

The End of Forgetting:

Transparent Identities and Permanent Records

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People of Earth, your attention please... This is Prostetnic Vogon Jeltz of the Galactic Hyperspace Planning Council... As you will no doubt be aware, the plans for the development of the outlying regions of the Galaxy require the building of a hyperspatial express route through your star system, and regrettably your planet is one of those scheduled for demolition... There's no point in acting all surprised about it. All the planning charts and demolition orders have been on display in your local planning department in Alpha Centauri for fifty of your Earth years. So you've had plenty of time to lodge any formal complaint and it's far too late to start making a fuss about it now.

Douglas Adams, *The Hitchhiker's Guide to the Galaxy*

We are living through a period when the sheer number of records being collected, correlated, and published is growing geometrically.¹ At the same time, an unmistakable trend towards increased openness—accountability, candor, frankness, and informality—characterizes American social life and public policy.² The implications of this surge in recording and sharing are bewildering, as complex contradictory values such as privacy, transparency, free speech and the right to know swirl around public discourses. Juxtaposing these emerging cultural attitudes with their corresponding communicative environments and media substrates is a powerful strategy for illuminating these concepts and relations. We need to cultivate a deeper understanding of these shifting forces to purposefully critique and design the information architectures of our future.

In an age characterized by exponential growth and accelerating change it is difficult to discern the meaningful trends from the superficial fads. However, constant and familiar patterns begin to emerge when formfitting analytic instruments are applied with enough historical perspective and a multi-disciplinary approach. The imprints of cultural change are etched in the external world in the form of artifacts, records, technologies, and laws. These traces reflect shifting beliefs and practices, and often create feedback loops, positively (or negatively) reinforcing the momentum of change. Simultaneously taking into account these imprints alongside prevailing attitudes and behaviors provides greater insight into the trajectory of these transformations.

In this essay we attempt to disentangle the overlapping fuzzy notions of transparency, surveillance, and privacy through a series of historical progressions and thought experiments intended to catalog and map the contours of this domain. We track the parallel rise in the regulation of corporate

disclosure, the social movement demanding open government, and the self-surveillance society epitomized by the behaviors on social networking sites like MySpace and Facebook. The development of comprehensive taxonomies of these concepts is beyond the scope of this essay, but the examples selected are intended to illustrate the complex spectrum these concepts span.³

Is there a relationship between the rise in transparency and the sharp increase in record keeping? What kinds of social and cultural impacts might emerge from this rise in record keeping? Can we begin to develop a discourse around the politics of memory that productively frames the critical discourse around privacy, surveillance, transparency and free speech? What is the relationship between memory and personal or organizational identity? How is deception woven into the fabric of everyday psychology and social life?

Theoretical Rituals

Honesty and light. Secrecy and darkness. Since the very beginning,⁴ light has been associated with goodness and honesty has not only been the best policy but an unqualified virtue. Visual metaphors are commonly invoked when we talk about honesty and disclosure. *Transparency, exposure, revelation, shining a light*, and “*sunshine laws*” are all terms and expressions which are connected to seeing, uncovering (letting the light in), and illuminating. These terms typically carry positive connotations, even though common wisdom holds that the truth can sometimes hurt.

The desire for honesty and transparency is likely rooted in survival instincts and may be driven by a deep emotional need—simple curiosity, a free floating anxiety generated in response to the unknown, an urgency to situate the Self in relation to the Other, or a profound fear of the metaphorical dark. Accordingly, transparency is often considered an unqualified good, and the “right to know” is increasingly regarded as a civil right e.g., the Sixth Amendment's guarantees for a public trial “and to be informed of the nature and cause of the accusation; to be confronted with the witnesses against him.”⁵

The concept of transparency is a slippery one, as it means many different things in different

communicative contexts. The term 'transparency' is ambiguously used to describe a style of communication between individuals in interpersonal relationships, between members within a group, between a government and its citizens, between a corporation and its customers, or between an organization and its constituents. Even within these contexts, the meaning of the term is under-determined. Does transparent information need to be specifically requested, or is it made available without a request? Is the information accessible to anonymous receivers? Is the information accessible to anyone, or are there any access restrictions limiting the information to a particular group? Does access to the information require an exchange of money or information (the receiver's identity, motivation for the request, probable cause)? Is the transparent information raw, censored, redacted, or filtered? Who owns the transparent information, and what subsequent operations are permitted? Can the receiver use, copy, display, reformat, translate, excerpt, redistribute, recontextualize, remix?

These questions make the assumption that transparent communication is a means of transmitting information, but James Carey's seminal distinction between communication as transmission and communication as ritual is an important dimension to consider in this stew:

If the archetypal case of communication under a transmission view is the extension of messages across geography for the purposes of control, the archetypal case under a ritual view is the sacred ceremony that draws persons together in fellowship and commonality.⁶

Transparent communications sometimes operate in a ritual capacity, e.g., “coming out” declarations, broadcasting banal status updates on social networking sites, or when bad actors make a showy demonstration of openness to manipulate the way they are perceived. The sharing of personal and private information erases boundaries between self and other and is a reliable technique for establishing trust and friendship. Transparent communications are an important feature across a range of ritual communications. A thorough inquiry into non-transmission transparency is a compelling topic for future investigations.

While it is likely impossible to specify the necessary and sufficient conditions which capture the essence of transparency, these various contexts and variations share family resemblances with each

another. As Wittgenstein demonstrates in the *Philosophical Investigations*, some “phenomena have no one thing in common which makes us use the same word for all—but that they are *related* to one another in many different ways... we see a complicated network of similarities, overlapping and criss-crossing: sometimes overall similarities, sometimes similarities of detail.” An analysis of the traits of a particular family member ought to inform our understanding of the usage across the diverse spectrum.

Acts of Transparency

An excellent site to launch an inquiry into the nature of transparency is the story of the US Freedom of Information Act (FOIA). The first version of FOIA legislation was passed in 1966, despite stiff opposition by President Johnson and the executive branch. The culmination of a 12-year long heroic crusade led by congressman John Moss,⁷ the enactment of FOIA represented a decisive victory for the “freedom of information” movement. Moss was strongly supported by journalists, educators, and scientists who used the mainstream media to spotlight many egregious examples of governmental concealment. The initial enactment was comprised of multiple exemptions, and in practice requesters faced excessive delays and exorbitant searching and copying fees. FOIA did not grow fangs until 1974 in the wake of the Watergate scandal, when amendments were passed (overriding President Ford's veto) to address these shortcomings.

When Moss was first elected to office, the government bureaucracy practiced a culture of secrecy, summed up in the attitude of “when in doubt, classify.”⁸ Moss' initial encounter with secrecy occurred over a routine inquiry into the firing of federal employees because of “security reasons.”⁹ When stonewalled in his attempts to clarify these offenses, Moss was incensed by the difficulty in obtaining government information. His frustration motivated him to push for the creation of a special Special Subcommittee on Government Information, a part of the Committee on Government Operations, where he conducted investigations into blatant cases of unjustified concealment. As his power and obsession grew he drafted legislation which continues to distinguish the United States of America from any other government.¹⁰ Like America's unique conception of the right to free speech,

the complementary right to the kinds of knowledge guaranteed by FOIA was historically unprecedented, and to this day few liberal democracies have fully emulated its scope.

FOIA created a right for anyone in the world to request access to US federal agency records or information.¹¹ FOIA does not apply to courts or congress, only covers federal agencies (although many states have adopted similar laws), and is subject to a series of exceptions such as conflicts with national security, trade secrets, personal privacy, or criminal justice. Agencies must acknowledge the request within 20 business days of receiving it, but there is no stipulation about how promptly they need to respond. If a request is denied on the basis of an exemption, there are procedures to initiate an appeals process, and all federal agencies must designate a FOIA officer and publish a report on their FOIA activities.

There are no special forms required to file a FOIA request, but the request must contain five pieces of information: 1) It must state that the request is a FOIA request. 2) It must reasonably describe how to locate the materials or records requested. 3) It must provide proof of your identity, and 4) the fee category your request is subject to (commercial, journalist/educational/non-profit, or all other). 5) It must indicate the maximum fee the requester is willing to pay for search time and copying costs.¹²

The limitations and frustrations of FOIA are well known to journalists and researchers, but while the law is not perfect it is certainly better than nothing. In recent years, the power of FOIA has been diluted as the federal government outsources more and more activities to the private sector. These corporate records are beyond the reach of FOIA—access to them is being systematically preempted and the intent of FOIA is being circumvented. Furthermore, while it is very difficult to determine the reasons, the percentage of “No Records Found” responses to FBI FOIA requests has doubled from 40% to 80% in the past decade.¹³ Are agencies being stingier with their releases, and more conservative in their interpretation of exceptions? Are matching records becoming more difficult to find as information systems deteriorate? Have requests become more frivolous or imprecise as awareness of FOIA has increased?¹⁴

While there are some limited provisions in the current FOIA for expediting requests, many FOIA requests disappear into a fog of uncertainty after the initial acknowledgment. The Faster FOIA Act¹⁵ would create a commission to study methods and make recommendations for reducing the notorious processing delays that FOIA is well known for.

Transparency Games

As we have noted previously, the term 'transparency' is ambiguous, and its meaning varies according to its usage and context. FOIA represents tremendous gains in governmental transparency and the potential for accountability, but to grasp its limitations we need to situate its operations within a space of possibilities. A richer description of the degrees of freedom at play in transparent communications will help us analyze transparent architectures.

To a first approximation, transparent communications are usually indirect, as the receiver of transparent communications is not usually the intended recipient of the original message. This modality of communication is often more sophisticated than the simple sender-receiver model of communication introduced in introductory communications textbooks.¹⁶ Transparency often involves making communications, motivations, or decisions visible to a third party who was not involved in the original interaction. A clear example of transparency through indirect communication is seen in the publication of the communications of US Presidents, whose archives must be made available to the public according to the Presidential Records Act of 1974. Similarly, US Federal court proceedings, including depositions, evidence, arguments, and rulings must be published in a manner accessible to the public without anyone having to request them, except when the court decides there is a good reason for the records to be sealed.

There are many important variations on these patterns of transparency through indirect communication. The Securities Act of 1933 and the Securities and Exchange Act of 1934 required companies to disclose detailed information about their operations, earnings, and liabilities by filing this information with the Securities and Exchange Commission (SEC), which in turn provide this

information to the public. In contrast to the presidential and court records, in this case the public does not surveil company's internal communications. Rather, the company prepares these filings for the SEC specifically for them to be released. We could accommodate this variation by squinting and claiming that the public is indirectly accessing the communications between the company and the SEC, but this convolution would stretch the credibility of our model, as the companies intentionally prepare these communications for this disclosure.

Still, an important aspect of indirection communication is preserved in the case of SEC filings, as these filings are transmitted 'for-anyone' and not specifically 'for-someone'. There are important caveats to the notion of 'for-anyone' since messages are always represented and encoded in ways that mean different things to different receivers. If we bracket these caveats, there is a tautological sense in which all forms of *mass* communication are 'for-anyone'—an important part of what we usually mean when we talk about mass communication is that anyone can be on the receiving end. It is also obvious that not all mass communications are transparent, as advertising and entertainment can hardly be described as transparent. However, when truthful information that was previously opaque or hidden is communicated to the masses, we consider this openness to be an instance of transparency. The attention grabbing packaging of a cereal box is not an example of transparent communication, but the manufacturer's information and the nutritional label on the back of the box is. A commercial for the latest treatment for erectile dysfunction is not example of transparent communication, but the fine print disclosing the possible side effects is (although both the ad and the fine print testify to the increased atmosphere of cultural transparency around intimate, sexual matters, but that is yet another sense of transparency which we will return to later).

Interpersonal transparency is an obvious exception to this principle of indirect communication, as we often use the word 'transparency' to indicate honest and direct communications within a relationship. A relationship between two people is described as transparent when neither has anything to hide from the other. Forthright communication about sex, health, and death are difficult to discuss

openly, depending upon the social norms, and directness around these topics are good examples of interpersonal transparency. We could artificially coax this sense of transparency into the indirect model by claiming that interpersonal transparency is precisely about making latent or subconscious desires visible to your partner, but this is admittedly a stretch. Interpersonal transparency often functions primarily as a form of ritual communication and our understanding of this alternate sense of transparency may become more clear after examining more examples of transparent communications.

FOIA requests are a complex example of transparent communications since the request itself is a direct communication between the requester and the agency, but the contents of the agency's reply to a successful request are indirect communications. Actually, if the reply is redacted, its contents are a hybrid of indirect communications (the original records) and the direct communication of the anonymous censor. An additional layer of complication emerges with the practice of redistributing and pooling successful FOIA requests. Law firms, investigators, and conspiracy theorists have a long history of sharing hard won government documents, but the radical decrease in storage and publishing costs is seriously changing the dynamics of information freedom. Sites like the *Air Force History Index*¹⁷ have become public repositories for collections of legally collected FOIA documents since FOIA results are in the public domain. Once the documents are initially obtained they are published to the public. Subsequent access no longer requires payment or disclosing your interest or identity.

Pushing these boundaries even further is Wikileaks.org, a tool that supports the the anonymous posting and retrieval of documents. Designed to provide a safe haven for whistle blowers to expose unethical behavior in governments or institutions, a Time magazine reporter wrote that if “Wikileaks is used with a healthy dose of skepticism, it could become as important a journalistic tool as the Freedom of Information Act.”¹⁸ The authenticity of records posted anonymously on Wikileaks raises some very thorny question around honesty and trust at the limits of transparency, as the materials leaked might be incomplete, false, or released with a specific agenda. On the other hand, Wikileaks offers an innovative solution to the important problem of blowing a legitimate whistle in an era of omniscient surveillance.

Wikileaks embodies a strange new brew of transparency and secrecy tempered by uncertainty and paranoia.

Another illustration of the shifting conceptions of transparency is the story of public access to federal legislative proceedings. In 1979 the cable television industry launched the Cable-Satellite Public Affairs Network (C-SPAN), a private non-profit company created as a public service. C-SPAN's mission is to “provide public access to the political process”,¹⁹ and it broadcasts congressional and senate proceedings (since 1986 on C-SPAN2), live and in their entirety. In 1995 Congress directed the the Library of Congress to make a text version of the proceedings freely available to the public.

Contrary to popular misconception, C-SPAN is not government funded, and while the footage they capture is technically in the public domain upon capture, the programming they broadcast on C-SPAN is subject to copyright controls, which they aggressively litigate to enforce. As storage and distribution costs have plummeted and digital architectures support read/write interactions, new opportunities for increased access and engagement have emerged. C-SPAN was slow to experiment with new tools to help the public discover and activate their archives, and actively cracked down on citizen journalists who repurposed “their” footage in the context of public debate.

In January 2006 the Metavid project launched with the ambition of creating a community archive for public domain US legislative footage. Metavid began as a masters thesis project at USCS, and is currently grant funded by the Sunlight Foundation.²⁰ The project has successfully defended itself from legal attacks over their right to redistribute the footage of government proceedings that C-SPAN claims it owns. Leveraging the culture, technology, and ideology of the free software movement, Metavid seeks to provide an alternative to traditional archives which “impede democratic access to the production of meaning around context specific online [re]presentations of elected Representatives. Contemporary archives act as gatekeepers to meaning production by; implementing costly permission based access to public media assets; promoting the production of static, opaque consumable mediations; and engaging in proprietary encapsulation for self-preservation.”²¹ The Metavid project

encourages its community to be active participants in renegotiating and remediating the meaning of the archive. In the span of less than 30 years, a development which had been heralded as a landmark gesture of transparency, is now being criticized as an straightjacket constraining free discourse.

Messages in Bottles

These examples demonstrate a very diverse range of transparent communications. Yet patterns of similarity are suggested by common themes. As we have seen, not all transparent communication is indirect, nor is all indirect communication transparent. But many paradigmatic examples of transparent communications are indirect, such as presidential archives, financial disclosure statements, or mandatory labeling. All indirect communications are implicitly mediated—by definition since they are not direct they must happen through an intermediary, and their core features can be decomposed into representation, storage, and access. These categories are not entirely distinct as constraints imposed by one aspect may percolate through the other layers. For example, the storage medium may constrain representation, or enable a wider range of access. However, by examining these features in turn we can tease out the ways they impact transparency when they do play a role. There are politics of representation, politics of storage, and politics of access whose power dynamics are easy to confuse when they are all tangled up in the rubric of 'transparency'.

The politics of representation are subtle but distinct. Data, records, and archives easily lull us into a false sense of certainty. However, the language, the framing, and the omissions of the records implicitly convey a great deal of subjectivity and orientation. As Bruno Latour convincingly argues in the *Politics of Nature* we have unwittingly ceded an inordinate degree of power to the authority of the almighty 'fact'. We must recognize the subjective values mobilized by the power to take things into account, and be aware of the choices any given representation represents:

The notion of “fact,” let us recall, had the disadvantage of not taking into account the enormous work of shaping, formatting, ordering, and deducing, needed to give the data a meaning they never have on their own... the whole set of mechanisms for attributing shape and distributing causalities.. [and the] instruments, bodies, laws, habits, language, forms of life, calculations, metrology, everything can contribute to the progressive socialization and

*naturalization of entities...*²²

The subjectivity of representation is obviously prevalent in natural language records, such as police reports or medical charts. However, even in these cases the dominance of the expert and the comprehensive certainty of the description is often interpreted as authoritative. When confronted with a large archive even natural human language can adopt the aura of 'data', especially if only one perspective is represented.

The role that the representation of data plays in transparency is clearly visible in the case of the 1990 Nutrition Labeling and Education Act, enacted to improve public health and profiled by Mary Graham in *Democracy by Disclosure*.²³ Graham details many of the compromises hashed out in the federal regulation of food labels, such as the normalization of nutrients tracked across the nation, the exclusion of restaurant and deli foods from the regulation, the selection of a conventional serving size and average daily intakes, the choice of units and they are expressed (absolute or percentages), the definition of 'light' and 'low-fat', etc. Nutritional labels are also notably obscure and difficult to read, and have not been coordinated with educational programs to teach people how to understand and act on the data.

The politics of storage may sound mundane, but the ownership of records translates into control over their discoverability, connectedness, and manipulability. The storage of records happens in a particular medium which constrains curation, organization, and preservation. The medium of record storage dictates the financial costs of creation and storage, and the range of computations which can be easily performed across the data. Physical records, such as paper and film, are geographically bound which limits their availability. Indexing these records can be incredibly resource intensive which may significantly limit their searchability. For example, the FBI's record system is not yet digitized or centralized, so FOIA requests must be made to specific field offices (there is one at least one per state) for them to be found.²⁴ To complicate matters, the records are usually filed hierarchically by case, and are rarely cross-indexed or categorized.

As data mines grow vastly in size, storage allows for richer analyses of the correlations and patterns within the mine. The power to analyze and draw inferences from records is possible if you have unlimited, random access to the entire store. Outside of completely transparent systems, access is limited and control over the record storage implies control over computation, analysis, and inference.

The politics of access covers a wide range of activities, including distribution, redistribution, discoverability, and usability. Intellectual Property law figures prominently into this aspect of transparency, as copyright, trade secret, and patent laws all interact with the legality of re-communicating a record. Even if a record is accessible to a particular individual, their ability to share that information may be constrained by legal barriers. Intellectual Property laws represent a delicate, some would say abused, balance with free speech. The dispute between C-SPAN and Metaviv demonstrates it is important to consider this factor in the design of transparent systems.

Open government advocates have articulated principles that target the nuances and interplay of legal and technological barriers to access.

(1) No Legal Barrier to Sharing: Content made publicly available... should be freely licensed so that citizens can share, excerpt, remix or otherwise redistribute this content without unnecessary complexity imposed by the law... (2) No Technological Barrier to Sharing: A merely legal freedom to share and remix, however, can be thwarted by technological constraints. Content made publicly available should also be freely accessible, not blocked by technological barriers. Citizens should be able to download [snip] content in a way that makes it simple to share, excerpt, remix, or redistribute. This is an essential digital freedom... (3) Free Competition: Governments should remain neutral in the marketplace of ideas... Content should thus not be made publicly available in a way that unfairly benefits one commercial entity over another, or commercial entities over noncommercial entities. For example, if video of a press conference is made available in real time to television networks, it should at the same time be made accessible in a standard, universal format for download and sharing... Ideally, that format should be nonproprietary. But so long as the content is freely licensed (Principle #1), and free access is secured (Principle #2), transcoding would not be inhibited. The transition would thus not be supporting one platform to the exclusion of others.²⁵

Again we see an interplay between accessibility and representation—in this case, the syntax or format used to represent the media, not the semantic representation of the information. For today's open government advocates, access includes the ability to *write* as well as *read*—to remix and redistribute.

Access also covers the slippery and subjective issue of usability. Some records are open in theory, but hidden in practice. They hide behind opaque interfaces or Kafkaesque bureaucracies. This sense of access is most blatant in the case of access to people with sensory disabilities (e.g., blindness), but surfaces in many other contexts. Stamen design lab's Oakland Crimespotting project brilliantly illustrates the difference between openness according to the letter of the law and openness in High Definition splendor. Stamen programmatically scraped the cognitively indigestible data from the Oakland police records and represented them on a rich, interactive map. They color coded violent, non-violent, and victimless crimes and presented users with very easy to use tools for querying, manipulating, and sharing this data. The creators of the interface believe that their “map-first approach is a valuable and sensible way to publish information for people to use—everyone knows how to find their house, school, or workplace on a map, but few people remember relevant details such as the city council district or police beat these places occupy.”²⁶

The Crimespotting project highlights the important issue of accessibility to humans, but also demonstrates the value of providing data that is easily accessible to machines. Access to transparent data in standard open format is yet another sense of accessibility, crucial for the kinds of reprocessing exemplified in this project. The decoupling of the data from the presentation is a form of technical accessibility that, when combined with the legal freedoms to remix and redistribute, creates the potential for a wider range of access custom tailored to the particular audiences.

Through the Looking Glass

A chronicler who recites events without distinguishing between major and minor ones acts in accordance with the following truth: nothing has ever happened should be regarded as lost for history. To be sure, a redeemed mankind receives the fullness of its past—which is to say only for a redeemed mankind has its past become citable in all its moments. Each moment it has lived becomes a citation 'a l'orddre du jour—and that day is Judgment Day.

Walter Benjamin, Theses on the Philosophy of History²⁷

We have been concentrating on examples of transparent communications where institutions of power disclose information to increase their accountability. These examples generally carry positive

associations (at least to people outside of those institutions) and make transparency seem democratic and fair. However, the rising tide of record keeping lifts all information ships, and the winds propelling our rights to know can blow us in many different directions. For information to be communicated transparently it must first be surveilled and collected and, in an important sense, transparency and surveillance are two sides of the same coin. The rise in transparency that we have been discussing so far is tightly linked to the rise of the surveillance society.

If we translate the center of our analysis to the individual rather than the institution our reflexive response to increasing transparency takes on an entirely different flavor. This inversion threatens personal privacy to the point of extinction, taking with it many of our intuitions about civil liberties and rights.

Information Flux

The physical sciences make frequent use of a measurement known as flux: the rate of flow of “stuff” passing through a given surface. The flow of particles, fluids, heat, and electro-magnetic fields can all be quantitatively described by this analysis, yielding interesting generalizations and predictions.²⁸ The description of this flow has a geometric representation that is useful for imagining the logical space of possibilities. Important laws have been formulated based on the direction, rate, and net passage of “stuff” across the boundaries of the surfaces being studied.²⁹

This technique can help us conceptualize the quality and shape of the information society that we are in the midst of co-constructing. While the sheer quantity of information changing hands is certainly an important factor in the current transformation we are witnessing, arguably as important is the gradient of the information flow, and whether the flux is negative, positive, or neutral.³⁰

Consider our “personal information clouds” (or organizational information clouds) as metaphorical enclosing surfaces.³¹ The information flux is all the information that passes through this boundary. We are incontrovertibly on a trajectory towards a world where data collection, storage, and analysis is ubiquitous and pervasive.³² However, there are major variations in the net flux of

information whose future character is not yet determined.

Simply put, regardless of the quantity of the information being captured, the information flows we are describing can be divided into three possible geometrical outcomes: 1) Positive flux—you are leaking information, and others know more about yourself than you do. 2) Negative flux—you gather and retain more information about yourself than you emit, and you know more about yourself than others do. 3) Neutral flux—everyone has equal access to everyone else's information, a situation we could describe as a form of perfect transparency.

A corollary of this detailed and permanent history is an increasing ability to predict and foretell future behavior.³³ Again, the variations of information flux will determine who has access to these predictions, potentially impacting our traditional understanding of determinism and freedom, and in turn, personal responsibility.

This simplification is an approximation which disregards important features in the production of identity and meaning. Information is not synonymous with meaning, and inferences and interpretations do not flow freely across personal boundaries. Information is not arbitrarily interchangeable, and some pieces of information are far more valuable or private than others. Information is produced within a network, and the reduction of this flow to a two-body problem disregards the information that other people might provide about me to others, and vice versa. Nonetheless, this model still captures important contours of the dynamics of knowledge exchange and helps us contrast pure transparency with its alternatives based on differential access to information flows. In this context, transparency does not sound quite as rosy as when we were on the receiving end of information provided to us by other institutions.

Unforgettable in Every Way

The competing flows of information exchange the information flux model describes are happening within a rapidly changing context. While society is negotiating the directional flows of information, the sheer amount of information being collected continues to rise. The vast number of

records that are being collected, correlated, and analyzed will have a strong impact on personal and organizational identity, irrespective of the net direction of information flow.

I provocatively refer to the era that we are collectively embarking upon as “The End of Forgetting.” This phrase sensationally describes the profound transitions we are participating in by conflating records and memories. This sleight of hand is not entirely unjustified, as records can evoke memories (Plato calls this operation a “reminder”³⁴), machines can function as cognitive prostheses, and the media we use to record memories are ever more closely approximating the phenomenology of the original experiences. The phrase begs the important question—who is doing the remembering? But the real payoff in describing the transition in these terms comes from recognizing the stakes.

The close relationship between memory and identity has been a mainstay of science-fiction, psychology, and philosophy for centuries.³⁵ The terrain most often explored is the connection between the loss of memories or amnesia and the ways which this alters, compromises, or threatens personal identity.³⁶ However, an exploration of permanent memories, the flipside of memory loss, has been sorely neglected. There are a handful of fictional works that fashion worlds where no one ever forgets, but these works are sparse, especially if this is the world we are hurtling towards.³⁷ The spectre raised by omniscient surveillance and perfect transparency is an idea that we ought to focus our imaginations on sooner rather than later. Permanent memories are sure to have implications as severe and disruptive as any of the ones depicted in the classical treatments of this theme.

Secrets and Lies

Freud and his followers postulated a depth model of psychology in which suppression, repression, and the ability to forget are vital aspects of our psychological makeup. These defense mechanisms, which allow us to maintain our sense of self, rely upon our ability to selectively recall and subconsciously filter the personal narratives that are consistent with the reality we want to believe. Our ability to cope with trauma and stress depends upon the function of forgetting. I doubt I am alone in contemplating the discomfort of revisiting the growing pains of childhood with the precision of modern

day surveillance apparatus. And yet, this is the world that we are on the verge of establishing, without the slightest consideration of the consequences, for every child born in the 21st century.

Perhaps more shocking than memories that can't be filtered and don't dissipate, is the impact that surveillance might have on deception. Arguably, modern day society is founded on lies,³⁸ ranging from small little white lies between friends and neighbors, to corporate advertising and marketing, to Orwellian political spin, to the lies we tell ourselves to preserve and maintain a likeable version of our self (in spite of any evidence to the contrary). Pervasive surveillance threatens to rip apart the fabric of deception that currently weaves together individuals, social groups, nations.

Demonstrating the central role of deception in psychological and social health is another large research project, but consider a few categorical examples. Consider the power of shame and embarrassment evident in blackmail and the tabloids. Consider the cover-ups and disclosures that ruin relationships, careers, and reputations. Consider the importance of secrecy in business, politics, and love. All of these forms of deception are being impacted by the gradual elimination of forgetting. Instead of allowing these changes to overtake us by surprise, we should actively be studying and anticipating their effects.

The net flux of information described earlier will have a significant impact upon the constructs that form the basis for our current model of contemporary society. Depending upon whether the net information flux is negative, positive, or neutral we will begin to see dramatic shifts in the balance of knowledge and power that exists between citizens and governments, consumers and corporations, and even individuals and others.

Considering what is at stake, we have an obligation to proceed with rigor and caution when introducing technologies whose implications can potentially disrupt the structure of our personal identities and social networks. The differences between a negative, positive, and neutral information flux need to be analyzed in greater depth.

Memory Lane

'Remembering' is arguably a primary function of software, as the digital revolution can be understood as the discovery of a general technique for representing data *and processes* in a manner that can be stored, retrieved, and reproduced. Although the challenges of long-term digital preservation make librarians break out in a cold sweat, purging digital records is an effort which can actually cost more than saving them. The situation is easier to understand by contemplating that, unlike matter or energy, information does not obey any conservation laws. As far as the laws of physics are concerned, information can be shuffled around and duplicated freely without affecting the original.³⁹ With duplication costs approaching zero, tracking down and deleting information that has already procreated and propagated is often a Sisyphean effort.

However, we should not be too distracted by the glitter of new media. 'Remembering' has always been a primary function of media, dating back to the invention of the alphabet and writing. The critique of a record's capacity to capture and convey knowledge is a topic that Socrates grapples with in the *Phaedrus*:

Then anyone who leaves behind him a written manual, and likewise anyone who takes it over from him, on the supposition that such writing will provide something reliable and permanent, must be exceedingly simple minded; he must really be ignorant... if he imagines that written words can do anything more than remind one who knows that which the writing is concerned with... The painter's products stand before us as though they were alive, but if you question them, they maintain a most majestic silence. It is the same with written words: they seem to talk to you as though they were intelligent, but if you ask them anything about what they say, from a desire to be instructed, they go on telling you just the same thing forever.⁴⁰

Here Socrates expresses an anxiety about textual and visual media that has been echoed in turn about every emerging form of media. As John Durham Peters explains “writing parodies live presence; it is inhuman, lacks interiority, destroys authentic dialogue, is impersonal, and cannot acknowledge the individuality of its interlocutors; and it is promiscuous in distribution. Such things have been said about printing, photography, phonography, cinema, radio, television, and computers.”⁴¹

The relationship between the growth in surveillance and transparency and the improvements in

the technologies of representation, storage, and access is undoubtedly complex. Attempts to establish causal relations between cultural practices and their durable counterparts are often frivolous, as these dualistic categories represent our inner and outer worlds, and ultimately reflect a single unified reality. We can confidently assert that dramatic improvements in record keeping are correlated with dramatic shifts in the volume of information flux. The direction of that flow is something that needs to be carefully worked out over history.

The etymology of 'transparency' is rooted in seeing, and the invention of photography may be an important milestone since the exposure of film records the influence of light itself. A dramatic interplay between this medium and information flux is the development of chronophotography and its application to scientific management of labor.⁴² Chronophotography was pioneered by Etienne-Jules Marey in his meticulous studies of motion and fatigue in the late 19th century. Marey was interested in the representation of time, but the technologies he developed also shifted the information flux between management and labor. Bodies in motion were examined in exacting detail in order to extract optimum efficiency from their labor.

Television and film also altered the information flux, as portrayals of minority lifestyles helped many viewers realize they were not alone. Vito Russo's *The Celluloid Closet*⁴³ recounts the history of the image of homosexuality and gender variance in Hollywood movies, and tells a story of progressive openness and acceptance that closely tracks gay liberation in the US. Josh Gamson's *Freaks Talk Back*⁴⁴ explores similar territory in the land of tabloid talk shows. He discusses the impact of this incredibly popular television format on the image and self-image of homo-, bi-, and trans-sexuals in the US. Mark Andrejevic's *Reality TV: The Work of Being Watched*⁴⁵ draws explicit connections between reality television programming and the surveillance-based interactive economy. He analyzes the glamorization of voyeurism and the benign portrayal of monitoring and manipulation.

Speculative Futures

Finally, as we embark on the information age, all prior forms of media have been subsumed by

digital media. As Lev Manovich claims:

*The computer, which since the 1960s has been used as a production tool, has now become a universal media machine—a tool used not only for production, but also for storage and distribution... The computer media revolution affects all stages of communication, including acquisition, manipulation, storage, and distribution; it also affects all types of media—texts, still images, moving images, sound, and spatial constructions.*⁴⁶

The affordances of these new tools are not all obvious yet, but various constituencies are exerting tremendous pressures to increase the flow of information in their direction. Citizens are clamoring for more transparency in government, and for transparency as a means for regulating corporations. Government and corporations are constructing the apparatus to surveil, analyze, predict, and control the behavior of their citizens and customers. Organizations are clamoring for increased intra-organizational transparency in their communications, often at the expense of individual privacy.

On the other hand, youth culture is disseminating more information about itself than ever, with little regard for its recoverability. They have discovered the joy of exhibitionism and the voice of a broadcaster as they disseminate personal details of their lives 'for-anyone' to discover. This behavior resembles transparency, but the asymmetrical control over these records is cause for concern. Intuitively, it seems that knowing more about yourself than anyone else does is something that we have traditionally taken for granted, and may even form a central aspect of our identities. The perturbation of this traditional balance has implications we are just now beginning to perceive.

Two thought experiments suggested by the Information Flux model may help clarify our normative intuitions about privacy and identity in an information rich society:

Face Painting

Face Painting is an underground collaborative game designed to resist the privacy threats that Facebook poses. From the Urban Dictionary:

*Face Painting (also referred to as 'MySpin') is internet slang for the practice of sprinkling a social networking profile with embellishments, fantasy, and satire, often with humorous or political intentions. Face painters play with the truthiness of identity by conducting a campaign of misinformation to protect their true identity.*⁴⁷

Face painters recognize that role-playing does not require 3D immersive graphics and their performance provokes the question—Why are so many people disclosing truth to a demonstrably untrustworthy system? Their mischievous efforts to reintroduce chaos and noise back into the system, protect their identities with a campaign of misinformation, and game the recommendation and advertising engines with odd juxtapositions and preferences are fun, but also deadly serious. The campaign aims to raise awareness around omniscient surveillance, and in particular critique Facebook's nefarious privacy violations. It also discourages participants from disclosing seemingly innocuous details such as musical and pop cultural preferences. Face painters have assembled teams for scavenger hunts, recruiting the children of corporate executives to join oppositional causes (e.g. the child of an oil company executive to join an environmental campaign, or the child of a record company executive to join a campaign for progressive Intellectual Property reform).

Face painting won't significantly diverge the torrential flow of information, but it does cleverly illustrate how individuals can reassert control over their digital footprint, and redirect the net information flux if they are aware of its significance.

Biography Portals

The BioPort is a piece of “intension-ware” that I have described in technical detail elsewhere.⁴⁸ The basic idea for this software begins with a combination blog, diary, and appointment book. Think of this as a tool for constructing your autobiography for you in real time—similar to the scrap books that parents use to record Baby's first smile, first lock of hair, first word, etc. Thanks to Moore and his law,⁴⁹ storing reams of information won't be a problem—automatically harvesting data, and being able to easily extract meaningful information are the real challenges. We can even imagine transactional capabilities, so that informational transactions can be posted to your BioPort from trusted sources. Just as we receive little yellow receipts at the completion of financial transactions, it is conceivable to imagine informational receipts collected in our BioPorts. The BioPort could greatly enable inverse-surveillance and *sousveillance*⁵⁰ a term used to describe the recording of an activity from the

first-person perspective of a participant.

To make this fictional scenario more vivid, just consider a thin slice of your BioPort—your nutritional history. Corporations like Wal-Mart, Shop Rite, and A&P, might use these records to try to sell you more high-profit high-fructose corn syrup. In your hands, you might make want to make sure you had enough calcium and iron, and weren't wasting too much money on junk food. The flux of nutritional data is a small example which illustrates how differently the end of forgetting can play out depending upon who controls the data.

The personal utility of having this repository available is very clear. With the right suite of visualization and analysis tools, the BioPort could become the ultimate psychoanalytic device—one which allows individuals to know themselves better by helping them identify and discern recurring behavioral patterns in their own lives. It could also transform social spaces, by allowing communities to come together and securely share slices of each other's BioPorts.

When some people first hear about the BioPort they express shock and indignation at the idea of software becoming responsible for something as important as an individual's identity. But it is important to recognize that in a surveillance society the collection of personal information is inevitable. We have a choice between 1) governments and corporations gathering information about us, and keeping it from us, in order to police and market to us more effectively and 2) becoming our own big brothers and gathering and keeping a copy of this information about ourselves.

Beyond the Panopticon

The varied examples of government transparency we surveyed illustrates our muddled usage (and understanding) of transparent communications. We voraciously demand and consume larger helpings of information but are simultaneously disgusted and horrified when we contemplate the amounts we are excreting. To move this conversation forward we need new models of transparent communication that capture the contours and trade-offs of alternative designs. Foucault's popularization and explication of the Panopticon⁵¹ needs to be supplemented with a wider range of architectural plans.

The relevance of Panopticism is still fresh, but the metaphor has been filled beyond capacity and we need to develop new images which illustrate competing dynamics.

This essay attempts to disentangle the discourses around transparency, privacy, and surveillance by introducing the abstraction of information flux, and attempting to decouple the rate of information storage and flow from the net direction of that flow. The resulting models provide us with the concepts and language to begin a more productive debate over the Politics of Memory—a term that intends to capture the stakes involved in the struggle to control these flows, and the personal, social, and cultural implications of its outcome.

It also seems clear that a technology like the BioPort is one way to support individuals maintaining a negative information flux, and continue living in a society where the flow of information is centered around the individual. This social reality is distinctly different than the perfectly transparent society (neutral information flux) forecast in David Brin's *The Transparent Society*⁵². However, prevailing currents are attempting to steer this flow away from the individual, into the waiting hands of those who would benefit from the control that this positive flux enables.

A positive flux of information from institutions of power to individuals may improve democratic conditions by providing accountable checks and balances through distributed oversight. However, the design of these information systems are complicated by the details of representation, storage, and access which can undermine and thwart these balancing forces. Furthermore, the right to anonymous reading and speaking may be a central component in sealing the personal information leaks that are distorting the balance in information flux.

I am pessimistic that free market conditions would optimize an individual's best interests in a transparent society. Herbert Marcuse has argued that the Western liberal democracies are, 'totally administered societies' permeated by the values of consumerism, in which the manufacture and satisfaction of 'false needs' serve to prevent the working class from gaining any genuine insight into their situation.⁵³ I am deeply concerned that a positive or even a neutral information flux will

compound this situation, and result in increased domination and subjugation of the oppressed.

This preliminary analysis indicates that maintaining a positive information flux is essential for us to maintain any semblance of autonomy and freedom. Even with this condition met, the quantity of information will undoubtedly alter our sense of self, as we lose the ability to hide information from ourselves, and collectively embark on journeys of self-discovery. The application of predictive modeling to our own behavior will also allow for greater opportunities for reflection and planning, and provide us with a greater understanding of the consequences of our actions. As sunlight peaks over the horizon we can choose to blind ourselves, chase our shadows, or pursue enlightenment.

- ¹ Jay Stanley and Barry Steinhardt, *Bigger Monster, Weaker Chains, The Growth of an American Surveillance Society*, ACLU Technology and Liberty Program, January 2003.
- ² Mary Graham, *Democracy by Disclosure: The Rise of Technopopulism* (Brookings Institution Press, 2002).
- ³ For an excellent taxonomic treatment of privacy see Solove, Daniel J., 'I've Got Nothing to Hide' and Other Misunderstandings of Privacy. *San Diego Law Review*, Vol. 44, 2007; GWU Law School Public Law Research Paper No. 289. Available at SSRN: <http://ssrn.com/abstract=998565>.
- ⁴ "And God said, Let there be light and there was light. And God saw the light, that *it was good*: and God divided the light from the darkness", Genesis 3-4.
- ⁵ "The Constitution of the United States," Amendment 6.
- ⁶ James. W. Carey, "A Cultural Approach to Communication", *Communication as Culture: Essays on Media and Society*, (Boston: Unwin Hyman, 1989), p. 18.
- ⁷ For more information, analysis, and updates about FOIA see The National Security Archive's FOIA section, "The Freedom of Information Act (FOIA)," <http://www.gwu.edu/~nsarchiv/nsa/foia.html>.
- ⁸ Bruce Ladd, *Crisis in Credibility* (New American Library, 1968).
- ⁹ Michael Lamov "John Moss and the battle for freedom of information, 41 years later," Nieman Watchdog, Nieman Foundation for Journalism <http://www.niemanwatchdog.org/index.cfm?useaction=background.view&backgroundid=00191> July 3, 2007. (accessed December 7, 2008).
- ¹⁰ A good summary of the story of Moss' story exists here George Kennedy, "FOIA: How Americans got their right to know," <http://www.johnemossfoundation.org/foi/kennedy.htm>, and Kennedy also wrote a doctoral dissertation on the subject.
- ¹¹ More information about FOIA and its complete text can be found at <<http://www.state.gov/m/a/ips/>> Accessed December 15, 2008.
- ¹² Commercial entities must pay for search and copying. Journalists, educators, and non-profits – the search fees are waived and the first 100 pages of copies are free. Everyone else must pay beyond the first 2 hours of search time and the first 100 pages of copies. For a practical account of making FOIA requests see "A Hacker's View of the Freedom of Information Act (FOIA)" Phil Lapsley, Presented at The Last HOPE conference, July 18 2008. Available here <http://www.thelasthope.org/talks.php>.
- ¹³ See the DOJ annual FOIA reports at <<http://www.usdoj.gov/oip/foia-ar.htm>>. Analysis was conducted by Phil Lapsley
- ¹⁴ e.g. <<http://www.getmyfbifile.com>> a website that makes it very easy to generate FOIA requests to multiple agencies.
- ¹⁵ H. R. 541 "To establish the Commission on Freedom of Information Act Processing Delays." introduced January 17, 2007 <<http://www.opencongress.org/bill/110-h541/text>> Accessed, Dec 15, 2008.
- ¹⁶ Claude E Shannon and Warren Weaver, *The Mathematical Theory of Communication* (University of Illinois Press, 1963), p. 5.
- ¹⁷ "The Air Force History Index" <<http://airforcehistoryindex.org/>> Accessed, Dec 15, 2008.
- ¹⁸ Tracy Samantha Schmidt, "A Wiki for Whistle-Blowers," *Time*, January 22, 2007, <<http://www.time.com/time/nation/article/0,8599,1581189,00.html>> Accessed, Dec 10, 2008.
- ¹⁹ About C-SPAN <<http://www.c-span.org/About/Default.aspx>> Accessed, Dec 10, 2008.
- ²⁰ Metavid was started as a thesis project of Michael Dale and Abram Stern under the advisement of Professor Warren Sack in the Digital Arts and New Media program at UCSC For a complete history of Metavid's development and its clashes with C-SPAN see Michael Dale's thesis "Democratizing the Archive: An Open Interface for Mediation" available at <http://metavid.org/wiki/Democratizing_the_Archive:_An_Open_Interface_for_Mediation> Accessed, Dec 15, 2008.
- ²¹ Michael Dale, "Democratizing the Archive: An Open Interface for Mediation" (2006).
- ²² Bruno Latour, *Politics of Nature: How to Bring the Sciences into Democracy* (Harvard University Press, 2004), pp. 117-118.
- ²³ Mary Graham, *Democracy by Disclosure: The Rise of Technopopulism* (Brookings Institution Press, 2002).
- ²⁴ See <http://www.getmyfbifile.com/form.php>. "Not all records are stored at HQ -- some are stored at FBI Field Offices. As a result, it can be important to request records from relevant Field Offices."
- ²⁵ <<http://open-government.us/>> These principles were published in a petition to encourage an open transition of government to the Obama administration, and are part of a larger movement advocating openness in Government. The Mozilla Foundation, the Participatory Culture Foundation, and Change Congress jointly launched this effort.
- ²⁶ <http://oakland.crimespotting.org/about> Accessed December 10, 2008.
- ²⁷ Walter Benjamin. *Illuminations*. Trans. Harry Zohn. Edited and with Introduction by Hannah Arendt. (New York: Schocken Books, 1968), p. 254.
- ²⁸ The notion of flux has informed our understanding of light (electromagnetism), heat (thermodynamics), and motion (mechanics). See, for example, David Halliday and Robert Resnick, *Fundamentals of Physics* (New York,: Wiley, 1974).
- ²⁹ E.g. Issac Newton,. "Philosophiae Naturalis", *Principia Mathematica* (1687), and Maxwell, James Clerk, "On Physical Lines of Force", (1861).
- ³⁰ The designation of 'positive' and 'negative' is not intended to signify any value. By mathematical convention positive flux

leaves a closed surface, and negative flux enters a closed surface.

³¹ Personal InfoClouds is a term introduced to describe the data that person interacts with daily, which accompanies them wherever they go. Sometimes attributed to: Mik Lamming and Mike Flynn. Forget-me-not: Intimate Computing in Support of Human Memory. In Proceedings of the '94 Symposium on Next Generation Human Interface. Feb, 1994.

³² Jay Stanley and Barry Steinhardt, "Bigger Monster, Weaker Chains, The Growth of an American Surveillance Society", ACLU Technology and Liberty Program, January 2003. And, Robert O'Harrow, *No Place to Hide: Behind the Scenes of Our Emerging Surveillance Society* (Free Press, 2005).

³³ Computer Scientists and Artificial Intelligence researchers have been working on this problem since the dawn of the discipline. Simulations, Games, Time-series analysis, Markov Models, Neural Networks, etc, are all the precursors of predictive behavior modeling. All that is missing is the input data, which we are in the process of remedying.

³⁴ Plato, *Phaedrus*, 275a.

³⁵ A seminal 20th century analytical treatment of personal identity is: Derek Parfit, *Reasons and Persons* (Oxford University Press, USA, 1986).

³⁶ Fictional films that deal with this theme include *Vertigo* (1958), *La Jetée* (1962), *Total Recall* (1990), *Twelve Monkeys* (1995), *Memento* (1996), *Eternal Sunshine of the Spotless Mind* (2004), *Paycheck* (2003). A great anthology of short stories on identity and amnesia is Jonathan Lethem, *The Vintage Book of Amnesia: An Anthology of Writing on the Subject of Memory Loss* (Vintage, 2000).

³⁷ A few titles I have encountered that explore this terrain, sometimes indirectly include the films *Minority Report* (2002), *A Scanner Darkly* (2006), *The Final Cut* (2004), and the books Jorge Luis Borges. "Funes, The Memorius". *Labyrinths*. (NY: New Directions, 1969), Arthur C. and Baxter, Stephen. Clarke, *Light of Other Days, The*. (Tor, 2000), Vernor Vinge, *Rainbows End: A Novel With One Foot In The Future*, 1st ed. (Tor Books, 2006),

³⁸ Or, more accurately, founded on bullshit, balderdash, and lies. Harry G. Frankfurt, Harry. "On Bullshit." *Raritan* 6 (1986): 81-100.

³⁹ Tom Siegfried. *The Bit and the Pendulum: How the New Physics of Information is Revolutionizing Science*. (New York: John Wiley & Sons, 2000). See also, "Elements of Reality: A Dialogue", by Piet Hut, P. & Bass van Fraassen., 1997, *J. of Consc. Stud.* 4, No. 2, 167-180.

⁴⁰ Plato, *Phaedrus*, 275c-e.

⁴¹ John Durham Peters, *Speaking into the Air: A History of the Idea of Communication* (University Of Chicago Press, 2001), p 47.

⁴² For a fuller history of the development of chronophotography and the rise of Taylorism see Anson Rabinbach, *The Human Motor: Energy, Fatigue, and the Origins of Modernity* (University of California Press, 1992).

⁴³ Vito Russo, *The Celluloid Closet: Homosexuality in the Movies*, Revised. (Harper & Row, 1987). This was made into a documentary film by the same name in 1995.

⁴⁴ Joshua Gamson, *Freaks Talk Back: Tabloid Talk Shows and Sexual Nonconformity* (University Of Chicago Press, 1999).

⁴⁵ Mark Andrejevic, *Reality TV: The Work of Being Watched* (Rowman & Littlefield Publishers, Inc., 2003).

⁴⁶ Lev Manovich, *The Language of New Media* (The MIT Press, 2002), pp 4, 19.

⁴⁷ <<http://www.urbandictionary.com/define.php?term=face+painting>> Accessed December 15 2008.

⁴⁸ For a fuller technical description of the BioPort, see Jonah Bossewitch "Becoming Your Own Big Brother: A Paradoxical Approach for Retaining Control of Personal Freedom", (2005) available at <http://pocketknowledge.tc.columbia.edu/home.php/viewfile/18366>

⁴⁹ Moore, G. Cramming More Components onto Integrated Circuits. *Electronics*, Volume 8, April 19, 1965. Available at <<http://www.intel.com/research/silicon/mooreslaw.htm>>.

⁵⁰ The prefix 'sous' is French for 'from below', to contrast the 'sur'-veillance, from above.

⁵¹ Foucault's analysis of Bentha's Panopticon is a regular starting point for discussions of a surveillance society. Michel Foucault, *Discipline & Punish: The Birth of the Prison* (Vintage, 1995).

⁵² David Brin, *The Transparent Society: Will Technology Force Us to Choose Between Privacy and Freedom?*. (Basic Books, 1999).

⁵³ Herbert Marcuse. *One Dimensional Man: Studies in the Ideology of Advanced Industrial Society*. (1964) Boston: Beacon Press, 1991.