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Content

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Editorial: On IRIE Vol. 3

The third edition of the 'IRIE – International Review of Information Ethics' (06/2005) and the first under its new title after having been renamed from IJIE (due to a name similarity with another infoethics journal) is dedicated to the focal subject "Search Engines". Much attention has been paid to this subject during the past few years; most of all the necessity of (self)regulation of Search Engines and their suppliers has been discussed. In his essay "Funktionen, Probleme und Regulierung von Suchmaschinen im Internet (Function, Problems, and Regulation of Search Engines in the Internet – an extended abstract in English is enclosed)", Christoph Neuberger reports on this debate in Germany as well as on the most recent results of the communication sciences. The author contributed to the research project "Transparency in the Net" (2003/4) which was carried out on behalf of the Bertelsmann Stiftung (Bertelsmann Foundation). In the context of this project all the details of suppliers, offers, and users of Search Engines in the German language were empirically analyzed for the first time. Furthermore, we publish an English translation of the "Code of Conduct" which also was developed in the context of the already mentioned research project. I like to take the opportunity of expressing my deepest thanks to Marcell Machill for allowing both translation and publishing.

The great importance which is attached to the subject is perhaps expressed at the best by the title of a recently published book. Under the headline "Die Google-Gesellschaft (The Google Society)"[1] it claims to target not only Search Engines in specific but the change of the cultural handling of knowledge on the whole. According to the authors it is perfectly legitimate to subsume the complex subject under the brand of the most common internet search engine insofar as "a crucial tool like the Google Search Engine is employed as a synonym of our fundamentally different way of creating, changing, and distributing knowledge in the 21st century" (p. 18). In this context the authors even go as far as exaggerating Search Engines to be a new "universal interface of man and information" (p. 20). Surely it is possible to challenge such a view, but there remains the question once opened by the developments in the past ten years, what information ethics is able to say on the internet at all if it remains silent on the offers currently most used in the net, particularly as by the help of them billions of US $ are made every month.

In so far I am happy of being able to present four essays covering this subject. Certainly they do not deliver a complete practical philosophy of search engines but they perfectly highlight some very important aspects like "Ethical and Political Issues in Search Engines" (Hinman), the necessity of the "Symmetry in Confidence" in search engines (Rieder), search engines and their relation to the "Ethical subject" (Blanke) and finally the "Problem of Privacy in Public" (Tavani).

An area not covered in this issue is the important economic aspect of search engines. The recently published report "Das Google-Yahoo Ökosystem (The Google-Yahoo Ecosystem)"[2] e.g. points out to the fact that by search engines a new "ecosystem" of smaller suppliers is coming into existence challenging the incumbents. In so far, the subject of this special issue will definitely be on the IRIE´s future agenda especially when a more economic subject will be chosen as a theme of an issue yet to come.

Finally, I would like to express my thanks to the authors for their essays and to the reviewers for their reviews. Special thanks go out to Karsten Weber, who stood in for me during my holidays, as well as to Mirko Wittwar who despite of being completely booked out did the necessary translations on time.

Have an exciting reading!

Michael Nagenborg, Guest Editor.

This is issue is supplemented by two articles that do not fall under the focus of 'search engines' but complement it in one or the other way. Thomas Hoeren argues in 'Laws, Ethics and Electronic Commerce' that the Internet is leading to a dematerialization, deterritorialization, extemporalisation and depersonalisation of law and thereby the legal system loses its traditional (Roman law) roots (person, space, time). Besides selfregulatory ambitions and technological perfection of the tools for it (like

[1] Kai Lehmann, Michael Schetsche, hg.: Die Google-Gesellschaft. Vom digitalen Wandel des Wissens. Bielefeld: Transcipt 2005.

[2] http://www.berlecon.de/research/spotlights.php?we_objectID=227

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we can perfectly assess in the area of search engines) according to Hoeren further legal clarification is needed. Secondly, the 'Attitudes of UK Librarians and Librarianship Students to Ethical Issues' have been empirically examined by Kevin Ball and Charles Oppenheim. The Students are found to be in no case more liberal than the practitioners – unlike one would expect – but are even more rigorous especially in the case of Internet filtering e.g.. Do they emulate a stance of responsibility pressed by the difficulties of the job market? In the end the authors observe that the substantial efforts of teaching ethics within the curriculum lead only into a mediocre level of awareness and sensitivity for the underlying ethical issues of the information sciences and professions.

Finally the reviews provided in this issue for the first time and from now on regularly shall introduce and/or discuss important and interesting publications in the field of information ethics. You are all invited for suggestions and/or volunteering for writing a review on request.

We hope you once again can enjoy this issue. It may inspire your thinking, scientific working and your personal and professional practice.

Yours,

Rafael Capurro, Thomas Hausmanninger, Karsten Weber and Felix Weil, the Editors.

Christoph Neuberger:

Funktionen, Probleme und Regulierung von Suchmaschinen im Internet

Abstract: see also the extended abstract in English in the article

Suchmaschinen haben eine Orientierungs- und Speicherfunktion im Internet. Der Wettbewerb zwischen Google, Yahoo und Microsoft, der im Jahr 2004 an Schärfe gewonnen hat, wird als „Krieg der Architekturen" interpretiert, bei dem es letztlich darum geht, allgemeine Standards für die Aufbereitung und Suche digitaler Informationen zu setzen. Die Frage, wie groß der Einfluss des Marktführers „Google" auf die Aufmerksamkeitslenkung im Internet ist, lässt sich noch nicht abschließend beantworten. Gegen ein „Googlepol" spricht zum Beispiel, dass viele Nutzer parallel auch bei anderen Anbietern suchen. Die Qualität der Suchmaschinen-Ergebnisse wird nicht nur durch technische Schwächen, sondern in wachsendem Maße auch durch externe und interne Formen der Manipulation beeinträchtigt. In der letzten Zeit haben sich Suchmaschinen-Betreiber und Suchmaschinen-Optimierer in Selbstverpflichtungserklärungen auf Regeln geeinigt, durch die mehr Transparenz für die Nutzer geschaffen und das Problem des „Spamming" von Suchmaschinen gelöst werden soll.

Agenda

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- Relevant publications: See: http://egora.uni-muenster.de/ifk/personen/neubergerpublikationen.htm

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Extended Abstract: Function, Problems, and Regulation of Search Engines in the Internet

Search engines are the most used type of offer in the internet (van Eimeren/Gerhard/Frees 2003: 35). However, they have hardly been analyzed yet in communications sciences. Most of all, search engines have an orientation function but at the moment are also increasingly significant as stores of information. Thus, the market leader Google in 2004 made an agreement with five big libraries on digitalizing 15 millions of books and documents. Particularly in France this announcement provoked reaction, as they said that a cultural inequality was to be feared if predominantly literature in the English language was made accessible in this way.

Altogether, the competition of the three great suppliers Google, Yahoo, and Microsoft has increased during the year 2004. Google going public on August 19th, 2004, drew attention at the search engines market. The company made returns of 1.67 Billions of US-Dollars, more than 500 of which were supposed to be invested in the extension of the search engine in 2005. In the course of the year the two main rivals Yahoo and Microsoft caught up: Yahoo split up with Google and invested 2 Billions of US-Dollars. Microsoft gained independence from Google and in November, 2004, started the test-version of its own search-technology. After the competitors having caught up with most of Google´s lead, experts since recently consider the possibilities of search-technology to be exhausted. Thus, competition has shifted towards specialized search offers and supplementary services. Altogether, functional expansion and convergent development are to be observed, the great suppliers thus coming closer to each other.

According to Ferguson´s opinion (2005: 39), competition develops towards a "war of architectures": Finally, he says, it is all about defining standards for processing and search of digital information on all technological platforms. De facto, standards are set up by the market leader, because of which the competing entrepreneurs will at first try to reach a share of the market which is as big as possible.

The competition of the great US-search engines also influences the German market, where the "global players" appear with country-specific offers. For 2004, a total of 193 offers in the German language were investigated. In 2002, one third of the German-speaking search engines were run without commercial interest, one fifth served the image of a company. Almost one half was part of a portal (cf. Machill/Welp 2003: 76f.).

The question of how big the market leader Google´s influence is on controlling attention in the internet cannot yet be finally answered. Basically, however, there are limits for controlling the attention of search engines: while traditional mass media decide about which news and opinions are published, search engines only inform about already existing offers. Moreover, a growing share of users is not interested any more in new sites (cf. van Eimeren/Gerhard/Frees 2003: 354f.), thus trends indicate that the demand for search-performance may decrease. The majority of users also searches parallel in one of the two other top-3 search engines (cf. Nielsen NetRatings 2005). Google´s influence on traditional mass media, the so called "Googleization" (Seifert 2003), has not yet been confirmed by studies.

Tests show that despite the huge market share the quality of Google has not discernibly worsened in comparison to other search engines (cf. Neuberger 2005: 6f.). A part of the users critical attitude towards business leads to the operators being closely watched and irregularities being published (e. g. at google-watch.org or in Germany by "Telepolis").

Several studies give evidence to the low degree of competence of search engine users both regarding the evaluation of hit-lists and working the search engines (cf. Machill/Welp 2003: 166-175, 341-345; eprofessional 2004). The different competence of the users might result in a digital divide of the second order (cf. Marr 2005: 28).

The quality of search engines is not only affected by technological weak spots but increasingly also by external and internal ways of manipulating. Results are externally manipulated by search engine optimizers who on behalf of suppliers are supposed to improve the chances of attention of certain websites. Most of all, affiliate-programmes by online-shops and auctions have contributed to an increasing share of spam at Google (cf. Karzauninkat 2004b: 90; Roush 2005). In the course of a survey among German-speaking suppliers of search engines it occurred that rather easily applicable kinds of spamming are predominating, , e.g. using false keywords within the meta-tags (cf. Machill/Welp 2003).

The problem of internal manipulation is in hits which are paid for by website suppliers and which are insufficiently or not at all labelled as being commercial. In 2001 the consumer advocates´ association Commercial Alert pointed out to this practice by filing a suit at the Federal Trade Commission (FTC). Also search engines in the German language combine commercial banners to searches regarding subject matter; payed results are also widely spread (cf. Machill/Welp 2003: 90f.). Most of all, bought places on the hit lists themselves seem to be a problem. Studies show that many users do not know the practice of payed hits (cf. Princeton Survey Research Associates 2002: 17; Machill/Welp 2003: 179f.; Marable 2003; Frankfurter Allgemeine Zeitung 2005). Informed online-users in their majority demanded clear labelling. Of these, 45 per cent also stated that they would stop using a search engine if paid hits were not appropriately labelled (cf. Fallows 2005: 16-21).

Obviously, Google differentiates the accessibility of certain sites according to countries. Due to this, this search engine was confronted by the accusation of intransparent influence on search results and of over-hastily giving way to political pressure (cf. e. g. Palm 2002; Zittrain/Edelman 2002; Finkelstein 2003; Jodda 2003; McHugh 2003; Rötzer 2004; Schwan 2004c). On the other hand, Google and other search engines are also criticized for making access to problematic sites (pornography, propaganda etc.) possible.

In Germany, during the past few years there have been intensive debates on (self)regulation of search engines. A first try was made by the Bertelsmann Stiftung (Bertelsmann Foundation) which in 2003 introduced a code of conduct regarding the self-obligation of search engine-suppliers. However, response was very low, so that further steps (seal of quality, founding an organization of self-control) were given up (cf. Bertelsmann Stiftung 2003, 2004). In February, 2005, the “Freiwillige Selbstkontrolle Multimedia-Anbieter” (FSM) (Self-Control Organization of MultiMedia Suppliers) introduced a code of conduct for search engines (cf. FSM 2004). It also includes a procedure of complaints and a list of sanctions. Moreover, the search engines obliged themselves not to make accessible those sites as put on the index by the Bundesprüfstelle für jugendgefährdende Medien (BPjM) (Federal Review Board for Media Harmful to Young Persons). Such detailed indications are lacking in the case of foreign suppliers, however. The Bundesverband Digitale Wirtschaft (BVDW) (Federal Association of Digital Business) decided in 2004 to grant in future a certificate to respectable marketing agencies for search engines in order of checking the spamming of search engines. However, it is much too early to draw a conclusion regarding the effect of these kinds of self-control.

Orientierungs- und Speicherfunktion von Suchmaschinen

Suchmaschinen sind in der Kommunikationswissenschaft bisher noch kaum analysiert worden,[1] obwohl sie der meistbesuchte Angebotstyp im Internet sind (vgl. van Eimeren/Gerhard/Frees 2003: 35). Der Grund für die große Bedeutung von Metamedien im Internet sind die spezifischen *Orientierungsprobleme und -potenziale* des Internets. Das Internet vereinfacht den Zugang zur Öffentlichkeit: Kommunikatoren sind nicht mehr auf Redaktionen angewiesen, die als „Gatekeeper“ Aussagen prüfen und selektieren, sondern können selbst als Anbieter auftreten. Die Nutzer ihrerseits haben einen unvermittelten Zugriff auf eine Vielzahl von Angeboten. Dadurch sind sie aber auch alleine mit der Aufgabe konfrontiert, aus der Überfülle verfügbarer Seiten eine sinnvolle Auswahl zu treffen. Aus der Sicht der Anbieter schwindet angesichts der „Informationsflut“ die Wahrscheinlichkeit, die Aufmerksamkeit von Nutzern zu gewinnen und Anschlusskommunikation auszulösen.

Nach der ARD/ZDF-Online-Studie 2004 sind für drei Viertel der Online-Nutzer (74 %) Suchmaschinen die zentrale Quelle für das Auffinden neuer Seiten (vgl. van Eimeren/Gerhard/Frees 2004: 355). Sie sind damit die wichtigsten Navigatoren, die den Weg zu Informationen im Internet weisen. Digital aufberei-

[1] Im Rahmen des Forschungsprojekts „Transparenz im Netz“ (2002/2003) wurden erstmals umfassend die Anbieter, Angebote und Nutzer deutschsprachiger Suchmaschinen empirisch analysiert. Die Bertelsmann Stiftung hat dafür Forscher an den Universitäten Münster und München beauftragt. Dabei wurden eine Anbieterbefragung, Inhaltsanalysen von Trefferlisten (Christoph Neuberger), eine repräsentative Nutzerbefragung (Wolfgang Schweiger), Laborexperimente (Werner Wirth) sowie ein Test von Seiten-Optimierungsverfahren (Christoph Neuberger, Stefan Karzauninkat) durchgeführt. Die in diesem Beitrag zitierten Projektergebnisse sind im Sammelband von Machill/Welp (2003) dokumentiert.

tete Informationen haben den Vorteil, dass Suchmaschinen in kurzer Zeit große Mengen davon durchforsten und relevante Seiten anzeigen können, die bestimmte Suchwörter enthalten. Mit Hilfe eines „Crawler“ oder „Spider“ genannten Agenten erfassen sie große Teile des Internets und indexieren die in den Dokumenten auftauchenden Wörter.

Darüber hinaus gewinnen Suchmaschinen-Anbieter als *Informationsspeicher* an Bedeutung. Der Marktführer Google gab im Dezember 2004 bekannt, dass das Unternehmen eine Vereinbarung mit fünf renommierten Bibliotheken über die Digitalisierung von 15 Millionen Büchern und Dokumenten geschlossen hat. Beteiligt sind die Universitäten Stanford, Harvard, Michigan und Oxford sowie die New York Public Library. Das Projekt ist auf zehn Jahre angelegt. Die auf mindestens 150 Millionen US-Dollar geschätzten Kosten werden alleine von Google getragen. Ältere Bücher werden vollständig über das Internet verfügbar gemacht, urheberrechtlich geschützte Werke in Auszügen (vgl. Krüger 2004a; Lee 2004). Die Ankündigung von Google, Bibliotheksbestände zu digitalisieren, hat vor allem in Frankreich Reaktionen ausgelöst: Der Leiter der Nationalbibliothek, Jean-Noël Jeanneney, sah die Gefahr eines kulturellen Ungleichgewichts im Internet, wenn in erster Linie englischsprachige Literatur im weltweiten Netz öffentlich zugänglich wird, und forderte ein europäisches Gegenprojekt. Staatspräsident Jacques Chirac will der Europäischen Union die Digitalisierung der Werke der großen europäischen Bibliotheken vorschlagen (vgl. Wiegandt 2004: 15; Neue Zürcher Zeitung 2005c: 51).

Die großen Drei auf dem globalen Suchmaschinen-Markt: Google, MSN und Yahoo

Im Jahr 2004 ist der Suchmaschinen-Markt in Bewegung geraten. Vor allem der Börsengang der Suchmaschine Google am 19. August hat die öffentliche Aufmerksamkeit auf den Markt der Suchmaschinen gelenkt. Google erzielte einen Erlös von 1,67 Milliarden US-Dollar, der in den weiteren Ausbau der Suchmaschine fließen soll. Allein im Jahr 2005 sollen über 500 Millionen US-Dollar investiert werden (vgl. Bauer 2004: 23; Virtel 2005). Im Laufe des Jahres 2004 holten die beiden Hauptrivalen Yahoo und Microsoft gegenüber Google auf: Yahoo hat im Februar 2004 seine Kooperation mit Google beendet und arbeitet seither mit einer eigenen Suchtechnik. Yahoo hat 2 Milliarden US-Dollar investiert und unter anderem den Suchdienstleister Inktomi und die Vermarktungsfirma Overture übernommen. Microsoft machte sich unabhängig von den Ergebniszulieferungen von Yahoo. Im November 2004 startete MSN die Testversion einer technisch eigenständigen Suchmaschine (vgl. Bager 2004b; Fischermann 2004; Hohensee 2004; Laube 2004; Patalong 2004a; Ferguson 2005: 36-42).

Nachdem die Konkurrenten den Vorsprung von Google weitgehend aufgeholt haben, erscheint Experten die Suchtechnik derzeit ausgereizt. Mit großen Technologiesprüngen ist nicht zu rechnen. Unterschieden wird bei der Suchtechnik zwischen herkömmlichen Gewichtungsmodellen, bei denen die Häufigkeit der Suchwörter in den Dokumenten bestimmt wird, und neueren Modellen, bei denen die Hypertextstruktur, in die ein Dokument eingebettet ist (wie beim „Page Rank“-Verfahren von Google), oder die Nutzungshäufigkeit von Seiten („Click Popularity“) ausgewertet werden (vgl. Biever 2004; Glöggler 2003: 67-94).

Der Wettbewerb hat sich auf spezialisierte Suchangebote sowie Zusatzdienste verlagert, die den Nutzern kostenlos offeriert werden, um Marktanteile zu gewinnen oder zu sichern. Google hat seit der Ankündigung des Börsengangs eine Vielzahl neuer Angebote gestartet (Google-Funktionen: www.google.de/intl/de/features.html). Über eine deutschsprachige Nachrichtensuche verfügen inzwischen neben Google auch Yahoo und Web.de. Ein weiteres Expansionsfeld ist die lokale Suche: Yahoo Deutschland plant für das erste Quartal 2005 ein solches Angebot und kooperiert dabei mit dem Telefonbuchanbieter „Das Örtliche“, der zum Telekom-Konzern gehört; Google will noch im Laufe des Jahres damit starten (vgl. Golem 2004; sueddeutsche.de 2005). Seit Januar 2005 können in den USA Fernsehprogramme über „Google Video“ recherchiert werden; Yahoo kündigte an, bald nachzuziehen (vgl. Spiegel Online 2005). Von den großen Anbietern wird außerdem die Entwicklung von Video-Suchmaschinen vorangetrieben; Yahoo hat im Dezember 2004 eine Videosuche vorgestellt (vgl. Olsen/Kaufman 2004; Neue Zürcher Zeitung 2005d).

Neben neuen Suchofferten hat Google im April 2004 mit G-Mail auch einen Mailservice gestartet. Damit hat Google sein Leistungsspektrum über die Suchfunktion hinaus auch auf Kommunikationsangebote erweitert und greift damit seine schärfsten Konkurrenten Yahoo und MSN auf einem wichtigen Feld an. G-Mail geriet aber ins Visier von Datenschützern, weil zum Inhalt der Mails passende Werbung geschaltet werden soll (vgl. Bleich/Heidrich 2004; Patalong 2004b; Spiegel Online 2004). Ähnliche

Kritik erntete Google mit seiner Desktop-Recherche, die seit Oktober 2004 in einer Testversion kostenlos heruntergeladen werden kann. Voraussetzung für eine Suche auf der eigenen Festplatte ist nämlich, dass deren gesamter Inhalt indexiert wird, wodurch die Nutzeraktivitäten nachvollziehbar werden. Auch Yahoo sucht seit Januar 2005 auf dem Desktop (vgl. Krüger 2004b; Neue Zürcher Zeitung 2005a).

Google hat darüber hinaus Publikationsmöglichkeiten für Online-Nutzer geschaffen. Dazu gehört der kostenlose Weblog-Dienst Blogger.com, der seit kurzer Zeit auch in deutscher Sprache angeboten wird (vgl. Schwan 2004a). Außerdem übernahm Google im Juli 2004 die Website Hello, auf der Nutzer ohne Gebühr Online-Fotoarchive anlegen können (vgl. Neue Zürcher Zeitung 2004). Schließlich startete im April 2005 das „Google Video Upload Program", eine Präsentationsplattform für Hobbyfilmer (vgl. Focus Online 2005).

Insgesamt sind also eine funktionale Expansion (vgl. Khopkar et al. 2003) und konvergente Entwicklung zu beobachten, wodurch die großen Anbieter einander näher rücken: Während die beiden Portale Yahoo und MSN ihre Suchkompetenz verbessert haben, verbreitert die ehemals reine Suchmaschine Google ihre Angebotspalette.

„Kampf um Architekturen"

Nach Auffassung von Charles H. Ferguson steuert die Konkurrenz zwischen Google, Microsoft und Yahoo auf einen „Krieg um Architekturen" (Ferguson 2005: 39) zu: Letztlich ginge es darum, Standards für die Aufbereitung und Suche digitaler Informationen auf allen technischen Plattformen zu definieren. Derzeit sei das „Suchuniversum ein heilloses Durcheinander, voller unerschlossener und gegeneinander abgeschotteter Bereiche. Eine gemeinsame Architektur könnte das ändern." (ebd.: 44) De facto-Standards werden durch den Marktführer gesetzt, weshalb die konkurrierenden Unternehmen zunächst versuchen, einen möglichst hohen Marktanteil zu erzielen.

> *„Siegreiche Architekturen sind proprietär und schwer nachzubauen, aber sie sind auch offen – in dem Sinne, dass sie Schnittstellen zur Verfügung stellen, auf deren Grundlage andere Anbieter und die Nutzer selbst die verschiedensten Anwendungen entwickeln können. Auf diese Weise kann eine Architektur alle Märkte erreichen, und es entsteht ein ‚Lock in'-Effekt: Die Nutzer werden darin gefangen, weil sie nur mit großer Mühe und zu hohen Kosten zu einem anderen System wechseln können." (ebd.: 40)*

Google mangelt es bislang noch an solchen Schnittstellen, wie sie z.B. Microsoft für das Betriebsprogramm Windows bereitstellt, um für fremde Programme anschlussfähig zu sein. Wer auch immer die Standards setzen wird: Das siegreiche Unternehmen würde einen vereinheitlichten Suchmarkt kontrollieren.

> *„Einer der besten Gründe, auf das Überleben von Google zu hoffen, ist (...), dass bessere Qualität zu erwarten ist, wenn der Wettbewerb hart bleibt. Wenn Google die Suchindustrie dominieren würde, bliebe immer noch Microsoft als disziplinierender Faktor. Wenn dagegen Microsoft alles dominieren würde, hätten wir noch weniger Schutz vor seiner Mittelmäßigkeit." (ebd.: 47)*

Der deutsche Suchmaschinen-Markt

Der Wettbewerb zwischen den großen Suchmaschinen mit Sitz in den USA beeinflusst auch den deutschen Suchmaschinen-Markt. Die „Global Players" sind auch hier mit länderspezifischen Angeboten vertreten. Daneben umfasst der nationale Markt eine Vielzahl weiterer Suchmaschinen: Im September 2004 ließen sich 193 deutschsprachige Angebote ermitteln, bei denen die externe Suche die zentrale Funktion war und die thematisch nicht spezialisiert waren (eigene Erhebung; Auswertung einschlägiger Linkverzeichnisse). Allerdings ist die Nutzung der meisten dieser Suchmaschinen marginal im Vergleich zu den Branchenriesen. Ein Drittel der deutschsprachigen Suchmaschinen wurde 2002, so ergab einer Befragung, ohne kommerzielles Interesse betrieben, ein Fünftel diente der Selbstdarstellung eines Unternehmens. Knapp die Hälfte der Suchmaschinen war Teil eines Portals mit zahlreichen anderen Angeboten (vgl. Machill/Welp 2003: 76f.). Die reichweitenstärksten Suchmaschinen aus Deutschland sind Lycos, Fireball, Web.de und T-Online (vgl. ebd.: 156-162). Mit Seekport startete im Dezember 2003 eine neue Suchmaschine mit großen Ambitionen, die auch bereits ins europäische Ausland expandiert ist (vgl. Computerwoche 2005).

„Googlepol“ und Erweiterung der Zugangsvielfalt

Besitzt Google ein Quasi-Monopol auf dem Suchmaschinen-Markt und damit einen großen Einfluss auf die Aufmerksamkeitslenkung im Internet? Ist die Rede vom „Googlepol“ (Winterbauer 2003) berechtigt? Vorgetragen wurde diese Sorge vor allem von der Bertelsmann Stiftung, deren Vertreter behaupten, dass Google einen Marktanteil von 70 Prozent erreiche, „und das ist eine Monopolstellung, die weder im Printbereich noch bei den elektronischen Medien zugelassen werden würde.“ (Machill 2004)

Für eine *Berechnung von Marktanteilen* mangelt es allerdings an einer soliden Datengrundlage. Die vorliegenden Statistiken kommen je nach Indikator zu sehr unterschiedlichen Ergebnissen (vgl. Machill/Welp 2003: 156-162; Neuberger 2005: 5f.). Nielsen NetRatings ermittelte für die USA im Januar 2005, dass 47 Prozent der Suchanfragen („Searches“) auf Google entfielen, 21 Prozent auf Yahoo und 13 Prozent auf MSN (vgl. Nielsen NetRatings 2005). Berücksichtigt werden muss bei Marktanteilsberechnungen auch die Zulieferung von Treffern an andere Anbieter. Die Suchmaschinen sind – für die Nutzer kaum durchschaubar – untereinander eng verflochten. Der Informationsdienst „Search Engine Watch“ stellte im Juli 2004 folgende Kooperationen fest: Google lieferte Treffer an AOL, Excite, Ask Jeeves, HotBot, Lycos, Netscape und Teoma. Yahoo/Overture gaben an MSN, AltaVista, AllTheWeb, HotBot und Lycos Ergebnisse weiter (vgl. Sullivan 2004; Karzauninkat 2004a). MSN stützt sich – wie erwähnt – seit November 2004 auf eine eigene Suchtechnik und bezieht keine Treffer mehr von Yahoo.

Grundsätzlich sind der Aufmerksamkeitslenkung von Suchmaschinen jedoch enge Grenzen gesetzt: Ihre *„Gatekeeper“-Funktion* ist nicht mit jener der Redaktionen von Presse und Rundfunk vergleichbar. Traditionelle Massenmedien entscheiden darüber, welche Nachrichten und Meinungen publiziert, also dem Publikum überhaupt zugänglich gemacht werden. Suchmaschinen orientieren lediglich über Angebote, die für die Nutzer technisch bereits verfügbar sind und die sie auch auf Alternativwegen erreichen könnten. Suchmaschinen werden außerdem nur gebraucht, wenn neue Angebote gesucht werden bzw. die bekannten Angebote ein Bedürfnis nicht befriedigen können. Nicht die gesamte Internetnutzung ist deshalb von Suchmaschinen abhängig.

Die ARD/ZDF-Online-Studie zeigt, dass ein wachsender Anteil von Nutzern kein großes Interesse mehr an neuen Seiten hat und sich die Zahl der durchschnittlich pro Onlinesitzung besuchten Websites verringert (vgl. van Eimeren/Gerhard/Frees 2003: 354f.), damit dürfte tendenziell auch der Bedarf an Suchleistungen sinken. Die Abhängigkeit von Google hält sich auch deshalb in Grenzen, weil eine Mehrheit der Google-Nutzer parallel auch in einer der beiden anderen Top 3-Suchmaschinen (Yahoo, MSN) sucht, wie eine Erhebung von Nielsen NetRatings (2005) in den USA im Januar 2005 ergab.

Tests zeigen, dass sich die *Qualität* von Google trotz des großen Marktanteils im Vergleich zu den anderen Suchmaschinen nicht erkennbar verschlechtert hat (vgl. Neuberger 2005: 6f.). Der wachsende Anteil gespamter Seiten in den Ergebnislisten ist darauf zurückzuführen, dass Google das wichtigste Ziel von Suchmaschinenoptimierern ist (vgl. Karzauninkat 2004b). Auch die Zufriedenheit der Onlinenutzer mit dem Marktführer ist hoch: Wolfgang Schweiger stellte in einer repräsentativen Befragung fest, dass Nutzer, die ihre Hauptsuchmaschine bewerten sollten, im Fall von Google die besten Noten vergaben (vgl. Machill/Welp 2003: 176f.). Ihre Urteilsfähigkeit dafür war auch relativ groß: „Google-Nutzer stellen die Gruppe mit der höchsten Internet- und Suchmaschinenkompetenz dar, sie nutzen am stärksten das Internet und Suchmaschinen (...).“ (ebd.: 164) Eine hohe Zufriedenheit mit Suchmaschinen im Allgemeinen und mit Google im Besonderen ergab auch eine repräsentative Nutzerbefragung in den USA im Jahr 2004 (vgl. Fallows/Rainie 2004: 3; Fallows 2005: 8-11).

Auf dem *Suchmaschinen-Markt* ist die Position von Google nicht zementiert. Wie gezeigt, muss Google derzeit große Anstrengungen unternehmen, um seine Position gegenüber MSN und Yahoo zu behaupten. Zwar sind die Eintrittsbarrieren für neue Wettbewerber hoch, soweit es um universelle Suchangebote für das Internet geht. Kleinen Start up-Unternehmen gelingt es jedoch immer wieder, mit spezifischen Suchfunktionen erfolgreich zu sein. Erst allmählich werden das Tiefenweb und andere Plattformen wie der PC von Suchmaschinen erschlossen (vgl. Ferguson 2005: 42-44).

Die unternehmenskritische Haltung eines Teils der Nutzerschaft im Internet führt dazu, dass die Betreiber großer kommerzieller Websites unter genauer Beobachtung stehen und *Missstände* öffentlich deutlich zur Sprache gebracht werden. Dies geschieht im Fall von Google zum Beispiel auf der Website „Google Watch“ (google-watch.org) oder im

deutschsprachigen Onlinemagazin „Telepolis“ (telepolis.de). In Deutschland wurde im Juli 2004 der gemeinnützige „Verein zur Förderung der Suchmaschinen-Technologie und des freien Wissenszugangs“ (suma-ev.de) gegründet, der gegen die Konzentration auf dem Suchmaschinen-Markt kämpfen will. Als Alternative zu den kommerziellen Suchmaschinen soll in Deutschland das Entstehen eines Netzwerks aus kleinen Suchmaschinen gefördert werden, das auf „Open Source“-Software basiert (vgl. Heise Online 2004b; Sander-Beuer 2005). Um den Wettbewerb zu fördern und die Vielfalt der Perspektiven zu erweitern, wird derzeit die „Open Source“-Software Nutch entwickelt, die es jedem interessierten Nutzer erlauben soll, eine eigene Suchmaschine zu betreiben (vgl. Krempl 2004a).

„Googleisierung“ des Journalismus?

Der Einfluss von Google soll auch durch traditionelle Massenmedien verstärkt werden, weil sich Journalisten angeblich zunehmend mit Google-Anfragen zufrieden geben und auf Offline-Recherchen verzichten. Dieses als „Googleisierung“ (Siegfried Weischenberg, zitiert nach Seifert 2003) des Journalismus bezeichnete Phänomen ist allerdings noch nicht durch empirische Studien bestätigt. Der Wissenschaftsredakteur des Nachrichtenmagazins „Focus“, Jochen Wegner (2005), vermutet folgenden Umgang mit Google in den Redaktionen: Die Benutzung von Google definiere mittlerweile den Mindeststandard der journalistischen Recherche, was angesichts der geringen durchschnittlichen Rechercheleistung in deutschen Redaktionen „das allgemeine Niveau nur gehoben haben“ könne. Google könne dazu beitragen, einfache Fehler schnell aufzuklären. Allerdings verführe Google auch dazu, sich nur auf die über die Suchmaschine erreichbaren Quellen zu beschränken. Dies aber sei gefährlich, da die von Google entdeckten Seiten im Internet Themen und Meinungen oft verzerrt widerspiegeln. So sei die Trefferzahl in Google keineswegs ein Indikator für die Wichtigkeit eines Sachverhalts oder einer Person. Schließlich bestehe auch die Gefahr, dass Falschinformationen aus dem Internet gefischt und über Massenmedien weiter verbreitet werden.

Geringe Nutzerkompetenz

Mehrere Studien belegen eine geringe Kompetenz der Suchmaschinen-Nutzer: Trefferlisten werten sie nur oberflächlich aus, sie begnügen sich meistens mit der Auswertung der ersten Ergebnisseite und der Prüfung weniger Treffer. Auch ihre Kompetenz zur Bedienung der Suchmaschinen ist wenig entwickelt (vgl Machill/Welp 2003: 166-175; 341-345; eprofessional 2004). Die unterschiedliche Kompetenz bei der Bedienung von Suchmaschinen könnte eine „digitale Spaltung“ zweiter Ordnung zur Folge haben, weil die Nutzer in sehr unterschiedlichem Maße vom Angebot des Internets Gebrauch machen können (vgl. Marr 2005: 28). Um dies zu vermeiden, müssten Suchmaschinen benutzerfreundlicher gestaltet werden. Unterstützt wird dieses Bemühen auch durch Informationsdienste wie die „Suchfibel“ (suchfibel.de) oder „Search Engine Watch“ (searchenginewatch.com), die zum Verständnis der Funktionsweise von Suchmaschinen beitragen und einen Marktüberblick geben.

Externe Manipulation von Suchergebnissen

Suchmaschinen sind keineswegs die neutralen und technisch perfekten Wegweiser im Internet, als die sie erscheinen mögen (vgl. Winkler 2002: 34). Neben Schwächen der Suchtechnik beeinträchtigen in wachsendem Maße Formen der externen und internen Manipulation die Qualität ihrer Ergebnisse. Dabei erhalten Seiten höhere Ränge in Trefferlisten zugewiesen, als ihnen nach ihrer Bedeutung für die Beantwortung der Suchanfrage zustehen würden. Knapp 60 Prozent der deutschen Onlinenutzer beklagen den hohen Anteil an „Infomüll“, der auf den Trefferlisten von Suchmaschinen zu finden ist, ergab eine repräsentative Forsa-Umfrage im Jahr 2004 (vgl. Seekport 2004).

Extern manipuliert werden Ergebnisse durch Suchmaschinen-Optimierer, die im Auftrag von Anbietern die Beachtungschancen von Websites verbessern sollen. Optimierern ist es auch längst gelungen, das anfangs als kaum manipulierbar geltende „Page Rank“-Verfahren von Google, bei dem nicht der Inhalt des Dokuments, sondern dessen Vernetzungsstruktur ausgewertet wird, durch so genannte „Linkfarmen“ zu beeinflussen. Dabei wird durch Tausende untereinander verlinkter Seiten mit den passenden Stichwörtern ein optimales Umfeld für jene Seiten geschaffen, die in Google-Ergebnislisten einen hohen Rang erzielen sollen.

Vor allem Affiliate-Programme von Onlineshops und Auktionen wie Amazon und eBay, bei denen Provisionen an Websitebetreiber bezahlt werden, die Kunden zuführen, haben dazu beigetragen, dass bei

Google der Spam-Anteil gewachsen ist (vgl. Karzauninkat 2004b: 90; Roush 2005). Mit „Google-Bombing“ werden koordinierte, oft politisch motivierte Aktionen bezeichnet, bei denen durch Verlinkung Seiten in den Ranglisten von Google künstlich nach oben befördert werden. Als in Google bei der Eingabe des Wortes „Jew“ an erster Stelle eine antisemitische Website auftauchte, hat eine Vielzahl von Bloggern diese Site verdrängt und den Eintrag „Jew“ der Online-Enzyklopädie Wikipedia an dessen Stelle gesetzt (vgl. Dworschak 2003; Drösser 2004; Karzauninkat 2004b; Livnat 2004).

In einer als Vollerhebung angelegten Befragung deutschsprachiger Suchmaschinen-Anbieter zwischen Oktober 2002 bis Januar 2003 (vgl. Machill/Welp 2003: 83-85) zeigte sich, dass die eher simplen, auch von Laien anwendbaren Formen des Spamming dominierten, nämlich die falsche Charakterisierung von Seiten in den Meta-Tags (durch besonders häufig benutzte Suchwörter, die aber nichts mit dem Inhalt der Seite zu tun haben), die mehrfache Anmeldung von Seiten bei einer Suchmaschine oder die häufige Wiederholung von Wörtern, für die eine Seite optimiert ist. Anspruchsvollere Methoden wie Brückenseiten (mit einer Weiterleitungsfunktion), „Cloaking“ (d.h. unterschiedliche Seitenversionen für Robots und Nutzer) und der Aufbau von Linkfarmen tauchten vergleichsweise selten auf.

Zwischen Suchmaschinenanbietern und -optimierern findet eine Art Hase-Igel-Wettlauf statt: Neue Techniken werden rasch durch neue Optimierungsverfahren unterlaufen, was die Suchmaschinen zur Weiterentwicklung zwingt. Suchmaschinen reagieren außerdem durch die Geheimhaltung technischer Details und mit Maßnahmen gegen das Spamming (wie den Ausschluss gespamter Seiten aus dem Index) (vgl. Neue Zürcher Zeitung 2003: 51; Bager 2005a, 2005b).

Interne Manipulation von Suchergebnissen

Neben der externen Manipulation von Suchmaschinen gibt es auch Formen der internen Manipulation, die von den Suchmaschinen-Anbietern selbst ausgehen. Hier geht es um Treffer, für die Website-Anbieter bezahlen und die nur unzureichend oder gar nicht als Werbung gekennzeichnet sind. Auf diese Praxis aufmerksam gemacht hat im Juli 2001 die Verbraucherschutzorganisation Commercial Alert mit einer Klage bei der Federal Trade Commission (FTC) (2002). Commercial Alert kritisierte vor allem die unzureichende Kennzeichnung von Werbung außerhalb der Trefferlisten („Paid placement“) und bezahlter Treffer in den Ergebnislisten („Paid inclusion“). Die FTC hat den Suchmaschinen Empfehlungen für die eindeutige Kennzeichnung gegeben, die inzwischen in den großen englischsprachigen Suchmaschinen weitgehend Beachtung finden, wie eine Studie von Consumer Web Watch im Jahr 2004 ergab. Mängel tauchten noch vereinzelt bei der Kennzeichnung von „Paid inclusions“ und bei den Nutzerinformationen („Disclosure information“) auf (vgl. Sherman 2004; Wouters 2004).

In der erwähnten Anbieterbefragung (vgl. Machill/Welp 2003: 90f.) zeigte sich, dass auch bei deutschsprachigen Suchmaschinen Werbebanner, die thematisch an die Suchanfragen gekoppelt sind (58 %), und bezahlte Suchresultate, die außerhalb der eigentlichen Trefferliste angezeigt werden (40 %), als Bezahldienste weite Verbreitung gefunden haben. Beide Formen erscheinen als wenig problematisch, da sie in der Regel durch Gestaltung und Platzierung für die Nutzer gut erkennbar sind. Anders steht es mit erkauften Plätzen in den Trefferlisten selbst, ob mit oder ohne einen garantierten Rangplatz (40 % bzw. 22 %). Hier dürfte die Verwechslungsgefahr besonders groß sein.

Die befragten Suchmaschinen verwendeten ganz unterschiedliche Wörter zur Markierung bezahlter Treffer. Eindeutig und aus den traditionellen Medien bekannt sind die Hinweise „Anzeige“ und „Werbung“. Weniger bekannt sein dürfte, was sich hinter den Bezeichnungen „Sponsored Link“, „Sponsored Listing“ oder „Partnerlink“ verbirgt. Irreführend sind die Wörter „Empfehlung“ und „Webtipp“, die eher als nutzerorientiertes Qualitätsurteil aufgefasst werden dürften. Einige Anbieter begnügten sich auch mit einer besonderen Schrift und Farbgestaltung, um Bezahltreffer hervorzuheben.

Diverse Studien zeigen, dass viele Online-Nutzer die Praxis bezahlter Treffer nicht kennen, sie oft nicht zwischen bezahlten und nicht-bezahlten Treffern unterscheiden können, sie aber Wert auf eine klare Trennung legen (vgl. Princeton Survey Research Associates 2002: 17; Machill/Welp 2003: 179f.; Marable 2003; Frankfurter Allgemeine Zeitung 2005). So wussten in einer repräsentativen Befragung des Pew Internet & American Life Project im Mai/Juni 2004 62 Prozent der Suchmaschinen-Nutzer in den USA nicht Bescheid über diese Praxis. Unter jenen 38 Prozent, welche sie kannten, gaben 47 Prozent an, sie könnten stets erkennen, welche Treffer bezahlt oder gesponsert sind und welche

nicht. Die Online-Nutzer forderten mehrheitlich eine klare Kennzeichnung. 45 Prozent meinten, sie würden eine Suchmaschine nicht mehr nutzen, falls sie bezahlte Treffer nicht markiert (vgl. Fallows 2005: 16-21).

Suchmaschinen-Marketing gilt als „Motor der Onlinewerbung" (Breuning 2004: 400f.) und ist die Haupterlösquelle vieler Anbieter. Die Stärken des Suchmaschinen-Marketings bestehen darin, dass passend zum Informationsbedürfnis, das der Nutzer durch seine Sucheingabe mitteilt, Werbung geschaltet werden und der Erfolg durch das Anklicken der Links genau kontrolliert werden kann. Google erzielte im Jahr 2003 95 Prozent seiner Umsätze durch Werbung, die thematisch eingeblendet wird („AdWords"), und zwar sowohl auf den Ergebnisseiten der Suchmaschine selbst als auch auf Partnersites.[2] Yahoo hatte einen Werbeanteil am Gesamtumsatz von 82 Prozent, MSN von 29 Prozent (vgl. Bager 2004a; Schwan 2004b; Van Couvering 2004: 7; Ferguson 2005: 42f.). Das Marktforschungsunternehmen eMarketer ermittelte für das Jahr 2004 einen Umsatz von etwa 4 Milliarden US-Dollar für Suchmaschinen-Marketing in den USA und sagte einen Anstieg für 2005 von 22,5 Prozent voraus (vgl. Delaney 2005a).

Forrester Research (2005) berechnete für Deutschland im Jahr 2004 einen Umsatz im Suchmaschinen-Marketing von 165 Millionen Euro und prognostizierte für das Jahr 2010 399 Millionen Euro. Ab dem Jahr 2007 werde allerdings europaweit der Marktanteil des Suchmaschinen-Marketing am Online-Werbemarkt sinken, da das Misstrauen der Nutzer gegenüber bezahlten Treffern wachse, multimediale Werbung („Rich media") an Bedeutung gewinnen werde und die Preise für „Keyword"-Suche steigen werden. Über die aktuellen Preise für die Belegung der ersten Werbeposition für einen bestimmten Suchbegriff informiert monatlich der deutsche Suchmaschinen-Preisindex (SPIXX), den die Agentur explido WebMarketing führt (explido-webmarketing.de). Preise beziehen sich auf den einzelnen Klick eines Nutzers, ein Abrechnungsverfahren, das ebenfalls Manipulationsmöglichkeiten eröffnet (vgl. Liedtke 2005).

Technische Verzerrung von Suchergebnissen

Neben der gezielten Manipulation verzerren auch technische Schwächen die Ergebnisse von Suchmaschinen. Qualitätskriterien sind dafür die Relevanz der Treffer und ihre Vollständigkeit, das heißt der Grad der Erfassung der im Internet verfügbaren Dokumente. Suchmaschinen können lediglich auf syntaktischem Niveau operieren, können also weder Seiteninhalte noch Suchanfragen interpretieren (vgl. Kuhlen 1999: 245). Teile des Internets sind für Suchmaschinen technisch nicht oder nur schwer erreichbar (dynamisch generierte Seiten, Multimedia-Angebote, registrierungspflichtige Websites). Außerdem gibt es Kapazitätsgrenzen der Crawler, was dazu führt, dass weniger populäre Bereiche vernachlässigt werden und neue oder aktualisierte Seiten nur mit Verzögerung registriert werden (vgl. Karzauninkat 2004c).

Kritik richtete sich in der letzten Zeit vor allem gegen das Nachrichtenportal Google News, das ohne menschliche Hilfe journalistische Quellen auswertet und Meldungen nach ihrer Relevanz gewichtet (vgl. zum Folgenden: Mrazek 2004; Krüger 2004c; Schink 2005). Zwar sind auch hier die Rankingkriterien geheim, weil aber die redaktionelle Nachrichtenauswahl simuliert werden soll, lässt sich das Ergebnis an journalistischen Standards messen. Als wichtig eingeschätzt werden solche Meldungen, die häufig im Netz vorkommen, was aber nicht unbedingt mit ihrer Relevanz korrelieren muss. Google News bevorzugt außerdem große Medien und Nachrichtenagenturen. Dass knapp die Hälfte aller Nachrichten aus nur fünf Quellen stammt, zeigte eine Auswertung von Digital Deliverance (2004).

Präferiert würden in Google News auch zeitlich aktuellere Beiträge, was dazu führe, dass nicht jene Anbieter, die eine Meldung selbst recherchiert und zunächst exklusiv verbreitet haben, an erster Stelle platziert werden, sondern „Nachzügler", die sie übernommen haben. Im Vergleich zu Nachrichtensites dauert es oft sehr lange, bis wichtige Meldungen auftauchen. Ein Beispiel: Nachdem der Name des neuen Papstes am 19. April 2005 bekannt gegeben worden war, stand nach rund einer Minute eine Eilmeldung auf der CNN-Website. Das deutschsprachige Google News-Angebot brauchte dagegen fast eine Stunde, bis der Name „Ratzinger" auf der Homepage erschien. Im US-Wahlkampf fiel Beobachtern eine politische „Schräglage" zugunsten konservativer Positionen auf, was aber – so verteidigte

[2] Allerdings kommt es bei der automatisierten Platzierung der Werbung auch gelegentlich zu absurden Ergebnissen (vgl. Delaney 2005b).

sich Google – dem Meinungsbild im Internet entspräche, das von Google News lediglich gespiegelt werde. Ein weiterer Kritikpunkt lautet, dass nicht nur auf seriöse journalistische Quellen verwiesen wird, sondern auch auf PR-Mitteilungen und rechtsextremistische Seiten.

Misstrauen weckt die zurückhaltende Informationspolitik von Google, was das Entfernen von Seiten aus dem Index betrifft. Google differenziert offenbar die Zugänglichkeit von Seiten nach Ländern (etwa in Deutschland, Frankreich und China im Vergleich zur US-Version). Damit hat sich die Suchmaschine den Vorwurf der intransparenten Einflussnahme auf die Suchergebnisse und des voreiligen Nachgebens auf politischen Druck eingehandelt (vgl. z.B. Palm 2002; Zittrain/Edelman 2002; Finkelstein 2003; Jodda 2003; McHugh 2003; Rötzer 2004; Schwan 2004c).

Andererseits werden Google und andere Suchmaschinen auch dafür kritisiert, dass sie den Zugang zu problematischen Seiten ermöglichen (Gewalt, politischer Extremismus, Pornographie), also Seiten nicht filtern oder aus ihrem Index entfernen. Diesen Missstand bestätigen auch die Ergebnisse einer repräsentativen Nutzerbefragung und einer Inhaltsanalyse im Auftrag der Bertelsmann Stiftung. Den Filtern, die den Nutzern angeboten werden, gelingt es nicht zuverlässig, jugendgefährdende Seiten auszusondern (vgl. Machill/Welp 2003: 113-125, 195-205). Überdies soll der von Google eingesetzte Familienfilter SaferSearch auch zahlreiche Seiten ohne pornographische Inhalte blockieren (vgl. Edelman 2003).

Regulierung von Suchmaschinen

In den letzten beiden Jahren wurde in Deutschland intensiv über die Regulierung von Suchmaschinen diskutiert. Anlass dafür waren Missstände wie die vermutete Meinungsmacht durch die Marktmacht von Google, die Manipulation von Suchergebnissen, die Nichterkennbarkeit bezahlter Treffer, die Zugänglichkeit jugendgefährdender Angebote über Suchmaschinen und der Umgang mit Nutzerdaten. Zur Frage, wie Suchmaschinen juristisch einzuordnen sind, hat die Landesanstalt für Medien Nordrhein-Westfalen (LfM) ein Rechtsgutachten in Auftrag gegeben (vgl. Krempl 2004b).

Mit der Situation auf dem Suchmaschinen-Markt befasste sich im Juni 2004 der Unterausschuss Neue Medien des Deutschen Bundestages. Dabei wurde die Förderung freier Suchmaschinen erwogen (vgl. Heise Online 2004a). Im März 2005 forderte die Grünen-Fraktion im Bundestag in einer Informationsbroschüre, Alternativangebote zum Marktführer Google zu fördern sowie die Kompetenz der Nutzer zu verbessern, und appellierte an die Suchmaschinen, für Transparenz zu sorgen und Datenschutzvorschriften einzuhalten (vgl. Bundestagsfraktion Bündnis 90/Die Grünen 2005). Ein Eingreifen des Gesetzgebers wurde bislang nicht gefordert.

Dagegen sind mehrere Initiativen zur Selbstregulierung von Suchmaschinen zu verzeichnen: Einen ersten, wenn auch erfolglosen Vorstoß unternahm die Bertelsmann Stiftung. Die Stiftung stellte im Oktober 2003 einen Verhaltenskodex zur Selbstverpflichtung von Suchmaschinen vor, der die Transparenz der Funktionsweise und der Ergebnisse gegenüber den Nutzern, den Schutz vor jugendgefährdenden Inhalten durch Familienfilter, das Entfernen illegaler Seiten sowie eine Zurückhaltung bei der Erfassung von Nutzerdaten forderte. Die Resonanz darauf blieb allerdings sehr gering, sodass auf weitere Schritte (Gütesiegel, Gründung einer freiwilligen Selbstkontrolle) verzichtet wurde (vgl. Bertelsmann Stiftung 2003, 2004).

Dieser Aufgabe nahm sich inzwischen die „Freiwillige Selbstkontrolle Multimedia-Diensteanbieter“ (FSM) an, die im Februar 2005 einen Verhaltenskodex für Suchmaschinen vorstellte (vgl. Freiwillige Selbstkontrolle Multimedia-Diensteanbieter 2004). Er enthält neben den oben genannten Punkten auch ein Beschwerdeverfahren und einen Sanktionskatalog. Zu den Gründungsmitgliedern, die sich auf die Einhaltung der Regeln verpflichtet haben, gehören die drei großen Suchmaschinen Google, Yahoo und MSN mit ihren deutschen Ablegern, AOL Deutschland, Lycos Europe, T-Online und t-info (vgl. Freiwillige Selbstkontrolle Multimedia-Diensteanbieter 2005). Weit reichen die Transparenzforderungen, die darin an sie gestellt werden: Für den Nutzer erkennbar sein sollen die Funktionsweise der Suchmaschine und die Kriterien, nach denen Websites ausgeschlossen werden, bezahlte Ergebnisse sollen deutlich gekennzeichnet werden. Die Suchmaschinen haben sich auch verpflichtet, die von der Bundesprüfstelle für jugendgefährdende Medien (BPiM) indizierten Websites nicht zugänglich zu machen. Solche konkreten Hinweise auf problematische Inhalte fehlen allerdings für ausländische Angebote. Außerdem ist die geforderte Filterung technisch nur schwer realisierbar (vgl. Neue Zürcher Zeitung 2005b).

Der Bundesverband Digitale Wirtschaft (BVDW) beschloss im November 2004, künftig ein Zertifikat an seriöse Suchmaschinen-Marketing-Agenturen zu

vergeben. Damit soll das Spamming von Suchmaschinen eingedämmt werden. Das Zertifikat wird nach Angaben des BVDW von den führenden Suchmaschinen-Vermarktern Espotting, Google und Overture unterstützt. Grundlage für die Aufnahme in die „White List" ist die jährliche Prüfung der Agenturen mit Hilfe eines Kriterienkataloges, den die Mitglieder der BVDW-Arbeitsgruppe Suchmaschinen-Marketing ausgearbeitet haben (vgl. BVDW 2005). Für ein Fazit, welche Effekte diese Selbstkontrollen haben, ist es bisher allerdings noch zu früh.

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Carsten Welp and Marcel Machill:

Code of Conduct Transparency in the Net: Search Engines

1. The Search Engine operators inform the users about the way in which the Search Engine works; particularly the basic criteria of ranking are explained. Also, the Search Engine operators describe which ways of manipulating websites (spamming) lead to exclusion from the result lists in case of doubt.
2. The Search Engine operators design their sites in the most transparent way. Contents whose position on the result list is due to a commercial arrangement are clearly marked.
3. It is the intention of the Search Engine operators to protect children and youths from morally damaging contents. To this purpose, the operators provide family filters and point out to the fact that filters do not guarantee absolute protection for youths and that children should not use the internet without their parents´ supervision.
4. Those sites which are regarded illegal according to national legislation will be excluded from the result lists as soon as the operators know about them and have access to the illegal sites on the index.
5. For handling the users´ data there is the principle of data-thriftiness.

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Lawrence M. Hinman:

Esse est indicato in Google: Ethical and Political Issues in Search Engines

Abstract:

Search engines play an increasingly pivotal role in the distribution and eventual construction of knowledge, yet they are largely unnoticed, their procedures are opaque, and they are almost completely devoid of independent oversight. In this paper the author examines three areas in which we encounter difficult and persistent ethical issues in search engine technology: The problem of algorithm and the lack of transparency of the search process, the problem of privacy with regards of the possibility to monitor search histories, and the problem of local censorship. The given findings lead to the conclusion that the development of structures of accountability for search engines is an important task for the near future.

Agenda

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Introduction

In the final months of 2004, rumors began to circulate on the Internet that the infamous prison abuse photographs from Abu Ghraib were no longer available on a Google image search, although they continued to show up on other search engines.[1] The implication was that political considerations might have been influencing the search engine results, and implication that Google denies.[2] When I emailed Google directly about this issue, Nate Tyler, a spokesman for Google, wrote: "Basically, Google did show these images but only for a limited period of time, as our index (collection of web images) cycles through every so often to update itself. New images replace the old. At no point did we filter these images." This explanation seems implausible, given the large number of old photos that seem to stay in the Google database and the high level of importance (and back-links) of these particular photos.

This was not the first instance of ethical issues being raised about search engines. In the early years of search engines, the line had not always been clearly drawn between "sponsored sites" (i.e., sites that pay the search company to put their sites on the top of the list) and regular, non-paying sites. This has in large measure been worked out, and search results typically label those sites that have paid to be listed. This strikes a nice balance between the demands of honesty and those of business. Search engines are understandably heavily dependent on advertising revenues, so it was important to provide a solution that permitted that to continue; at the same time, it was important that users find themselves directed toward the most relevant sites.

Subtle variations upon this theme, however, are now pervasive. Search engine companies sell certain keywords to advertisers in such a way that, when searches enter that term, certain advertising results are displayed in the results page. The advertiser then pays the search engine company a fixed amount per click. This has given rise to "click fraud," generated by the lure of an estimated 3.8 billion dollars annually in advertising revenues.[3] Competitors may repeatedly click on the ads, thereby driving up the advertising costs paid by their competitors. The average price-per-click for popular keywords is $1.70, and can range in rare cases as high as $50 per click. It's easy to see how an unscrupulous competitor could drive the advertising budget of another company into the ground.

Other issues have proved more troublesome. In a typical Google search on the word "Jew," several of the first ten sites that come up are virulently anti-Semitic, including "Jew Watch" and "The International Jew: The World's Foremost Problem." Comparable searches on "Christian" or "Muslim" or "Hindu" do not yield critical sites among the top-ranked entries. In a note from Google on "Offensive Search Results,"[4] The Google Team points out that anti-Semitic sites do not typically appear in a search for "Jewish people," "Jews," or "Judaism," only in a search for the singular word "Jew."

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[1] When I did a search on "Abu Ghraib" in December 2004 on Alta Vista (http://www.altavista.com/image/results?q=abu+ghraib&mik=photo&mik=graphic&mip=all&mis=all&miwxh=all), I came across a number of the infamous photos on the first page of results; the research listed a total number of 2,579 results. However, when I did a comparable search on Google (with SafeSearch turned off) (http://images.google.com/images?q=abu+ghraib&hl=en&lr=&safe=off&start=0&sa=N), I got 137 results, but almost none of them were the prison abuse photos that from Abu Ghraib that so electrified the world. The same search, repeated in February 2005, yielded far more images in Google, although still some of the original infamous photos seemed not to be present.

[2] Email from Mr. Tyler to me on 1/4/05.

[3] Michael Liedtke, "Click Fraud Looms As Search-Enging Threat," Associated Press, Feb. 11, 2005; http://www.miami.com/mld/miamiherald/business/national/10876986.htm?1c. Also see Jessie C. Stricchiola, "Click Fraud—An Overview." Alchemist Media, Inc http://www.alchemistmedia.com/CPC_Click_Fraud.htm .

[4] http://www.google.com/explanation.html . They write, in part, that "If you use Google to search for "Judaism," "Jewish" or "Jewish people," the results are informative and relevant. So why is a search for "Jew" different? One reason is that the word "Jew" is often used in an anti-Semitic context. Jewish organizations are more likely to use the word "Jewish" when talking about members of their faith."

In an international counterpart to the United States emphasis on local standards for judging pornography, international search engines encounter the problem that such anti-Semitic websites are illegal in some countries. Responding to the legal requirements of their home countries, Google.de and Google.fr do not list those anti-Semitic sites. A search for "Juden" (the plural—the singular in German, "Jude," returns many entries on Jude Law) on Google.de yields over 2M entries, but the first page contains no critical entries; nor does a search on "Juif" on Google.fr yield anti-Semitic sites.

Google's official policy on this issue is clearly stated in the note on offensive entries:

> *Our search results are generated completely objectively and are independent of the beliefs and preferences of those who work at Google. Some people concerned about this issue have created online petitions to encourage us to remove particular links or otherwise adjust search results. Because of our objective and automated ranking system, Google cannot be influenced by these petitions. The only sites we omit are those we are legally compelled to remove or those maliciously attempting to manipulate our results.*[5]

Several of the first page sites that appear in a search on the "Klu Klux Klan" are highly critical of the Klan; no note appears in that search about offensive results.

These cases raise interesting and extremely important ethical issues about access to information on the Web and the role of search engines. Let me begin by commenting on the public function and responsibility of search engines.

The Public Function and Responsibility of Search Engines

Search engines occupy a privileged place in the world of information technology. They are like windows onto the web—and, like windows, tend to be largely unnoticed because our gaze focuses on what is visible through them. With windows, however, it is easy to detect when they are cloudy or distorted. With search engines, however, it is much more difficult to tell when they are providing distorted or incomplete pictures. Several points should be noted here.

First, the vast amount of information available on the Web would be almost useless without search engines. They play an absolutely crucial role in the access to information.[6] In the world of the Web, *esse est indicato in Google*: to exist is to be indexed on Google. The challenge in information retrieval is not simply to find the right piece of information, but also to avoid listing all the pieces of extraneous information. (The success of Google was precisely in its ability to help users find exactly the information they were seeking and to avoid irrelevant sites.) Search engines are the gatekeepers of the web,[7] helping people to reach their desired destinations. Without them, much of the web would simply be inaccessible to us.

Second, access to information is crucial for responsible citizenship.[8] Citizens in a democracy, and

[5] Ibid.

[6] In March 2005, Google was ranked fourth in most accessed U.S. sites by Nielsen, with a unique audience that month of 60M viewers, which equaled an audience reach of 43%.

http://www.netratings.com/news.jsp?section=dat_to&country=us The other principal mode of access to the Web has been guides done by individuals. In the early stages of the Web, these flourished. More recently, with increasing accuracy of search engines, they have declined in importance.

[7] On the gatekeeper metaphor, see Baye, M. R. and Morgan, J (2001). Information Gatekeepers on the Internet and the Competitiveness of Homogeneous Product Markets, *American Economic Review* 91(3): 454-474.

[8] On the political dangers associated with search engines, see Introna, Lucas D. and Helen Nissenbaum (2000) "Shaping the Web: Why the Politics of Search Engines Matters", *The Information Society*, Vol. 16, No.3, 1-17; available at http://www.indiana.edu/~tisj/readers/full-text/16-3%20Introna.html. On government surveillance, see "The Nature and Scope of Governmental Electronic Surveillance Activity," Center for Democracy and Technology (2004), at http://www.cdt.org/wiretap/wiretap_overview.html; for current standards, see "CURRENT LEGAL STANDARDS FOR ACCESS TO PAPERS, RECORDS, AND COMMUNICATIONS: What Information Can the

indeed members of the international community in general, cannot make informed decisions without access to accurate and complete information. Within a few years, the Web has become the favored source of information retrieval. When we want to find more information about a topic, whether it be torture or tsunamis, we turn first—and often only—to the Web. The Web has become the principal source of research information for most Americans who do casual research. Typically, users turn first to Google for searches; Machill et al. estimated that 74% of users turn to Google first.[9]

Third, search engines have become central to education. Students today perform countless web searches in an average day. They search Google far more often than they go to the library, undoubtedly more often than they look in a book for information. Search engines play a role analogous to the card catalogue in traditional libraries and the indices, such as the *Reader's Guide to Periodical Literature*, that were so important to students of the previous generation. Imagine a library without a card catalogue; that would be a close analogy to the Web without search engines, but with one important difference. Books would still be written without card catalogues, but without search engines, many persons and groups would probably not develop their websites.

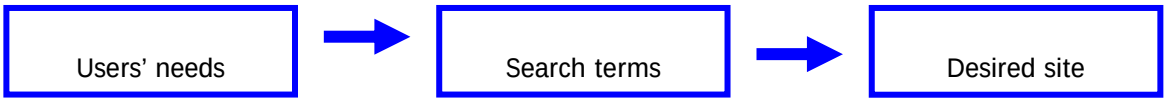
Fourth, search engines are owned by private corporations, businesses that are quite properly seeking to make a profit. These companies, especially Google since it has become the search engine of choice for so many millions, have a crucial public responsibility but are accountable to shareholders, not the general public. This sets up a tension between the public role of search engines and their corporate accountability.

Let's now examine three areas in which we encounter difficult and persistent ethical issues in search engine technology.

The Problem of the Algorithm

The key to the success of Google was an important conceptual shift in the understanding of searches. Initially search engines used fairly elementary algorithms to determine page rank such as the number of visits to a page, the number of other pages which link to a given page. What is common to these initial approaches to user searches was that they depended on objective criteria such as the number of page views. A given search engine could certainly get it wrong, but that did not diminish the fact that there was an objective fact of the matter to be gotten wrong. These initial searches were at least intended to rank the most popular sites, where "popularity" would have a technical and objective meaning.

The shift in what we could call second-generation search engines involved looking much more closely at what users wanted to find, which was not always the most popular site, but the site that most closely meets their needs. The remarkable success of Google depends in part on its ability to offer users what they are looking for, based on the search terms that are entered. Thus we have the following relationship:



This is conceptually very different from a ranking of page popularity alone; what the user wants becomes an integral part of the formula, as does the set of search terms most commonly used to express what the user wants.

The situation described above is complicated by the fact that the search algorithms that govern searches are well-kept secrets, and properly so. Not only do these algorithms give some companies a competitive edge, but potential spammers can manipulate search engine results much more easily if they know the details of the algorithms used to rank search results. Consequently, the search process is not transparent, that is, we do not know why certain sites have been included or excluded and we do not know what some sites are ranked above others.

Government Get About You, and How Can They Get It?" at http://www.cdt.org/wiretap/govaccess/govaccesschart.html

[9] Machill, M., Neuberger, C., Schweiger, W. and Wirth, W, "Wegweiser im Netz" Qualität und Nutzung von Suchmaschinen," in *Wegweiser im Netz: Qualität und Nutzung von Suchmaschinen,* Verlag Bertelsman Stiftung, Bielefeld, p. 397.

The Politics of Searching: Privacy and Liberty

In the aftermath of the September 11th attacks, the Federal Bureau of Investigation in the United States proposed to develop an email intercept system that could sniff out possible terrorist threats, getting right to the "meat" of the message and disregarding the inessential. Carnivore, as it came to be known,[10] was designed to monitor email traffic, but it is easy to see the way in which the same argument could justify monitoring internet searches. Carnivore, like most FBI computer projects, was a technical failure and abandoned, after an expenditure of $6-15M, in favor of commercial software.[11] After all, if the government is entitled by the Patriot Act of 2001 to see what books we have been taking out from the library,[12] wouldn't the same logic mandate access to search requests?

The potentially chilling effects of such a situation are clear. The technical difficulties are significant but surmountable. Certainly it is virtually impossible to check who is doing searches from a public computer. From office or home machines, it's at least possible to obtain ip addresses, and sometimes more if, for example, someone has cookies enabled. Most recently, Google has offered a voluntary search history, "My Search History," that allows users to store and retrieve their searches. It "lets you easily view and manage your search history from any computer."[13] Google stresses the benefits for end users, building on the fact that most of us have at one time or another been unable to retrieve a reference we originally found in a Google search but cannot find again. However, there is obviously an economic motive behind this helpful attitude: Google can provide advertisers with far more sophisticated consumer profiles if it maintains a comprehensive database of search histories that can be sorted by individual user. To some extent, this is already possible with cookies and with individuals signed in with a Gmail account, but the new "My Search History" feature increases accuracy dramatically and tracks users across multiple machines.

Economics is driving these technological developments in tracking search engine users, but the truly frightening aspect of this is political rather than economic. We all leave countless virtual footprints as we move through the day, using credit cards, making cell phone calls, accessing ATM machines, etc. These already provide a surprisingly detailed picture of an individual's daily life at least in terms of external activities. Search histories, however, go one step further: they provide an excellent source of insight into what someone is *thinking*, not just what that person is doing.

The danger, at least in the United States, is that such monitoring may be used increasingly to monitor and eventually suppress political dissent. The terrorist attacks of September 11th were ironically effective in strengthening public support for the erosion of personal liberty in the United States, and one can easily imagine government monitoring of search engine activity justified as a counter-terrorism measure.[14]

If such a scenario seems too implausible, and if it seems unthinkable that major search engine companies would cooperate with such an undertaking, one only has to look at Internet filtering in China today to see what the future may hold.

Local Standards in a Global Village

Perhaps the most frightening aspect of the power of search engines has occurred recently in China, which has made massive and highly effective efforts to prevent average Chinese citizens from accessing certain sites on the Internet. The accepted wisdom has been that the Internet is an unstoppable force for democratization, a force for liberation that cannot be tamed by local governments.

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[10] Later, it was called DCS-1000.

[11] "FBI cuts Carnivore Internet probe," CNN website. Tuesday, January 18, 2005 Posted: 9:59 PM EST (0259 GMT) Tuesday, January 18, 2005.

[12] "FBI monitoring library records in terror probe," Associated Press, June 25, 2002 (http://www.freedomforum.org/templates/document.asp?documentID=16468; last accessed 5/3/05).

[13] https://www.google.com/searchhistory/login

[14] For an insightful discussion of this issue in the European context, including a discussion of the differences between the American and European contexts, see Michael Nagenborg, "Privacy and Terror: Some Remarks from Historical Perspective, IJIE International Journal of Information Ethics, Vol. 2 (11/2004), 1-5.

This assumption has been proved false in the case of Internet censorship in China. The Chinese government has succeeded in blocking the access of the average Chinese computer user to political sites dealing with the Dalai Lama and free Tibet, the Falun Gong, Tiananmen Square and—most recently—the Chinese demonstrations against Japan's most recent attempts at revisionist history.[15] The report of the ONI on "Internet Filtering in China 2004-2005" indicates that China has been far more successful in preventing its citizens from accessing certain websites than previously imagined. China's approach has been multi-pronged. Much of it occurs at the backbone level, which is highly effective, but this is supplemented by restrictions on internet service providers and even down to the level of cybercafés, which are required to track customer usage.[16] Email appears to be filtered at the service provider level, not at the backbone level, and increasingly sophisticated anti-spam filtering software can also be modified for use in political filtering. Blog provides are carefully monitored through keyword filtering, and politically incorrect bloggers are typically removed quickly from the servers. Within China, when one looks for Google, one often reaches alternative search engines such as Openfind, Globepage, chinaren.com, search.online.sh.cn, and fm365.com.[17] These search engines are easily manipulated to carry out the kind of filtering that the Chinese government mandates.[18]

It is important to realize here the degree of cooperation that China has gotten from the West in its Internet filtering programs. Certainly much of the backbone of China's Internet has been supplied by American manufacturers. According to the ONI Country Study on China, Cisco Systems has played a pivotal role in providing the infrastructure that enables the Chinese government to filter the Internet so effectively.[19] Without the technical expertise and physical infrastructure provided by American companies, China's Internet filtering endeavors would be far less successful.

The role of Google in this situation, at least what we know of that role, does little to quell fears about the ways in which Google may be subject to political pressure. In 2004, the Chinese government began intermittently to shut down access from within China to the China Edition of Google News. Eventually, Google decided to shape its search results within China to the expectations of the Chinese government. A Google statement describes the situation in the following terms.

> *There has been controversy about our new Google News China edition, specifically regard-*

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[15] Jonathan Krim, "Web Censors In China Find Success," *Washington Post*, Thursday, April 14, 2005; Page A20. Also see Jonathan Zittrain and Benjamin Edelman, "Empirical Analysis of Internet Filtering in China," Berkman Center for Internet & Society, Harvard Law School: http://cyber.law.harvard.edu/filtering/china/ ; last accessed 5/2/05; this includes a complete list of the 18,931 sites blocked by the Chinese government.

[16] OpenNet Initiative (ONI), "Internet Filtering in China 2004-2005: A Country Study," April 14, 2005. http://opennetinitiative.net/studies/**china**/ONI_China_Country_Study.pdf Also see Jonathan Zittrain and Benjamin Edelman, "Internet Filtering in China," 2003. http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan011043.pdf

[17] Berkman Center for Internet & Society, Harvard Law School, "Replacement of Google with Alternative Search Systems in China: Documentation and Screen Shots," http://cyber.law.harvard.edu/filtering/china/google-replacements/

[18] OpenNet Initiative: Bulletin 005, "Probing Chinese search engine filtering," August 19, 2004 http://www.opennetinitiative.net/bulletins/005/

[19] "There has been considerable debate about the complicity of Western corporations in the development and maintenance of China's filtering system. China's Internet infrastructure includes equipment and software from U.S. companies, including Cisco Systems, Nortel Networks, Sun Microsystems, and 3COM.28 Cisco Systems in particular has been integral to China's Internet development. The core of China's Internet relies on Cisco technology; Cisco specifically implemented the backbone networks for ChinaNet29 and CERNet30, China's nation-wide educational network. Cisco's involvement continues to this day with the company's role in the development of China's "Next-Generation Network," known as CN2.31." "Internet Filtering in china 2004-2005," pp. 6-7.

> *ing which news sources we include. For users inside the People's Republic of China, we have chosen not to include sources that are inaccessible from within that country.*[20]

In other words, Google decided to respect the Chinese political censorship rather than allow it to be shut down once again.

Although China is a vast potential market, it currently has little economic influence over Google, and presumably no political power over it. Nevertheless, Google seems to have accommodated itself to the wishes of the Chinese government. If this is the case, one cannot help but worry that Google could eventually be much more strongly influenced by the United States government, which has far greater economic and political impact on Google than does the government of China.

Conclusion

Search engines play an increasingly pivotal role in the distribution and eventual construction of knowledge, yet they are largely unnoticed, their procedures are opaque, and they are almost completely devoid of independent oversight: powerful, cloaked in secrecy, and not subject to external control. Insofar as the flourishing of deliberative democracy is dependent on the free and undistorted access to information, and insofar as search engines are increasingly the principal gatekeepers of knowledge, we find ourselves moving in a politically dangerous direction. We risk having our access to information controlled by ever-powerful, increasingly opaque, and almost completely unregulated search engines that could shape and distort our future largely without our knowledge. For the sake of a free society, we must pursue the development of structures of accountability for search engines. Based on the cases discussed above, there is little reason to think that search engines will remain impervious to external political and economic pressures.

Lawrence M. Hinman, Director of the Values Institute and Professor of Philosophy at the University of San Diego, writes widely in the area of applied ethics. He is the founder of *Ethics Updates* (http://ethics.sandiego.edu) and *Ethics Videos* (http://ethics.sandiego.edu/video/).

20 http://www.google.com/googleblog/2004/09/china-google-news-and-source-inclusion.html Google concludes, "On balance we believe that having a service with links that work and omits a fractional number is better than having a service that is not available at all. It was a difficult tradeoff for us to make, but the one we felt ultimately serves the best interests of our users located in China. We appreciate your feedback on this issue." Also see the links at http://www.google-watch.org/china.html .

Bernhard Rieder:

Networked Control: Search Engines and the Symmetry of Confidence

Abstract:

Search engines have become an integral part of our Internet use. They shape the way we look at the world, they provide orientation where there is none; but the maps they draw are too often hijacked by commercial interest. Search engines are less *black box* than *black foam*; functional decoupling, parasite technologies, and the embedding in the greater context of culture and society render the *search act* subject to overdetermination. Control is thus diluted into a dense network of human and non-human "actants" and the power of the search engine is located in a *control zone* rather than a control center. In order to shift power back to the public, this paper proposes the concept of "symmetry of confidence", a new relationship between search engine companies and their users.

Agenda

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In the middle of the nineties, when the Internet first made its entrance to a larger audience, the debate on the social, political and ethical dimension of the global network centered around two main issues: first, the question of basic access to technology and second, the effects of a global non-broadcast media on the functioning of the public sphere. After the turn of the decade and especially after the burst of the economic bubble, research on the Internet is diversifying at a rapid pace; research questions are becoming both more specific and precise – answers contain a lot more nuance. With over 700 million users, the Internet is now an established part of industrial society and the debate on access is quickly shifting from the general question of admittance to the technology in general to the problem of access to specific information once inside. As the *gatekeeper* of the digital age, the search engine has come under special scrutiny in the recent years.[1]

The latest Pew study[2] on the topic suggests that search engines are a central part of how people use the Internet. They have become *institutions*: the interactive mapmakers that chart the unstructured geography of the vast data environment that is the Web. When scouting for new information, there is practically no way around the search engine and as the Internet has become part of our daily lives, so have they; and the maps they draw are less and less representations of the public sphere, but charts of the commercial landscape. In a democratic society, the concentration of power automatically raises a series of questions and in order to gauge the size of the problem, we first need the conceptual tools to understand the phenomenon - only then can we propose a course of action. Due to the unusual complexities of the role search engines play, our understanding is still in the early stages.

This paper will add some thoughts to the discussion by making three arguments: 1) conceptualizing search engines as black boxes is increasingly inaccurate and will be more so with further technical advancement; 2) our perspective on power and control must adapt to our hybrid condition; 3) a theoretical and practical shift in our conception of the relation between user and developer should be a key element in an ethical and political stance on the question. Being a researcher as well as a developer, I will try to build these arguments on a perspective that is based on both on a technological and a cultural theory viewpoint. In a time where activities that were formerly reserved to human agents are getting automated in computer code and being delegated to machines at a fast pace, the study of technology becomes indispensable for our understanding of the forces that shape culture and society.

The search engine: from black box to black foam

The ongoing debate on the political and ethical implications of search engines[3] does rarely provide a definition of its subject; some years ago it was AltaVista and now it is Google that plays the role of a convenient *pars pro toto*. This focus on the dominant player in the market makes it difficult to generalize the technical and morphological aspects of the object of study and to understand the functional and representational choices each company makes. But it is only through a closer look on these choices that we can discuss the significance for society and culture and propose a course of action at the same time. Power structures are not confined to the social realm; they also operate inside of technical artifacts and to decipher them, we need to look at these artifacts themselves. I will therefore suggest a quick definition of the term: a (Web) search engine is a piece of software that creates an *index* of a defined set of *data*, includes a *retrieval technique* to access that index and uses a specific *mode of representation* to display the results.[4] Following this definition, we can identify four distinct conceptual layers, where each one puts the developer before a series of choices:

- *Data:* What is the scope of application? A local site/database or the entire Web? Is the data unstructured, pre-structured or structured? What is relevant? How do we extract it?

[1] E.g. Gerhart, Susan L.: Do Web Search Engines Suppress Controversy? or Introna, Lucas D. / Nissenbaum, Helen: Shaping the Web.

[2] Fallows, Deborah: Search Engine Users.

[3] While search techniques are as old as computers, the term “search engine” has come to refer specifically to retrieval software on the World Wide Web. In this article, I will use it in this context.

[4] For an introduction to the larger field of information retrieval see Chu, Heting: Information Representation and Retrieval in the Digital Age.

- *Index and indexing technique:* How is the index structured and what are the criteria to be taken in? How much of the data space is covered by the index? What is the common rate for updates?

- *Search and retrieval:* How do we query the application and how is the query related to the index? What are the criteria for relevance? In which order should we rank results?

- *Representation:* In which form does the application present the results? As a list? A clustered list? A map? A tree? A 3D-sphere?

Taken together, these four layers trace the *morphology* of a search engine – a series of choices for the developer as well as a series of questions for the investigator. Every search engine gives a particular answer on each one of those levels. Commercial success as well as political impact depends on it. While making up a functional whole in the eyes of the user, the four layers are in general built as largely independent modules rather than a monolithic application, and specialists in research and development are working on the specific problems and difficulties encountered on their level, which constitutes in fact a distinct field of research. There is actually no technical reason for packing all four layers into one application and we are already seeing specialization and diversification in the area. "Result browsers" display search engine query results using a different type of representation: Touchgraph's GoogleBrowser[5] transforms the top-down list into an animated network of nodes and Google News Map[6] projects the events from Google's news syndication service[7] onto a world map. Several research projects use post-processors to re-rank search results to add features such as weighted search[8] or document comparison based on vector models[9]. There are companies like Sensoria, whose product iSearch[10] is a basically a highly sophisticated neuromimetic search algorithm that can be used with any index and various forms of representation. Even the optimization of a Web page in order to increase its place in result ranking can be seen as part of the search process.

Such forms of modularization, functional decoupling, and "parasiting" are part of the history of systems design: while the first computers ran one program at a time, machines nowadays are a prolific environment for hundreds of processes and components, each one performing a different task. The four subsystems that constitute a search engine are therefore embedded into other, established structures that range from programming languages and frameworks to the operating systems and database applications that lay the ground for everything else. In analogy to the history of human societies, the ever more complex organization of information systems continuously produces specialization and division of labor and today, a computer may very well be called a "society of processes"[11]; habitants are highly dependent on each other and the functioning on the whole cannot be reduced to the actions of an individual.

The trend to ever-increasing organizational complexity forces us to reassess the images and metaphors we use for information technology. Search engines have often been called "black boxes"[12] – we cannot see inside (they are protected both by technical and legal door locks), the only way to judge the mechanism is therefore to analyze input and output. But the metaphor of the black box implies that we still have a clear picture of the outside shape of the object; there still *is an object* and we know where it starts and where it ends, we can clearly identify input and output. But the label is becoming increasingly inaccurate. The functional decoupling at the inside of a search engine and the integration of the system into a larger technical environment make it nearly impossible to gauge how many subsystems are actually involved in the search process. The neatness of the box is long gone; what we look at is the burgeoning assembly of black bubbles that form

[5] http://touchgraph.com/TGGoogleBrowser.html

[6] http://douweosinga.com/projects/googlenewsmap

[7] http://news.google.com

[8] For example the Fetuccino "search parasite" described in Ben-Shaul, Israel et al.: Adding support for dynamic and focused search with Fetuccino.

[9] My own project "procspace" is an example (http://procspace.net).

[10] http://www.influo.com

[11] This idea was first explored by Marvin Minsky and has practically invaded the AI community in form of multi-agent systems.

[12] E.g. in Winkler, Hartmut: Search Engines. 29

an amorphous mass: *black foam*[13]. How many layers of processing lead from the manipulated *metatags* on a webpage to the *clustermap* the user interacts with when making a search request? Through how many subsystems does the search query pass and what do they add to the result? Where does the "system" start and where does it end? There is no longer a clear answer to these questions. Functional interdependence and technical layering will only continue to grow and with search algorithms that are built on probability mathematics and connectionist approaches, even developers have no way to predict how a system will perform in a given situation.

And this is only the technical side of the process. But information systems are neither god-given nor self-sufficient. At both ends of the chain we find human beings, at the bottom as developers, system designers and information scientists and at the top as users; and in the middle there are people who optimize Web pages for optimal ranking and other developers that create meta-searchers, post-processors and parasite interfaces. All of those human beings are of course deeply embedded into the dense networks of culture and society. Taken all together, we see a great number of human and nonhuman agents that make up the *dispositif* that structures the terrain for what we might call a "search act"[14]. If we want to know how the search engine's power operates, we have to start from this hybrid complexity and cope with *overdetermination*.

The Question of Power

We are only at the beginning of our theoretical grasp of such very complex socio-technical systems. Technology has never been neutral but it is only with the computer entering the cultural practices that are so intimately tied to the production of meaning that we actually start to understand what that might actually mean. It is probably Bruno Latour that went the furthest in theorizing the hybrid practices performed in networks of human and non-human "actants". Latour goes as far as proclaiming that "action is simply not a property of humans *but of an association of actants*"[15]. Adapted to our question, it means that when a surfer uses a search engine, the human and the non-human fusion into a third, a hybrid actant that is more than the sum of both. Behind them lies the even larger, hybrid network described above: every actant, no matter if human actor or technical subsystem, plays its role in determining the outcome. The responsibility for the results cannot be labeled back to one of the components. We leave both technical and social determinism behind – at the price of loosing a stable point of origin for causation. If we take Latour's perspective seriously, the question of power suddenly becomes very complicated: "Responsibility for action must be shared among the various actants"[16]. And, as I have tried to show, there is a great number of technical and human actants at work in the *black foam* surrounding the search act and control is effectively diluted into the dense network they make up. The political choices (e.g. through ranking techniques) developers can make are actually part of a much larger, distributed space of possibility and we should not think of control *centers* but rather control *zones*.

Power runs through the capillaries of this network and with reference to Foucault[17] we have to understand power as a *productive force*, not as an inhibitor. Search engines are best understood when seen as producers, not as censors. Their product is a perspective, a topology, a map on the chaotic territory of the Web. By ranking search results, they offer a concept of *what is important* and what is less so. They are *vision machines*[18] that not only extend our perception into the masses of information that would normally be far beyond human scope, but that also *interpret* the environment they render visible. The functional morphology embedded into the four layers of a search engine might not work the same way as a human perception and interpretation, but it is nonetheless a semantic model that implies a perspective of what things *mean*. Google's

[13] The metaphor of foam has been recently explored – in a very different context – in Sloterdijk, Peter: Sphären III.

[14] The analogy to the term "speech act", first coined by Adolf Reinach and later by John Austin, intends to emphasize de pragmatic context of information search. Due to space restrictions, this line of though must be explored elsewhere.

[15] Latour, Bruno: Pandora's Hope. 182

[16] Latour, Bruno: Pandora's Hope. 180

[17] Foucault, Michel: Histoire de la sexualité I.

[18] Virilio, Paul: La machine de vision.

PageRank[19] algorithm for example is built on the assumption that every link to a site is also a popularity vote and that sites that get a linked to a lot must be very important. This is of course a sociological assumption and whether right or wrong, it implies a view of how society works. And this view is effective in every one of the millions of search operations processed each day.

There is at least one major difference between a human gatekeeper (or better: viewshaper) – a journalist for example – and an algorithmic one. The journalist is deeply situated in the culture she is working in. She is able to judge a source of information using probably hundreds of micro-criteria (some of which may very well be subsymbolic in nature) and it is clear that a PR brochure from a company will not be treated the same way as a communiqué from the United Nations. The quality of the human journalist is her *subjectivity* – her being a subject of a culture – which doesn't mean that she is not *balanced* in her work. The algorithmic gatekeeper does not have this level of immersion in culture necessary for deep semantic operation. While some level of adaptation is possible, search engines use a "one size fits all" approach: in order to produce their hierarchies, they have to decide on a set of criteria and parameters (like PageRank) that will be used on all of the analyzed data. As a result, one perspective will be favored over the others and this *worldview* is not based on the adaptive interpretation of a human being but on a short series of parameters mechanized in the form of an algorithm with little or no capacity to adapt to context. Commercial actors have the resources to adapt their Web content to the common criteria that decide on visibility and they have already hijacked large zones of the keyword terrain. Search engines have become agents of commercial interest.

But despite this critique, we have to understand that "there is no such thing as digital information *without* filters"[20], that there is not *outside* of power. The whole idea of the search engine is about providing orientation where there is none or very little and this implies higher visibility for some and less visibility for most. Foucault taught us that knowledge (and a search engine can be seen as producer of knowledge) is intimately intertwined with power and it is very clear that a commercial enterprise will chose a worldview that does not contradict the power structures of the market.

The Symmetry of Confidence

We are faced with a rather paradoxical situation: on the one hand side I have argued that search engines are powerful *vision machines* that provide cultural orientation, mostly in favor of economic interest; but just before, I suggested that information systems and the hybrid networks that surround them make it impossible to attribute accountability to a precise agent in the chain. So there is power, but nobody has it. Political and ethical choice depends however on our capacity to act and my argument for a distributed understanding of control seems to make effective action extremely difficult. At the same time we seek answers to the question of how can we guarantee that the model of knowledge, the worldview every search engines implies is compatible with the democratic values of plurality and equality and not just another outlet of special interest? Introna and Nissenbaum have pointed out[21] that the Web is a public good and that commercialization and centralization of information access through search engines is endangering the Web as an egalitarian space for civic communication and representation. They appeal to humanitarian values of fairness and restraint and urge the makers of search engines to keep an egalitarian outlook. While business ethics may be part of the solution, it is clearly not enough. As the already mentioned study[22] of the Pew project suggests, we use search engines – despite all the problems and reservations – with great confidence. It is time that this confidence was mirrored back to us.

Reduced accountability through hybridization of control and the dilution of power into a network of actants on the one hand, and the immense act of confidence in which we delegate part of our perception to search engines on the other, lead to a possible answer to the problem: the notion of "symmetry of confidence". What does this mean? I propose that instead of asking (search engine) companies not to be commercial actors, we should build on the ongoing process of modularization in order to shift more control to the public. Dilution of power does not

[19] http://www.google.com/technology/

[20] Johnson, Steven: Interface Culture. 38

[21] Introna, Lucas D. / Nissenbaum, Helen: Shaping the Web.

[22] Fallows, Deborah: Search Engine Users.

entail even distribution; there are *zones of power* and the current concentration in the zone of commercial interest can and should be countered by strengthening civil society. While it would be desirable to develop "more egalitarian and inclusive search mechanisms" as Nissenbaum and Introna suggest[23], devising policy for such a goal would be difficult and highly problematic from a political standpoint: what are the "good" values and how do we legislate them into the market? And how would we keep the commercial actors from quickly adapting their content to the new "egalitarian" search algorithm?

Instead of trying to mechanize equality, we should obligate search engine companies to perform a much less ambiguous public service by demanding that they grant access to their indexes and server farms. If users have no choice but to place confidence in search engines, why not ask these corporations to return the trust by allowing users to create their own search mechanisms? This would give the public the possibility to develop search algorithms that do not focus on commercial interest: search techniques that build on criteria that render commercial hijacking very difficult. Lately we have seen some action to promote more user participation and control, but the measures[24] undertaken are not going very far. Still, from a technical point of view, it would be easy for the big players to propose programming frameworks that allow writing safe code for execution in their server environment; the conceptual layers already are modules and replacing one search (or representation) module with another should not be a problem. The open source movement as part of the civil society has already proven it's capabilities in various fields and where control is impossible, choice might be the only answer. To counter complete fragmentation and provide orientation, we could imagine that respected civic organizations like the FSF[25] endorse specific proposals from the chaotic field of search algorithms that would emerge. In France, television networks have to invest a percentage of their revenue in cinema, why not make search engine companies dedicate a percentage of their computer power to algorithms written by the public? This would provide the necessary processing capabilities to civil society without endangering the business model of those companies; they could still place advertising and even keep their own search algorithms a secret. But there would be alternatives – alternative (non-commercial) viewpoints and hierarchies – to choose from.

Conclusion

This paper started out by arguing that search engines have become more like *black foam* than black boxes. Their highly complex hybrid technical and social composition renders clear delimitations impossible, and overdetermination dilutes power from control centers to control zones. In order to reduce commercial hijacking of search engines, we need to strengthen civil society; one way to do so would be to open the server farms or search engine companies for code written by the open source community.

This symmetry of confidence is not a concept for abolishing power structures or capitalism; it proposes a different *zoning* of power by shifting some part of control over the *vision machines* back to the public. If search engines shape the way we look at the world, the public should have the right to shape them in return.

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[25] Free Software Foundation, http://www.fsf.org

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Tobias Blanke:

Ethical subjectification and search engines: ethics reconsidered

Abstract:

This article will explore the relation of search engines to the freedom they invoke in human subjects. Away from questions about the social impact of search engines and their ethical use, it shall investigate the influence of search engines on ethical subjectifications. The article will criticise the common critique that search engines should only deliver neutral and objective results to their users, where 'neutral' and 'objective' are defined as anti-subjective. On the contrary, it will argue that search engines are designed to deliver subjective results. A possible ethical critique starts therefore where they fail to do so. Due to reasons immanent to the technology, search engines are never subjective enough in their relevance decisions. Their results collide at the same time with what their users expect them to deliver. The article will show that, far from being a disadvantage, this disagreement between the users' expectations and the search engines results is what triggers an ethical subjectification.

Agenda

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Introduction

This article will explore the relation of search engines for the internet to the freedom they invoke in human subjects. On the one hand, the internet is representative for a concept of freedom in the very early sense of the Enlightenment; on the other it evokes well-known reactions to anarchic Enlightenment that waver between the desire for freedom and control over freedom. The freedom the internet gives rise to has been valued and praised but also feared. It is virtually impossible to control this freedom at the source. It does not take much effort for users to present any views or materials online. Search engines often take the blame for the misuse of this publishing and freedom of information, as they are the entry point to the web's freedom. They are therefore faced with the dilemma of unlimited freedom versus controllable freedom. Ethical arguments have been invoked for the control the information on the World Wide Web at its gates. New legislation cannot really help, as the web is not bound to national borders or responsible to a lawful sovereign. With modernity, if freedom and its subjects cannot be controlled by laws, moral or ethical control has provided a solution. Search engines are as such an ethical problem, because they confront us again with the modern ambivalences of ethical subjectification and its traditional question of how to make subjects behave ethically. How to control freedom by means of ethics is the question for ethical investigations of the new web technology.[1] This article will propose a different approach towards the complex relation between ethics and modern information technology.

Inspired by Norbert Wiener's proposal in his classical Computer Ethics book, *The Human Use of Human Beings: Cybernetics and Society*, this article will depart from traditional ethical approaches used to assess the ethical impact of search engines.[2] Away from questions about the social impact of search engines and their ethical use, it shall investigate the influence of search engines on ethical subjectifications. Applied ethics is not just ethics applied by using lasting ethical ideas to gauge human behaviour in society and throughout history. It is not enough to look at the subject's ethical consciousness before and after the interaction with technology and afterwards decide on the nature of change based on situation-independent ethical values. To break loose from this type of applied ethics, it is crucial to consider the phenomena themselves and not be restricted to universally applicable ethical values. Looking at the ethical development of subjects under the influence of search engines does away with the external viewpoint. In exchange, it requires knowledge about the technology and its functioning, given that analysis starts with the phenomena. Sometimes a dispute in an argument in applied ethics is just a dispute about facts. This paper will contend that such an approach is more appropriate to explain the influence of technology in general and search engines in particular upon the processes of ethical subjectification.

In order to develop the impact of search engine technology on ethical subjectifications, the article will proceed in two stages. Firstly, it will look at how search engines decide over information. The article will demonstrate why a common ethical critique of search engines misses its target. One should not expect search engines to deliver only neutral and objective results, as the technology is not designed to do so. Secondly, it discusses the problem of reducing ethical freedom to having total information. The other argument in the common ethical position towards search engines, as criticised in this paper, is the demand not just for neutral, but also for complete information. The second part will show that an ethical decision does not derive from what is already known, but what remains to be discovered. Search engine technology will be considered in the context of the area in computer science dealing with it, Information Retrieval (IR). Here search engines are only a small field of applications and among them web search engines are the most famous. They open the way into the internet and make the internet a truly 'worldwide web'. Without them, only field experts would be able to find information, as an overview of the location of relevant sites would be a

[1] Please compare the report on ‚Deutschlandfunk' about a conference „Zur Ethik und Ökonomie von Internet-Suchmaschinen - Eine Tagung der Bertelsmann-Stiftung in Berlin"**.** The summary is, that the world inhabitants are to be trained with ethics on the use of the World Wide Web. Deutschlandfunk, Ethik und Ökonomie von Suchmaschinen.

[2] Wiener, Norbert: The Human Use of Human Beings.

prerequisite for information retrieval. Search engines are the path of access for the general public into the internet world. A closer look at search engine technology will reveal that the ethical problems of search engines commence with their decision about the relevance of an information for the rest of the world.

Relevance decisions – Simulating the users' minds

Possible ethical problems with search engines are often identified with those of the web, when they are blamed for the content they return to an information need. If the source cannot be blamed, the entrance is to be controlled. Such an approach runs into the danger of disregarding the specificity of search engines. The technology itself cannot be blamed for the content it has to consider. An item is a datum for a computer and becomes information only for a human being able to interpret it. Search engines return in this sense data and do not know anything about what this data represents. Computers are symbol-manipulating machines; they do nothing else but substitute symbols with other symbols and process data without real knowledge about what it means. Search engines work the same way. Though they are meant to retrieve information, they actually retrieve data. Computer science only calls them information retrieval engines as their matching is not absolute. Data retrieval done by database management systems relies on clearly defined objects or definitions and follows the rule: Either every object or none can be retrieved. The search conditions express necessarily and sufficiently what could possibly be retrieved by them. One incorrect match in thousands of retrieved objects means simply a total failure. Information retrieval however looks for 'relevant' information, which can still be there even if the data is inaccurate. Relevance is defined with respect to the computation of the information an object contains about another. Every user of search engines experiences relevance in the form of the order of the return list. It is with relevance that the more technologically specific ethical problems of search engines begin.

Technologically, relevance decisions of search engines work amazingly well if one takes into consideration the amount of data they have to deal with in real time. The computer makes a guess on the content of the documents. As it cannot understand what is written, its guess is not based on understanding. It will use statistics and calculation, its only source of information,[3] and start counting words, word phrases etc. By means of term frequencies, search engines estimate how useful this document could be for a query. If document A repeats the query's words more often than document B, then it will have a higher relevance.[4] Rather basic statistics produce what is for the users the 'mysterious' ranking of search engines. "Google" as the nowadays most famous example will take us closer to the ethical problems behind the ranking. It produces pragmatically a good match quickly. The full details of its algorithm are not known because of property rights, but an early paper of the two Google founders indicates that it is based not only on word occurrence statistics but also on a system of authorities and hubs.[5] Authorities are web pages that are linked by many others, while hubs link themselves to many other pages. Web pages achieve a better ranking if they optimise their relation within this system of hubs and authorities. With this algorithm, Google simulates information seeking strategies from academic contexts. In academia, it is a good habit to start research by browsing through the material referenced in an initial paper.

The Google system obviously performs so well that most users choose it instead of other systems. Google started off as one of the preferred engines among computer experts and has today almost a monopoly, as it returns reasonably good information very quickly without charge. Even if its market penetration and global dominance can be another ethical (or rather political-economical) problem, for the purposes of this article, Google is chosen as an example of how search engines work, used to investigate the impact of the basic technology upon

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[3] For reasons of simplicity, the argument will be restricted to the understanding of textual information. Graphical or other multi-media matching works similarly.

[4] Zipf's law says that only the least occurring words hold most of a text's particular meaning while the most occurring ones are repeated throughout many texts. Mathematically, the relevance of a word is indirect proportional to its frequency. Modern information retrieval is based on this law by discarding the most and the least occurring words as not very discriminating.

[5] Brin, Sergey and Page, Lawrence: The anatomy of a large-scale hypertextual Web search engine.

ethical subjectifications. It is more important for the latter argument to look at the principles of how search engines deal with meaning and information. From this viewpoint the ethical problems of search engines do not begin with the fact that they decide about relevance but with how they decide about it. The technology has been developed so as to decide itself. Its decision is supposed to reveal the meaning in the data and simulate information. How is this meaning retrieval done? The first thing to notice is that it is always limited by the 'objective mind' of a machine. A search engine is designed to retrieve information relevant to a human's subjective situation. Therefore search engines are at the heart of what has been discussed for years now as the gap Artificial Intelligence will not be able to bridge.

It is the subjectivity of intelligence as a theoretical action by a human agent that makes it so difficult to simulate information and bridge the gap between the subjective and objective mind. Would intelligence be what behaviourists have thought, AI research would have already been much more advanced in making an artificial intelligence a pleasant partner to have a chat with.[6] Information is subjective and the aim of information retrieval is not to contradict this but to deliver something that satisfies a subjective information need.[7] First, however the engine has to learn to simulate the subjective decisions behind human beings' relevance associations. It hat to simulate their subjective decision criteria by the objective means of mathematical manipulation. Ways of simulating the users' minds must be found. Above, I have described one example with Google. Its concept of authorities stems from what could be called the research expert option. In the praxis of research processes it is well known that the researcher trusts those information most, which come from reliable sources. One way to discriminate what a reliable source could be is to find out what other researchers quote most often. This would then be a research or information authority. Another researcher could be a hard worker so that the researcher will find in her papers many valuable links to other papers. The researcher will therefore often return to this research hub. To find a good combination of hubs and authorities is likely to make the research process successful. Google works on this assumption that the subjectivity of its WWW's user is structured similarly to that of the professional researcher.

The target for search engines is to reproduce opinions as neutrally as possible. Developers therefore rely on the opinion of subject experts, hoping to find a neutral response matching the users' taste. While a search engine is produced, experts play an important role in the fine-tuning of parameters to deliver better results. In this sense, these subject experts are similar to Kant's artistic genius, who represents in her work something that everybody believes when faced with a structure that does not allow deducing what everybody has to think. Kant describes the genius as a talent to produce what cannot follow a rule. Just like Kant's genius the expert is supposed to deliver exemplary results.[8] As long as experts work for other experts something in a library for information about certain subjects, this approach may work. Nevertheless, the web search engine, the most successful information retrieval application, deals with the complete unknown average user, whose taste is different from that of experts. In this sense, the ethical problem with search engine is the form of subjectivity they simulate, which is not the subjectivity of everybody. The content they look at is not specific to them.

The key to understanding the relation between ethics and search engines is to do away that they are supposed to be neutral in their target. They attempt to be scientific in being unscientific and ask subject experts for that. This is a typical engineering move to capture something in itself impossible to capture. At the moment of developing a search engine, it cannot be known what users might think about its results, as the users are simply not present while writing the code or tuning the parameters. Even if experts were geniuses and always right in their decisions, they would still misconceive the taste of future users they cannot know. As engineering products, search engines are thus not undemocratic, rather but a-democratic. They do not intend to misconceive the preference of most people, but cannot ask most people for their opinions. Search engines are the realisation of a scientific process

[6] No machine has yet passed the Turing test and tricked a human judge that she is not talking to another human being.

[7] "Relevance is a *subjective* notion" Ceith Rijsbergen: Information retrieval, p. 146

[8] Immanuel Kant: Kritik der Urteilskraft, §49.

and not of a vote.[9] They remain to be products of engineering work and not of ethical or political action. Their aim is to help people find the data they need to satisfy their information need. They deliver meaning of texts without reading them. The next chapter will argue that it could even be regarded as an advantage in producing ethical subjectivity that they cannot provide a total view of the world.

The production of ethical subjectivity

We have seen that the technical fact that different search engine implementations deliver different results cannot be an argument against their neutrality.[10] This does not make a search engine less objective and missing its targets. On the contrary, its target is to mirror subjectivity objectively. As every search engine attempts this in a slightly different manner relevance decisions are delivered differently. The critical question directed at the search engine does not attack its presupposed lack of neutrality in its results, but the form it seeks to represent the necessary a-neutral moment of subjectivity. Subject experts help to represent the unknown user. Demanding neutrality as such from search engines would end search engine technology and would mean confusing the aims of the scientific production process and the process itself. Non-rationalised subjectivity is supposed to be produced which involves different results for different search engines.

To use a famous quote from an even more famous scholar in computer ethics, Joseph Weizenbaum, what search engines still cannot do and probably will also not be able to do in the near future is to understand the content of what they retrieve and reflect that in their relevance decisions. Although current research has proposed several ways to introduce "semantics" into the syntax matching techniques of search engines, all of these are still limited. "Thesauri" for example will help the machine not get lost in similar meanings, but they will never be complete enough to help it understand the meaning.[11] Meta-information in different forms is only information used by the knowledge engineer or the authors of texts to summarise their understanding. In their present configuration, search engines cannot make the step towards understanding. Thus, they can never present a complete and sound overview of an information need. Their relevance decisions are never the only ones possible and they do not even attempt to be so. Research actually wants relevance decisions to be as subjective as the users' information needs.

The problem with search engines appears therefore to be of a different nature, namely that their decisions are not subjective enough. To fine-tune the parameters of the search engine's algorithm, subject experts are needed to decide which documents of a collection are relevant and which are not. Search engines therefore reproduce the subjectivity of experts. From an ethical point of view, one could argue that it is actually a good sign that users disagree with the output of search engines and do not take for granted what experts want people to believe about their subjects. There is no such thing as an unbiased relevance decision. Rather than an ethically problematic conclusion, as it has been largely advocated in current ethical and political debates, such relevance decisions constitute a valuable source of ethical subjectification nowadays by not simply reproducing what experts want people to believe about their subjects. The search engine's relevance decision – if correctly understood – offers the chance of ethical decision-making for subjects, who can with respects to ethics only be all the subjects and not a limited group like experts. Search engines open ethical considerations and autonomous decisions rather than foreclosing them by opening the knowledge of communities beyond that what is already known. The desire to have a complete overview of information is a result of the modern illusion of ethics as a rational choice made

[9] Marcel Machill et al. Seem to make the argument that it should be the other way around. Marcel Machill, Transparenz im Netz.

[10] Please compare "Suchmaschinen – Bundestagsfraktion Buendnis 90/Die Gruenen – 03/2005". Die Grünen: Suchmaschinen, pp. 5 Strangely enough, the paper seems to know exactly in advance what is relevant to users and what not. It often tells the reader that engines miss out relevant information, but does not show how it has come to these decisions about the engines' decisions.

[11] The use of thesauri still needs to prove that it will improve the effectiveness of a search engine significantly.

Grossman David A and Frieder, Ophir: Information Retrieval.

by the subject in transparent conditions. If one considers an approach to ethics inspired by Alain Badiou – where ethics is linked to subjective decision-making and 'newness' rather than reliance – the role that search engines play for ethical subjectifications appears in a different light.[12]

For Badiou, a subject becomes such as a result of an ethical process. It is not predefined as an ethical rational one, who only has to judge the quality of different purposes and actions. One becomes a subject in the process of ethical actions. The subject does not need to have total information before she engages in action. It is even not desirable that the subject should have a clear standing in the world. The fact that one becomes a subject through a process means that one redefines and re-configures one's position while having a strong trust into its own ability to deal with the world. Ethical action is a process of creation by a subject that at the same time creates the subject and must not be mistaken by juridical action. With the latter, the laws are given and the facts need to be applied. Ethical action is about making new laws. Applying old ones may be better done by experts, but finding new ones is a job for everybody. That is why, Badiou is right to emphasise that ethical action is always a universalist one.

The total corpus of knowledge and rules – whether or not one doubts such a possibility – would mean the end of ethics, which is built on the fact that what the subject sees cannot be everything. Nobody wants an expert, whose expertise she does not know, to judge the relevance for her. In this sense, her disagreement with the results establishes what one could call following Badiou an ethical situation. Becoming a subject is possible only when a situation is not completely governed by laws external to the subject, since they are scientific and objective. Every user will make the experience that a search engine does not return what she wanted. The opinion of the search engine differs from that of users, which should be enough to convince them that their searches also produce just another match between the information need and the information itself. This difference creates an ethical situation and a becoming subject by changing her position in the world. Computers following experts' opinions can simulate what everybody should believe. They must fail to find the 'new' an ethical situation is about.

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Herman T. Tavani:

Search Engines, Personal Information and the Problem of Privacy in Public

Abstract:

The purpose of this paper is to show how certain uses of search-engine technology raise concerns for personal privacy. In particular, we examine some privacy implications involving the use of search engines to acquire information about persons. We consider both a hypothetical scenario and an actual case in which one or more search engines are used to find information about an individual. In analyzing these two cases, we note that both illustrate an existing problem that has been exacerbated by the use of search engines and the Internet – viz., the problem of articulating key distinctions involving the public vs. private aspects of personal information. We then draw a distinction between "public personal information" (or PPI) and "nonpublic personal information" (or NPI) to see how this scheme can be applied to a problem of protecting some forms of personal information that are now easily manipulated by computers and search engines – a concern that, following Helen Nissenbaum (1998, 2004), we describe as the problem of privacy in public. In the final section of this paper, we examine a relatively recent privacy theory introduced by James Moor (2004) to see whether that theory can shed any light on privacy concerns surrounding the use of search engines to acquire personal information. Although no definitive solution to the problems examined in this paper are proposed, we conclude by suggesting that Moor's privacy theory could help us to frame – via debate in an open and public forum – a coherent on-line privacy policy concerning whether, and which kinds of, personal information should be accessible to search engines.

Agenda

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Introduction

Few would dispute the claim that search engines have provided an important service to Internet users – e.g., in directing users to available on-line resources for academic research, commerce, recreation, and so forth. Hence, some might be surprised to find that search-engine technology itself can be controversial from the perspective of personal privacy. Consider, however, that Internet search engines can be used to locate personal information about individuals. In some cases, personal information that is accessible to search engines resides in public records that are freely available on-line. In other cases, personal information resides in commercial databases (such as DocuSearch), and while this information is locatable via search engines, a small fee is required to access it. Also consider that some information about persons currently accessible on-line has been made available inadvertently; and in many cases, that information has become available without the knowledge and consent of the person or persons affected.

But why should these issues necessarily raise concerns for personal privacy? To answer this question, we first describe some basic characteristics of search engines in general. We then we show how access to personal information is facilitated by search-engine technology and why certain uses of this technology are controversial from a privacy perspective.

Search Engines and Implications for Personal Privacy

What, exactly, is search-engine technology, and how is this technology used to gain access to information about persons? Essentially, search engines are programs designed to point Internet users to a list of relevant Web sites that correspond a user's request for information about some topic or subject. As noted above, search engines can be used to locate information on a variety of topics – from academic research, to recreation, travel, commerce, etc. Search engines can also be used to acquire information about persons. Consider that by entering the name of an individual in a search-engine program's entry box, search engine users can potentially locate and retrieve information about that individual. For example, Marie Wright and John Kakalik (1997) note that a certain kind of information about individuals, which was once difficult to find and even more difficult to cross-reference, is now readily accessible and collectible through the use of on-line automated search facilities such as Internet search engines.

Still, we can ask why the use of search engines to gain information about persons, as opposed to other topics or subjects, raises privacy concerns. First, consider that an individual may be unaware that his or her name is among those included in one or more databases accessible to search engines. Further consider that if he or she is not an Internet user, that person might be altogether unfamiliar with search-engine programs and their ability to retrieve personal information about him. Thus individuals have little control over how information about them can be acquired by Internet users, which, in turn, has implications for personal privacy. So it would seem that questions concerning the impact that search engines have for personal privacy can indeed be raised.

Admittedly, the fact that one can search the Internet for information about one or more persons would not, at first glance, seem terribly controversial. After all, we might reasonably assume that the persons about whom information is being requested via a search engine have either placed some personal information about themselves on the relevant Web sites or perhaps have authorized someone else to do it for them. But there could also be personal information on these Web pages that an individual has neither included nor explicitly authorized to have placed on a Web site. David Kotz (1998) points out that since many email-discussion lists are stored and archived on Web pages, it is possible for a search engine to locate information that users contribute to electronic mailing lists or *listservers*. Search engines can also search through archives of *news groups*, such as *Usenet*, on which on-line users also post and retrieve information. One such group, *DejaNews*, is set up to save permanent copies of new postings. As such, it provides search engines with a comprehensive searchable database. Because the various news groups contain links to information posted by a person, they can provide search-engine users with considerable insight into that person's interests and activities. So it would seem to follow that not all of the personal information currently included on Web sites accessible to search engines was necessarily either placed there by the persons themselves or explicitly authorized to be placed there by those persons.

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One might also assume that information currently available on the Internet, including information about individual persons, is, by virtue of the fact that it resides on the Internet, *public information*. And if this information is public in nature, then we can question whether it should be protected through privacy laws and policies. Of course, we can also question whether all of the personal information currently available on the Internet *should* be unprotected via privacy policies merely because it is viewed as public information. The following scenario may cause us to question whether at least some information about individuals that can be, and in some cases already has been, included on one or more Web pages or in databases accessible to Internet users should be viewed simply as public information that deserves no normative protection.

Hypothetical Scenario: Using Internet Search Engines to Acquire Information About an Acquaintance

Imagine a scenario in which an individual, named Pat, contributes to a cause sponsored by a gay/lesbian organization. Pat's contribution is later acknowledged in the organization's newsletter, a hardcopy publication that has a limited distribution. The organization's publications, including its newsletter, are subsequently converted to electronic format and included on the organization's Web site. That Web site is then "discovered" by a search-engine program and an entry about that site's address is recorded in the search engine's database. Assume that Pat has read the hardcopy newsletter that describes the various contributions that Pat and other members have made to the organization in question. It is possible that Pat has no idea that the contents of the newsletter have also been placed on the organization's Web site and that the existence of this Web site has been discovered by one or more search engines.

Now, further suppose that Pat is an acquaintance of yours from college and that you have not seen Pat since you both graduated two years ago. You then happen to cross paths briefly at a sporting event and agree to get together for dinner to catch up on events in your lives since your college days. Curious to learn more about what Pat has recently been up to, in order to be prepared to discuss some of these activities with Pat when the two of you get together for dinner, you decide to inquire about Pat via the Internet. You then access the Google search engine and enter Pat's full name in the entry box. A series of "hits" related Pat are then returned to you, one of which identifies Pat in connection with the gay/lesbian organization mentioned above. What would you likely infer about Pat on the basis of this particular "hit"?

Until now, you had no reason to wonder about Pat's sexual orientation. Pat has never disclosed to you any information pertaining to his or her sexual preferences, nor has Pat revealed through any public activities of which you had been aware any behavior traits that would link Pat to being homosexual. Yet as a result of a hit returned from the Google search engine, one might easily draw certain inferences about Pat's sexual orientation.

Perhaps Pat is, as a matter of fact, homosexual; and perhaps Pat is not. Pat's sexual orientation is not what is at issue here. Of course, even if Pat is a homosexual, and even if Pat is not troubled by the fact that others have this knowledge about him or her, the issue of how one is able to arrive at an inference about Pat's sexual persuasion is what seems problematic. What is problematic from a privacy perspective is that inferences about Pat's sexual orientation can be made in ways that Pat is unable to affect or influence.

Since Pat might have no idea that information about his or her activities involving the gay/lesbian organization is publicly available on-line to anyone with Internet access, we can ask whether the use of search-engine technology in Pat's case has raised any legitimate privacy concerns. Has Pat's privacy been violated in anyway? Or is the fact that the information about Pat was already public, at least in some sense, a relevant matter? And even if that information was publicly available in that it existed in printed material that was available to relatively few people, does it follow that there is no reasonable case to be made for why that particular information should not be normatively protected in cyberspace?

Some might argue that in the case of Pat, the fact that some personal information about him or her has been disclosed via search-engine technology is a trivial matter. After all, no one was harmed – at least not in a physical sense. However, we next examine an actual case where the use of search-engine technology (in conjunction with information brokers and off-line search facilities) to locate a person led to physical harm to an individual once that person was located. In fact, the harm ultimately resulted in that individual's death.

Case Illustration: Internet Search Engines and Cyberstalking

In October 1999, twenty-year-old Amy Boyer was murdered by a young man who had stalked her via the Internet. The stalker, Liam Youens, was able to carry out many of the stalking activities that eventually led to Boyer's death by using on-line search facilities available to Internet users. To acquire personal information about Boyer, including information about where she worked, Youens elected to take advantage of search services provided by on-line "information brokers" in the commercial sector. For example, he used Docusearch.com, an on-line search agency that requires a fee for its services, to obtain the information he sought about Boyer (Grodzinsky and Tavani, 2004). So, in effect, Youens acquired much of the information he gained about Boyer through commercial on-line search facilities, as opposed to using only conventional search engines that are freely available on the Internet.

The cyberstalking incident involving Amy Boyer raises a wide range of ethical and social issues, one of which involves privacy (Tavani and Grodzinsky, 2002). For example, was Boyer's right to privacy violated because of the way in which personal information about her could be so easily gained by Liam Youens? Or was Youens simply accessing information about Boyer that was public and thus not eligible for any kind of legal or normative protection? Boyer's mother (Helen Remsburg) has since filed an invasion of privacy lawsuit (based on "commercial appropriation of personal information"), in addition to a "wrongful death" lawsuit, against Docusearch (www.epic.org/privacy/brief). And in February 2003, the Electronic Privacy Information Center (EPIC) submitted an *Amicus Curiae* brief against Docsusearch (www.epic.org/privacy/boyer/brief.html) in support of the claim that Boyer's privacy had been violated.

In assessing the Amy Boyer case from the perspective of personal privacy, we can ask: To what extent does the kind of personal information on the Internet that accessible via standard search engines, as well as through on- and off-line search facilities involving information brokers in the commercial sector, deserve some kind of legal or normative protection? In other words, to what degree is that personal information sensitive or confidential, and in what respect is that information *public* in the sense that it should be accessible to others? We next consider a framework for trying to understand and analyze the status of certain forms of personal information that would seem to span the private-public divide.

The Problem of Protecting Privacy in Public

Some forms of personal information enjoy normative protection via policies and laws because they involve data about persons that is either sensitive or intimate, or both. This kind of personal information can be referred to as Non-Public Personal Information (or NPI). However, many privacy analysts are now concerned over ways in which a different kind of personal information – Public Personal Information (or PPI), which is non-confidential and non-intimate in character – is also collected and exchanged over the Internet.

How can PPI and NPI be distinguished? As noted above, NPI can be understood as information about persons that is essentially confidential or intimate in nature. This could include information about a person's finances and medical history. PPI, which can also be understood as information that is personal in nature, is different from NPI in one important respect. PPI is personal information that is generally considered to be neither intimate nor confidential. For example, information about where an individual works or attends school, as well as what kind of automobile he or she owns, can be considered personal information in the sense that it is information about *some individual as a particular person*. However, this kind of personal information typically does not enjoy the same kinds of privacy protection that has been granted to NPI.

Until recently, concerns about personal information that was gathered and exchanged electronically have been limited mostly to NPI. And because of concerns on the part of many privacy advocates about the ways in which NPI has been exchanged, certain privacy laws and policies have been established to protect it. Many privacy advocates now worry about the ways in which PPI is routinely collected and analyzed via computer technologies. Recently, they have argued that PPI deserves greater legal and normative protection than it currently has. Helen Nissenbaum (1998) has referred to the challenge that now faces us with regard to protecting the kind of information that we refer to as PPI as the "problem of protecting privacy in public."

Why should the use of computers to collect and exchange publicly available information about persons generate controversies involving personal privacy? Initially, we might assume that there is very little to worry about with respect to the collection of PPI. For example, suppose that I happen to

discover some information about Mary. I learn that Mary is a junior at Technical University, that she frequently attends her university's football games, and that she is actively involved in her university's computer science club. In one sense, the information that I have discovered about Mary is personal because *it is about Mary as a person*. However, that information is also public because it pertains to things that Mary does in the public sphere.

Should Mary be concerned that I am so easily able to find out this information about her? Certainly in the past, there would have been little reason to be concerned that such seemingly harmless and uncontroversial information about Mary was publicly available. Imagine, for example, a scenario in which eighty years ago a citizen petitioned his or her congressional representative to draft legislation that would protect the privacy of each citizen's movements in public places. It would have been difficult then to make a strong case for such legislation, because lawmakers and ordinary persons would have seen no need to protect that kind of personal information. However, some privacy advocates now argue that our earlier assumptions about the need to protect privacy in public are no longer tenable because of the way that information can be processed via computer and information technologies, especially in the commercial sphere. Nissenbaum (2004) notes that many entrepreneurs in the commercial sector currently proceed from an assumption that she believes is misleading – viz., the position that there is a "realm of public information about persons to which no privacy norms apply." It would seem that many "information brokers" who go about collecting personal information for their commercial databases find this kind of reasoning supportive of their enterprises.

From what we have seen in the hypothetical scenario involving Pat, and in the actual case involving Amy Boyer, the kind of reasoning used by information brokers can have implications that go far beyond the interests of entrepreneurs in the commercial sphere. Consider, for example, that DocuSearch.com, an on-line information company, provided Liam Youens with the information he needed to locate (and eventually murder) Amy Boyer. Yet, DocuSearch would argue that it was providing a service that was perfectly legal and that it was not responsible for Boyer's death merely because it provided information about Boyer to Youens. But even if that case had not resulted in the tragic outcome for Boyer, we can still ask whether Boyer's privacy rights were violated when DocuSearch provided information about Boyer to Youens without Boyer's knowledge and consent. To address this question and others surrounding the ability of search engines to access information about persons, we need an adequate framework of privacy.

A Privacy Scheme for Analyzing Controversies Surrounding Search Engines

Many theories of privacy have been put forth, and there is no need to review them here. James Moor (2004) has recently introduced a theory of privacy that incorporates important elements of traditional theories, which, individually, have addressed privacy concerns from the perspective of protecting individuals against either intrusion *or* interference *or* information access. According to Moor's comprehensive definition:

> *an individual has privacy in a* situation *if in that particular situation the individual is* protected from intrusion, interference, and information access *by others [Italics Added].*

One important element of Moor's definition is that it addresses issues of intrusion (into one's personal affairs) and interference (with one's personal decisions) and concerns involving access to (one's personal) information. Another important aspect in Moor's theory – especially for our analysis of privacy concerns surrounding search engines – is Moor's notion of a "situation," which is left deliberately broad so that it can apply to a range of contexts or "zones" that can be "declared private" in a normative sense. For example, a situation can be an "activity," a "relationship," or the "storage and access of information" in a computer or on the Internet. Thus, practices involving the use of search engine-programs would meet the criteria of a *situation* in Moor's scheme.

Central to Moor's privacy theory is another important distinction – viz., one between *naturally private* and *normatively private* situations. This distinction enables us to differentiate between a *loss* of privacy and a *violation* of privacy, thus showing that not every loss of privacy necessarily results in a violation of privacy. Consider that in a naturally private situation, individuals are protected from access and interference from others by "natural" means, such as physical boundaries in natural settings that might preclude one from being seen. Consider, for example, a situation where one is hiking alone in the

woods. In this case, if the person is seen at some point while hiking, his or her privacy can be *lost* but not *violated*. It is not violated because there are no norms -- conventional, legal, or ethical -- according to which one has a *right* or even an expectation to be protected (i.e., not to be seen hiking). In a *normatively private situation*, on the other hand, individuals are protected by conventional norms. An individual's privacy can be violated only in "normatively private situations" because it is only in those kinds of situations that zones or contexts that merit some kind of normative protection have been formally established.

When a search engine is used to locate information about some person, *X*, has *X's* privacy necessarily been violated? Arguably, *X* may have lost some of his or her privacy in the process, but it is not yet clear whether any privacy violation has also occurred. But consider once again the hypothetical scenario involving Pat, where information returned from a search query about Pat suggested that he or she is likely a gay or lesbian. Was Pat's privacy violated in – i.e., in a *normative* sense – in this scenario? Pat may indeed have lost some privacy in the *natural* (or descriptive) sense of privacy because information about Pat's volunteer work on a project was disclosed to a wider audience. However, Pat's privacy is violated only if search engines are (i.e., have been formally declared to be) *normatively private situations*.

Should practices involving the access of personal information on the Internet via search-engine technology be declared a normatively private situation? If we begin to think of personal information on the Web as constituting (Moor's notion of) a normatively private situation, we can also begin to think about some ways that this information can be protected in certain ways while other kinds of information – i.e., non-personal information – currently accessible to search engines can continue to flow easily. To help us decide this matter, Moor provides a framework for debating issues such as these. For example, he recommends that there be open and "rational" debate on questions involving privacy policies, and this is clearly articulated by Moor in his *Publicity Principle*. According to this principle:

> *Rules and conditions governing private situations should be clear and known to persons affected by them.*

Thus there is an important element of transparency or openness in Moor's principle, which also supports the notion of informed consent in policy decisions. This would certainly apply in the case of Internet users, who first would be made aware of the issues involving the access of personal information on-line and who would then have a say in how the policy would be determined. As Moor states:

> *...we can plan to protect our privacy better if we know where the zones of privacy are and under what conditions and to whom information will be given.*

In Moor's scheme, privacy policies need not be cast in concrete, since they are always subject to refinement and revision. Moor also points out that privacy policies can, under certain conditions, be justifiably breached – via his *Justifications of Exceptions Principle*. And they can also be modified and revised through his *Adjustment Principle*. So, Moor's privacy theory would seem to provide plenty of flexibility within a structure that sets up zones of privacy called *normatively private situations*.

Applying this model of privacy to practices involving the use of search engines to acquire information about persons would perhaps be an ideal way of testing out Moor's privacy theory in the area of public policy involving the Internet. It could also prove very useful in an effort to resolve some of the concerns we have identified with respect to the problem of privacy in public, particularly as that problem applies to the use of search engines in on-line activities.

Concluding Remarks

We began this essay by examining some reasons why the use of search engines to acquire information about persons raises privacy concerns. We then considered a hypothetical scenario and an actual case, both of which were controversial because of the way that search engines were used to acquire personal information about individuals. Next, we considered how privacy issues arising in these cases were similar to those surrounding the "classic" problem of determining the private vs. public character of personal information; and we saw how this concern is exacerbated on the Internet by what Nissenbaum calls the problem of privacy in public. Finally, we examined Moor's theory of privacy to see how we could better understand, and perhaps even begin to resolve, some privacy issues associated with the use of search engines to gain information about persons by framing a comprehensive privacy policy that explicitly addresses this issue.

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In composing this paper, I have drawn substantially from material in two previously published works: Tavani (1998, 2004).

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Thomas Hoeren:

Law, Ethics and Electronic Commerce

Abstract:

Unlike the Internet community had expected electronic commerce does not lead to an anarchic dissolution of law. In the context of electronic trade, problems arising between users and providers can be solved, for instance by applying traditional principles of contract law. And yet, the legal dispute of Internet related facts and circumstances gives rise to a number of interesting topoi. Even though these subjects have already been considered in the past (for instance in the context of satellite technology), they only now show their specific explosive effect and diversity in the face of the electronic commerce.

Agenda

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The Phenomenon of Dematerialization and the new Property Rights

The first striking topos of the Internet law is the net-inherent dematerialization, which leads to a situation where material assets lose their significance in favour of new intangible assets.[1] Traditionally, the European civil codifications such as the Code Napoleon and the German Civil Act are based upon the dichotomy of goods and services.[2] Assets which could be worthy of protection but do not show the characteristics of neither goods nor services do not gain protection under present private law. This phenomenon is rooted in the logic of the 19th century. At the threshold from farming to an industrialised society the old civil law codes had to reflect the primacy of the production of goods. Even in view of the needs of a modern service society it could only refer to rudimental legal regulations in relation to service contracts. However, in a so called information society a number of legal interests exist which do not fall within the logic of goods versus services. In that respect we are dealing with new property rights, assets worthy of protection, for which traditional instruments of the civil law cannot provide security.

Information

First of all, it is a question of information as such[3]. Traditionally, the protection of information is confined to the protection of know-how as it is firmly established in the traditional regulations on trade secrets. These provisions are puzzling in a number of ways. They secure a high level protection without sufficiently defining the term "trade secrets". However, modern efforts to re-define the legal protection of "information" are facing very much the same problem. Intellectual property law is based upon the idea of a protection of works of art, literature and music and has not been adjusted to the needs of a modern information society.[4] Although the European Commission is trying to initiate such a convergence by establishing a new property right for collections of information[5] in the European Database Directive[6], the outlines of this new system of protection have not been clearly defined. Nobody knows, for example, what is meant by a qualitative or quantitative substantial investment, a necessary qualification for the sui generis protection of databases. This symbolises the basic dilemma of information law: definite criteria for the assignment of access to information and exclusive information rights do not exist[7]. The idea of an international system of information regulation ("Wissensordnung")[8] remains a mere utopia[9].

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[1] See *Bercovitz*, Gewerblicher Rechtsschutz und Urheberrecht. Internationaler Teil 1996, 1010 (1011).

[2] Compare considerations in *Hoeren*, Gewerblicher Rechtsschutz und Urheberrecht 1997, pp. 866.

[3] Compare with *Hoeren*, Information als Gegenstand des Rechts, Addendum to Multimedia und Recht 1998, No. 6, 6*.

[4] Justified in so far the fundamental criticism by *Barlow*, The Economy of Ideas: a Framework for Rethinking Patents and Copyrights, in: WIRED 2.03, 1994, pp. 84; for reformatory propositions see *Zweiter Zwischenbericht der Enquete-Kommission Zukunft der Medien, Neue Medien und UrheberR*, 1997, and *Schricker*, UrheberR auf dem Weg zur Informationsgesellschaft, 1997.

[5] See i.e. *Bechtold*, Zeitschrift für Urheber- und Medienrecht 1997, p. 427; *Berger*, Gewerblicher Rechtsschutz und Urheberrecht 1997, p. 169; *Dreier*, Gewerblicher Rechtsschutz und Urheberrecht. Internationaler Teil 1992, pp. 739; *Wiebe*, Computer und Recht 1996, pp. 198.

[6] Directive *96/9/EG of. 11.3.1996, OJ No. L 77 of. 27.3.1996, 20*. See articles by *Gaster*, Ent.LR. 1995, pp. 258, *Gaster*, ÖSGRUM 19 (1996), pp. 15; *Gaster*, Revue du Marché Unique Européen 4/1996, pp. 55.

[7] Compare with the thesis by *Druey*, Information als Gegenstand des Rechts, 1995, pp. 441.

[8] Fundamental *Spinner*, Die Wissensordnung, 1994, especially at pp. 111.

[9] In so far the innovative considerations concerning the reformation of the data protection law by *Kloepfer* are not convincing. In his expert opinion for the next DJT, *Kloepfer* demands the passing of a Federal Data Act (Bundesdatengesetz) respectively of an Information Code/Statute Book (Informationsgesetzbuch), even though the particulars of such an information order would not be identifyable.

Domain

But other new property rights exist besides the information as such. Their legal fate is unclear. One of these new rights is the domain.[10] The domain represents the virtual identity of the provider and his products. Today, in the Internet a person is mainly present via such a clearly assigned domain. The domain is the conditio sine qua non for any Internet appearance and therefore also features as part of the trade name, on visiting-cards, brochures and in advertising copies. Typically, property rights are being granted by public administration working as guarantors for distributive justice. In the case of domains however the state only takes repressive actions. This can be seen as a novelty. Following the principle of "first come first served", domains are being granted by institutions under private law. A third person can only subsequently take action against such an award, drawing attention to the fact that the assigned identification could infringe the right to his own name. The state will then prohibit any further use of the domain by the domain-holder.[11] Yet, the state refuses to change the system of marketing domains[12].

But indeed, the identifying power of a domain is diminishing. First, search engines are becoming more and more important as a means for defining the virtual identity of the provider[13]. Taking into account the tremendous speed with which the World Wide Web is growing, the question of investigation for information is a pressing one. Lost in cyberspace – the feeling of getting lost in the www whilst searching for a specific homepage can no longer be taken under control simply by referring to the existing domain of a provider. An efficient supply of information is to an increasing extent guaranteed by search engines. In the future, intelligent robots will assist the user when searching in the net; the user simply defines the topic for which he seeks information in general terms and receives this information periodically in easy to digest portions from the www-robot. This upheaval gives reason to reflect the identifying power of domains. In the end, a user will hardly make use of a domain in order to find a provider. It is more likely that he will act through search-engines and robots without the domain being of any importance.

Electronic Commerce and the Deterritorialization of the Law

In the Internet, all provisions referring to the place, the territory or the seat are losing sense. The electronic speed deterritorialises the law[14].

Problem Areas

The diminishing relevance of territory-based rules is primarily demonstrated in the area of international civil procedure law and of private international law. Due to their origin in the 19th century idea of sovereignty these provisions very often refer to local connections. This is for example the case when the defendant's domicile appears as the connecting factor. Something similar applies to connecting factors such as the place where the damaging act has been committed and the place where the damaging act takes effect when dealing with questions of the law of torts or the place of contract of con-

[10] Compare from recent literature *Bettinger*, Gewerblicher Rechtsschutz und Urheberrecht 1997, p. 402; *Omsels*, Gewerblicher Rechtsschutz und Urheberrecht 1997, p. 328; *Stratmann*, Betriebs-Berater 1997, p. 689; *Ubber*, Wettwerb in Recht und Praxis 1997, p. 497; *Völker/Weidert*, Wettewerb in Recht und Praxis 1997, p. 652; *Wilmer*, Computer und Recht 1997, pp. 562.

[11] Related questions of "identification law" (names/marks etc.) will not be reduced by the fact that a number of top-level-domains will be available in the future; this new way of conferring domains will only multiply the problem of an exact/accurate assignment of domain names. See *Bettinger*, Gewerblicher Rechtsschutz und Urheberrecht Internationaler Teil 1997, 404 (at p.420); *Kur*, Computer und Recht 1997, pp. 325.

[12] So at least the *Krupp*-decision *OLG Hamm*, Multimedia und Recht 1998, 214 with comment by *Berlit*, Neue Juristische Wochenschrift-Rechtsprechungsreport 1998, 909 = Computer und Recht 1998, 241 with comment by *Bettinger*. For a different opinion see, for example, *LG München I*, Computer und Recht 1997, p. 479; *LG Frankfurt a.M.*, Multimedia und Recht 1998, 151; *LG Düsseldorf*, Computer und Recht 1998, 174.

[13] See *Wilmer*, Computer und Recht 1997, pp. 562.

[14] See *Vief*, Digitales Geld, in : Rötzer (Hrsg.), Digitaler Schein, 1991, p. 117, 130.

sumer contracts. But other areas of law are also affected by connecting factors which are determined by a locality. Reference has to be made to the tax law term of the permanent establishment[15], which creates difficult questions especially in relation to the Internet.

But also in the area of online contracts, territorial criteria are very often misleading. Above all, attention has to be drawn to contracts which provide for regional restrictions of the right of exploitation, as it is for example typically in the case for television licences or distribution agreements. Such categories of contracts lead to unforeseeable difficulties when dealing with the question of use of film material or product advertising over the Internet.

Furthermore, territoriality as a connecting factor causes problem in relation to injunctions. These claims are traditionally limited to the prohibition of a specific act in the territory of a specific state; an injunction which takes effect beyond the borders of the territory of a state would not be enforceable for reasons of public international law[16]. However, in relation to Internet infringements this would result in a situation where injunctions become unenforceable because of technical reasons. A provider cannot exclude the on-line access of a homepage by a user situated in a specific state territory. In the Internet it is impossible to define user groups on a territorial basis; no one knows whether the user of the address hoeren@aol.com is situated in Germany, the USA, or Malaysia. This forces courts to define the extension of injunctive reliefs in broader terms than legally permissible. The prohibition does not only extent to the possibility of having access to a server from Germany. It has to prohibit the whole use of a particular homepage throughout the world[17].

Possible Solutions

The question is indeed how the law should respond to its deterritorialization. The problem of territoriality might be solved by creating a virtual space. All actors in this "Cyberspace" have their own net-identity which only shows a minimal connection with the domicile or the place of business[18]. Within this space, providers have to reveal their identity as it is in fact intended by the EU Directive on Electronic Commerce.

This directive however does not solve the questions of private international law which still considers the seat, the place of business or the domicile of the person affected. Here, the principle of territoriality should be replaced by the concept of purported use. This concept has mayor roots in competition law[19] and defines the applicability of national statutes according to the place where the deliberate intervention in the market takes place. Someone who uses the Internet for advertising has to do so according to German law only to the extent to which it is intended for the German market. This rule is now also being discussed in relation to criminal law[20]. Furthermore, it shows similarities with the American "minimum contacts principle". However, the copyright lawyers have always rejected to apply this principle to intellectual property law by arguing that these rights are based upon territorial a jurisdiction could only confer copyrights and trademarks within its territory. But this gives rise to the inevitable dilemma that a provider – due to the global possibility of on-line retrieval – has to be familiar with and comply with the industrial property law of every jurisdiction[21].

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[15] For a general overview see *Vink, Albarda and others*, in: Caught in the Web, 1998, pp. 58; *Lejeune and others*, European taxation 1998, pp.2.

[16] For a short period of time, a different view has been adopted in the Netherlands in the *De Corte Geding*-decisions; see in this context *Brinkhof*, European Intellectual Property Review 1994, 360; *Gielen/Ebbink*, European Intellectual Property Review 1994, 243.

[17] *KG*, Neue Juristische Wochenschrift 1997, p. 3321 – Concept Concept.

[18] See *Turkle*, Leben im Netz, 1998, p. 9.

[19] See the decision of the Federal Supreme Court *BGHZ* 113, 11 (15) = Neue Juristische Wochenschrift 1991, 1054 – Kauf im Ausland; similar *OLG Karlsruhe*, Gewerblicher Rechtsschutz und Urheberrecht 1985, 556 (557); *Kotthoff*, Computer und Recht 1997, pp. 676.

[20] *Hilgendorf*, Neue Juristische Wochenschrift 1997, pp. 1873.

[21] The different possibilities of solution are discussed in *Hoeren/Thum*, ÖSGRUM 20 (1997), pp. 78. See also BGH, Multimedia und Recht 1998, 35 with comments by *Schricker* – Spielbankaffaire.

The Internet and the Extemporalization of Law

But even the element of time is becoming more and more absurd in the Internet.

Problem Areas

First aspects of the increasing digital detemporalization can be found in the law of copyright. Traditionally, European legislators distinguish in copyright law between the material and immaterial exploitation of works. Immaterial exploitation refers to broadcasting and TV where an unlimited audience can see and/or listen to works simultaneously. In the Internet, services are however done successively. They are not distributed to users; the users themselves are getting access to a server at a time of their own choice. Generally, the Internet is characterized as a huge collection of services on demand. In this situation one could try to apply rules for public display by analogy to services on demand. However, this (typical German) way has lost significance in the face of the decision of the international community of states to introduce a new right of "making available to the public" into copyright[22]. This solves the problem of the categorisation of services on demand; storing information for demand already constitutes an infringement of the exploitation rights of the owners of copyright and neighbouring rights[23]. Yet, this new right will cause follow-up problems such as the distinction between public and non-public in the so called *intra*net and the integration of the new right into the system of statutory exceptions.

The phenomenon of detemporalisation also influences consumer protection law. Consumer protection can be done by giving the user time to reconsider and withdraw contractual decisions. This protection is predominantly guaranteed by the introduction of the revocation right and the compulsory requirement of a written form for contracts. To that extent, the EU Distance Selling Directive is of great importance. This directive shows the dilemma of consumer protection in the digital context. Following the directive, a right of withdrawal from electronic orders will be introduced throughout Europe (Art. 6 I 1 and II), as well as the obligation to inform the consumer in that respect (Art. 4 I lit. F). But for a number of services this right of withdrawal will be denied even though substitutes have not been developed (Art. 3 I and II). In that respect, the directive leaves a number of gaps in the protection of electronic consumers.

The problem of time is also dealt with in the discussion concerning the electronic form[24]. It is already a kind of religious belief within the European Internet law community that the digital signature might be the functional equivalent to the hand-written form. When complying with the rather high security standards, a digital signature does indeed fulfil most functions of the hand-written signature. However, at the same time the warning function of handwriting has been ignored. The process of signing something in hand-written form draws the signatory's attention to the fact that he is about to act in a legally relevant manner. This warning lapses when digital signatures are being automatically generated and sent within fractions of a second. Asymmetric encrypting techniques deconstruct the temporal context; the factor of time will only subsequently be recorded in the mailing protocol.

Possible Solutions

The digital loss of time has to be compensated; there should be a substitute for legal rules which make reference to time. For example, when substituting the written form for electronic equivalents, the user closing a contract should be granted a pause during which it is possible for him to reflect whether he actually wants to give an expression of will with such content. This might lead to a revocation right which allows the declaring party to revoke electronic orders after the expression of will has been received. The Distance Selling Directive introduces such a right of withdrawal for consumers. Facing the speed of communication in the net, this provision should be extended to all declaring parties, irrespective of their consumer characteristic, in order to allow everybody time to reflect.

[22] See Art.8 WIPO Copyright Treaty.

[23] See *Lewinski*, Multimedia und Recht 1998, pp. 115.

[24] Compare *Bizer/Hammer*, Datenschutz und Datensicherheit 1993, pp. 619; *Ebbing*, Computer und Recht 1996, pp.271; *Heun*, Computer und Recht 1995, p.2; *Kilian*, Datenschutz und Datensicherheit 1993, pp. 607; *Pordesch/Nissen*, Computer und Recht 1995, pp. 562.

Self-regulation instead of State Regulation

The amount of problems surrounding the enforcement of law results in a growing number of voices calling for self-control and self-regulation in the net. In the present discussion, there is strong emphasis on the so called Netiquette and other methods of voluntary self-regulation by providers. However, only little attention has been to the fact that "the" netiquette does not exist[25]. Different services have their own rules of conduct. Such texts in that position may stretch out from ten lines to up to 40 pages. The same applies to the idea of voluntary self-control. The different self-control institutions use various sets of rules of specific content. The efficiency of self-control is unclear as well as its sanction mechanisms cannot be supported by state regulations of enforcement. Beyond contractual obligations, there is no chance to enforce codes of conduct.

In addition, it is still not clear whether the netiquette is conforming to law. The rules might conflict with existing regulations on unfair contract terms and antitrust law. Art. 81 of the Treaty of Amsterdam permit rules of conduct with anti-competitive effects only in so far as such rules repeat and specify existing, EU-conform regulations of unfair competition law. Rules of conduct which restrict a provider's action on the market are therefore dubious under European antitrust law where they restrict an action which subsequently proves to be irrelevant and neutral in the light of unfair competition law.

But the additional question arises whether it is possible to impose sanctions for the violation of codes of conduct. In the United States, the discussion focuses on Alternative Dispute Resolution (ADR) which might lead to the introduction of an Internet jurisdiction and arbitration proceedings in the Internet. However, serious attempts to establish such Internet courts have never been made. And indeed, the introduction of Internet courts would probably not solve the problem of execution, as the decisions of such courts would not be enforceable.

[25] This thesis has extensively been justified by *Hoeren*, in: Becker (Hrsg.), Rechtsprobleme internationaler Datennetze, 1996, pp. 35.

Data Protection and Depersonalisation

The Internet also leads to a depersonalisation of law. All legal rules which relate to a specific "person" have to be reconsidered. People can create new persons, change their identity, and build up virtual realities and virtual entities. For instance, new ways of building up a corporation are establishing in the area of electronic commerce. Virtual corporations are working on a spontaneous, trans-border basis. One of the mayor problems caused by the depersonalisation is the concept of personal data in the context of data protection. Especially, the possibilities of dynamic addresses lead to the question how a concrete person is identifiable via an IP address. Until now, no solution has been found for that problem in data protection law; further research is necessary.

Technology instead of Law

The question therefore arises whether the answer to the machine might be found in the machine itself[26]. A number of difficult legal questions may become obsolete in the Internet by the introduction of certain technical procedures. For instance, in the area of copyright, one has to think of digital watermarking techniques and digital fingerprints[27]. These procedures guarantee that the owner of a right can positively be identified and that cases of piracy can as easily be prosecuted. Reference may also be made for cryptographic procedures[28].

However, the role of technical means within the legal system has to be considered. Technology as such is not more than a fact which per se cannot claim legitimacy. For instance, it would be dangerous to qualify the circumvention of any anti-copying device as illegal. As the anti-copying device could very well be set up by someone who himself is not in the position of a right-holder; the circumvention of security measures which have been established by a software-pirate can not be prohibited. Techni-

[26] See *Hoeren*, Law, Computers and Artificial Intelligence 4 (1995), pp. 175.

[27] *De Selby*, ACM Management Review 1997, pp. 467.

[28] See Imprimatur, The Law and Practice of Digital Encryption, Amsterdam 1998.

cal devices do not create themselves legitimation which causes specific problems in relation to the digital signature[29]. The German *Signaturgesetz* has for instance been praised as it combines very extensive technical standards of certification with a free market economy orientated model of institutions[30]. But this combination is problematic in two aspects. To begin with, the technical security standards have been established so high that hardly any company will be able to meet them. This might just be tolerated in Germany. In an international context however this attempt will be rejected as a discriminating obstruction of access, especially as Germany on its own in the world with these high standards. However, it is not a alternative solution to reduce the value of security standards to zero as it has been done in the EU Signature Directive.

Electronic Commerce and the Problem of Trust

The deciding factor in relation to Electronic Commerce will be the question of trust[317].

Trust in the "Analogous" Environment

Contracts are only concluded by someone who can trust in the performance of the contract by the other party. Such a trust exists if parties are in a long standing business relation and therefore have no doubts concerning the compliance with the contract. However, new connections may contain some difficulties. Apart from problems such as the ability and the willingness to pay, every party has to make sure who the other party is and how the contractual statements of the other party have to be understood. In the "analogous" life, the guarantee of authenticity and identity is given by personal contact or by observance of the written form. If contract negotiations take place in the presence of both parties, either party knows whom one is dealing with and is aware of the content of the declarations of intent. The written form guarantees at least a certain authenticity of the communication; in relation to the declaring person certainty can be reached by introduction of a notary.

Trust and Digital Signature

These trust-building measures will in the long run not be applicable to the Internet. Here, the parties do not know each other; they only meet in the anonymity of the digital world. Personal contacts are missing as much as the possibility to find a safeguard in the written form. Hence, when an electronic order is placed no one knows whether it actually is placed by the person who pretends to be the orderer. The content of an order may also be changed on the long through the Internet to the recipient. In this crisis, asymmetric encoding techniques promise relief. By digital signature they secure the identity and the correctness of the declaring person and protect against undue inspection by encoding with the help of a public key.

But who guarantees that an encoded message really does origin from the person who created the text under a specific name? Here, the German *Signaturgesetz* and the EU Signature Directive refer to the fact that the identity of the sender is guaranteed by the certification authority. In so far this organisation acts a kind of notary. Yet, the certification organisations are governed by private law. Anyone can establish such an institution; according to the draft of the European Commission even without a specific licence. It therefore has to be asked which requirements have to be met in order for the certification institutions to be trusted. It is difficult to create trust via private certification organisations. In this private sector trust can only be created by a security infrastructure which has to be provided by the certification institutions. An advanced level of technology is supposed to create trust.

But this concept has its weaknesses: Trust in technology cannot be created through technology itself. As soon as technology improves, the trust in conventional encoding devices vanishes. Cryptographic methods which are now considered to be safe may soon become obsolete; and then one has to wonder what to do with those keys which have already been distributed. Therefore I think a legislator should not specify the evidential value of a digital signature. As

[29] Cf. *Roßnagel*, Neue Juristische Wochenschrift-Computerreport 1994, pp.96; *Bieser*, Computer und Recht 1996, pp.566.

[30] Cf. *Timm*, Datenschutz und Datensicherheit 1997, 525 (528); *Rieß*, Datenschutz und Datensicherheit 1997, 284 (285); *Hohenegg/Tauschek*, Betriebs-Berater 1997, pp. 1541.

[31] See in connection with this *Khare/Rifkin*, Weaving a Web of Trust, in: World Wide Web Journal, Summer 1997, pp. 77.

the digital signature has no established a fixed evidential value; this varies intertemporally[32]. The concept of the European Commission implemented in the Signature Directive is not convincing. According to the Commission, everybody should be able to establish a certification agency without a licence and should only repressively be held responsible via a liability for defects. It is questionable in how far this can establish trust, especially as a certification agency can at any time limit the risk of liability simply by choosing a suitable legal form.

Summary

The previous reflections may be summarised as follows:

1. The Internet does not create net-specific legal problems. Rather, the Internet law itself is only part of the general search for an international information order and the specifications of an information justice.
2. In the information society, a number of new property rights come into existence which cannot be classified within traditional property concepts.
3. The Internet is leading to a dematerialization, deterritorialization, extemporalisation and depersonalisation of law; the legal system thereby loses its traditional (Roman law) roots (person, space, time).
4. Self-regulation in the Internet may assist law, but can never substitute it. Especially questions of antitrust law caused by business self-regulation need of further clarification.
5. Technology can never legitimate technology. Problems of trust in the integrity and authenticity of electronic texts are becoming more and more important.

[32] See in connection with this §§ 17 II, 18 *Signaturverordnung (SigV)*, which came into force on the 1.11.1997.

Kevin Ball and Charles Oppenheim:

Attitudes of UK Librarians and Librarianship Students to Ethical Issues

Abstract:

There have been a number of studies examining the attitudes of librarians to ethical dilemmas, but few examining them in comparison with Library and Information Science students as we did in our study. According to that UK librarians and students in general hold surprisingly similar ethical attitudes. We expected the students to be more liberal, more willing to uphold idealistic principles, and given their student status, with attitudes balanced in favour of other students' and patrons' rights in terms of fees, and accessibility, and copyright law. On the contrary, in many areas such as Internet filtering, looking at online erotic images, and removing books at the request of patrons, we found practitioners more liberal than the students. A reason for that might be that the students are keen to emulate what they perceive to be a conservative and mature outlook, i.e., a stance of responsibility, as a pressing concern for ILS students is likely to be the establishment of a career. Though there is a fair level of teaching ethical issues it seems to lead into a mediocre level of student awareness of basic issues or of the CILIP Code which is meant as a 'framework' to help information professionals 'manage the responsibilities and sensitivities which figure prominently in their work' (CILIP 2003).

Agenda

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Introduction

Library ethics has become a familiar topic in the UK in recent years. The chief professional association of UK library and information professionals is the Chartered Institute of Library and Information Professionals (CILIP). With the capacity to grant Chartership status on some of its members, CILIP's stated mission is to promote the profession's profile and back up the information community's needs with training, services and information (CILIP 2003). This includes a code of ethics, which was recently adopted. Prior to this, one of the bodies that now make up CILIP, the Library Association had a Code of Professional Conduct, not a code of ethics. The other precursor, the Institute of Information Scientists, produced Guidelines for Professional Ethics for Information Professionals (Inform, 1998, pp 4-5). CILIP see its new code primarily as a supporting tool, a 'framework' to help information professionals 'manage the responsibilities and sensitivities which figure prominently in their work' (CILIP 2003).

A library profession's code typically includes the need to protect the public (Welsh, 1991, p.76), the need to be responsible to the profession and to one's employer (Vosper, 1991, p.74), the need to support and guide professionals, and the need to express its service orientation. The CILIP code is enforceable: CILIP warn that where there appears to have been a 'significant breach' of the code, then this 'may be a matter' for the CILIP Disciplinary Committee, which has the capacity to admonish, to suspend, or to expel its members from CILIP (CILIP 2003). Those who are expelled from CILIP can still continue work as an information professional. Of the three types of code identified by Frankel (1989, pp. 109-115), CILIP's is aspirational as it presents ideals to follow. With the promise of the Code's associated practical examples, it will also be what Frankel terms 'educational' (1989, pp. 109-115).

As recommended by Oppenheim and Pollecutt (1998, 198), CILIP set up an Ethics Panel in 2002, composed of experienced information specialists, who together with CILIP's professional staff, are accessible to CILIP members who require additional guidance. CILIP plan to supplement the code with practical examples to demonstrate to practitioners how the code may be applied.

Is a code of ethics necessary? Oppenheim (1980) favours a code, not so that transgressors can be subject to expulsion from membership, and not as a means to gain the profession a higher standing, but as a tool for professional bodies to offer advice to its members, and to demonstrate that these bodies are committed to a particular stance when a member is in dispute with an employer.

Lonsdale and Oppenheim (1995, pp.69-78) examined how the topic was taught at UK library schools. They found that no uniform approach existed for teaching ethics: its presence varies on courses, from specific classes to 'pervasive' instruction. They argued for a minimum of two hours of class discussion to make theories relevant to students. These authors also recommended that professional associations insist during course validation procedures that ethical matters are 'explicitly covered'. Despite these comments from a decade ago, and the clear recommendations by Hannabuss (1996) on how to teach the topic, UK LIS departments still generally fail to teach the topic fully (Gordon-Till 2002).

White (1991) saw the importance of awakening analytical skills in students when dealing with ethical case studies, to guide them away from hasty polarized decisions of what is correct or incorrect, so to see the complexity of an issue. He also stresses the golden rule of not indoctrinating students, or of instilling a teacher's own value system upon them. Both White (1991) and Hauptman (2002) lament that most educators continue to give ethics low priority.

Gordon-Till (2002) urges professional associations to take a more prominent role as educators, as previously recommended by Oppenheim and Pollecutt (1998, p.197). Gordon-Till also stressed the need for Continuing Professional Development (CPD) in ethics.

Previous studies

There have been a number of studies examining the attitudes of librarians to ethical dilemmas, but few examining Library and Information Science students. Perhaps the most frequently cited ethics study involved an investigation of professional-client relationships, of the nature of whether reference librarians' responsibility to supply information to patrons outweighs their responsibility to society (Hauptman, 1976, pp.626-627). Replicating this legendary study, Dowd (1989) examined the professional neutrality of reference librarians by testing their conduct when encountering a query for information that may lead to drug abuse. He investigated whether reference librarians would help a patron to

locate material that would inform hoe to go about freebasing cocaine, that is purifying it to become smokable crack. The librarians' responses were varied, though there were no categorical refusals.

Rosenqvist et. al (1996) investigated how Nordic librarians would react when faced with practical ethical problems posed in a questionnaire. The findings suggest that Nordic librarians share a common understanding of what constituted ethical values. Overall, Nordic librarians hold a position of neutrality, coupled with 'caring objectivity'.

Juznic et al. (2001) carried out an investigation in Slovenian public libraries; researchers, posing as patrons, requested material on suicide, necrophilia, and photographs of corpses. The librarians' verbal and non-verbal responses, and the quality and appropriateness of the received material were evaluated. The librarians were not shocked by the questions posed, and did not appear to recognise that they were encountering an ethical dilemma.

Our research

UK ILS students were compared with practitioners to see whether entrants to the profession are being ethically prepared, and to see whether attitudes change with experience. In common with previous studies (Prior et al. 2001, Schleihagen 2002), respondents were asked to indicate the degree to which they agreed or disagreed to a series of statements. The available responses were: strongly agree, agree, neutral, disagree, and strongly disagree. A more direct approach, such as posing as a patron (Hauptman 1976) and observing how the librarians react in a work setting would have been a reasonable way to obtain the data on questions of a reference-desk inquiry nature; however, most ILS students currently do not work in libraries.

The ethical statements were worded from different angles to avoid any bias. Half proposed what may be considered an ethical course of action, whilst the others an unethical course. In addition to the statements, two yes/no questions investigated the subjects' awareness of ethical codes and their completion of any programme of library ethics education. Finally a short series of questions were devoted to gathering demographic data, including the respondents' sex and age, along with some professional background details: membership of CILIP; the year they obtained a professional qualification.

The questionnaires were devised and sent out in May and June 2003. One questionnaire was designed for LIS students, the other for practising librarians. A copy of both is available in the appendix. They were identical in content, with the exception of the some of the demographic and background questions. Using the list of accredited UK Library and Information Science courses on CILIP's homepage (CILIP, 2003), a list was compiled of suitable universities that offered courses with librarianship content. Departmental websites were used to gather email addresses of suitable contacts. These contacts were asked if they would be willing to forward a questionnaire to their current students. The questionnaire was distributed to ten departments: Aberystwyth, Robert Gordon, Bristol, Strathclyde, University College London, Northumbria, Sheffield, City, Leeds Metropolitan, and Loughborough.

In addition, questionnaires were sent to two UK online discussion groups for library professionals. The first, LIS-CILIP, with 615 subscribers (www.jiscmail.ac.uk/lists/) is a forum for online debate used by some CILIP members for issues of professional concern. The second, LIS-LINK, with 3,263 subscribers is a forum for debate on general library issues.

As a follow-up, selections of the results were sent in August 2003 to lecturers in UK universities. The questions were sent via email in a word attachment. Their names were chosen and email addresses were noted from departmental websites, where it was indicated that information ethics was an area of their interest. These results were sent to individuals in the following universities: Northumbria, Aberystwyth, Sheffield, Strathclyde, Loughborough, and University College London. Two replies were received.

Results

214 responses were received: 100 from practising librarians and 114 from ILS students; the majority of respondents were female (77% of students and 80% of practitioners).

Just over one-third of the ILS students were over 30 years old, an indication of the high majority of postgraduates. The librarian respondents were slightly older overall, with about one third 21-30 year olds, and a similar number in the 31-40 age range.
97 of the 100 librarians stated that they had ob-

tained a library qualification: all but two gave the date obtained. The median year in which the library practitioners obtained a library qualification was 1997: an average length of professional employment of six years.

104 (91 per cent) of the student respondents were enrolled on postgraduate ILS courses, with seven students (6 per cent) on undergraduate courses. Three respondents did not state their level of study. The preponderance of postgraduates reflects the period in the academic year in which the questionnaire was sent out: a period when undergraduates are busy with exams.

61.9 per cent of student respondents and 27.6 per cent of librarian respondents had encountered some ethics instruction as part of a university or job training course.

Awareness of CILIP's code of ethics (at the time of the research it was a published draft) was stronger amongst the library practitioners (74%) than ILS students (48%). 87 librarian respondents and two students were CILIP members.

The results of each of the questionnaire's statements are briefly summarised below.

76% of librarians disagreed or strongly disagreed that withholding access to a book is permissible in some instances, such as if a violent-looking person asked for a book containing fighting techniques hinting that they might make use of it against someone else. This mirrors the results of previous experiments (Hauptman, 1976; Juznic et al., 2001). ILS students were slightly more concerned with their responsibility to third parties, with fewer students, 66.3 per cent, willing to provide access to this material. Slightly more of the ILS students than librarians were in favour of withholding the book: 20 per cent compared with 12 per cent.

A slight majority of librarians (55%) and of students (59.7%) felt that a request from the police for a patron's details should be obeyed. in both cases, roughly one-third felt that a patron's identity should be protected in the circumstance given, where a library book of the perpetrator is found at the scene of a minor crime. If the divergent opinions expressed in this statement were representative of library staff generally, it would be a futile gesture for a librarian to defy the police, as so many colleagues would willingly comply. As one librarian who agreed that the patron's details should be withheld acknowledged, 'in practice, I would probably comply'.

The majority of the librarian and student respondents felt that library charges are an acceptable restriction to services. However, 28.9 per cent of students and 20 per cent of librarians disagreed or strongly disagreed on the acceptability of such fees. Jochumsen's (2000) study speculated that librarians' opposition to fees is a 'massive' philosophical ideal.

Responses to the question of using revenue from a service to purchase material were evenly spread. Around one-third of both types of respondents, ticked either the 'agree' or 'disagree' box, with relatively few strongly opposed or strongly in favour.

There was overwhelming endorsement of conduct that recognises equality.

Over half of the librarians and students "strongly disagreed", plus a further 31 librarians and 31 students (27.2 per cent) "disagreed" with giving any patrons special treatment. One respondent, who strongly agreed with providing special treatment, annotated the questionnaire and explained that 'I can't believe there is a single librarian in the world who doesn't fast-track requests from friends or wipe family members' fines'. However, the results showed that only 6% of librarians and 12% of students felt that this is acceptable practice. This adds an element of uncertainty about the honesty of the respondents. Some of the results may reflect how people claim they would act, rather than how they might actually act in practice.

The majority of both sets of respondents agreed that a patron should have access to services regardless of ability to pay.

A large majority of both the librarians and ILS students felt that a reference service should not be influenced by one's personal attitudes or the subject matter. One librarian commented that when her personal values do clash with the subject matter requested by a patron, 'I would request another member in certain circumstances to take over. For example, I would be unwilling to personally provide abortion information at a reference desk'.

68% of the librarians and 58.8% of the students indicated that they felt library employees are not entitled to prominently display their political or sexual views through their dress. One librarian respondent commented that

> *As a manager, I disagree with an employee of any workplace overtly stating their views on religion, sexuality, etc. I feel it is especially impor-*

tant when offering a service that staff are seen as approachable as possible.

Similarly, another librarian suggested that an implication of displays of personal values could be to limit a user's access, by being 'off-putting and this will impair their ability to access information'.

From the opposite pole, one respondent explained that: 'I have been known to wear political badges myself... I don't think that there should be any way of stopping people from wearing badges'. More neutrally, a librarian was 'Not against it per se, but we should avoid being confrontational and upsetting others by doing so'.

66% of librarians and 61.4% of students were in favour of ordering a diet book that has been identified by reviews as detrimental to the follower's health. One solution offered by a respondent is to 'alert users to the fact that there are reservations abut it in expert circles'. Another wrote 'who are we to decide what readers can and can't read?'

87% of the librarians and 76.4% of the ILS students indicated that a call from patrons to remove a book should not be heeded. 7% of librarians and 23.7% of students would withdraw the work. As with many of the responses and perhaps surprisingly, the students were slightly more conservative than the librarians. A representative comment from a respondent that disagrees with patrons' sway over a collection explains that 'people are not forced to read material they find offensive'. 12% of librarians and 13% of students would wish to exclude some material from the library.

With regard to the role of a librarian as a protector of children's morals, 30% of students disagreed that the onus falls on parents rather than library staff to protect them from unsuitable material. This compares with 19% of librarians, who saw the responsibility falling more on a child's parents. One librarian felt that 'library staff should ensure that children are not browsing in [unsuitable] sections, or have easy access to other parts of the library if not accompanying their parents'.

10% of librarians and 13.4% of students felt that information on contraception or drugs should not be supplied to patrons due to their age. One respondent felt comfortable in supplying only one of the examples: 'I think information on drugs should be supplied, but am less sure about contraception or abortion'. Hauptman (2002, p.20) and Taylor (1997, p.67-74) believe that age should not be a deciding factor. One respondent commented that: 'I have been "disciplined" by a former manager for allowing an adult with Down's Syndrome to take a book of her choice out of the library (nothing at all distasteful or injurious, it was on the subject of the biological make-up our skin) as he felt that book was inappropriate for this person'.

Opinions differed as to the acceptability of a member of library staff using a computer for non-work activities. The students and librarians can be put into three roughly equal camps, those who saw no harm in using computer equipment, perhaps seeing it as a permissible perk, those who used equipment strictly for work, and those with no strong feelings either way. Only a fraction more students than librarians, 35.4% to 28%, indicated a relaxed approach to this practice.

The respondents' perception of copying software for home use was unequivocal. The attitude of the bulk of both sets of respondents was that it is unacceptable for employees to make unauthorised copies of software. Only 2% of librarians and 4.5% of students felt that this was an acceptable practice. Library students and librarians appear to be slightly more scrupulous than information systems employees, of whom in an earlier study, 7.8% felt that copying software was acceptable (Prior et al. 2002, p.35).

Respondents were asked whether they agree that staff who violate the CILIP code should be disciplined. 55.7% of librarians and 53.1% of students support disciplining. It appears the profession generally agrees that the code should be backed up by disciplinary measures. Interestingly, in an earlier study, only 25 per cent of reference librarians felt that the then LA Code should be enforceable by disciplinary action (Lonsdale and Oppenheim, 1995, p.76).

45.5% of students and 47.8% of librarians felt that copyright law governing photocopying is fair. There was also little difference between numbers who held the opposing view. Roughly one in five of the ILS students and librarians disagreed that it is fair. However, in further question only 45.5% of librarians agreed and 24.2% of librarians disagreed that copyright law should be rigidly enforced. Students were slightly less committed (33.6% agreed).

Contrary to CILIP's position, 48.0% of librarians, and 69.0% of students favoured the use of Internet filters. Of these 78 students, 34 (43.6 per cent) were aware of CILIP's code (not far below the 47.8

per cent for the whole student sample); 47 had received some ethics education (the figure for the whole students population was 61.9 per cent); and the ages of the 78 were representative of the whole sample. Looking at the background of the librarians who endorsed filtering, 25% had received some ethics instruction (comparable with 27.6 per cent for the whole sample); 64.6 per cent were aware of the code (slightly lower than 74 per cent for the whole sample); and their ages were representative of the greater sample. However, 29.4% of students and 42.9% of librarians agreed that a patron in a semi-secluded workstation with high-sides should be allowed to look at erotic material.

Statistical analysis

Chi-squared tests were carried out on all the data obtained, to compare the responses of students and practitioners. Only the differences between the responses to statement twenty (endorsing filtering software) were significant at the 1% level of significance. In all other cases, students and practitioners showed no statistically significant differences in views. The two sets of respondents responded to the ethical questions in a surprisingly similar way.

The follow-up study

Responses to a selection of the results were sought from lecturers in information science ethics. Firstly, the academics were asked whether the extent of respondents indicating to have received instruction in library ethics as part of a university course or job training conformed to their views. One academic felt that so few librarians had undertaken some instruction in ethics because 'ethics as a visible part of programmes is new and many practitioners would pre-date those days in their education'. Another suggested that the figure of 27.6% might represent 'a slight increase amongst librarians because of the discussion with the new CILIP code'. It is possible that some practitioners simply cannot remember every library school class they attended, in some cases up to thirty-five years ago, or that the subject pervaded the curriculum. In the instances where students replied that they had not undertaken any ethics education, perhaps it was offered as an optional module, which some respondents chose not to take.

Secondly, the ethics lecturers were asked whether they were satisfied with the results of the level of awareness of CILIP's code: 74 per cent amongst practitioners, 47.8 amongst students. Comments revealed their disappointment: 'very poor' and 'no, I am not [satisfied]'. One added that this 'suggests practitioners don't read their professional literature. The draft has been well publicised'. Nonetheless, the 74% result was higher than a 1993 study that found that 67.2% of reference librarians thought that the LA had a code (Lonsdale and Oppenheim, 1995, p. 76). These authors concluded that the LA needs to increase the code's publicity (Lonsdale and Oppenheim, 1995, p.76). Unlike the earlier study, our questionnaire was sent to LIS-LINK and LIS-CILIP, resources that are likely to attract librarians who take an active interest in developments in the profession, so is not necessarily representative of the profession as a whole.

Next, the academics were asked for their response to statement ten, which concerned heeding a patron's request to remove a book from a collection, even though it breaks no laws; 13% of librarians and 24% of LIS students were not committed to upholding access to legally available material. The academics judged the student figure 'uncomfortably high' and 'a horrible disappointment'. One reasoned that the inclusion in the results of foreign students on UK Information Science courses with religious and cultural beliefs that 'work against our liberal consensus' might have skewed the results. The academics thought that the percentage for librarians was not unexpected: 'they have experience, sometimes bruising experience, on which to base their answer and I'd consider that not a surprising percentage'.

The results of statement twenty were also presented to the lecturers, which concerned the acceptability of filtering software. They were asked, given the position of the LA in its Professional Issues Statement which does not endorse filtering, does this level of opposition surprise or concern you? They were in agreement that the librarians' stance was unsurprising. One remarked that 'this fits in with the impressions I have gained when talking to librarians'. Turning to the students' responses, 'they disappoint me immensely' commented one, while another recognised that this mirrors his own observations: 'recent student work in this department has shown support for filtering'.

Conclusions and recommendations

UK librarians and students hold surprisingly similar ethical attitudes. We expected the students to be more liberal, more willing to uphold idealistic principles, and given their student status, with attitudes balanced in favour of other students' and patrons' rights in terms of fees, and accessibility, and copyright law. On the contrary, in many areas such as Internet filtering, looking at online erotic images, and removing books at the request of patrons, practitioners were more liberal than the students.

There is either some lack of awareness or decisions not to adhere to the ideals of CILIP. There was just one significant difference between practitioners and LIS students, in the endorsement of Internet filtering. The common norms of the profession seem to be already in place. This most noticeable disagreement between the respondents' opinions and the position of CILIP and the former LA concerns students' support for Internet filtering. Hannabuss (1996, p.25) and White (1991) argue the importance of making students aware of the complexities of issues, of sensitising students to the ethical implications of topics, and of a discursive and evaluative approach, without indoctrinating students with the a lecturer's own attitudes. However, there are some areas, such as Internet filtering and some areas of intellectual freedom, where the official message is not getting through to students; or perhaps they are aware but exercising their right to ignore it. A pressing concern for ILS students is likely to be the establishment of a career, and so it is possible that they are keen to emulate what they perceive to be a conservative and mature outlook, i.e., a stance of responsibility.

The results showed that there is a fair level of teaching ethical issues, and only a mediocre level of student awareness of basic issues or of the CILIP Code. There is clearly more work to be done to get students involved in ethical issues.

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Ricarda Drüeke:

Review: CyberMedienWirklichkeit. Virtuelle Welterschließungen

Abstract:

This paper shall give a review of Goedart Palm: CyberMedienWirklichkeit. Virtuelle Welterschließungen. München: Verlag Heinz Heise, 2004. 240 Seiten Broschur. 19,00 €

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Short introduction

"Without virtuality there will not exist reality - mere virtuality constructs reality" suggests Goedart Palm at the very beginning of his book. With this declarative statement Palm, who holds a doctorate in law and practices law, begins his disputation of the relationship between reality and virtuality. He focuses on questions concerning virtuality which plays, in his view, a major role in the construction of reality and even constitutes preconditions for the existence of reality. The former reality is a product of ideas and imaginations, but in fact also the current reality. In doing so, virtuality is the interface between visualizing and behaviour.

For the explanation of this statement of affairs, Palm's book "CyberMedienWirklichkeit. Virtuelle Welterschließung" provides philosophical theories and theories of media. His ambition is to explain virtuality in combination with multitudinous practical examples, to give broadly a theoretical base for virtuality and to find an answer to the question of how we tap new realities or worlds by using technologies and cyberspace. In such a way, Goedart Palm has created a moving rumination on the meaning of virtuality. The book is based on a various number of essays and articles which were composed for the online magazine "Telepolis".

Summary of the book's content

In the course of computerization and development of cyberspace we are situated in a new reality which exceeds our present imaginations about virtuality. This development demands a reflection of how to tap into new virtual worlds and about notions of virtuality. Due to the fact that in the present virtual situation, the subject of behaviour, the human being, gets a part of virtuality leading to the consequence that human beings will change over time. As a result, the human being can be newly-constructed, dissolved, or reversed into another virtual existence. This possibility of this development spawns a new theory of virtuality, as part of philosophy and a theory of media. This theory allows one to trace fragmentarily the changes of virtual worlds and reality and establish a hybrid base for an explanation of them. Palm does contend, as his title suggests, that there exists various kinds of "virtual openings of worlds", which are anchored in different forms of access to virtuality. These anchors are constituted by individual and shared memories.

The specific chapters of the book are split into two sections: "virtuelle Wirklichkeitslehre" and "virtuelle Passagen". The first one is a philosophical approach to virtuality and reality linked to technical aspects. This also includes an interpretation of cyberspace as the virtual opening of worlds. Palm conceives the first part as a depiction of the virtual lore of reality, which he justifies by reference to philosophical theories and theories of media related to technology. In Palm's view virtuality begins in everyone's own head: our brain filters, interprets and forms our cognition. Reality is an elusive phenomenon, but virtuality depends on reality and vice versa. Even the outcomes of philosophy are no more than variations of reality. Palm suggests that the beginning of the knowledge lies in the virtual opportunities of Socrates. He traces the development of the notion of virtuality, from Aristotle, Descartes, Nietzsche through Baudrillard. His philosophical "tour d'horizon" explains virtuality as "schöpferische Schnittstelle zwischen den Potenzen, dem Möglichen, Denkbaren, dem weiten Feld der Vorstellungen, Imaginationen und Konzepten auf der einen Seite und ihrer stofflichen Einlösung und konkreten Handlungspraxis auf der anderen."

Palm asks himself whether virtuality is the precondition and preliminary accomplishment of technology. His framed answer is 'yes', it does begin in such an understanding. Cyberspace he describes - in the extreme case - as a place where everything that is conceivable could be realized. The point is not that everything has to be realized. It is matter of preserving against the failure of an imagination through the absence of possibilities.

Thus, cyberspace offers some new possibilities for "virtual openings of the world". Cyberspace can split up in different forms when looking at virtuality. It can be described as a database of reality or, in other words, as a warehouse of knowledge. It can also be a virtual space of communication or a closed space of simulation. And, at the extreme, it can be seen as an autonomous creation. In these spaces, virtuality, reality and individual and collective memory were and are created. Hence, more than ever, cyberspace is difficult to describe with conventional patterns of explication. With appeal to notions of interactions, inter-relations and interdependences between reality and virtuality, cyberspace would be insufficiently defined by theories related to media. Palm suggests that these theories try to run after changing situations.

The second chapter of the book includes different fields of internet applications. In this section the

book gets more concrete. Palm describes virtuality by considering such technical examples as email, virtual museums and search engines. His analysis discusses various facets of virtuality in cyberspace. In the middle are individual applications like email or games, but there are also scientific applications like "SimNerv", a model of synthetic nerves of frogs, or search engines and artificial intelligence. These are all concrete examples of the "how" of the virtual opening of the world by using digital media.

Evaluation

The articles and essays of the book, which respond to new questions about virtuality in cyberspace, were written mostly for the online magazine "Telepolis". By reason of this they all emerge based on various periods and backgrounds. In the book reviewed here they were published with sparse revisions. The overview of only some aspects, which are mentioned in the book, shows how many inspiring questions, analysis and thought-provoking impulses the book includes. Interested readers would discover even more and could deal with this in an affirmative or deprecating way. Both the advantage and disadvantage of the book lie in its character as a collection of articles over a period of time and circumstances. It is an advantage because of the possibility to address various kinds of aspects. It is a disadvantage because of elusiveness of any conclusions. Hence, "CyberMedienWirklichkeit" presents a composition of fragments of knowledge which Palm tries to bring together. They do not coalesce as a visible whole and have consequently a patchy effect. But, this is maybe exactly what represents the results of the common knowledge of virtuality. By reading the book, to some extent, the differences of emerging approaches, the variety of themes and the repetition of similar lines of thoughts may interfere with its coherence. And another potentially aggravating factor is the multitudinous numbers of citations. In every case a lot of philosophers and scholars are consulted, and this continual referencing interrupts the flow of reading. Thus, the book is more to dip into rather than to be read in a stringent way. Even asserting this, by all means the book may be useful. If one does not expect a complete answers to questions about virtuality and/or a complete theory of virtuality, even so one can gain an insight through the fragmentary structure of virtuality by philosophical approaches and practical examples.

Johannes J. Frühbauer:

Review: Readings in Virtual Research Ethics. Issues and Controversies.

Abstract:

This paper shall give a review of Elizabeth A. Buchanan (Ed.): Readings in Virtual Research Ethics. Issues and Controversies. Information Science Pub. , 2003. 350 pages Broschur. 69,00 €

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The virtual realm, which is essentially based on ICT, has changed the framework of research activities and practices and is now challenging ethical reflections upon it. Thus a common observation is, that not only the quality of research practices has been improved by using ICT, but also the quantity of these activities has increased during the last decade in a significant way. Especially the internet and its technical facilities has given a new dimension to the opportunities of research. Even if the attention to ethical challenges of research is not new at all, there are new questions of ethics as it is mentioned again and again by several contributors to the "Readings in Virtual Research Ethics. Issues and Controversies", a volume recently edited by Elizabeth A. Buchanan, who is co-director of the Center for Information Policy Research at the School of Information Studies, University of Wisconsin/Milwaukee.

As Buchanan herself stresses, the 1990s have given way to diverse disciplines which looked around the ethical questions connected with or evoqued by research activities on the media basis of ICT. In a certain way the conference around virtual research ethics, which was convened in 1999 by The American Academy for the Advancement of Science in collaboration with the NIH Office for Protection from Research Risks and from which Buchanan is quoting a paragraph in her introduction, can be seen as a starting point for an interdisciplinary and systematic reflection on ethics within the field of virtual research. What in 1999 has been begun through this conference is now continued by Buchanan's collection of readings. The large diversity of virtual research is represented by the contributors in Buchanan's volume: the 18 chapters, written by 28 authors, cover a wide variety of disciplines and perspectives as for example psychology, medicine, philosophy, anthropology, education, communications, business, and women's studies among others.

Elizabeth A. Buchanan organized the 18 chapters of her volume in five sections according to different material or methodological approaches to the subject. The first section inquires into the "Foundations of Virtual Research Ethics" and comprises both theoretical approaches particurlarly with regard to the philosophical perspective of ethical pluralism and some very first more practical orientations in asking for a compliance of online surveys and analysis with already existing ethical standards and guidelines. The second section illustrates different practical approaches to virtual research and its instruments. Thus the look for synchronous CMC-forms (computer-mediated communication) or e-mailing as a method of data collection evokes ethical questions especially with regard to identity, privacy, informed consent, or chat copyright.

The third section is an investigation of "research ethics in practice"; it consists on the one hand of various disciplinary case studies of virtual research in action and on the other hand on the concurrent ethical issues each author encounters in his or her engagement in the virtual. The reader finds here for instance studies on Internet relationships and sexuality and studies of interviewing feminist activists through the National Organization of Women (NOW) Village.

Section four asks above all if online research with minors ought to receive a special consideration due to their potential vulnerability and inability to comprehend research itself. Guiding questions are: What are specific difficulties in studying children? How could parental consent be obtained when children or adolescents are studied? And what kind of cross-cultural differences can be observed in the study of minors.

In section five we encounter "A Call for Researchers", which stresses that there exists a new relationship between researchers and researched within the virtual realm – relationship which is leading to new considerations and which is depending on new understandings by acknowledging the cross-cultural and international characteristics of virtual research.

As this short and selective survey on the five sections in Buchanan's volume shows, virtual research is not only marked by its multidisciplinarity but also by a wide range of applications. Despite this variety of applications, different themes and issues, the ethical request can be focussed on the researcher and the researched individuals.

Some contributors of the "Readings" express their doubt that the ethical guidelines for traditional face-to-face research could be applied directly to online research, because new ethical issues are inherent to the (new) medium. Therefore exploring ethical guidelines for the conduct of online research is one of the main aims of the volume. If we now read Buchanan's comprehensive collection of virtual research practices not only from a general perspective of social sciences with a wide range of interests but with a specific focus on questions and suggestions of ethics and especially of information ethics, we might gain at least four categories in a kind of systematic synthesis or relecture: (1) the identification of ethical challenges, (2) the references of ethical guidelines; (3) general moral principles; (4) a

list of concrete ethical aims for the practice of online research.

Among the ethical challenges we can identify as a very first concern and a high moral attention that is addressed to the rights and protection of the individual: Ensuring human rights, dignity and welfare of participants in online studies and virtual research is an aim frequently named. Any regulation of virtual research activities and online studies should be regarded as for the sake of the participants: the ethical treatment of participants must be ensured. Other goals of virtual research ethics are to minimize any risks which are associated with various virtual research endeavours. A more formal aim is the task to translate existing ethical guidelines to online research or to identify and resolve common ethical problems – despite of the diversity of research fields and applications.

A very important role can be seen in the activities of institutions, boards, panels, or conferences, as they are referred to in many chapters of Buchanan's "Readings". A leading role in establishing ethical guidelides is obviously held by the American Psychological Association (APA). In the chapters for example the Belmont Report is mentioned as a set of guiding principles of research ethics or the function of Institution Review Boards (IRB) with regard to ethical evaluation. The fact that particularly IRBs are very often quoted proves the importance of that institution in raising awareness, attention and sensibility to ethical challenges in research in general. And last but not least, due to Buchanans "Readings" or similiar studies institutions like IRBs, which have to judge whether projects and endeavours fulfill ethical requirement or not, in future will face more proposals for virtual research ethics than in the past. That might include that IRBs will, must even devote more attention to the large variety of issues raised in Buchanan's collection. If we take into account the various institutions, organizations, codes which are committed to preserve ethical guidelines and provide researchers and other ICT-professionals with moral orientation, it seems to be evident, that online research requires above all a commitment to already established principles rather than the invention of new ethical rules.

As already mentioned, a common moral "credo" is the commitment to human rights and the necessary protection of the subject: And especially with regard to this central claim for individual protection we can collect a lot of criteria in Buchanan's volume to get a long list of essential ethical requirements. Other values or principles which are proclaimed are justice, beneficence, autonomy, dignity, or welfare. Concrete ethical aims are related to privacy and integrity of the people who are studied, the informed consent, which particularly is a constant component in the various listings. Suggestions with regard to the informed consent are for example that consent procedures ought to use a language which is comprehensible to the participants; the challenge which must be faced is that the pool of participants is potentially demographically, geographically and linguistically quite diverse; participants in research should have the right to decide whether, for how long and on what conditions they will take part in the study; and a check list may comprise questions like these: Do sites permit asking questions at any point of the study? Is it possible to ask questions before giving any consent to the study? Do the sites state that a person must be 18 years old to be participant? Very close to informed consent is the question of permission: it is not always clear on how to obtain and maintain permission therefore a permission based approach is proposed. Other ethical sensitive points are the protection of anonymity, copy-right aspects, the ownership of words, data safety, or the request for confidentiality and trust: it is important that participants get highest possible confidelntiaity, and that personal information should be stored in a way so as to keep unauthorized persons from taking part oft its content. Trust is related to the interaction between researcher and researched; therefore it is necessary that researchers have to familiarize themselves with the cultural contexts into which they are entering when conducting research online.

The chapters collected by Elizabeth A. Buchanan show that it is not only the question what is legal in virtual research, but also what is legitimate with regard to the essential interests and the fundamental dignity of human beings in their role as participants of studies, surveys and interviews. Moral standards intend to guide researchers that their research on human subjects will follow both legal requirements and ethical practices. Even after reading Buchanan's "Readings" we encounter questions like the following: How can web studies and experiments really comply with ethical standards? How could it be achieved that researchers indeed observe already established ethical standards? Is ethical behaviour only a question of professional ethos or personal virtues? Could or must there be not only organized ethical codes of conduct, but institutional constraints which guarantee the observation of ethical principles and standards? One result of the "Readings" seems to be obvious: a high responsibility bears on the shoulders of the re-

searcher him- or herself; thus she or he could indeed find a very essential and helpful guideline in already existing codes or principles and a very good orientation in the precious and worthy work Buchanan has done by her collection.

Another problem is that the application of online research ethics to online environments has only recently begun to be discussed: for the moment there seems to be no consensus what recommandations should be given, there are divergent opinions of what ethical rules should be followed. It can not be avoided that there remains a grey area in virtual research practices. And even if there are existing ethical guidelines for virtual research and despite of good intentions and the researchers best efforts, there is no doubt that harm could be done to participants in internet research. The role of participants should be stengthened: Therefore the empowerment of participants could be a strategy beneath the necessary ethical behaviour of the researcher: with regard to this a perspective of future virtual research could be a "collaborative model" that intends to incorporate the participant in to the research process itself – recognizing the participant's place as an active member working towards the common goal; thus the participants interest could be better recognized. Finally it cannot be prevented that procedures which are established to protect human participants may indeed deter them from participating in online surveys and experiments.

Giving some illustrations of Buchanan's "Readings" I would like to name in a rather selective manner some noteworthy facts, examples, ideas or problems: 80 percent to 90 percent of internet research seems to be located in the USA and Canada; the proposal of an online participants "bill of rights" is the most essential one – it would promote norms concerning what online research participants can expect and demand from researchers who seek their participation; a very interesting discussion is realated to the question how participants of studies, surveys, interviews, who should remain anonymous, could be paid; the issue of payment to induce participation in Internet research is obviously an important but controversial point; with regard to the uncetainties face to study results a reflexive cybersociology is proposed to acknowledge both the validity and potential falseness of virtual data; how could parental consent be obtained if research studies are addressed to minors: children or adolescents? And finally: a warning is expressed not to overgraze the commons in cyberspace: Virtual reseach would be unusuable, if (potential) participants of virtual research will encounter a flood of studies. Their willingness to participate could decrease rapidly while or because the demand for participation is increasing.

Without any doubt: Buchanan's collection deserves our attention and our respectful acknowledgement. It shows that the request for a virtual research ethics is related to a wide panorama of applications in research practices. The chapters provide an excellent survey of varoius research applications, the reader gets familiar with different actors and their perspectives. Furthermore the "Readings" are not only a welcome proof for the high ethical awareness and moral attention with regard to virtual research activities, they also show the "classical" tension between freedom of research and the individual rights of the subjects especially in their role as particapants of online studies. Over and above it is an instructive introduction to the specific terminology of virtual research, its media and its methodologies. According to the already mentioned ethical challenge with regard to the position and role of participants the "Readings" show ways how to resituate the research subjects in order to incorporate participants needs and benefits into the research design.

Any reader of Buchanan's collection of virtual research ethics will certainly be taken to many places, even if he or she will find similiar problems, concerns or questions. Thus the "Readings" are a wide choice of impulses to think about research and research ethics in a new context. And even if themes are very often similiar, each chapter deals with them in its own manner uniquely and fruitfully. Because of the wide range of issues and themes the index is very useful to the reader especially when he or she is just looking for a specific problem.

A more critical point is that the reader could get lost in the richness of information and diversity of issues and so loose orientation. Useful are references to institutions or organizations, which deal with virtual research ethics; the references to the secondary literature provide not only a very large survey to current research and academic discussion. Despite of the deserved acknowledgement and appreciation of Buchanan's volume, some questions remain open, some aspects are not satisfied: Would "Online or Internet Research Ethics" not be a better or more precise term than the very unprecise "Virtual"? And what does "Virtual Research" exactly mean? Even if there is an evident consciousness by several chapters for cross-cultural considerations, the volume as one ensemble remains restricted on a very exclusive

Western view on information societies. Desirable would be a condensed version which would organize its contents in a more systematic way, not at last to give a better and more precise orientation one the different issues and to avoid repetitions and redundancies. Even if – as Buchanan says – "many stones left unturned for future researchers in the virtual realm", some fertile ground has been already explored. Without any doubt: The diversity of contributions in Buchanans volume as a shell plenty of various fruits of intellectual reflection and analysis makes it useful for many readers, not only for online researches. Therefore these "Readings" should not only be read by those who are already participating in the discourse and networking of information ethics, but also by those who are professionals within the manifold variety of ICT-based virtual research. Only by this a hermetic discourse among "moralists" can be prevented, and only by this wide range of perception an effective ethical impact on every day research-practices could be developed. The current challenge at that turning point from a postspective reflection to a prospective ethical guiding and orientation now lies in the bridging from reading to doing.

Karsten Weber:

Review: The plurality of moral challenges in information societies and the need for systematic thinking

Abstract:

This paper shall give a review of some recently published and some older books, which were published as second or third edition, on Information Ethics and Internet related topics:

- Brennan, Linda L. & Victoria E. Johnson (eds.): Social, Ethical, and Policy Implications of Information Technology. Hershey, PA: Information Science Publishing, 2004. – 304 pages, paperback, $59.95
- Capurro, Rafael: Ethik im Netz. Wiesbaden: Franz Steiner, 2003. 278 pages, paperback, €26.00
- Cavalier, Robert J. (ed.): The impact of the Internet on our moral lives. Albany, NY: State University of New York Press, 2005. – 249 pages, paperback, $26.95
- Johnson, Deborah G.: Computer Ethics. Upper Saddle River, NJ: Prentice Hall, third edition, 2001. – 240 pages, paperback, $40.67
- Kuhlen, Rainer: Informationsethik. Umgang mit Wissen und Informationen in elektronischen Räumen. Konstanz: UVK (UTB), 2004. – 444 pages, paperback, €24.95
- Nyíri, Kristóf: Vernetztes Wissen. Philosophie im Zeitalter des Internets. Wien: Passagen Verlag, 2004. – 179 pages, paperback, €19.95
- Spinello, Richard A.: Case Studies in Information Technology Ethics. Upper Saddle River, NJ: Prentice Hall, second edition, 2003. – 252 pages, paperback, $54.67
- Spinello, Richard A. & Herman T. Tavani (eds.): Readings in Cyberethics. Sudbury, NJ: Jones and Bartlett Publishers, second edition, 2004. – 697 pages, paperback, $54.95
- Tavani, Herman T.: Ethics & Technology. Ethical Issues in an Age of Information and Communication Technology. Hoboken, NJ: John Wiley and Sons, 2004. 344 pages, paperback, $53.95

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- Relevant publications:
  - Karsten Weber: Das Recht auf Informationszugang. Berlin: Frank & Timme, 2005.
  - Guest editor (together with Rafael Capurro) of CSI (Computer Society of India) Communications special issue “Informatics and Ethics”, June 2005.
  - Digitale Spaltung? Informationsgerechtigkeit! In: Rupert M. Scheule, Rafael Capurro, Thomas Hausmanninger (Hrsg.): Vernetzt gespalten. Der Digital Divide in ethischer Perspektive. München: Fink, 2004.

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First of all, I have to thank the authors and publishers of the books that are reviewed here. Without hesitation, all of them responded to my email request for a copy of their works by sending them immediately – most of them right across the Atlantic. Obviously, a non-profit organization like the ICIE and our e-journal IRIE would not be possible without such generosity. Such support realizes what is meant when we talk about our *scientific community*. The opportunities, which technologies such as the Internet provide, to communicate immediately, fast, and cheaply, have already had an impact to our moral lives. These possibilities alter our sense of obligation to one another.

But let us take a more pragmatic approach. The books that are reviewed here could be categorized in several ways. One category is that of anthologies: the works by Linda L. Brennan and Victoria E. Johnson, Rafael Capurro, Robert J. Cavalier, Richard A. Spinello & Herman T. Tavani, and Kristóf Nyíri are all anthologies. Capurro's and Nyíri's books contain collections of their own texts previously published in journals and elsewhere. The books by Brennan and Johnson, Spinello and Tavani, and Cavalier contain many important and often cited essays (in Cavalier and in Spinello and Tavani) or chapters (in Brennan and Johnson) on information ethics, policy implications, moral challenges and social impacts of Information and Communication Technologies (ICT), and so on.

in contrast to the categories above, one will find the monographs of Deborah G. Johnson, Rainer Kuhlen, Richard Spinello, and Herman T. Tavani. These books are conceived as textbooks that would provide an introduction to students of the field of information ethics and to ICT-related social and ethical questions.

However, Brennan and Johnson's as well as Spinello and Tavani's collection of chapters or essays on ICT-related social and ethical questions could also be used as introduction into the field. Therefore, a second category could be mentioned: books that address experts in their respective fields of research.

A third possible categorization is that of language. The books of Rafael Capurro, Rainer Kuhlen and Kristóf Nyíri are written in German (noting that Capurro's work contains some chapters written in English). All the other books are written in English. However, all the categorizations delineated above are more or less formal and do not take into account the content of the reviewed books. That shall be done now.

I will begin with those monographs that were conceived as textbooks. All authors (Deborah Johnson, Kuhlen, Spinello, and Tavani) included a chapter or a couple of pages in their books where they provide some considerations why it is necessary to think about ICT in social, political or moral terms. Some even provide a rough introduction to ethical theories. For instance, in the first two chapters of his work Rainer Kuhlen briefly tries to summarize existing ethical approaches and theories, to sketch their relations to information ethics, and to connect conceptions of human rights to the objectives of information ethics. However, in the rest of his book these ethical approaches and theories only appear occasionally, unsystematically, and poorly integrated. Kuhlen presents a couple of major conflicts arising by the use of ICT, introduces the different groups affected by ICT, and shows several lines of argumentation within the conflicts of those groups. His approach is descriptive without normative considerations.

Unfortunately, the link between basic ethical positions and reflections on ethical problems related to ICT more or less is missing in all the books that are reviewed here. Sometimes that is no big thing: Richard Spinello provides in his book a collection of case studies in which he describes the respective problem, the different parties who are involved, the interests of those parties, and so on. The book is descriptive – Spinello does not (want to) offer a normative point of view. Therefore, it seems to be sufficient for Spinello to point out why those cases could be considered from the viewpoint of ethics, politics, or law without indicating how that could be done. But the textbooks of Deborah Johnson and Herman Tavani emphasize ethical questions. However, there is no strong link between basic ethical positions and the described issues although it would be quite interesting to know what kind of results would emerge, for instance, from, an utilitarian calculus in comparison to those that would arise from deontological considerations or in contrast to ethical positions that stress justice and fairness. Yet, although all reviewed textbooks have to be criticized with respect to the lack of normative considerations, it is important to note that there is a particular problem with Kuhlen's book, because he presents his own point of view in an apodictic way without giving reasons for it to the reader. The other authors are more restrained with regard to their own moral verdicts. Especially in case of textbooks for students it is very important to argue carefully – students have to learn ethical argumentation and they have to learn that any claim has to be estab-

lished with arguments and not with dogmas or mere opinion.

Richard Spinello and Herman Tavani's anthology is conceived a little bit differently than the others. They decided to identify a couple of ICT-related problems and to write an introductory chapter for each problem which contains discussion questions, references and suggestions for further readings. Subsequently, each problem is discussed by several other authors. Now, some of them tried to establish a link between basic ethical positions and the treated question and some did not. However, because each chapter contains a number of essays, readers will have the opportunity to learn about several different viewpoints. That approach seems to be the great advantage of Spinello and Tavani's textbook compared to the other ones. The conception of Linda Brennan and Victoria Johnson's anthology is quite similar, but there is no introductory part and for every ICT-related topic the reader only finds one chapter.

Finally, the anthology of Robert Cavalier brings together a couple of essays that seem to have a common viewpoint: he mentioned that the authors of his anthology based their essays on Aristotelian foundations, which mean that all of them try to show that the moral challenges of the Internet only can be met with moral virtues as articulated by Aristotle and those whom he influenced. However, even for non-Aristotelians, all chapters of Cavalier's book are quite interesting because they highlight historical aspects and ideas about the Internet not that common in the usual debates.

Even leaving out the consideration of the language of the work, Rafael Capurro's and Kristóf Nyíri's books are somehow different compared to the other anthologies because they summarize their own previously published essays. Additionally, regarding the content, there is another difference: Capurro's and Nyíri's aim seems not to be to solve ethical problems that occur in real life but to try to establish some theoretical foundations of information ethics and other ICT-related problems. For example, both muse about Heidegger's philosophy and about the possibilities of adopting Heideggerian ideas for recent ICT-related moral and metaphysical questions.

Capurro's and Nyíri's books are quite good examples for what often is called "continental philosophy"; the other books that were reviewed here tend to be more analytical. But that should not be understood as pejorative; both kinds of thinking are important to deal with "the impact of the Internet on our moral lives", as Robert Cavalier calls it. But there is still a lot of work to be done. Theoretical considerations are quite important for a better understanding of the field, but it is necessary to link them to practise. And the other way round is also important: case studies and moral advise are important, too. But without foundation of moral claims and without their justification such claims easily can be rejected. To make this point more clear, let me suggest one example: the digital divide and free access to information. That is a problem within nation-states and a problem that transcends the borders of nation-states. Even in the context of a single society it is necessary to justify claims of free access to information for everybody. If we do not provide such justification there will be a confrontation in case of proprietary versus non-proprietary software (Open Source, Free Software), of intellectual property conflicts, or even in case of privacy debates. In all these cases often it seems that the opponents just raise claims without justification – and often it seems that those claims could not be justified without heavy contradictions and inconsistencies.

Therefore, let me end this review with a remark. In the field of ICT-related research, particularly in case of raising normative claims, we still are standing at the beginning of work that yet has to be done. The diversity and immense number of moral challenges in information societies both ask for more efforts in systematic thinking as well as in creating links between theoretical musings and practical work.

In summary, depending on your expectations and needs anyone of the reviewed books can be recommended. As textbooks I would prefer Deborah G. Johnson's text or Richard Spinello and Herman T. Tavani's book but all other publications are informative as well. There is only one point of critique left: the price of some of the reviewed books is relatively high, particularly with regard to the fact that all of them are paperback editions. Perhaps the publishers should think about the price again, especially in those cases a book is published as second or even third edition.