

Black Holes on the Internet. - BHOTI

Observations out of focus

The idea of Black Holes on the Internet stretches my mind since 1997. Since those days internet has changed extremely, means the development of new technologies (streaming/flash) and commercialisation that has become one of the net's most important aspects. The amount of data on the net was already in 1997 incredibly high - but still it rises and will grow on in future¹.

Data, Information, Knowledge

Before I'm going to cause more confusion in this text later, I want to describe the context of terms like "Data", "Information" and "Knowledge".

Data is a formal abstraction and as such depictable in mathematical units. Data can be described in a formal or structural way, e.g. by algorithms or tables. Data is unable to entirely describe a complex phenomenon, it is always an abstraction. To reach this abstraction, certain phenomena which describe the significant have to be filtered out. The noise gets lost, the data is prepared for processing.

Information is an informal abstraction, which means, it can not be abstracted in an mathematical or logical theory. Information can consist of text, image, sound or something else. They describe, what seems to be significant for a certain phenomenon. "We're going to meet with Einstein at 9pm. at the black hole.", is an information in which the information can be described by data (the activity, time, place, person). To process this information by a computer the data must be abstracted from the original information. The activity "to meet" must be quantized so that it can be handled as data, e.g. "to meet"=1, "not to meet"=0. Otherwise the equivalent "0" and "1" has lost any character of the information itself.

Knowledge is a personalised, inner abstraction of a phenomenon, that was recognised by a person. Somebody who is able to combine the information 'black holes are dangoures' with the information 'that they want to meet at a black hole' in a right way, will propose 'to better meet somewhere else'. The person knows, based on the available and rated information, that the 'restaurant on the end of the universe' is much more secure. This person has been there before and felt save; so he/she can start an action based on this knowledge.²

Kat Hagedorn has summarised those terms in the " Information Architecture Glossary"³ as follows: "Information. Anything that can be restored or retrieved" and "Knowledge. Information, that is analysed by the user and leads the user to action."

We could follow this issue much deeper for sure, but let's come back to the net. On the net, information crosses our way in form of data that's saved in files, for instance as text. The information was created on the one hand by the person that has created the file, on the other hand the information constitutes itself while the reader compares the files' content with their

¹ See the investigations in deep-internet, <http://www.albany.edu/library/internet/deep.html>

² the above ideas are mainly derived from Valdemar W. Setzers text „Data, Information, Knowledge and Competency“, <http://www.ime.usp.br/~vwsetzer/data-info.html>, Feb 1999

³ http://www.asis.org/Conferences/Summit2000/morville/IA_Glossary.html, März 2000

own knowledge. The bigger the credibility of information and the better the information are contextualised in-between - the bigger is also the possibility that it concerns knowledge. Knowledge on the net is distinguished by the fact, that a big amount of users or a small amount of specialists grant credibility to an information.

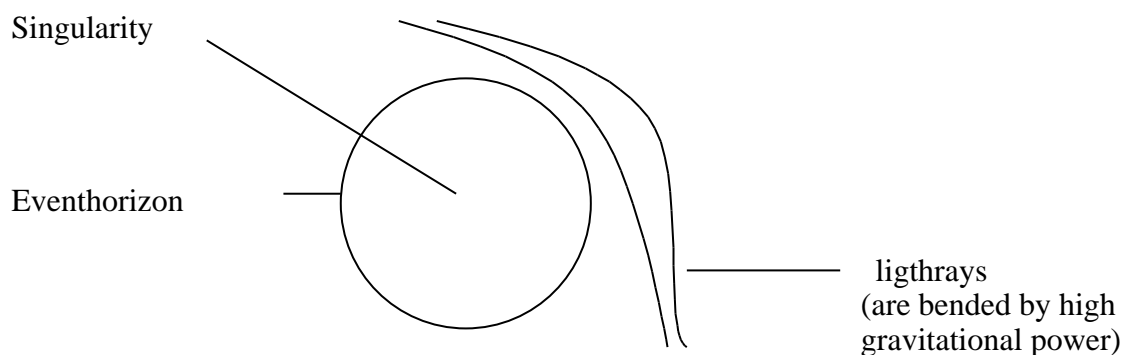
During the last years a remarkable amount of information was added to the net. This almost endless amount, caused that filtering/ evaluation has become impossible and the noise has increased.

Black Holes

Now I want to describe the origin of the black holes in short. More detailed information is to be found in books⁴ or on the net⁵.

If the lifetime of a star comes closer to the end, the star can collapse. A star of 1,4 sunmasses becomes a white dwarf, while until three sunmasses a neutronstar develops. Just when the mass of the collapsing star is more then three times higher than the sunmass, a black hole becomes into existence.

The black hole is a place with incredible high gravitational power. This attraction is so high, that even light, the fastest known waveform can't escape and falls into a black hole. Thatswhy by the way it is black



The singularity in the black hole centre is surrounded by the event-horizon. Everything that crosses the event-horizon in direction of singularity has no chance to escape the event-horizon and is stuck inside the black hole forever. One even could not get in contact with an astronaut inside the black hole because radiowaves (which are slower than light) can not escape. Beside that the gravitational power would kill our astronaut by crumbling him into lots of atoms.

This process is irreversible, which means in difference to a lot of physical processes, it can not be recalculated. It is discussed by the theoreticians that some radiation may leave the black holes, but they do not agree always in this.

Ongoing with that is the so called "information paradox". On the one hand there is the

⁴ e.g. Hawkins „A short history of time“

⁵ e.g. <http://cfpa.berkeley.edu/BHfaq.html> and <http://www.rdrop.com/users/green/school/index.htm>

realisation that no information that has crossed the event-horizon can escape. On the other hand the theory of quantum-mechanics would break down under this circumstances, because its most important principle is reversibility.⁶ The problem is still much more complex, so please rtfm.

BHOTI Black Holes on the Internet I

The imagination of the total lost of information exercises a very own kind of fascination according to the facts I've described above. Black Holes on the Internet (BHOTI) could act as huge datahoovers, which swallow without any consideration of losses all data that comes near them. This would be, so to say, the vision.

It immediately remembers on very aggressive computerviruses. Despite I don't want to talk about viruses, we should have a short excursion to see, what distincts them from the possible BHOTI.

Viruses acting on basis of bugs inside a certain software and combined with the users' ignorance and incompetence they are able to perform unexpected and unwanted actions. There are different motivations to program viruses and it exists enough free available information, how to do it. The idea of BHOTI follows a total different direction, although the concept of virus can be an inspiring one as well.

1:1

The 1:1 translation of a black hole on the internet can look like this: You need a very big, powerful server, that is able to transfer and process an immense amount of data. This would correspond to a normal star. The moment of imploding would have to go similar on the given server and would at least pull down the server owns data to the abyss . By that such a heavy "datagravitation" develops, that also data being situated in immediate neighbourhood will be sucked into the BHOTI. Independent of quality and quantity everything that can't escape the data-gravitation gets lost in the black hole. How big must be the amount of data during a certain period of time, to cause the necessary gravitational power?

Cyberspace

How do we imagine the net? The most recent thought may be of the Cyberspace-model, in every case it is three-dimensional. To think three-dimensional everyone learns in school. The probably most impressing model was developed by William Gibson⁷, who described the cyberspace, as we know it nowadays, in his "Newromancer"-trilogie.

„Cyberspace. A consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts... A graphical representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the nonspace of the mind, clusters and constellations of data.“⁸

For current cinematographic translations of cyberspace or virtual reality, e.g. "The Matrix"⁹, the three-dimensional model has been used always.

Occupying one self more thorough with black holes, one crosses again and again the term 'space-time', that was originally introduced by the mathematician Hermann Minkowsky. Within space-time Minkowsky unites the three dimensions x, y, z with the dimension of time

⁶ as stated in Stephen Hawking, „A short history of time“,

⁷ <http://landow.stg.brown.edu/cpace/scifi/gibson/neurov.html>

⁸ Gibson, William, Neuromancer, p.51

⁹ see <http://www.whatisthematrix.com>

and thus developed a four-dimensional model. In 1915 Albert Einstein and the mathematician David Hilbert have formulated equations that described, how the materia with its energy, its impulse and its pressure and tension causes the bending of space-time. These bendings again pull the materia in its by inertia and weight determined path through the space-time. These findings, although made by Albert Einstein already in the beginning of the 20th. century, have not made any heavy impact onto our way of thinking on space or on the cyberspace. To think a black hole - one would have to learn thinking four-dimensional first.¹⁰

Heavydata-research

It becomes clear relatively soon that the realisation of black hole on the internet is not an easy task. But let's not stop the wild speculations! Therefor the topic is much to fascinating. It is even that fascinating that in 1998 a first symposium of the "Society for Heavydata-research"¹¹ took place and discussed similar absurd analogies as there are "data-acceleration, cold data-fusion, and information-materia-transformation".

Lets have a more detailed look to what Hartmut Winkler from the University Bochum has to say about "Cold data-fusion, theoretical concepts and experiences on experimental reactor-operating". In his essay he writes: "Data, as we know, increases almost autonomous, uncontrollable and in exponential scale; and until now we try to upgrade memory and processor-performance in a hectic manner. In fact we've already lost. The miniaturisation will come to its stagnation on an atomar level, at least then the increase will start again to go on physically. In the beginning all surface is going to be used, I'm thinking of bridges parapets that are covered with a thin layer of silizium, lateron the information will penetrate the substance of objects. And then ... The only chance that I see, is that we were able to realise the fusion. The logic of additive data-growth, seems to stop just if we succeed in building reactors which melt data. Headword of this research is 'Qualitative Information-synthesis' a relatively new subject, which even can show up with first results already. The main problem now is the enormous amount of energy, that is emitted during the synthesis..."¹²

Right now a Team at the CERN in Geneva works on the DataGrid-Projekt, that is described as below:

„The objective of the project is to enable next generation scientific exploration which requires intensive computation and analysis of shared large-scale databases, from hundreds of TeraBytes to PetaBytes, across widely distributed scientific communities."¹³ Remember, they are talking of Petabytes, while one Petabyte equals one million Gigabyte. When the new particle-collider LHC is buildt at the CERN in 2005, about 40 Million particles per second will be detected by the sensors which causes data-masses of 100 GigaByte per second.

At least it becomes clear from the above that the BHOTI-idea can not function in a scientific discourse. And it's not intended to do so. The 'agentur-bilwet'¹⁴ however has introduced the term of "illegal science" to describe this mode of procedure and Hakim Bey¹⁵ - "The Marko

¹⁰ Here is not meant geometrical fourdimensionality. Although mathematical models exist, that depict the relationship of time to the other dimensions, there exist no geometrical or visual picture, that is easily able to depict that.

¹¹ <http://www.philart.de/schwerdaten/index.html>

¹² <http://www.inm.de/info/tagungen/schwerdaten-abstracts.html#winkler>

¹³ <http://www.datagrid.cnr.it/>

¹⁴ <http://www.thing.desk.nl/bilwet/>

¹⁵ <http://www.t0.or.at/hakimbey/hakimbey.htm>

Polo of the Subunderground" may be the another witness of my efforts.

Net.Art

At this point some short words about net.art. I take it for granted that the reader knows the field¹⁶ more or less and therefor I'll describe it only in short.

One can distinct the following kinds of net.art, that interfere each other of course: a) net.activism b) fakes c) web.art/ browser.art d) interactive art on the internet and e) code.art.

a) The borderlines of internet-activism have showed up during last years but also the possibilities, e.g. the situation of radio b92¹⁷ during the Yugoslavia-war, the No-One-Is-Illegal campaign¹⁸ or Toywar¹⁹.

b) Fakes on the net are as long interesting as they do not appear within the art-context. As soon as it is known that it is 'only art', the fakes own disturbing idea, which is often connected to political items gets blurred and powerless. "It's just art, don't worry!"²⁰

c) Web.art/ browser.art has opened up our eyes for certain esthetical categories, which accompany the use of computer. Nowadays IMHO this efforts are turning in circles apart from further detailed distinctions. Known examples for browser.art are <http://www.jodi.org> and <http://www.superbad.com>

d) Already in 1997 Alexej Shulgin has made some essential remarks on interactive art in general but also as a comment of some developments on the net. "Looking at very popular media art form such as 'interactive installation' I always wonder how people (viewers) are excited about this new way of manipulation on them. It seems that manipulation is the only form of communication they know and can appreciate. They are happily following very few options given to them by artists: press left or right button, jump or sit. Their manipulators artists feel that and are using seduces of newest technologies (future now!) to involve people into their pseudo-interactive games obviously based on banal will for power."²¹

What remains?

e) There are for instance the activities of =cw4t7abs aka nn²² or Blank/Jeron with "reMail"²³, "The 12hr-ISBN-Project by Brad Brace"²⁴, as well as "Parasite" and "Information Tautology" in the frame of "Protocollision"²⁵ and "Orphan" by Jirka Pfahl²⁶. Although these work are very distinct, their work on the source-code and their work with such different services as e-mail or ftp are interesting. Absolutely immodest I also would like to point Your attention onto my "f0rwardpunk"²⁷ from 1999. To make a long story short let's use the term "code.art".

This is not an introduction of a neologism, it can be read ironically moreover – the way as the term nat.art was introduced. The term „artistic software“²⁸ may be used as well. In fact the term is originated on a website (I have lost the URL) and named a certain categorie of

¹⁶ see Blank, Joachim, „What is netart ;)“, <http://www.hgb-leipzig.de/theorie/netlag.htm>

¹⁷ <http://www.radiob92.net/>

¹⁸ <http://www.contrast.org/borders>

¹⁹ <http://www.toywar.com>

²⁰ see: ‚Fakes‘ in „Kommunikationsgeruillia“, Brünzel, Sonja u. Blisset, Luther, Verlag Libertäre Assoziation

²¹ „art, power, kommunikation“, by Alexej Shulgin; in Ostranenie97 - Katalog, edited by Bauhaus Dessau Foundation, 1997

²² <http://m9ndfukc.com>

²³ <http://sero.org/remail>

²⁴ <http://www.teleport.com/%7Ebrace/12hr-isbn-jpeg.html>

²⁵ <http://www.protocollision.org/testmaincontrol/eng/mainframeeng.html>

²⁶ <http://www.tert.de/orphan>

²⁷ <http://www.hgb-leipzig.de/~francis/f0rwardpunk/1.htm>

²⁸ During the media-art festival transmediale 2001 (<http://www.transmediale.de>) a new category ‚artistic software‘ was established.

projects.

Code.art

What is it? May be but must not be interactive. Code.art acts on the technological structures of the net. Code.art exposes itself to the level of program-code. While net.art in general has explored the WWW relatively extensive other services just have been ignored. To that fact contributes for sure the circumstance, that the WWW is a ideal system for presentation and self-representation. Some attention has been paid to video and audio streaming technologies. Otherwise the following services and protocols have been ignored almost totally: ftp, e-mail and webmail, newsgroup, telnet and irc.

In the area of programming-languages a few works have been developed, which can be illustrated by IODs' experimental browser Webstalker²⁹. Webstalker was developed with the software Macromedia Director. Within Macromedia Director net.lingo-routines were implemented to extend the basic abilities of the program to internet.

It is possible to download additional artistic software from the net.art-portal verybusy.org; see section 'files'.

Artist-works with napster or gnutella or portals like cycosmos are not known to me, there have been activities on GSM and WAP initiated by Igor Stromaier³⁰, tending to an ironic touch. Vuk Cosic's³¹ work is not only connected to the exploration of the potential of ASCII in general, he also prepared the "ASCII-Unreal". "Unreal is a 'kill-or-die'-game, which sets the goal to kill as much enemies as possible inside a 3D-world. In addition to the game it is possible to install a construction-kit, that allows someone to build own scenarios. This again was used by Cosic to shape a game-version that is based on ASCII-art.

The artist of <http://www.0100101110101101.org> exhibit their computer on the net, means that You can look into the machine directly via a webinterface. You can open up folders or read the actual mail, if You like.

Finally I would like to remember of the countless works with text on the net, poem generators as well as interfaces for collaborative authorship

Beside this exists a highly active scene of code-artists, who produce 'demos', direct programmed animations. Let's have a look to the following (self)explanation: "Demos are an art form. They blend mathematics, programming skill, and creativity into something incredible to watch and listen to. (...) A demo is a program that displays a sound, music, and light show, usually in 3D."³² One of the most important demo-scenes' websites is <http://www.hornet.org>. A glance into the there situated section 'code' refers to the skills that are necessary to program demos. It's really worth a look. Competitions on a regular basis exist, which limit the size of programm-code to e.g. 64 kByte and challenge to optimise the programm-code as much as possible. The goal is a possibly extravagant optic, in which the immanent problem is implied already: The content of demos is optimisation. Demo-artisans do not share much contact with netartist.

Code.art - Getting into details

I have named some of code.arts representatives already above. Now I want to go further into details to illustrate what fascinates me in it.

More or less unrecognised by the net.art-business has stayed the 12hrs-ISBN-Project of Brad

²⁹ <http://bak.spc.org/iod/>

³⁰ <http://www.intima.org>

³¹ <http://www.vuk.org> or <http://www.ljudmila.org/~vuk>

³² <http://www.oldskool.org/demos/explained/#whatisademo>

Brace³³. He describes it as: "Classic Hypermodern Imagery... posted/mailed every 12 hours... perfect trans-avant-garde memes for the 00`s! A continuum of minimalist masks in the face of catastrophe; conjuring up transformative metaphors for the everyday... A poetic reversibility of exclusive events." Therefor Brace owns memory-space on five ftp-servers and an armada of 21 ftp2mail-adresses as well as four binary-newsgroups to his disposal, which he has established himself. Again Brad Brace: „This interminable, relentless sequence of imagery began in earnest on December 30, 1994. The basic structure of the project has been over twenty-four years in the making. While the specific sequence of photographs has been presently orchestrated for more than 12 years` worth of 12-hour postings, I will undoubtedly be tempted to tweak the ongoing publication with additional new interjected imagery. Each 12-hour posting is like the turning of a page; providing ample time for reflection, interruption, and assimilation.“

Every 12 hours an image is posted, gets copied within the several systems and is published to the subscribers. This mode of procedure has inspired me personally very much, whereas the aspect of endless, machine-based copying took my utmost attention. In my humble opinion the content of the images becomes a minor matter by the exciting quantity of postings - the actual interesting procedure is the process of shifting data.

Within "re-mail"³⁴ Blank and Jeron are connecting the services of WWW and e-mail in a evident manner. The FAQ describes it that way: "Too many e-mails in your mailbox? The purpose of re-m@il is to help people with heavy e-mail loading. They forward messages to re-mail@writeme.com. Those messages will be answered by the public at <http://sero.org/re-mail/>. The answers will be- without asking you - sent back to the origin sender. Why don`t you configure your mail-account as an autoforward to re-mail@writeme.com ?"

In frame of the Netherland-Japanese co-operation "protocollision"³⁵ Gabrielle Marks and Stefan Kunzmann are programming an autonomous software-agent, which they name a "parasite" designed to nest into the other participating projects. The announcement therefor states: "The paraSite 'cultivated' by Gabrielle Marks & Stefan Kunzmann 'feeds' on data which is drawn from 'hosts'. Part of the paraSite needs to nestle, 'embed' itself, into host sites: the sites of the other PROTOCOLLISION participants. The growth and even survival of the paraSite depends on factors such as the frequency of visits to a such a host site. This means the paraSite is ever changing, without the makers being able to direct these changes beforehand: the (unconscious) behaviour of the visitors steers the 'overgrowth'. Because all the various stages of the paraSite remain visible, it will perhaps be possible to follow its evolution and to discover who makes it possible for this paraSite to grow so luxuriantly. Will paraSite alter the behaviour on other sites? Who manipulates what? The visitor the paraSite.... paraSite the visitor... , the other sites?"

Jirka Pfahl is not interested in data anymore, instead he takes care about nondata. His webiste counts on „Orphan Files“³⁶, domains and Websites that contain no data. Netsurfers can propose those sites theirself and additionally a crawler looks for new candidates on the net. This amount of NOTHING makes You feel silent and meditativ – a desert in the center of an information-landscape.

³³ <http://www.teleport.com/%7Ebbrace/12hr-isbn-jpeg.html>

³⁴ <http://sero.org/remail>

³⁵ <http://www.protocollision.org>

³⁶ <http://www.tert.de/orphan>

To depict internet „1:1“³⁷ is the aim of Lisa Jevbratt. Again she focuses our view onto technological matters, that form a social structure as well. Therefore she connects a database to the web.

„The database is the result of an ongoing "interlaced search". An even sample of possible IP addresses is examined simultaneously (rather than searching from the beginning of the numerical spectrum 0.0.0.0 of the IP addressing system to the end 255.255.255.255). By zooming in on the numerical spectrum, i.e. repeatedly performing the search on different samplings, all possible IP addresses will eventually have been tested for inclusion in the database. The search will at that point start up again, so that new networks and hosts on the web get included. Currently, approx. two percent of the spectrum has been searched and 186100 sites have been included in the database.

Because of the interlaced nature of the search, the database could in itself at any given point be considered a snap-shot or portrait of the web, revealing not a slice, but an image of the web with increasing resolution. The C5 IP database contains any hosts that respond to an http request. Hosts with limited or restricted access, and without a front-end HTML document are included. When navigating the web through the database, one experiences a very different web than when navigating it with the "road maps" provided by search engines and portals. (...)

The interfaces/visualizations are not maps of the web but are, in some sense, the web. They are super-realistic and yet function in ways images could not function in any other environment or time. They are a new kind of image of the web, and they are a new kind of image."

The visualisation that is provided by the interface she describes as following: „This visualization is both a complete pictorial representation of the web, and a clickable image map linking to every top level web site associated with an IP address. The image is composed of squares, each representing one host in the IP database. The color and location of a square is determined by the IP address number, allowing the viewer to "see" what the IP space of the web looks like. (...) The variations in the complexity of the striation patterns are indicative of the numerical distribution of web sites over the available spectrum."

BHOTI II

What's about the promised Black Holes On The Internet. Has there been found one, at least one that could confirm the absurd idea? We have a few traces that could refer to, how a BHOTI could look like. I want to indicate those traces here:

The Hackers Dictionary went into computer-history as the 'jargon-file'. It was founded by Raphael Finkel in 1975 in Stanford and since that it has developed to the biggest collection of data of the hackers culture. Looking immediately for the term 'black hole' one finds the following entry:

„black hole n., vt.

[common] What data (a piece of email or netnews, or a stream of TCP/IP packets) has fallen into if it disappears mysteriously between its origin

³⁷ <http://c5corp.com/1to1/index.html>

and destination sites (that is, without returning a bounce message). "I think there's a black hole at foovax!" conveys suspicion that site foovax has been dropping a lot of stuff on the floor lately (see drop on the floor). The implied metaphor of email as interstellar travel is interesting in itself. Readily verbed as `blackhole': "That router is blackholing IDP packets." Compare bit bucket and see RBL."³⁸

and

„drop on the floor vt.

To react to an error condition by silently discarding messages or other valuable data. "The gateway ran out of memory, so it just started dropping packets on the floor." Also frequently used of faulty mail and netnews relay sites that lose messages. See also black hole, bit bucket.“

That these phenomena are not unique shows an article by Microsoft that can be found at the official support-database. „ (...) On a TCP/IP wide area network (WAN), communication over some routes may fail if intermediate network segments have packet sizes smaller than the communicating hosts, and routers do not send appropriate ICMP responses to this condition. A router that causes this condition is sometimes known as a "black hole" router. The Ping utility, a standard utility installed with the Microsoft Windows NT TCP/IP protocol, can be used to find black hole routers. Some recommendations are provided to work around or fix problems with black hole routers. (...)“³⁹

The article describes further the technical circumstances that can lead to dataloss during transmission and why this is not corrected by the usual routines of error-correction. Altogether Microsoft error-analysis refers however only one of the phenomena that are substituted by the term 'blackhole-router'. Often the term is used in situations in which the situation can not be described in technical terms and thus tends to computer-metaphysics. One may know the situation, sitting at the computer, trying to process a certain operation or to program a certain code and it doesn't function in no way. Another person attends and does the exactly same action and suddenly it functions or that other person does the so-called 'rain-dance'⁴⁰, which means she/ he does something without being able to explain what, but it works.

It seems as if the idea of 'bitrot' seems to fit into this category:

„bit rot n.

[common] Also bit decay. Hypothetical disease the existence of which has been deduced from the observation that unused programs or features will often stop working after sufficient time has passed, even if `nothing has changed'. The theory explains that bits decay as if they were radioactive. As time passes, the contents of a file or the code in a program will become increasingly garbled.“⁴¹

Bitrot is not only known as stated in the jargon-file above. William Gibson has developed another interesting concept of bitrot in his science-fiction-novel 'Idoru'. There he describes collections of data that are not used and maintained anymore and thus undergoing an artificial

³⁸ <http://www.tuxedo.org/%7Eesr/jargon/html/entry/black-hole.html>

³⁹ <http://support.microsoft.com/support/kb/articles/q159/2/11.asp>

⁴⁰ <http://www.tuxedo.org/%7Eesr/jargon/html/entry/rain-dance.html>

⁴¹ <http://www.tuxedo.org/%7Eesr/jargon/html/entry/bit-rot.html>, see also <http://www.atarihq.com/pal-division/fleecing/bitrot.html>

process of bitrot to clean up the resources for new data. He's not going deep into that concept, only mentions it, but it could consist important parallels to what I'm looking for on black holes. William Gibson's thought of bitrot has another companion. "Wastelands of html-structures" and "forgotten hotmail-accounts" are pointed out by Matthew Fuller and Geert Lovink within their text "the chicken have come to the roast"⁴² and they refer to the collections of data-waste that is not used anymore and unmaintained and forgotten scrapes an undeleted living, on several servers. "Vast areas of the net lack even basic levels of interactive vitality. Lonely servers are either busy with themselves, or decay, neglected, forgotten, see their tragic counters.", is said in the text, which revolves around the question, if this data-trash couldn't be usable for something yet. Additionally I want to mention: dataloss by unintended deleting, loss of information through technical innovation, e.g. no longer readable, old datacarriers, new browsers or new programming-languages. Furthermore You may have a look to the 'Dead Media Project'⁴³ initiated by Bruce Sterling containing a huge list of dead media(machines) as well as the categorie 'Electronic Computers and Calculators'.

More precise determination of a state causes the determination of the other state to be more unprecise⁴⁴

In that sense - the Heissenbergian - I can answer the question for Black Holes On The Internet only with these observations but instead of an answer I had to raise additional questions.

I hope that I was able to describe an approximate field of possibilities by counting the different, even partially contradictory views.

How to proceed with this collection of material? On the BHOTI-Webpage <http://www.irmielin.org> is gathered a list of pointers and references to BHOTI as well as a discussion-forum and a chat-interface. Iirmielin can offer a platform to develop hard- and software as well as a place of discussion and storage of ideas.

Therefore I propose to proceed as stated: During a period of 2-3 months a collective collection of BHOTIphilia takes place which can be accompanied by a discussion-process via mail and the discussion-forum. It tries to figure out one or two concrete proposals to programm a software, which will be done during the next months on different places, co-ordinated via the net. The release party will feature a very special edition of BHTOI-champaign to all participants.

There's no more to say.

⁴² <http://www.nettime.org/nettime.w3archive/199908/msg00029.html>

⁴³ <http://www.deadmedia.org>

⁴⁴ Heisenbergian Uncertainty Relation, see also <http://www.lev.shuttle.de/lev/whs/UNSCHREL.HTM>