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Pushing the Interface: Questioning Existing Web Interaction Models

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KEYWORDS *Carnival, information visualisation, interaction design, interaction diagrammatisation, interface, social software, World Wide Web*

ABSTRACT This paper explores means of re-examining our relationship with, and interactions on, the web. By probing the dominant existing models—and providing alternatives—I ask questions of the current paradigms and present new opportunities for how we analyze our interactions and act online. Since the release of the first popularized graphical browser, Mosaic, in 1993, the web has become a market to control: first for information providers and browser companies, and later, for corporations and conglomerates. With each, a standardization of how we interact on the web came into being. Alternative interface models to existing hegemonic practices are not fully entertained as possible means of exploration of this space, hence, we continue to look and interact the same way.

By always following the same path are we negating new discoveries? By continually following these ingrained and orthodox practices are we missing opportunities? By porting existing standards to new software and hardware are we limiting our interaction possibilities?

This paper proposes that by exploring alternative interactive models we can better understand how we currently use the web and, more importantly, how we *could* use the web.

I will set out and re-examine the existing hegemonic interaction model; I will then classify, describe, and explore two broad categories of interface explorations. In each category I will present prototypes—designed artifacts—that provide alternative means of analysis, retrieval, and action, allowing the user to re-examine, re-explore, and re-discover how they use the web.

INTRODUCTION

> *This is a particular moment in the history of digital networks, one when powerful corporate actors and high-performance networks are strengthening the role of private electronic space and altering the structure of public electronic space. Electronic space has emerged not simply as a means of communicating, but as a major new theatre for capital accumulation and the operations of global actors.*[1]
>
> —*Saskia Sassen*

In 1993 the World Wide Web moved from a specialist tool that was accessed through a text browser to one of public consumption with the release of the first graphical browser—Mosiac.[2] As the web continued to grow it became obvious that this was a market to control, first for information providers and then for specialist browser companies. Later, it also became apparent that much larger opportunities were to be had. With these opportunities came greater corporate interest, and with the corporations came a standardization of how we interact with the web. Although the corporations involved have changed—from Netscape in the early '90s, to Microsoft in the late '90s and '00s, to a more fractured contemporary market involving a plethora of companies (Mozilla, Apple, Opera, Google, Microsoft, and others)—the means by which we visually understand and interact with the web is firmly established. How we interact with the web has evolved at a slower rate than the technology (both personal and network) facilitating the experience. With the standards enacted and enforced by the millions of everyday users, there are fewer opportunities for creatively using the web.[3] Alternative interface models for analysis and action to existing hegemonic practices are not usually entertained as a possible means of the exploration of this space, hence, we continue to look, understand, and interact the same way.[4]

By always following the same path are we negating new discoveries? By continually following these ingrained and hegemonic practices are we missing opportunities?

This paper explores means of re-examining our relationship with and interactions on the web. By probing the dominant existing models and providing possible alternatives, I ask questions of the current paradigms and present new opportunities for these experiences. I will set out and re-examine the existing hegemonic interaction model; I will then classify, describe and explore two broad categories—the personal and the public—of interface explorations. The *personal interface* concerns itself with repre-

senting our past interactions on the web by visualizing in a new form our browser's history; the *public interface* re-interprets how we visualize a popular social bookmarking site. For each of these categories I will present prototypes—designed artifacts—that enable alternative means of analysis, retrieval, and action. These new opportunities, in turn, allow the user to re-examine, re-explore, and re-discover how they use the web.

Within this paper the spaces that produce design and the spaces that design produces are explored as a means to examine the experience of viewing, analyzing, and interacting with common activities on the World Wide Web. It is hoped that the questions asked will open new possibilities and help to "disrupt the unified and homogeneous narrative of the traditional utopia and demonstrate the multiplicity of possible futures."[5]

To explore and clarify this territory this paper draws on Bahktin's theory of the Carnival, the dérive practice of the Situationists, Deleuze & Guattari's concept of the rhizome, and the ideas of design ambiguity and ludic design practices raised by Gaver.

METHODOLOGICAL FRAMEWORK

The methodological framework for this paper involves the analysis of the established practices of how we view, analyze, and interact with two specific categories of information on the Web. New design prototypes are then presented offering alternative possibilities allowing us to re-examine how we currently act on, and with, the web; importantly, they also suggest how we may interact in the future. These prototypes serve as critiques in the spirit of the carnival as developed by Bakhtin: "[The] carnival celebrated temporary liberation from the prevailing truth and from the established order."[6]

These prototypes are not solutions that are meant to completely replace established practices—they present two possibilities that allow us to question existing hegemonic practice and explore possible futures.

THE CURRENT PARADIGM

The way we use the World Wide Web has become clearly defined and firmly ingrained within mainstream society. Although the systems and technologies involved have evolved and changed drastically, the physical process of using the web has evolved at a much slower rate.

In 1991 Tim Berners-Lee posted a short summary of the World Wide Web project to the alt.hyperttext newsgroup. The summary described three key concepts that allow the Web to work: HyperText Markup Language (HTML); Uniform Resource Identifier (URI); and HyperText Transfer Protocol (HTTP). The core concepts and technologies were now in place for the public launch of the Web. Although the Web was born its popularity was constrained to specific audiences, as the interaction with it was primarily through a text-based browser. In 1993 two key events transpired to allow the use of the World Wide Web to become a public and popular activity: the first was that CERN announced that the World Wide Web would be free for anyone to use; the second was the release of the first graphical web browser—Mosaic.[7]

Eighteen years after the launch of Mosaic, how we interact with and on the Web is remarkably similar to 1993. There have been changes: the amount of information and pages has increased drastically; we now have much more control over the look of a website; there is more use of databases and back-end technologies to produce sites; we have seen a drastic increase of Web 2.0/social software technologies; and the devices that we use to view and act on the web have continued to diversify. Most of this progress has dealt with the volume of material or with the technologies involved, either behind the scenes or with the hardware we use to interact with the web. It has been much less focused on how we use, analyze, and better understand our interactions on, and with, the web. Why do we still view sites in the same manner: jumping from page-to-page by clicking on links or buttons? Why do we visualize the growing amount of information in the same manner—often through long (and growing longer) returned lists?

In the first section I shall explore the Personal Interface, presenting the existing scenario, then through a designed prototype, posit new possibilities that question and push the boundaries of existing practice.

THE PERSONAL INTERFACE

A common feature in today's web browsers is the ability to view the browser's history, this allows the user to view (and explore) a list of all the sites that they have visited over a set period of time (See FIGURE 1, following page). It is the user's personal documentation of their online explorations.

The history feature is primarily used as a recall tool—to help the viewer locate a page visited previously. As a possible opportunity for exploration, reflection, and analysis it is cumbersome, underdeveloped, and underutilized. Much of this under-usage is due to how it is designed and how the information is presented to the viewer: the majority of browsers return a text list of website pages viewed, you have little opportunity to customize the results beyond controlling the amount of returns through the number of days viewed or through a search function.

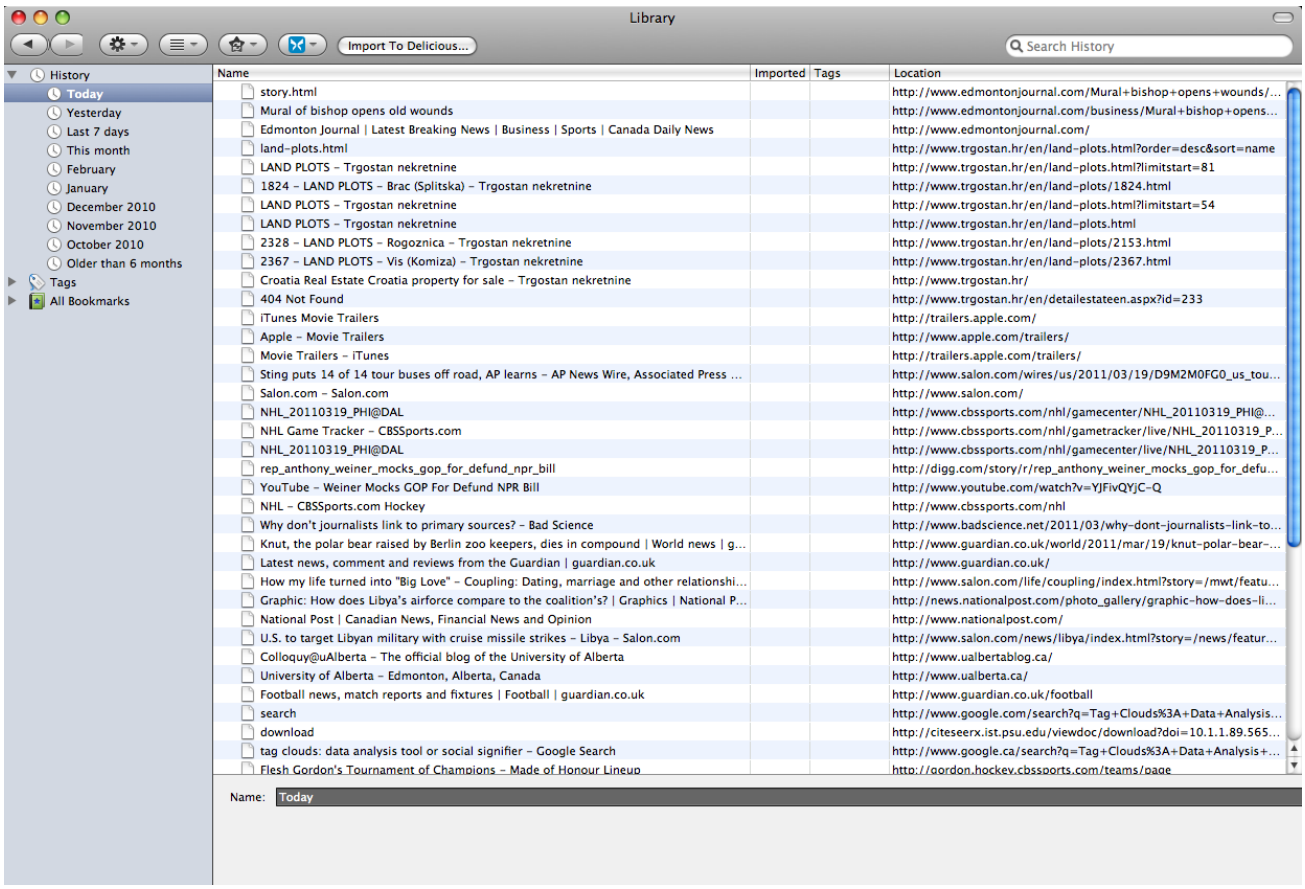


FIGURE 1: *Screenshot of Firefox's History Feature for Mac OS X*

The information is static, unrevealing, and difficult to fully come to terms with. It is common to be presented with a list of hundreds of visited sites across numerous screens. These long lists—requiring scrolling through multiple screens, remove (or make difficult to access) much of the pertinent information from the viewer. Little data is returned except for the URL (often a wieldy designation) and the title of the page which, due to naming practices on the web or dynamically generated content, is often titled "home," "main," or another generic title. Additionally, many people remember their visit(s) from specific information within the site, possibly the subject of the article or imagery used. The current history function in most browsers does not take advantage of this information.

Locating and confirming a site through the history interface is also a linear and time-consuming affair. To find a remembered site users click on one of the URLs in the returned list and then wait for the browser to open the page. If, once loaded, the viewer realizes this was the wrong page they need to return to the history list and find the next possible candidate further down the listing.

The history function has become the dominant and popular model for how we interact with records of our past web journeys. The carnival, for Bakhtin, was a needed mechanism that served to highlight new possibilities that not only questioned the existing dominant order but also hinted at possible futures.[8] As Webb notes the function of carnival is to "illuminate potentially transgressive elements within popular social and cultural practices."[9] A design prototype that serves to bring attention to other possibilities and futures is AlphaHistory Visualiser.

AlphaHistory Visualiser (AHV) is a design artifact that offers a new way of analyzing, exploring, and acting on the user's history information (See FIGURE 2, following page). Rather than present the browser's history as a long list of URLs and titles, AHV diagrammatically plots the journeys from a set period of time. The viewer can choose how many days to visualize; the history of web visits is then recorded, with each visit to a new site plotted in the letter section it falls within (e.g., www.salon.com falls in the "S" section). Each day's visit is color-coded to allow the viewer to distinguish between different days. When the cursor

travels over one of the plotted nodes the URL of the website is displayed allowing the user to access the page. (See FIGURE 3, following page) Next to the listed URL is an icon that toggles the viewing of a snapshot of the visited page; viewers can do this for URLS individually or set it as the default setting in the bottom control panel. The user can also choose to view all the URLS at one time if wished, or for specific days, or for range of days (See FIGURE 4, following page).

There are numerous benefits to this alternative presentation of the user's history. In the first instance we are able to see all the information on one page rather than scrolling through page after page of listed URLS. This shift allows the viewer to see where they spend time on the web in a new light—rather than being presented with a chronological list all their explorations are now reconfigured in one viewable space. Additionally, the viewer can now better see the relationship between sites visited on different days because it reveals where the user goes, how often, and how they got there. Bringing to light these connections and inter-relationships gives the viewer new opportunities for understanding how they use the web, and importantly, reconfigures our notions of web exploration as more than purely a linear process.[10] It is also easier to track how specific journeys came about, how an online stroll through one area ended up at a specific destination, this advantageously allows the viewer to jump back in at any moment and re-explore areas. The opportunity to view screenshots of the sites visited adds new possibilities for understanding where we have been and allows alternative ways of remembering our experiences and visits beyond the textual.

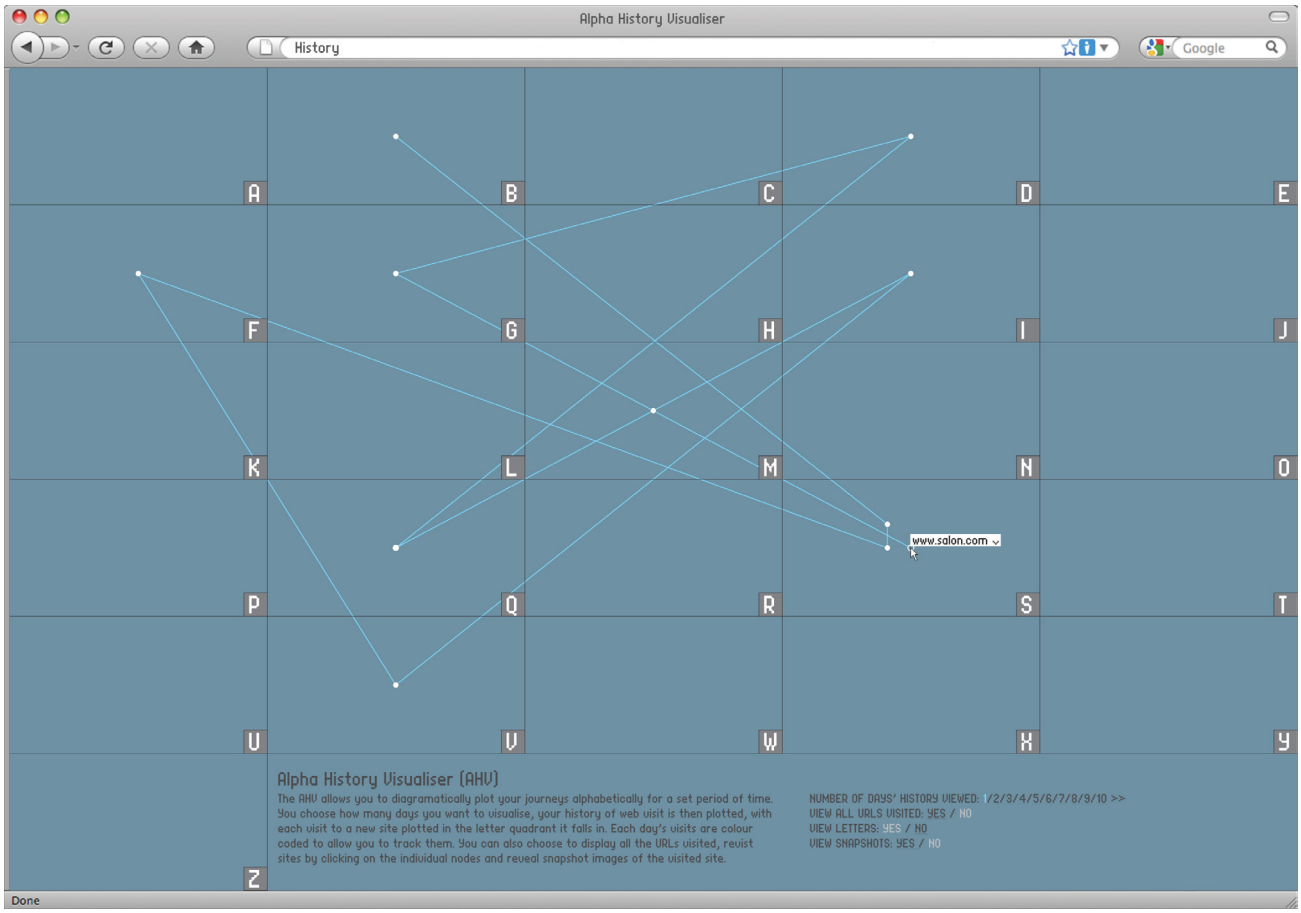


FIGURE 2: *Screenshot 1 of AlphaHistory Visualiser*

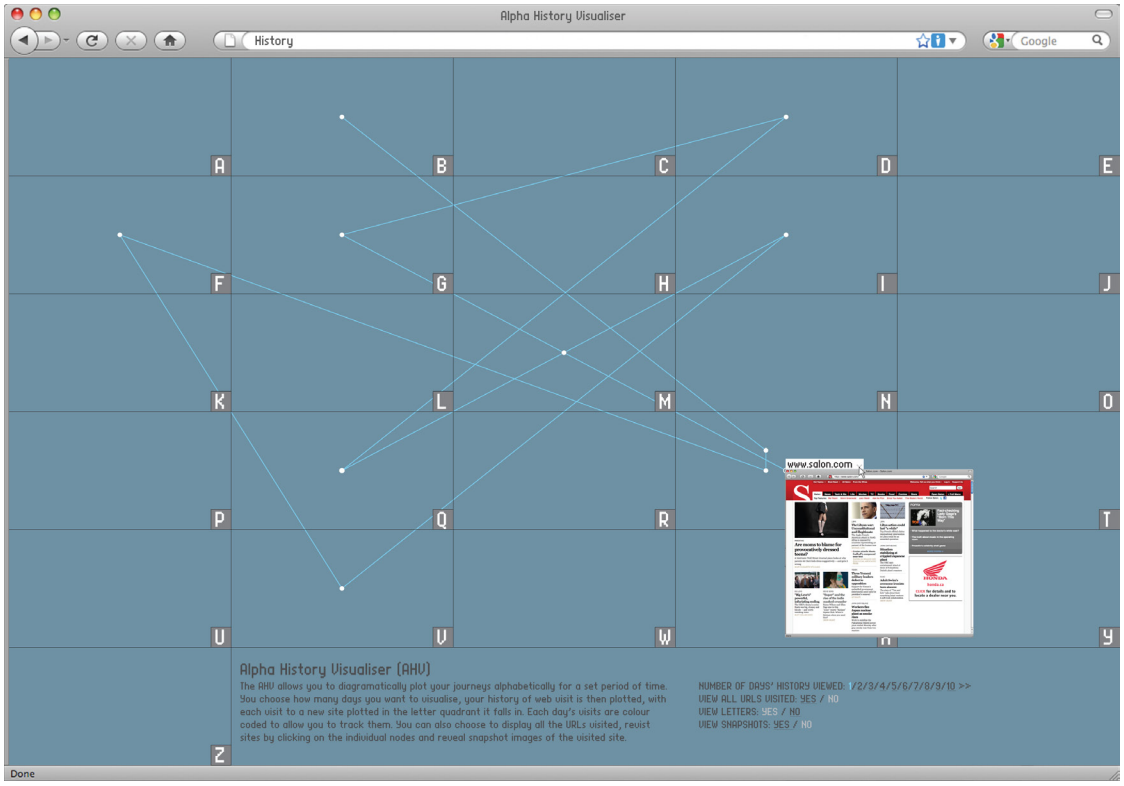


FIGURE 3: *Screenshot 2 of AlphaHistory Visualiser*

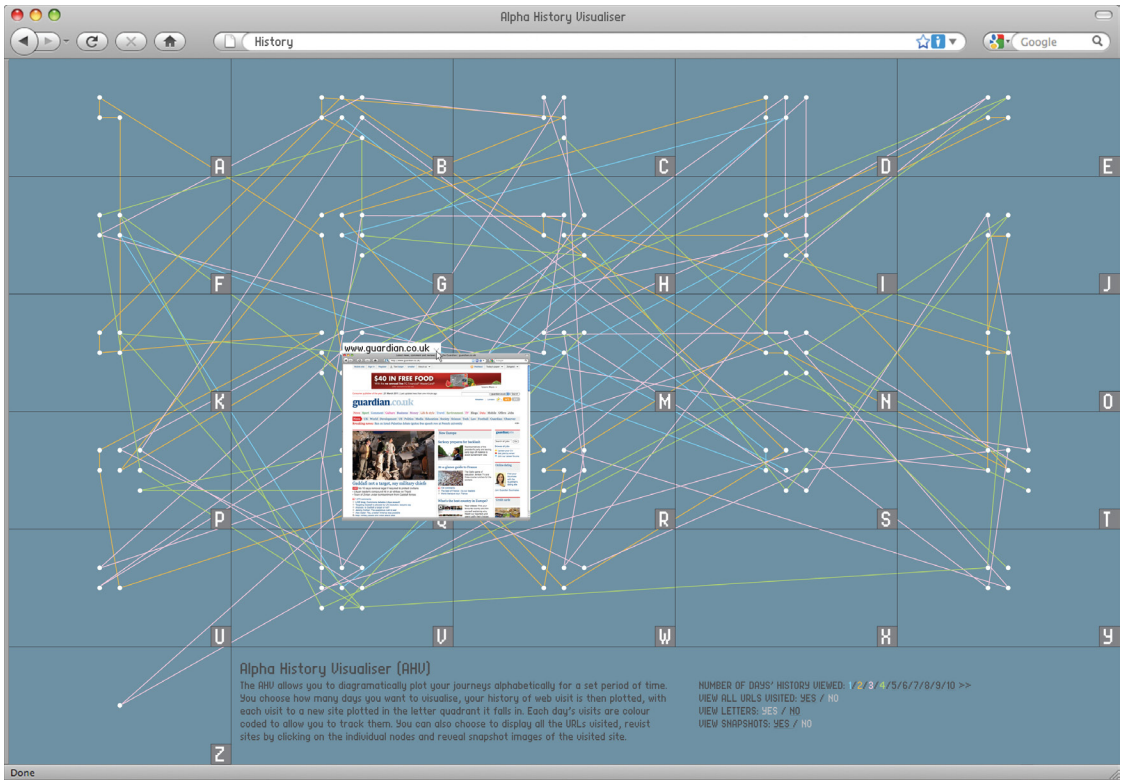


FIGURE 4: *Screenshot 3 of AlphaHistory Visualiser*

As prominent information visualization expert Manuel Lima noted, "The field's central aspiration resides on explanation and unveiling, which in turn leads to discovery and insight."[11] AlphaHistory Visualiser allows the viewer new ways of looking at where they spend their time on the web, facilitating access to new forms of information or re-interpreting existing ones. These tools make possible analyzing the journeys we make, allowing us to reflect on these practices, recognize patterns, and extract relevant and revealing information and insight.[12] These challenges to the accepted order, that of the standard browser's history feature, are not revolutionary or epic,[13] but they, as Bauman notes, begin "exposing the field of the possible in which the real occupies merely a tiny plot."[14]

In addition to exploring how we can better understand our personal journeys and interactions through new interpretations of information the area of the public interface is to be challenged and explored.

THE PUBLIC INTERFACE

One of the larger evolutions on the web over the last five years has been the rise of the popularity and use of social software. This movement, which includes such sites and entities as Facebook, Twitter, Flickr, and Wikipedia, encourages collaboration and focuses on how to "bring communities together, building upon the success of its technological predecessors and enhancing, rather than replacing, human interaction."[15] This movement is an example of a subtle yet fundamental shift in how the web is organized and used. The public interface looks at a prominent social software site called Delicious that describes itself as a "social bookmarking service that allows users to tag, save, manage and share web pages from a centralized source. With emphasis on the power of the community, Delicious greatly improves how people discover, remember and share on the Internet."[16]

The Delicious premise is quite simple. You open a Delicious account and add bookmarks to it, and for each bookmark added you are able to provide a short description and tags that describe the bookmarked site. The powerful feature lies in the ability for you to not only search for other tags but to track and follow other people's additions to their Delicious accounts.

Instead of finding information, or websites, from search engines, advertising links, or from following other provided links, the premise of Delicious relies on the network of your subscribed peers. By choosing peers that have similar likes and interests as your own, or interesting contrasts, you can dramatically increase your field of exploration and opportunity for discovery. If you have ten peers listed and they each have ten peers listed, you have access to the searching and sifting powers of one hundred users that are in line with your specified interests.[17]

Although there has been a shift in how the web can be used with the rise of entities like Delicious, social software systems themselves have started to become a dominant model, and as such there are opportunities for questioning and for positing new opportunities to push the boundaries within these interfaces.

Although powerful in scope, the interface that is presented for Delicious is somewhat limited (and limiting). Currently, the default setting for the viewer's account displays the bookmarks in chronological order, listing the website link, the added description of the site (if there is one), the tags used to describe it, information on when it was added, and the number of other Delicious users that subscribe to that site (see FIGURE 5, following page). To the right of the main listing is a basic tag list that is also viewable as a tag cloud. Both of these features give the viewer rudimentary feedback on how they are using tags to define and describe their Delicious additions. Although useful, the way the information is presented limits the possibilities of its exploitation. As with the history feature discussed previously, the information is presented as a long list of links that the viewer needs to scroll through. The viewer can control the amount of links on the page (with 10, 25, 50 or 100 showing on each page) but is otherwise quite restricted in controlling the information presentation. The lists are presented chronologically, with latest entries listed at the top (the order can be reversed); if the viewer wants to find something they need to scroll through the complete collection of links and pages to find it, or use the search function.

DeliciousMM presents a new way of visualizing the user's Delicious account—instead of creating lists of bookmarks it creates spider diagrams, or mind maps, based around the tags used to describe sites (see FIGURE 6, page 8). The system takes as its starting point the tags used to categorize sites: these tags are displayed on one page, the more often a tag has been used to describe a bookmark the larger it is on the page—with the number of times it is used displayed after the name. From each of these tags the associated bookmarks are linked. Rolling over these links will present a snapshot of the URL and clicking on the bookmark takes the user to the corresponding website—each tag is represented by different colored links. (See FIGURES 7 and 8, pages 8 and 9).

This system allows the user to revisualize their Delicious account, moving away from the static list normally presented. First, by mapping out the same information

in a different format a variety of new possibilities are presented—all the information in the account can be seen within one diagrammatic representation, all the URLs and tags are laid out on the same plane rather than having to scroll and move to new pages to see further information. This representation allows the viewer to access the information in a much more image-based way, "providing an alternative point of entry into a complex site."[18]

Additionally, the user can visualize the tags associated with the account—this allows the user to see not only the relationships between the tags and the bookmarks, but also the tags in relation to each other. These inter-relationships, which are more buried (or at least fractured) in the traditional view, allow new explorations within the account; users are able to track from one starting tag to a bookmark that runs off of it to another tag and continue on. This new interface moves the Delicious experience away from a strictly linear journey closer to the rhizome as described by Deleuze & Guattari, "Perhaps one of the most important characteristics of the rhizome is that it always has multiple entryways."[19] With this new interaction model the opportunities to explore and analyze the relationships between, and access numerous entry points, is increased.

Finally, DeliciousMM not only provides more information, and reveals the inter-relationships present, but also allows the information to be personalized, addressing specific needs but also enabling how individual people may work, as Gaver notes "scientific approaches to design need to be complemented by more subjective, idiosyncratic ones."[20] Importantly these opportunities to personalize and control the information and interactions give control back to the viewer, helping to create "a place for exploration and experimentation."[21]

DeliciousMM allows the viewer the opportunity to explore how they can challenge, extend, and enrich the practice of using Delicious, continuing to extend, and enhance, the growth of community centric social software systems.

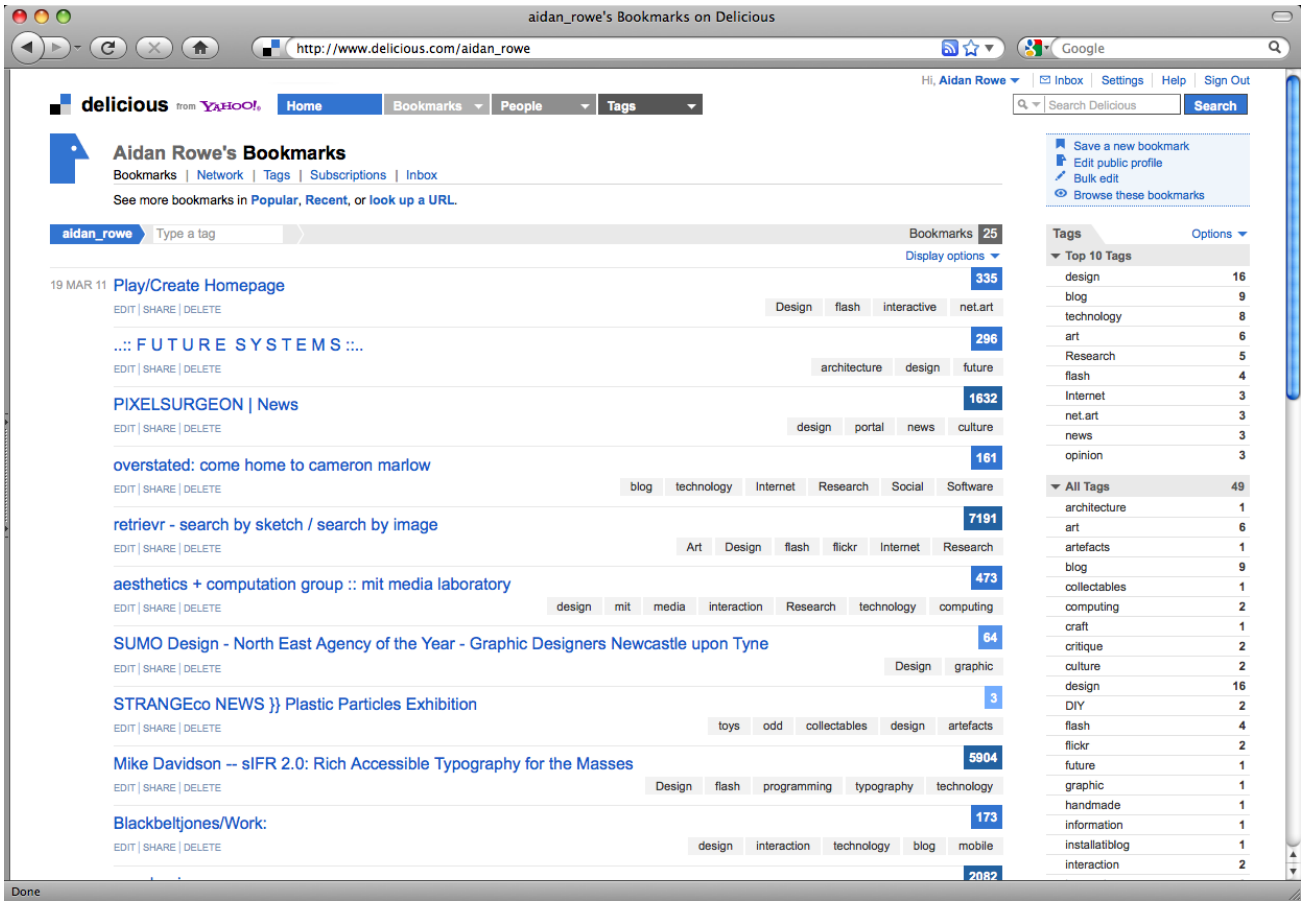


FIGURE 5: *Screenshot of Delicious' main interface*

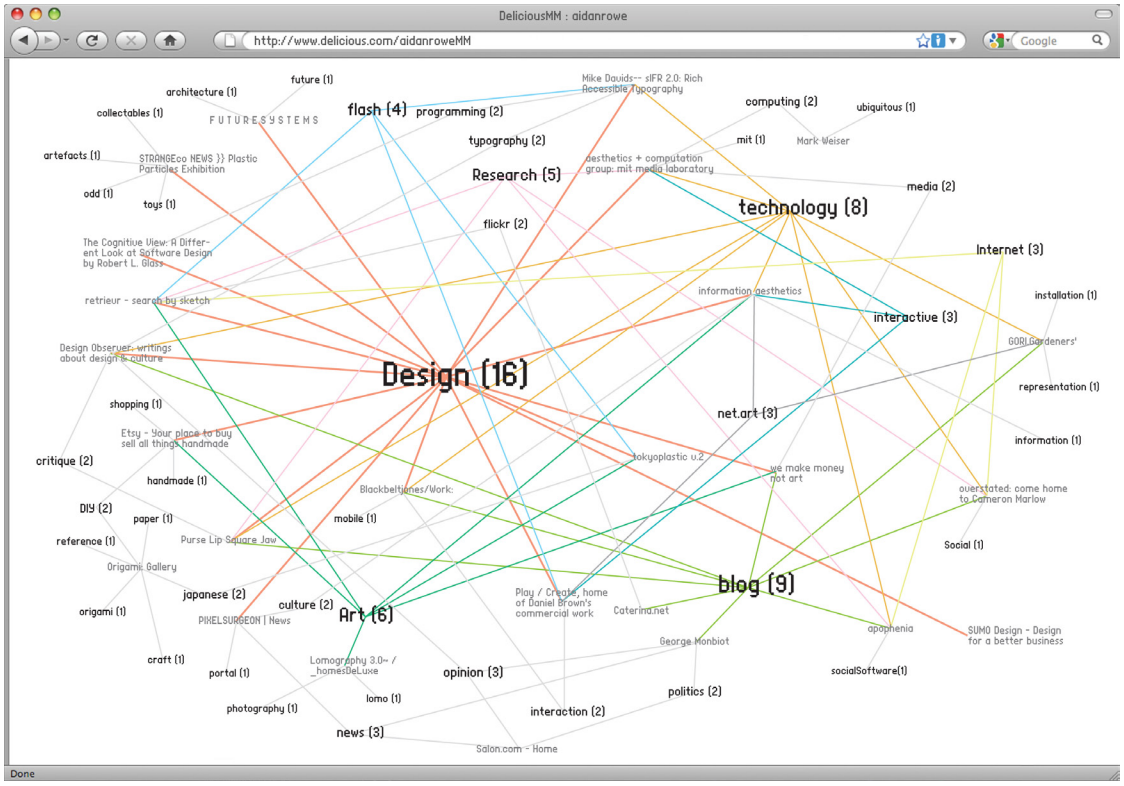


FIGURE 6: *Screenshot 2 of AlphaHistory Visualiser*

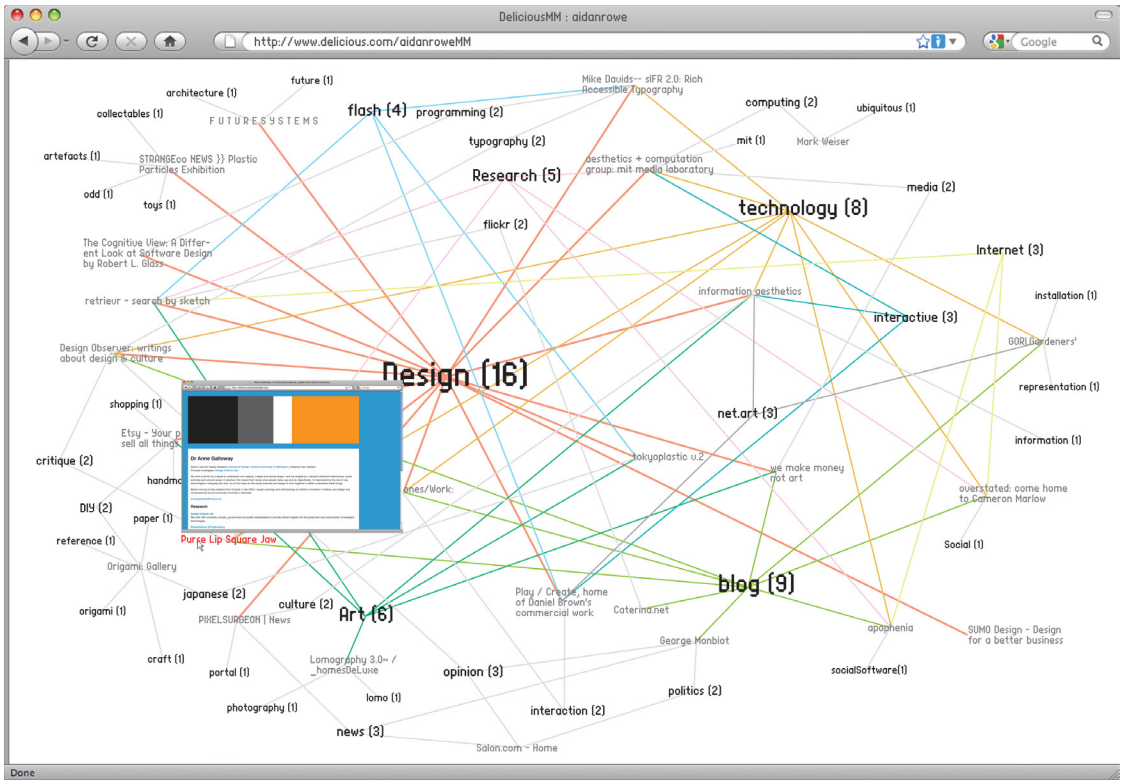
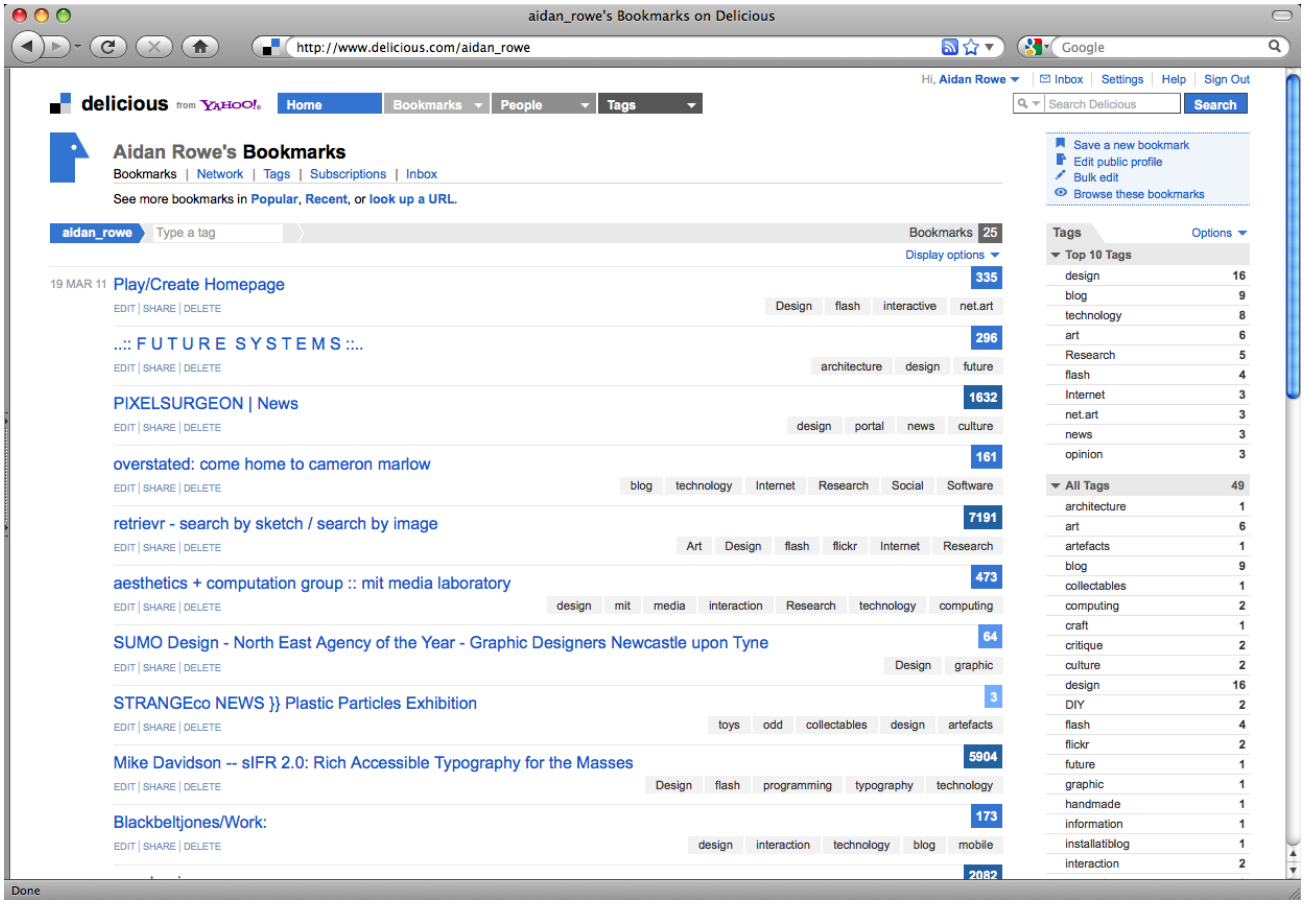


FIGURE 7: *Screenshot 3 of AlphaHistory Visualiser*



CONCLUSION

This paper has made a case for re-examining how we interact with, and on, the web. It has done this by presenting existing dominant interaction models and then juxtaposed alternative design prototypes that allow transgressive opportunities. These prototypes have taken as their starting point Bakhtin's theory of the Carnival, and asserted that the carnivalesque can serve as both a critique of existing dominant model(s) and as projections of future possibilities.[22]

The prototypes presented explore different territory—the personal and the public—but both draw upon new forms of visualization to present the user's information in new interactive forms. These draw attention to the multiplicity of relationships that are hidden in current dominant models. The prototypes present new opportunities for how we analyze our interactions and take action on the web.

It is hoped that these designed prototypes shed some light on the possibilities of using the carnivalesque as a means of challenging existing dominant models. The alternatives and artifacts proposed within this paper are not solutions (or at least not to a specific problem); instead they are starting points, providing an area for discussion, debate, and interaction. As Holloway and Kneale note, the spirit of the Carnival is not located only within the epic or large, that the routine and common are also "elements of everyday life which can become 'Carnivalized.'"[23]

As information continues to increase and our need to interact online multiplies there is a need to continue speculating about the future of how we interact with the web, to facilitate interactions to be more intelligent, rich, and transparent with the ultimate goal of enabling the translation of "information into knowledge."[24]

BIOGRAPHY

Aidan Rowe's research and practice interests are in design and education. Recent practice-based work explores human computer interaction, net.art, and information aesthetics. Written and pedagogic work revolves around understanding and improving design education in practical and theoretical forms. He has lectured and taught design in Canada, Japan, Germany, Hong Kong, France, and the UK.

NOTES

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