

»User requests are what computers are for!«¹

New approaches in collaborative and »concreative« tools

Beat Suter, René Bauer and Heiko Idensen

The area of collaborative environments has been developed much further within the last few years. Today more and more collaborative and concreative² environments are used to replace the old non-dynamic websites. Among them are some interesting independent builds.

Concreative systems like tEXtMACHINA or Nic-las are more than just interfaces. Some of their innovations and extensions reach much further than established tools like BSCW and Wikis. They feature open concepts in designing structure and assembling and distributing content. This may sometimes lead to problems since users are not only responsible for the content but for the structuring as well.

Some of the tools offer the possibility to manage and work together on any part of the content. They may be used in different areas from E-learning to managing whole departments of schools or setting up expanding knowledge pools. Tools like tEXtMACHINA were developed for research purposes, it is no wonder they are more experimental than established tools and focus a lot more on communities. Nic-las let a community develop a kind of »Zettelkasten«³ and with it an own structure and agreeable terms. The community may then surf the net and comment websites. And the tool Nic-las cooperates on generating content in distributing the inserted objects through a second system and inserts them into a new context. Furthermore the system works with a so-called digital subconscious that is a contextualising extension that serves as a connection for the community and carries creative impulses.

Basic system philosophy

This paragraph introduces the two collaborative environments tEXtMACHINA and Nic-las and discusses their unique approaches to concreative community- and knowledge-building. They both are based on the same kind of philosophy which says that tools shall provide an optimum of freedom and flexibility for the user in terms of cooperation. This means users can cover their specific needs themselves and discuss and co-create and co-design content starting with the structure and organization of content and eventually venture into setting up complex knowledge networks on equal terms. This again opens mutual observation for all members of a group or community and on a longer time frame permits builds of complex structures which are not dependent on the tool but find their bearings on the group. An open policy for use makes the borders pervious between several seaparated areas and puts the transitions from learning to knowhow and knowledge in a state of flux. In contrast to this shared basic philosophy the two concreative applications find themselves on either side of the scale in terms of size of groups they are meant for and in terms of experimental degrees of use: tEXtMACHINA tends to cater for academic and scientific communities which can be rather large and enclose whole departments or faculties of universities with several thousand students and scholars. It features tools for E-learning like adaptable evaluation units, grading units, commenting and text-coding units up to units for definition of terms. Nic-las on the other hand is a system of tools for smaller groups. It permits building a system with the

¹ Famous quote from the science fiction movie TRON, made in 1982 by the Disney Corporation.

² Concreative web-interfaces permit us to cooperate in creative working processes. The term was reintroduced by Judith Mathez (2002) for collaborative electronic literature and originates with the philosophers Robin George Collingwood (1938) and Heinrich Rombach. See also Footnote 18.

³ German equivalent for "card index box".

structure of a rhizome which then can be contextually used for research and creating new texts and works while it delivers own suggestions.

tEXtMACHINA

The software tEXtMACHINA⁴ (www.textmachina.uzh.ch) was developed as research project in the German department of the University of Zurich. It accomodated different data formats. The theoretical and conceptional idea was not to differentiate between structure and content. Effectively there are no prefabricated structures. This basic prerequisite may make it possible to simulate science as a scientific discourse in a cultural academic environment. For this platform users generate content themselves – and each object in tEXtMACHINA allows further comments. It starts with the choice if the user wants to work in a combined area or alone in an own area (hyperthread). Then the user can insert structural objects like a thread or simple „text-objects“ like plain text, link, sound, picture, movie or an interactive evaluation. In each spot the user again has the opportunity to insert elements like a thread or change a long discourse paragraph into a thread. The types of data and data formats are used as a toolbox to create all sorts of texts. And the management of the content known in CMS is made visible and easily manageable for the user. He also has the possibility to limit rights for individual objects or threads.

The figure consists of two side-by-side screenshots. The left screenshot shows the homepage of gametheory.ch, featuring a navigation menu on the left with categories like 'Aktuelle Veranstaltungen', 'WissenKnowledge', and 'blog_Z_game root'. The main content area lists various events and projects, such as 'Projekt ToniAreal (Toni Areal) - Neugestaltung' and 'Game Sound Analysis (2. Sem.)'. The right screenshot shows a blog entry titled 'Spooky Country oder deutscher "Quellcode" Gibson weiter auf dem Weg zurück in die Gegenwart' by 'Anonymer Gast' from 6-5-2008. The entry includes a photograph of a person climbing a wall, a link to an interview with Gibson, and a comment section.

Figure 1: [Screenshot of content of a page of gametheory.ch] + [Screenshot Blog-object]

If you work with tEXtMACHINA for a longer period, you will be experienced enough to create more complex types of text without any programming. The system is designed for any user to combine simple types of text to more complex and specialised types like „protocols for students“ or „profiles for filing research grants“. This way it becomes possible to depict existing and changing structures and demands of real communities and create corresponding text types. An art school demands different protocols than a medical research group or a database in development stage. Such structures of data then can be used in an overall context and developed further by different users and groups. There are different ways of commenting in tEXtMACHINA. It is not only possible to add comments at the bottom of any text or object in the environment. Commenting is also made possible by simply adding a note right on top of objects, for example on top of pictures. With adding layers of comment to pictures and

⁴ tEXtMACHINA is a research project by René Bauer, Stefan Hofer, Imre Hofmann and Prof. Dr. Michael Böhler. It was developed at the German institute of the University of Zurich from 2002 to 2005. More information can be found on <http://textmachina.uzh.ch/> (30.04.2008).

diagrams a discourse can be opened right on location. And additional information that usually is relegated to footnotes and endnotes in distant areas or sections of a text becomes visible right on top of the discussed object and is open for interactive feedback. The otherwise finite text of a book becomes executable and commentatable. It is also possible to work together on a text. Parts of the text can be marked and added with post-its that are shown as links or besides the main text or on top of the main text. These post-its again may contain any kind of comment as text or object. This makes it possible to create an own hypertext inside the medium and include another layer of structure. This method turns even more powerful if you work with the highlighting feature. Parts of texts can be highlighted in red let's say for questionable, blue for incomprehensible and green for interesting. If several people work on a text the colours might get mixed or darker when highlighted several times. New ways of collaborative comprehension might arise this way. A text with dark markings may show straight away that there is a problem of comprehension in the group that has dealt with it.

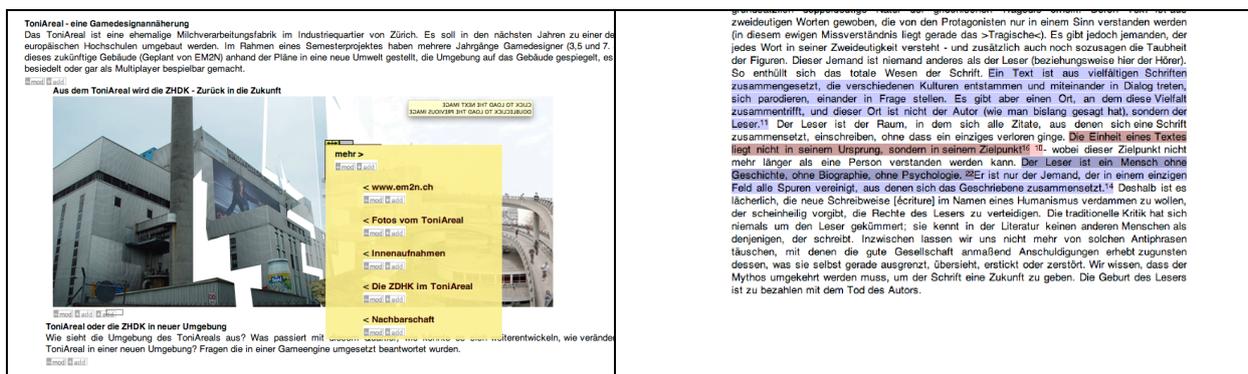


Figure 2: [Screenshot with comments on top of a picture] + [A text encoded with different colors]

Because of the possible and differentiable structure of the tool it may be used in almost all areas of academic, scientific and artistic work and research.

Communities and use

It enables the academic programme Game Design at the University of Arts Zurich with 10 teachers and approximately 100 students to enhance its training operation by preparing lectures and presentations, setting up tasks and projects for the students and making evaluations of classes. Even the students do organize lessons and prepare presentations with the tool. Furthermore the knowledge pool is found in the same medium and efficiently supports the learning process. This is made possible by non-prioritizing the hierarchy of the users. The knowledge pool inevitably grows and supports all members of the community.

tEXtMACHINA is not only used by creative programmes at the university of arts⁵ in Zurich but in different contexts. Several departments of the university of Zurich⁶ with up to 2000 users and the German department of the University of Essen⁷, Germany, feature platforms. tEXtMACHINA offers the user the power to discuss and differentiate a project in a subject-oriented social context. But he has to organize and structure the environment by himself.

⁵ Game Design, University of Arts Zurich. 2004 – 2008. <<http://www.gametheory.ch>> (30.09.2008).

⁶ Deutsches Seminar, University of Zurich. (2003 – 2008). <<http://www.textmachina.uzh.ch/ds/>> (30.09.2008).

⁷ Deutsches Seminar, University of Essen. (2005 – 2008). <<http://www.textmachina.uzh.ch/essen/>> (30.09.2008).

The Computer as a Concreative Player

The presented application focuses mostly on the digital mechanics of software, enables concreativity but leaves the creative work to human beings. Computer and software now not only mediate between human beings, they generate new components for systems. They are able to initiate and support the conceptualizing of new developments in which the computer keeps a certain independence and manages to do contextual and creative tasks on the side while, for example, a game is being played. The software becomes an actor and begins to work as an independent and concreative element or player.

Nic-las, an adaptive and shapable medium for communities

Nic-las started as a research project. It is a collaborative writing environment that focuses on small research groups of up to 40 people and encourages to create valuable content for the whole group. Nic-las is not just a platform and an interface which is mediating between users but a system which participates in text, creates new texts and co-authors the whole process.

The first versions of nic-las⁸ were, as the name already indicates, theoretically and practically guided by some of Niklas Luhmann's ideas. Niklas Luhmann may, as the self-inflicted "legend" tells us, have owned a card index box (*Zettelkasten*) with entries of important terms and a manual system, which linked the relevant terms with each other. According to popular cultural mythology, this *Zettelkasten* was a text- and book-production machine.⁹ It is fairly easy to rephrase this myth as an algorithm: Take the cards of the subjects out of the index box in the sequence of the subjects that ought to be discussed and write down all the content and links. Then, link all these pieces of text and you receive your text:

Im Augenblick sitze ich an einem Vortrag über ökologische Probleme in modernen Gesellschaften, und meine Arbeit besteht darin, Zettel [...] zu sichten und so zu kombinieren, dass ich etwas Substantielles zu diesem Thema sagen kann. Die neuen Ideen ergeben sich dann aus den verschiedenen Kombinationsmöglichkeiten der Zettel zu den einzelnen Begriffen.¹⁰

Luhmann's *Zettelkasten* appears to be a system of self-referential cards. Luhmann referred to his system as a communication with card index boxes. In its first stages of development, Nic-las was an attempt to translate into software the myth of a *Zettelkasten* which is able to write a book by itself. Around the same time, a similar concept of a general *Zettelkasten* was developed by Arthur P. Schmidt in his book *Wissensnavigator*,¹¹ an encyclopedia of important trends in science, technology, ecology and management. The *Wissensnavigator* has been incorporated into Nic-las 1.0 and is publicly available at: <http://www.nic-las.com/wissensnavigator/>. A second project for a more specialised encyclopedia by internet- and hypertext-related researchers from 2000 at <http://www.nic-las.com/enzyklopaedie/> shows how Nic-las as a transposition of a theoretical model has become a complex system which features an inner layer (endo-layer) and an outer layer (exo-layer). During the first stages of development, the focus was almost entirely on the endo-world of the system. But the focus

⁸ Nic-las is a project by René Bauer and Joachim Maier which started in 1999 and so far has been developed into version 3.0.

⁹ It thus fully realizes what is still only a project in the Gutenberg galaxy: a 'tableau' of knowledge.

¹⁰ Luhmann, Niklas, "Biographie, Attitüden, Zettelkästen", in: *Archimedes und wir*, Interviews, ed. Dirk Baecker and Georg Stanitzek, Berlin 1987, p. 125-56, p. 144.

¹¹ Schmidt, Arthur P., *Der Wissensnavigator, das Lexikon der Zukunft*, Book with CD-ROM, Deutsche Verlags-Anstalt, Stuttgart 1999.

has shifted and is now firmly on the difference between the endo- and the exo-world of the system.

There are only two kinds of possible entries in Nic-las: differences and texts. A difference equals an index card of the *Zettelkasten*, a text refers to a document and can also consist of pictures, sounds, movies or data-archives. On the surface Nic-las seems to work like a *Wiki*. Texts, pictures and sounds can be stored with certain keywords. These classifying keywords in Nic-las are called differences, referring to the theories on difference by Derrida and Deleuze/Guattari. A difference arranges and separates one part of a body from another. A community organizes these keywords according to its own needs and works out its own specific meaning of the terms. Nic-las turns into an "Aufschreibesystem"¹² of this community. At the same time, it becomes a space for storing information (memory) and a space for discussion (communication).

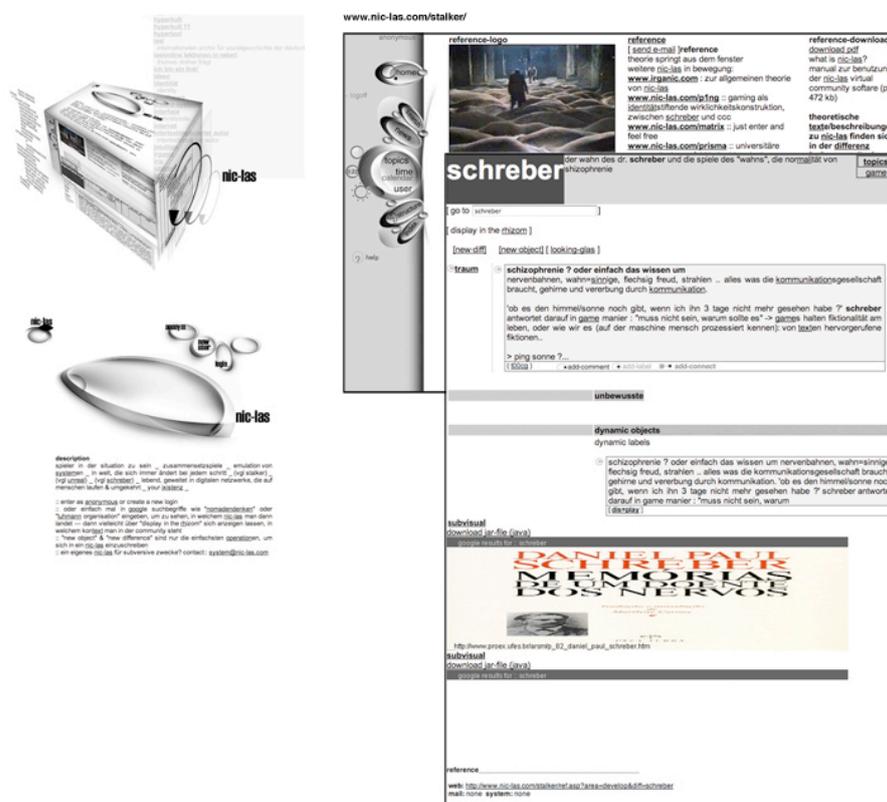


Figure 3: [Screenshot with Nic-las 1.0 Web-Interface and Subconscious Pop-up]

Structure of difference and rhizome

As a medium, Nic-las is mostly unstructured and can therefore be shaped according to the needs of a community. The community starts with a first card and builds up the structure with the developing of content and discussion.

Nic-las is a vital digital medium, which (at least partially) does what users want to imagine. Nic-las creates the possibility of inscribing oneself into the open digital spaces and at the same time remains observable for all members of the community.

¹² "Das Wort Aufschreibesystem [...] kann auch das Netzwerk von Techniken und Institutionen bezeichnen, die einer gegebenen Kultur die Adressierung, Speicherung und Verarbeitung relevanter Daten erlauben." (Kittler, Friedrich A., *Aufschreibesysteme 1800, 1900*, München 1985, p. 519.)

The organisation of the structure does not have to be hierarchical; it can be set up and organized from each card to any other card. A hierarchical structure only emerges if it is set up deliberately. Much more often, however, there are rhizomatic structures emerging; structures which again look different from each point.

Autopoiesis (Endo)

Besides the regular and deliberate classification, Nic-las features an additional autopoietical system, which organizes the texts entered on the basis of its structure. If you for example insert a text(-object) into nic-las (www.nic-las.com/enzklopaedie) with the terms “Walter Benjamin”, “Bruchstücke” (fragments), “Rhizom” (rhizome) and “das Neue” (the new), the text floats through the structure of Nic-las. It is going to flow into the difference Walter Benjamin; there it is going to split, one part will flow into the difference “Bruchstücke” (fragments) and there into “Rhizom” (rhizome); the other part will flow into the difference “das Neue” (the new). This means that any text will be distributed in the system a second time, this time on the basis of the structure. If someone enters a new difference, the whole system reorganizes itself and automatically redistributes the texts in the system. Nic-las as a medium generates a new context for the texts, intertwines and links them anew. This way the software participates in creating the content. As a medium, Nic-las changes each time the structure changes. Nic-las was designed to extend a deliberate "Aufschreibesystem" with a unique component and creates different references which open new aspects and facets for the ideas and intentions of the users.

Nic-las should be able to adapt to any changes of its users and community as it changes with them and processes the content further. Each user gets to see a different perspective on the content since the system has adapted the previously entered content and sorted it twice.¹⁴ The autopoietical functions complete the content of the system in levelling it out and feeding parts of the system with information, which at first may seem to be rather remote but can turn out to be useful.

A user of Nic-las works with this double system and has to tackle the surprising fact that the system participates in his research or work; the system comes up with associations, brings text to the surface that does not seem to be in the right place but is somehow linked to the subject matter. The medium Nic-las becomes a part of the community and turns out to be more than just an "Aufschreibesystem" that works on humans. It may be compared to the system of a library, which works on humans. Software works on hardware, books work on human beings. Nic-las comes with a logic that opposes a deliberate system by extending it and becoming a co-author, a vis-à-vis which has to be taken seriously. The software with its own order and with a momentum of its own is a member of the community as well. Therefore, Nic-las is an autopoietical media- and information system that fills and completes itself. In the end, Nic-las is adaptive to the community, it turns into a skin, an ever-changing environment, and an extension of the community.

If a user wants to initiate research with a new keyword he can just add a new difference. Even if this difference has been entered into the system for the first time, it may show up with content from the previous sessions of other users – the autopoietical system has sorted through the content and washed up related content. The author now sees what the community is working on and has the opportunity of joining the discussion, adapting it to his needs and changing its focus. The additional content Nic-las generates comes in varied associations and

¹⁴ Bauer, René and Joachim Maier, Nic-las, 1999 – 2008, <<http://www.nic-las.com>> (30.09.2008).

links to "the system" of the user. The community then has the choice to select from the variations and possibilities of the larger system environment.

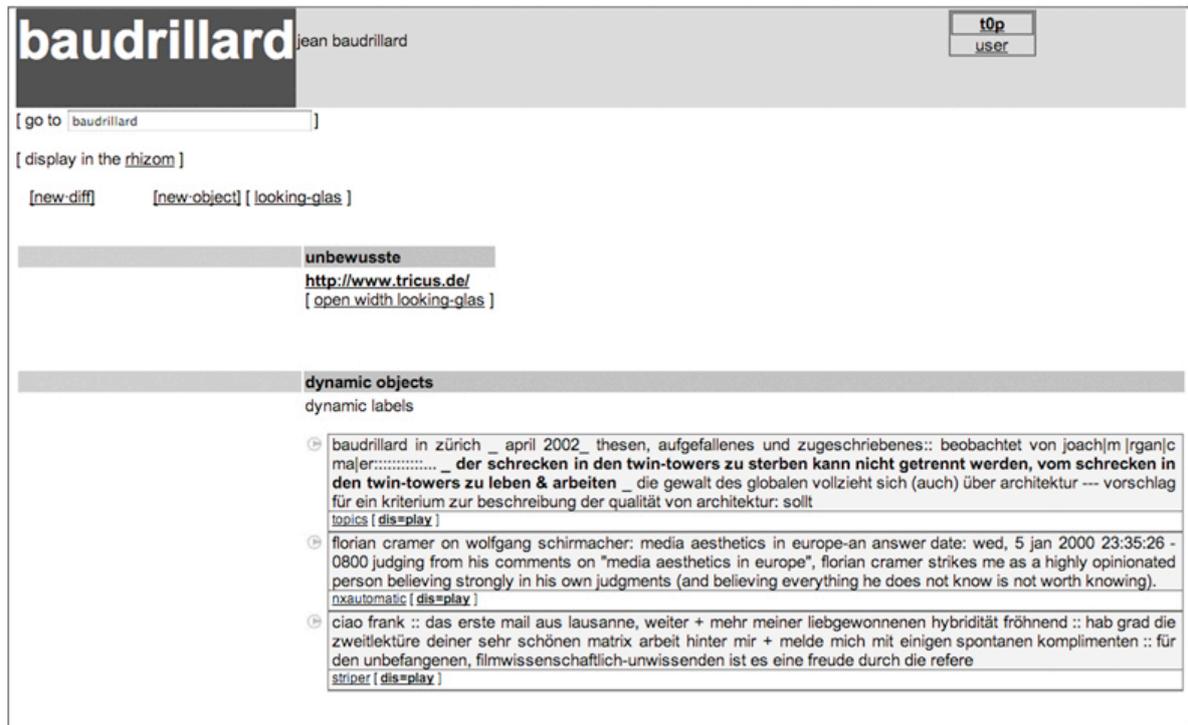


Figure 5: [Subconscious and dynamic objects contextualise the index card "Baudrillard"]

Subconscious (Endo)

The digital subconscious first was a playful approach on interaction between different texts. It was introduced as a joke on (post)modern theories but became a rather useful tool. Nic-las features different types of a digital subconscious. The digital equivalent of the "Freudian" subconscious (which was implemented first) is a media transposition of Sigmund Freud's concept of communication. If a user chooses to "delete" a difference or an object (text, film, sound etc.), it will nevertheless be kept in a special section of the database. From time to time, the "digital subconscious" will then bring parts of these deleted items back up to the surface. The subconscious objects may appear as pop-ups, text inserts or as layers next to, under or on top of the text a user happens to be working on.

enzyklopaedie was umfasst der begriff "enzyklopaedie" ? definition von enzyklopaedie ? (offen/geschlossen/rhizomatisch) rhizomatisch

metadiskurs (weimar) top topics

[go to enzyklopaedie]

[display in the rhizom]

[new-diff] [new-object] [looking-glas]

terrorismus

http://www.hgb-leipzig.de/%7Efrancis/txt/copyright/oben.html
[open width looking-glas]

nic-las :: copyleft in der kunst und copyright in der popkultur by francis hunger...
(anonymous) [add-comment] [add-label] [add-connect]

unbewusste

und passagen ... die auch beobachtbare rückstände einer traumwelt (jede epoche träumt ja nicht nur die nächste, sondern träumend drängt sie auf das erwachen hin - hin zum jetzt der erkennbarkeit) sind ... orte der verklärung als zauberbilder des jahrhunderts, als wunschbilder eines kollektivs, mit denen es die unfertigkeit des gesellschaftlichen produkts sowie die mängel

dynamic objects

dynamic labels

standleitung wird umgestellt> vermutlich beeinträchtigung der serverdienste
[nxcalendar] [dis=play]

buch: als brille"das buch hat aufgehört, ein mikrokosmos nach klassischer und abendländischer art zu sein. das buch ist kein bild der welt und noch viel weniger signifikant. es ist noch schöne organische totalität, auch nicht mehr einheit des sinns. michel foucault antwortet auf die frage, was für ihn ein buch sei:
[zitat-archiv] [dis=play]

Figure 6: [Nic-las: the system's subconscious suggests another context]

These subconscious objects are randomly assorted to an active difference (index card). A user may be irritated at first by the unexpected appearance of these lost objects, but he gets used to the unusual system operation quickly and may start to integrate it into his working process soon. If it matches subject and research, a user may be pleasantly surprised by a subconscious object; he may ask himself: "Did I write this? This is a good idea, I can work with it" and integrate it into the present text. If it does not fit, he can just as easily ignore it and dismiss it. Finally, besides the Freudian subconscious, Nic-las knows a Deleuzian subconscious as well. This Deleuzian subconscious washes up items stored in the community database. This type of subconscious is more efficient and has become the standard preference of Nic-las. The two concepts of the digital subconscious have been introduced as a transposition of theory into software; they have become extensions and operations of the system, which generate variation. The medium starts to participate in a work as an autonomous and concreative factor, upsetting deliberate arrangements.

LookingGlass (Endo/Exo)

While Nic-las thus offers an interactive storage and retrieval system which in itself is both dynamic and autopoietical, the question remains whether the system as a whole is closed off or whether it can interact with other systems and communities. Is there a way for users to break out of the system and productively 'irritate' the community? How can a community be confronted with potentially conflicting meanings and discourses of other communities? One of the extensions of Nic-las that were designed for this purpose is LookingGlass; it enables the community to have a look at the world from inside the community, using its own values.

LookingGlass enables the user to surf the net, tag and grade webpages, and comment on individual webpages. These markings and comments will then be available for other members of the community and again become part of the system. A user who surfs with the help of LookingGlass finds the terms, links and comments of his community right on the webpages he chooses; they show up in layers layered on top of an 'alien' webpage. The texts are linked back into the system. The web becomes visible through the glasses of the community. Users of the system are able to observe themselves while observing, and the community registers outside content and concepts according to its perception. LookingGlass thus changes the environment by using the community's values and writing layers on top of content (exo) which finally makes the community visible as a dynamic collaborative system.

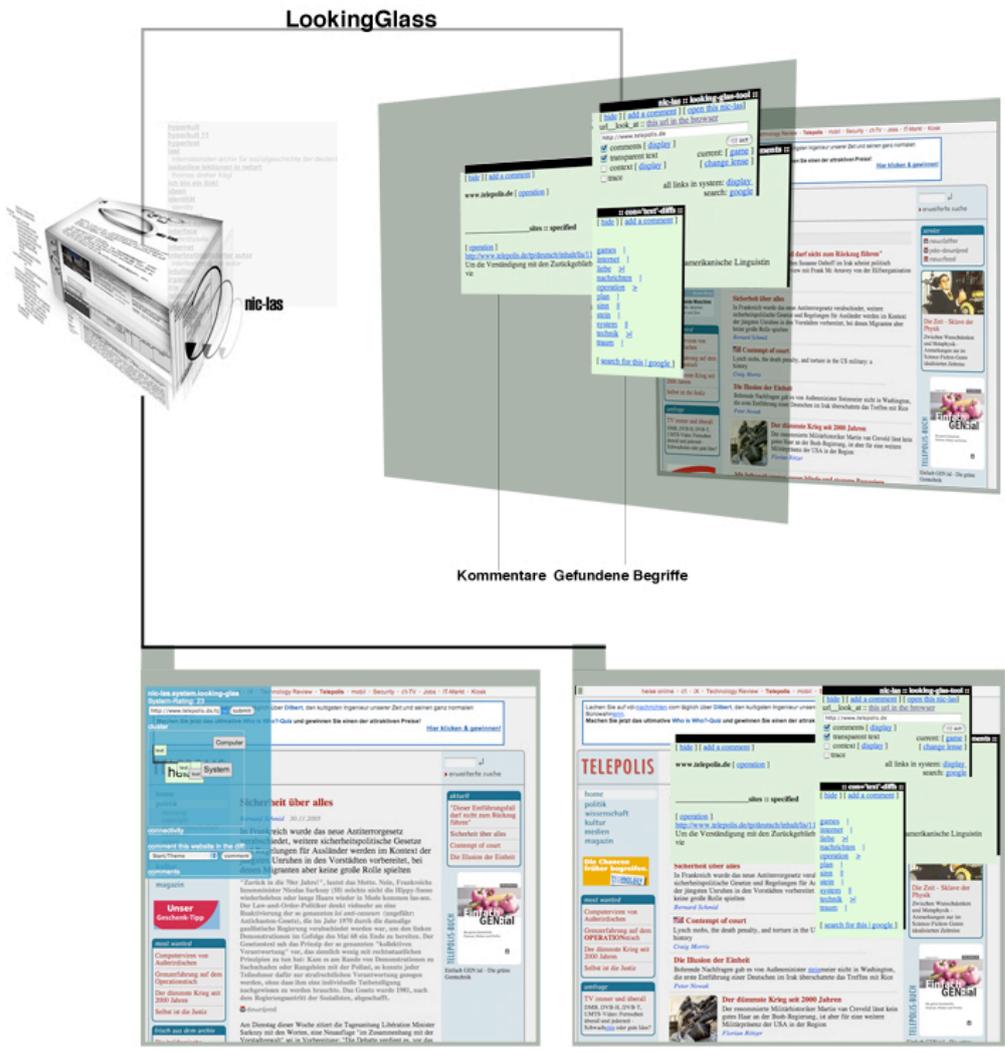


Figure 7: [The extension Looking Glass filters outside content into Nic-las communities]

Subvisuals (Endo/Exo)

While LookingGlass thus provides an extension that allows outside content to enter a system (and that will shape and control its perception), other forms and extensions were needed to expand and contextualize a system as a whole. Two extensions, context and subvisuals, serve this purpose: they will wash respective content from the net into Nic-las. For example, if a user works on the difference "visualization", these extensions will start looking for context and subvisuals both for this term and for related concepts. The system is going to

contextualise itself in the environment of Google's page ranking by suggesting related text and matching visuals.

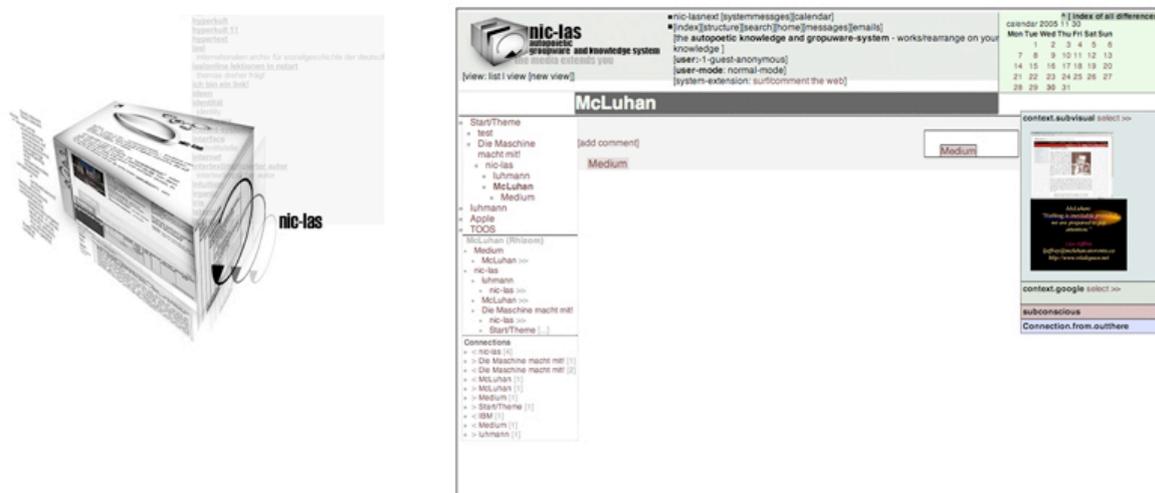


Figure 8: [Subvisuals connect and suggest related text and matching pictures]

This ensures that users of a Nic-las will get confronted with the meaning of a keyword in the net. A difference and demarcation between community-meaning and web-meaning is being developed. The exterior and the interior of a system can be overcome by a mere click which integrates text into the system. Subvisuals extend a certain difference in Nic-las and its structural position with visualizations by Google Image. Context and subvisuals are dynamic extensions to the system which anchor the differences in the general surrounding of the World Wide Web. These contextualisations with Google are only a first step; it is both possible and desirable to integrate further databases and applications into a system like Nic-las.

Search-engine extensions (Exo)

Usually, if a user searches and finds a website by means of a search engine his entry and the results of his search will be recorded in logfiles. These logfiles may only be evaluated partially or manually, and most of the logfiles will never be looked at. Nic-las is different in this respect: it features an extension which integrates search queries into its system. If a user of Google finds content in a Nic-las, the system creates a link in the respective difference and records the query for further use by the community. This system operation enables users to see that their knowledge is being used, even if the content in question is forgotten or neglected. Often, the community will then take note of this content it has not been working actively on.

Nic-las offers communities more than just a medium for Computer Mediated Communication. If they so choose, they can use it as an extension, which actively participates in their work.

In conjunction with its users, Nic-las forms a new type of interactive medium which operates in intertwined, dynamic and concreative fashion. The whole is more than just the combined parts: Nic-las offers the model of an ambient intelligence system.

Future Systems

The term 'Ambient Intelligence Systems' was introduced by Philips in 1999 and has mostly been used in commercial concepts. Philips and other producers and developers of electronic consumer goods are convinced that current inventions are about to make electronics 'smart'.

Technological breakthroughs will also allow humans to integrate 'smart electronics' into more friendly environments. This vision of 'Ambient Intelligence' formulates the prospect of people living comfortably in digital environments in which "the electronics are sensitive to people's needs, personalized to their requirements, anticipatory of their behaviour and responsive to their presence."¹⁵

Adaptive concrete systems like Nic-las open up perspectives for dynamic ambient intelligent systems in commercial and non-commercial environments, amongst them the arts, videogames and creative processes like writing, design, music, and performance. The characteristics are similar to those of ambient systems: context awareness or context mining, adaptive spaces, personalization, immersion and possible variations.

For the last 100 years, a lot of effort has been put into eliminating the medium from the process of information transfer. We have only recently arrived in a time where the reproduction of text and messages is not the dominating problem anymore: "Today, we are dealing [...] not with identical reproduction anymore but with changed reproduction, with variety and creativity."¹⁶ The systems we are developing are not just designed to reproduce objects and information but to produce sets of variations users can interactively choose from. In Nic-las, for example, such interactive tools of variation exist in the Looking Glass extension. These systems can work on the basis of communities like Nic-las or on the basis of concrete and subconscious interfaces like Streamfishing¹⁷ – a net-application that displays the searchstrings of a searchengine as a sky with flying stars. The selection of streams that are made visible or connectible (and therefore usable) will help to further develop dynamic and concrete media and develop new concepts with new facets and new ways of integrating software and people. This software should help us adapt better to the changing preferences and environments. This way software becomes a new adaptive or permeable skin of information that wraps around our bodies. It will be a cover that has change already woven into it as a likely possibility. Skinlike extensions like this might be able to dampen the fights between old and new and master difficult cultural processes, since they have internalized change as an opportunity rather than a nuisance and make it visible and usable for everyone. This means that these extensions as well as the changes are not perceived anymore as part of something else but as part of ourselves.

With the invention of the computer and computing programmes the history of interaction has taken a radical turn. The computer may be looked at as the realization of the old desire of creating a depiction of a human being as a vis-à-vis that is able to act and interact by itself. What was created so far has become a simple vis-à-vis, which acts on the bases of logic and cybernetics. As a model for our alter ego we use a mathematician with pencil and paper (according to Turing's concept of an universal machine) – or as a friend recently noted: a bookkeeper with pencil and paper. In the past this bookkeeper was mostly used as a mediator,

¹⁵ Website Philips Research Technologies, 1999 – 2005,

<http://www.research.philips.com/technologies/syst_softw/ami/background.html> (30.11.2005).

¹⁶ "Heute geht es um das Gegenteil davon – eben nicht mehr um identische Reproduktion, sondern um veränderte Reproduktion, um Variation und Kreativität." Our translation; the original quote in German is taken from an interview: Hartmann, Frank and Klaus Taschwer, "Zurück zum Gespräch, Ein Interview mit Michael Giesecke über kollektive Wissensproduktion, das Medium Buch und die Rolle des Autors", in Telepolis, 1999,

<<http://www.heise.de/tp/r4/html/result.xhtml?url=/tp/r4/artikel/6/6377/1.html&words=Giesecke%20Hartmann>> (30.11.2005).

¹⁷ AND-OR (René Bauer, Beat Suter). Streamfishing. 2004. <<http://www.and-or.ch/streamfishing/>> (30.09.2008).

someone who stands between the interactors but has to remain invisible under all circumstances: a medium with a name but without a particular meaning. It was his job not being seen by any participant and not causing any disturbances, that would have revealed his person; it was his job to pass on any data – and interaction was nothing but predictable communication. Today's media have to go one step further, they need to integrate the bookkeeper and render him into an active participant. Projects like Nic-las are demonstrating this – but they are only a start. Communication and interaction may become concreativity¹⁸ by which a human being extends himself and finds via interaction with his own models more than just himself.

After all, the Gutenberg galaxy comes to a closure when standardized producers and consumers communicate with each other as servers.

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The Authors

Beat Suter

has a ph.D. from Zurich University. He works as a lecturer for Game Design/ Interaction Design at the University of the Arts Zürich. His research focuses on Netliterature, Netart and Game Art. He has published on Hyperfiction, Interactivity of digital texts, Netliterature and Collaborative Writing. He is the publisher of the „edition cyberfiction“.

Websites: <http://www.gametheory.ch>, <http://www.and-or.ch>, <http://www.cyberfiction.ch>, <http://www.update-verlag.ch>

Selected publications:

1999: (with Böhler, Michael; Hgg.). Hyperfiction. Hyperliterarisches Lesebuch: Internet und Literatur. Mit CD-ROM. Basel/ Frankfurt a. M.: Stroemfeld/ Nexus. [German]

2004: "möglichkeitsraum internet: vom verwahrten content zur interkreativen allmende" In: Auer, Johannes (Hg.): \$wurm = (\$apfel>0) ? 1 : 0; experimentelle literatur und internet, memoscript für reinhard döhl. Stuttgart und Zürich: update Verlag 2004, S. 42 - 65. [German]

2006: "Das Neue Schreiben. Vom widerstandlosen Umstellen von Buchstaben bis zum fluktuierenden Konkretisieren." In: Giuriato, Davide, Stingelin, Martin und Sandro Zanetti (hgg.): "System ohne General. Schreibszenen im digitalen Zeitalter." Zur Genealogie des Schreibens, Band 3. München: Wilhelm Fink Verlag, S. 169 - 189. [German]

2006: "Neue Formen der Literatur und des Schreibens." In: "Duden - Thema Deutsch", Band 7, Sprachvariation und Sprachwandel. Mannheim, Leipzig, Wien und Zürich: Dudenverlag. [German]

¹⁸ Mathez, Judith: Hier bitte selber weiterschreiben! Konkreativität als Kategorie digitaler Literatur. In: dichtung-digital, Newsletter March 2002. <<http://www.dichtung-digital.com/2002/02-25-Mathez.htm>> (16.02.2006).

Heiko Idensen

is a researcher on hypertext and collaborative writing since the 1980ies. He worked as a lecturer in the multimedia lab at Hildesheim University, Germany. His research focuses on network discourse, interactivity of digital texts and collaborative writing. His projects and texts from the 1990ies have inspired a whole generation of German researchers.

Selected publications:

1996: Die Poesie soll von allen gemacht werden! Von literarischen Hypertexten zu virtuellen Schreibräumen der Netzwerkkultur, in: Kittler; Matejovski (Hg.): Literatur im Informationszeitalter, Frankfurt/Main, S.143-184 [German]

1998: Reading and Writing Competence in the Net. Hypermedia discourse technologies in transition from book to Network culture, in: Internationales Archiv für Kulturanalysen (Hg.): Cultural Competence: New Technologies, Culture & Employment, Documentation of the EU conference from 1.-3.10.1998 in Linz, Austria. [English]

2001: Kollaborative Schreibweisen – virtuelle Text- und Theorie Arbeit, in: Gendolla, P.; Schmitz, N.; Schneider, I.; Spangenberg, P. (Hg.): Formen interaktiver Medienkunst. Geschichten, Tendenzen, Utopien, Frankfurt/Main, S. 218-264. [German]

2001: Idensen, Heiko: Hypertext, Hyperfiction, Hyperwissenschaft? Gemeinschaftliches Schreiben im Netz, in: Schmidt-Bergmann, Hansgeorg.; Liesegang, Torsten (Hg.): Liter@tur. Computer – Literatur – Internet, S.69- 115. [German]

Website: <http://www.hyperdis.de>

René Bauer

works as a lecturer for Game Design/ Interaction Design at the University of the Arts Zürich. He is an independent game developer and software engineer. His research focuses on Game Programming, Game Art, Interactivity of digital texts and Collaborative Writing.

Websites: <http://textmachina.uzh.ch>, <http://www.nic-las.com>, <http://www.and-or.ch>, <http://www.la1n.ch>

Selected publications:

2007: (with Beat Suter) "Gamescape: Generating Architecture from the Subconscious." In: Borries, Friedrich, Steffen P. Walz and Matthias Böttger (eds.): "Space, Time, Play. Computer Games, Architecture and Urbanism: The Next Level. " Basel, Boston, Berlin: Birkhäuser Publishing. [English]

2008: (With Mela Kocher and Beat Suter) "Sinnsystem Shooter." In: Bopp, Matthias, Serjoscha Wiemer und Rolf Nohr (hgg.): "Shooter. Ein Computerspiel-Genre in multidisziplinärer Perspektive." Münster: LIT Verlag (forthcoming). [German]

[Beat Suter; Zürich, Switzerland, 30.09.2008]