



***ShiftSpace: Thesis Paper***

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## **Table Of Content**

Table Of Content	2
Abstract	4
Border Conflict: A Personal Statement	5
Objective	7
Methodology	8
Software Development: The ShiftSpace Extension	8
Spaces	8
The Console	9
The Shift Menu	9
The Notes Space	10
The Highlights Space	10
The ImageSwap Space	11
The SourceShift Space	11
Software Development: Future Developments	13
Trails	13
Social Network	15
Reputation System	15
Moderation System	16
Groups	17
Inbox Tab	18
Personal Setting Tab	18
Decentralization	19
Community Development	21
The ShiftSpace Website	23
Mailing Lists	25

Subversions – Revision Control System	25
Activecollab – a project management system	25
Issue Tracking	26
Presentations / Installation Parties	26
Workshops	27
ShiftSpace API	27
Commission Program	28
Publications	28
Conclusions	29
Appendix I: Interface as a Conflict of Ideologies	31
Appendix II: Metaweb Applications Comparison	60
Appendix III: ShiftSpace Help Document	63
Appendix IV: Draft for Moderation System	68
Appendix V: Turbulence / ShiftSpace Commission Program	72
Appendix VI: User Case Study – Bill Orcutt and Lily	75
Appendix VII: Project Timeline	77
Bibliography	78
Thank Yous	80

## ***Abstract***

ShiftSpace is an Open Source layer above any website.

While the Internet's design is widely understood to be open and distributed, control over how users interact on-line has given us largely centralized and closed systems. The web is undergoing a transformation whose promise is user empowerment—but who controls the terms of this new read/write web? The web has followed the physical transition of the city's social center from the (public) town square to the (private) mall. ShiftSpace attempts to subvert this trend by providing a new public space on the web.

As a thesis project, ShiftSpace is perused in collaboration with my partner Dan Phiffer.

Beyond ITP, being an open source project, it involves other individuals such as Avital Oliver, David Buchbut and others.

## ***Border Conflict: A Personal Statement***

To grow up in Israel means to be always aware of borders. There were national borders, which changed often, and defined where you could and where you could not go. Within Israel there were borders between communities—religious and secular, North African and Eastern European, Israeli Jews and Israeli Arabs, rich and poor. I have had to be aware from birth of those visible and invisible lines that separate us one from the other. Everyone had to learn this: to be safe, you must be aware of borders and stay within them. To go beyond, to not be mindful of them, is dangerous. The message was clear, yet it seemed to me like there had to be a better way to live.

That may explain why I was so drawn to the Internet. It appeared to me to be a place without borders. A world where I could explore freely, meet people who were not in my specific geographic or cultural communities, and express myself without being labeled in advance. It seemed to put into practice one of the greatest lessons of the Jewish diaspora... how to stay together culturally while separated physically. In some ways, I believe, the Jewish Diaspora was the first example of a post-national society. This model failed with both the Holocaust and the founding of Israel. I expected the web to provide a more successful model.

In Israel I was a graphic designer and focused on web design. I grew optimistic about the possibility of a world in which there was wider understanding, dialog, cultural curiosity and openness. It may have been naive, but I was inspired and worked to make public this vision of a kind of utopia of information and understanding through the web.

Perhaps because of my lifelong conditioning, the more I work on the web, the more aware I

become of the borders—often invisible, often subtle—that exist online. And the more I am drawn to cross them. Again it seems to me like there has got to be a better way.

I try to learn from the city and from urbanism and political theory. I am influenced by the Situationist International, like me these thinkers were constantly aware of invisible borders, but this awareness was not meant to keep the borders, but to expose, cross and break them. The concept of *dérive* as described by Guy Debord is a critical method to decipher the social and political constraints of urban space. It is the principal method for exploration of our own 'psychogeography' - how our urban environment affects our self and social perception. Today we live not only in geographical space, but also in information spaces that define our perception of the world and our private and public identity.

I am interested in extending the idea of the *dérive* to explore the geography of information. Critical exploration can reveal the true nature of our information spaces and allow us to question their design. With my work I attempt to encourage people to challenge and renegotiate the borders of information and to challenge the way they shape our world.

### Objective: Privatization Vs. Online Public Space

The web is referred to as a free revolutionary space capable of bridging geographical, political and cultural differences. It's not. This celebration of the 'new democratic global village' ignores the main concept at the heart of things - privatization. Website owners have become the sole rulers of their own domain, maintaining fully privatized and centralized control over the interface. Today we can say that cyberspace has even more borders than the physical space.

In the past four decades we have changed our experience of public space. With the rise of consumer culture we have traded the town square for the shopping mall. We are losing our autonomous zones for private-controlled commercial zones.

The web today is more a shopping mall than a town square like your local mall, it gives the misleading appearance of a public space. The blogging revolution have re-introduced the ideal of an online public-sphere, or a 'Blogosphere', based on an independent discourse between private sites. But even sites that are based on user generated content and hold the most pluralistic agendas, ultimately maintain a private ownership control structure, which is hard-coded into the DNS protocol.

ShiftSpace is an attempt to break through and create the a truly public space on the web.

*(for the extended objective refer to appendix I: Interface as a Conflict Of Ideologies)*

## **Methodology**

ShiftSpace is essentially a software development project, but even more than that, it is a community building challenge. Hence, we are dealing with two main methodologies: software development and community development.

### **Software Development: The ShiftSpace Extension**

The ShiftSpace extension for the Firefox browser is available for free download at ShiftSpace.org. When a webpage is requested by the browser, ShiftSpace manipulates the page's code to allow special applications to work within it. These applications for ShiftSpace are called *Spaces* and the bits of content generated through them are called *Shifts*.

#### ***Spaces***

Some of the spaces are utilitarian, such as *Notes* which allows ShiftSpace user to leave annotations on websites resembling post-it notes, or *Highlights*, which allows the user to highlight text on the page. Another family of Spaces are of a more interventionist and experimental nature. Such is *ImageSwap* allowing users to grab any image on the web and swap it in place of any other image, or *SourceShift* – allowing the users to edit the shifted page's HTML code and share it with other users.

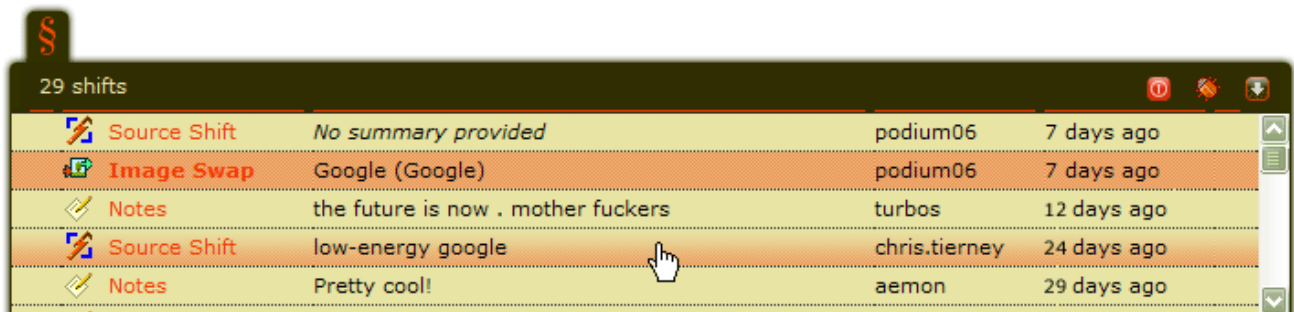
#### ***The ShiftSpace Console***

When a user browses to a modified ('Shifted') webpage, the small ShiftSpace icon (§) pops up



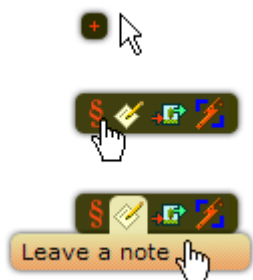
in the bottom left side of the screen to notify the user that there are Shifts on the page. The user can then press the keys [Shift]+[Space] to launch the ShiftSpace console.

The console allows the user to browse through the Shifts (modifications) or to use a Space (tool) to create her own Shifts. After creating a Shift the user can choose whether to share it, to keep it private or to delete it. The public Shifts are aggregated on ShiftSpace.org which also provides RSS feeds filtered by user or url.



### ***The 'Shift Menu'***

When a user clicks the [shift] key a little [+] sign appears to the left of her mouse, moving the mouse over it opens the shift menu which presents a selection of icons representing the available spaces – applications for ShiftSpace through which content can be generated. After getting user feedback and iterating through the interface, and with the help of our developer community we have managed to make the shift menu appear only in the right context and disappear when the use of the [shift] key is not for the purpose of ShiftSpace.



## The 'Notes' Space

Notes is a sticky-note type annotation space. It allows users to write text in any language (supports Unicode encoding) on a yellow note on top of the page and to place and resize that note.

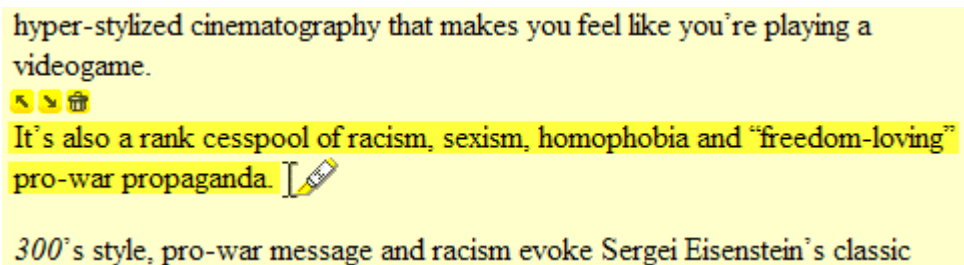
[登录](#)



The screenshot shows a Google search interface. The search bar contains the text "falun gong". Below the search bar, there are navigation links: "网页", "图片", "资讯", "地图", "新!", and "更多". To the right of the search bar, there are buttons for "Google 搜索", "高级搜索", and "使用偏好". Below the search bar, there are radio buttons for "所有网页", "中立网页", "简体中立网页", and "中国的网页". A yellow sticky note is overlaid on the search results, containing the text: "Please note that your search results have been censored. The top results should have been: en.wikipedia.org/wiki/Falun\_Gong and www.falundafa.org". The search results below the sticky note include a link to "Chinese Government Outlaws Falun" and a snippet of text: "On July 22, Chinese Ministry of Civil Affairs and the Falun Gong organization under its control, and pronounced them illegal. Chinese ministry of Public Security also issued a notice prohibiting ...". Below the snippet, there is a link to "www.chinaembassycanada.org/chn/xw/swgb/t27826.htm - 11k - 类似网页".

## The 'Highlights' Space

Highlights is another utilitarian space, it allows user to mark text in websites for later reference and for sharing. The user can choose from a selection of several highlight colors and to bundle more than one highlight on a page into one shift. The highlights interface allows users to browse through the highlights on the page by having the page scroll through the available highlights.



The screenshot shows a text document with several lines of text highlighted in yellow. The highlighted text includes: "hyper-stylized cinematography that makes you feel like you're playing a videogame.", "It's also a rank cesspool of racism, sexism, homophobia and 'freedom-loving' pro-war propaganda.", and "300's style, pro-war message and racism evoke Sergei Eisenstein's classic". There are also some small icons and a cursor visible on the highlighted text.

## The 'ImageSwap' Space

ImageSwap is a more interventionist type of space and it demonstrates the potential of the

system for creative and subversive interfaces. When ImageSwap is activated, every image on the page is added a colored hover effect and an icon-interface. When a user moves her mouse over the icon at the left top corner of the image, she is being given two options: *Grab*, or *Swap* – The first would grab any image on the web and the second would swap that image in the place of the existing one. ImageSwap is a creative way to comment on a page through the modification of its visuals.



### ***The 'SoureShift' Space***

The main idea behind SourceShift is to allow our users a more low-level/open-ended interface. SourceShift grabs the pages html source and turns dumps it in a text edit box. The use can then modify the source in any given way (including completely rewriting it) and save it as a shift. Through SourceShift we not only allowed users to openly remix the page, we have also managed to learn much about the use patterns of ShiftSpace. For example, we have found that a popular use of ShiftSpace is the addition of video embed code from service providers such as YouTube and Google Video. This is something that makes us understand a video embedding space is something we should definitely consider as one of the next spaces to develop. SourceShift, being totally open-ended also allowed users like Bill Orcutt to hack into the system and generate shifts using other interfaces such as his developing procedural programming environment Lilyapp.

## **Software Development: Future Developments**

There are many future developments we are interested in developing. The order of the development to a large extent is determined through our user's feedback. While we were sure that the social network would be one of the first developments, we have learned it is not a high priority at this moment, at least not before the new shift-menu interface, the Highlights space and Trails. Every new release also includes a round of bug fixing. Release 0.08 were pretty stable and took care of most of the serious bugs. Release 0.09 and 0.10 would allow themselves to include new features.

### ***Trails***

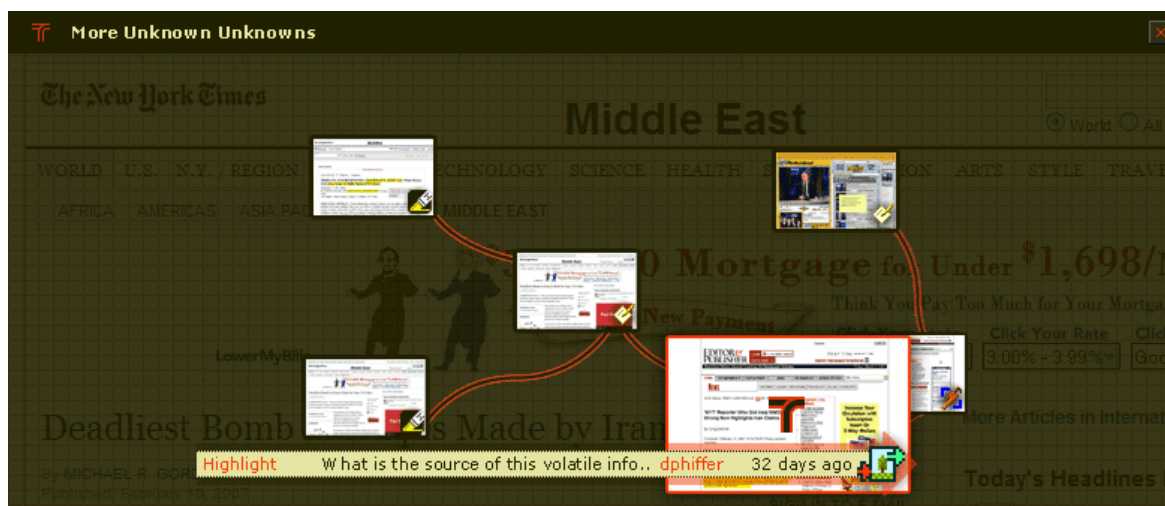
In 1945 Vannevar Bush wrote '*As We May Think*' an influential article which is considered one of the first visions of the web. He described a system called '*The Memex*', in which documents will be interconnected in thematic links. These links which he called '*trails*' were different from the hyperlinks we know today – while hyperlinks are unidirectional (connecting the linking page to the linked page but not the other way round) Bush's trails were bidirectional – creating an information map without the inherent hierarchy of the hyperlink.

In 2002 *Six Apart*, the company behind the popular blogging system *Movable Type* included a feature in their software which they called a *trackback*. Trackbacks are a way for an author of a blog-post to be notified when another page on the web has linked to that specific post. The linking page can be then automatically mentioned on the original page itself – creating a feedback loop that turns the unidirectional hyperlink to something more along the lines of

Bush's trail – a bidirectional connector. Trackbacks have since been adopted by most blogging systems and have turned into an inherent part of what blogging stands for. To a large extent the ability to track-back to a source has facilitated discussion between blogs and had a grave contribution for the rise of what we call the *Blogosphere*.

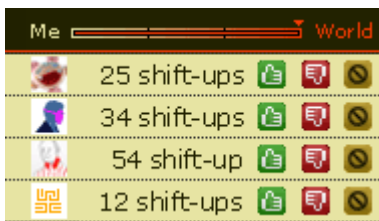
We feel bidirectional links can be a very powerful tool for the metaweb and are interested in having them be an inherent part of the system. We envision ShiftSpace's trails much along the lines of what Bush described in “*As We May Think*”. ShiftSpace trails would connect shifts on pages into information maps that can be browsed through the metaweb layer. Trails would be used to extend the context given by the site owned and use hyperlinks in a very fresh and dynamic way.

















Users will be invited to map shifts into Trails. Each shift can be trailed to one or more other shift. Trails can be used for collaborative research, curating netart exhibitions or as a platform to facilitate a context-based public debate. For example, a Note on an on-line article can be trailed to a Highlight on a blog post and then trailed to a SourceShift on another page, together creating a trail through information.



## ***Social Network***

As the system grows, we would want to allow users to conveniently filter the shifts on their pages. One of the ways to do it is through adding a social networking system. The system, built into the console, would allow the user to define her ShiftSpace friends and to choose to filter shifts in four different ways: her own authored shifts, her friends shifts, her friends' friends shifts and those of the rest of the user community. We also intend to provide customizable rss feeds for each of these filtering groups and to probably add more features based on this social network.



Me	World
 25 shift-ups	  
 34 shift-ups	  
 54 shift-up	  
 12 shift-ups	  

## ***Reputation System***

We take privacy issues very seriously. We believe some ShiftSpace users might use it in a subversive manner and do not want to block this form of action or to have the data collected by us become incriminating in any way. We attempt to ask the user for as little information as we need from her (up to this release we have not even asked for an e-mail address yet, but will have to start doing so to account for lost passwords). The identities constructed in ShiftSpace are not necessarily traceable to the identities of the users behind them. This allows the user to maintain her privacy, but might make for a community with no member credibility. One way we do intend to create credibility in the community is through a reputation system.

This reputation system would reward users for what the community deem a positive

contribution and would judge users whose contribution is deemed offensive. In the heart of the system are two buttons that allow users to rate a shift with a 'shift-up' (good) or a 'shift-down' (bad). The aggregated rating would allow to filter for interesting shifts and the overall aggregation of rating would allow to commence the most contributing community members and to make their reputation fit their participation.

### ***Moderation System***

Spam and abuse are problems we did not yet encounter to large extents in Shiftspace, but the openness and the potential of the platform for subversive marketing would most definitely lead to an abuse problem. This issue poses a real controversy, since while we would want to protect the system from abusive use, we would also not want to turn it into an authoritarian and suppressive environment.

With advisement from Clay Shirky and after reading his article "*Against Well-designed Reputation Systems (An Argument for Community Patent)*" we decided we will fix things when they break – meaning, we will not attempt to foresee governance threats, but await to deal with them when we actually experience them. While this makes the system slightly more vulnerable, we do believe it makes for better governance. With that approach, the community sees governance and moderation as a their own need rather than an arbitrary police.

We have been drafting some ideas for moderation systems based on one general rule – we do not delete a user's shift. Even if the community deems a user and her contribution as abusive or offensive, her content will be kept in the system but only lose the ability to be 'public' – will be set automatically to private mode and would not be viewable by anyone other than the user

herself. The proposed moderation system is centered around the 'flag as abuse' button and is described in the attached appendix titled “*moderation system design proposal*”.

## ***Groups***

In our research process, we have come across Hoodwink'd – an interesting secret community that have developed a private metaweb communication channel. The Hoodwink'd system embeds an external commenting system into websites and facilitates secret discussions on a meta layer within websites. Like ShiftSpace Hoodwink'd uses the Greasemonkey Firefox extension to inject Javascript into the page, in conjunction with a database component that serves the 'winks' and aggregates them. Unlike ShiftSpace, Hoodwink'd is an exclusive community and requires a certain level of computer expertise to point the browser at the secret Hoodwink'd server and to log-in to the system. The result is a community of like minded geeks who enjoy the secrecy of their action and share their exclusive freedom of speech over the metaweb.

While we talk of ShiftSpace as a public space, we acknowledge the fact some defined communities, such as Hoodwink'd, can emerge within it and some communication requires the privacy of a closed group. Moreover, we can see how some information might be relevant to one group and less relevant to another. We intend to support this need through assigning group specification to shifts and through support of group-centered features such as group rss feeds and group discussion tools. We believe that groups will become an important feature for ShiftSpace that would help the system grow and serve the interests of its users.

## ***Console Inbox tab***



We intend to use the ShiftSpace console for more than just notification of the existing Shifts on the page. We want to have a convenient way of informing the users of information that might be relevant to them. Anything from the availability of a new release, through a trail contribution that has been added to a trail they authored, through a call to attend to a broken shift, to a message from another user can be tracked through an inbox. Using the design paradigm of an e-mail box, users will be able to manage their action on the metaweb layer provided by ShiftSpace.

### ***Personal Settings tab***

Another tab to be added to the console would allow personal settings. These settings can be specific preferences for presentation of data, filtering, usage and installation of additional spaces, personal data management, selection and presentation setting for rss feeds and so on. The setting bar would be an ongoing development. The first release of this feature would probably follow in one of the upcoming software updates.

### ***Decentralization***

The current network diagram we use is centralized. This means that all the data is being stored centrally on ShiftSpace's dedicated server. This architecture gives us total control over the data. This level of control is something we don't want. Right now, in order to bring ShiftSpace down all it takes is to take down our server. Even if the data is backed up, ShiftSpace requires the server to work in real time and to serve the information for the shifts to be displayed on the pages. Centralization doesn't only make the system vulnerable to technological hazards, it also makes it vulnerable to jurisdictional attacks. Meaning, when we serve all the content we can be held accountable for it and might be forced to use our total

control over it to disrupt the system, or even worse – to compromise the privacy of our users.

Centralized control over user data have been a major controversy in the past couple of years with companies such as Yahoo giving away private user data to the Chinese government in cooperation with China's questionable suppressive governance. This has led to a lawsuit against Yahoo by a political prisoner and his family who was beaten and imprisoned by China after Yahoo surrendered his information to the Chinese government. There is an inherent conflict between users and the big media corporations that run most of the web-services today. When it is one user versus a huge government, all of these corporations, including Google who have committed to a slogan of “*don't do evil*”, will use their powers and the user's information for their own interests.

Even though ShiftSpace is not a for-profit project, we want to build the system in a way that it would not only be not in our interests, but it would actually be impossible for us to control the information centrally and by that also have the power to delete or surrender information to an authoritarian power.

For this to be the case and for ShiftSpace to become this public space that we hope for it to become its architecture should be more decentralized. We are currently researching distributed data serving architectures that would allow users to serve their own data. Firefox can serve SQLite database files (which is the database technology we're using) so we might be able to have the shifts stored on the user's computer and served from there instead of from the a centralized server. We are currently researching Peer to Peer (P2P) architectures for ShiftSpace and are trying to balance between the demand for the shifts to be available to users

at all times, and the attempt to allow the user full control over her own data. One of the technologies we're considering is distributed hash tables (DHT) which is the same one used for applications such as Bittorrent and other P2P networks. We are also studying open source distributed hosting implementations in the Firefox browser environment such as the POW (Plain Old Webserver) extension.

## **Community development**

ShiftSpace is a software tool, but in itself is empty. The power of ShiftSpace is based on user-generated-content. Moreover, ShiftSpace is a platform, and wishes to serve different applications and different approaches to interface, for this reason too, we need to reach out to more developers. And finally, as an open-source project we believe it is not enough to just make the code available online, it is also important to make the development of ShiftSpace an open process, involving different developers and being influenced by different approaches.

This is the reason we see ShiftSpace as both a software development project and a community development project. We can identify four user groups: Unregistered individuals, ShiftSpace users, space developers and the inner circle.

### **Group – 1: Unregistered individuals**

Internet users who have either not heard of ShiftSpace or have heard about it but have yet not installed it. These users might also be using different browsers that we currently do not support. Obviously this is the basic group and we need to find ways to address it both through spreading the message and through technological features that would allow a use of the system that is prior to the installation of the extension.

### **Group – 2: ShiftSpace Users**

Users of the platform who participate by browsing Shifts, creating new Shifts through different Spaces and filing bug reports. Future developments will include more diverse participation for this group, including creating trails, rating shifts, expanding social networks

and creating groups.

### **Group – 3: Space Developers**

These may be creators of net art works, activist interfaces, site-specific communication tools or even companies basing their business on the ShiftSpace plug-in. We will encourage all of these Space developers to publish their code as open source and share it with other developers and help make this environment as accessible as possible to members with various programming skills.

### **Group – 4: The Inner Circle**

The Inner Circle are devoted developers who will write code for the core ShiftSpace platform. They will develop the future features and maintain the database. This level of involvement is not exclusive to those who possess the technical skills to develop the software, but also to individuals dedicated to the success of the system, who can contribute from their skills in different ways (the very effort of community development might be one way, fund raising can be another). The inner circle would also be the group who will be leading ShiftSpace and it include the current leaders of the project, Dan and myself. By current I mean that when the community becomes strong enough we intend to be holding elections to the leadership of the project. There is a good chance that in these elections we will be overthrown by other members who will be even more excited and devoted to the project than we are. Personally an outcome like that while obviously not easy for our egos, would be a sign for a successful community.

Until today we have managed to reach several volunteers who have joined the inner circle

after seeing us speak about ShiftSpace in various opportunities and through our own social networks. Two of them, Avital Oliver and David Buchbut have contributed code to release 0.08 and are becoming more and more involved, having coded the highlights space with almost no involvement on our part.

We expect the users, space developers and inner circle to grow and for more people to get involved. We intend to expand the community through several channels.

### **The ShiftSpace Website**

The new ShiftSpace was launched in January 2007. After a couple of months in which we used a standard blog for the site, this was a long awaited update. ShiftSpace.org includes several features. First and foremost it allows users to install ShiftSpace through a quick three steps installation. The site also provides several video screencasts – presenting the system's functionalities through narrated walk-throughs. The site still functions as a blog as well where we post periodical news and announcements and provide an archive for the development. We lately started to provide insights into our process as well, inviting users to comment on the upcoming steps.

Another feature in the site is **the wiki**. We use Mediawiki's system to provide help pages and instructions as well as open issues to discussion. For example the proposal for a future moderation system is posted on the wiki and is available for users to edit and propose amendments.

Another feature in the new site is the **Shift Tracker**. The Shift Tracker aggregates all the

shifts marked as public – it allows users to view the latest few shifts on the main page or browse the whole archive. Currently each shift can be viewed through a direct link to the page it was left on, in the future we plan to expand the shift tracker to a **proxy system**, providing a mirror of how would a shifted page look had they installed ShiftSpace. These proxy pages would be hosted in ShiftSpace.org, ShiftSpace users would be forwarded directly to the page (where they can view the shift 'live') and users who have not installed ShiftSpace yet, would still be able to browse shifts through this 'preview' proxy mode.

The screenshot displays the ShiftSpace.org website with a dark theme. At the top, there is a navigation menu with links for 'WHAT IS SHIFTSPACE?', 'PRESS', 'WIKI', 'MAILING LIST', and 'CONTACT US'. The main header features the 'ShiftSpace.org' logo and a sub-header 'Webpage' with a red arrow icon and the text 'ShiftSpace: An Open Source layer above any webpage'.

The content is organized into several columns:

- INSTALL SHIFTSPACE:** A section with a large '\$' icon and the text 'Install ShiftSpace Version 0.08 | Mar 7, 2007'.
- LATEST SHIFTED SITES:** A list of recent shifts with timestamps and titles, such as 'Please note that your search results ...' and 'Lauren is a sexy gingerpoomonkey. ...'.
- SCREENCASTS:** A section titled 'Introduction Screencast' and 'Console: Future Development' with video player thumbnails.
- NEWS BLOG:** A section with articles like 'Today & Thursday two streamed presentations' and 'Trails - the story so far (Updated)'.

At the bottom, there are three columns: 'About' (describing the project's history), 'Credits' (listing creators and supporters), and 'Categories' (listing various content types like Theory, Events, and Presentations).

## **Mailing Lists**

The site also provides the link to our discussion list and our announcement list. The discussion list is where we invite people to discuss ShiftSpace and bring up ideas and concerns about the project. We currently have a couple of interesting threads open on the list. One involves the licensing of the system, the code and the shifts. The other thread follows the idea of one of our users to develop Alternate Reality Games using ShiftSpace. In the coming few months we should try to make the discussion list more active as we see it as an important tool to draw people further into the project and to practice the transparency principle of our process.

## **Subversions - Revision Control System**

We use several management tools to maintain the open source community. Probably the most important one of them is the code repository. We are using subversions, a revision control system which allows the developers to submit (commit) code to the online repository. When a commit is being made, all of us are informed by e-mail that we should update our folders to the latest revision. Subversions also saves all the previous revisions archived so even if there's a mistake or if we want to refer to some old piece of code we can always do that through the system.

## **Activecollab – a project management system**

Members of the inner circle use Activecollab, an open-source project management system to spread responsibilities, to follow timetables, to track to-do lists and to upload files for collaboration. Each inner-circle member can access the system and update the rest of us on the status of his work. Currently the use of the system has not been very excessive and we



hope to extend and better its use in the future.

## **Issue Tracking**

Linus Law says: *“Given enough eyeballs, all bugs are shallow”*. This quote coined by Linus Torvalds (the father of the Linux project) is one of the core principals of open source development, meaning that if enough beta-testers are using the system, most of the bugs will be quickly identified and fixed. Since our first public versions, we have been including a link to the issue tracking system from the console itself. We have been encouraging our users to go post bugs, give us the information how to reproduce the problem so we can easily fix it and give us the details of the system on which they run into the problem. Until today we have gotten 52 bug reports, through the releases we have managed to refer almost to all of them and currently have a few more open issues which we will be attending to in the coming releases.

## **Presentations & Installation Parties**

ShiftSpace was first introduced to the public in the Ars Electronica Festival in September 2006. We launched ShiftSpace v0.03, the first public version of the platform with an 'installation party' at the last day of the festival. We threw another installation party at Conflux, the festival for contemporary Psychogeography in Brooklyn, NY and have been presenting the project and inviting new users to join ever since. Among the venues we have presented in are The Upgrade International gathering in Oklahoma City, Dec. 2006, Upgrade Boston, Jan. 2007, Programmable Media Conference, New York, March 2007, DEAF festival, Rotterdam April 2007 and others.

## **Workshops**

At the end of February we have conducted our first ShiftSpace workshop for undergraduate new-media students at Purchase University. We have presented ShiftSpace and its approach to develop an active discussion of media. The workshop started outside the computer with the students assigned to critically dissect and remix messages in print media. The students used scissors, glue, tape, highlighter pens and other tools as interfaces for challenging the printing press. They have used collage to build trails of information which they later presented to the class. The second step was to continue the same line of intervention online using ShiftSpace to react to online media.

We are currently building a new set of workshops in which we will work with artists, activists, students and developers to create their own content through ShiftSpace. These workshops will change based on the audience's different technical levels, their cultural interests and the context of the workshop (one time thing in a festival, a 3 meeting series in a school, a semester long course...).

The next workshop is scheduled for mid-July in the Israeli Center for Digital Art. Other optional workshops currently discussed might take place in September in Ars Electronica festival in Linz, Austria and in Conflux festival in New York.

## **ShiftSpace API**

We are currently working to make ShiftSpace more accessible to development and to make it easier to develop new spaces that use the platform. We intend to release in the coming versions an Application Programming Interface (API) which will include convenient

guidelines to develop spaces and a simple way for users to install and manage new spaces. We will then try to develop a tutorial, a Software Development Kit (SDK) and some programming examples for developers to play with.

### **Commission Program**

We have recently won a commission from Turbulence, an organization that commissions and supports net art. We are working in collaboration with Turbulence to build a re-commission program – meaning we will commission artists to create artworks using the ShiftSpace platform. These submissions would be both new spaces and new trails. We are waiting to launch the API and a stable version of Trails for that, and expect to publish the call around September 2007.

### **Publications**

The growing of our user base have been moderate and we currently have about 750 registered users. This has been a good number for us for the early stages of the software development. As the releases become more stable we might want to expand this number but we are fairly happy with the pace in which the system have been developing. One of the best ways to draw attention have been through publications in online magazines. So far we have not yet tried to push this end but every publication has gotten us a new wave of registrations. The latest one, a review in Techcrunch.com in mid April have immediately doubled our user base and have drawn a lot of attention to the system. In the coming releases we intend to be more pro-active about media coverage and to have the hungry bloggers out there know when we have some new developments going on.

## **Conclusions**

As an ongoing project any conclusion at this step are relative to the scope of the project at large which aims to continue further beyond the scope of this thesis work. The main conclusions I draw from this project which have been also embedded through the process involve the development of an open source project.

In the first semester at ITP, Dan and I have developed *Atlas Gloves* a DIY a gesture based interface with Google Earth. The project has followed our interest in low-cost systems and open distribution, it was based on simple webcam based video tracking and two pingpong balls + an open source software available for free download at [AtlasGloves.org](http://AtlasGloves.org) . For me it was the first attempt to develop an open source software and the project has indeed gotten some press and attracted some users who downloaded the software and built the gloves. Even though the code was posted online, it has not developed beyond the version we put online in the first place.

While projects like Atlas Gloves and ShiftSpace are both categorized under the umbrella of open source software, they are inherently different. Atlas Gloves was one of these open source projects which are technically open source, but are practically a freeware – a software available for free download which is developed by one developing team. From the process of working on ShiftSpace I learned that for an open source project to reach its full potential, good software development is far from being enough. Open source requires leadership and community development skills. Yochai Bankler's ideas of commons-based peer production are actually not software development guidelines, but a new social and economical phenomena – an inspiring new movement which I am excited to be a part of.

The community building process with the devoted mentoring we received from Clay Shirky have also introduced to us the work ethic of “fix it when it breaks”. Again, this is more than software development guidelines, it is clearly a part of the way for a community to grow together, acknowledge its goals and challenges and accept change as a need rather than an arbitrary construct.

With my interest in politics and social change I am constantly thinking what of these ethics can be taken beyond the realms of software and into the realm of social life? Can the ideas of common-based peer production be extended to culture outside the computer world? Can we build societies with enough trust and solidarity to be strong enough to “fix things when they break” rather than drown into preventive authoritarian police structures?

I am excited to continue working on ShiftSpace and to continue to discover this new process as I go. I hope to have what it takes to make this happen. I am devoted to try.

## **Appendix I: Interface as a Conflict of Ideologies**

### **Preface**

In the past 50 years User-Interface has become a major field of cultural production, since the innovations of Douglas Engelbart in the sixties (mouse/keyboard/video-screen) through the personal computer revolution in the eighties to the rise of the World Wide Web in the nineties and the trends for social web applications since the turn of the century. Producers of hardware and software systems have been attempting to develop interfaces that will direct the users to produce the interaction desired by the system they represent. The discussion of interface have been constantly revolving around the axis of experience and usability, presented sometimes in contradiction and sometimes as complimentary assets of 'good interface design'. As a tool the success of interface is defined by its ability to generate the desired interaction on behalf of the user and have the user understand and act by the set of rules that the system defined.

It is important to mention, interfaces have existed for a long time before the personal or the institutional (military) computer. Actually, they have been around longer than culture or man-made tools have. Yet the rapid construction and consumption of interfaces (especially in the field of software and specifically in the context of communication interfaces and the web) have made this an important and influential part of contemporary culture.

Interface is defined as a point of interconnection between two independent systems. This definition sheds a different light on the way we have learned to know the interfaces around us. If the sides interacting through the interface are to be two independent systems, then one would expect interface itself to maintain that balance and not favor one system over the other.

In this essay I would address the question of control and agency within interface and attempt to find where is interface situated within the map of power. I would also use several examples and attempt to propose tactical and strategic approaches to act within this conflict.

## **Encoded/Decoded**

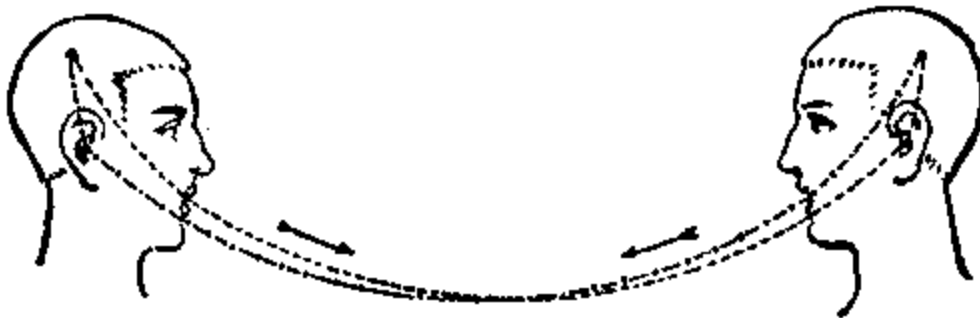
One of the first fundamental interface we all use is language. Semiotics is occupied with questions of interface down to the level of the building bricks of meaning. In that level interface is both what differentiate symbols as independent units and is 'the glue' that connects them into new units.

Linguist Tania Reinhart explored the low-level interface between syntax and systems of sound. Her work researched the counter influences of context and meaning and the role of the linguistic interfaces on multiple levels of language. Her work is very influential on the margins of human languages and computer languages. Reinhart's work investigated both the interface between the low level symbols and the very high level of media theory where information (and disinformation) lays just as much on the interface between context and meaning.

In the intersection of Computer Science and linguistics researches try to analyze processes both in human and in computer systems. In the highest level we can find the compute-human-interface – a point in which the two differentiate both as independent systems and as a new constructed unit. This requires us to question both the interface and the nature of the new unit it constructs.

The oral communication circuit as defined by Ferdinande De Saussure involved a symmetrical

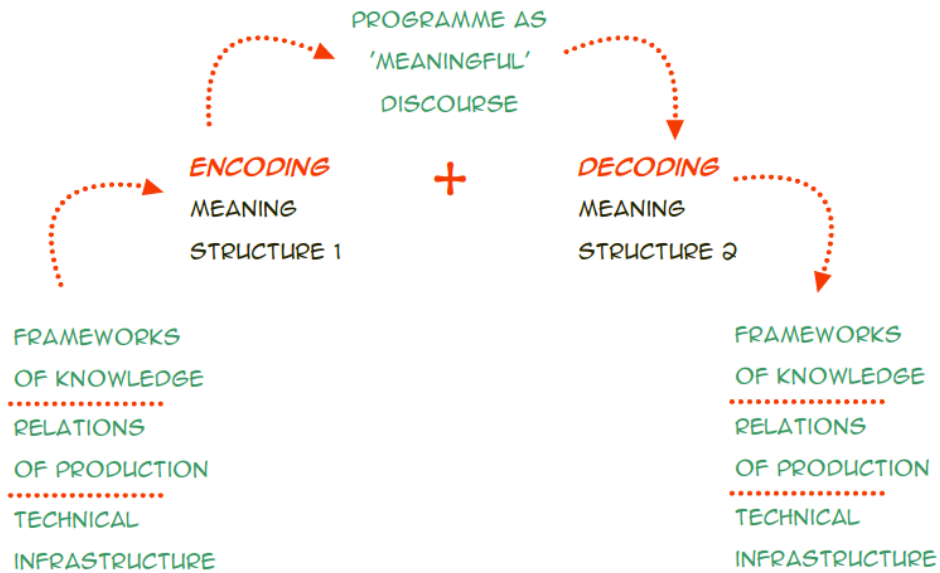
feedback loop: message expressed through speech from the mouth of the sender and received through the listening ears of the receiver. Then again, the feedback occurs in which the previous receiver constructs a new message, express it through speech to be received by the listening receiver (the previous sender). This communication circuit depends on equal sharing and use of the interface, in this case – spoken language.



British Sociologist and cultural theorist Stuart Hall rejected this model of what he called 'textual determinism' and suggested that the code used by the sender to encode a concept into a message is not necessarily the same code used by the receiver to decode the message into a concept. In an essay from 1980 titled 'Encoding/Decoding' he suggests that rather than being a passive action of receiving, the recipient of the message is actively involved in the communication circuit and decodes the message into a concept.

The use of code in the communication circuit will be key for examining questions of interface. We now know that language is a communication interface for sending and receiving messages, but it involves other cognitive interfaces which are the codes responsible for Encoding and Decoding the messages and concepts. While language should be shared for the Saussureian circuit to maintain itself, the codes used for encoding and decoding can be and often are different.





Mass media (Hall had television in mind when an earlier version of this paper was released in 1973, but this theory is fully applicable to new mass media as well including the web) offers not only the message but the recommended code to decode it with. This code offers a certain identity to identify with and to use in order to derive a certain action. Here is an example:

***Sender's concept:*** Buy Nike products.

***Sender's encoding:*** Nike stands for the free spirit of sport, its product is sports rather than fashion and the athletics abilities it stands for are at the core of the American dream.

***The programme / (meaningful) discourse:*** A clean and aesthetic TV ad showing Michael Jordan in an empty basketball court shooting hoops and slam-dunks in slow motion with only the sound of his shoes squeaking on the floor. Nike's logo appears at the last 3 seconds of the ad.

Up to this moment the sender has complete control over the message, the sender hopes for the receivers not only to receive the message but to actually identify with the proposed identity and want to adopt it as a part of their own. The identification model offered by the sender would also lead to decoding it with the original code that was used to encode it and getting the desired message across. Using the same code of the encoder to decode the message is what Hall calls the **Dominant Code**. In this case the receiver can be expected to continue the process in this fashion:

***Receiver's decoding:** Nike stands for everything I believe in - the free spirit of sport, creativity, the love of the game, physical athletic ability and the American dream.*

***Receiver's (produced) message:** Nike is a brand for me, I should buy their products.*

According to Hall another option for decoding proposed is the **Negotiated Code**. It means the receivers understand the message and the encoding process, they do not dismiss it all together but do not automatically buy it either. In this case the circuit might continue like this:

***Receiver's decoding:** Nike have a fancy ad, it sure is aesthetic. I guess they have a new line of shoes as well. I like sports but that has nothing to do with my taste in fashion.*

**Receiver's (produced) message:** *At the end of the day, I wouldn't mind buying their shoes, Nike are as good as the next brand, when I do need to make this decision I will choose shoes based on my own reasons, not because I like the Chicago Bulls.*

The third code would be the **Oppositional Code**. The receiver understands the content of the message and the code encoded into it, but chooses to dismiss that code all together and use another code to decode the message in opposition to the initial intent of the sender:

**Receiver's decoding:** *Nike attempt to buy me with Michael Jordan, his Slam-Dunk and the American dream, while all I see are sweatshops and labor exploitation of the worst kind.*

**Receiver's (produced) message:** *I will never buy any Nike product, I might even consider switching to the side of the Lakers.*

These three interpretations of the same encoded message reveal the complexity of the communication circuit. Saussure spoke of oral communication which creates a symmetrical circuit of interaction, Hall spoke of mass media and specifically television, a unidirectional medium. The communication interface is crucial in the process of encoding and decoding – it is the structure that formalizes the message and defines the nature of the communicated relationship. Yet in both speech and television interface is invisible to us, it has very explicit rules and we are aware of its abilities and disabilities. With speech when in dialog mode, we expect to be given the chance to speak back and use the same interface for discussion as our correspondent use, we are expecting a symmetrical one-to-one relationship. With Television

we are expecting a one-to-many asymmetrical relationship – we see what is broadcasted by the Television channel, which delivers the audio-visual message without expecting any response from us. We can always switch to another channel, still that would not directly change the message of the broadcaster, rather switch the broadcaster itself.

### **The Web's Communication Diagram**

Language is a common interface, television is not. We do not respond to television since it is not an interface available to us. The internet is a many-to-many platform which allow through formalized interfaces different types of communication. We have the one-to-one communication diagram of e-mail, the many-to-many diagram of IRCs, but what would be the case of the web?

The web is celebrated for dramatically lowering the threshold for the authorship of media and communication interfaces. The relatively low prices of hosting, the simplicity and flexibility of HTML and the interconnectivity model of the hyperlink have made the web a revolutionary tool for gaining ownership of media.

The web contains interfaces that allow for one-to-one, many-to-many or one-to-many unidirectional or bidirectional interactions. This multiplicity complicates the web's communication diagram. In this case again the key to exposing the diagram is the question of identity. In both the oral dialog's symmetrical one-to-one diagram and the television's one-to-many broadcast diagram, the identity of the communicating systems is defined and so is their role in the communication circuit. In the case of the web this identity is a bit harder to distinguish. Let's try to look at a few examples.

Most websites, like the *New York Times* website for example, function in a classic one-to-many broadcast format without offering interfaces for users input. This would be similar to the case of the television – the user's interaction defines the form of consumption – which pages to browse, at what pace, when to scroll the page and so on. All the content is predefined by an identified system – the site's editing board. It is in the site's benefit to fit its content to the model of the audience (just like the Nike TV ad fit its message to its audience's value system). Yet the audience can be abstracted as a general public since its passive consumption of information will not be relevant to the nature of the communication cycle. The only identity represented through the interface is that of the *New York Times*.

Other sites allow visitors to use text comments. Most blogs are built in this model. In this case the owner allows her audience to be active consumers of the information and to take part as authors of content within it through a predefined interface. The communication cycle is still one-to-many though a second layer of feedback is added and the audience of the blog can develop a form of a many-to-many interaction between themselves based on the context set by the blogger. The identities in action are first and foremost that of the blogger and then those of the community of followers that have the blogger and her writing as the context.

Others so called *web 2.0 services* such as *Flickr* and *MySpace* are based on user generated content and primarily offer interface as their product rather than content. The user becomes the author of the content and holds a perceived ownership over the content. The webpage is empty without the participatory content and is dependent on it. This diagram might appear identical to that of the second model, but it is in fact inherently different. The identity of the author is merely that of a privileged audience member. The actual identity in power which is

formalized through its interface is that of the hosting site. The owner's interface again (like in the case of the NY Times) sees the members as an abstract public rather than a defined and identified community. Defined communities might emerge within this interface but the choice of interface and in that sense the context and format of the interaction is totally dependent on the service provider.

We can see in all these models that control over the interface is always kept in the hand of the site owner. Even the highest level of interactive content does not allow authorship of the interface – and so while content can be authored by the owner of the site or its audience the rules of engagement are always defined by one member of the communication cycle.

### **Commons-Based Peer Production - A New Ideology**

An interesting phenomenon and one of the most radical interfaces of the *web 2.0* era is that of *Wikipedia- The Free Encyclopedia*. A major part of what makes Wikipedia's model so exceptional and have become the subject of an extensive discourse and research, is again the relationship between interface and identity. In Wikipedia's case there is no single identified author identity but a peer-produced context – the Wikipedia article. Yochai Benkler a Yale's Law Professor and one of the most influential theorists of the open-source movement defined this phenomenon as a new force in the market. He coined for it the term Commons-Based Peer Production:

*I call this commons-based peer production. Commons (as opposed to property) because no one person controls how the resource is used, they are either open to the public or a defined group. Peer production*

*because it is done through self-selected, decentralized individual action.*

*Yochai Benkler (2006): The Wealth of Networks:*

*How Social Production Transforms Markets and Freedom*

Benkler mentions Wikipedia as a prominent example in his writing but stresses that it is not that a Wiki is just some kind of a magical interface ingeniously designed to generate high-quality content. It has been the community of editors and moderators that from the early days of Wikipedia made sure that vandals, spammers and pranksters do not deliberately harm the commons-based peer production.

Wikipedia is a collective identity involving a complex governance structure. It might be the most liberal example of a successful web application we can see today, and is an inspiring proof of how alternative social structures can emerge on the web. Still, its communication circuit has a pattern similar to that of the Nike commercial:

***Sender's concept:*** *We want you to edit content only if you can really make a constructive contribution to better the quality of the article and towards a stabilized goal. Wikipedia is interested in wide-consensus, not in individual expression or discussion.*

***Sender's encoding (embedded in the interface):*** *Wikipedia is a common effort and a valuable resource to all its users. The page you are browsing is the product of hard voluntary work by a group of people dedicated to a mutual goal. We invite you to be a constructive part of this group. Should you decide that your input can benefit this*

*work, then and only then should you click the edit button, learn the specific WikiMedia syntax and make the edit. Remember your edit is always temporary and can be changed or reverted immediately by any of the other user or moderator. We trust you and believe you would act in the benefit of the greater good.*

***The program / (meaningful) discourse:*** *Minimal interface, very rational and utilitarian. The article page is not editable in itself. The edit button is available for different parts of the page. The page leading to a discussion page appears at the top and is given very low attention (and its existence is unknown to most of Wikipedia's users). The WikiMedia interface is unique, it is not hard to understand but it requires learning, adjusting and a bit of trial and error. The interface allows you to preview your edit prior to submitting it.*

Wikipedia's ideology is deeply encoded into its interface. The fact it is run by a non-for-profit organization, and is free and open-source is a major part of that ideology and is to a direct source for its success and for the trust invested in it by its contributors. We know for fact that Wikipedia's dominant code is widely exercised by tens of thousands of editors who follow the message and practice the ideology. We can firmly say that this ideology is also practiced by millions and millions of Wikipedia users who do not edit Wikipedia entries feeling not knowledgeable enough to contribute, or not worthy of taking part in this almost religious practice.

## **The Revolution Will Not Be Verified**



Attempts at oppositional reading and reaction to Wikipedia's message, like spam and vandalism, are strictly reverted and blocked by Wikipedia's efficient moderation system, consisted of volunteers who have proved loyal to the cause and worthy of authoritarian powers.

On June 27<sup>th</sup>, 2005 inspired by the way Wikipedia successfully maintains a dominant code in an open and critical environment, the *Los Angeles Times* launched a new feature in their site which they called *Wikitorials*. The idea was that the editorial articles would be offered as wiki articles for the readers to participate on and collaboratively edit. On June 19<sup>th</sup>, after 2 days of seeing their editorials being spammed and vandalized this innovative initiative in journalism was canceled. This message was left on the page: “Unfortunately, we have had to remove this feature, at least temporarily, because a few readers were flooding the site with inappropriate material. Thanks and apologies to the thousands of people who logged on in the right spirit.”

“If you're going against what the majority of people perceive to be reality, you're the one who's crazy”

*Stephen Colbert (2006): The Colbert Report*

*(inciting viewers to vandalize Wikipedia while inventing the term 'Wikiality')*

An interesting case of oppositional decoding of the Wikipedia interface was practiced by comedian Stephen Colbert on his satirical television show on *Comedy Central*, *The Colbert Report*. In the show Colbert plays a Republican television host dedicated to his ideology and to its defense by any means necessary, even in the price of total ignorance of reality (“*which has a Liberal bias*”). On May 9<sup>th</sup>, 2006, Colbert ironically proposed the term *Wikiality* as a

way to alter the perception of reality by editing a Wikipedia article. Colbert analyzed the interface to his audience and proposed his own oppositional decoding. He suggested that if enough of his viewers would go and edit the article on *Elephants*, claiming that the Elephant population in Africa have tripled in the past 6 months, then that would become the reality, or the Wikiality – the representation of reality through Wikipedia. He also claimed that this would be a tough “fact” for the Environmentalists to compete with (“*Explain that, Al Gore!*”).

The chain of events that followed have required Wikipedia to lock the article on *Elephants* and to ban the user *stephencolbert* for using an unverified celebrity name (a violation of Wikipedia's terms of use). Colbert's actions was perceived as nihilistic, disrespectful, vandal and subversive to the ideology of Wikipedia. They have also exposed the set of beliefs and ideologies (that nevertheless I personally share) of Common-Based Peer Production.

If we refer back to our definition of interface as a point of interconnection between two independent systems, we can understand how both Wikitorials and Wikiality were taking the wiki interface out of its context – exposing the delicate ideological balance it is situated in. Wikipedia (as an independent system) maintains a productive relationship with its users (the other independent systems) through its ideologically encoded interface. The LA Times Wikitorials experiment attracted an audience similar to that of Wikipedia (Jimmy Wales, the co-founder of Wikipedia actually contributed one of the first edits to Wikitorials) and attempted to borrow the interface model without understanding that the LA Times in itself represents a different ideology. The LA Times is not a Non-For-Profit and it does not stand for the Commons-Based Peer Production. The message it was encoding could not conceal this inherent difference between its own and that of Wikipedia. The LA Times did not have the

patience to endure the vandalism that a wiki community requires in the early stages of self-definition and after only two days it have used its ultimate authoritarian power as the owner of the interface – it called the experiment off. The Colbert Wikiality attack has used Wikipedia as a model for constructed ideology and have created a spectacle of information vandalism along the lines of the Yes Men's Dow Chemicals TV prank. It was in a way the opposite example to Wikitorials – the same system (Wikipedia) offers the same interface (the wiki interface) to an audience that is dedicated to an opposite ideology than its own. While in the LA Times case the ideology encoded into the interface was altered and generated oppositional decoding, in the Colbert Report case it was the same encoding but a deliberately oppositional decoding on the side of the Colbert fans (practicing the dominant code of Colbert's televised Wørd).

We can see by now that there is ideology embedded in the interface which acts as a message in itself (the interface is the message?). In the case of the web this ideology is almost always broadcasted in the model we are familiar with from earlier, less-interactive forms of mass media. In both these wiki cases, though control was definitely distributed through the wiki interface, one side of the communication diagram always holds the keys. In both cases this side chose to execute its authoritarian power to 'break the deal' it attempted to promote through the interface. The fact that one side can break the deal and the other can't is a part of the interface and reveals its bias – this bias is in the foundation of how we come to know the web.

### **Unknowns Knowns in On-line Urban Space**

We can now frame the paradox of user-interface at the age of proprietary software. While

interface attempts to stand between two independent systems, to define their borders and their rules for engaging with each other, user-interface in software is almost always defined by the side of the software developer. In the diagram of software/interface/user the interface is controlled by the side of the software. While this proves to be in many cases an efficient model, I would argue that as a form of cultural practice, user-interface teaches us how to interact with systems and how to comply with the systems rules. The paradigm of user interface as compliance with biased rules of engagement is a way of manufacturing consent. I am interested in the role of the web as the most accessible platform in which we engage with the production of interface.

*"There are known knowns. These are things we know that we know.  
There are known unknowns. That is to say, there are things that we  
know we don't know. But there are also unknown unknowns. There are  
things we don't know we don't know."*

*Donald Rumsfeld, March 2003*

In an essay titled *Design As An Ideological State Apparatus* Lacanian philosopher Slavoj Žižek reacted to Rumsfeld's attempt in amateur philosophy and suggested: *"What he forgot to add was the crucial fourth term: the 'unknown knowns,' things we don't know that we know which is precisely the Freudian unconscious, the 'knowledge which doesn't know itself,' as Lacan used to say."* Žižek claims that it is with these unknown knowns that design deals. It is also the unknown knowns that are embedded into interface design. We *"don't know we know"* that we don't make the rules of the interface. We *"don't know we know"* that we follow a dominant ideology which is encoded into the interface. We *"don't know we know"* that our

compliant use of interface is also defining our “know-how” of interfacing with other systems of control.

The great promise of the web was that it lowered the threshold of accessibility to media publishing, both as a consumer and a producer. Writing HTML is fairly easy and does not require any programming skills. The most basic and most powerful interface of the web – the hyperlink is in the grasp of any user. HTML is an open standard and is available for use in the public domain. If so, what are the unknown known of the web? What are the constructs of the web that we have come to take for granted?

HTML is the common denominator for web development, and is involved to some extent in any interface on the web. That is, of course, as long as you are the owner of the website. The construct of the Domain Name System (DNS) as it is used on the web creates a link between three elements: identity, control and space. While our experience of everyday life in the physical world formalizes these three elements and unites them in the body (as identity, as control and as space), on the web they are projected to the webpage. Control over the space of the webpage is in the hands of the identity behind it. Unlike the body though, the online space is experienced as an information retail space – inviting people to wonder through it and shop for information. Like in retail space private space is maintained and the rules of engagement are defined by the identity in power. Unlike in physical space though, private control is not contrasted by other forms of control, it is the only control diagram on the web. Every space is owned and controlled. The web has developed like a hive of networked benevolent dictatorships which practice their control through interface.

*“A unitary urbanism – the synthesis of art and technology that we call for – must be constructed according to certain new values of life, values which now need to be distinguished and disseminated.”*

*Gil J. Wolman, September 1956*

*at the Lettrist International Delegate to the Alba Conference*

There is currently no public space on the web. The process which the Situationists International have warned us about in the fifties and sixties, of the city losing its urban character have materialized in cyberspace – a social space completely controlled and privately owned. While this critique of the web might share a lot with the Situationist ideas of Unitary Urbanism, we must distinguish these two social spaces. While Unitary Urbanism and younger movements like *Reclaim The Streets* are based on a somewhat romantic idea of preserving and reclaiming the city's public spaces, the web has never had any public space. The closest thing to public space on the web in my view would be Wikipedia, which offers an alternative to the identity/property paradigm and offer a democratic governance system that in potential allows any user to achieve access to position of power. But as we've seen Wikipedia in itself does not make its interface (and ideology) as accessible as its content and the process of governance is complex to the level a bureaucratic catch 22 – to attempt to change the system you need to become its greatest disciple. We can imagine that in physical world terms Wikipedia would be something like a public service institution. While unitary urbanists speak of the transition of the city's social life from the town square to the mall, the web has been built in advance as a mall and currently has no model for a town square.

Moreover, in our context the web is formally closer to ideology – in its immateriality, its artificiality, its detachment of body from identity and its practice of information. I believe that

the similarity between ideology and the web makes the web an important field for social and political practice.

Our compliance as web users and the overarching tight privatized control of the web over our online culture are the web's biggest unknown knowns. We can't think of the web in any other way. Wikipedia proved this perception can be challenged when it comes to content, but we have yet to see a substantial challenge to the dominance of interface. This might be a call for on-line urbanism.

### **Cracks in the Walls**

I am encouraged by current trends in web interface development. It seems like the call for more openness, further information mobilization and a challenge to the bordered website paradigm is coming from all ends of the web and new initiatives and technological trends are being promoted.

The past few years have seen a growing tendency for embracing web standards that keeps the content, the structure and the presentation of the page separate from each other. The content, lets say, a blog post can be presented and structured in different ways – presented with a different, composition, colors, fonts or structured differently – using the title with an excerpt from the text body and a mention of the time of the post and the category and so on... Using web standards (as promoted by the W3C) has many benefits for maintenance of websites but it also the propagator of the huge information mobility that we see on the web today. When the content can be extracted from the context of the page it can be published in different formats and start 'traveling' beyond the page.

One of the main developments making use of this information mobility is RSS feeds – a way to store content as a marked-up file that can be easily structured and presented in different contexts. And so new interfaces are being built to present information which is served from different sources on the web. This mobility of content beyond the private space of the webpage not only did not deprive website owners from the much desired 'traffic' in their site, but actually generated more traffic and greater exposure for sites previously anonymous.

Information feeds have become a standard that generated many innovation in the field of interface design and have promoted the idea of the web as a continuous information space rather than a collection of segregated private spaces.

Today there is a demand of many web services to open-up and provide hooks for external interfaces to use the data without having to browse to the website and conform to the specific structure and presentation used there. The demand expands beyond text feeds. Media is also being fed through image, audio and video aggregators. Even interfaces are moving beyond the borders of the webpage. The most prominent example in this field is Google Maps which have not only provided a powerful way to present and browse maps on the web, Google have provided a hook into their application, what is called an API. API stands for an Application Programming Interface, unlike the user interface the Application Programming Interface allows simple ways to programmatically request services from a software. What this means is that the powers of one software can be shared by another, in the case of Google Maps, it has created an explosion of mapping applications online and have substantially contributed to the renewed interest in mapping and geography.



We cannot suspect Google of being just plain generous with its services, obviously Google benefits from having users information routed through their API into its databases for its ongoing project of surveying users browsing patterns and content in order to direct relevant advertising to them. Investing in APIs and with further penetration and dependency of users on the service is in the benefit of companies running a proprietary software product. It allows them to offer hooks to the service while maintaining control over the source code and not having to open it (i.e. Not having to expose the source code).

There are actually fairly much less examples of open web APIs for open-source services. One reason for that is that in many cases a semi-open API is not needed since complete control over the source code is available to the developers. Some open source web services that do offer APIs to provide better access to their systems are Wordpress, the open source blogging platform, Drupal the open source content management system and (again) Wikipedia.

While search engines have always attempted to survey the information on webpages and to refer to 'point at them' from afar, a couple of services have developed to formalize website metadata that is not based on web-crawler algorithms but rather on user generated data. A major trend in that field is that of social bookmarking. Social Bookmarking stands for repositories of links gathered, classified and tagged by users and shared between them. While attempts in the field can be dated back to 1996, the big boom of social bookmarking has started after the dot-com bubble burst, with various service models like Del.icio.us, Digg and Reddit amongst others. Social Bookmarking though practically just information and links, have become a standard process to collaboratively gather metadata about pages and to some

extent have become ways to annotate a site by proxy. They further emphasize the tendency towards further interconnection of websites and more user authorship within them.

Another technological field of research that has been around for a while but have yet to take off in its full potential is the metaweb. Metaweb stands for web applications and platforms that attempt to expand the interactive features offered by webpages. The most common application of the metaweb are social annotation applications – allowing to leave text on pages (in many cases using the sticky note metaphor). Another common metaweb application resembles the function of a highlighter pen and allows to save marked-up text on a page. Metaweb applications often use a plug-in architecture to add the meta functionality to the page or they work in a proxy version – a copy of the page content under another domain that includes the meta interface. Metaweb applications are pushing the envelope on the way we've learned to experience the web, as they offer us to carry our own interface with us as we browse the web.

We can be encouraged by these attempt to bridge the closed walls of the webpage and to embrace them as a natural tendency of users to find more open models to the web. It seems like even though the webpages have always been built on a model of individualism, ownership and privatization, more and more users are demanding a public space on the web.

There are several ways I can see to challenge interfaces, to reexamine the privatized model of the web and to promote what we previously defined as on-line unitary urbanism. They require understanding of the current technological trends and an open discussion of the power structures behind interface.

I would like to offer some suggestions through two approaches to this task, one in the practice of tactical media and the other in what I would refer to as strategic media. Each can be used, apart or in conjunction to retrieve user agency in the interface, and to claim interface as a proposition rather than a construct.

### **Something To Do: I - Tactical Media**

There are many definitions to tactical media. All of them speaks of this practice as a short-lived 'hit-and-run' type of use of media in opposition to a target of power. While I have some doubts about the efficiency of the short-lived practice, I sympathize Alex Galloway's call for the goal of tactical media:

*“The goal is not to destroy technology in some neo-Luddite delusion, but to push it into a state of hypertrophy, further than it is meant to go. Then, in its injured, sore, and unguarded condition, technology may be sculpted anew into something better, something in closer agreement with the real wants and desires of its users. This is the goal of tactical media.”*

*Alexander Galloway*

*Protocol – How Control Exists After Decentralization*

In the case of interface, the goal of tactical media is not to refrain from engagement with systems, but rather the opposite – extend it. I would like to briefly touch on several such tactics. One them is hacking.

I see hacking as much more than a technological skill. I see hacking as one of the most important approaches to the world we are living in today. In a world that becomes more controlled and consolidated from day to day, hacking stands for examining relationships with a fresh eye, it is an approach very close to Hall's negotiated decoding. And indeed what I am promoting is for interface to become more negotiated.

Since interface has to involve some communication it is often a good start for a hacker to start searching for a way to exploit the system. Not all hacks involve complex programming, for example, an interesting tactical hack on interface is the *Google Bomb*. In 2003 Anthony Cox have created a parody of the “404 - page not found” error message in response to the war in Iraq. The page looked like the error page but was titled “*These Weapons of Mass Destruction cannot be displayed*”. The rest of the page kept switching between the original text of the error message and the prank concerning the lack of proof that Saddam possessed any WMDs. The page has become a successful amusing meme and have gained a lot of popularity and traffic for the first couple of weeks. Four months later, after the meme had already died, it was reborn in another form. It seemed like when searching for the term “weapons of mass destruction” google returned Cox's prank site as the first result. Google's page rank algorithm had calculated all the page linking the term to Cox's site and has 'assumed' that this mean that site would be the most relevant result in a search for “weapons of mass destruction”. While this prank and the metaphorical search result issue were initially the cause of a pure coincidence, the users have decided to embrace it and a big grassroots campaign were started through blogs to link the term to the page to assure the hack is sustained.

Google prides itself in its unbiased algorithms and in their mathematical accuracy, but the

Google Pagerank technology - the heart of Google's search engine can in fact be decoded as a latent interface. It is designed to crawl the web and survey its content to decide which site is considered by enough other sites a reliable source. In the case of Google Bombing the algorithmic surveillance is being appropriated deliberately to inject a specific page as a search result. Google's top search results are a luxurious goal and are not at all meant to be interactive. Yet, the Google Bomb *of mass distraction* managed to divert the system and not only oppose the Bush administration through a political parody, but also oppose the Google administration of the web and game its so called unbiased rational. And so, thanks to the Google Bomb hack, according to Google circa 2003 the most relevant answer to the search for Weapons of Mass Destruction was *"These Weapons of Mass Destruction cannot be displayed"*.

Google Bombing did not involve writing code, but it did involved reverse engineering. Reverse engineering stands for analysis of a system's structure in order to learn its processes and through that possibly introduce change in the system. Reverse engineering is a practice at the heart of hacking but its core ideas can be found at the heart of political activism and movements for social change. If we can practice reverse engineering in software maybe we can deploy the same approach to reverse social engineering.

Tactical media should question interfaces and promote a critical discussion of its role in society. Tactical media practitioners should offer hacking spectacles such as the Google Bombing but also inspire and educate others in the approaches of hacking – hacking software, hacking hardware, hacking interface, hacking the social structure.

## Something To Do: II - Strategic Media

*“For there to be such a thing as tactical media implies that there are also strategic and logistic media. These terms go together, and describe 3 different levels at which contestation can take place. If the tactical is local and contingent, the strategic involves planning and coordination. The logistic would then refer to systematic, global and long range organizations of forces.”*

*McKenzie Wark*

*Strategies for Tactical Media - Realtime (Oct/Nov02)*

Strategic media is a different approach from the short-lived hit-and-run. Strategic media is a “hit-and-stay” method of opposition. It often shares some of the goals of tactical media and sometimes even involves tactical practices as a part of the larger scope strategy. Strategic media is a more complex practice as when you “hit-and-stay” you risk being called to take responsibility for your actions. Not only from the target you oppose or other authoritarian institutions, but maybe even more so from your peers in the struggle. Unlike its tactical younger brother, strategic media requires patience and leadership. Strategic media comes from an inclusive approach to social and political conflicts – practitioners of this strategy don't see themselves as external to the culture they are attempting to change. I would argue that identifying oneself within the system she opposes, makes her even more committed to the struggle. Strategic media, though indeed harder to execute and require further commitment and less immediate satisfaction, promises a more sustainable system, a system that can mature and grow and not only oppose power, but actually propose viable amendments.

Strategic media shares a lot of the values of parasitic media in its attempt to influence the system from within. It is always a conflicted practice and is bound to produce some miserable failures, but I believe that after almost two decades of tactical media we should realize that we are winning battles but losing the war.

One of the main strategic media practices we've seen bloom especially in the past two decades since the rise of the internet is the open source and movement. What is most inspiring to me in this movement is that it was not led by top-down ideology, it was led by a very basic tendency of people to want to be free within systems. The Linux project, the Firefox browser, the Apache server, the Creative Commons licenses and (once again) Wikipedia are all a part of what Benkler defined as the new ideological force in the market – the commons-based peer production. All of these examples and thousand others can be thought of as strategic media practices.

A good example of how a tactical media practice in the field of interface have turned strategic is the case of Greasemonkey. Greasemonkey is an extension for the Firefox browser that allows users to install userscripts - javascript hacks that automatically execute and modify the webpage on-the-fly. That is – change the page that is displayed to the user while not affecting the source of the website on the host server. Greasemonkey allows users with coding skills to add, remove or fix features on the page their browsing, it also allows them to integrate content from other sites and web services into the page.

It was first published in December 2004 by Aaron Boodman, who according to Wired magazine is “...a software engineer who got sick of dealing with the Web on other people's

*terms*” and it has been developed since day one as an open source project. Three months later Boodman started receiving code contribution from other developers, another three months later it has become the third most popular extension to the Firefox browser. Later that year a book on the O'Reilly series was published titled 'Greasemonkey Hacks' and the community of hackers, that have developed approximately two million userscripts, have been growing since then.

Greasemonkey, like any other successful open-source project would have never succeeded without the initial leadership of Boodman and the other emergent hackers who got the community excited about the process. The very nature of javascript is its openness – since it runs on the client side (on the user's computer) any user could easily open the userscript and based on her javascript skills adjust and modify the script to fit her own needs. Greasemonkey did not only offer a channel to easily hack interface – it has also made sure that the new hacks are easily hackable.

We can think of userscripts (most of them consisting of just a few lines of code) as tactical media interventions in webpages, while Greasemonkey, as a platform would definitely be a strategic media initiative – offering a standard and a committed leadership which was well received by the hacker community.

## **Conclusions**

The web has become maybe our main interface to globalization, it has been inspiring us to engage with it and have been teaching us how to do it. Interface is an extremely important field of political action today since it is not only our engagement within software and networks



that is on the line. It is our perception of engagement and responsibility in a world that is drifting away from social structures based on human relationships, involving mutual dependencies and trust further into formalized technocratic structures based on numbers and statistics leading us to segregation, privatization and profit/loss based relationships.

Interface is the key to responsibility in political structures. Democracies offer an interface to governance, not only as a way for a government to be based on the will of the people but as an interdependent system that implies distributed responsibility. Processes of privatization and segregation have been affecting the way we perceive democracies. The latent interface rendering the single vote almost completely powerless have resulted in alienation and lack of trust between governments and the public they represent.

I see the crisis of democracy as an interface problem. When groups of power can interface with governance through finance the idea of equal representation is broken. The current political system in the US that allow for political lobbying and fundraising for candidates have created an interface for corruption. (not rendered as such for its legality)

There is no doubt that voting through money is an anti-democratic interface. In the beginning of the 19<sup>th</sup> century the perception of power was different, women were not allowed to vote in the US until 1920. Since World War II questioning the capitalist democratic model was considered treason and was a social and ideological taboo. The fall of the Berlin wall and the collapse of the Soviet block (which also marks the rise of tactical media) have allowed for a new opportunity to examine the interfaces of the American democracy but the ruling ideology of this era which is well embedded into the structure of the web, is one of privatization and passivity in front of systems.

Bureaucracy became the interface between citizens and governance. The mall replaced the town square as an interface to public space. Financial power became an interface to democracy, and to some extent the term 'democracy' became an interface for financial power. Today, interfaces are designed to channel our behavior and the way we interact with the systems behind them. They are revealed to us as tools. We have learned to trust them and have grown dependent on them. We have gotten so used to our interfaces that we forget to critically examine them and reveal their biases. We forget to ask who designed the interface, and on whose behalf? how was it introduced to us? What is our desired interaction with the system and how is it channeled or not channeled through the interface?

While they offer us formalized interaction, software interfaces teach us not to expect to define the rules for engagement. This is a call to regain agency, through hacking, open-source and media activism. I believe we should use the practices of tactical media and strategic media to oppose the logistic media of global power. I believe there is an inherent conflict in interface, a conflict we need to engage with and attempt to subvert. New ideologies are developing from

global interconnectivity, from the free culture and the open source movements and from hacker culture. These new ideologies are developed from bottoms up – from communities sharing mutual goals rather than those in powers defining an arbitrary abstract public. This new action demands a renewed social dependency, openness, creativity, leadership and trust. The power balance of interface can be reconsidered. It is time for us to sit down and rewrite our rules of engagement.

## *Appendix II: Comparison of Metaweb Applications*

ShiftSpace is not the first meta-web application. Third Voice was an early attempt to allow site-specific annotations, but it was not open source and allowed only one form of modification. The company went out of business in 2001. The myth around Third Voice speaks about the market not being ready for the revolutionary meta-web idea that Third Voice represented, with webmasters organizing in initiatives such as "Say No! to Third Voice" and lawsuits piling at the young company's door. But the truth is that the company did not manage to build a firm business model around the product and with practically endless websites, there were not enough Third Voice notes out there and not enough useful ways to track them to make a case for the effectiveness of the system.

The problems encountered by Third Voice are relevant to many other social metaweb applications. And today, even though a lot of the initial conditions for this type of applications changed, we have not yet seen a significant success in the field. Today, there are several different annotation applications that try to add to the Third Voice model through more sophisticated aggregation systems, interfacing with social-bookmarking sites, highlighting features, online proxying of annotations (to allow them to be served not only through the browser plug-in) and so on... Yet most of them attempt to build a business model which usually pose a conflict of interests with their users. Either these applications compromise their users' privacy, or they mine the users' data to bother them with ads, or they require tiring registration processes, or they limit them to a one or two tools. None of these applications have come up with a convincing sustainable business model, and in that case, if like Third Voice, the company goes out of business, it takes with it all the data created by its users.

Greasemonkey is a plug-in environment that allows hackers to inject code into websites. As a metaweb platform it allows different applications to work based on the site browsed by the user or through automatic pattern matching on the content. Greasemonkey is an open-source project that have spawned a thriving community of developers, using various automatic Javascript-based metaweb applications. Greasemonkey does not have a social network of users or an aggregation interface. To create metaweb content the user has to write Javascript and it is currently impossible for users to know by browsing a site, what *Userscripts* are available for it. The elegant architecture, the open-source model and the versatility it allows, are the source of GM's success.

ShiftSpace uses Greasemonkey's architecture as the underlying platform and it's open source approach to add flexibility. It adds to that by creating interfaces that will make it easy to create and share content through the system and APIs to encourage developers to extend on these interfaces. ShiftSpace will offer a lot of the functionalities currently offered by proprietary metaweb applications and would add to them. It does not attempt to mine or monetize the user's data, neither does it limit the user to a certain tool. The user's privacy is important to us, and thus we hope to incorporate a Peer-to-Peer system to protect the information from technological or jurisdictional hazards. The driving force behind the creation of ShiftSpace is a just concern for the future of the web and a great belief in the role of the open-source movement in it. It hopes to become an important chapter in the history of the metaweb and set a successful standard that would finally realize its promise.

### *THIRD VOICE*

### *GREASEMONKEY*

### *SHIFT SPACE*

---

1999	2004	2006
SOCIAL	NOT SOCIAL	SOCIAL
ONE APPLICATION	VARIOUS APPLICATIONS	VARIOUS APPLICATIONS
USER-CENTRIC	DEVELOPER-CENTRIC	USER-CENTRIC
PER PAGE AGGREGATION	NO AGGREGATION	PER PAGE + RSS + TRAILS + ...
CENTRALIZED DATABASE	CLIENT SIDE	AIMING TOWARDS P2P
PROPRIETARY CODE	OPEN SOURCE	OPEN SOURCE

## **Appendix III: ShiftSpace Help Document**

### **Installing ShiftSpace**

The simplest way to install ShiftSpace is to follow the step by step guide on the first page of ShiftSpace.org.

### ***Download Firefox***

If you are not using the Firefox browser yet, this might be a good opportunity to start.

ShiftSpace currently runs only on Firefox (tested in Windows, Mac OSX and Linux). Please download it from the Firefox website. After installing it please get back to ShiftSpace.org and continue the installation.

### ***Install the Greasemonkey extension***

ShiftSpace currently uses the Greasemonkey Firefox-extension that allows it to work within any website. Please install the extension, restart Firefox, and come back to ShiftSpace.org.

### ***Install the ShiftSpace userscript***

We're almost done. Now just click this link to install the ShiftSpace userscript version 0.08.

Refresh the page.

### ***Sign Up***

Click the keys [Shift]+[Space] to open the console. This will be the way to open the ShiftSpace console on top of any website you visit. Please sign up with a username and a password. click 'Sign Up'. Welcome to ShiftSpace!

### ***Turning ShiftSpace On / Off***

You might notice the little monkey icon that was added to the right of your bottom frame.

When the monkey is brown and smiling (🐵), it is on and when it is Grey and sad (😞) it is off (click it to toggle between the two states). When Greasemonkey is off, ShiftSpace wouldn't work. If you are running other Greasemonkey userscripts and want to disable only ShiftSpace, right-click the icon and un-check ShiftSpace from the active userscript list.

### ***Signing on / off***

If you are using ShiftSpace on another computer than your own, you might want to log out your username before leaving the browser. To do so click [shift]+[space] to open the console and use the red sign-out icon (🚪) on the top right of the console. To sign back in click the Login option and enter your username and password.


### ***Browsing Shifts***

When you browse the web you might notice the ShiftSpace notifier popping in the bottom left side of your screen (📄), this means there are Shifts (shift space user-generated content)



available for you to browse on the page.


### ***Using the console***

Click the [Shift]+[Space] keys to open the console and see what Shifts were left on the page. Each row presents the shift's title, what Space was used to create it, which user created it and how long ago was it created. To view a specific Shift, simply click on it's corresponding row and it would appear on the page. Another click on the shift's row would make it disappear. You might want to minimize the console while browsing a shift. You can do so by either clicking the notifier icon or the minimize icon () to the right on the console's frame.



### ***Using the Shift tracker***

Another way to find public Shifts submitted by the ShiftSpace community is to use the Shift Tracker on [shiftspace.org/shifts](http://shiftspace.org/shifts).

### ***Reporting bugs***

Another icon on the console's frame is the little 'report bugs' icon (). Webpages act differently from one another and we are trying to make ShiftSpace work well on all of them, yet it is not an easy task and we need your help finding the special cases and the little annoying bugs to help us make the system work better. We would really appreciate it if you use this icon and report bugs or even ideas of what you think can work better. We currently use 'Google Code' as an issue tracker. It is not perfect, since it demands you log in with a Google username, and because it is, well... Google. For now we would really appreciate it if you use it, we promise to move to a different system when we get the time to do so.

## ***Creating Shifts***

This is the main thing, and probably the main reason we're here... To make it very easy we created the Shift-menu. When you click and hold the [Shift] key you will see a little  icon to the right of your cursor, move your mouse over it to open the Shift-menu () and choose between the icons and their corresponding menus to create your own new shifts.

## ***Using the Notes Space***

When choosing the Notes space from the Shift-menu a note will open on the page. Simply type into it whatever message you want to leave for yourself or for others on the page. You can drag the note through it's top frame and resize it through it's bottom right edge. when you're done, simply click [Save]. Congratulations, you have created a note, using ShiftSpace.

## ***Using the ImageSwap Space***

When choosing the ImageSwap space from the Shift-menu every image will get the ImageSwap hover effect when you move your mouse over it. You will notice the ImageSwap icon on the top-left corner, when you move your mouse over it you can choose to either 'grab' or 'swap'. 'Grab' the image you want and then find the image you want to replace and 'swap' it.

## ***Using the SourceShift Space***



When choosing the SourceShift space from the Shift-menu the page's html code would appear in an editable window. change the code in any way you want, you can either change specific words, images, layout... add content, or even write a whole different html to appear as your

shift. Enter a title for your SourceShift and save. Now your own version of the page is available as a SourceShift.


### ***Managing your Shifts***

Managing your shifts is important. The first use of ShiftSpace usually is mainly to test its capabilities and try the different tools. These shifts are usually not made to be shared (i.e: 'Hello, world!' note on Google.com). We would appreciate it if you turn these shifts private or delete them to make sure the public shifts quality is kept high and worth sharing.

### ***Turning a shift private/public***

The default of your shifts is 'public' - meaning, unless you choose otherwise, your shifts will be available to the entire ShiftSpace community. If you do choose to keep a shift private, or want to turn in public again, click the privacy toggle icon in the console between 'public' () and 'private' ()

### ***Trashing a shift***

In many cases you would want to delete your shift, use the trash icon () to do that.

(disclaimer: currently trashed shifts are still being save in the system, in the future we intend to provide a trash can managing interface).

### ***Uninstalling ShiftSpace***

To uninstall ShiftSpace double-click the monkey icon and use the userscript management window. To uninstall Greasemonkey use Firefox's Tools>Add-ons menu.

## **Appendix IV: Draft for Moderation System**

### **Shift moderation - a governance problem**

The governance problem we will try to solve for this assignment is the fact that although the system promotes sharing modifications of web-pages (various annotations forms of annotations, what we refer to as 'shifts') not all of the shifts should be shared and some users might attempt to abuse the system for unfavorable content (such as spam). There are several levels of user-shift relations we need to address:

- The user's rights to create and view their own generated shifts
- The user's rights to publish their shifts to the ShiftSpace community
- A user's right to decide not to be exposed to a specific shift (published by another user)
- A user's right to be exposed to subversive content (published by another user)
- The community right to have a healthy and clean environment where the ShiftSpace browsing experience is not harmed by overwhelming amount of abusive shifts, and overwhelming use of governance.

A leading principal: Keep governance minimal, simple, and as non-repressive as possible

### **Design proposal: Three step moderation**

We propose a three step moderation based on a simple interface that would facilitate a part of ShiftSpace's reputation system. This system combines a direct democracy and an aristocracy. In the center of this system is the 'report an abusive shift' button and an 'abuse threshold'.

### **The 'abusive shift' button on the ShiftSpace console**

The ShiftSpace console lists all the available shifts on the page along with details for when

were they posted and by whom. Apart from a rating system (which we will not get into in the scope of this assignment) a 'flag as abusive shift' button would be attached to any shift. This interface will work on two levels:

- private - when I mark a shift as abusive I choose not to see it or be alerted about it anymore when I browse the web.
- public - my vote on this shift is sent to the system and calculated with other user's votes to decide whether it should be defined globally as an abusive shift.
- author - In any time the shift's author can either choose or be forced to mark the shift as private and by that have only herself be exposed to whatever content she may choose to create.

### ***Step One: report the author***

When enough users have marked a shift as abusive and it reaches the first threshold layer (let's say 3) the author of the shift is alerted and asked to choose one of these options:

- turn the shift private
- delete the shift
- ignore

Even if the user chooses to ignore the prompt, the shift will still be available to all the other users.

### ***Step Two: turn private + allow author's defense***

If the shift-author user ignored the first prompt and enough users have marked the shift as abusive to make it reach the second threshold layer (let's say 4) the shift is marked as abusive and automatically turned to private mode, where only the author can see it. The author is then

alerted again and asked to choose one of these options:

- turn the shift private
- delete the shift
- defend the right to post the shift by claiming it is legitimate
- ignore

In case the user insist the shift is legitimate it is turned public again and unless it is marked as abusive by yet another user(s), it will still be available to the ShiftSpace community.

### ***Step Three: mark as abusive***

When more users marked the shift as abusive even after the author defended it and it has reached the final threshold layer (let's say 5) the shift is permanently marked as abusive by the system, it is turned private, and the user is not prompted again. Again, since the system do not delete the shifts the users will still be able to browse their own shifts even if it is considered by the system as abusive.

### **Tracking abusive use patterns**

All the information regarding patterns of use will be stored in the system and monitored by the system administrators (aristocracy). These patterns include:

- the amount of times were a specific user's shifts been marked as abusive
- the amount of times a specific user has marked shifts as abusive
- to what extents does the user's patterns of marking as abusive fit the general public opinion?
- are specific users being targeted by specific other users?

## **Administrative powers**

When these patterns emerge and reveal an undesirable use, or an attempt to abuse the system (including the monitoring system itself), the administrators hold the following powers:

- send a message to the user warning her to change her pattern of use.
- 'silence' a user by making her shifts appear public to her while being registered private by the system.
- reverse the effect of abusive voting when one user attempts to systematically repress another user.
- disable voting power of a user when their voting is shows an attempt to game the monitoring system.
- at any step we do not see the need to delete an account though technically this option is available.

## **Who are the administrators?**

Right now the administrators are the aristocracy that 'rules' the ShiftSpace community (Dan and Mushon). In the future we hope to see that the system we built with it's flexibility (changing threshold) will keep making the hurdle of administration something that is within our reach. If not we will probably distribute these administrative powers to either a wider aristocracy or to a meritocracy.

## **Appendix V: Draft for The Turbulence / ShiftSpace Commission Program**

In 2007, in collaboration with Turbulence.org, ShiftSpace will commission ten new internet artworks and tools using the ShiftSpace platform with fees ranging from \$100-\$2000. You can submit a proposal below, or read more about our submission and voting procedures.

The deadline for submission is: **midnight November 1st**

### **About Turbulence**

**Turbulence** is a project of New Radio and Performing Arts, Inc. (NRPA). Now celebrating its 11-year anniversary, Turbulence has commissioned over 120 works (\$500,000) and exhibited and promoted artists' work through its Artists Studios, Guest Curator, and Spotlight sections. As networking technologies have developed wireless capabilities and become mobile, Turbulence has remained at the forefront of the field by commissioning, exhibiting, and archiving the new hybrid networked art forms that have emerged. Turbulence works have been included in the Whitney Museum of American Art's Biennial ('00, '02, '04), and its Bit Streams and Data Dynamics exhibitions; Total Museum of Contemporary Art, Korea; C-Theory, Cornell University; Ars Electronica, Austria; International Festival of New Cinema and New Media, Montreal; European Media Arts Festival, Germany; and the Sundance Film Festival, among others.

### **Briefly, What is ShiftSpace?**

**ShiftSpace** is an open source layer above any website. It seeks to expand the creative possibilities currently provided through the web. ShiftSpace provides tools for artists,



designers, architects, activists, developers, students, researchers, and hobbyists to create online contexts built in and on top of websites.

While the Internet's design is widely understood to be open and distributed, control over how users interact online has given us largely centralized and closed systems. ShiftSpace attempts to subvert this trend by providing a new public space on the web. By pressing the [Shift]+[Space] keys, a ShiftSpace user can invoke a new meta layer above any web page to browse and create additional interpretations, contextualizations and interventions by using various authoring tools.

There are two main categories for proposals:

#### **Category I: 5 New Commissioned Spaces for ShiftSpace**

Spaces are applications that use the ShiftSpace platform to apply the users with site specific interfaces.

Spaces are written in Javascript, they can be installed by the ShiftSpace users and used in (web) context. Full documentation of the ShiftSpace api is available [here](#). The ShiftSpace team will be providing technical support to the commissioned artists but each application should prove their capability to carry out the production.

One Commission of \$2000 and four commissions of \$500 will be granted to the leading applicants. We will also publish periodic insights to the production process on [ShiftSpace.org](#) and will be presenting an exhibition of the complete work in Eyebeam, NY in December 2007.

## Category II: **5 New Information Trails Using ShiftSpace**

Trails are maps of annotations and modifications (shifts) left on websites. By creating trails, ShiftSpace users not only maps the shifts they created, but also the pages they were left on.

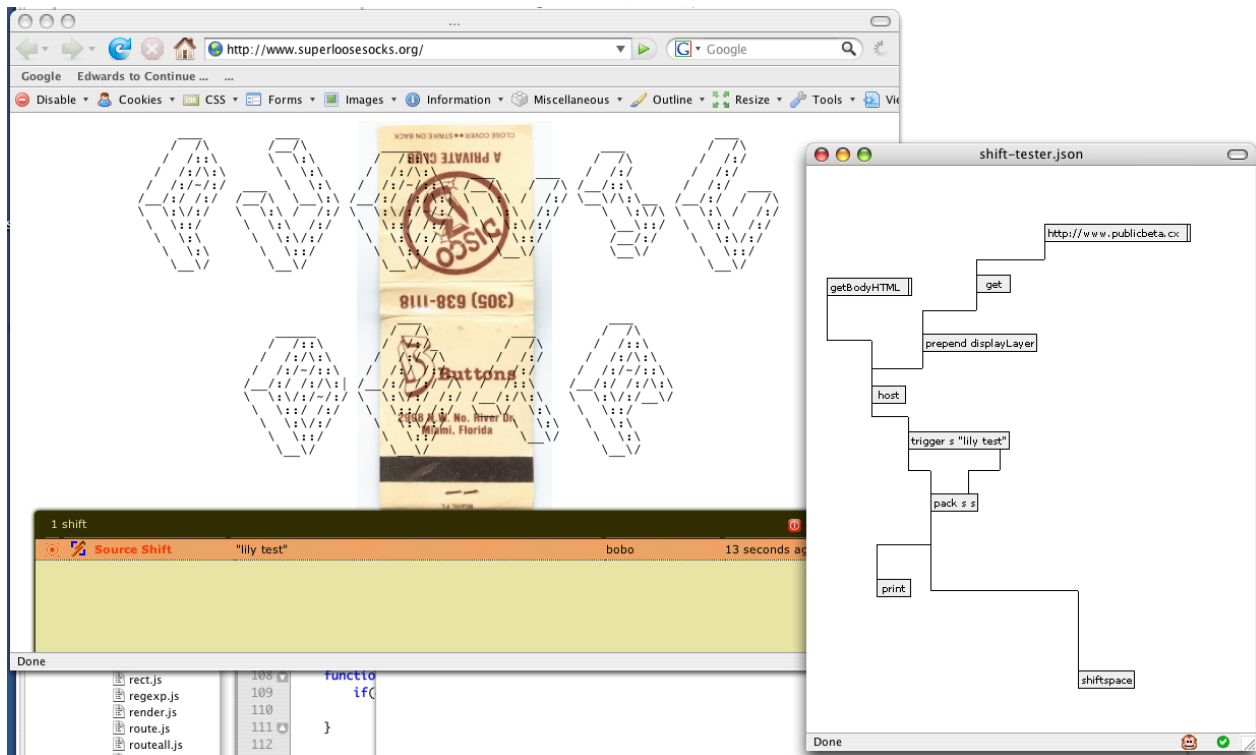
One award of \$600 and four awards of \$100 will be awarded to the most interesting new trails. We will also publish an interview with each one of the trails creators on ShiftSpace.org

## Appendix VI: User Case Study – Bill Orcutt ad Lily

In early March 2007 a friend has sent me an e-mail with the title “So Cool”. The content of the mail was: “max/msp wannabe on a browser! [Http://lilyapp.org](http://lilyapp.org)”.

I clicked the link and was pretty impressed. Lily is an Open Source, browser-based, visual programming environment written in JavaScript. It is developed by a guy called Bill Orcutt and uses a procedural graphic interface for connecting modules different and creating programmatic patches. The interface indeed follows the style of the audio/video programming environment Max/MSP and Jitter, but it is all written on Javascript.

I wrote Bill an e-mail and told him about ShiftSpace. I also offered to be a beta-tester for Lily and offer my feedback. Bill liked the idea of ShiftSpace and signed up to the system. A week after I got this screenshot in an e-mail from Bill:



Bill has built a ShiftSpace module for Lily and used SourceShift to hack directly into ShiftSpace. Since SourceShift is an open ended space, it was easy for him to translate the output of his application into ShiftSpace.

Bill's use of SourceShift is exactly the reason we built this space and is an example of ShiftSpace potential for collaboration. We would never have expected a user would hack into our system so easily and use it in such ways. Bill has since developed a couple more lily-shifts and is pushing the envelop with what can be done through the system.

We are currently working with Bill to further develop the collaboration between these two open source projects. We will try to develop a version of Lily as a space for ShiftSpace. This space would allow users to build Lily patches as shifts and would dramatically extend the creative capabilities currently available through the system.

Bill have downloaded the source code for ShiftSpace and is interested in helping us develop the system from his end. We have also expressed our interest in Lily and might contribute to this project too. We hope to expand the collaboration with Bill and to even develop ShiftSpace/Lily workshops.



## **Bibliography**

**Althusser, Louis**, “Ideology and Ideological State Apparatuses (Notes towards an Investigation)”  
(*January-April 1969*) *Lenin and Philosophy and Other Essays* (1971)

**Benkler, Yochai**, “The Wealth of Networks: How Social Production Transforms Markets and Freedom”,  
Yale University Press (2006)

**Boutin, Paul**, “Monkeying With the Web”, *Wired Magazine*, Sept 2005

**Galloway, Alexander**, “Protocol — How Control Exists After Decentralization”, MIT Press, 2004

**Habermas, Jürgen**, "The Public Sphere: An Encyclopedia Article," *New German Critique* 3 (1974)

**Hall, Stuart** ([1973] 1980): “Encoding/decoding”. In Centre for Contemporary Cultural Studies (Ed.):  
*Culture, Media, Language: Working Papers in Cultural Studies, 1972-79* London: Hutchinson, pp. 128-38

**Klein, Naomi**, “No Logo: Taking Aim at the Brand Bullies”. New York: Picador USA, 1999.

**Reinhart , Tanya**, “Interface Strategies: Optimal and Costly Computations”, MIT Press, (2006)

**SAUSSURE, F. de** (1993) “Saussure’s Third Course of Lectures in General Linguistics” (1910–1911),  
Oxford: Pergamon.

**Wark, Mackenzie** "Strategies for Tactical Media" *Realtime* #51 Oct/Nov 2002

**Wolman, Gil J.** Address by the Lettrist International Delegate to the Alba Conference of September 1956

**Zizek, Slavoj**, “Design as an Ideological State-Apparatus”, (2006) first presented: ERA05:The World Design Congress in Copenhagen (Denmark).

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