
Introduction: Behind the Practice of Information Politics

This book is an exposé of the politics of information devices on the Web, broadly conceived. It begins with a mundane but often overlooked fact: On the Web (as elsewhere) sources are in constant competition with each other for the privilege of providing information. They compete for inclusion as well as prominence in all manner of information spaces. They also compete to be the leading information, the source that matches the information requested or given at any particular time. The competition is particularly fierce for placement in authoritative spaces.

When analysts treat the extent to which the sources of information collected by authoritative spaces follow certain principles—say, inclusivity, fairness and scope of representation—the matter may be said to become political. Analysts often ask if there is a politics *behind* how a search engine or portal selects and indexes its information. This question pertains to *back-end politics*.

We begin by interrogating the back end with the aid of a Ralph Nader complaint to the U.S. Federal Trade Commission.¹ But the matter runs deeper than calls made to search engine companies to disclose information practices that are advertising in disguise. However important such exposure cases are, I wish to move from the sometimes arcane debate about search engine logics, information retrieval, and information design to a larger one about the future of the Web more generally as a space that maintains the collision between alternative accounts of reality.

One of the better terms employed these days to describe the elision of alternative accounts is *informational politics*. It is normally employed to describe how sophisticated Western governments stage democracy, not through classic forms of deliberation and representation, but with polls that pulse and other manipulative tactics that attempt to ensure media

communication strategies are effective in forming views that will fall in line with the official account. Manuel Castells's discussion of informational politics provides one foothold. Richard Grusin's recent discussion of "pre-mediation" also proves helpful in conceptualizing perhaps the most extreme form of informational politics, where officially planned events, such as war, are "pre-screened" so viewers may become accustomed to the inevitable realities ahead.²

Here I take informational politics more broadly, and, initially, turn it on the Web. Whether this competition of sources results in inclusivity, fairness, and scope of representation, the initial query concerns whether authoritative spaces on the Web may be seen to be in alignment with official accounts of reality. In other words, are they also a forum for informational politics, however unwittingly? This, in keeping with the political analysts' principles of inclusivity, fairness, and scope of representation, is a crucial test for the state of the Web, on the *front-end*.

Discussions about back-end and front-end politics, and the extent to which they increasingly lend themselves to the demise of alternative accounts of reality, is how this book begins and ends. In between, the aim is to derive a set of principles and propose a practice that can survive a searching info-political critique. To do so, I begin with the political analysts' premises of the constitution of public-spiritedness and apply them to the back-ends and front-ends of Web projects. How do leading Web projects fare when confronted by inclusivity, fairness, and scope of representation?

Subsequently moving beyond the critique, I will propose a practice and build upon it with a series of concrete information instruments that enact information politics on the Web. The initial questions are how to adequately capture the alternative accounts of reality on offer, invest them with authority if so deserving, and rejuvenate the collision space in the public spirit.

In the narrative that follows, a particular Web epistemological practice is proposed. It strives to take seriously the means by which the cultures of the Web adjudicate. In the Web epistemology discussed below, the question is, who or what could be made to adjudicate? Here, one uses techniques to make Web dynamics adjudicate. In this sense the adjudicating agent (or agency) is being ascribed to Web dynamics, and the argument concerns which heuristics and techniques could be used to

capture and analyze them in a Web epistemology. The dynamics themselves are the result of collective human activities with machines—*registered* activities, the collective consequences of which may be out of sight or incomprehensible to humans without techniques. Some of the evidence for labelling these dynamics out of sight or incomprehensible lies in the increasing difficulty people have in manipulating the results of leading search engines or tampering with the recommendations flowing from leading collaborative filtering applications.³ For example, the refinement of Google's techniques (as opposed to AltaVista's) continues to forestall manipulation, payola, and the like—a great achievement. With the rise of authoritative spaces relying principally on non-voluntaristic techniques—those that do not allow “self-reporting”—opportunities arise for developing further means of capturing and analyzing Web dynamics for the purpose of source adjudication.⁴ The purpose here is to develop a set of heuristics for doing so, and interrogate the value of the results in terms of the information politics performed. (Google, as an example of authoritative spaces discussed below, does not fare as well as one may imagine.)

It is a bold proposal, for the cultures and spaces that adjudicate (through, for example, collaborative filtering and hyperlink measures, as well as particularly public-spirited manual editing practices) have a host of problems of their own, as I discuss. But overall it is an experiment worthy of pursuit if Internet analysts persist in posing the larger question of what the Web may be for. In this book consider the Web the finest candidate there is for unsettling informational politics. Chapters two through five—the realised political instruments for the Web—each may be read as a demonstration of why and subsequently how this goal may be accomplished.

Back-end Information Politics

The recommendation by the American Federal Trade Commission that search engine companies disclose paid link policies and “preferred placement” schemes was significant for Internet users.⁵ That companies pay to have their links included in search engines and for high rankings in returns, and that seemingly neutral or objective engine returns may be advertisements in disguise, turned out to be news to some 60% of

Internet users, as surveyed by Princeton University researchers and reported by the FTC in its recommendation.⁶ The FTC decision, communicated in a letter to iWon.com, MSN.com, Netscape, AltaVista, Direct Hit, HotBot, and LookSmart, asked the companies to ensure that ads in search engine returns, whether preferred placements or paid inclusion schemes, are clearly and conspicuously marked in keeping with deceptive advertising statutes. This would bring an end to the consumer confusion, it was said; action on the part of search engine companies was favored by 80% of the users surveyed.

By pulling back the curtain on the origins of the information in search engine returns, the recommendation brings into focus a crucial point about information and a form of politics behind its delivery. We all are being invited to recognize an often-neglected point in what is sometimes thought to be a medium that flattens and equalizes the status of information: Multiple sources are vying for different information to be placed under the same generic heading in authoritative, aggregated listings. The maneuverings behind that competition—the competition, in the above case, for key words to be associated with particular sources—is one clear definition of information politics in practice. These are the politics behind information retrieval, or back-end information politics.

The stakes are great. Search engines are not merely technical but political matters, as political analysts Lucas Introna and Helen Nissenbaum point out. “[Search engines] provide essential access to the Web both to those with something to say and offer as well as to those wishing to hear and find. Our concern is with the evident tendency of many of the leading search engines to give prominence to popular, wealthy, and powerful sites at the expense of others.”⁷ Theirs is a plea for search engines, as the primary means of access to indexed information in the new medium, to provide full disclosure of the rules governing indexing, ranking, and other information-biasing mechanisms and schemes, including preferred placement and paid inclusion.

The Federal Trade Commission did not make such a sweeping recommendation to engine companies. The Commission followed the more limited arguments made by the filer of the complaint that set the case in motion. Consumer Alert, the Ralph Nader-headed group, only went so far as to point to the growing influence of the market on search engines (“ad creep” was the term used), and the confusion arising from mixing

ads and editorial content in the graphical lay-out—a concern long on the agenda of search engine watchers. Consumer Alert did not wish to politicize the methods of indexing and ranking, that is, the search engine logics themselves.⁸

When search engine companies first unveiled their engines, they did not put ads in the search results. Results were displayed based on objective criteria of relevancy tallied by algorithms. During the last year, however, some search engines sacrificed editorial integrity for higher profits, and began placing ads prominently in the results, but without clear disclosure of this practice.⁹

Taking aim at the objectivity of search engine logics, Introna and Nissenbaum tally up the various reasons why a site is not indexed in the first place, or, if indexed, why it is not well-ranked. Where the absence of indexing is concerned, for example, it may not be in the path of crawler; it may be on a very large, partially-indexed site. Where ranking is concerned, it may not have received sufficient links; it may be an “orphan site” with no inlinks.¹⁰

But, more importantly, Introna and Nissenbaum, as well as other authors, go further than Consumer Alert’s calls for disclosing the mixing of ads with editorial content.¹¹ They desire that engines and tools embody more generally another form of information politics, another back-end spirit. Engines should take up the “suite of values embodied in the ideology of the Web as public good,” they write.¹² The authors enumerate a set of political and system design principles befitting this spirit—inclusivity, fairness, and scope of representation. They urge engine-makers to enquire into the extent to which any particular mix of the standard elements in their (ranking) logics—metatags, hyperlinks, pointer text, freshness—produces more public-spirited returns.

A short example may illuminate the authors’ point—one made more or less forcefully on certain trade, public advocacy, and critical sites, from searchenginewatch.com to google-watch.org. In February 2003 researchers and I ran queries for the term *terrorism* in Google in an effort to grasp the extent to which the back-end politics of information retrieval may or may not be converging with more common understandings of informational politics. The sociologist Manuel Castells has provided the term *informational politics* to describe how governmental and party politics are performed not through classic government-citizen exchanges and deliberations but rather through the mediation of the press and

view by Searchenginewatch.com of Major Search Engine Companies' Preferred Placement and Paid Inclusion Disclosure Rating, July 2002.

Engine	Program	Notes	Disclosure Rating
Web (FAST)	Paid Placement	"Sponsored Search Listings" sold by Overture "Start Here" links sold by Lycos	Pass (Qualified)
Search	Paid Inclusion	May occur in main results	Fail
	Paid Placement	"Sponsored Links" are paid links from Google	Pass
	Paid Inclusion	May occur in main results currently provided by Inktomi	Fail
	Content Promo	"Recommended Sites" generally lead to AOL or partner content	Fail
es	Paid Placement	"Products and Services" links sold by AltaVista or Overture	Fail
	Paid Inclusion	Occurs in main results and directory listings	Fail
	Paid Placement	"You may find this featured listing helpful" sold by Ask	
	Paid Placement	"You may find these sponsored links helpful" links from Overture	Fail
	Paid Placement	"You may find these options useful" paid links from others	
	Paid Inclusion	May occur in "Click Ask below for your answers" or "You may find my search results helpful" sections	Fail
	Paid Placement	"Sponsored Link" ads sold by Google appear at top and to right of main listings	Pass
	Paid Inclusion	None	n/a
	Paid Placement	"Sponsored Search Listings" sold by Overture	Pass
	Paid Inclusion	May occur in any results from Inktomi (look for Inktomi logo at bottom of page)	Fail
	Content Promo	In "Search Partners" and "From The Lycos Network" areas	Fail

art	Paid Inclusion	Paid inclusion program allows sites to be crawled more deeply in Inktomi's listings	n/a
	Paid Placement	"Featured Listings" sold by LookSmart	Fail
	Paid Inclusion	Commercial sites pay for listing	Fail
	Paid Placement	"Sponsored Search Listings" sold by Overture "Start Here" links sold by Lycos	Pass (Qu
rch	Paid Inclusion	May occur in main results provided by FAST	Fail
	Content Promo	"From The Lycos Network" area	Pass
	Paid Placement	"Sponsored Sites" from Overture	Pass
	Paid Inclusion	May occur in "Web Directory" info from LookSmart or "Web Pages" info from Inktomi.	Fail
(GoTo)	Content Promo	In "Featured Listings" area	Pass (Qu
	Paid Placement	Listings with "Advertiser's Max Bid" note are paid	Pass
	Paid Inclusion	Unpaid results from Inktomi may have paid inclusion listings	Fail
	Paid Placement	"Sponsored Links" from Overture, in future from Google	Pass
	Paid Inclusion	None	n/a
	Content Promo	Within "Matching Results"	Pass
	Paid Placement	"Sponsor Matches" sold by Overture	Pass
	Paid Inclusion	"Yahoo Express" provides fast review and possible inclusion in main listings. Mandatory annual fee for commercial areas.	Fail
	Paid Submission	Within "Inside Yahoo!" area	Pass

<http://www.searchenginewatch.com>, July 2002.

broadcasting media.¹³ Other authors describe politics through mediation in epistemological terms—that which we come to know cannot be easily disentangled from that presented in the press and broadcast media.

At the other epistemological extreme are the Daily Me writers such as Nicholas Negroponte and Cass Sunstein. In very different manners both speak of how the Internet—especially the personal filtering of information before it arrives—encourages disintermediation and an end to a shared discourse and experience associated with common consumption of press and broadcast media.¹⁴ Of interest to us here, in our small experiment, is the further point Sunstein makes in relation to *information exposure*. More readily, the point also relates to the “pluralism of viewpoints” principle written into certain national public broadcasting laws. To what extent are the politics at work in search engines and shown in search engine returns precluding exposure to a range of arguments?¹⁵

Our Google queries for *terrorism* furnished us in the top twenty results pages from the White House, the CIA, the FBI, the Heritage Foundation, a smattering of strategic studies groups at universities, CNN, and *Al Jazeera*, the Qatar-based news network. We do not wish to overstate the point that the preferred search engine—providing in 2002 what google-watch.org called “75% of all external referrals on most Websites”—would be epistemologically aligned with a particular version of arguments we may associate with the evening news, however much it may put paid to a disintermediation-through-search-engines argument.¹⁶ We also do not wish to belabor points about bias, its origins, or its consequences, particularly in relation to Google’s PageRank method. The political analysts of search engines already have done so.

Of greater importance here is which overall Web dynamics one should capture, and which sorts of politics may different uses of Web dynamics put on display or into action. Google, for example, looks primarily at links and the pointer text describing the link, though their logics are ever-evolving. Those sites receiving the most links with pointer text corresponding to the key word query will be privileged in the returns. Since the results may be increasingly aligning with the mediated, we are interested in asking whether the Web need be so aligned. In other words, which kinds of overarching logics and methods may be brought to bear in order to undertake another information politics—perhaps one more

in tune with the political and system design principles enumerated by our analysts—inclusivity, fairness, scope of representation? (See table 1.2.)

Front-end Information Politics

Before discussing which Web dynamics and capturing methods may be available to enact more public-spirited information politics, as well as how to build upon those principles, there are further cases to be discussed. The next case is more classically political and allows us to begin to make some further distinctions about information politics. The UK online Citizens’ Portal is a different kind of authoritative space in the new medium where a form of information politics has been in play. To the initiators, the portal is a place where citizens can have their say in open discussions about issues in an ostensibly deliberative forum. Unlike the back-end maneuverings to which Ralph Nader alerted us, in what the sociologist Ulrich Beck would call the “sub-political,” deal-making arena, the UK online Citizens’ Portal is more formally political in the sense of hosting citizen discussions and consultations in a governmental framework.¹⁷ It is an ideal e-democracy project, whereby citizens and their viewpoints are offered access to other citizens and to the government, outside of the realm of informational politics—that is, without the mediation of day-to-day pollsters, more formal opinion researchers, or the media.¹⁸ In December 2001, over a year after the project properly commenced, twelve discussions were taking place on children, families,

Table 1.2
Web epistemology matrix classifying Web projects on the basis of relationships between the following features: self-reporting (volunteering information to be indexed) and inclusivity of actors (who may wish to be included).

	Adjudication	
Collection Method	Inclusive	Exclusive
Voluntaristic		
Non-voluntaristic		Google*

* Ranking logics and indexing methods result in exclusion, as Introna and Nissenbaum have argued.

and retirement; countryside; crime and home affairs; culture, media, and sport; defence; devolution and local government; economy and taxation; education, training, and employment; environment, housing, and transport; European and international affairs; health and welfare; and science and technology, with some 20,000 total postings.

The subject categorizations neatly match individual ministerial responsibilities. Ostensibly, the discussions are potential inputs in ongoing political debate and decision making within government.

Which information is allowed to be displayed in this e-democracy portal? What constraints are placed on the scope of issues and range of arguments discussed? When the citizens' portal was first brought into service in 2000, the contribution level was low. Citizens contributed such inappropriate content to the discussions that the government re-launched it with a registration requirement. Registration was the threshold to make way for more serious debate. Debates have been taking place, yet some elements of medium culture (for example, pseudonyms, flaming, spamming) have been stronger than the picture of serious citizen discussion the government may have in mind.¹⁹ In the discussion lists one repeatedly encounters this message: "This message has been removed due to violation of Code of Conduct 4, please refer to Terms and Conditions for further information." Citizens often do not perform as well as envisaged, and as required.

Organizing the discussion themes by ministerial responsibility and requiring user-citizen registration are *info-political system design* decisions. Here they are made with an eye to facilitating discussion of issues on ministerial agendas. The means by which these decisions are translated onto the Web, however, have brought into focus a clash of two digital cultures. Above, mention was made of the anonymous and pseudonymous users, flaming, spamming, and list misconduct. To that list of familiar elements of one digital culture one may add to it hyperlinking, or recommendations made on sites and lists to other pages, to other points in the debates.

Together these elements of digital culture are beginning to come into conflict with the newer digital copyright and proprietary cultures, which the UK online Citizens' Portal has adopted. The site's general terms and conditions of the debate require attention. Reference may not be made to the debate by an external hyperlink without permission, meaning one

may not point to the debate on the Web. The site's hyperlink policy, from the terms and conditions, reads:

You are not entitled (nor will you assist others) to set up links from your own Web sites to ukonline.gov.uk (whether by hypertext linking, deep-linking, framing, tagging or otherwise) without our prior written consent, which consent we may at our absolute discretion, and without providing a reason, grant or withhold.²⁰

From a copyright point of view, the "Crown," as site author, owns the debate space. Ownership of others' content generated on one's site is not unusual in the newer proprietary Web. Efforts to disallow hyperlinks to the discussion, especially by government, are more novel. (Attempts at forbidding deep-linking by one company to a competitor have a longer history.²¹)

I would like to take up two of the crucial consequences of the Crown's information politics, particularly as they are in contrast to the political and system design principles enumerated earlier. Whilst other analysts may concentrate on the regrettable level of the discussions (evidenced by the frequent resort to code of conduct messages), as well as the missed opportunities in this showcase e-democracy debate space for the Blair government, it is important to point out the kind of political debate the space's information politics author. (See figure 1.1.)

The first consequence of the Crown's information politics is one's need to "surf government" in order to participate in debate. We have a situation whereby people are asked to follow the formats of the government's online information politics—formats that constrain what counts as a contribution. The second, related consequence is that those discussions and positions that live elsewhere (on the Web) may not join the debate by referencing it in the form of a hyperlink. In principle, the debate thus is a governmental as opposed to a social debate. With the government's adoption of particular online information policies, a question arises about the government's understanding of what constitutes debate. More normatively, one may ask, should government, using these formats, author the debate?

The lack of social-ness to the debate is a consequence of the *politics of information formatting*, a front-end form of information politics. By classifying issues along the lines of ministerial responsibility instead of gleaning or grabbing them from society—issues that may be more readily



Figure 1.1
Sample discussion from the UK online Citizens' Portal, captured on December 14, 2001.

embedded in the medium—and by disallowing external connections to the discussions and other common features of medium culture, instead of inviting them, the government excludes itself from the public-spirited Web, with inclusivity, fairness, scope of representation, and now socialness, as its organizing principles.

One of the rationales behind the overt practice of information politics—editing the Web, editing out social debate and the rest of the medium—is illuminated in another governmental portal project in the Netherlands. Here it becomes clearer that information politics may also

be viewed as reassurance projects—a means of creating sites with trustworthy information, providing safe places to go on the Web. The Web as safe haven—now defined as an info-political system design practice (to be criticized)—was once most frequently associated with America Online. AOL has traded on the Web as danger zone, as rumor mill—a chaotic space of questionable purveyors of information.²² The dangers of the Web, or the more radical view that the Web can harm or even kill you, arise from occasional reported cases of people obtaining pharmaceuticals and other products (and contacts) through unregulated (Web) channels and using them improperly, as is discussed in chapter two on Viagra. There we discuss how one may take advantage of the Web's proximity to street culture and unpalatable realities, instead of denying or whitewashing them—which in itself may be dangerous. That discussion is prefaced with current practices for averting Web danger, as well as how they could be rethought. We do so by thinking about the extent to which the editing initiatives are benefiting from knowledge of medium culture and Web dynamics (back-ends on the Web, if you will), and whether they translate into public-spirited information provision (front-end Web).²³

The idea of the Web as dangerous place arrived in 2001 in the Netherlands at the Ministry of Health, and a Web site solution was put forward. It is an editorial approach that seeks, vets, and authorizes a small set of “information partners” before allowing materials of theirs to appear on the Ministry's sponsored initiative—the health kiosk portal *gezondheidskiosk.nl*. To gain some perspective on the strategy, it is helpful to list the defining elements of trustworthy information as listed on the *gezondheidskiosk*'s site. Information is trustworthy if the following is known: its purpose (*doel*), target group, source, date of publication, and background context (with further references provided, if possible). Information also must be non-commercial. At the time of writing, nine information partners have met these (socio-epistemological) requirements for providers of trustworthy information.²⁴

If one of the greater challenges of the medium for Web epistemologists is to overcome the impression (and occasional reality) of people acting on untrustworthy information, the health kiosk's goals are comprehensible and the project is fundable. The goals fit with the pictures in our heads of how a group of editors might go about defining criteria for

evaluating sources, assuming they are unburdened by a familiarity with the medium cultures and Web dynamics—apart from its reputation as chaotic and potentially dangerous place.²⁵ But what if one were to attempt to follow the culture and its adjudicating methods, and develop what might be called a Web epistemology? This would be a “webby” means of evaluating which sources would pass muster. How would that differ? What kinds of back-ends and front-ends would be developed?

Towards Web Epistemologies and Ontologies

A discussion of Web dynamics and what they may yield might begin by touching on two overarching approaches for making decisions about inclusion: *voluntaristic* and *non-voluntaristic*. (We return later to whether they also achieve fairness, scope of representation, and socialness.) The voluntaristic approach is one of self-reporting; Webmasters and information recommenders pointing to sites so that they may be placed. Open directories operate in this manner. Calls are made, usually using lists multiply distributed to networks of subscribers, for keepers and contributors to an open directory of one kind or another; for example, dmoz.org. One or more knowledgeable parties in a particular subject area volunteers, or is asked, to maintain a portion of the directory, using low vetting or generally inclusive criteria. In principle, the reporting of sites to the directory is done with the understood goal of inclusion. More recently, online encyclopedias have been collectively authored, as in the open content wikipedia.org project.

With dmoz.org and wikipedia.org in mind, one could characterize the gate-keeping functions of portal directories on a source inclusion spectrum. Open directories would fall to the left of Yahoo!, with the opposite end being an AOL or an MSN, where there are commercial tie-ins and paid placements behind links (and often external hyperlinking policies). Other voluntaristic examples include sites like medialounge.net, where art groups and cultural institutions report themselves (as well as their social links or affiliations) for inclusion in a database that may generate a social network map.²⁶ In all cases, one volunteers one’s site with a classification already in mind.

It is important to complicate the approach slightly by touching on voluntaristic ranking. One's reporting of a site (or a product or a person) may be counted, and the tallies may become sources of ranking. These techniques use registered activities—embedded information—for the purposes of recommendation. For the sake of clarity, if the ranking practice is well known to the surfers and they understand how to boost and privilege, the overall model may still be considered voluntaristic.

Straddling the line between the voluntaristic and non-voluntaristic approaches is the more sophisticated effort behind Alexa's invitation to download its toolbar and the subsequent means by which the Internet archive (and the Way Back machine) have been built. The surfer with the toolbar, installed in tandem with a browser, would contribute knowingly to the Internet archive (archive.org) by allowing the toolbar to record the sites surfed and report them back to the archive. Sites surfed that are not currently in the archive would be visited and indexed later by an archive crawler. Basically, surfers are recommending their surfed sites for archiving, but the sites are not volunteering themselves to be archived.

In a non-voluntaristic approach, there is no self-reporting allowed and inclusion is based on measures of quality of *found* as opposed to self-reported ties. Google works on this general principle (counting large quantities of inlinks). It may be contrasted with the more popular search engines of yesteryear (AltaVista), which ran more on the voluntaristic model—self-reporting of site content in metatags. (We enter into a discussion of some additional consequences of search engine logics as well as collaborative filtering at more length in the next chapter.)

On the basis of the extent to which volunteered information is taken up by the indexers and made available to surfers and searchers, an initial classification of Web-epistemological projects may be made. (See table 1.3.)

Much of the work described in this book follows the non-voluntaristic evaluative model. In adhering to the non-voluntaristic approach, we are endeavoring to maintain some distance from our objects of study. Allowing them to carry on in their everyday capacities is more telling than affecting them with knowledge of our monitoring. We put forward this study with the knowledge that much of the Web has been built on

Table 1.3

Web epistemology matrix classifying Web projects on the basis of relationships between the following features: self-reporting (volunteering information to be indexed) and inclusivity of actors (who may wish to be included).

	Adjudication	
Collection Method	Inclusive	Exclusive
Voluntaristic	Dmoz IMD	Yahoo! UK online Gezondheidskiosk.nl
Non-voluntaristic	archive.org	Google*

* Ranking logics and indexing methods result in exclusion, as Introna and Nissenbaum have argued.

voluntarism, but we would like to argue that there are occasions and reasons to do without.

One supporting reason for our position is that we are not so naïve to believe our emails, project brief attachments, URL pointers, and software presentations are so compelling as to influence their behavior. In further, realist defense of the non-voluntaristic approach, many have observed that participatory experiments often do not live up to their promises; participatory spaces without participants also depress. But the larger rationale behind the non-voluntaristic approach is that it places the burden of evaluation—and debates about evaluation—on techniques that blame the Web. This overall approach creates a beneficial climate.

Being able to blame the Web would be good news for all the editors and their critics. Concern could be shifted away from editors working with incomplete information, or working under the idea that they must dodge charges of favoritism. With the Web to blame for recommending links, governments, for example, would no longer need to link only to themselves. They would need not worry about a hostile press writing stories about a hyperlink from a government Web site to a call boy network, as in the notorious German case, reported in the *Bild Zeitung*.²⁷ Concern would be shifted away from commercial editors working on new paid-for-placement schemes and other commercial linking policies. Having blamed the Web, they would be granted relief from *die Nörgler*—those critics and watchdogs toiling on the latest bias exposure cases.²⁸

Concern would be shifted away from the editorial practices of even the all-inclusive open directory makers. With the blame placed on the Web, the artist, the alternative Webmaster, or the hotmail scientist, whose paper may have been rejected by arxiv.org on the basis of his or her email address alone,²⁹ would need not stay awake at night, wondering why the one critic or team of editors did not include the site or paper in the listing.³⁰

Even if the terms of debate about source evaluation were successfully shifted from editorial practices to capturing and analyzing Web dynamics, fresh concerns would arise. As many authors have pointed out, the politics and sub-politics of search engines and other evaluative devices remain under-interrogated. Among other problems, these devices may only *appear* to blame the Web in recommending sources as relevant. It is difficult to verify the claim, for the logics are not known in great detail. But once the arguments begin along these lines, the tyrannies of the editors and critics (and debates about them) begin to recede from the picture.

If we are able to shift the debate away from editors to a kind of living Web, with devices capturing dynamics, adjudicating sources, and putting on display other information politics, the political principles still must be taken into account. The outputs must be interrogated according to the info-political system design principles discussed earlier. Perhaps they require amendment. However, I would first like to address the back-end Web and draw up some considerations of what is meant by a living Web, and which sorts of methods and devices already may be capturing it.

To begin, we draw the distinction between information gleaned from the medium—embedded information—and information gleaned from without the medium and put up on the Web—disembedded information. Classic disembedded information, for example, is that which arrives from news feeds from press agencies and is continually mounted on the Web or provided as a stream, often in the form of a ticker, as in BBCnews.com. Similarly, the ever intriguing devices connected to the Internet, with an allotted Yahoo! sub-directory, from coffee and soda machines to clocks, robotic gardens, and Web cams, are disembedded information streams.³¹

The outputs and analysis of classic embedded information, particularly from an info-political point of view, have not seen committed

attention from the two disciplines where it may be expected. Internet researchers have long pointed to their initial fascination with tools that show or capture trace routes (the packet trajectories of a message or a page view request through the Internet).³² The surfer and Webmaster traces left when browsers request pages (hit logs) and when pages refer or link to other pages (referral logs) also have been discussed, but neither ever amounted to the data trove they were once thought to be. Moreover, the scientometric, or Webometric, community, after an initial wax of enthusiasm, has not concentrated its subsequent efforts on score-keeping Web sites or references in discussion lists as serious means of adjudicating either quality or impact of publication.³³ Instead they continue to work with disembedded information. In these areas there is not a Web epistemology under consideration, at least in the terms discussed thus far.

As Rob Kling has pointed out, one of the reasons behind the lack of study of the living Web—capturing and analyzing embedded information for the purposes of adjudication—has been the overall lack of transferability of the arxiv.org model, the physicists’ open publishing system which once heralded new Web science.³⁴ He has discussed the case of the transformation of the idea of E-Biomed—the open publishing system for medical science publications—to PubMed Central, a system without pre-prints and with considerable lag time between submission and publication. It is a story of the resistance of commercial publishers and scientific

Table 1.4
Web epistemology matrix classifying Web projects on the basis of relationships between back-ends and front-ends—what information they capture (information embedded in the medium or disembedded) and whether the information is dynamically generated.

	Front-end output	
Back-end source	Static	Dynamic
Embedded	Webalyser (site stats)	Lycos top 50, All Consuming ¹
Disembedded		Real-time water, ² BBC news ticker

¹<http://www.allconsuming.net>. Captures data about the books being mentioned in blogs and lists them according to freshness and frequency of mentioning.

²<http://water.usgs.gov/realtime.html>. Shows real-time hydrologic data from U.S. water stations.

societies to open publishing and new forms of recommendation, where, for example, the combination of paper freshness and recent cross-listings would comprise the principle ranking methods. To the societies and publishers, it may even be dangerous to allow Web dynamics to adjudicate, for they remain untested quality indicators. They are also understudied.

Information Instruments Doing Politics

This book, among other things, is a contribution to the debate about Web epistemology—the various techniques that capture online (embedded) information, analyze it, and recommend it, often, as is shown, in competition with disembedded information. As mentioned, these techniques fortuitously blame the Web, attempting to leave behind the editors and critics, but also have epistemological and info-political problems of their own. We have entered that debate by building a basic Web epistemology that identifies the features of a living Web, locating the types of devices that may be coming to occupy the term by capturing and analyzing it. It is in the space of devices that capture embedded information, analytically adjudicate, and (dynamically) recommend, that we would like to place our information projects and interrogate our information politics.

In the following chapters, a series of information instruments is put forward that makes strides towards this new Web epistemological practice. The process of thinking through and developing devices that capture Web dynamics on the one hand, and perform an information politics on the other, may first benefit from two definitions. The term *information instrument* is employed here to mean a digital and analytical *means* of recording (capturing) and subsequently reading indications of states of defined information streams. Stream capturing methods are built into the instruments using various programming languages and methods.³⁵ The interpretations of the streams are designed into the interfaces, where there is an effort to add more depth to the usual flat Web ontologies on offer—to deepen the Web and its devices that usually stream information with vastly different statuses on the same plane.

Indeed, the original way to think about the Web ontologies the devices generate is classical. It has been framed in terms of whether they perform hierarchies in the status of information, whether they classify, and to

what effect. For example, the faceted classification system of Yahoo! has a depth to its ontology, whereas the entries in the 2003 *Encyclopedia of New Media* are flatter.³⁶ (See figure 1.2 and table 1.5).

In pointing to the varying depths of Web ontologies, authors have striven to address one of the original features of the medium, long at the heart of debates and concerns about the overall status of the medium, but, more importantly, debates and concerns about its celebrity. The feature may be called *side-by-sideness*. As the *Whole Earth Catalog* put it in 1992, “the eminent and the crackpot” appear side by side. In our epistemological practice we do not wish to abandon this matter, for it is precisely this medium feature, generated by earlier devices, that may lie behind the expectation that the Web will continue to be flat in the sense of inclusivity and in its scope of representation.

As to the second definition, information politics have a back-end and a front-end. It is thought of in terms of the technical and normative legit-

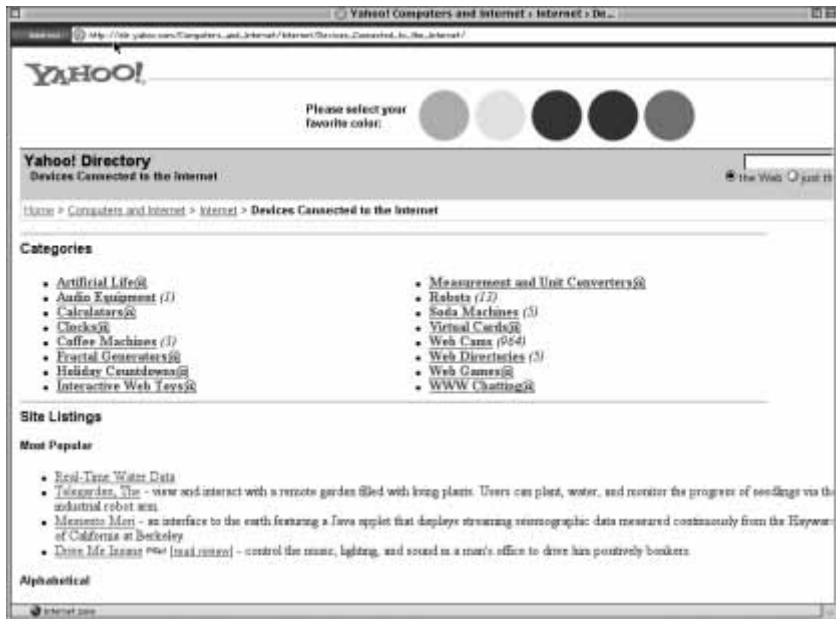


Figure 1.2

Yahoo!’s faceted classification of “Devices Connected to the Internet” as an example of deeper Web ontology, captured on February 20, 2003.

Table 1.5

Portion of entries list in the *Encyclopedia of New Media* as example of flat ontology.

Access	Carmack, John
Amazon.com	Carnivore
Anderson, Laurie	Case, Steve
Andreesen, Marc	Castells, Manuel
Anonymity	Cathedral and the Bazaar
ARPANET	CAVE
As We May Think	Cellular Telephony
ASCII Art	Cerf, Vinton
Association of Computing Machinery	Chat
Authoring tools	Child Online Protection Act & Child Online Privacy Protection
Avatar	Codec
	Communications Decency Act
Barlow, John Perry	Communitree
Berners-Lee, Tim	Community Networking
Bernstein v. US Dept. of State	Compression (audio graphic video)
Bezos, Jeff	Computer Emergency Response Team
BITNET	Computer Graphics
Blog	Computer Grids
Bluetooth	Computer Music
Borg, Anita	Computer Supported Collaborative Work
Brand, Stewart	Content filtering
Broadband	Convergence
Brooks, Rodney	Cookies
Bulletin Board Systems	
Bush, Vannevar	
Business-to-Business	

imacy of means allowing competition between sources. One may evaluate the extent to which the means as well as outcomes fit with principles of inclusivity, fairness, scope of representation, and social-ness. There will be conflicts when one compromises front-end politics for back-end achievement, as is the current norm on the Web, especially for devices capturing embedded information.

The information politics, moreover, concern a much larger question about the medium more generally. What's the Web *for*, or what could it be made to be for? Should it be made to continue to principally flatten hierarchies of information, itself a highly info-political move? Should it be made to expose, put on display an informational politics? Or, contrarily, should we make the Web compete with press and broadcast media—the very opposite, from an information politics point of view, of convergence? Should it build hierarchies in line with typically mediated versions of events (the Google *terrorism* case discussed above), or should it consciously do otherwise?

With the overall question as to what the Web is for, we enter the debates about (back-end and front-end) information politics by situating our own instruments in them. Here the instruments—and the substance and context behind them—are introduced, one by one. We also discuss the kinds of politics they do, in light of the political analysts' calls for a new public-spirited practice. Finally, we conclude with when and why we part company with those principles, in a Web epistemological practice still very much attuned to information politics.

Political Instruments for the Web

The Lay Decision Support System

The first information instrument presented is viagratool.org, the Lay Decision Support System. It is a Web site that provides serious information about a drug, available by searching, form-filling, on-line prescription, e-commerce, and the post. The back-end information stream about Viagra was captured using a manual collaborative filtering technique, the method made famous by the disciples of Vannevar Bush and put into practice on the Web by Amazon.com and others. A group of experts were asked: According to the Web, what is Viagra and who is it for?

As we found with the aid of our group of collaborative filterers, Viagra comes across on the Web as a party drug, with distinct user groups—clubbers, sex tourists, and others—not addressed by the official information providers such as Pfizer and medical industry sites as well as governmental health information providers, including the previously mentioned Ministry of Health initiative Gezondheidskiosk.nl.

Significantly, six months after our finding, press accounts began to appear calling Viagra the new party drug. The research led to two preliminary conclusions, as well as an info-political system design. The first research conclusion is that Web accounts, in pre-dating mainstream journalistic accounts, may serve as an anticipatory medium. This, of course, has far-reaching consequences, and, in the Viagra chapter, we contrast our efforts using the Web as anticipatory medium with some of those who have made similar discoveries at Lycos Top 50, Google, All Consuming, Technorati, and Daypop as well as Jon Kleinberg's work on word "bursts" in blogs as an indication of new trends. We also show the difference between the types of information put on display by capturing search engine query trends and by capturing still other realities Web dynamics have on offer.

The second conclusion also challenges the order of things. If Viagra as party drug is not acknowledged by officialdom, it becomes incumbent upon the information users to exchange information relevant to them, as is often the case on the Internet, especially for medical information, in patient and other support networks. In our instrument, we build upon the more general observation that cohort support networks are challenging expert knowledge and expert-layman distinctions in conventional doctor-patient and doctor-industry relationships. Eventually, the doctor comes to recognize the new learning interface (doctor/Web-aware patient), which is distinct from their usual sources (literature, other doctors, and the medical industry).³⁷ The instrument, with its Web method of adjudication, is doing the political boundary work that may encourage that shift.

There are two versions of the support system, one for the potential Viagra consumer and another for the often-overlooked second and third parties caught up in "Viagra situations." In the first system, the collaborative filters found and kept information, among other things, about its

marketing (and re-selling), its serious harms in cocktail dosages, and insider accounts provided by seasoned lifestyle drug users. The information is displayed on the front-end in a Viagra discourse map with four thought trajectories, each asking whether to consume it, from different angles. Here we borrow information design first developed for didactical purposes at museums and world's fairs.³⁸ Importantly, the system is *not* a consumer-to-consumer information service or pure cohort support service in the peer-to-peer spirit that the Internet is fostering. Rather, it captures and exposes the range of experiences and arguments about the drug, providing it with a more honest identity. It allows Viagra to become not just the doctor's, the patient's, the industry's, and the regulator's drug, but also the marketer's, the emergency room medic's, the humorist's, and certain other users of Viagra and Viagra substitutes—Web sources also not normally put forward in the doctor's office or on the other official sites. Each could play a part in the Viagra decision. In the second version, we present Viagra situations, quite remote from the placid beach scenes with loving couples found on the Pfizer Web site or a jogging Bob Dole, as seen on TV. In this second version, we move closer still to using the Web as anticipatory medium with the help of unsanctioned information. We first resurrect the second parties in Viagra situations (for example, the prostitute), different from those in “normal, loving” relationships. Finally, we call into existence third party observers—friends and onlookers—anticipating darker Viagra usage scenarios.

In prescribing the sites for information and in anticipating diverse Viagra users as well as Viagra situations on the ground, we perform an information politics. We are showing how sanctioned and unsanctioned information not only may be able to stand side by side (as in the pre-Google days, when an Altavista search for “Shell” would return in the top ten not only the Anglo-Dutch company's site, but also a site parodying company practices), but we are also demonstrating how, in certain cases, Web dynamics and our capturing techniques may allow unsanctioned information to rise comfortably to a new status, with the benevolent effect of anticipating serious situations. In making the case for anticipatory reality instruments such as *viagratool.org*, we are able to rely on the official Dutch policy of providing information on such banned substances as ecstasy.³⁹ Thus the Web (with techniques and an informa-

tion politics) fills in that role not yet assumed by the government and its health portal site.

The Issue Barometer

The Issue Barometer is more sophisticated. It is an indicator of the pressure of debates around social issues, as may be measured by certain Web dynamics (linking, top-level domain names, and page modification) as well as textual analysis of sites.

To measure the pressure of social debates, we first locate the network around the issues, using special co-link software we developed—a Java crawler and a co-link analysis engine to locate issue networks on the Web.⁴⁰ The software, dubbed the Netlocator (and in the later version the IssueCrawler) locates densely interlinked pages on the Web dedicated to issues, given particular starting points. The issue network is displayed (on the front-end) as an astronomical chart or virtual roundtable; the size of the organizational nodes on the map are indications of the number of inlinks each has received from other network actors, and is thought of in terms of standing in the network. The inter-linkings between actors in the debate (the hyperlinks between organizational sites or pages) are seen as social relations, potentially complicating entanglements between the actors seated there. Here the virtual roundtable assumes a depth (in the terms discussed earlier), for, despite all sitting around the same flat table, each actor may have a different standing in the network and may have social affiliations with other actors that have a bearing on what may be said in that company.

In the Issue Barometer gauge attached to the map on the front-end, network activity indicators are shown. These readings of the network are taken from available data per page in the network. For example, the heat of an issue is gauged by measuring the freshness of the actors' issue-specific Web pages in the network. For debate activity we look into the percentage of actors espousing positions (through textual analysis). In the third indicator in the barometer, country-specific data are used to chart levels of territorialization (the involvement of one country versus many countries). The territorialization indicator has been devised especially for the case study at hand.

The case study in question concerns the organization of a public debate on food safety in the Netherlands in 2001, surrounding such issues as

genetically modified (GM) food. The Dutch government called for the public debate, which included leading social actors from science, industry, government, civil society, and the citizenry. In 2002 the final report was issued by the government and concluded that the debate was far from successful, citing public disinterest in the issue as well as a lopsided debate, with a series of important actors (NGOs) leaving the forum mid-way.

The question we put to ourselves was straightforward. May the Web (and capturing and analytical techniques) be employed to explain, in part, the failure of classic politics; that is, the national (territorial) public debate? Moreover, can we perform a new information politics that may provide a measure of remedy?

In mapping the food safety debate in the Netherlands, we found that it does not exist, except in the case of certain de-territorial actors brought onto the Dutch food safety debate map by Dutch actors—the Codex Alimentarius Commission and the European Union—actors, crucially, who were not part of the public debate held in the country. In short, the Dutch food safety debate was taking place outside of the Netherlands.

We were able to draw a series of preliminary conclusions from the work. The first is that the Web (with certain techniques) was not only able to show the absence of Dutch debate, but also to point to where the debate was taking place. Indeed, when we analyzed the network of the 15 Dutch NGOs that left the national debate, we found that they were not so much departing the debate, but leading us to it—to a global debate around the Codex, encompassing a wide range of international actors with high levels of heat and debate activity. Cautiously, we put forward the idea that the Web may be able to capture de-territorialization *in situ*, if you will. Finally, we conclude that efforts to stage a national debate—to do classic politics—are often endeavors to re-stage, or re-territorialize, debate, with the Web showing some of the challenges ahead. One of these challenges concerns the extent to which the debate form and format—including the terms—have the capacity to retain those national actors active in the de-territorial arena.

We complicate the performance of classic politics (the national public debate in a building) by showing that the Web tells us that the debate is going on more intensively elsewhere. One could argue that the information instrument points to the political consequences—failed debate, a dis-

interested public—when one stages classic politics without the aid of the Web or techniques able to capture de-territorialization.

The Web Issue Index of Civil Society

The Web Issue Index is a variation on the Consumer Price Index that divines (in a sense) the leading social issues and their relative currency over time. Instead of measuring the changing price of a stable basket of goods over time and drawing conclusions about rising and falling inflation, we measure the campaigning behavior of stable sets of NGO actors, drawing conclusions about rising and falling social concerns. In gathering the back-end data, we ask, which campaigns are collectives of NGOs undertaking, and how frequently do the issues change? On the front end, the Index results are delivered in the form of an issue ticker. The stream displays the rising, falling, and stable social issues of interest over time, according to regular queries of two baskets of sources: Seattle protestors and the Dutch *Echte Welvaart* (genuine welfare) movement. (Further detail is provided in chapter four.) The ticker, moreover, streams issues on three levels, wading from issue, into sub-issues per issue, to a single piece of information per sub-issue that the most NGOs treating that issue are currently pointing to. This may be a document, a statement, a leak, etc.

The value of such an information source is argued from empirical research about the Genoa G8 summit and the anti-globalization movement. In particular, we asked whether the NGOs' portrayals of issues are distinctive enough to warrant a dedicated stream, different from the summit issues portrayed by the printed press (and their digital versions on-line) and by the governmental information providers. We also recognize that there exist a number of dedicated streams to NGO issues such as *Oneworld.net*, also running on Yahoo! News. Is it necessary to add additional streams, doing multiple site analysis?

Thus here we use the Web to capture informational politics in action (in Castells's sense), providing empirical evidence about the extent of the press coverage (in both online and off-line versions) of NGO issues in comparison to the summiteers's issues. In the argument, we first ascertain whether the press and the governments adequately and rigorously capture the Genoa debate led by the counter-summiteers. To do so, we collect Genoa issue lists from the press, the summiteers, and the NGOs

and compare them. We found that neither the governments nor the press scratched the surface of the NGO issues, perhaps because of attention to disembedded information, particularly the more obvious concentration on violence, where the only palpable NGO-related conclusion drawn by the summiteers and covered by the press was to move the next summit to a remote, secure location.

So, here we argue that the Web is substantively closer to the ground—closer, in this case, than the summiteers or the eyewitness reporters from the newspapers (not to mention to the readers of the press and the viewers of protest violence on TV).

Significantly, we also found that, over time, the NGO issues are relatively stable. (This was the good news from Genoa and beyond.) Therefore we need not continually refresh them everyday and compete, for example, with the press as Oneworld.net does, with its daily news from and about NGOs and civil society. This is how we defend our particular issue stream and its politics.

Thus far the Web has been found to be and taken as a valuable collision space between official and unofficial accounts of reality. With collaborative filtering, the network maps, and the issue indexing, the unofficial often sits more easily next to the official situations and events than one would imagine. At viagratoool.org, an invitation is extended to address the unofficial realities of the use of a new pharmaceutical product. In the Issue Barometer we question whether national public debates, as well as inter-governmental policy proposals (for example, by the Codex Alimentarius Commission), are addressing the debate on food safety. In the Web Issue Index, we stream alerts about the disconnection between government, the media, and mediated accounts of civil society aims, issues, and positions. In all cases we are increasing exposure to the range of positions and scope of representation of actors without providing flat information.

The Election Issue Tracker

The Election Issue Tracker charts the press resonance of political party issues in addition to certain NGO issues in the run-up to the national elections. We measure the currency of each political party's platform issues by counting how frequently the issue terms are mentioned in the leading newspapers, using newspaper archives on the Web. To do so on

the back-end, a batch query system is built that can call upon differently constructed newspaper databases (early every morning) and return, simultaneously, the number of issue mentions and the dates per newspaper. Using the familiar information design of a stock market share graph per issue, Election Issue Tracker, on the front end, shows whether and how the political parties' issues resonate in the printed press—how frequently they are mentioned, when and by which newspapers—over the past three months.

Where method is concerned, election issues are first distilled directly from the individual party platforms (culling disembedded information with an eye to terminological specificity, so party issue resonance comparisons may be made effectively). The specific terms are then fed into the newspaper databases through the batch queries. We show each party's issue resonance as article counts, where one article equals one mentioning.

Election non-issues are also tracked. To do so, we use a stable NGO source basket (from the Web Issue Index with embedded information). Once it is ascertained which NGO issues are not on the platforms of the political parties—the non-issues—we track their media currency in the same manner. We then compare the resonance of issues and non-issues, allowing us to evaluate the extent to which classic informational politics are in play and whether there are alignments between governmental agendas and press resonance, or perhaps between NGO issues on the Web, and the press. Thus we are able to enrich the notion of informational politics by charting such disalignments.

There is a politics built into the system insofar as we are normatively positioning ourselves in favor of elections being about issues, as opposed, for example, to personalities. Principally however, the intent has been to hold up a mirror to party-press relations and pose dilemmas for political parties (including the governing parties). In a word, the dilemma—the choice between two courses of action, neither of them wholly satisfactory—concerns whether parties will stand by their issues, even if they are not press-friendly. We are also able to chart issue abandonment by parties, seeing whether those issues being abandoned are those that do not resonate in the press.

The effort here is to cross informational politics (in Castells's sense) with the new information politics based on Web epistemological

practice being discussed in this book. In the case in question, we watch whether the embedded information may challenge the disembedded over what counts as issues. There were intriguing findings.

We found that there are issues high on certain political party platforms that do not resonate in the press, for example, a European Constitution on the Labour Party platform. Conversely, there are non-issues that also resonate, such as waiting lists in health care. More provocatively, we found in the run-up to the elections that the populist parties that sent shock waves through the Netherlands in May 2002, especially Pim Fortuyn's party, saw their issues resonate most in the press. With that finding in hand, we cautiously attempt to build the case that the press participated, through issue coverage, in the rise of populism. We qualify the statement by saying that the populist issues had the greatest press impact. We also found that parties did not so much abandon issues that were not press-friendly as add the press-friendlier ones to their platforms, thereby resolving the dilemma (and becoming more populist, in issue terms). In the analysis we are able to chart a more general swing towards populism in the Netherlands from the pioneering Pim Fortuyn Party to the press, and subsequently to the establishment parties.

Towards a Politico-epistemological Practice with the Web

I would like to conclude with the heuristic principles behind the instruments and the extent to which we are embracing or departing from the info-political system design principles previously enumerated by the political analysts. The endeavor is to first take seriously embedded Web information as well as the common Web techniques to capture, adjudicate, and provide recommendations. We are positioning the work here within the space of those devices and techniques that sit on top of Web streams, often cross and/or analyze multiple streams, and dynamically provide them with a depth in the status of the information. However, we shall depart from what may be seen as ludicrous outcomes of the techniques in action thus far—coffee machines connected to the net or Britney Spears appearing as the most sought after item in the engines. These are not the information trends we are after.

While our ontology is concerned with striving for deepness, we are aware of the traditional flatness of the medium—the *side-by-sideness*

issue—as a feature that certain public-spirited analysts desire to retain or return to. With them, we have redefined flatness in terms of scope of representation and information exposure, and contrasted that to the practice of traditional informational politics. The aim is to show how the Web may at least enrich how we come to understand when informational politics are and are not at work, as directly in the case of the Web Issue Index as well as the Election Issue Tracker. With the principles of scope of representation and exposure retained, moreover, we feel the Daily Me problems also may be put safely to rest by our particular practice.

By choosing the non-voluntaristic approach to source adjudication, our Web epistemology, however, may suffer from charges of being unfair as well as non-inclusive. After all, exhaustiveness in collection method and inclusivity in adjudication are not adhered to. We do not take the entire Web as our realm of inquiry; we do not offer inclusion to actors who may desire it. (See table 1.6.)

Previously we have raised this issue indirectly in our study—our desire to have the actors carry on unaffected by our monitoring—as well as in the discussion of blaming the Web and how it may provide a salutary means of leaving the debate about the practices of editors behind. To those considerations, more importantly, may be added the fact that unlike the previous device occupying the same space in the matrix—Google—for our devices, the adjudication methods are open. (See table 1.2 and table 1.7.) One knows by reading how the ranking or the high indication is achieved.

Table 1.6

Web epistemology matrix classifying the information instruments on the basis of relationships between back-ends and front-ends—what information they capture (information embedded in the medium or disembedded), whether the information is dynamically generated, and whether the information delivered shows depths in status.

	Front-end output	
Back-end source	Flat, Static	Deep, Dynamic
Embedded	Viagratool	Issue Barometer, Web Issue Index
Disembedded		Election Issue Tracker

Table 1.7
Web epistemology matrix classifying information instruments on the basis of relationships between the following features: self-reporting (volunteering information to be indexed) and inclusivity of actors (who may wish to be included).

Adjudication		
Collection Method	Inclusive	Exclusive
Voluntaristic		
Non-voluntaristic		Viagratool, IssueCrawler/Issue Barometer, Web Issue Index, Election Issue Tracker

To put this issue into context, one of the main rationales behind closed logics, apart from commercial secrets, is that knowledge of the logics would enable manipulation. Calls for disclosures of the logics, either by watch groups or by our political analysts, are met with this argument. It results in a stalemate. If, to the analysts, only open logics result in public-spirited information provision, to the logicians it only would result in worse results. (Manipulation routinely sees sites un-indexed—thrown off the Web for a time from a searcher’s and an organization’s point of view.)

In our instrumentation we have striven to put this particular debate to rest. Significantly, we need not worry ourselves with what may be termed manipulation. Indeed, should an instrument awareness arise that influences behavior and encourages actors and issues to do better in the rankings, the readings become even more telling.

With the exception of viagratool, the instruments have this additional feature, which we wish to add as an info-political system design principle. Thus, in all, we have as our principles and heuristics: scope of representation, exposure to the range of arguments (beyond the highly mediated), social-ness, embedded information, non-voluntaristic collection method, exclusivity in adjudication, deeper ontology, and comprehensible logics inviting what was once termed manipulation. By instruments encouraging what was once termed manipulation, I mean (also as a principle) there is a certain in-built political reflexivity to them. They show the extent to which the actors may be reacting to the dynamics being captured. The clearest case is the Election Issue Tracker, where one is able to notice if parties embrace the press-friendliest issues. Simi-

larly, with the Issue Crawler and Issue Barometer, one may track efforts of organizations intensively networking, and heavily page-modifying, with fresh positions in the debates. In the Web Issue Index, furthermore, one may also monitor NGO efforts to all mount campaigns on the same issues, or campaigns on issues that are suffering from lack of attention. With what normally would be considered cases of manipulation, here political parties' informational politics are displayed. Here, too, issue barometers would register the highest readings and issue indices would witness issue bursts owing to new, collective campaigning behavior by NGOs. Should this occur on the basis of the organizations' independent readings of Web dynamics, let alone from reading the instrumentation described herein (however unlikely), we would not despair in the least. The value of our practice and our information politics would be affirmed.