| THE UNFOLDING OF WIKIPEDIA AS A DYNAMIC SOCIO-TECHNICAL SYSTEM: A CASE STUDY OF CONTROVERSY |

Digital Methods for Internet Research

Final Project

December 23, 2010

Universiteit van Amsterdam

STEFANIA BERCU | RANIA DALALAKI | EKATERINA YUDIN

6099300 # 6247903 # 6307647

s.bercu@uva.nl o.dalalaki@uva.nl e.yudin@uva.nl

Supervisors:

Prof. dr. Richard Rogers, Erik Borra, Michael Dieter

| ABSTRACT |

This paper, a case study on controversy within the world's co-authored free encyclopedia, takes an in-depth and behind-the-scenes look at the social and technical framework of Wikipedia —- a platform that successfully manages to sustain a unique breed of world-wide and real-time collaboration, particularly when opposing views surface. The dynamics of Wikipedia's networked environment were investigated using a multi-layered approach of Digital Methods procedures and tools which assisted the researchers in unearthing the layers upon layers — from article and user pages to discussion and talk pages —- of a controversial Wikipedia topic. By deconstructing the complex symbiotic environment of this encyclopedia, and tracing controversy from debate to resolution, our results support previous researchers' notions of a socio-technical system in place and establish Wikipedia as a locus for debate where societal controversies are reflected.

| KEYWORDS |

Wikipedia ✦ Online Community ✦ Collaboration ✦ Vandalism ✦ Controversy

| INTRODUCTION |

The World Wide Web, available to all with an Internet connection, has fostered a collaborative environment on many fronts. As the 21st century space for people to gather and openly discuss ideas, issues and information ranging from the social to the political it closely resembles the public sphere concept first put forth by social theorist Jürgen Habermas (Habermas, 1968 qtd. in Poor, 2005). His vision — of a forum where public opinion is shaped by mediated discussion with ideas considered on the basis on their merit — is more specifically manifesting itself in the monumental feat that is Wikipedia today. Wikipedia's interactive framework and participatory characteristics uniquely exemplify the forum where public opinion is shaped by mediated discussion and where ideas are considered on the basis of their merit — factual and neutral. As a free of charge provider of independent information to the public, who can choose to participate and

debate for the truly 'factual' information on any single topic, Wikipedia can be construed as having achieved this public sphere status (Habermas, qtd. in O'Sullivan, 2009) — a complex, social and technological web that we will investigate throughout this article.

The rare and successful experiment of the World Wide Web community mobilizing to co-create the most popular public knowledge database has forever transformed information and revolutionized collaboration. Constantly written, rewritten, edited and improved, Wikipedia is a place where first impressions are made, where people periodically return, and a place, that according to Noam Cohen (NYTimes.com, 2009), represents qualities akin to that of a city and its dwellers. Mimicking basic civility, trust, cultural acceptance and self-organizing qualities, Wikipedia can be regarded as a judgment-free environment with accommodating and outward-looking residents (NYTimes.com, 2009). In thinking of Wikipedia as functioning analogous to that of a city, we can also apply the analogy of Cohen (2009) that 'the greater the foot traffic, the safer the neighborhood', since the more popular and controversial an article is, particularly when it includes questionable resources, the more likely it is to be accurate and free of vandalism.

As a place where controversies take place, we seek to discover how the collaborative community of the Web treats a single topic page. To investigate the socio-technical web of Wikipedia we will closely analyze the 'behind-the-scenes' aspects of its system and trace how, and to what extent, the watchful crowds of human users patrol together with a pack of fast-acting automated bots in order to preserve the standards set forth by Wikipedia. Particularly within controversial topics where polemical writing may surface, we seek to discover just how transparent the layers of debate within Wikipedia are in uncovering and highlighting societal concerns and whether crowd-sourced collaboration is an effective method to combat vandalism within controversy.

This paper starts out by reviewing and applying past literature and research on how crowd-sourced collaborative relations emerge within the scope of Wikipedia as a public sphere, and further elaborate on the unique structural features and protocols that command and attract this open community of knowledge. We then cover particular research as it applies to the struggle for accuracy and threat of vandalism within Wikipedia, and detail the particular roles all agents of the knowledge system must play to usher in quality information. Employing a digital methods research approach (including digital tools), we deconstruct the protocols that make up Wikipedia, present a case study

of a controversial topic and map the social structure of the 'system' and how it deals with controversy and resolution. The paper explores how the symbiotic relationship between the intricate layers of Wikipedia's structure and the governing principles and rules that are upheld to every article facilitate a dynamic interrelation and collaboration among human and non-human editors. By exploring these factors, which define Wikipedia's unique framework and drive the success of upholding a neutral point of view and facts about opinions — rather than opinions themselves — we seek to establish Wikipedia as a locus for debate and as a complex sociotechnical world of a circle of knowledge.

| CROWD-SOURCED COLLABORATION IN WIKIPEDIA'S PUBLIC SPHERE |

As a place where controversies are born, logged, and archived (Niederer and van Dijck, 2009), Wikipedia emerges over its past decade of existence as a forum for debate and deliberation, while acceding to systemic principles, rules, and regulations. More precisely, it is governing policies and protocols that make Wikipedia collaboration and coordination possible for the unique blend of contributors who range 'from human editors to autonomous software agents (or 'bots') and semi-automated programs to user interface enhancements and visualization tools. The combination of these actors ultimately shapes the way in which human editors engage with content and steer an epistemological enforcement where specific knowledge on a topic may not be necessary (Geiger and Ribes, 2010).

The strong participatory community of contributors, known as Wikipedians, subsists on the structure of Wikipedia's open and transparent system to function and contribute on an everyday and up-to-the-minute basis. Unlike many other participatory systems, Wikipedia differs in that it's not exactly hierarchical — moderators are not the most important actors, but rather contributors and collaborators are. The organizational hierarchy that does exist is more of a complex defense system of protocols prepared to take on vandalism and biased content, distribute various permission levels, and decide what entries and edits to include, exclude, allow, or block. In descending order of varying permission levels, Wikipedia management consists of the following users: system administrators, stewards, check users, oversights, bureaucrats, administrators, bots, registered users, newly registered users, anonymous users, and last but not least, blocked

users who completely lack permissions (Niederer and van Dijck, 2009) (http://meta.wikimedia.org/wiki/User_groups). Important to consider here is the position of bots, above registered users, thereby noting the significant role of automated mechanisms in the control of content within Wikipedia — something we will elaborate on further in this paper (Niederer and van Dijck, 2009).

As Axel Bruns explains, the rise of collaborative content creation in Web 2.0 has shifted from hierarchically managed content to collaboratively and continuously collaborative processes. And it is precisely his theory of produsage — based on collaborative consensus and engagement of large communities of participants in a shared project — that depict the intricate workings of Wikipedia we are concerned with in our study (Bruns, 2008 qtd. in Tkacz, 2010). We can examine some aspects of the collaborative relations of Wikipedia according to Spher's concept of "Free cooperation". The basic tenets include that every rule in the collaboration is changeable and negotiable, absolutely nothing is off limits or beyond the question, and that every person has the same power to influence the rules (Sphehr, 2007, qtd. in Tkacz, 2010 , Spher and Windszus, 2004, qtd. in Tkacz, 2010). Similarly, we can apply Axel Bruns's notions on content creation to the online space questioned in our research. Though it may appear that such democratization for producing encyclopedic content is untenable, the system Wikipedia has in place — one of strong regulatory mechanisms and policies for making decisions between competing alternatives — ultimately enables such functional collaboration, particularly when it comes to quality control of controversial topics (Tkacz, 2010), a relationship we will deeply investigate in our study.

| STRUCTURAL OPENNESS POWERS THE PEOPLE |

While we will refer to the technologically enabling qualities of Wikipedia in a later section, it is important to recognize that as far as human users are concerned, it is a watchful and dedicated community of vigilant editors that comprises Wikipedia; this further points to various researcher's assertions that it is the wisdom of a dynamic crowd of contributors made up of elite and novice users, rather than only experts, that powers

the mixed social system of Wikipedia today (Kittur et al., 2008). Motivations for participating in the collaborative project vary from contributing expert knowledge to fixing vandalism, but we can generally depict the group of interdependent Wikipedians as those who "participate together in discussion and decision making, and share certain practices inherent to the collaborative culture of Wikipedia that in the end both define the community and are restored by it" (Bellah et al., 1996, p. 333, qtd. in Reagle, 2008). Further, the Wikipedia community should be understood as being 'prosocial' and exhibiting intentional, voluntary and (often challenged) beneficial behavior (Bowles and Gintis, 1998; Sproull et al., 2004, qtd. in Reagle, 2008). Much has been argued about the egalitarian model of Wikipedia where all users — whether registered, anonymous, expert or novice — without first going through a screening process have direct access to the platform, with the right to make changes and additions, thereby compromising issues of quality control (Olleros, 2008). Wikipedia however, as a radically open, non-discriminatory and voice-giving platform, prefers giving everyone access first —-knowing permission levels vary at each level — and worrying about quality concerns after the edit has been done.

As Reagle (2008) postulates, Wikipedia can be looked at as an open content community — one where the encyclopedia is a snapshot of its continuing conversation. Driven by worldwide cooperation, the collection of people involved in Wikipedia differs from that of any other encyclopedic undertaking, and this particular community should be appreciated for its meritocratic processes. The features of an open content community that we are concerned with, as put forth by Reagle, consist of transparency of processes, rules, determinations and rationales (all of which Wikipedia provides to its willing participants via the policy page, (http://en.wikipedia.org/wiki/Wikipedia:Policies_and_guidelines), integrity and non-discriminative processes. Within Wikipedia, transparency is an attributed feature, and by allowing participants to understand the reasoning behind decisions, it informs the community on protocol and culture, thereby reducing abusive practices (Coffin, 2006 qtd. in Reagle, 2008). By having the Wiki technology and culture promote the documentation of proposals, discussions and decisions, Wikipedia can allow anyone to edit. Reagle considers this empowerment feasible only with deliberate technical features that must be implemented to limit vandalism and malicious errors that undoubtedly arise with such an

open model. Novice users and new contributors are especially welcome and Jimmy Wales, founder of the Wikipedia project, stressed this from the early days of Wikipedia in a statement of principles in 2001: "Newcomers are always to be welcomed, and there must be no cabal, no elites, and no hierarchy or structure which gets in the way of this openness to newcomers" (Wales, 2001, qtd. in Reagle, 2008). It is precisely Wikipedia's 'structural layers' — and the object of the current study — which we will further elaborate on, that make a "structure-less", open and collaborative environment possible.

| THE TRANSPARENT WORKINGS OF A SYSTEM |

Coined and articulated by hacker Eric Raymond as *"schlock and chaos are avoided due to the watchful eyes of the many",* the analogy, as it relates to Wikipedia, helps support the reality that given enough testers/developers or users and contributors, almost every problem or error will be characterized quickly and the fix will be obvious to someone (Coffin 2006, qtd. in Reagle 2008). Similarly, on Wikipedia, every error is transparent to somebody, partly because of the operating systems put in place by Wikipedia and its community. As introduced in the previous section, the encyclopedia project's unlikely and unexpected success in crowd-sourcing knowledge is to be attributed to a host of technological factors and systemic policies that work alongside (and guide) human editors in the editorial and administrative process. The production and maintenance of a social order that enables the collaborative production of an encyclopedia with hundreds of thousands of diverse and often unorganized contributors worldwide is unraveled in Wikipedia's layers upon layers (Geiger and Ribes, 2009). A closer behind-the-scenes look at the regulatory layers of Wikipedia reveals a transparent and intricate social and technological system of managerial protocols for users to work and comply with. To collaborate on Wikipedia means to negotiate with the masses; and within the project many spaces exist for the process of coordinating mass opinion. On the surface, a few basic article policies, that are continuously enforced, govern the content of Wikipedia articles and help spur the edit wars that emerge amongst editors who seek to protect the legitimacy of articles: no original research, neutral point of view (NPOV), and verifiability; these are accompanied by secondary rules: be polite, assume good faith, avoid personal attacks, and be welcoming

(http://en.wikipedia.org/wiki/Wikipedia:List_of_policies). These principles are maintained due to the transparency of the Wiki technology, a fundamental building block of Wikipedia that allows all edits, discussions and decisions to be open for inspection (Coffin, 2006 qtd. in Reagle, 2008).

To examine Wikipedia through the lens of a digital space for rational debate one must recognize the massively wide-ranging opinions that will undoubtedly exist on publicly debated topics and understand that without clear systems the process of coordinating mass opinion amongst amateurs and experts in a disciplined manner would be inconceivable and chaotic. First and foremost, the continuous editing process of Wikipedia is aided by instrumental features such as a built-in history for each article page that covers its entire lifetime, personal watch lists that alert editors of recent modifications to chosen articles, and recent changes pages that give users additional clues and alert them about the qualities of individual entries (Niederer and van Dijck, 2009). As Rogers (2009) explains, the built-in archiving system that records all previous changes to a page enables quick reinstatement to an older version in cases of slander, vandalism, deletions and misuse, and further ensures an article is never permanently damaged. Other entry-specific features include an article talk page (for users to discuss and build consensus on changes to the article page), a user page and user talk page (a personal page for each user on the site along with a related talk page for discussion of issues arising from the article) and other "behind-the-scenes" Wikipedia pages that are used to discuss and articulate procedures such as conflict resolution or other Wikipedia policies (Kittur et al., 2007). Overall, with the goal of creating high quality content combined with the enormity of participants in Wikipedia's project, the hierarchy of human and non-human controls becomes a necessary monitoring measure for adjustment of content to take place instantaneously in real-time (Nissenbaum et al., 2006).

Some topics within Wikipedia necessitate more care from editors than others, one of which is adding information to any page about living persons. According to Wikipedia policy such material requires a high degree of sensitivity, must adhere strictly to all applicable laws in the United States, to the Wikipedia policy on Biographies of Living Person and to Wikipedias' three general content policies explained earlier (NPOV, verifiability, and no original research) (http://en.wikipedia.org/wiki/Wikipedia:Biographies_of_living_persons). Wikipedia

policy appears very firm about requiring high quality published sources, and in the case that misleading and false information appears, thereby violating the policy, editors have the special right to remove the content immediately without discussion. This aspect of Wikipedia policy that upholds the drive for quality and non-biased information becomes especially important in our research as we examine such a controversial type of page.

| THE THREATS OF WIKIPEDIA: VANDALISM |

While the basic functioning principle of Wikipedia is that its content is created and maintained through the collaborative efforts of volunteers, premeditated misuse of liberties by some editors cannot be avoided. The accuracy of Wikipedia as an encyclopedia has been extensively researched and assessed. While studies have shown that the content of Wikipedia is comparable quality-wise with other encyclopedias (Chesney, 2006), the projects' "anyone can edit" policy is strongly criticized, as it allows for vandalism or misinformation that leads to the undermining of the reliability of entries. Therefore, administrators and editors often have to engage in the time consuming task of reviewing content and edit histories in order to keep Wikipedia free of vandalism. Kittur et al. (2007, p. 456) define vandalism as "degrading the quality of an article either by deleting parts of it or intentionally adding inaccurate or inflammatory content, often including swear words", while West et al. (2010) also include any edit that is not value-adding in their definition. For the purpose of this study we are interested in what the Wikipedia community identifies as vandalism and what the official guidelines and policies of Wikipedia regarding the matter are. Consequently, we will employ Wikipedia's definition of vandalism as: "any addition, removal, or change of content made in a deliberate attempt to compromise the integrity of Wikipedia". (http://en.wikipedia.org/wiki/Wikipedia:Vandalism)

Detection of vandalism leads to the offending user receiving a warning and, ultimately, being blocked or permanently banned from the system. Hence, vandal fighters must proceed with caution when they deem an editor as intentionally malicious, as not all damaging edits are necessarily made in bad faith. Wikipedia provides a rather comprehensive list of the different manifestations of vandalism. According to Wikipedia policies, vandalism does not occur only in entry pages, but can spread to all layers and structures; from creating a username that carries offensive meaning and vandalizing edit

histories and talk pages, to damaging Wikipedia templates and manipulating the substance of articles by adding, modifying or removing content, vandalism can take various forms and have varied repercussions – both for Wikipedia as a project, as a community, and for the editor to blame (http://en.wikipedia.org/wiki/Wikipedia:Vandalism#Types_of_vandalism). Priedhorsky et al. (2007) conducted an empirical study on damage to Wikipedia pages and revealed recurring patterns of vandalism. We present them here precisely as they appeared listed in their article: misinformation (changing dates or numbers, inserting inaccurate facts), mass or partial delete of content (from removal of an entire article to just a few sentences), offensive content (obscenity, pornography or hate speech), spam (irrelevant links or advertisement) and nonsense (strings of random characters and unrelated text). We find this classification helpful in narrowing the focus of our investigation, and we will refer to it for the remainder of this article.

The damage caused by vandal edits of articles is manifold: not only is the accuracy of the entry temporarily compromised, but also the community itself is affected, as these events may trigger arguments and conflict among its members. While some vandalism, such as inserting vulgarity or a random string of characters and deleting massive content, is easy to spot, more elaborate forms of vandalism, like inserting inaccurate information, are more difficult to detect. The decision to revert these edits is often the result of a discussion taking place in the user or article talk pages, which sometimes takes the form of a dispute (Shachaf and Hara, 2010). Resolving such disputes and reaching a consensus about whether an editor is guilty of vandalism is time-consuming and it ultimately damages Wikipedia as a whole, since the energy invested in fixing vandalism could be put to better use by fixing innocent edits or creating new encyclopedic content. However, as the incidence of vandal edits continues to grow (Priedhorsky et al, 2007), conflict and coordination costs – that is, Wikipedia work that does not directly increase the article content – are also on the rise (Kittur et al., 2007). In order to explore cases of vandalism, particularly those of mass deletion, Viégas et al (2004) introduced the History Flow, a visualization tool that generates a graphic rendering of the edit history of Wikipedia entries (Priedhorsky et al, 2007). For our study, we employ the same tool to examine and determine whether occurrence of vandalism is affecting the amount of direct work (generating new content) performed on a controversial article.

| WIKIPEDIA AS A SOCIOTECHNICAL SYSTEM OF COLLABORATION |

Given an ever-growing number of casual editors and a decline in the number of dedicated users on Wikipedia in the past few years, fully-automated software (bots, for short) were developed to assist vandal fighters and content managers in handling the increasing workload. Niederer and van Dijck (2010) argue that focusing on human contributors alone when researching and reporting on Wikipedia leads to a misrepresentation of the system, and they suggest that a more appropriate approach would be that of a sociotechnical structure – one where an intricate system of protocols and hierarchies govern the interrelation and collaboration between human and non-human agents that ultimately defines Wikipedia's dynamic structure. Bots are created by Wikipedians with programming knowledge and employed in performing specific narrow tasks once they are approved and granted a username by the Bot Approval group (http://en.wikipedia.org/wiki/Wikipedia:Bots). In February 2009, there were 618 registered bots on Wikipedia (11 of each had yet to make an edit) (http://en.wikipedia.org/wiki/Wikipedia:List_of_bots_by_number_of_edits), who account for a significant increase from the 151 bots listed in December, 2006 and especially from September 2008, when 457 bots were reported active (http://en.wikipedia.org/wiki/Wikipedia:Editing_frequency/All_bots). These pieces of software are assigned different types of tasks and categorized into editing and non-editing bots. Editing or co-authoring bots are engaged with the article content by adding revisions or by scraping content from the Web to create entries, particularly for Wikipedias of endangered languages. Non-editing or administrative bots are more visible to Wikipedia users, as they their tasks are related to content policy, such as detecting vandalism or spam and identifying copyright violations. Newer types of bots are also deployed for linking similar articles across languages in order to create a Wikipedia network (Niederer and van Dijck, 2010). Geiger explored the presence of bots throughout Wikipedia and found that 16.33% of all edits were made by bots (2009 qtd, in Geiger and Ribes, 2010). We aim to examine if this percentage is also maintained across controversial articles, which attract a high number of human editors.

Distinguishing between vandalism and damaging changes done in good faith by an inexperienced editor can, at times, require consideration of very subtle elements which

most fully-automated bots are incapable of. Smets et al. (2008) estimates that up to 8% of changes in the English Wikipedia pages are mislabeled as vandalism. Due to the massive amount of data, manual labeling is unfeasible. In order to resolve this shortcoming, semi-automated software or assistant editing tools were developed. In his research, Geiger (2009 qtd, in Geiger and Ribes, 2010) found that over 12% of all edits to Wikipedia are made with assisted tools. These make the process of reviewing article edits significantly more time efficient for vandal fighters and content managers, since the software analyzes the edits, and collects information about the context in which they occurred as well as the user history of each edit author. Some tools (Huggle and Twinkle being the most popular of these) have built-in ranking mechanisms that use vandalism-identification algorithms to rank edits in order of likelihood of vandalism. They then return all the data in the interface, so the reviewer is presented with almost all of the necessary information for the decision making process of rendering an editor ill intentioned. Geiger and Ribes (2010) conclude their study on the role of assisted editor tools in the coordination of human editors by stating that automated software has profound social effects, in that it transforms the process of reviewing edits – that of singling out and banning individual vandals – into a collective effort, and ultimately shapes the often seamless structure of collaboration among editors. Having established that Wikipedia can be studied as a multilayered system that reconstructs the social by employing both human and non-human agents, we seek to explore the unfolding of the different strata and nodes of this network in our case study by investigating the full history of a Wikipedia article.

| CASE STUDY |

Exploring a controversial topic in depth to reveal disputes, the role of users and bots, editing behavior and how article standards are upheld in line with Wikipedia's policies was the prime motivation for the present study. By inquiring the page of Norman Finkelstein, our chosen subject who experiences considerable public debate on the web (he is a Jewish political author and former professor who argues against the case for Israel and who is subsequently denied entry there), this research seeks to analyze the sharpness of Wikipedia's social and protocological system.

The online encyclopedia Wikipedia was analyzed within the media specific, web epistemological field of digital methods research, as introduced by Richard Rogers (2009). In an attempt to argue for the distinct qualities of the use of digital methods when it comes to analyzing digital objects by and within their own environment, one should first consider the added value of the pursuit of this Web-specific methodology when researching Wikipedia. As previously mentioned, Wikipedia offers a collaborative ground not only among authors and editors who are encouraged to openly produce content, but also among human and non-human actors within the system. Rogers defines the content of Wikipedia as "networked content", meaning that it is formed and maintained through the cooperation of human and non-human editors (2009). Furthermore, Wikipedia's complex layered structure provides great insight in the functioning mechanisms of the system, by making available a significant amount of metadata for each specific entry, as well as the ecology surrounding each article. From Talk and Discussion Pages to the Edit History of an entry, and from each editor's user page to the analysis of the process of content creation as it unravels and matures over time, the necessity of studying the structure and networked content of Wikipedia with appropriate digital methods that are put forward by the project itself is made apparent. In other words, the nature of Wikipedia as a web project spearheads the requisite demand for it to be analyzed with techniques that "follow the medium" (Rogers 2009).

According to the medium-specific web epistemology advanced by the Digital Methods Initiative, research could be thought of as the practice of "exploiting" computing techniques and appropriating them for research, as well as comprehending online environments not only as digital objects of study, but also as sources of study. Web epistemology as methodology is considered highly advantageous due to its proximity to the ecology of digital objects, which enables this type of research to illustrate the structure and dynamics of the medium and/or the digital subject matter of analysis (Rogers 2009). In the present study, the Digital Methods model of studying the Web was used in the development of a research design and methodology and in the employment of digital tools, which we will elaborate on in the following section.

Research conducted on the Wikipedia entry of Norman Finkelstein took on a multilayered approach. Maintaining a digital methods approach, results were obtained by studying the patterns that underlie user activity within the project. In an attempt to examine the dynamics and collaboration between editors and the mechanisms that

mobilize them to produce and protect content, we deconstructed the history and discussion page of the article. The development of the entry's content – as the result of an intricate process of collaboration between Wikipedia actors – was the main focus of our study. Finally, we sought to establish the synergy of the social and technological aspects of Wikipedia's system as it is represented through the scope of our article of choice.

| PROCEDURES |

The present research focused on collecting and analyzing the metadata made available about the Wikipedia entry for Norman Finkelstein. The complete set of 2972 edits was explored, in order to better understand the evolution of the content as it gained in quality and quantity. A statistical overview of the page's growth, number of registered and anonymous users was examined through the Article Revision Statistics Tool and the History Flow Visualization. While implementing these tools, the profiles of the top users were studied and cross-examined with results from the Contributors Wikipedia application. Also, patterns of editing in regard to the location of anonymous users were unveiled by analyzing their digital traces (geo-locating their IPs and examining their overall activity within Wikipedia). Furthermore, an analysis of Norman Finkelstein's article as it occurred throughout the Discussion Page, as well as in the article archives, was conducted for frequency of relevant keywords and for behavior dynamics between different categories of editors. Additionally, bot activity and prevalence of semi- and fully-automated tools was analyzed in order to assess the connections between vandalism, the technological factor of bot activity, and collaboration.

| TOOLS |

// Contributors //

The Contributors tool (http://toolserver.org/~daniel/WikiSense/Contributors.php) can be employed to study the revision history of a page, in the words of its creator, with "options for sorting, filtering, grouping and different output formats" (ibid). It works by retrieving results from the Edit History of the entry over time, creating a list of contributors, and indexing, for each one, the number of changes they performed in the article and the timeframe within which they were active on the page. Furthermore, its feature of

distinguishing human from non-human editors, and anonymous from registered users, proved itself particularly helpful for our study. In this study, the Contributors tool was used for creating a list of the top editors of Finklestein's Wikipedia entry and determining the number of bots and unregistered editors on the page (findings deriving from this tool were cross-examined with the Article revision statistics tool).

// Article Revision Statistics //

The Article revision statistics tool (http://toolserver.org/~soxred93/articleinfo/index.php), developed by Wikipedia's user X!, allows the researcher to view statistical data of an entry as well as to visualize certain aspects of that data via graphs and charts. More specifically, the findings of the tool upon a given Wikipedia entry demonstrate general statistics of the page such as: edit counts per month and year, edits over time, the article size as it evolves over time and the top 50 users according to the number of edits. While mapping the ecology of Norman Finkelstein's Wikipedia entry, the tool succeeded in presenting a clear-cut image of the statistics of the entry as well as the activity of this entry's top editors.

// Wikipedia Edits Scraper and IP Localizer //

Created by the Digital Methods Initiative, the Wikipedia Edits Scraper and IP localizer's function is to provide a complete edit history of a given Wikipedia article (http://wiki.digitalmethods.net/Dmi/ToolWikipediaEditsScraperAndIPLocalizer). Its novelty lies in the fact that the outcome includes data about the anonymous users that were found to be editing the article at some point of the entry's history. Their IPs are tracked down to the level of the country and city of origin, which allows us to explore editing patterns on certain controversial topics on a geographical level. While investigating the revised history of the article of Norman Finkelstein within Wikipedia, edits made by anonymous users were uncovered and characterized by the country and city from where the IP address originated.

// Wikipedia Bot Edits Scraper //

The Wikipedia Bot Edits scraper (http://wiki.digitalmethods.net/Dmi/ToolWikipediaBotEditsScraper) works by scraping the Edit history of a Wikipedia entry and returning only those changes found to be

performed by bots or by human editors with assistant software. By elucidating the scope and depth of bot editing of the entry under investigation, we managed to learn more about whether, and to what extent, there is a socio-technical system of collaboration unfolding within Wikipedia.

// History Flow Visualization and History Flow Visualization Companion //

The History Flow Visualization application, developed by IBM (http://www.research.ibm.com/visual/projects/history_flow/), is a piece of software that can be employed to collect large amounts of data and illustrate them in dynamic charts. However, while deconstructing the entry of Norman Finkelstein using the visualizations produced via the History Flow Visualization tool, we found that the tool returned a limited amount of information, by only visualizing a random set of 100 continuous edits. In an attempt to further explore the entire edit history on Finkelstein's entry an additional tool was applied. The "History Flow Companion" (http://tools.digitalmethods.net/beta/wikipediaHistoryFlowCompanion/), designed by the Digital Methods Initiative, chronologically separates the entire edit history in batches of 100 edits, and thus, allowed us to visualize the entire edit activity of the article.

// Wikipedia entry (Discussion/Talk Pages, Archived Index, Edit History) //

The aforementioned tools employed in the study were combined with a thorough study of the main layers that embrace any Wikipedia entry: the Discussion Page and the Edit History feature of the article. An added feature displayed in the entry on Norman Finkelstein is the Index of the Discussion page, an ongoing listing of all the subjects of discussion as well as the number of users engaged in each discussion since the beginning of the article to the present. In our case, this Index was used as an indicative tool that portrayed the actual concerns of the entry's editors. Further exploring the Discussion page, we conducted a word count of a number of significant keywords (NPOV, revert, vandal, bias, source, original research, WP:OR, WP:BLP, WP: NOR) for the purpose of determining the frequency of each, and therefore, the importance and emphasis placed on each issue. Apart from the visualizations from History Flow Visualization Tool and the 'scraped' outcome of the Wikipedia Edit Scraper and IP Localizer, past versions of the

article were analyzed in order to collect edits relevant to vandalism efforts, bot editing and the effort to maintain the NPOV.

| DATA |

Overall, the data obtained throughout the present study is generally estimated to be valid and reliable, as the data outputs of the tools were cross-examined for verification. A discussion of this data will follow in the next section of the study.
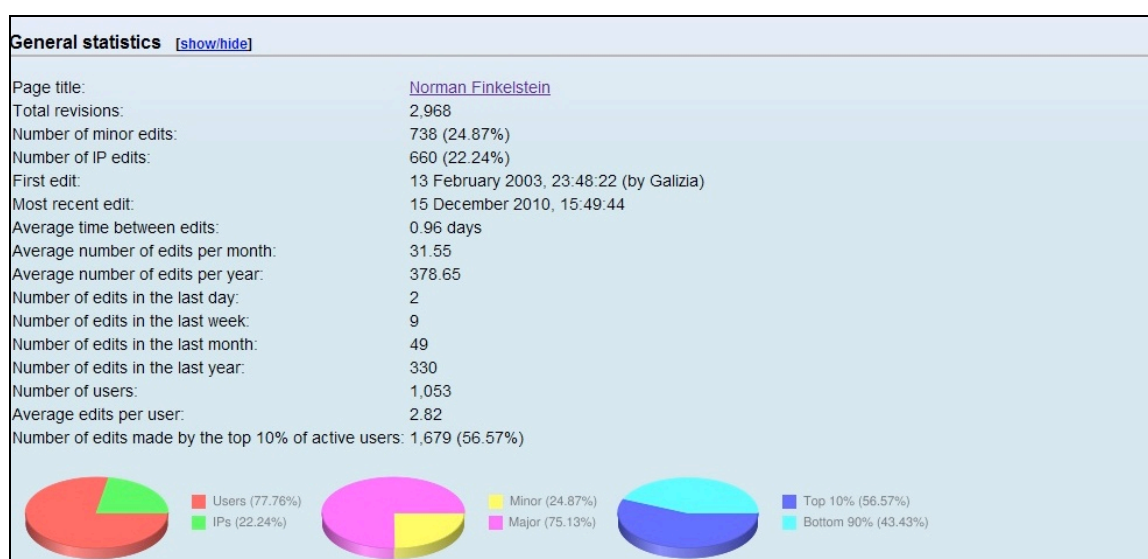

Figure1. General statistics for Wikipedia: Norman_Finkelstein

The Wikipedia entry for Norman Finkelstein was edited 2972 to date and has grown over time, reaching a size of 3060 KB and a 7590 word-count. In order to analyze its trajectory, the information available through the edit history and discussion page of the article was cross-examined with statistical analysis for page activity, editor activity and top editors' activity. The Article Revision Statistics tool revealed that out of a total of 1055 editors in the article's full history, 77.76% (819) were registered users and 22.24% (236) anonymous editors (Figure 1). The results from the Wikipedia Bot Edits Scraper revealed that throughout the article's lifespan 135 changes to the article were performed by bots or by human editors using semi-automated tools.

Out of the 2972 changes to the article, 75.13% were major edits, while 24.87% of them were minor. According to the statistics, the top 10% users are responsible for

56.57% of changes to the page. Regarding edit history, statistics show that the most edited years within the period of 2003-2010 were 2006, 2007 and 2008. In 2006, 625 modifications of the page's content occurred, out of which 260 were assigned to anonymous editors. In 2007, the year in which most number of edits was performed, more than 620 edits took place, 75 of them anonymous. Also, September 2007 holds the record for the month with the biggest number of changes throughout the history of the article, which is the most edited month in the history of the article (189 edits). In 2008, the number of anonymous edits remained at a relatively low level: 75 out of the overall 620 edits. An interesting finding is that in a one-year period between April 2009 and May 2010 the entry was changed only 123 times (For the precise number of edits per month, including number of edits per user, please see Appendix).

In an attempt to reveal the profiles of human editors of the article, the user pages of the top 49 users (the odd number is due to a malfunction of the Article Revision Statistics tool that removed the 50th user) over the last seven years were studied. We found that most of the top users have extensive knowledge of the Arab-Israeli conflict, Middle-East controversy and other issues related to Israel-Palestine debates, and were involved in editing entries that were directly related to the Arab/Israeli theme.

The IPs of anonymous users were found to be located mainly in the United States, Canada, The Netherlands and Israel. When we analyzed the actual edits by these users within the article for Norman Finkelstein, we found that most of the edits coming from anonymous users in Canada and Israel were later categorized as vandalism and subsequently reverted. Vandalism of the entry across the entire edit history ranges from adding obscene words or deleting content, to the use of sock puppets (fake IPs and usernames of the same user) as means of stalking senior editors and administrators. Repeated vandalism or violation of Wikipedia policies and rules led to the page being protected (meaning that anonymous users were blocked from editing the entry) three times across its history: in July 2007-September 2007, April 2008- July 2008 and May 2009- June 2010. Currently, editors of this article are restricted to 1-edit every 24 hours.

The keyword analysis of the Discussion Page of the article and its six archives revealed that the users active in the discussion are frequently debating Wikipedia's policies and regulations: overall, the term *POV (WP:POV)* (referring to NPOV) was brought up 243 times, *Source*- 418 times, *Original research (WP:OR)*- 120 times and Biography *of living person (WP:BLP):* 105 times.

| DISCUSSION |

Figure 2. Top editors for Wikipedia: Norman_Finkelstein

Analysis of the collected data on our chosen subject on Wikipedia produced interesting findings, some of which are consistent with the studies presented in the literature reviewed for the purpose of this article. By investigating the activity of the top editors of the entry, we found that the top five users were responsible for a significant percentage of the edits – 12.81% (Figure 2.). Both this finding and the fact that the top 10% editors of the article were authors of 56.56% of the changes in the edit history closely match Jimbo Wales' estimation that over 50% of all edits within Wikipedia are done by 0.7 of users. (Wales, qtd. in Swartz, 2006, qtd. in Niederer and van Dijck, 2010)

When analyzing the overall edit history of the article per year (Figure 3.), we were intrigued by the high number of edits in the article between 2006 and 2008. Content analysis of these edits revealed that the increased activity was due to controversial events related to Norman Finkelstein that were taking place, and being depicted in the media, at the time. The investigation of editing patterns and talk pages brought to light how the growing debate around Norman Finkelstein also reached the Wikipedia community and began to be shaped by it. What we find interesting is that on more than one occasion, Wikipedians reports on important unfolding of the subject even before mainstream media. For example, in June 2007, Finkelstein was denied tenure at DePaul University, where at

the time he worked as an assistant Professor. The media speculated that the decision was influenced by Finkelstein's views on Israel and the matter got substantial attention in the press. However, the news of tenure denial appeared on Wikipedia days before it was featured in reputable journals and newspapers, such as The Guardian. The same pattern is observed in 2008: on the 23rd of May, Israel denied Finkelstein entry into its territory, invoking security reasons. Two days later, on the 25th of May, this information was added to the Wikipedia article. The Guardian reported on it on the 27th of May.
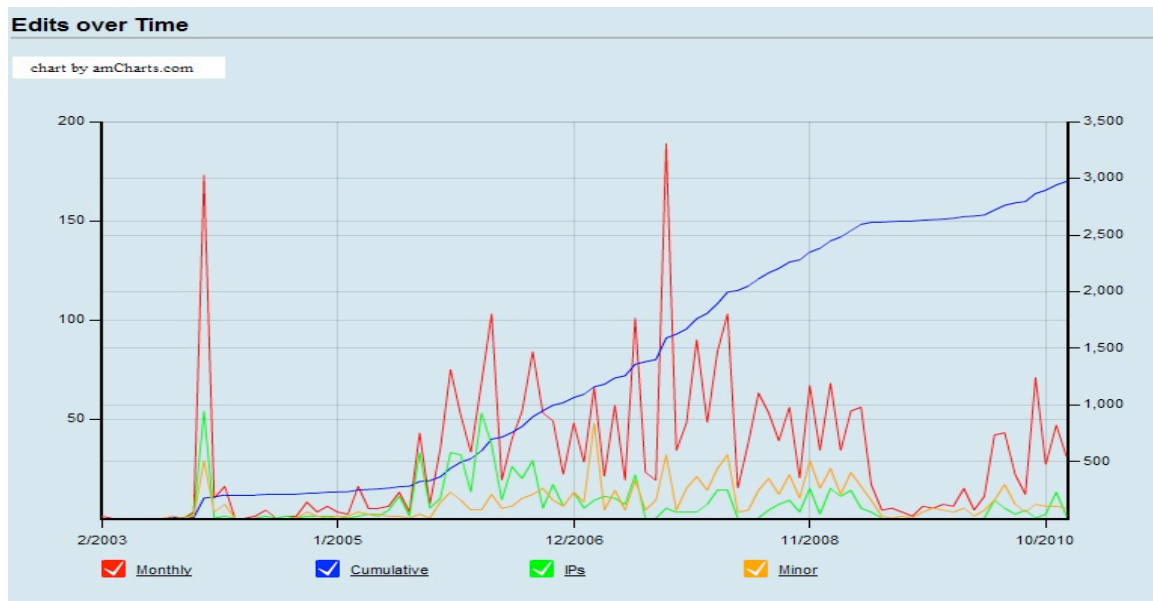

Figure 3. Edit history of Wikipedia:Norman_Finkelstein

The massive growth in article content during 2006 and 2007 led to it being nominated for the Wikipedia: Good Article (WP:GA) category in autumn 2007. In order to receive the status of WP:GA, an article has to meet several criteria: it has to be well written, factually accurate, and verifiable and broad in coverage – all while maintaining a neutral point of view and remaining stable in content. (http://en.wikipedia.org/wiki/Wikipedia:Good_article_criteria) The article failed the first nomination in October 2007, as it did not meet the NPOV criterion, but was granted the GA status two months later. The collaborative effort to achieve this nomination and maintain it demonstrates once again the fight for NPOV as well as the existence of a strong community of users.
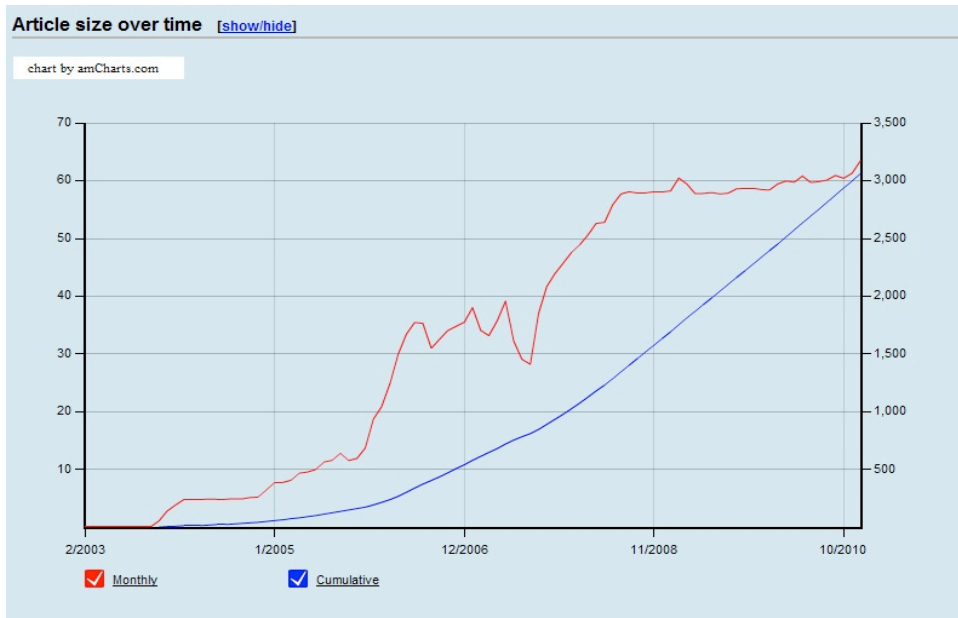
Figure 4. Article size over time

Between May 2009 and May 2010, we noticed a dramatic decrease in number of changes to the article. We found that the reason for the change in dynamics of the page was due to the protection of the entry for one year (until June 2010), following a sockpuppet attack in April 2009. These unfortunate episodes of repeated vandalism allowed us to isolate, explore and draw conclusions about the behavior and role of registered users and, by comparison with timeframes when the article was not protected, theorize on the behavior of anonymous editors. Our most surprising finding is that although the number of changes to the page was very low, the size of the entry in Kilobytes (KB) increased by almost 40% from April 2009 to May 2010 (Figure 4). However, the word-count of the entry remained relatively unchanged. We therefore assign the increase in size to changes in the formatting of the article. Once anonymous users were blocked from editing the article and the entry was less vulnerable to vandal attacks, the registered editors could dedicate their time to fixing errors in formatting which had been overlooked, since the matter of fighting repeated vandalism bared more urgency. This is consistent with the findings of Kittur et al. (2007) about conflict and coordination costs in Wikipedia.

General statistics

Page title:	Talk:Norman Finkelstein
Total revisions:	1,435
Number of minor edits:	167 (11.64%)
Number of IP edits:	90 (6.27%)
First edit:	04 December 2003, 22:24:26 (by Leumi)
Most recent edit:	17 December 2010, 16:10:54
Average time between edits:	1.79 days
Average number of edits per month:	16.99
Average number of edits per year:	203.88
Number of edits in the last day:	0
Number of edits in the last week:	3
Number of edits in the last month:	104
Number of edits in the last year:	273
Number of users:	209
Average edits per user:	6.87
Number of edits made by the top 10% of active users:	899 (62.65%)

Users (93.73%)   IPs (6.27%)   Minor (11.64%)   Major (88.36%)   Top 10% (62.65%)   Bottom 90% (37.35%)
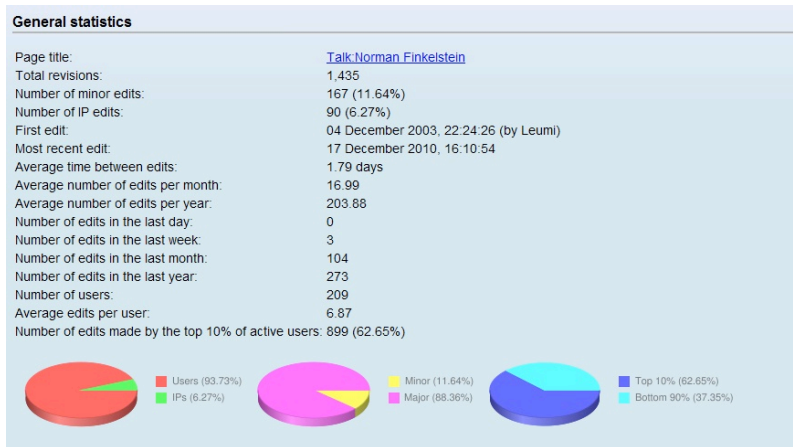
Figure 5. General statistics of Wikipedia: Talk: Norman_Finkelstein

The statistics for the talk page of the entry (Figure 5.) also revealed that 93.73% of the users active in the discussion are registered users and the keyword count showed considerable interest and debate about Wikipedia's rules and principles (Figure 6.).

POV (243)   Revert (110)   Source (418)   WP:OR (120)   WP:BLP (105)
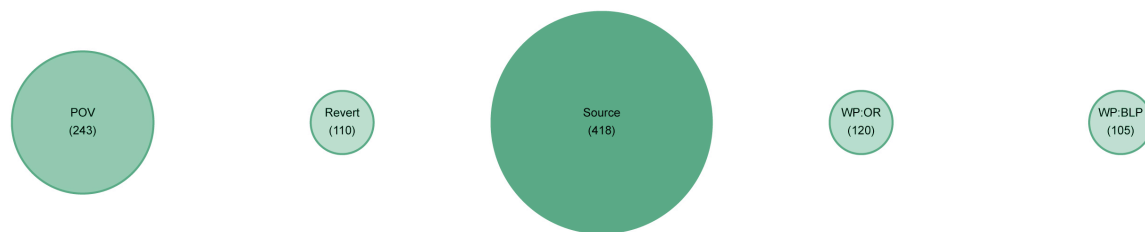
Figure 6. Keyword frequency in Wikipedia: Talk: Norman_Finkelstein

Further support of this finding and of how seriously policies are taken and enforced is demonstrated in July 2007, when Norman Finkelstein's entry was protected for the first time, following repeated violations of the WP:BLP policy. By contrast, the scarcity of anonymous user presence in the discussion page denotes that anonymous users are more interested in the actual encyclopedic content of Wikipedia than in the rules and collaborative aspects of the project. This is made even clearer when we examine the transformation of the article in a time of prolific anonymous user activity and contrast it with the changes of 2009-2010. In the first half of 2006, for instance, 53.9 % of the 315 entry edits were assigned to anonymous users. In January 2006, the size of the article was 192 KB and the word-count of the entry was at 1997 words. In July 2006, it had already reached a size of 337 KB and 4410 words. Why, then, with such important contributions in creating valid content from anonymous users, would the system block them from an article in the building of which they were so profoundly involved? It seems that

anonymous users are the outcasts of Wikipedia: as they are at the bottom of the Wikipedia hierarchy, they have the fewest rights from all categories of users and are therefore affected by most of its restrictions; this is also in line with the hierarchy structure reviewed by Niederer and van Dijck's (2009) research. These users are viewed with suspicion, as likely to create chaos in the system — and subsequently, assistant editor tools treat anonymous users as more probable candidates for vandalism than newly registered users and present their edits for review first. Ultimately, Wikipedia advertises itself as an open encyclopedia that anyone can edit, encouraging users who do not want to register for an account to get involved in the project by contributing anonymously. Yet, if one anonymous user does wreak havoc in one entry, all other anonymous editors will suffer the consequences and be blocked from further contributing to that article.

As far as anonymous editors who create chaos go, the geo-locating of the IPs of unregistered editors and the edit history did reveal that some had, indeed, damaged the page by different means. Given Norman Finkelstein's controversial political beliefs, it is rather plausible that anonymous users from Israel tried to change the page and push their own views, by accusing Finkelstein of being a fraud and a liar. A surprising finding is that most anonymous editors who had a Canadian IP had their changes reverted, as they were either in violation of Wikipedia policies or engaged in repeated vandalism. Norman Finkelstein is especially controversial in Canada, and on more than one occasion lectures that he gave at Canadian universities sparked demonstrations from Israeli-supporter student groups. We also managed to uncover the fact that on May 30th, 2010, user *77.246.75.133*, who's IP was located in Lebanon, edited the article by doubling the number of Lebanese casualties in Israel's bombing of Qana on July 30th, 2006 (Figure 7.). We find that when it comes to controversial issues, Wikipedia is transformed into a place for dispute and debate, where each side tries to enforce its own agenda. Fortunately, their efforts are made obsolete by a complex network of content vigilantes and the erroneous content is usually removed in a matter of minutes.

Figure 7. Anonymous edit from Lebanese IP.

After careful analysis, we can state that all the patterns of vandalism described by Priedhorsky et al. were applicable to at least one instance of vandalism discovered in the history of the article – both from registered and unregistered users. A particularly interesting case is that of user *Runtshit* who has been stalking RolandR – one of the top editors of this article for years – and creating more than 1200 usernames and IPs in order to insert offensive content in all entries for which RolandR is listed as a watcher. The decision to protect the page in March 2008 was taken as a result of a massive sockpuppet attack by this vandal. Interesting enough, one of the Israeli anonymous editors we found in the edit history was using an educational IP from the University of Haifa (*132.74.99.84*), which we later traced to being a sockpuppet of user Runtshit.

After having exposed these examples of relentless vandalism, it seems implausible that controversial Wikipedia articles could be kept from descending into chaos without the deployment of automated tools that provide speedy alerts and fixes. While the administrative bots involved with this entry are generally assigned tasks such as fixing formatting, adding and removing templates and categories, or linking to Norman Finkelstein entries in other languages (except for ClueBot, which is a vandal fighter bot), we found that top users are using software in order to manage the content of the page and review the latest changes brought to it. The most used tools were Auto Wiki Browser (AWB) for managing and creating content and Twinkle and Huggle, for reviewing edits and fighting vandalism. Although the data showed that bot and tool activity in this particular entry is significantly smaller than Geiger's estimation of 12 % of all edits –

only 4.5% of the changes to the page were made by bots or by human editors using assistant tools — the importance of this software in managing the content and the different layers of Wikipedia cannot be ignored or underestimated.

It is apparent from our analysis that careful consideration and effort by the Wikipedia community is invested into maintaining the principles and policies of Wikipedia. The page stats, the edit history and discussion logs show that the structure and administrative aspects of the page are being debated at length, framing Wikipedia to emerge as a locus for discussion of conflicting social and political views. This being the case, the debate sometimes spills into the actual article and is translated into what can be described as "edit wars" where one or more sides advance certain points of view. Thankfully, these situations are rapidly handled and the concerned community restores NPOV. Except for maintaining NPOV, dealing with recurring vandalisms in the entry attests to be a frequent task for the administrators and editors, one for which the use of automated tools proves to be more efficient, both in terms of time and effort.

There are limitations to our study, so the results should be interpreted with care and by further investigation. Not all of the edit history could be analyzed, as a considerable number of pages have been deleted. The discussion logs are also incomplete – the archive for November 2008 – April 2009 could not be retrieved.

| **CONCLUSION** |

In this paper we sought to unmask the inner workings of a free online encyclopedia most average users take for granted. Within the theoretical framework initially presented, we have discovered that what lies beneath the surface is a complex and multi-layered system that accredits the online encyclopedia as a real-time avenue for debate. We have found that the fundamental ecology of Wikipedia facilitates a structured and interrelated environment of self-assigned participatory culture, and what could be a chaotic system — particularly when it comes to controversial issues — is avoided by strict protocols that guide and sustain the roles that contributors and members of the Wikipedia community take on. Our multi-modal digital methods approach that analyzed a case study of controversy within Wikipedia highlighted the very layers that shape an article from dispute to resolution. By examining the metadata layers — that range from edit history

and user pages to multiple levels of discussion and talk pages — our research allowed us to map controversy and moments of resolution, and overall, allowed us to establish methods that can be used to explore Wikipedia disputes where societal controversies are reflected. In this regard, our study contributes new research detailing the particulars of controversy as it is manifested through the systems of Wikipedia. The investigation of both the human and non-human agents that make up a Wikipedia article traced the unfolding of the different strata and nodes of this network and allowed us to deconstruct the dynamics of the symbiotic collaboration among vigilante users that mobilizes them to produce and protect content, fight for quality, and eradicate vandalism surrounding controversy — all while upholding Wikipedia's policies. Our analysis of user behavior, as it interrelates with a technological framework of protocols, establishes and redefines Wikipedia as a dynamic socio-technical system that more closely resembles a closely-knit community bound by principles and rules that are upheld by community members. Wikipedia has forever changed the way people come together and the many intricate facets that enable this crowd-sourced feat should be further studied, particularly research that focuses on exploring online communities.

[To further illustrate our study, this research paper includes a multi-media presentation of our findings, available at: http://www.youtube.com/watch?v=51DhybfgXk0]

| BIBLIOGRAPHY |

- Chesney, T. (2006). "An empirical examination of Wikipedia's credibility". *First Monday*, 11(11), November.

- Cohen, N. (2009). *Wikipedia: Exploring Fact City*. NYTimes.com. Web. 09 December 2010.

- Digital Methods Initiative. (2008). Digital Methods Wiki, http://digitalmethods.net/, Web. 22 December, 2010.

- Garnham, N. (1992). The media and the public sphere. In C. Calhoun (Ed.), *Habermas and the Public Sphere* (pp. 359-376). Cambridge, MA: MIT Press.

- Geiger, S. T. and Ribes, D. *The Work of Sustaining Order in Wikipedia: The Banning of a Vandal.* Proceedings of the 2010 ACM conference on Computer supported cooperative work, February 06-10, 2010, Savannah, Georgia, USA: 117-125

- Habermas, J. (1962/1989). *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society.* Cambridge, MA: MIT Press.

- Kellner, D. (n.d). *Habermas, the Public Sphere, and Democracy: A Critical Intervention.* Web. 19 December, 2010.

- Kittur, A., Suh, B., Pendleton, B.A., and Chi, E.H. (2007) *He says, she says: conflict and coordination in Wikipedia*. Proceedings of CHI 2007, ACM (2007): 453-462.

- Niederer, S. and van Dijck, J. (2009). "The case of Wikipedia: Wisdom of the crowd or technicity of content?" *New Media & Society*, forthcoming.

- Olleros, X. (2008). *Learning to Trust the Crowd: Some Lessons from Wikipedia.* 2008 International MCETECH Conference on e-Technologies: 212-216.

- O'Sullivan, D. *Wikipedia: a new community of practice?* (2009). Surrey, England. Ashgate Publishing.

- Pnina, S. and Hara, N. (2010). "Beyond vandalism: Wikipedia trolls". *Journal of Information Science.* 2010 36: 357-370.

- Poor, N. (2005). Mechanisms of an online public sphere: The website Slashdot. *Journal of Computer-Mediated Communication, 10*(2), article 4. Web. 19 Dec, 2010.

- Priedhorsky, R. Chen, J. Lam, S. K., Panciera,K. Terveen,L. and Riedl, J. (2007). *Creating, destroying, and restoring value in Wikipedia*. In GROUP '07: Proc. of the 2007 ACM Conference on Supporting Group Work: 259–268.

- Reagle, J.M. (2008). In good faith: Wikipedia and the pursuit of the universal encyclopedia, PhD dissertation, New York University, pp. 70-102.

- Research.ibm.com, History Flow Visualization tool, http://www.research.ibm.com/visual/projects/history_flow/, Web. 22 December 2010.

- Rogers, R. (2009). "The end of the virtual". Digital Methods. Inaugural Lecture. 8 May 2009. Web. 19 December, 2010

- Smets, K., Goethals, B., and Verdonk, B. (2008). *Automatic Vandalism Detection in Wikipedia: Towards a Machine Learning Approach.* In AAAI Workshop on Wikipedia and Artificial Intelligence: 43–48.

- Digital Methods Initiative, History Flow Companion Tool, http://tools.digitalmethods.net/beta/wikipediaHistoryFlowCompanion/ , Web. 22 December 2010.

- Toolserver.org 2010, Article revision statistics, http://toolserver.org/~soxred93/articleinfo/index.php ,Web. 22 December 2010

- Toolserver.org. Contributors . http://toolserver.org/~daniel/WikiSense/Contributors.php.Web. 22 December 2010

- Tkacz, N. (2010). Wikipedia and the politics of mass collaboration. *Journal of Media and Communication*: Volume 2, Issue 2. Web. Decemberember 19, 2010.

- West, A.G. Kannan, S., and Lee, I. (2010) *Detecting Wikipedia vandalism via spatio-temporal analysis of revision metadata*. Proceedings of the Third European Workshop on System Security 2010, Paris, France: 22-28

- Digital Methods Initiative. Wikipedia Bot Edits Scraper. http://wiki.digitalmethods.net/Dmi/ToolWikipediaBotEditsScraper , Web. 22 December 2010.

- Digital Methods Initiative. Wikipedia Edits Scraper and IP Localizer. http://wiki.digitalmethods.net/Dmi/ToolWikipediaEditsScraperAndIPLocalizer Web. 22 December 2010.

- Wikimedia.org, User groups. http://meta.wikimedia.org/wiki/User_groups, Web. 19 December 2010.
- Wikipedia.org, Biographies of Living Persons. http://en.wikipedia.org/wiki/Wikipedia:Biographies_of_living_persons, Web. 19 December 2010.
- Wikipedia.org, Bots. http://en.wikipedia.org/wiki/Wikipedia:Bots, Web. 19 December 2010.
- Wikipedia.org, Editing frequency. http://en.wikipedia.org/wiki/Wikipedia:Editing_frequency/All_bots , Web. 19 December 2010.
- Wikipedia.org, Good Articles. http://en.wikipedia.org/wiki/Wikipedia:Good_articles, Web. 19 December 2010.
- Wikipedia.org, List of Bots by number of edits. http://en.wikipedia.org/wiki/Wikipedia:List_of_bots_by_number_of_edits, Web. 19 December 2010.
- Wikipedia.org, List of Policies. http://en.wikipedia.org/wiki/Wikipedia:List_of_policies, Web. 19 December 2010.
- Wikipedia.org, Policies and Guidelines. http://en.wikipedia.org/wiki/Wikipedia:Policies_and_guidelines, Web. 19 December 2010.
- Wikipedia.org, The role of policies in collaborative anarchy. http://en.wikipedia.org/wiki/Wikipedia:The_role_of_policies_in_collaborative_anarchy, Web. 19 December 2010.
- Wikipedia.org, Vandalism. http://en.wikipedia.org/wiki/Wikipedia:Vandalism, Web. 19 December 2010.

| APPENDIX |

1. **Number of edits per month. (overall, anonymous & minor)**

Number of Edits per month per year			
Month	**# of edits**	**IPs**	**Minor**
feb.03	1	0 (0.00%)	0 (0.00%)
mar.03	0	0 (0%)	0 (0%)
apr.03	0	0 (0%)	0 (0%)
mai.03	0	0 (0%)	0 (0%)
iun.03	0	0 (0%)	0 (0%)
iul.03	0	0 (0%)	0 (0%)
aug.03	0	0 (0%)	0 (0%)
sep.03	1	0 (0.00%)	1 (100.00%)
oct.03	0	0 (0%)	0 (0%)
nov.03	3	2 (66.67%)	1 (33.33%)
dec.03	173	54 (31.21%)	29 (16.76%)
Month	# of edits	IPs	Minor
ian.04	10	0 (0.00%)	3 (30.00%)
feb.04	16	1 (6.25%)	7 (43.75%)
mar.04	0	0 (0%)	0 (0%)
apr.04	0	0 (0%)	0 (0%)
mai.04	1	0 (0.00%)	0 (0.00%)
iun.04	4	1 (25.00%)	0 (0.00%)
iul.04	0	0 (0%)	0 (0%)
aug.04	1	1 (100.00%)	0 (0.00%)
sep.04	1	0 (0.00%)	0 (0.00%)
oct.04	8	1 (12.50%)	3 (37.50%)

Month	# of edits	IPs	Minor
nov.04	3	1 (33.33%)	1 (33.33%)
dec.04	6	1 (16.67%)	0 (0.00%)
Month	# of edits	IPs	Minor
ian.05	3	1 (33.33%)	1 (33.33%)
feb.05	2	0 (0.00%)	1 (50.00%)
mar.05	16	1 (6.25%)	3 (18.75%)
apr.05	5	2 (40.00%)	2 (40.00%)
mai.05	5	1 (20.00%)	2 (40.00%)
iun.05	6	4 (66.67%)	1 (16.67%)
iul.05	13	11 (84.62%)	1 (7.69%)
aug.05	3	1 (33.33%)	0 (0.00%)
sep.05	43	33 (76.74%)	2 (4.65%)
oct.05	7	5 (71.43%)	0 (0.00%)
nov.05	35	10 (28.57%)	8 (22.86%)
dec.05	75	33 (44.00%)	13 (17.33%)
Month	# of edits	IPs	Minor
ian.06	52	32 (61.54%)	9 (17.31%)
feb.06	33	13 (39.39%)	4 (12.12%)
mar.06	68	53 (77.94%)	4 (5.88%)
apr.06	103	37 (35.92%)	12 (11.65%)
mai.06	19	9 (47.37%)	5 (26.32%)
iun.06	40	26 (65.00%)	6 (15.00%)
iul.06	54	20 (37.04%)	10 (18.52%)

Month	# of edits	IPs	Minor
aug.06	84	29 (34.52%)	12 (14.29%)
sep.06	53	5 (9.43%)	15 (28.30%)
oct.06	49	17 (34.69%)	9 (18.37%)
nov.06	22	6 (27.27%)	6 (27.27%)
dec.06	48	13 (27.08%)	13 (27.08%)
Month	# of edits	IPs	Minor
ian.07	28	5 (17.86%)	8 (28.57%)
feb.07	66	9 (13.64%)	48 (72.73%)
mar.07	21	11 (52.38%)	4 (19.05%)
apr.07	57	10 (17.54%)	14 (24.56%)
mai.07	19	7 (36.84%)	4 (21.05%)
iun.07	101	22 (21.78%)	19 (18.81%)
iul.07	23	0 (0.00%)	4 (17.39%)
aug.07	19	0 (0.00%)	9 (47.37%)
sep.07	189	5 (2.65%)	32 (16.93%)
oct.07	34	3 (8.82%)	4 (11.76%)
nov.07	48	3 (6.25%)	15 (31.25%)
dec.07	90	3 (3.33%)	21 (23.33%)
Month	# of edits	IPs	Minor
ian.08	48	7 (14.58%)	14 (29.17%)
feb.08	84	14 (16.67%)	25 (29.76%)
mar.08	103	14 (13.59%)	32 (31.07%)
apr.08	15	0 (0.00%)	3 (20.00%)

Month	# of edits	IPs	Minor
mai.08	38	0 (0.00%)	4 (10.53%)
iun.08	63	0 (0.00%)	14 (22.22%)
iul.08	53	4 (7.55%)	20 (37.74%)
aug.08	39	7 (17.95%)	12 (30.77%)
sep.08	56	9 (16.07%)	22 (39.29%)
oct.08	20	3 (15.00%)	10 (50.00%)
nov.08	67	15 (22.39%)	29 (43.28%)
dec.08	34	2 (5.88%)	15 (44.12%)
Month	# of edits	IPs	Minor
ian.09	68	15 (22.06%)	25 (36.76%)
feb.09	34	11 (32.35%)	12 (35.29%)
mar.09	54	14 (25.93%)	23 (42.59%)
apr.09	56	5 (8.93%)	16 (28.57%)
mai.09	17	3 (17.65%)	9 (52.94%)
iun.09	4	0 (0.00%)	1 (25.00%)
iul.09	5	0 (0.00%)	0 (0.00%)
aug.09	3	0 (0.00%)	1 (33.33%)
sep.09	1	0 (0.00%)	0 (0.00%)
oct.09	6	0 (0.00%)	3 (50.00%)
nov.09	5	0 (0.00%)	5 (100.00%)
dec.09	7	0 (0.00%)	4 (57.14%)
Month	# of edits	IPs	Minor
ian.10	6	0 (0.00%)	3 (50.00%)

feb.10	15	0 (0.00 %)	5 (33.33%)
mar.10	4	0 (0.00 %)	1 (25.00%)
apr.10	11	0 (0.00 %)	4 (36.36%)
mai.10	42	9 (21.43%)	9 (21.43%)
iun.10	43	5 (11.63%)	17 (39.53%)
iul.10	22	2 (9.09 %)	7 (31.82%)
aug.10	12	4 (33.33%)	3 (25.00%)
sep.10	71	0 (0.00 %)	7 (9.86%)
oct.10	27	2 (7.41 %)	6 (22.22%)
nov.10	47	13 (27.66%)	6 (12.77%)
dec.10	31	1 (3.23 %)	5 (16.13%)

2. Bot and assisting software activity on N. Finkelstein's entry

Edit	Date	User/Bot URL	Size of edit	Content	Assisting software
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=400531233	4 December 2010	http://en.wikipedia.org/wiki/User:EdJohnston	(64,593 bytes)	(Changed protection level of Norman Finkelstein: WP:AE discussion now over. Everyone, please don't cause this article to return to AE ([move=autoconfirmed] (indefinite)))	

http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=399938552	1 December 2010	http://en.wikipedia.org/wiki/User:Cydebot	(64,578 bytes)	(Robot - Moving category Polish American Jews to American people of Polish-Jewish descent per CFD at Wikipedia:Categories for discussion/Log/2010 November 18.)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=398983501	26 November 2010	http://en.wikipedia.org/wiki/User:H3llBot	(62,622 bytes)	(BOT: Moved archive url to archive fields)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=398549375	24 November 2010	http://en.wikipedia.org/wiki/User:Chzz	(62,646 bytes)	(Reverted edits by 128.151.91.93 (talk) to last revision by ClueBot NG (HG))	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=398100763	21 November 2010	http://en.wikipedia.org/wiki/User:ClueBot_NG	(62,646 bytes)	(Reverting possible vandalism by 192.240.82.17 to version by Delia Peabody. Questions, comments, complaints -> BRFA Thanks, ClueBot NG. (50418) (Bot))	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=391151296	17 October 2010	http://en.wikipedia.org/wiki/User:Avoided	(61,188 bytes)	(Reverted edits by 147.9.230.154 (talk) to last revision by Xqbot (HG))	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=389586939	8 October 2010	http://en.wikipedia.org/wiki/User:Xqbot	(61,188 bytes)	(robot Modifying: eo:Norman Finkelstein)	

http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=387782168	29 September 2010	http://en.wikipedia.org/wiki/User:RjwilmsiBot	(61,193 bytes)	(→Tenure denial and resignation: CiteCompletion, {{dead link}}s: 1 using AWB (7192))	AWB (7192
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=384527321	13 September 2010	http://en.wikipedia.org/wiki/User:Luckas-bot	(61,629 bytes)	(robot Adding: eo:Finkelstein Gary Norman)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=377559693	6 August 2010	http://en.wikipedia.org/wiki/User:SmackBot	(61,521 bytes)	(Date maintenance tags and general fixes: build 441:)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=373399918	14 July 2010	http://en.wikipedia.org/wiki/User:Cydebot	(61,285 bytes)	(Robot - Moving category Polish-American Jews to Polish American Jews per CFD at Wikipedia:Categories for discussion/Log/2010 June 16.)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=370029782	25 June 2010	http://en.wikipedia.org/wiki/User:Nableezy	(61,241 bytes)	(Revert to revision 369728211 dated 2010-06-23 12:35:55 by 98.14.31.203 using popups)	popups
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=368595919	17 June 2010	http://en.wikipedia.org/wiki/User:ClueBot	(61,184 bytes)	(Reverting possible vandalism by Akiva orr to version by Zzuuzz. False positive? Report it. Thanks, ClueBot. (634288) (Bot))	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=367025857	9 June 2010	http://en.wikipedia.org/wiki/User:Koavf	(61,163 bytes)	(→Video: {{good article}} using AWB)	AWB

http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=366354441	6 June 2010	http://en.wikipedia.org/wiki/User:GargoyleBot	(60,650 bytes)	(→Video: overturn per DRV)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=366141369	5 June 2010	http://en.wikipedia.org/wiki/User:LinkFA-Bot	(60,663 bytes)	(Bot: Link GA +uk)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=365237003	31 May 2010	http://en.wikipedia.org/wiki/User:Rajah	(61,984 bytes)	(adding persondata using User:Dr pda/persondata.js)	User:Dr pda/persondata.js
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=364844218	29 May 2010	http://en.wikipedia.org/wiki/User:Rjwilmsi	(61,693 bytes)	(cite date format fixes (trailing punctuation), replaced: |date=30 March 2001. → |date=30 March 2001 (2) using AWB)	AWB
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=363206347	20 May 2010	http://en.wikipedia.org/wiki/User:RjwilmsiBot	(61,974 bytes)	(CiteCompletion, dates: 1, locations: 1, works/pubs: 1, authors: 1, using AWB)	AWB
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=362314956	15 May 2010	http://en.wikipedia.org/wiki/User:Cydebot	(62,023 bytes)	(Robot - Speedily moving category Polish-American Jews to American Jews of Polish descent per CFD.)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=360896871	8 May 2010	http://en.wikipedia.org/wiki/User:DumbBOT	(61,931 bytes)	(removing a protection template from a non-protected page (info))	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=357921770	23 April 2010	http://en.wikipedia.org/wiki/User:FrescoBot	(60,936 bytes)	(Bot: links syntax and spacing)	

http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=344438258	16 February 2010	http://en.wikipedia.org/wiki/User:AndersBot	(61,132 bytes)	(robot Adding: da:Norman Finkelstein)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=342361436	6 February 2010	http://en.wikipedia.org/wiki/User:BD2412	(59,784 bytes)	(Fixing links to disambiguation pages, improving links, other minor cleanup tasks, replaced: M.A. → M.A. using AWB)	AWB
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=341933783	4 February 2010	http://en.wikipedia.org/wiki/User:Luckas-bot	(59,754 bytes)	(robot Adding: ca:Norman Finkelstein)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=335866219	4 January 2010	http://en.wikipedia.org/wiki/User:Cydebot	(59,813 bytes)	(Robot - Speedily moving category Jewish Peace Activists to Jewish peace activists per CFD.)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=334922403	30 December 2009	http://en.wikipedia.org/wiki/User:AndersBot	(59,813 bytes)	(robot Adding: sk:Norman Finkelstein)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=328190095	27 November 2009	http://en.wikipedia.org/wiki/User:Full-date_unlinking_bot	(59,853 bytes)	(Unlinking full-dates. Details here. Codes: AMreg(×30), BRreg(×12))	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=325501089	12 November 2009	http://en.wikipedia.org/wiki/User:Rjwilmsi	(60,188 bytes)	(citation fixes (volume=vol...) using AWB)	AWB
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=324624792	8 November 2009	http://en.wikipedia.org/wiki/User:Luckyz	(60,103 bytes)	(Disambiguate El Mundo to El Mundo (Spain) using popups)	popups

http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=300492130	5 July 2009	http://en.wikipedia.org/wiki/User:AnomieBOT	(59,041 bytes)	(Rescuing orphaned refs ("menetrez1" from rev 296975303))	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=291293777	21 May 2009	http://en.wikipedia.org/wiki/User:Cydebot	(58,882 bytes)	(Robot - Removing category Jewish American activists per CFD at Wikipedia:Categories for discussion/Log/2009 May 6.)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=288232420	6 May 2009	http://en.wikipedia.org/wiki/User:Eleland	(59,067 bytes)	(Undid (DePiep) - you can drop the viceregal tone, please, and the sentence is mainfestly POV, since the books got both + and - reviews according mainly to partisanship)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=288016325	5 May 2009	http://en.wikipedia.org/wiki/User:Zzuuzz	(59,244 bytes)	(Reverted edits by 67.215.242.75 (talk) to last version by DumZiBoT)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=287576589	3 May 2009	http://en.wikipedia.org/wiki/User:DumZiBoT	(59,244 bytes)	(robot Adding: pt:Norman Finkelstein)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=284894675	19 April 2009	http://en.wikipedia.org/wiki/User:Drilnoth	(59,041 bytes)	(Code cleaned up using CodeFixer)	CodeFixer
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=284778958	19 April 2009	http://en.wikipedia.org/wiki/User:Docu	(59,046 bytes)	(clean up using AWB)	AWB

http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=284192794	16 April 2009	http://en.wikipedia.org/wiki/User:Mashkin	(59,048 bytes)	(Moved to a more appropriate location in the article. There is a contradiction between the reasons given by various parties, Reported both)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=283240456	11 April 2009	http://en.wikipedia.org/wiki/User:Rjwilmsi	(59,143 bytes)	(→Personal background and education: Typo fixing + Check Wikipedia fixes: using AWB)	AWB
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=283075682	10 April 2009	http://en.wikipedia.org/wiki/User:Rjwilmsi	(58,832 bytes)	(Typo fixing + Check Wikipedia fixes: using AWB)	AWB
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=276710366	12 March 2009	http://en.wikipedia.org/wiki/User:Ian_Pitchford	(61,191 bytes)	(clean up, typos fixed: politicial → political using AWB)	AWB
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=275130595	5 March 2009	http://en.wikipedia.org/wiki/User:E_Wing	(61,119 bytes)	(Reverted 1 edit by Stalynutsy identified as vandalism to last revision by Avruch. using TW)	TW
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=267171303	29 January 2009	http://en.wikipedia.org/wiki/User:AnomieBOT	(61,237 bytes)	(Rescuing orphaned refs ("NYBx" from From Time Immemorial))	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=267161594	29 January 2009	http://en.wikipedia.org/wiki/User:AnomieBOT	(61,013 bytes)	(Rescuing orphaned refs ("Exchange" from rev 267160303))	

http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=267160303	29 January 2009	http://en.wikipedia.org/wiki/User:Ciaccona	(59,776 bytes)	(Reverted 1 edit by 174.34.138.212 identified as vandalism to last revision by 128.189.190.78. using TW)	TW
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=262296338	6 January 2009	http://en.wikipedia.org/wiki/User:Camw	(59,365 bytes)	(Reverted edits by Gallowaysbooger to last version by Zorrobot (HG))	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=262091871	5 January 2009	http://en.wikipedia.org/wiki/User:Zorrobot	(59,365 bytes)	(robot Modifying: uk:Норман Фінкельштейн)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=258613078	17 December 2008	http://en.wikipedia.org/wiki/User:DumbBOT	(59,372 bytes)	(removing a protection template from a non-protected page (info))	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=257047156	10 December 2008	http://en.wikipedia.org/wiki/User:SmackBot	(59,392 bytes)	(Date maintenance tags and general fixes)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=254430665	27 November 2008	http://en.wikipedia.org/wiki/User:LovesMacs	(59,322 bytes)	(Reverted 1 edit by Icepick 49 identified as vandalism to last revision by Peter cohen. using TW)	TW
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=254029459	25 November 2008	http://en.wikipedia.org/wiki/User:Ironholds	(59,322 bytes)	(Reverted 1 edit by Trotskyrein3 identified as vandalism to last revision by Bonadea. using TW)	TW
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=252777488	19 November 2008	http://en.wikipedia.org/wiki/User:Blueboy96	(59,544 bytes)	(Reverted edits by Robotcom33 (talk) to last version by Molotron)	
deleted	19 November 2008	http://en.wikipedia.org/wiki/User:Robotcom33		(Undid revision 252755119 by Molotron (talk))	

http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=247230526	23 October 2008	http://en.wikipedia.org/wiki/User:2D	(59,191 bytes)	(Reverted edits by Suppresstreason to last version by DumZiBoT (HG))	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=246000227	17 October 2008	http://en.wikipedia.org/wiki/User:DumZiBoT	(59,191 bytes)	(robot Adding: it:Norman G. Finkelstein)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=240068341	21 September 2008	http://en.wikipedia.org/wiki/User:FF2010	(59,213 bytes)	(adding {{pp-dispute|expiry={{subst:#time:F j, Y|+1 week}}|small=yes}} using TW)	TW
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=240068309	21 September 2008	http://en.wikipedia.org/wiki/User:FF2010	(59,162 bytes)	(Protected Norman Finkelstein: : Full protection: Dispute. using TW ([edit=sysop] (indefinite) [move=sysop] (indefinite)))	TW ([edit=sysop] (indefinite
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=239544641	19 September 2008	http://en.wikipedia.org/wiki/User:J_Readings	(59,480 bytes)	(Reverted 1 edit by Azvas7 identified as vandalism to last revision by Depaulicize. using TW)	TW
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=237891494	12 September 2008	http://en.wikipedia.org/wiki/User:Stephenb	(59,161 bytes)	(Reverted 1 edit by Gag on rance. using TWINKLE)	TWINKLE
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=232811950	19 August 2008	http://en.wikipedia.org/wiki/User:ClueBot	(59,467 bytes)	(Reverting possible vandalism by Rants defeated to version by StaticGull. False positive? Report it. Thanks, User:ClueBot. (463415) (Bot))	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=230702087	8 August 2008	http://en.wikipedia.org/wiki/User:CJCurrie	(59,467 bytes)	(Reverted edits by Farmer joshjo (talk) to last version by DumZiBoT)	

http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=230688966	8 August 2008	http://en.wikipedia.org/wiki/User:DumZiBoT	(59,467 bytes)	(Bot: Converting bare references, using ref names to avoid duplicates, see FAQ)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=229219268	1 August 2008	http://en.wikipedia.org/wiki/User:DumbBOT	(59,306 bytes)	(removing a protection template from a non-protected page (info))	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=226686356	19 July 2008	http://en.wikipedia.org/wiki/User:J.delanoy	(59,217 bytes)	(Reverted edits by 221.2.73.229 to last version by DVD R W (using Huggle))	Huggle
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=225000745	11 July 2008	http://en.wikipedia.org/wiki/User:SJP	(59,133 bytes)	(Reverted edits by Chewdiss to last version by Oxymoron83 (using Huggle))	Huggle
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=224988861	11 July 2008	http://en.wikipedia.org/wiki/User:Oxymoron83	(59,133 bytes)	(Reverted edits by Chewthisrunce (talk) to last version by Kbdankbot)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=224849464	10 July 2008	http://en.wikipedia.org/wiki/User:Kbdankbot	(59,133 bytes)	(Robot - remove category per CFD 2008 July 2)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=224379245	8 July 2008	http://en.wikipedia.org/wiki/User:J.delanoy	(58,878 bytes)	(Reverted edits by Imprisonroland to last version by Species8473 (using Huggle))	Huggle
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=224307421	8 July 2008	http://en.wikipedia.org/wiki/User:Species8473	(58,878 bytes)	(Reverted edits by Greensteintony to last version by Btharper1221 (using Huggle))	Huggle
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=224087813	7 July 2008	http://en.wikipedia.org/wiki/User:RyanCross	(58,878 bytes)	(Revert to revision 223993600 dated 2008-07-06 21:25:05 by Wybot using popups)	popups

http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=223993600	6 July 2008	http://en.wikipedia.org/wiki/User:Wybot	(58,878 bytes)	(robot Modifying: fr:Norman G. Finkelstein)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=223905762	6 July 2008	http://en.wikipedia.org/wiki/User:Epbr123	(58,875 bytes)	(Reverted edits by 66.232.124.17 to last version by Tombomp (using Huggle))	Huggle
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=223791157	5 July 2008	http://en.wikipedia.org/wiki/User:Tombomp	(58,875 bytes)	(Reverted edits by Blowmerancie2 to last version by RolandR (using Huggle))	Huggle
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=223491333	4 July 2008	http://en.wikipedia.org/wiki/User:RolandR	(58,875 bytes)	(Reverted 1 edit by Beheadrrance10 identified as vandalism to last revision by Lightbot. (TW))	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=223375533	3 July 2008	http://en.wikipedia.org/wiki/User:Lightbot	(58,875 bytes)	(Units/dates/other)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=223039856	2 July 2008	http://en.wikipedia.org/wiki/User:DumbBOT	(58,882 bytes)	(removing a protection template from a non-protected page (info))	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=222078627	27 June 2008	http://en.wikipedia.org/wiki/User:Nathan	(58,906 bytes)	(Reverted to revision 219997482 by SmackBot; please propose your edits on the talkpage, you've introduced some POV interpretation as well as a number of spelling and grammar errors. (TW))	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=219997482	17 June 2008	http://en.wikipedia.org/wiki/User:SmackBot	(58,906 bytes)	(Date the maintenance tags or general fixes)	

http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=202060883	30 March 2008	http://en.wikipedia.org/wiki/User:Coffee	(53,022 bytes)	(Reverted edits by Lickprik rrance (talk) to last version by EjsBot)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=201601915	28 March 2008	http://en.wikipedia.org/wiki/User:EjsBot	(53,022 bytes)	(robot Adding: fi:Norman Finkelstein)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=200842711	25 March 2008	http://en.wikipedia.org/wiki/User:DumZiBoT	(52,989 bytes)	(Bot: Converting bare references, see FAQ)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=197944033	13 March 2008	http://en.wikipedia.org/wiki/User:Werdan7	(52,286 bytes)	(Reverted edits by Smash therance (talk) to last version by ClueBot)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=197943788	13 March 2008	http://en.wikipedia.org/wiki/User:ClueBot	(52,286 bytes)	(Reverting possible vandalism by Smash therance to version by NSH001. False positive? report it. Thanks, User:ClueBot. (273762) (Bot))	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=197768296	12 March 2008	http://en.wikipedia.org/wiki/User:ClueBot	(52,286 bytes)	(Reverting possible vandalism by Rolandsukks to version by J Readings. False positive? report it. Thanks, User:ClueBot. (272493) (Bot))	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=196807147	8 March 2008	http://en.wikipedia.org/wiki/User:Seraphim	(49,461 bytes)	(Reverted 1 edit by Arrest traitor rance to last version by BetacommandBot)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=196302282	6 March 2008	http://en.wikipedia.org/wiki/User:BetacommandBot	(49,461 bytes)	(Reverted edits by BetacommandBot (talk) to last version by Jules1236)	

http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=195704513	4 March 2008	http://en.wikipedia.org/wiki/User:BetacommandBot	(49,388 bytes)	(removing Category:Hunter_College_faculty)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=195704486	4 March 2008	http://en.wikipedia.org/wiki/User:BetacommandBot	(49,424 bytes)	(removing Category:Brooklyn_College_faculty)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=190207322	9 February 2008	http://en.wikipedia.org/w/index.php?title=User:RandomXYZb&action=edit&redlink=1	(48,278 bytes)	(Reverted edits by Atzmons revenge (talk) to last version by VolkovBot)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=190157211	9 February 2008	http://en.wikipedia.org/wiki/User:VolkovBot	(48,278 bytes)	(robot Adding: ar:نورمان فنكلستين)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=179440010	21 December 2007	http://en.wikipedia.org/wiki/User:Nathan	(48,339 bytes)	(Reverted to revision 179201322 by RSRScrooge; reverting IP vandalism. using TW)	TW
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=176351261	7 December 2007	http://en.wikipedia.org/wiki/User:SmackBot	(48,038 bytes)	(Date/fix the maintenance tags or gen fixes using AWB)	AWB
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=176224481	6 December 2007	http://en.wikipedia.org/wiki/User:Andyvphil	(47,774 bytes)	(→The follow up: Again, a CV. Appropriate and helpful id for a name, I think, pending replacement by a blue or external bio article link, both to be preferred.)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=176159067	6 December 2007	http://en.wikipedia.org/wiki/User:Ling.Nut	(46,509 bytes)	(typo in +"praised Finkelstein's achievements as both a scholar and educator.")	

http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=176158841	6 December 2007	http://en.wikipedia.org/wiki/User:Ling.Nut	(46,506 bytes)	(+ "praised Finkelstein's achievements as both a scholar and educator.")	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=175479644	3 December 2007	http://en.wikipedia.org/wiki/User:SmackBot	(44,974 bytes)	(Date/fix the maintenance tags or gen fixes using AWB)	AWB
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=175176622	2 December 2007	http://en.wikipedia.org/wiki/User:Chase_me_ladies,_I%27m_the_Cavalry	(45,602 bytes)	(adding {{pp-dispute}} using TW)	TW
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=175176614	2 December 2007	http://en.wikipedia.org/wiki/User:Chase_me_ladies,_I%27m_the_Cavalry	(45,587 bytes)	(Protected Norman Finkelstein: Full protection: Dispute, editors are having a revert war, and need a rest until they can come up with a solution on the talk page. using TW [edit=sysop:move=sysop])	TW[edit=sysop:move=sysop]
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=174172706	27 November 2007	http://en.wikipedia.org/wiki/User:RolandR	(45,597 bytes)	(Reverted 1 edit by 128.241.109.204; Removing irrelevant link. using TW)	TW
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=168623508	2 November 2007	http://en.wikipedia.org/wiki/User:RolandR	(43,833 bytes)	(Reverted 2 edits by Andyvphil; No, I don't have to ask Bogdanor anything. Provide a source, not a hostile alleged source. using TW)	TW
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=168289617	31 October 2007	http://en.wikipedia.org/wiki/User:NSH001	(43,832 bytes)	(Revert to revision 168284425 dated 2007-10-31 12:03:39 by SmackBot using popups)	popups

http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=168284425	31 October 2007	http://en.wikipedia.org/wiki/User:SmackBot	(43,832 bytes)	(Date/fix the maintenance tags or gen fixes)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=162960164	7 October 2007	http://en.wikipedia.org/wiki/User:SmackBot	(41,645 bytes)	(Date/fix the maintenance tags or gen fixes)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=161223227	30 September 2007	http://en.wikipedia.org/wiki/User:Thijs!bot	(42,124 bytes)	(robot Adding: es:Norman Finkelstein)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=159725925	23 September 2007	http://en.wikipedia.org/wiki/User:AMbot	(40,802 bytes)	(clean up and re-categorisation per CFD September 16 , removed Category:Anti-Zionists)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=158780702	18 September 2007	http://en.wikipedia.org/wiki/User:RolandR	(40,930 bytes)	(Reverted 2 edits by DePaul Liberator identified as vandalism to last revision by Nishidani. using TW)	TW
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=157918469	14 September 2007	http://en.wikipedia.org/wiki/User:SmackBot	(39,156 bytes)	(Date/fix the maintenance tags or gen fixes)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=156889464	10 September 2007	http://en.wikipedia.org/wiki/User:Nishidani	(31,221 bytes)	(→Finkelstein on From Time Immemorial: Early consolidate bibliographical notes to the bottom of the page, as earlier version mislead one into thinking the text ended much earlier)	

http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=156094442	6 September 2007	http://en.wikipedia.org/wiki/User:SmackBot	(30,702 bytes)	(Date/fix the maintenance tags or gen fixes)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=150514186	11 August 2007	http://en.wikipedia.org/wiki/User:Maelgwnbot	(28,725 bytes)	(Bot: Updating template fields)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=143306656	8 July 2007	http://en.wikipedia.org/wiki/User:RolandR	(28,163 bytes)	(Reverted 1 edit by Adam Holland to last revision by G-Dett; It wasn't vandalism, and the editor did give an explanation in Talk, to which nobody has responded. using TW)	TW
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=140946234	27 June 2007	http://en.wikipedia.org/wiki/User:Chobot	(30,480 bytes)	(robot Adding: fr:Norman Finkelstein)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=140572448	25 June 2007	http://en.wikipedia.org/wiki/User:Jayjg	(29,874 bytes)	(It *was* explained, at length, both in Talk: page discussion and in edit summaries. This is a WP:BLP violation, and 3RR doesn't apply. My next step is to protect the article.)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=140564020	25 June 2007	http://en.wikipedia.org/wiki/User:Jayjg	(29,874 bytes)	(Reverted edits by 89.102.7.146 (talk) to last revision by Shadowbot)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=140499738	25 June 2007	http://en.wikipedia.org/wiki/User:AntiSpamBot	(29,874 bytes)	(BOT--Reverting edits by Kretcherer to revision 140402642 (buggerance\.blogspot\.com))	

http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=137501512	11 June 2007	http://en.wikipedia.org/wiki/User:Shrike	(40,291 bytes)	(Revert to revision 137397893 dated 2007-06-11 05:41:57 by Yamamoto Ichiro using popups)	popups
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=121503822	9 April 2007	http://en.wikipedia.org/wiki/User:SmackBot	(37,049 bytes)	(Date/fix the maintenance tags)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=118141257	27 March 2007	http://en.wikipedia.org/wiki/User:Hersfold	(35,219 bytes)	(Revert to revision 118101209 dated 2007-03-26 21:29:40 by Danski14 using popups)	popups
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=113025801	6 March 2007	http://en.wikipedia.org/wiki/User:PDFbot	(35,212 bytes)	(Updating filesize for external links tagged with {{PDFlink}})	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=107725501	13 February 2007	http://en.wikipedia.org/wiki/User:JhsBot	(38,536 bytes)	(robot Adding: uk:Фінкельштейн Норман)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=106811039	9 February 2007	http://en.wikipedia.org/wiki/User:SmackBot	(38,524 bytes)	(Date/fix maintenance tags)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=97907801	2 January 2007	http://en.wikipedia.org/wiki/User:FlaBot	(38,579 bytes)	(robot Adding: sv:Norman Finkelstein)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=95066504	18 December 2006	http://en.wikipedia.org/wiki/User:CJCurrie	(35,838 bytes)	(Reverted edits by Scott Adler (talk) to last version by SmackBot)	
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=94895604	17 December 2006	http://en.wikipedia.org/wiki/User:SmackBot	(35,838 bytes)	(Date the maintenance tags using AWB)	AWB

http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=87655370	14 November 2006	http://en.wikipedia.org/wiki/User:Alphachimpbot	(34,931 bytes)	(BOT - updating merge tag using AWB)	[AWB](#)
http://en.wikipedia.org/w/index.php?title=Norman_Finkelstein&oldid=77667939	25 September 2006	http://en.wikipedia.org/wiki/User:A.J.A.	(33,448 bytes)	(→Finkelstein and the Anti-Defamation League: per WP:MOS, in stages to avoid cutting off the bottom of the article)	

3. History Flow Visualization (text changes from 2003 to 2010)
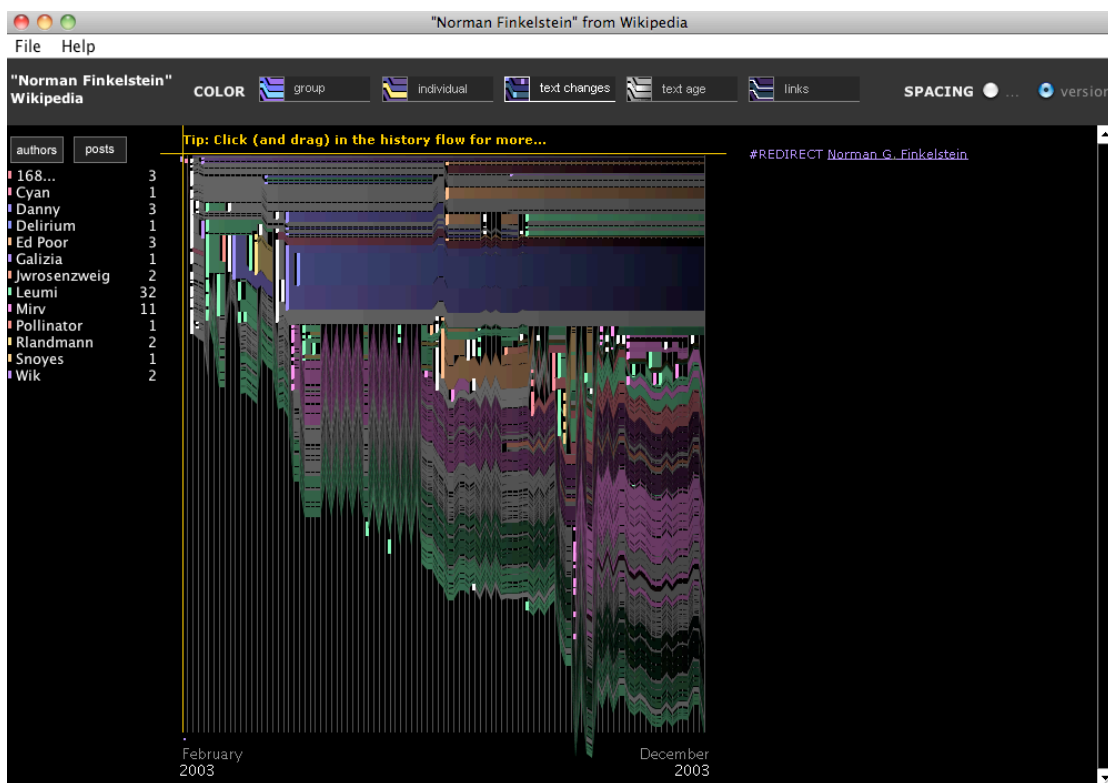
1. February 2003- December 2003
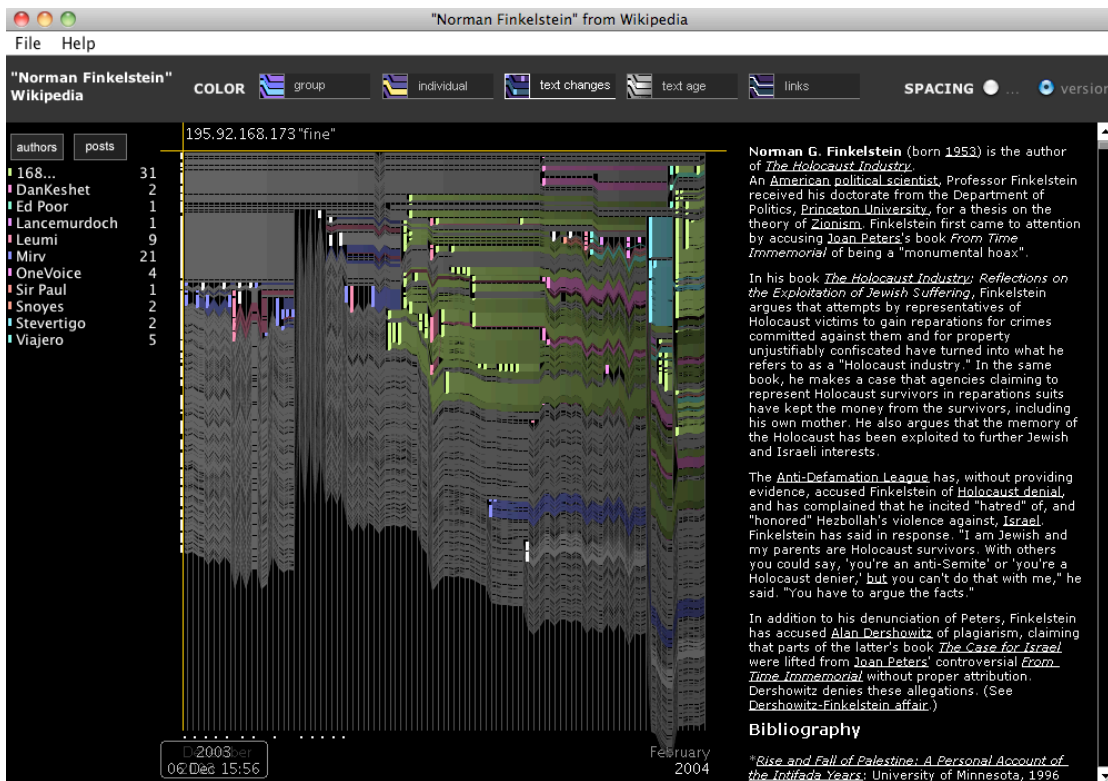
2. December 2003- February 2004
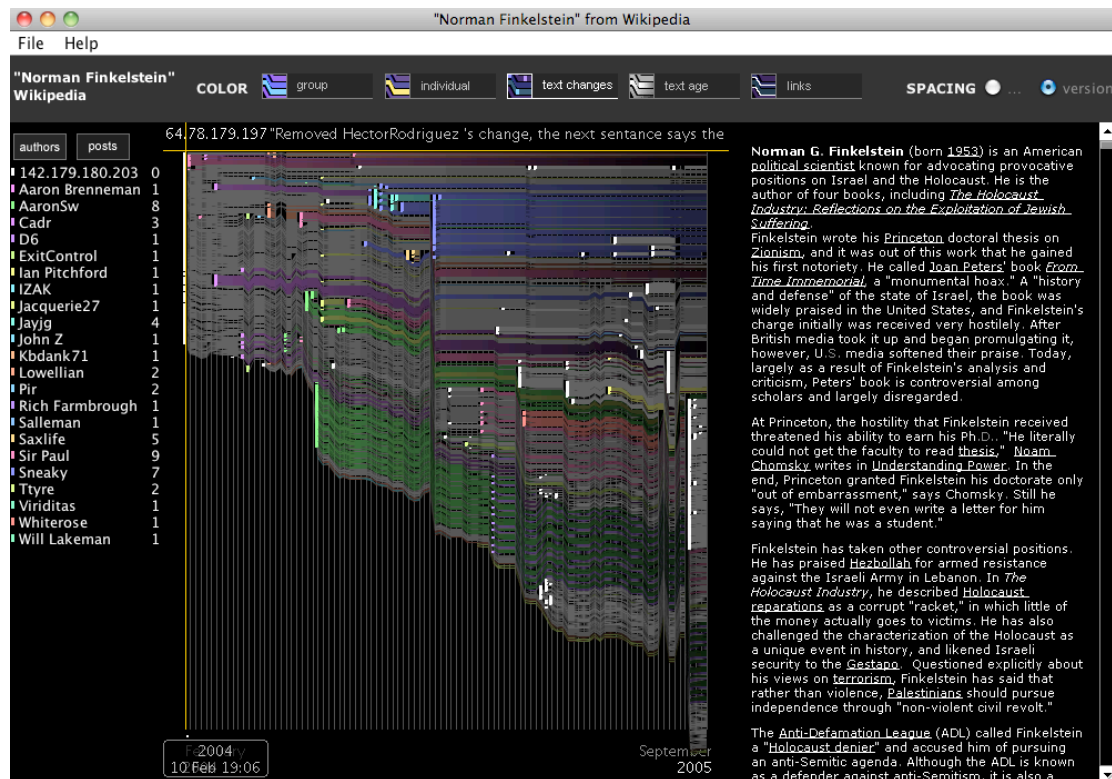
3. February 2004-September 2005
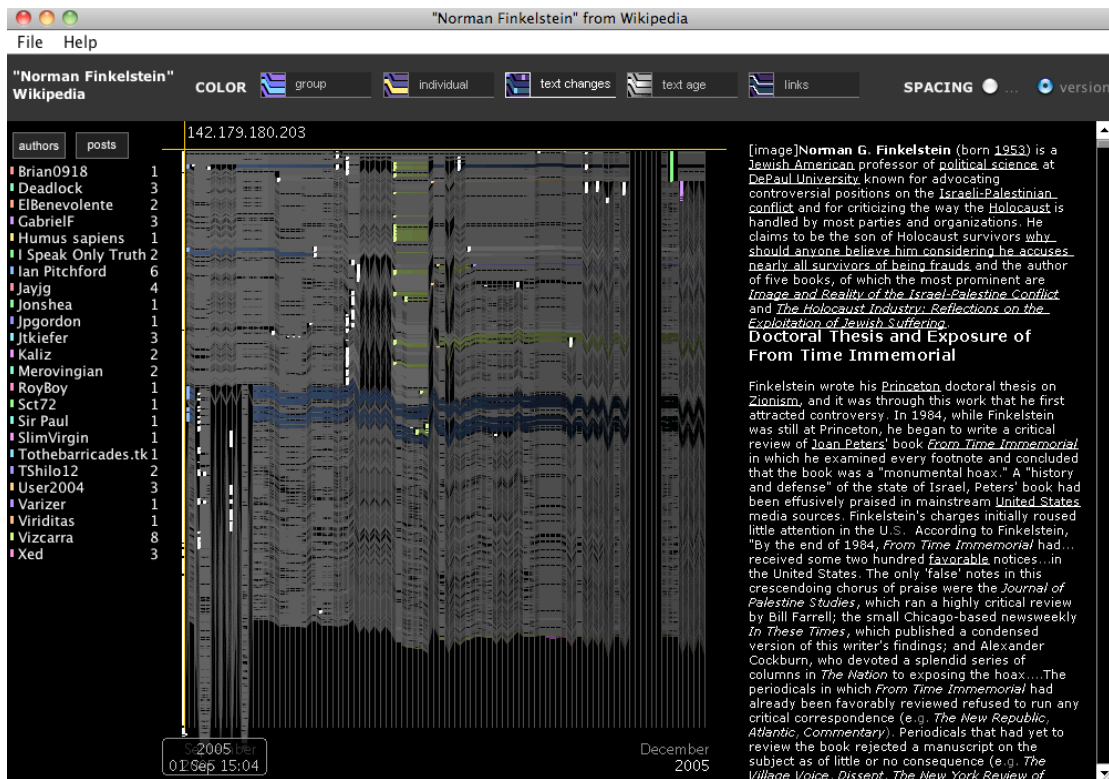
4. September 2005- December 2005.
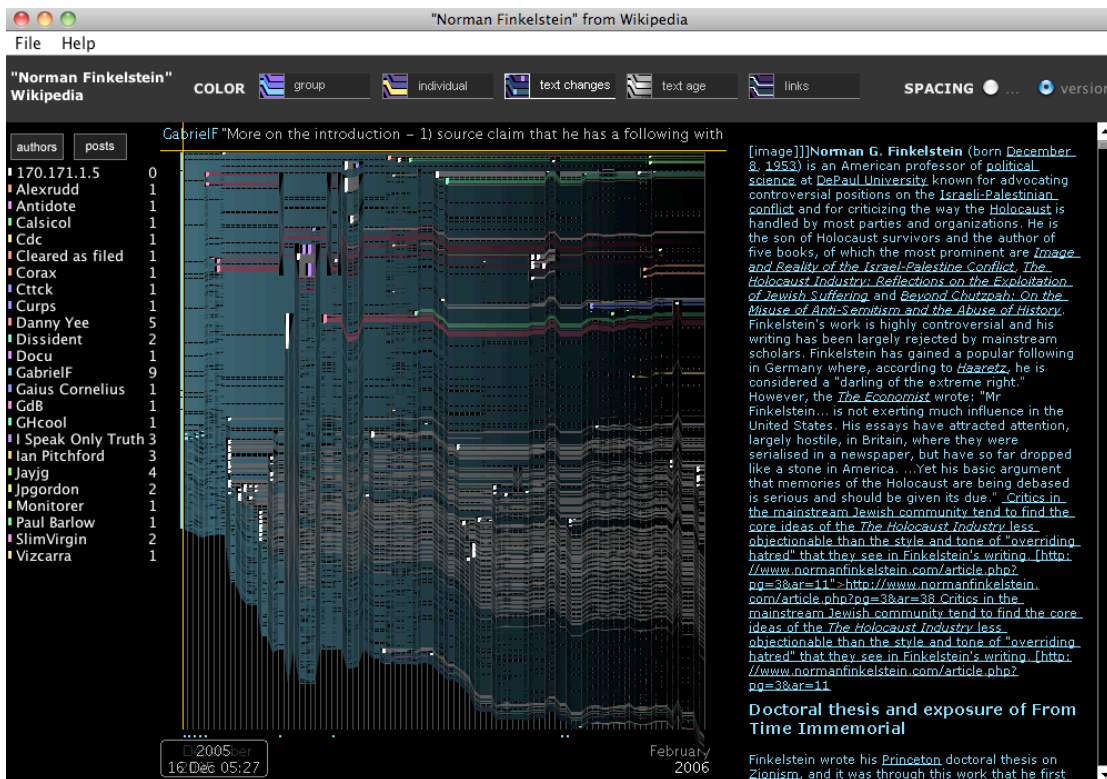
5. December, 2005- February, 2006
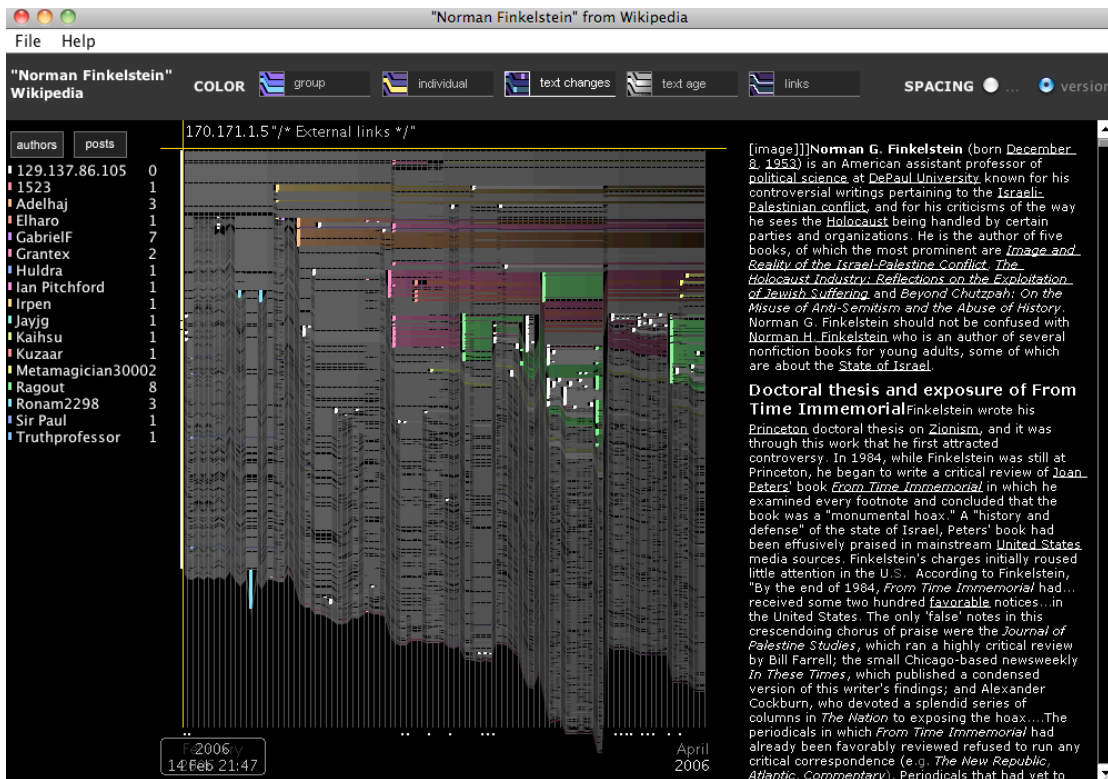
6. February, 2006- April, 2006
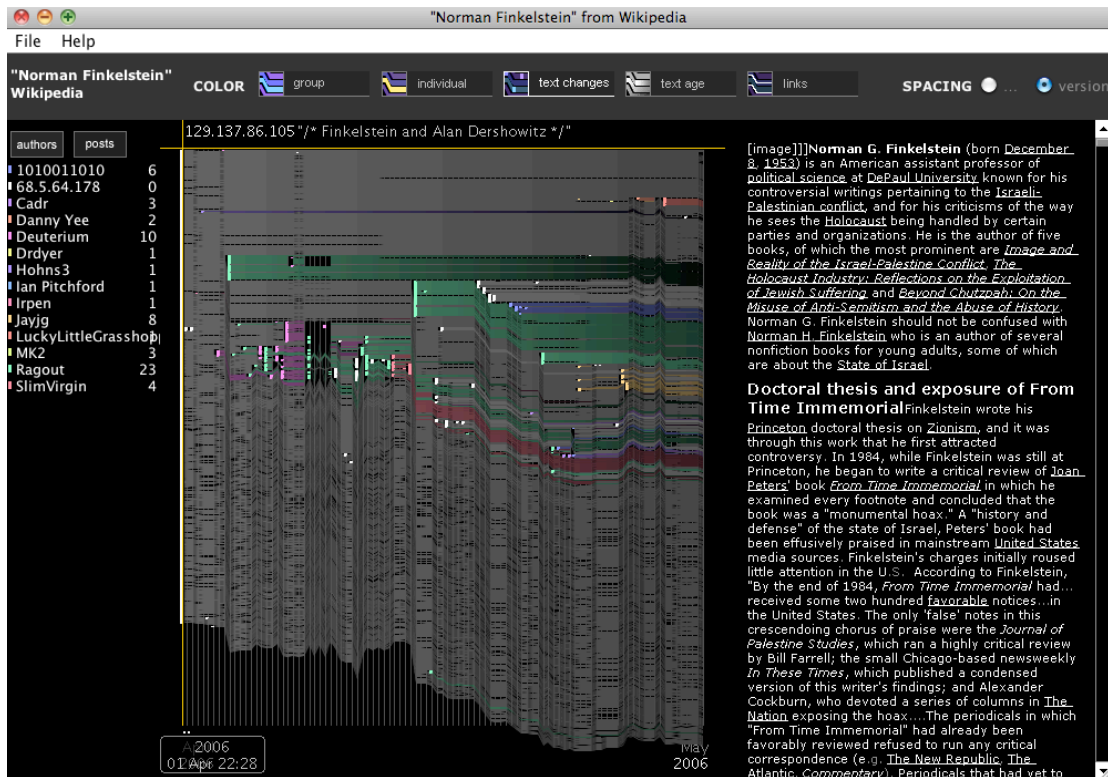
7. April, 2006- May, 2006
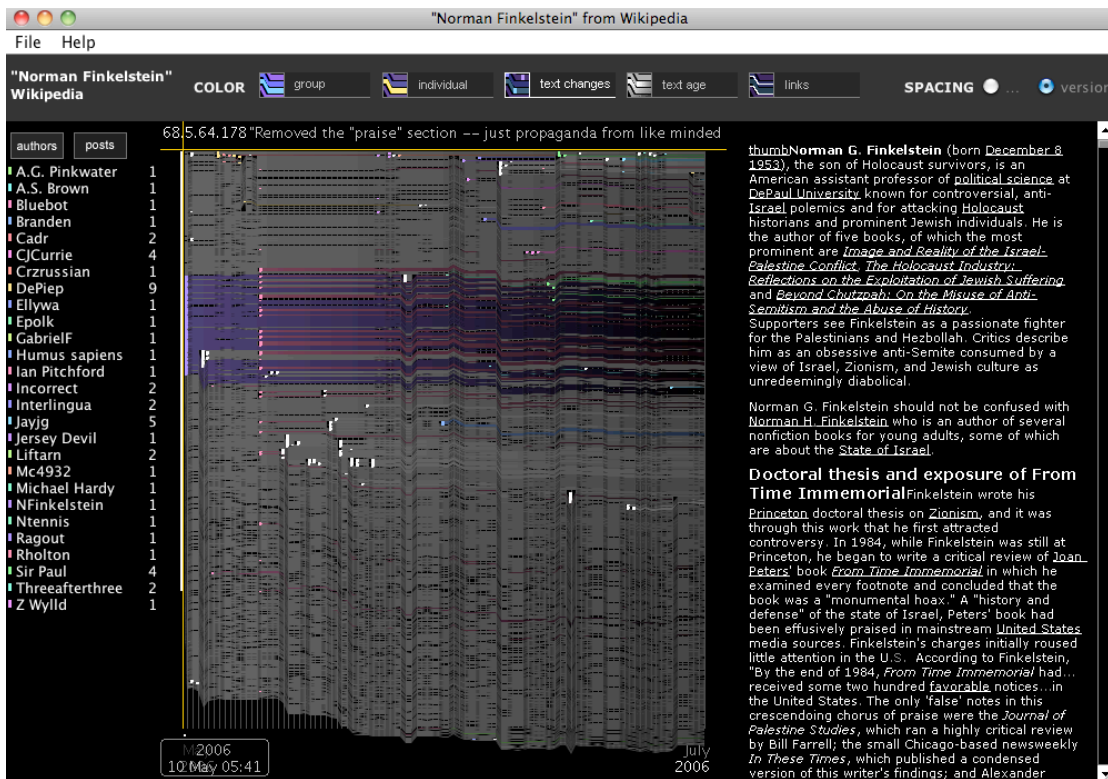
8. May, 2006- July, 2006
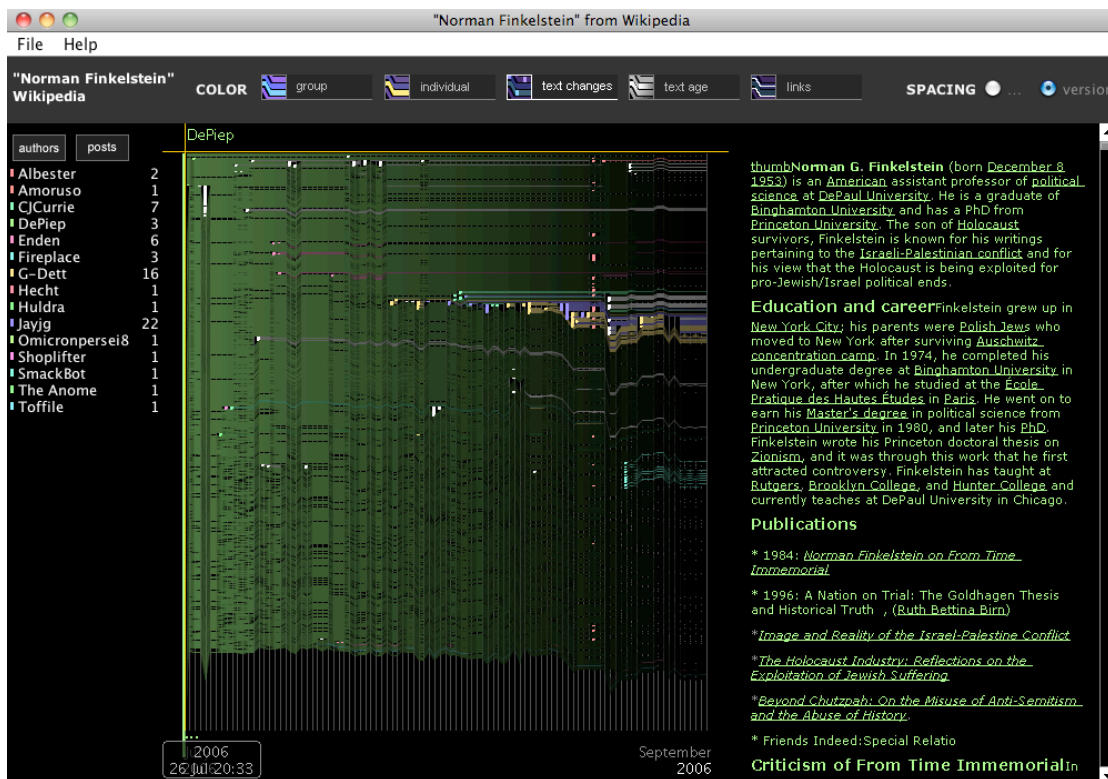
9. July, 2006- September, 2006
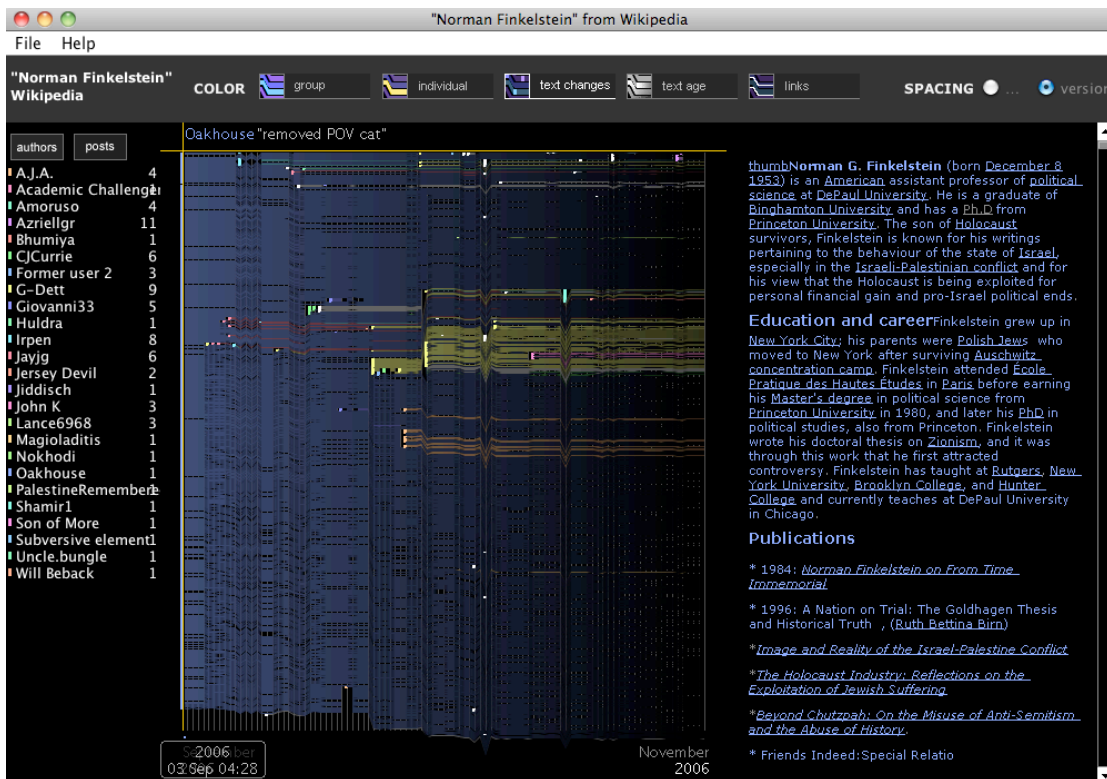
10. September, 2006- November, 2006
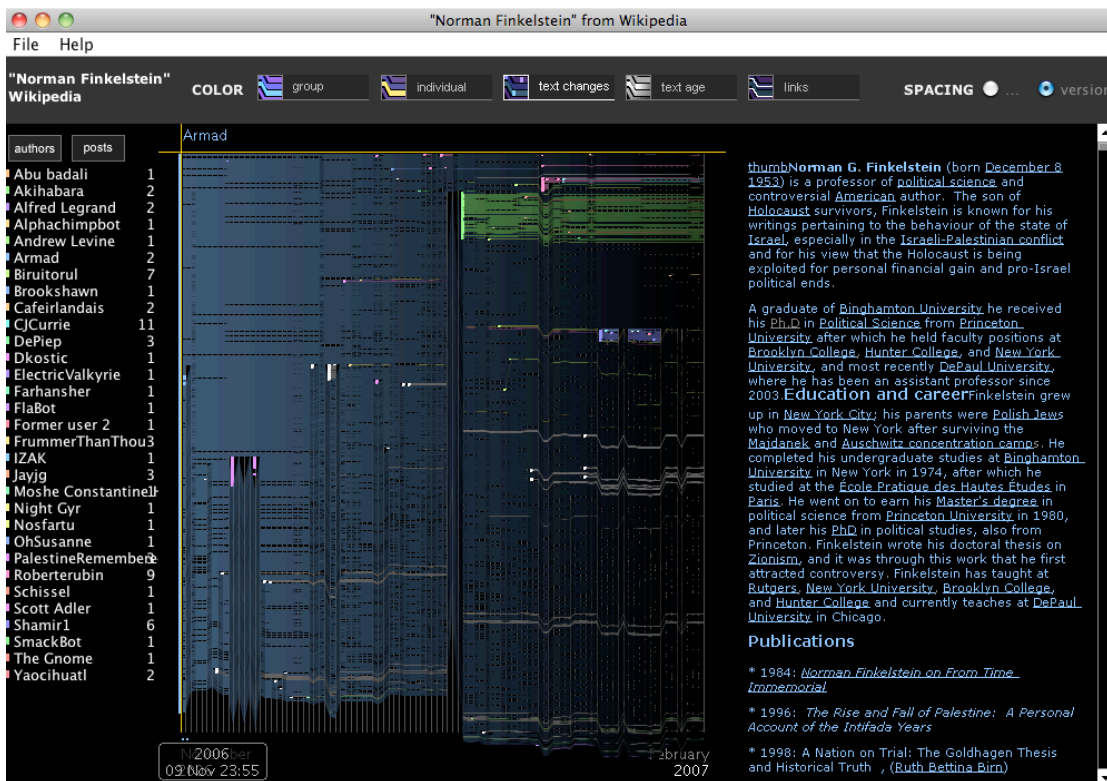

11. November, 2006- February, 2007.
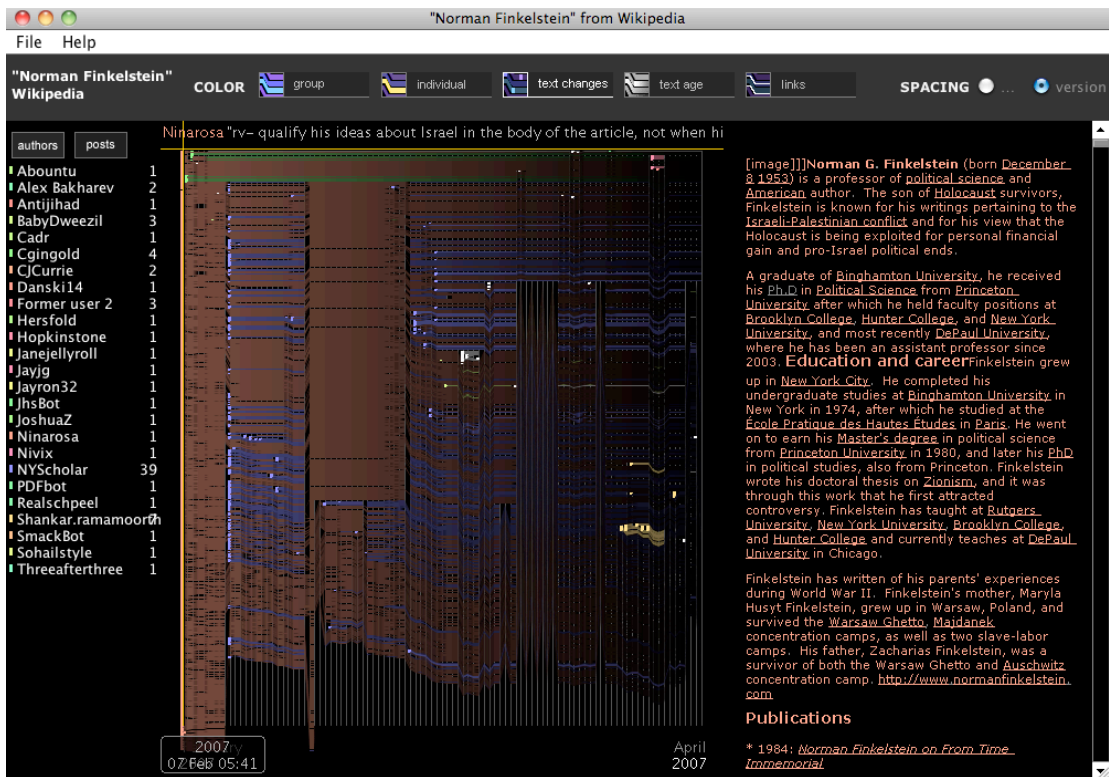
12. February, 2007- April, 2007
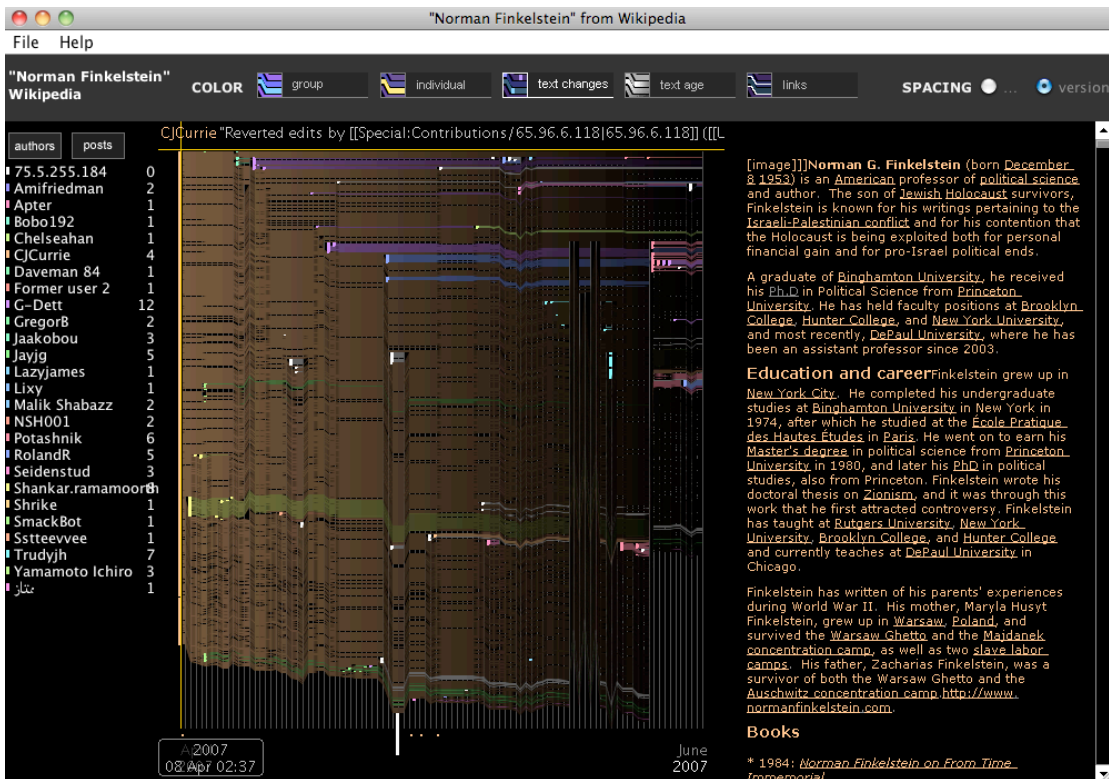
13. April, 2007- June, 2007
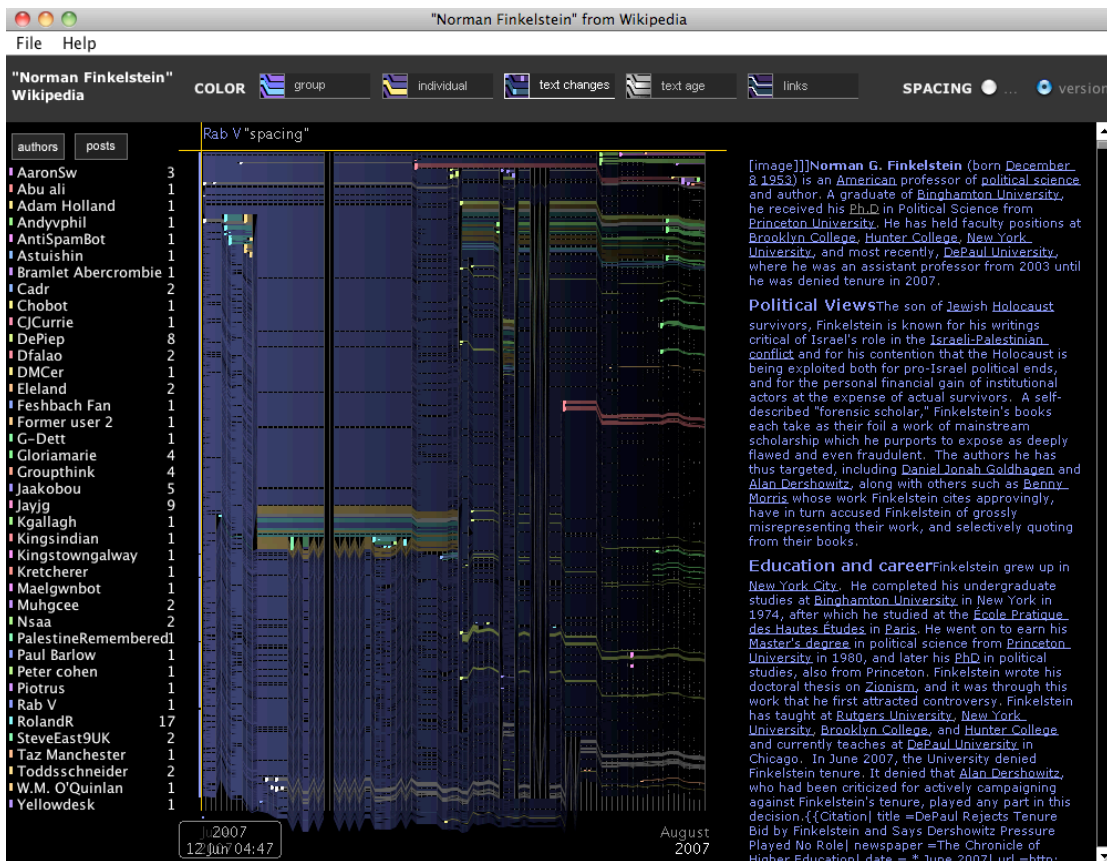
14. June, 2007- August, 2007

15. September, 2006

16. September, 2007- October, 2007

17. October, 2007- December, 2007
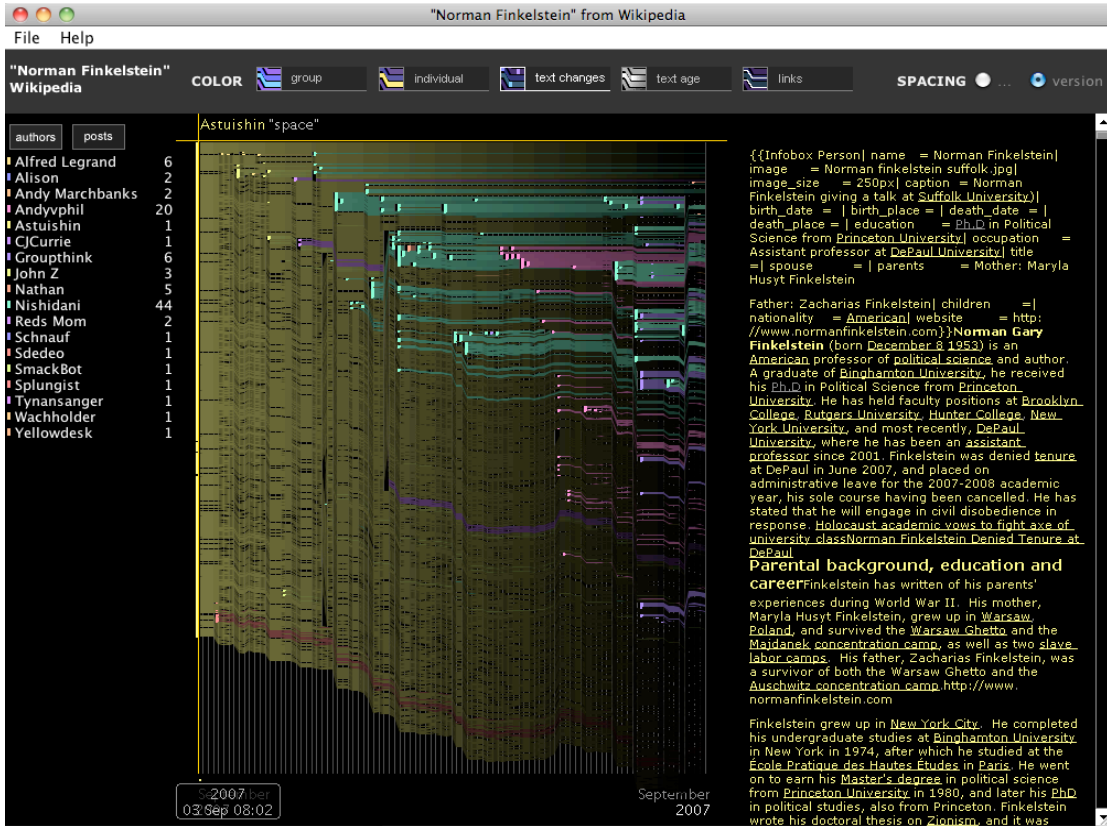
18. December, 2007- January, 2008
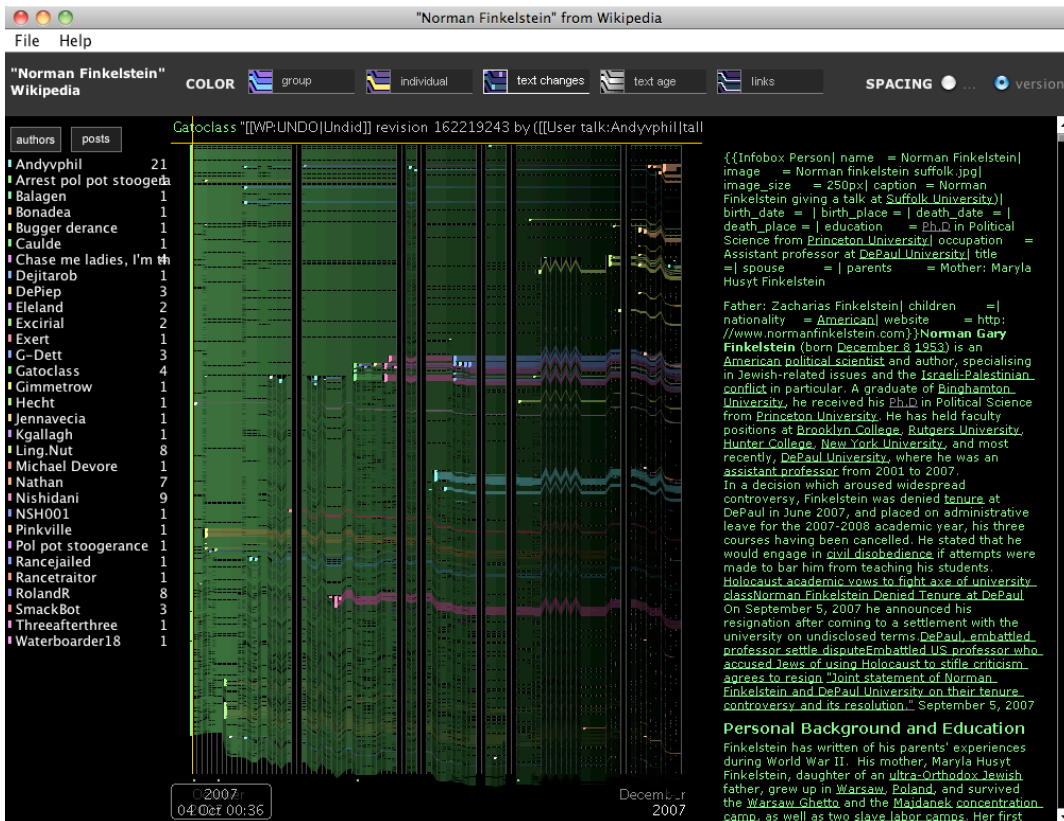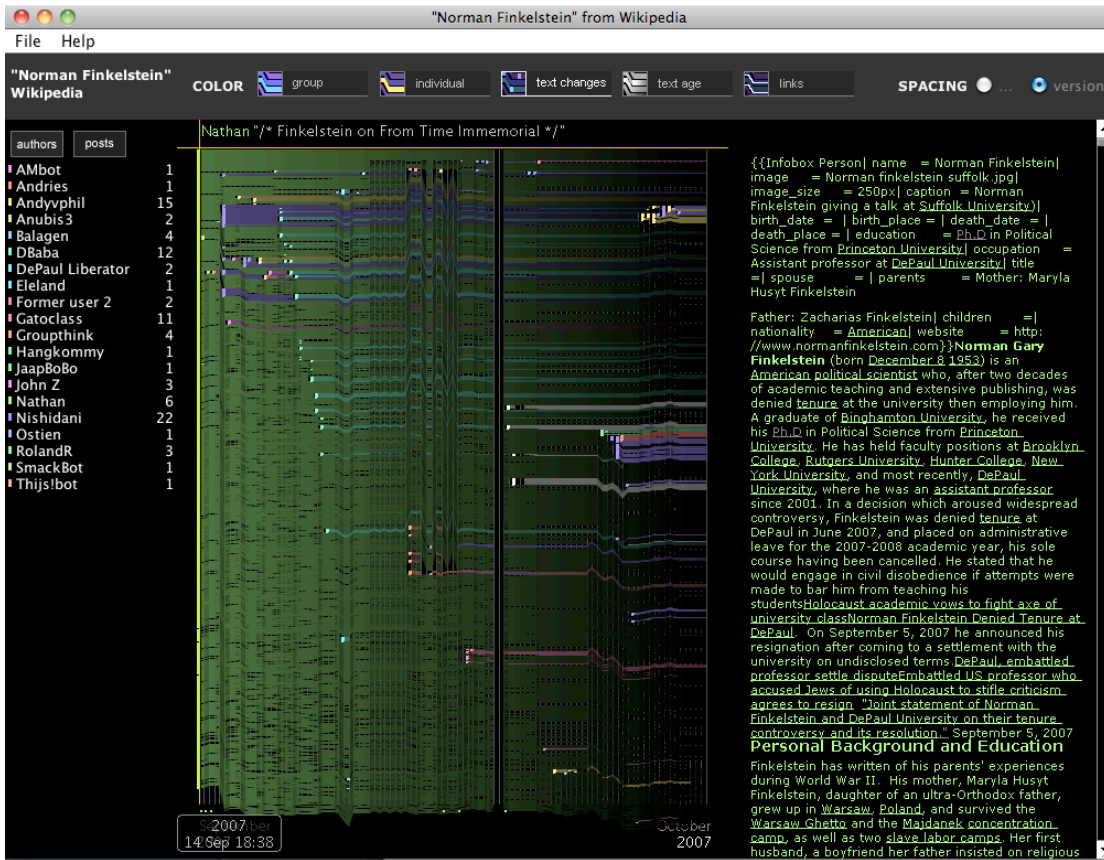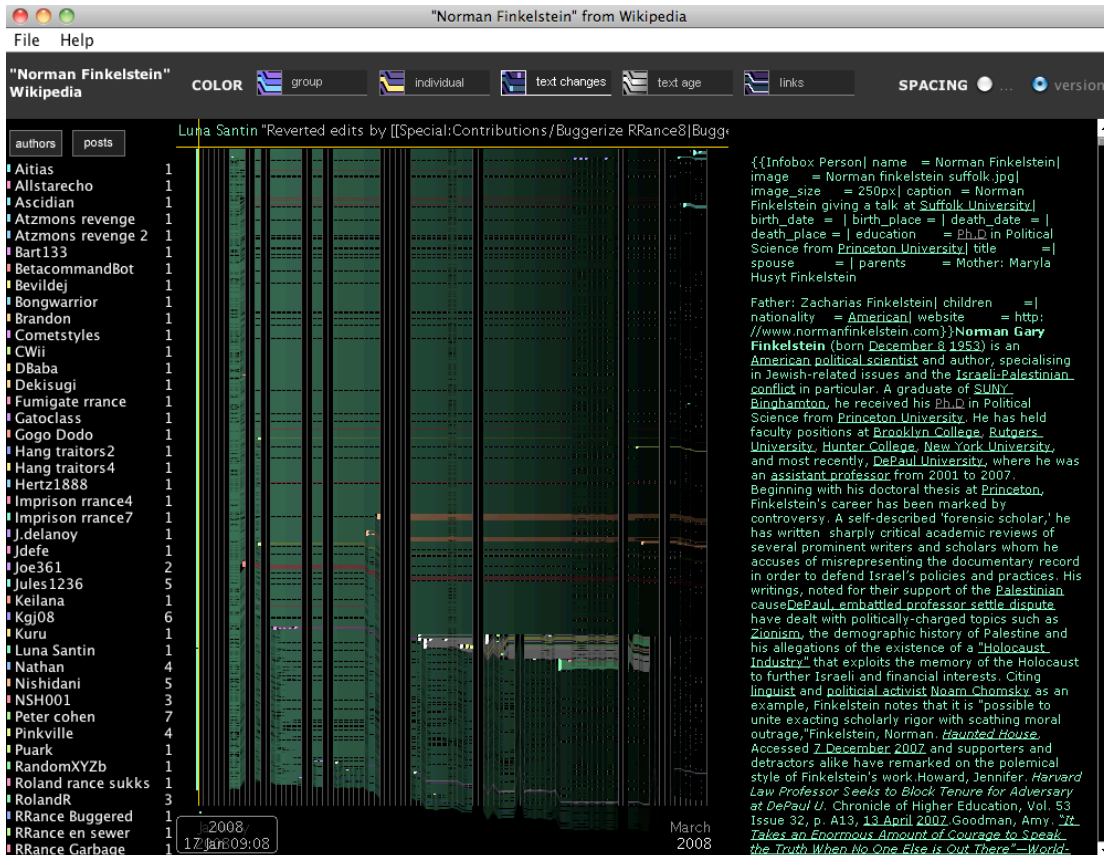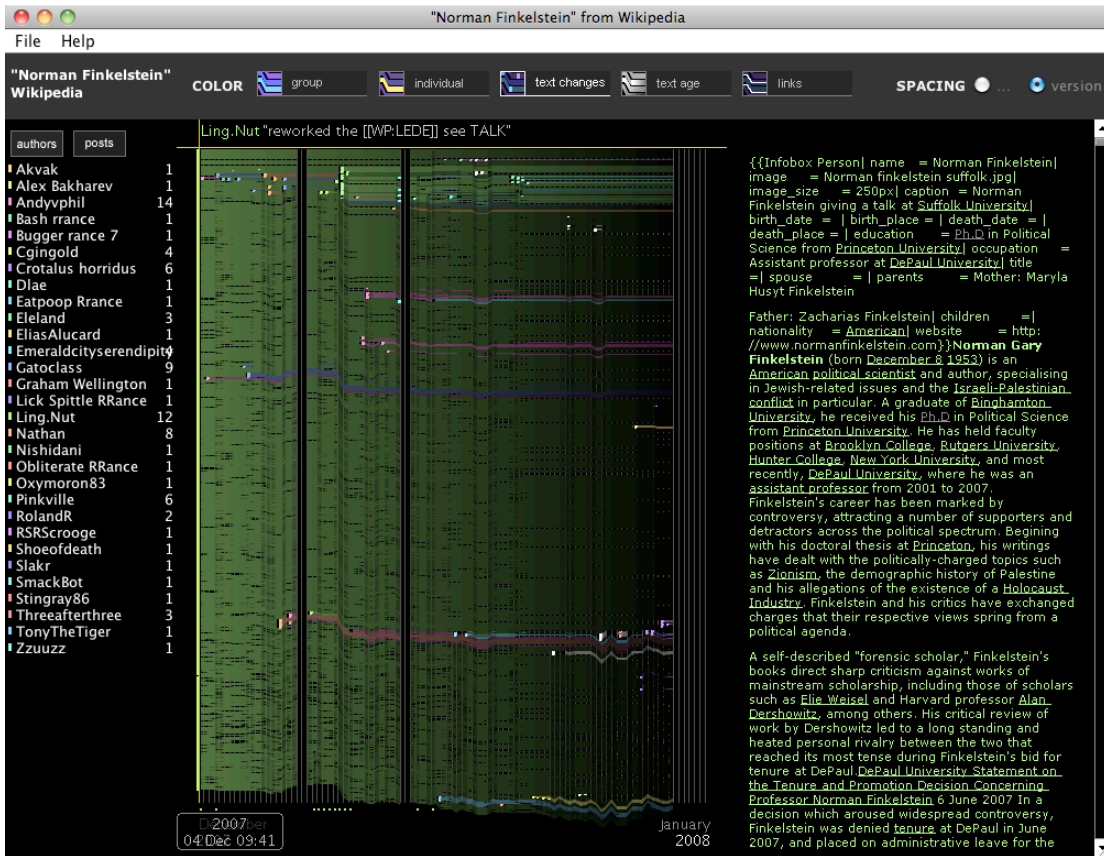
19. January, 2008- March, 2008

20. March, 2008- April, 2008
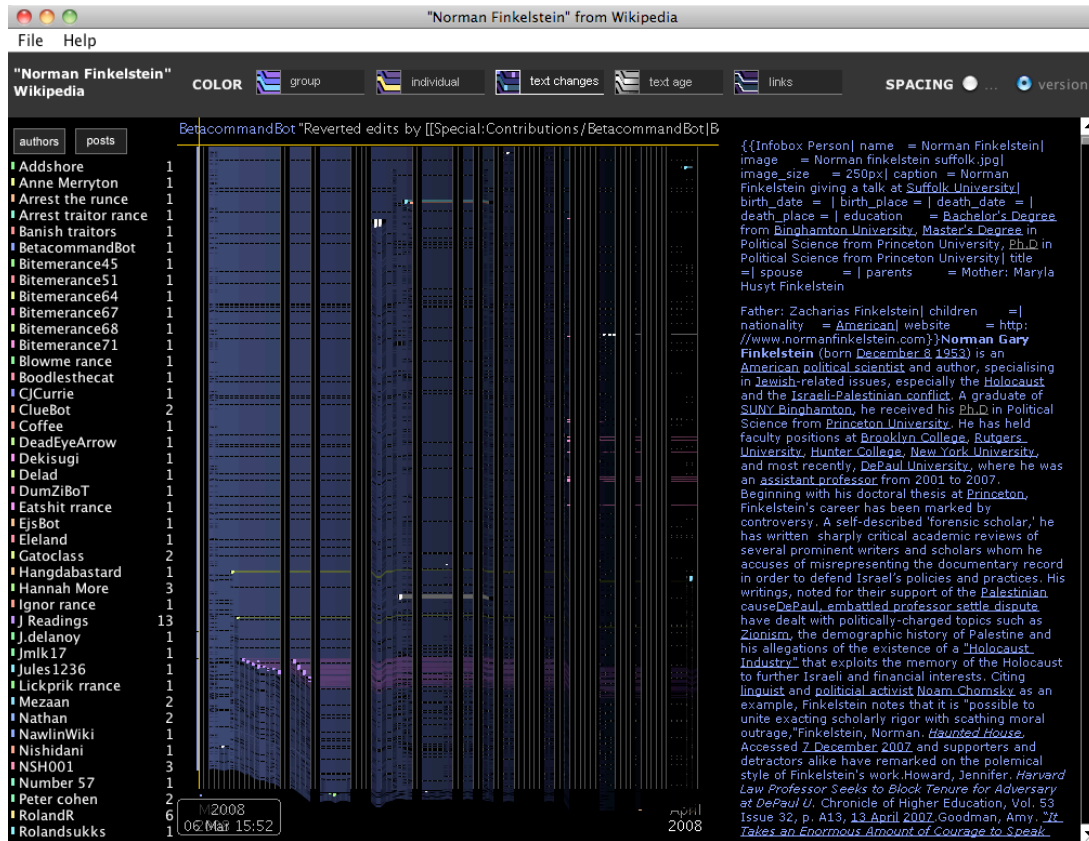
21. April, 2008 – June, 2008
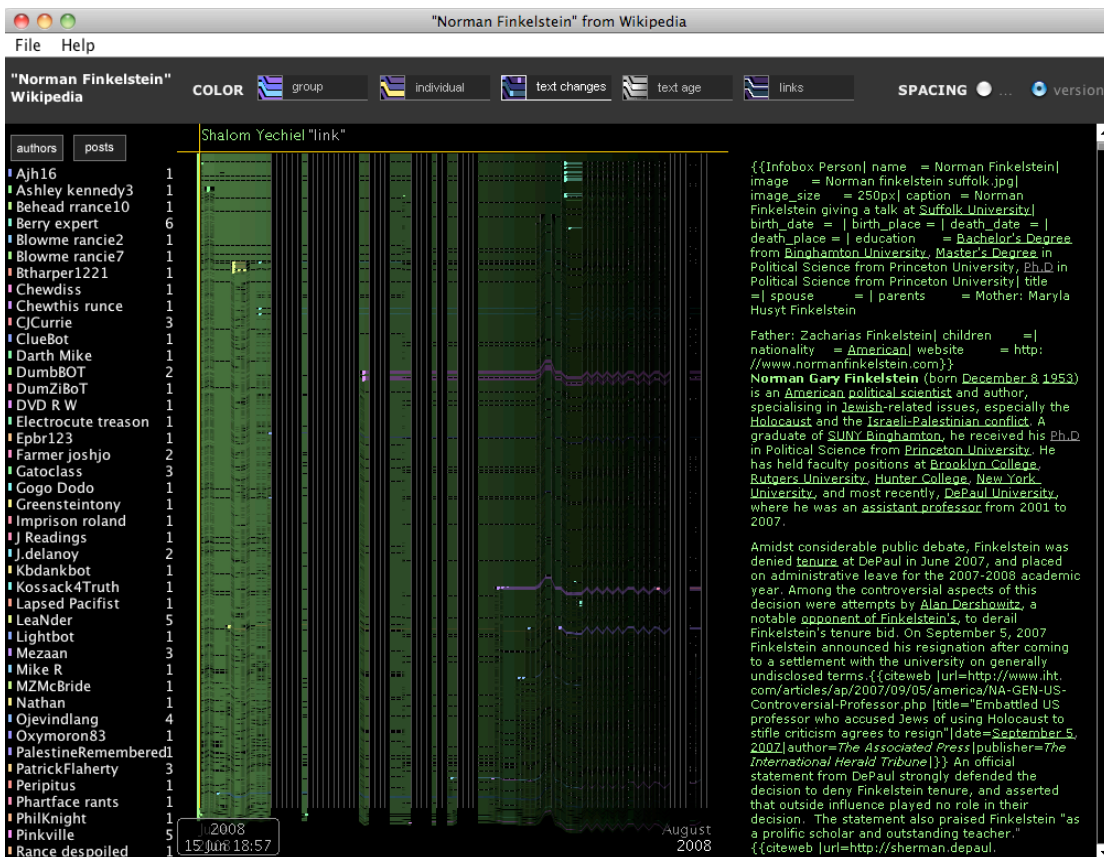
22. June, 2008- August, 2008

23. August, 2008- November, 2008

24. November, 2008- January, 2009
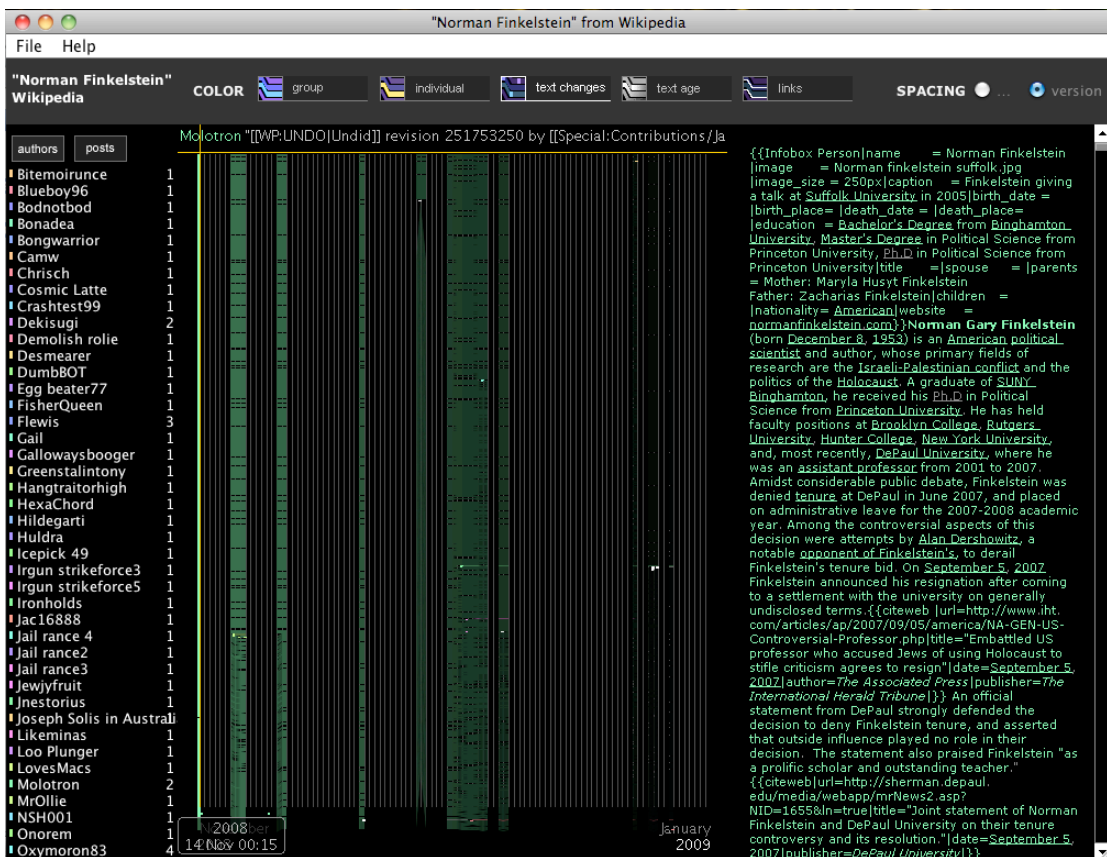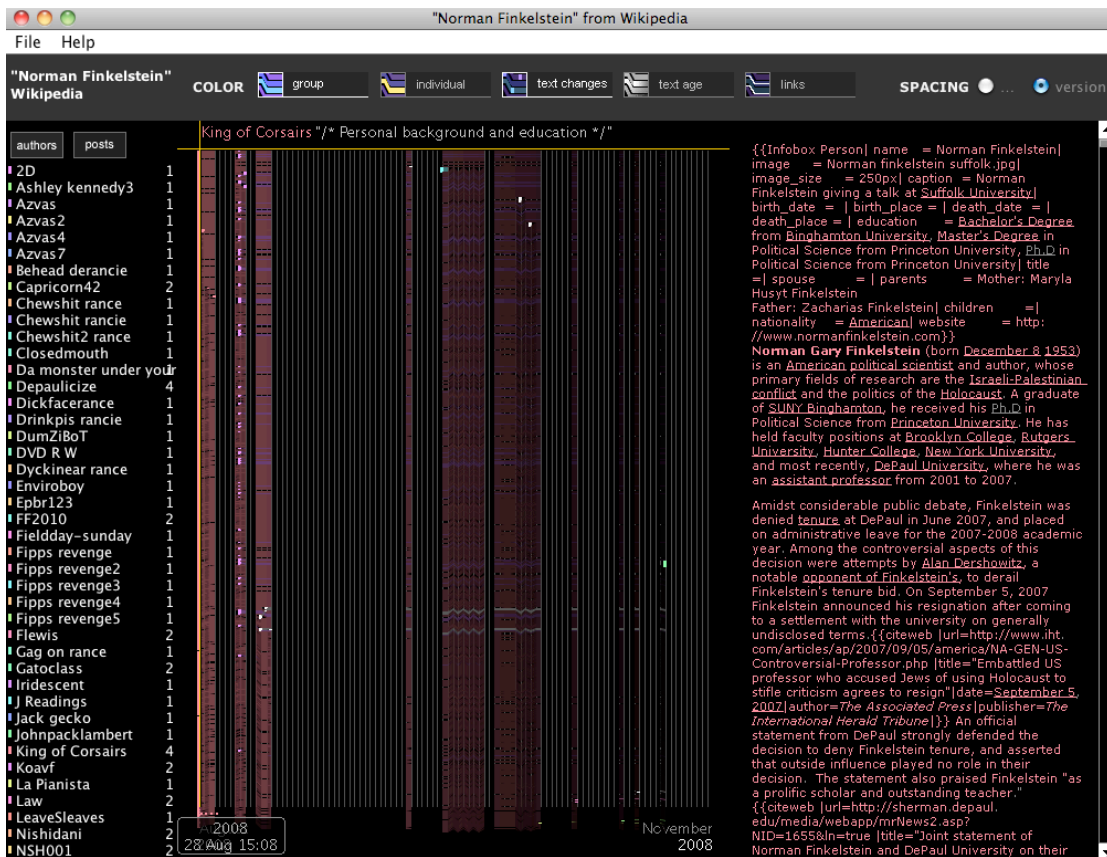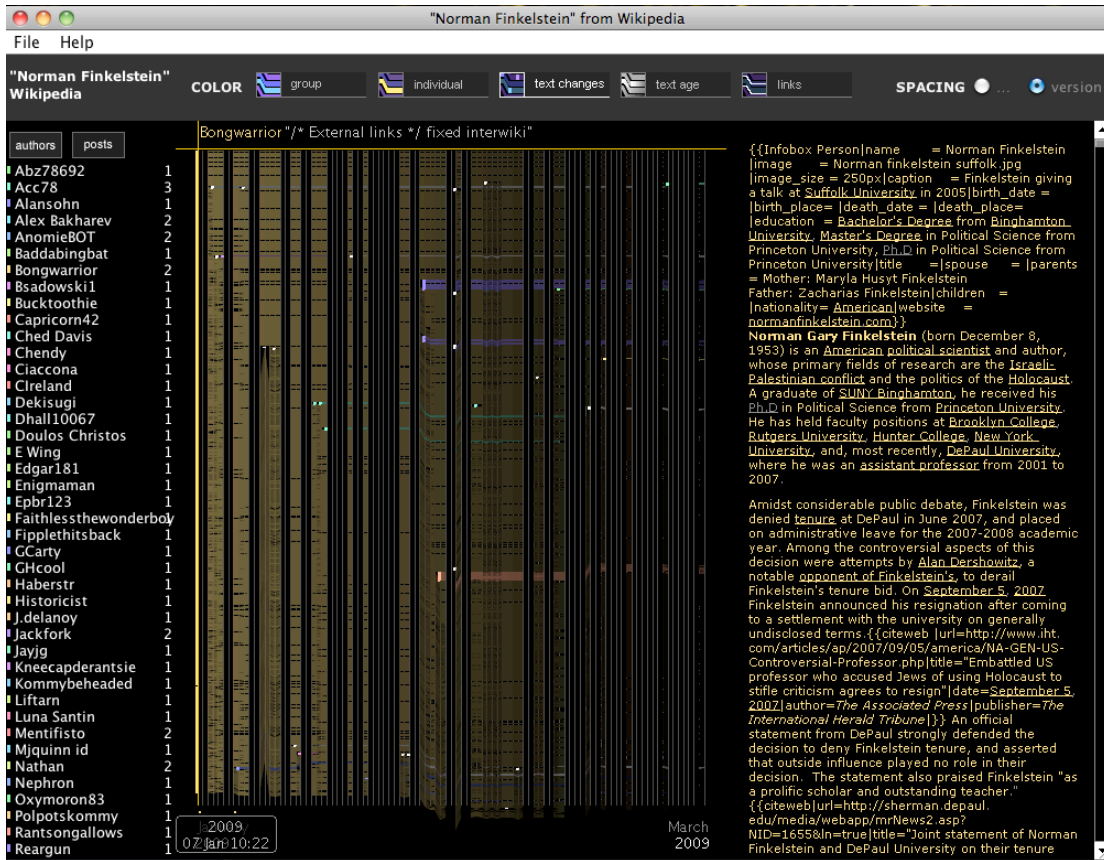
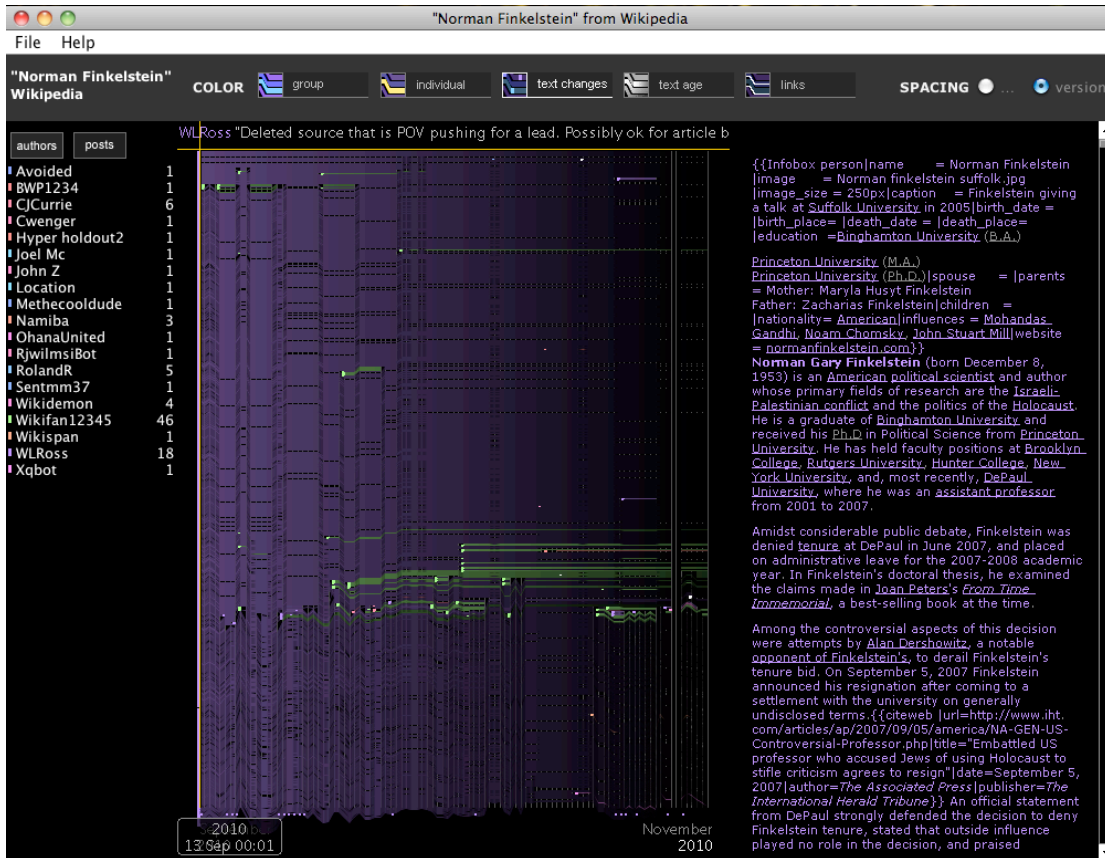25. January, 2009- March, 2009

26. March, 2009- May, 2009

27. May, 2009- May, 2010
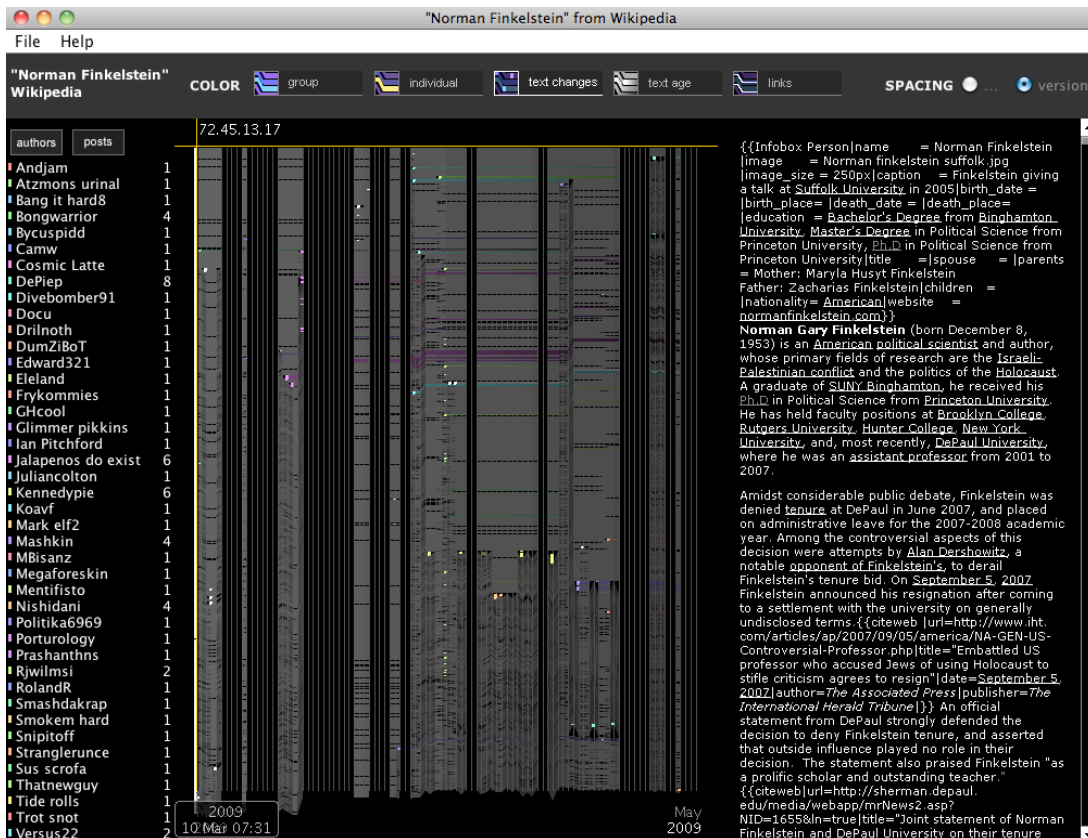
28. May, 2010- September, 2010
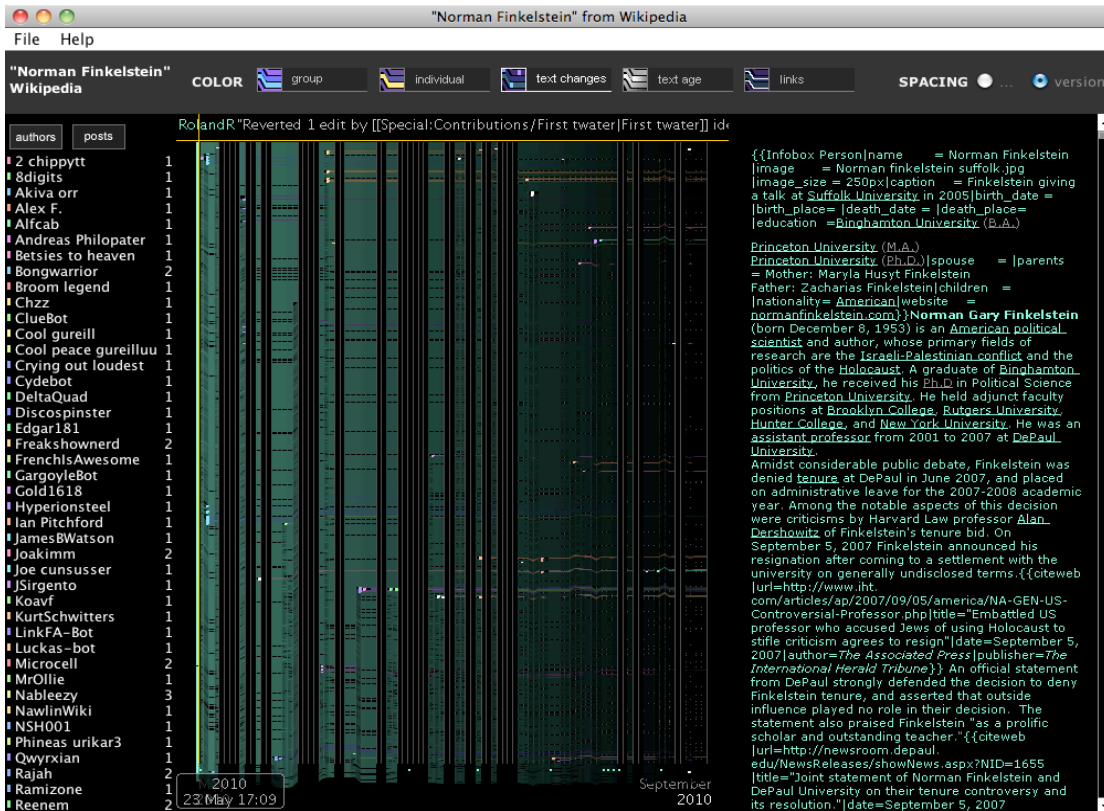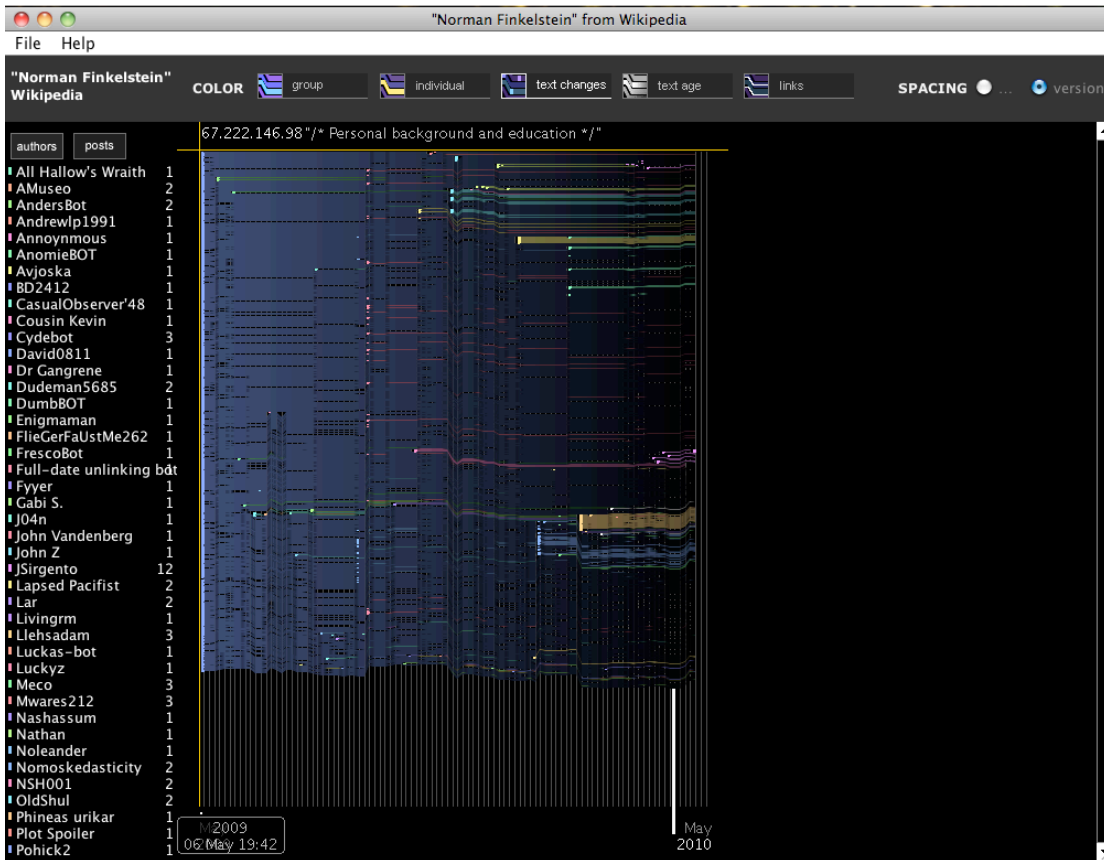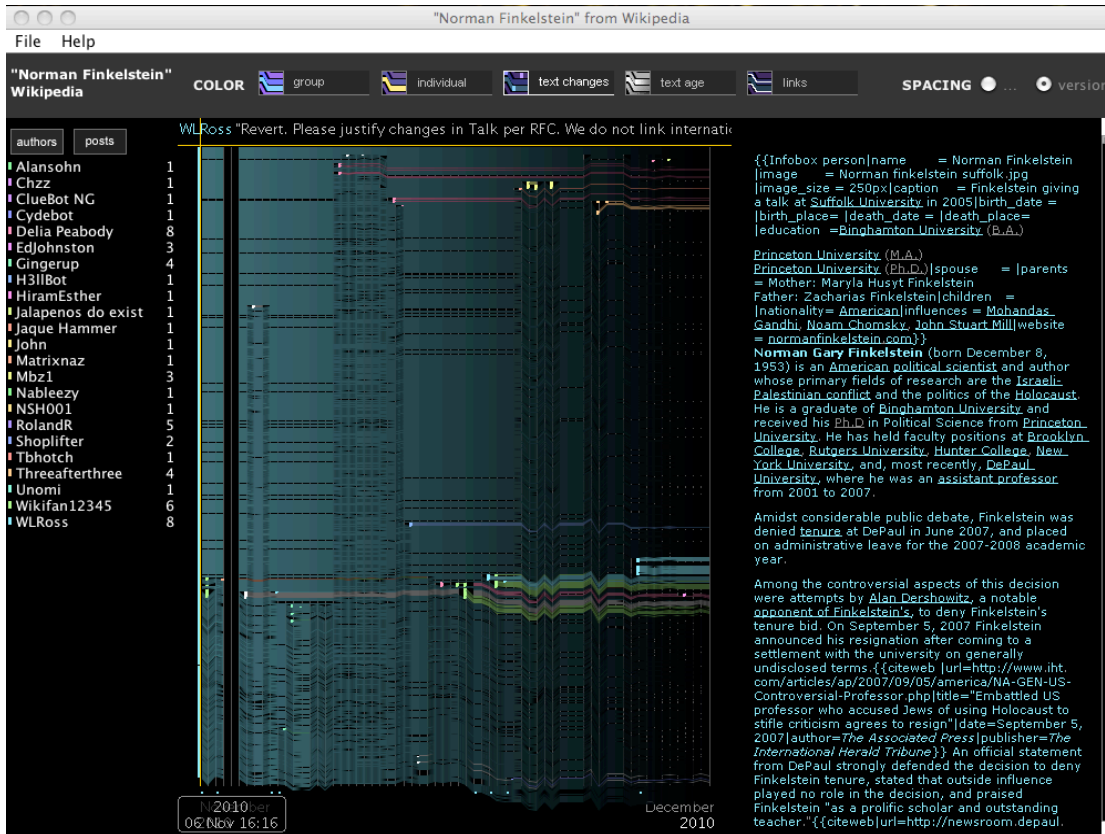
29. September, 2010- November, 2010

30. November, 2010- December, 2010