Denver Law Review

Volume 83 | Issue 1 Article 6

December 2020

The Security of Our Secrets: A History of Privacy and Confidentiality in Law and Statistical Practice

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THE SECURITY OF OUR SECRETS: A HISTORY OF PRIVACY AND CONFIDENTIALITY IN LAW AND STATISTICAL PRACTICE

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ABSTRACT

United States statistical programs and practices are among the best in the world. Lurking underneath this success, however, is a riddle—given the potential for abuse and harm, why do Americans willingly hand over their personal information to government data collection programs? In this article, we seek an answer to this riddle by examining the evolution of United States legal and statistical programs, with a particular focus on the United States Census of Population. In so doing, we explore the statistical programs, policies, regulations, and codes of ethics that have evolved in the United States over the past two centuries. We conclude that the willingness of individuals to disclose their personal information is not linked to programs of legal coercion or to simple cost/benefit analyses. Instead, we note that the intent of United States statistical programs has been to increase the level of trust and confidence that individuals have that their information will be kept strictly confidential. Various legal frameworks and the promulgation of statistical society codes of ethics buttress our basic conclusion that trust is an essential characteristic of a successful and efficient modern statistical program. We conclude by noting some recent developments that may threaten this trust program, including post 9/11 national security efforts, the rise of new data-gathering and analysis technologies, and the in-

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creasing use of private data collectors for government statistical programs.

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INTRODUCTION

Statistics and United States government statistical programs are stereotypically viewed as somewhat dull, otherwise benign. In the United States, data collected by federal statistical agencies are used for myriad purposes: from estimating unemployment and crime, to determining effectiveness of educational programs, to mapping traffic patterns. Every year, hundreds of thousands of households voluntarily provide information to government surveys.

Yet government data collection has its darker side. It has been claimed that data from censuses and population registers were used in the United States' forced internment of Japanese-Americans in World War II,[1] in Nazi Germany's rounding-up and execution of millions during the Holocaust,[2] and in the 1994 genocide in Rwanda.[3] These are extreme

1. William Seltzer & Margo Anderson, After Pearl Harbor: The Proper Role of Population Data Systems in Time of War 4-22 (Mar. 28, 2000) (unpublished draft manuscript), http://www.uwm.edu/~margo/govstat/newpaa.pdf.

2. William Seltzer, *Population statistics, the Holocaust and the Nuremberg Trials*, 24 POPULATION & DEV. REV. 511, 515-517 (1998).

3. ALISON DES FORGES, NEW YORK: HUMAN RIGHTS WATCH, LEAVE NONE TO TELL THE STORY: GENOCIDE IN RWANDA (1999), *available at* http://www.hrw.org/reports/1999/rwanda/

examples, but even well-meaning uses of data can potentially harm individuals. Innocent mishandling, misfiling, or misinterpreting of data can have real consequences for the unfortunate souls whose lives or livelihood may depend on how their information is used. The damage from improper handling of private information is not confined solely to pecuniary or bodily harm—many citizens are just as concerned that government data collection and use violates their privacy preferences. As a result, individuals may view even ordinary data collection requests or uses as embarrassing or particularly intrusive. Such attitudes may reduce the willingness of individuals to engage in voluntary information disclosures both today and in the future.

Elsewhere, we have argued that the United States is experiencing a "third wave"[4] of increased privacy concern. Linked to technological innovations and the concerted efforts of various interests groups to raise awareness and alarm,[5] this third privacy wave has heightened concerns about information sharing in general. The rise in privacy concerns has not left government statistical programs unaffected. Events surrounding the 2000 Census reveal that the government's tenuous ability to rely on voluntary information disclosures is intimately linked to perceptions of confidentiality and secrecy. During the 2000 Presidential election, the United States Census became a subject of political controversy. Then-Governor George W. Bush, when asked about the census, declared that he could "understand why people don't want to give that information over to the government . . . . I'm not sure I would either. . . . If people are worried about government intruding in their lives, they should think about it."[6] Candidate Bush was joined by other politicians and various radio talk show hosts in urging Americans to protect their privacy by refusing to answer questions they felt were too intrusive.[7]

A large-scale revolt against government data collection efforts in general, and the census in particular, could spell disaster for numerous programs. Indeed, then-Director of the Census Bureau, Kenneth Prewitt, was deeply concerned that "[t]he census was compromised by those who raised issues about privacy."[8] The political furor did not adversely affect

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Geno1-3-02.htm#P22_7285 (describing how population registers were used to identify Tutsis).

4. *See* Douglas J. Sylvester & Sharon Lohr, *Counting on Confidentiality: Legal and Statistical Approaches to Federal Privacy Law After the USA PATRIOT ACT*, 2005 WISC. L. REV. (forthcoming late 2005).

5. *See* Stephen A. Hetcher, *Norm Proselytizers Create A Privacy Entitlement In Cyberspace*, 16 BERKELEY TECH. L.J. 877 (2001).

6. Terence Samuel, *The Job of Counting the Next 100 Million People is a Lot Harder This Year*, ST. LOUIS DISPATCH, Apr. 23, 2000, at A14.

7. *Id.*

8. Bill Hillburg, *Response Rate 65% For Census Return Of Mail-In Forms Matches 1990 Nationwide*, DAILY NEWS OF LOS ANGELES, Apr. 20, 2000, at N3 (quoting Mr. Prewitt) (internal quotation marks omitted).

overall response rates[9] but raised the specter of a renewed backlash against government data collection efforts. In short, the general view that privacy needs to be protected is a potential source for individual refusal to provide full and accurate information for future government statistical projects.

Rising public concern over privacy and the dangers inherent in government uses of personal information collide with society's increasing data requirements. The federal government provides a staggering array of services that depend on submission of personal information for eligibility and apportionment. National economic policy and forecasting are equally affected by access to, and detailed analysis of, private information. Government policies and services are so essential to the functioning of modern society that some now conclude that efficient government based on access to data sets is a fundamental democratic right[10] and is essential to a well-functioning democracy.[11]

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9. Although the response rates for the 1990 and 2000 Censuses were essentially the same, Prewitt did acknowledge at one point that "The long-form response rate is lagging behind the short form by more than double the rate experienced in 1990." Press Release, U.S. Census Bureau, Census Director and Commerce Secretary Say Nation 'In Reach' of Major Civic Accomplishment (Apr. 11, 2000), http://www.census.gov/Press-Release/www/releases/archives/census_2000/000581.html. *See also* Mike Johnson, *Census Response Rate up in U.S. but Wisconsin gets Bumped to No. 2 as Rate Drops from 77% to 75%*, MILWAUKEE J. SENTINEL, Sept. 20, 2000, at B1 (noting that "Prewitt said that controversy affected the return rates for the long form.").

10. *See* Paul D. Reynolds, *Privacy and Advances in Social and Policy Sciences: Balancing Present Costs and Future Gains*, 9 J. OFFICIAL STAT. 275, 310 (1993). According to Reynolds:

> Citizens have a right to an efficient, effective, and just government. Given the current complexity of major social problems, optimal government decisions are not possible without more complete and detailed understanding of these social problems. This understanding will not be forthcoming without research access to large-scale data sets on individuals and organizations.

Id; See also New River Media Interview with Kenneth Prewitt, Director, U.S. Census Bureau, http://www.pbs.org/fmc/interviews/prewitt.htm (last visited Sept. 17, 2005) (quoting Kenneth Prewitt, Director U.S. Census Bureau):

> I would say that what I would call the nation's number system, good statistics, is critical to democracy [and] effective governance: How in the world can you govern a complicated industrial, advanced industrial economy or now our new knowledge economy without decent information by those people who have to write the laws and administer the laws and the programs?

Id.

As former Census Director Kenneth Prewitt has argued: "Information is two-way traffic in a democracy. It is to help the government know what the people need, and it is to help the people know if they are getting what they need, otherwise it is all anecdotes, and anecdotes are not good enough as far as I'm concerned to run a serious democracy." Prewitt also argues that access to data is essential to the basic workings and responsibilities of a democratic government. According to Prewitt, "[t]he people who wrote the Constitution had in mind that this society could govern itself better on the basis of quality information . . . . If we don't have information on reading scores, if we don't have information on poverty rates, if we don't have information on health, if we don't have information, broad-gauged information about what the government is doing, how in the world do we punish them at election time?" Press Briefing, U.S. Census Bureau, Press Briefing -- April 19, 2000 Director Prewitt (Joined in Progress), http://www.census.gov/dmd/www/4-19.html.

11. According to Steven L. Katz:

> Transparency is a fundamental issue for democracy and differentiates totalitarian and democratic societies. When information is not disclosed to the public, government has failed to exercise the best means of maintaining public trust and dispelling distrust.

Despite all these misgivings and potential harms, Americans have, for most of the past century, been willing participants in government data collection requests. The United States Census, for example, has enjoyed relatively high compliance rates[12] and other surveys and data projects have had similar success.[13] The question is why have Americans been willing to provide information for the past 100 years and will the current wave of privacy concern affect this willingness?

In this article, we explore the history of government data collection practices to seek an answer to this riddle. This historical exegesis is not limited merely to government practices—we also examine the evolution of statistical societies and, in particular, the varying approaches to statistical practice and ethics they adopt. As we will demonstrate here, the compliance rates that government surveys and data projects currently enjoy are not the result of an endemic preference by Americans to reveal their data to government census officials or data collectors. Instead, the history of United States statistical practice reveals a progression of government programs seeking to increase the voluntariness and accuracy of disclosed data by augmenting the trust that individuals have in the government's willingness and ability to use data solely for their intended purpose.

> When government actually is conducted in secret or access to relevant information is denied, then public support for and confidence in the resultant laws and policies is compromised.

Steven L. Katz, *Transparency in the U.S.: Towards Worldwide Access to Government*, THE JOURNAL OF PUBLIC INQUIRY, Fall/Winter 2001, at 55, 57. *See also* ALAN CHARLES RAUL, PRIVACY AND THE DIGITAL STATE: BALANCING PUBLIC INFORMATION AND PERSONAL PRIVACY 22, 40 (2002) ("The first and likely most important benefit of open access to state records is that it facilitates representative government."); GEORGE T. DUNCAN, EXPLORING THE TENSION BETWEEN PRIVACY AND THE SOCIAL BENEFIT OF GOVERNMENTAL DATABASES 7 (2004), http://www.ccsr.ac.uk/methods/archive/AccessGrid/documents/ExploringtheTension.pdf ("Broad access to data supports democratic decision-making. Access to government statistical information supports public policy formulation in areas ranging through demographics, crime, business regulation and development, education, national defense, energy, environment, health, natural resources, safety, and transportation.").

These widely shared ideals about the virtues of statistics for restraining authoritarian tendencies within government resulted in a large number of statisticians decrying Attorney General John Ashcroft's decision to "encourage[] federal agencies to reject requests for documents if there was any legal basis to do so, promising that the Justice Department would defend them in court. . . . a stark reversal of the policy set eight years earlier. . . ." Adam Clymer, *Government Openness at Issue as Bush Holds on to Records*, N.Y. TIMES, Jan. 3, 2003, at A1.

12. The primary data collection for the 2000 Census was done by mailing out questionnaires and requesting households to mail back the forms when completed. The final mail return rate, defined to be the number of households returning the form by mail divided by the number of occupied housing units in mailback areas, was 78% for the 2000 Census. For 1970, 1980, and 1990, the mail return rates were 87%, 81%, and 75% respectively. HERBERT F. STACKHOUSE AND SARAH BRADY, U.S. CENSUS BUREAU, CENSUS 2000 MAIL RETURN RATES: FINAL REPORT 1, 13 (Census 2000 Evaluation A.7.b, 2003), *available at* http://www.census.gov/pred/www/rpts/A.7.b.pdf.

13. Response rates are often higher for government surveys than for the Decennial Census. For example, nonresponse rates for the U.S. National Crime Victimization Survey, the National Health Interview Survey, and the Current Population Survey have all historically been below 10%. ROBERT M. GROVES & MICK P. COUPER, NONRESPONSE IN HOUSEHOLD INTERVIEW SURVEYS 160-61 (1998).

The history of government data collection practices reveals that, in the earliest years of the country, efforts to enforce compliance through legal coercion,[14] community policing and shaming,[15] and purely voluntary efforts[16] failed. In the face of a non-complying public, the federal government began to adopt measures to ensure the strict confidentiality of submitted data.[17] As we show here, the concept of confidentiality, although linked in part to an evolving sense of human dignity and entitlement,[18] was used mainly to encourage citizen compliance with data collection requests.[19] Indeed, the concept of confidentiality in law appears to have been little more than a tool for fostering trust between data subjects and federal statistical agencies—a trust that submitted data would only be used for the purposes for which it was originally submitted.[20]

Not surprisingly, statistical societies played an important role in fostering respect for confidentiality. Voluntary codes of ethical conduct stressed the utility of confidentiality in statistical practice, noting that it increased compliance rates and promoted honest disclosure.[21] By the mid-twentieth century, government practice and statistical ethics enjoyed a confluence of approaches—legally enforceable confidentiality pledges coupled with statistical practices to protect individual identity—that resulted in unprecedented compliance rates with disclosure requests. For more than a century, the view that confidentiality protections enhance response rates and accuracy has been largely correct and successful in inducing compliance with data requests.

Throughout the twentieth century, the interplay of legally mandated privacy and statistical methodology has created a system of statistical programs that virtually assure individual confidentiality. The result, for some, is to conclude that "[f]ederal statistics are not about individuals, [and] therefore they are not about privacy."[22] Such assurances, although widely correct, ignore recent developments in privacy attitudes that threaten to undermine the perception and reality of data confidentiality. As we discuss in more detail in another work, the concepts of confidentiality and privacy are changing in the face of breathtaking new technologies and data analysis methods and may require reassessment in some areas.[23] Just as important as these changes, however, are individuals'

14. *See infra* Part IA.
15. *See infra* Part IA.
16. *See infra* Part IA
17. *See infra* Part IA
18. *See generally infra* Part I.
19. *See infra* Part IA.
20. *See infra* Part IB.
21. *See infra* Part IB.
22. Charles W. Holmes, *Response To Long Census Form Below '90 Rate*, PALM BEACH POST, April 20, 2000, at 12A (quoting Prewitt).
23. *See* Sylvester & Lohr, *supra* note 4.

perceptions of the confidentiality of their data and whether promises of non-disclosure given by the government over the past century remain sacrosanct. To parallel a famous legal maxim, "it is not enough to assure confidentiality, we must *appear* to assure individual confidentiality." Recent government efforts to increase security in the years since the events of September 11, 2001 ("9/11") undermine, at a minimum, this appearance of confidentiality.[24]

Ultimately, security driven initiatives and actions, although perhaps laudable for other reasons, may destroy the willingness of individuals to consent to government data collection requests. Because the willingness of individuals to provide full and accurate information is central to the functioning and well-being of democratic government, a better understanding of the history of government statistical practice and the history of statistical societies is, we believe, an important step for avoiding this disastrous and potential future.

To these ends, the remainder of this article contains three parts. Part I recounts the development and history of privacy in government statistical practice. By focusing on legal and agency developments, we reveal how high cost compliance regimes that sought to coerce citizen compliance met with resistance and failure.

Part II reviews the rise of statistical societies and the changing nature of their ethical codes of conduct. In this part, we analyze how such societies, although deeply interested in the privacy and dignity of respondents, quickly seized on confidentiality, and its trust promoting qualities, as the key to increasing compliance and accuracy.

Part III builds on this historical exegesis, and compares and contrasts the privacy approaches of each discipline. Of particular interest is the contrast between the state's understandable decision to define privacy in terms of baseline individual rights, and statisticians' view that privacy is a factor to be considered in a more robust cost-benefit analysis. This part further notes the legal community's preference for providing post-disclosure remedies and penalties in contrast to statistics' goal of reducing privacy risks by engaging in appropriate disclosure practices that minimize privacy.

I. LAW AND PRIVACY

In this part, we document the rise of confidentiality, privacy, and informed consent in three specific contexts: (A) confidentiality of United States Census data; (B) the emergence of a "right to be let alone;" and (C) the rise of "information privacy" and continued threats of secondary uses. In so doing, we note how American jurisprudence has only re-

24. *See id.*

cently concerned itself with questions of privacy. Indeed, the concept of privacy is barely a century old and has been the subject of legal indifference for much of that time. Despite the relative novelty of legally protected privacy rights, policymakers have long recognized tensions between society's need for data and individuals' fear of misuse. In the eighteenth and nineteenth centuries, these tensions often manifested themselves in a mistrust of governmental purpose, particularly with regard to participation in the United States Census of Population and the Census of Manufactures. As the nineteenth and twentieth centuries progressed, however, government policies addressed these concerns by developing three distinct legal frameworks: (i) confidentiality of personal information; (ii) regulatory pledges to avoid secondary unintended uses of personal information without informed consent; and (iii) enacting sanctions, if seldom used, to punish government agencies or agents that breach confidentiality and informed consent requirements.

A. Privacy and the United States Census

The original United States Census, conducted in 1790, was considered by some to be inaccurate and poorly administered.[25] Despite the simplicity of the survey, consisting of a mere six questions,[26] individual compliance and disclosures were less complete than many had hoped.[27]

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25. According to one commentator, "On every side loud complaints were heard, both of the results of the census and the methods used. Lunt, *infra* note 37, at 73. *See also* HARVEY M. CHOLDIN, LOOKING FOR THE LAST PERCENT: THE CONTROVERSY OVER CENSUS UNDERCOUNTS 42 (1994).

26. The 1790 Census asked respondents to disclose: (1) name of head of family, (2) number of free white males over sixteen, (3) number of free white males under 16, (4) number of free white females, (5) number of other free persons, and (6) number of slaves. MARGO J. ANDERSON, THE AMERICAN CENSUS: A SOCIAL HISTORY 14 (1988). *See also* U.S. GEN. ACCOUNTING OFFICE, GENERAL GOVERNMENT DIVISION, DECENNIAL CENSUS: OVERVIEW OF HISTORICAL CENSUS ISSUES 8-9 (1998), *available at* http://www.gao.gov/archive/1998/gg98103.pdf [hereinafter *Decennial Census*]. Note that in 1790 no forms were provided to enumerators: the marshals submitted their results in a form convenient for themselves, and this led to non-uniform reporting of results. ANDERSON, *supra*.

27. Substantial disagreement continues to revolve around the claim that the 1790 Census resulted in an undercount of U.S. citizens. *Compare* WRIGHT & HUNT, *infra* note 35, at 16-17 (noting widespread belief that 1790 consensus resulted in a substantial undercount), The Special Committee on Empirical Data in Legal Decision Making, *The Undercount of the Census*, 36 REC. ASS'N BAR CITY N.Y. 24 (1981) and Lunt, *infra* note 37; *with* Frederick G. Bohme & David M. Pemberton, Privacy and Confidentiality in the U.S. Censuses—A History 2 (1991) (unpublished manuscript) (on file with author), Jeffrey S. Crampton, Comment, *Lies, Damn Lies, and Statistics: Dispelling Some Myths Surrounding the United States Census*, 1990 DET. C.L. REV. 71, 71 (1990), and HYMAN ALTERMAN, COUNTING PEOPLE: THE CENSUS IN HISTORY 205 (1969) ("Were the census results really so inaccurate? Probably not.").

Whether the 1790 Census undercounted Americans in any substantial way or not, the reasons why some chose not to participate in the census were varied. Some chose not to participate in the census based on Biblical concerns. According to 2 *Samuel* 24, King David's stubborn insistence on a census for conscription purposes resulted in a plague. *See* Bohme & Pemberton, *infra* note 44 (noting that in the first census and occasionally after that, some people opposed the census on religious grounds.). Others feared the misuse of census data to impose government taxes. *See* sources cited *infra* note 29. However, there is little evidence that any resistance to the census was based on privacy concerns. *See* ALTERMAN, at 205; U.S. CENSUS BUREAU, CENSUS

Although inaccuracies may have been caused by numerous factors, some viewed individual unwillingness to participate out of fear of government abuse of information as one cause.[28] President Washington, for his part, attributed the public's reticence to an "apprehension that [the census] was intended as the foundation of a tax."[29]

The fear of secondary uses, grounded in an abiding mistrust of governmental purpose,[30] has been a long-standing obstacle to willing participation and disclosure in statistical studies.[31] In the earliest years, United States officials ignored the underlying problem of mistrust and, instead, focused their efforts on coercing compliance. Congress adopted a simple strategy for increasing compliance—substantial penalties were imposed on individuals for failing to comply with census takers.[32] No rules or procedures were employed to ensure that data would be kept confidential or otherwise used appropriately by the census takers or the government.[33] This coercive system is illustrative of early federal statistical practice—a general lack of concern for privacy or confidentiality and a view that coercive tactics were the best way to assure citizen compliance.

The early census not only sought compliance and accuracy through coercive fines, but it also employed a form of community policing. Between 1790 and 1840, census results were posted in "two of the most

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CONFIDENTIALITY AND PRIVACY: 1790 – 2002 (2003), *available at* http://www.census.gov/prod/2003pubs/conmono2.pdf [hereinafter *Census Confidentiality*]. For a more general discussion of citizens' unwillingness to participate, *see* CHOLDIN, *supra* note 25, at 42 (noting that individuals refused to participate in the census on religious and other grounds).

28. *See generally* MARGO ANDERSON & STEPHEN E. FEINBERG, THE HISTORY OF THE FIRST AMERICAN CENSUS AND THE CONSTITUTIONAL LANGUAGE OF CENSUSTAKING: REPORT OF A WORKSHOP, 11-12 (1999), http://lib.stat.cmu.edu/~fienberg/DonnerReports/FirstCensus.pdf.

29. Washington and others also believed that non-participation was motivated by various concerns. *See generally* ALTERMAN, *supra* note 27, at 204-05. *See also* Davis, *infra* note 36, at 2 ("[T]he problems of communication and travel . . . must have been a contributing factor [to the undercount]. The suspicion that census data would be used in levying future taxes may also have played a role in the reluctance of some citizens to cooperate.").

30. For a general discussion of the rise of American mistrust of government, *see* GARY WILLS, A NECESSARY EVIL: A HISTORY OF AMERICAN DISTRUST OF GOVERNMENT (1999); Gary Orren, *Fall from Grace: The Public's Loss of Faith in Government, in* WHY PEOPLE DON'T TRUST GOVERNMENT 77, 81 (Joseph S. Nye et al., eds., 1997) (detailing the "mounting disillusionment" since the 1950s).

31. The issue has been raised, most recently and forcefully, in Freedom of Information Act requests for information gleaned from the census and other administrative surveys. *See generally* Michael Hoefges, et al., *Privacy Rights Versus FOIA Disclosure Policy: The "Uses And Effects" Double Standard In Access To Personally-Identifiable Information In Government Records*, 12 WM. & MARY BILL RTS J. 1 (2003) (discussing the evolution of legal doctrine as it relates to derivative uses of information taken from the U.S. Census); Jeffrey D. Zimmerman, United States Department of State v. Ray: *The Distorted Application of the Freedom of Information Act's Privacy Exemption to Repatriated Haitian Migrants*, 9 AM. U. J. INT'L L. & POL'Y 385 (1993).

32. In 1790, individuals who refused to participate in the census or cooperate with censustakers could be fined $20. *See* ALTERMAN, *supra* note 27, at 195; DAN HALACY, CENSUS: 190 YEARS OF COUNTING AMERICA 33 (1980). Over time, these penalties were increased. *Id.* at 144-45.

33. Penalties were imposed, however, for marshals or assistants who either failed to make returns or falsified data. *See* Lunt, *infra* note 37, at 72 ("A penalty of $200 was prescribed . . . .").

public places" within each enumeration district.[34] These acts imposed duties on all marshals to publicly post all returns in order, ostensibly, to provide individuals the opportunity to review their forms for accuracy. Just as important, however, as a second chance at accuracy was the hope that public posting would allow others in the community to note who either failed to file a return or did so inaccurately or falsely.[35] Through public posting of returns, census regulators sought to shame non-participants through public exposure and, ostensibly, to discover potential mistakes.[36] The zeal to garner complete and correct data drove these early measures—not privacy or confidentiality grounded in any nascent individual right.[37]

As the century progressed, and despite some initial success, the government's compliance campaign ran into renewed opposition. By the mid-nineteenth century, individual compliance was faltering and inaccuracies in the census were unacceptable.[38] Blame was partly directed to abuses of census data by various officials suspected of exposing survey results for personal gain, curiosity, or respondent embarrassment.[39] Further exacerbating privacy concerns was Congress' insistence that the

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34. JASON G. GAUTHIER, MEASURING AMERICA: THE DECENNIAL CENSUSES FROM 1790 TO 2000 (2002), http://www.census.gov/prod/2002pubs/pol02marv-pt1.pdf. *See e.g.,* Act of Mar. 1, 1790, 2 Stat. 101 (providing United States census standards). In addition to the public posting requirements, enumerators were also, under penalty of law, required to file copies of all census schedules with clerks of the district courts for acceptance and presentation to the grand jury. *Id* at 102. A fine of $200 for assistants was imposed for such failures while the marshals were liable for $800 for each violation. *Id.*

35. *See* CARROLL D. WRIGHT & WILLIAM C. HUNT, THE HISTORY AND GROWTH OF THE UNITED STATES CENSUS, S. DOC. No. 56-194, at 926-27 (1st Sess., 1900) (Census enumerators were to "cause a correct copy, signed by himself, of the schedule, containing the number of inhabitants, within his division, to be set up at two of the most public places within the same, there to remain for the inspection of all concerned . . . .").

36. Posting of census results not only served to stigmatize those who did not respond but also allowed data respondents to conduct their own error checks—a result clearly envisioned by the Census Act's authors. Timothy Pickering, the main author of the 1800 revisions to the original act, believed that public posting of census results that identified individuals helped correct errors in the census: "[It] appears to be that if any of the inhabitants discover errors in the enumerations, they may be made known to the assistant; and the naming of the heads of families will render the detection of errors practicable." Robert C. Davis, *Confidentiality and the Census: 1790-1929,* http://aspe.os.dhhs.gov/datacncl/1973privacy/appenc.htm (last visited Sept. 14, 2005) (citing TIMOTHY PICKERING, CIRCULAR TO MARSHALS, (April 30, 1800), in PICKERING PAPERS). *See also Census Confidentiality, supra* note 27.

37. *See generally* Edward C. Lunt, *History of the United States Census,* 1 PUB. AM. STAT. ASS'N 90 (1888). As stated in a more recent article:

> If the framers of the U.S. Constitution thought that the census might be viewed as an intrusion on personal privacy or foresaw any need to keep census data confidential, their misgivings were not evident when they approved Article 1, section 2, providing for a decennial census.

Census Confidentiality, supra note 27, at 1. *See also* Davis, supra note 36 ("[T]hese requirements involved disclosure, but apparently the confidentiality issue was not raised. Given the few facts contained in the schedule, all of which were common knowledge locally, it is probable that most citizens did not perceive the public posting of census results as an invasion of privacy.").

38. *See* Davis, *supra* note 36 (discussing discourse among the populace and government following the act for the census of 1840).

39. *See id.* (detailing the importance of confidentiality as matters of private life increasingly became subjects of census questions).

subject matter of the census increase beyond mere head-counting.[40] Over time, the limitations of the initial surveys were improved to provide further information to government policymakers.[41] The increase in questions and the rise of individual mistrust of government uses of data led to the first frameworks for assuring the confidentiality of census data. As a result, by the mid-nineteenth century, various directives were issued ordering that census data be kept strictly confidential.[42] Stopping short of legal penalties against violators, the policy by 1850 was clear:

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40. By 1850, the census not only included detailed questions involving manufacturing and commerce (which had been included, off and on, in censuses as early as 1810) but detailed information including:

> The schedule for the free population would list every inhabitant by name, giving, in addition, sex, age, color, nativity, place of birth, marital status, literacy, real estate ownership, and information as to whether the individual was deaf, dumb, blind, insane, idiotic, or a pauper or convict. The slave schedule was less inclusive, but more detailed than ever before. A mortality schedule listed by name all who had died in the preceding year, with personal and medical details included.

See Davis, *supra* note 36. As a result of the increase in reported data and their sensitivity, the requirement of public posting was finally abrogated in 1850. *See id.*

41. Despite its practical limitation, the census was viewed, from its inception, as an invaluable tool to "enable [Congress] to adapt the public measures to the particular circumstances of the community. . . . [And] to make proper a provision for the agricultural, commercial, and manufacturing interests . . . in due proportion." 1 ANNALS OF CONG. 1115 (Joseph Gales ed., 1834), *available at* http://memory.loc.gov/ammem/amlaw/lwaclink.html (follow "Browse the Annals" hyperlink; then follow "1st 1789-91" hyperlink; then follow "1st session" hyperlink listed under "House"; then enter "1115" in the box).

42. As noted earlier, census instructions issued in conjunction with each taking of the Census of the Population and, when it was administered, the Census of Manufactures had not, prior to the mid-nineteenth century, included any provisions for the confidentiality of census data. Indeed, a review of the 1820 instructions, for example, reveals that census-takers were more focused on the legal *obligation* of individuals to provide census information (while noting the sensitivity of commercial data). According to the 1820 instructions:

> [Census takers] will be careful to observe an important distinction between the inquiries directly necessary to the enumeration, and those relating to manufactures; they will see that . . . each and every *free* person . . . is *obliged* to render . . . a true account . . . upon a penalty of $20; but as the act lays no positive injunction upon any individual to furnish information upon the situation of his property, or his private concerns, the answers to all inquiries of that character must be altogether voluntary, and every one, to whom they are put or addressed, will be at liberty to decline answering them at all.

John Quincy Adams, *Instructions to Marshals—Census of 1820, reprinted in* WRIGHT & HUNT, *supra* note 35, at 136. The 1830 instructions included identical language regarding individuals' requirement to provide legal assistance on the Census of the Population. *See* Martin Van Buren, *Instructions to Marshals—Census of 1830, reprinted in* WRIGHT & HUNT, *supra* note 35, at 140-41.

By 1840, however, issues of confidentiality had begun to creep into the instructions. According to the 1840 instructions:

> Objections, it has been suggested, may possibly arise on the part of some persons to give the statistical information required by the act, upon the ground of disinclination to expose their private affairs. Such, however, is not the intent, nor can be the effect, of answering ingenuously the interrogatories. On the statistical tables no name is inserted—the figures stand opposite no man's name; and therefore the objection can not apply. It is, moreover, inculcated upon the assistant that he consider all communications made to him in the performance of this duty, relative to the business of the people, as strictly confidential.

Instructions to Marshals—Census of 1840, reprinted in WRIGHT & HUNT, *supra* note 35, at 145. As we can see, by 1840 the census was already contemplating two modern notions of privacy and confidentiality. First, that private information would be kept confidential through statistical methods (in

> [A]ll marshals and assistants are expected to consider the facts intrusted [*sic*] to them as if obtained exclusively for the use of the Government, and not to be used in any way to the gratification of curiosity, the exposure of any man's business or pursuits, or for the private emolument of the marshals or assistants, who, while employed in this service, act as the agents of the Government in the most confidential capacity.[43]

The primary concern for the confidentiality of information in 1850, however, was disclosing sensitive information about business or property, not individual information.[44] Despite this admonition, disclosure of census information was not criminalized until decades later.[45] Public posting of information, however, was soon abolished and, from 1850 on, census records were considered "confidential" pursuant to administrative policy.[46]

Over the next few decades, however, it appears that census agents were failing to abide by this policy. In 1870, the Census Office was required, once again, to reiterate its policy that "No graver offense can be committed by Assistant Marshals than to divulge information acquired in the discharge of their duty. All disclosures should be treated as strictly confidential . . . . The Department is determined to protect the citizen in all his rights in the present Census."[47] One of the chief proponents of the increased rules for confidentiality, Representative James A. Garfield, summed up the concern that individuals were not properly protected from secondary uses: "[t]he citizen is not adequately protected from the danger, or rather the apprehension, that his private affairs, the secrets of his family and his business, will be disclosed to his neighbors."[48]

Still unwilling to criminalize improper disclosures, the Census Office escalated its attempts to ensure confidentiality by requiring newly minted "census enumerators"[49] to swear to maintain the confidentiality of

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this early instance, merely insisting that names did not appear next to data) and, second, that those charged with gathering the information would keep all data confidential.

43. The author of the circular was disturbed by the fact that:

> Information has been received at this office that in some cases unnecessary exposure has been made by the assistant marshals with reference to the business and pursuits, and other facts relating to individuals, merely to gratify curiosity, or the facts applied to the private use or pecuniary advantage of the assistant, to the injury of others. Such a use of the returns was neither contemplated by the act itself nor justified by the intentions and designs of those who enacted the law. No individual employed under sanction of the Government to obtain these facts has a right to promulgate or expose them without authority.

WRIGHT & HUNT, *supra* note 35, at 150 (quoting Thomas MacKennan, *Circular to the United States Marshals and Assistants (1850)*).

44. *See* Bohme & Pemberton, *supra* note 27, at 5-6.

45. *See* Davis, *supra* note 36.

46. *See id.*

47. WRIGHT & HUNT, *supra* note 35, at 156.

48. House Comm. on the Ninth Census, H.R. Rep. No. 41-3, at 49 (1870).

49. By legislative fiat, for the 1880 Census, local officials designated "census enumerators" were selected to administer the surveys replacing United States Marshals in that regard. *See Census Confidentiality*, *supra* note 27, at 7.

all individually-identifiable census data.[50] As these requirements were still, apparently, insufficient and Congress finally criminalized disclosures in 1890,[51] further expanding the civil and criminal penalties over the ensuing years.[52] What should be remembered, of course, is that for all of these censuses, citizens could not legally protect their own privacy by withholding information—legal sanctions continued to make noncompliance a matter of criminal law, a policy that remains in place to this day.[53]

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50. WRIGHT & HUNT, *supra* note 35, at 937. *See also Census Confidentiality, supra* note 27, at 8. The Instructions to Enumerators in the 1880 Census told enumerators "to use great courtesy and consideration. A rude peremptory, or overbearing demeanor, would not only be a wrong to the families visited, but would work an injury to the census by rendering the members of those families less disposed to give information with fullness and exactness." GAUTHIER, *supra* note 34, at 18. The 1880 Census Instructions thus linked public trust with compliance and accuracy, noting that although participation in the census was required by law, "[e]numerators will, however, do well not unnecessarily to obtrude the compulsory feature of the enumeration. . . . With the high degree of popular intelligence here existing, the importance of statistical information is very generally appreciated; and if the enumerator enters upon his work in a right spirit, he will generally meet with a favorable and even cordial response." *Id.* at 18-19.

51. Act of Mar. 1, 1889, ch. 319, §§ 8, 13, 25 Stat. 760 (1889) (current version at 13 U.S.C. § 214 (2005) (imposing $5,000 fine on enumerators).

52. According to 13 U.S.C. § 9(a) (2005):

> (a) Neither the Secretary, nor any other officer or employee of the Department of Commerce or bureau or agency thereof, or local government census liaison, may, except as provided in section 8 or 16 or chapter 10 of this title or section 210 of the Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 1998 or section 2(f) of the Census of Agriculture Act of 1997–
>
> 1. use the information furnished under the provisions of this title for any purpose other than the statistical purposes for which it is supplied; or
>
> 2. make any publication whereby the data furnished by any particular establishment or individual under this title can be identified; or
>
> 3. permit anyone other than the sworn officers and employees of the Department or bureau or agency thereof to examine the individual reports.

53. Although these legal sanctions are rarely applied to nonrespondents, there is evidence that a reminder that a response is required by law increases the rate of compliance to requests for data from the census and other mandatory surveys. At the request of Congress (spurred in part by concerns about privacy), the Census Bureau tested the effect of different wordings in the letter requesting participation and on the envelope sent to persons selected to participate in the mandatory American Community Survey. Persons randomly selected to receive the "mandatory" reminder were sent a letter saying:

> Please take about 40 minutes of your time to assist your community greatly by completing and mailing back your copy of the American Community Survey, as required by law. We are conducting this survey under the authority of Title 13, United States Code, sections 141-193, and 221. That same law protects your privacy. Section 9 requires us to keep all information about you and your household strictly confidential. We may use this information only for statistical purposes. In addition, Title 13 imposes severe criminal sanctions if any U.S. Census Bureau employee violates those provisions. Title 13 also imposes penalties for not responding to the American Community Survey.

DEBORAH H. GRIFFIN ET AL., MEETING 21ST CENTURY DEMOGRAPHIC DATA NEEDS—IMPLEMENTING THE AMERICAN COMMUNITY SURVEY. REPORT 3: TESTING THE USE OF VOLUNTARY METHODS 6, 18 app. 1 (2003), *available at* http://www.census.gov/acs/www/Downloads/Report03.pdf.

Other persons in the study—the "voluntary" group—were sent a letter saying: "The U.S. Census Bureau chose your address, not you personally, as part of a randomly selected sample. The Census Bureau is required by U.S. law to keep your answers confidential. Your participation in the survey is important; however, you may decline to answer any or all questions." When the voluntary survey was used, mail response rates dropped by more than twenty percentage points. *Id.*

These views were not couched in a rhetoric of individual rights. Instead, their motivations appear to have been grounded in a desire to increase the accuracy and amount of data acquired. Accomplished by creation of a nascent trust regime, the actions of these early legislators to *force* compliance slowly gave way to measures intended to induce greater voluntary compliance through promises, pledges, and eventually legal rules that punished those who breached such trust based measures. These measures, combined with new technologies introduced in the 1890s, streamlined the census process and, at least in part, provided a greater level of data security[54] and further worked to build a trust-regime around the taking, administration, and keeping of the census.

Interestingly, questions of industrial statistics seem to have spurred greater acknowledgment of privacy concerns. First conducted in 1810, the Census of Manufacturers (whether as separate form or additional questions as part of the Census of Population) sought to gather information on occupations, income, and other vital statistics necessary, as President Martin Van Buren later noted, to "exhibit a full view of the pursuits, industry, education and resources of the country . . . ."[55] Despite the statistical importance of this information, officials, including John Quincy Adams, believed disclosure must be voluntary arguing that, "some individuals will feel reluctant to give all the information desired . . . . "[56] Adams's view appears motivated by the *nature* of such information—the view that some information was more sensitive than others—an approach that, over time, would become a cornerstone of American privacy law.[57]

Despite paying some lip service to the idea that industrial statistics were more sensitive and, therefore, deserving of greater privacy, most objections followed a familiar pattern. Most clearly evinced an abiding mistrust of the uses of the data, rather than a view that such information was inherently private. Some critics objected to the census because the information gathered might be used for other programs: "Is this federal prying into the domestic economy of the people a precursor to direct taxes? Is nothing to escape its inquisitors or its tax-gatherers? Is it worthy of the dignity and high functions of the federal government to pursue

54. *See* JOEL SHURKIN, ENGINES OF THE MIND: THE EVOLUTION OF THE COMPUTER FROM MAINFRAMES TO MICROPROCESSORS 78 (1996).

55. WRIGHT & HUNT, *supra* note 35, at 36.

56. *Id.* at 136 (quoting John Quincy Adams). A late nineteenth century writer noted that:

> Much of the value of any census must come from the sympathetic co-operation [sic] of the people examined; and in the first half of this century information was given much more reluctantly than now. No penalty was attached in 1840 to a refusal to comply with the requirements of the industrial investigation; and in some cases the people refused point-blank to answer the inquiries of the census-taker.

Lunt, *supra* note 37, at 82.

57. *See infra* Part IC.

such petty investigations?"[58] Fears of prying, and a felt-right to avoid the prying eyes of government and others, would soon launch the first wave[59] of legislated privacy.

In the end, the view that the United States Census could be administered through coercion and force was a clear failure. As the century progressed, concepts of confidentiality and prohibitions on secondary uses were gradually made part of the regulatory framework of conducting the census. Over time, these initial pragmatic steps would become ensconced in law through the emerging right to privacy. In the end, however, the conduct of the United States Census has always reflected the balance between disclosure and confidentiality. As the Supreme Court noted in *Baldrige v. Shapiro*[60] nearly 100 years after confidentiality was first guaranteed for census participants: "Although Congress has broad power to require individuals to submit responses, an accurate census depends in large part on public cooperation. To stimulate that cooperation Congress has provided assurances that information furnished . . . by individuals is to be treated as confidential."[61]

B. The Right to be Let Alone

As the United States government was cajoling the citizenry into full and honest participation in censuses, others became increasingly convinced that some information was inherently private. Individual privacy was emerging as an important social and legal issue throughout the second half of the nineteenth century.[62] The last two decades, in particular, witnessed the development of new privacy-invasive technologies, such as the portable camera, that gave rise to calls for the legal protection of individual privacy.[63]

This nascent privacy movement was given its most articulate and forceful support through the work of two jurists, Louis Brandeis and

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58. *See* JAMES D. B. DEBOW, STATISTICAL VIEW OF THE UNITED STATES: BEING A COMPENDIUM OF THE SEVENTH CENSUS 12 (Richard E. Easterlin et al. eds., Gordon & Breach, Science Publishers, Inc. 1970) (1854).

59. *See infra* Part IB.

60. 455 U.S. 345 (1982).

61. *Baldridge*, 455 U.S. at 354.

62. *See, e.g.*, Ken Gormley, *One Hundred Years of Privacy*, 1992 WIS. L. REV. 1335 (1992); Thomas H. O'Connor, *The Right to Privacy in Historical Perspective*, 53 MASS. L.Q. 101, 102 (1968); DAVID H. FLAHERTY, PRIVACY IN COLONIAL NEW ENGLAND 113-249 (1972). Other areas of law were expanding the zones of privacy beyond traditional notions of eavesdropping and home entry prohibitions. For example, Congress passed a law in 1825 making it a crime for a post office employee to open another's mail. *See* 42 U.S.C. § 1702 (1825), *amended by* 18 U.S.C. § 1703 (2005).

63. Attribution for the coining the term "right to be let alone" is generally given to Judge Cooley who, in his work years prior to that of Warren and Brandeis, made reference to the phrase, "to be let alone," which he described as a right of personal immunity. *See* THOMAS M. COOLEY, COOLEY ON TORTS 29 (2d ed. 1888). *See also* DeMay v. Roberts, 9 N.W. 146, 149 (Mich. 1881) (holding that woman had "right to the privacy of her apartment" during childbirth that "the law secures" against attempts by defendant to enter).

Samuel D. Warren.[64] Upset at the erosion of personal privacy caused by newspaper reporting[65] and photography,[66] these two lawyers penned what is generally considered one of the "most influential law review articles of all."[67] In this article they articulated what has become the basis of much privacy law in the United States—the right "to be let alone."[68] Although Brandeis and Warren's ideal of privacy contained elements of elitism and privilege, the basic notion that individuals possessed a right to be let alone soon became law.

Within a decade, judicial opinions began to recognize a right to privacy,[69] and legislation[70] and state constitutional[71] approval soon followed. By the mid-twentieth century, this initially academic right was protected through four distinct torts:[72] (i) false light;[73] (ii) misappropria-

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64. *See* Harry Kalven Jr., *Privacy in Tort Law—Were Warren and Brandeis Wrong?*, 31 LAW & CONTEMP. PROBS. 326 (1966).

65. According to Daniel Solove: "In the second latter half of the 19th century, newspapers were the most rapidly growing type of media. Circulation of newspapers rose about 1000% from 1850 and 1890, from 100 newspapers with 800,000 readers in 1850 to 900 papers with over 8 million readers by 1890." DANIEL J. SOLOVE, THE ORIGINS AND GROWTH OF INFORMATION PRIVACY LAW 10 (2003), *available at* http://ssrn.com/abstract=445181 (follow "Stanford Law School" hyperlink to download pdf document).

66. The rise of portable, "instant" cameras was of great concern to Warren and Brandeis and, as they argued, upset the prior balance of consent, trust, and contract that previously protected individuals against such intrusions:

> While, for instance, the state of the photographic art was such that one's picture could seldom be taken without his consciously "sitting" for the purpose, the law of contract or of trust might afford the prudent man sufficient safeguards against the improper circulation of his portrait; but since the latest advanced in photographic art have rendered it possible to take pictures surreptitiously, the doctrines of contract and of trust are inadequate to support the required protection.

Samuel D. Warren & Louis Brandeis, *Right to Privacy*, 4 HARV. L. REV. 193, 211 (1890).

67. *See* Kalven, *supra* note 64, at 327.

68. *See* Warren & Brandeis, *supra* note 66, at 195.

69. *See, e.g.*, Pavesich v. New England Life Ins. Co., 50 S.E. 68 (Ga. 1905) (holding that use of a photograph and name in an advertisement constituted an invasion of privacy). *But see* Roberson v. Rochester Folding Box Co., 64 N.E. 442 (N.Y. 1902) (holding that defendant's use of plaintiff's likeness in advertising without permission was not actionable under New York common law).

70. For example, in 1899, the California legislature amended its libel statute to include publication of a person in a newspaper or book, and other media, without consent. DON R. PEMBER, PRIVACY AND THE PRESS: THE LAW, THE MASS MEDIA, AND THE FIRST AMENDMENT 64 (1972). *See also* Act of Apr. 6, 1903, ch. 132, §§ 1-2, 1903 N.Y. Laws 308 (N.Y. Civ. Rts §§ 50-51 (McKinney 1976 & Supp. 1988)) (prohibiting the use of a person's name or likeness without consent when used in advertisements or trade publications and passed in reaction to the *Roberson* decision cited *supra* note 69).

71. The earliest mention of privacy-related rights in state constitutions may be found in the original Washington and Arizona constitutions, adopted in the early 20th century. *See* WASH. CONST. art. I, § 7 ("No person shall be disturbed in his private affairs, or his home invaded, without authority of law."); ARIZ. CONST. art. II, § 8 (employing identical language as Washington). Admittedly, these provisions only weakly relate to a concept of privacy as Warren and Brandeis intended. It was not until the late 1960s and early 1970s that numerous states amended their constitutions to include specific rights of privacy. *See, e.g.*, HAW. CONST. art. I, § 7; ILL. CONST. art. I, § 6; S.C. CONST. art. I, § 10.

72. Identification and naming of these torts is attributed to Prosser. *See generally*, William L. Prosser, *Privacy*, 48 CAL. L. REV. 383 (1960).

73. *See* Neil B. Hayes & Douglas J. Sylvester, *The Law of Online Privacy*, in BUSINESS LAW & THE INTERNET § 15.20 (Michael B. Simon et al., eds. 2002):

tion;[74] (iii) public disclosure of private facts;[75] and (iv) intrusion upon seclusion.[76]

Each of these bases for protection, however, was largely inapplicable against government data collection efforts.[77] On one hand were various legally mandated data collection efforts, such as the census and tax returns. On the other, torts do not protect information once disclosed, providing little protection against secondary uses.[78] Finally, government bureaucracies increasingly made data disclosures by citizens nearly impossible to avoid, even where legal sanctions were inapplicable.

As the twentieth century progressed, individuals' increasing interaction with government, through Social Security, driver's licenses, and numerous other administrative iterations, led to an increasing amount of personal data falling into the hands of government administrators.[79] These disclosures are voluntary in only the strictest sense of the word as "[i]ndividuals cannot reasonably avoid many government transactions, like getting a driver's license."[80] In addition to increasing government collection practices, private data collection ventures multiplied including the founding and proliferation of numerous commercial and personal credit rating institutions.[81] As the amount of data in governmental and

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> To prevail on a claim of false light, a plaintiff must generally prove a publication made with actual malice that places the plaintiff in a false light and that is highly offensive to a reasonable person. . . . [T]he false light tort requires a showing of actual malice or that the defendant either "knowingly" or "recklessly" disseminated such false information.

74. *Id.* at § 15.21 ("To prevail on a misappropriation claim, a plaintiff must generally prove that the defendant appropriated the defendant's name, likeness, or other image and used it for some commercial gain or advantage.").

75. *Id.* at § 15.22 ("[T]he elements of a public disclosure claim are a public disclosure of private facts that would be highly offensive to a reasonable person.").

76. *Id.* at § 15.23 ("The elements of the tort of intrusion upon seclusion are (a) an intrusion into an area in which the plaintiff has a reasonable expectation of privacy and (b) that the intrusion is highly offensive to the reasonable person.").

77. *See, e.g., id.* at § 15.24.

78. *See* Daniel J. Solove, *Access and Aggregation: Public Records, Privacy and the Constitution*, 86 MINN. L. REV. 1137, 1176 (2002) ("One of the longstanding conceptions of privacy is that it involves secrecy and is lost once information is disclosed.") [hereinafter Solove, *Access*].

79. PRIVACY PROTECTION STUDY COMMISSION, PERSONAL PRIVACY IN AN INFORMATION SOCIETY 605-18 (1977) *available at* http://www.epic.org/privacy/ppsc1977report (noting how the adoption of a national social security number was necessary to provide the means for government to track social security benefits for individuals). *See also* Eric Grossman, *Conceptualizing National Identification: Informational Privacy Rights Protected*, 19 J. MARSHALL L. REV. 1007, 1009-10 (1986).

80. *Id.*

81. Equifax, for example, was founded in 1899. Dun & Bradstreet and Moody's, two highly influential commercial credit rating companies, were founded in the mid-nineteenth century and rose to prominence in the late nineteenth and early twentieth centuries. *See* Jeffrey S. Adler, *Capital and Entrepreneurship in the Great West*, 25 J. INTERDISC. HIST. 189, 194 (1994); RICHARD SYLLA, A HISTORICAL PRIMER ON THE BUSINESS OF CREDIT RATINGS 2, 8 (2001), http://www1.worldbank.org/finance/assets/images/Historical_Primer.pdf.

private hands increased, new legal protections for privacy and information control crept into the law.[82]

C. Information Privacy

Tort-based privacy ultimately proved too limited to preserve both the privacy of individual data and the trust and willingness of individuals to provide that data. By the 1960s, the development of new data storage, linking, and mining technologies greatly increased both the need for more data and potential for abuse.[83] In turn, individuals became increasingly concerned about "the condition of not having undocumented personal information about oneself known by others."[84] Public unease with emergent capabilities was aggravated by numerous high-profile abuses of government-held data.[85] These factors ultimately led to a second wave of privacy law concerned, chiefly, with the protection of personal information.

This second wave of privacy was largely sparked by journalistic and academic writings detailing governmental data abuses and aggressive surveillance by law enforcement in the 1970s.[86] By the mid-1970s, journalists and other commentators had uncovered and substantiated a culture of widespread lawlessness and surveillance by the FBI, CIA and other governmental agencies.[87] Revelations that successive administrations had increased the surveillance budgets and activities of numerous federal agencies, including illegal wiretaps of Dr. Martin Luther King, Jr. and other public figures,[88] greatly increased fears of an imminent "Big Brother." Fears of surveillance soon combined with fears about misuse of collected data. As part of these larger surveillance efforts, it soon became clear that government agencies were also combing through public data files from the IRS and others.[89] In addition, increasing attention was being paid to the effect that financial credit data, controlled and dis-

82. *See* Andrew Jay McClurg, *Bringing Privacy Out of the Closet: A Tort Theory of Liability for Intrusion in Public Places*, 73 N.C. L. REV. 989, 1044-54 (1995); Diane L. Zimmerman, *Requiem for a Heavyweight: A Farewell to Warren and Brandeis's Privacy Tort*, 68 CORNELL L. REV. 291, 297 (1983).

83. William A. Parent, *Privacy, Morality, and the Law*, 12 PHIL. & PUB. AFF. 269, 287-88 (1983).

84. *Id.* at 269.

85. MORTON H. HALPERIN, ET AL., THE LAWLESS STATE: THE CRIMES OF THE U.S. INTELLIGENCE AGENCIES 1-12 (1976); VANCE PACKARD, THE NAKED SOCIETY 229-51 (1964).

86. For one of the first and most influential writings giving rise to increased public attention towards privacy concerns *see* PACKARD, *supra* note 85 (examining the rise of credit bureaus and financial profiling); *see also* ALAN F. WESTIN, PRIVACY AND FREEDOM (1967); JERRY ROSENBERG, THE DEATH OF PRIVACY (1969); ALAN F. WESTIN & MICHAEL BAKER, DATABANKS IN A FREE SOCIETY: COMPUTERS, RECORD-KEEPING AND PRIVACY (1972) (detailing rising public privacy concerns using survey data); Charles Fried, *Privacy*, 77 YALE L.J. 475 (1968).

87. *See, e.g.*, HALPERIN, *supra* note 85 at 1; ARTHUR R. MILLER, THE ASSAULT ON PRIVACY: COMPUTERS, DATA BANKS, AND DOSSIERS 125-68 (1971).

88. *See, e.g.*, WHITFIELD DIFFIE & SUSAN LANDAU, PRIVACY ON THE LINE: THE POLITICS OF WIRETAPPING AND ENCRYPTION 140-42 (1998).

89. *See generally* HALPERIN, *supra* note 85.

seminated through various credit bureau companies, could have on numerous areas of life.[90]

The United States' tentative steps towards stronger privacy laws were deeply affected by events in Europe. Increasing controversy over data-privacy programs in Europe, including disturbing revelations about Nazi Germany's use of census data to locate and exterminate German Jews,[91] led to an increased interest in constraining both government data-collection and usage practices and, in particular, to a backlash against comprehensive government databases.[92] The fight in Europe against national identity cards, censuses, and other statistical databases was widely reported in the United States. Within the United States, the privacy debates spurred by the Watergate scandal and the Church privacy hearings[93] were also reaching a fever pitch.

The result of these revelations was twofold. First, there was a substantial breakdown in trust between individuals and government data collectors. Various polling data from the period demonstrate how privacy fears and mistrust blossomed in this period of government intrusiveness.[94] These polls, first conducted in 1968 and then again in 1974-78 asked whether individuals felt that "sometimes your sense of privacy is being invaded or not—that people are trying to find out things that are not any of their business."[95] Nearly two-thirds of those who responded

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90. *See* PACKARD, *supra* note 85, at 168-82.

91. *See generally* J. ADAM TOOZE, STATISTICS AND THE GERMAN STATE, 1900-1945: THE MAKING OF MODERN ECONOMIC KNOWLEDGE 36-37 (2001). Jutta Wietog documented changes in the Census Act during the Third Reich: while the German Census Act of 1933 stated the obligation to maintain secrecy and allowed the data to be used only for statistical purposes, the 1939 Census Act "no longer mentioned the obligation to maintain secrecy" and permitted the data to be used "only for the *special purposes* of the census. But these special purposes were not defined anywhere." Jutta Wietog, *German Official Statistics in the Third Reich With Respect to Population Statistics*, Bulletin of the International Statistical Institute (2003), *available at* http://www.isi-2003.de/guest/3601.pdf?MItabObj=pcoabstract%26MIcolObj=uploadpaper%26MInamObj=id%26MIvalObj=3601%26MItypeObj=application/pdf (paper presented at the 54th Session of the International Statistical Institutes, Aug. 15, 2003). The 1939 Census asked specifically about Jewish ancestry. *Id.*

92. *See generally* William Seltzer & Margo Anderson, *The Dark Side of Numbers: The Role of Population Data Systems in Human Rights Abuses*, 68 SOCIAL RESEARCH 481 (2001).

93. *See* Thomas S. Blanton, *National Security and Open Government in the United States: Beyond the Balancing Test*, *in* NATIONAL SECURITY AND OPEN GOVERNMENT: STRIKING THE RIGHT BALANCE 33, 34 (2003), *available at* http://www.maxwell.syr.edu/campbell/opengov/ ("Only after Watergate and Vietnam, when Congress finally investigated the intelligence agencies, did the American public learn" of government data abuses and cover-ups). Reports prepared by the Church Committee are available at Paul Wolf, Cointelpro, http://www.icdc.com/~paulwolf/cointelpro/cointel.htm. *See also* Alice Robbin, *The Loss Of Personal Privacy and Its Consequences for Social Research*, 28 J. OF GOV'T INFO. 493 (2001). According to Robbin:

> During the 1970s, public anxiety was a catalyst for legislative hearings, the enactment of federal and state statutes, and implementation of administrative policies, regulations, and guidelines to safeguard privacy and create enforceable expectations of confidentiality for personal information that was collected by government, financial institutions, and the social research community.

Id. at 494.

94. Robbin, *supra* note 93, at 495-97.

95. Harris Poll #1815 (Mar. 1968), *cited in id.* at 495.

in 1968 did not feel that their privacy was being invaded.[96] By 1974-78, as the actions of government unfolded, the responses changed dramatically, with 80% in 1974 and 98% in 1978 responding that they did feel their privacy was under threat.[97]

The United States scandals and European abuses also led to a judicial and legislative backlash. During the 1960s and 1970s few, if any, laws existed to curb government excesses. Wiretap surveillance, although circumscribed in part by early statutes,[98] was largely unregulated and, indeed, subject to the administration's view that "national security" overrode other obligations to refrain from surveillance activities.[99] As a result, various judicial opinions and, finally, legislative enactments, were promulgated to protect individuals against government intrusions via wiretapping and other technologies.[100] In addition to these anti-surveillance measures, various laws were proposed to protect data held by federal agencies and private financial and medical entities.

Unlike most European countries, the United States did not enact a comprehensive privacy regime, choosing instead to: (i) protect the privacy of data and records held by the federal government; and (ii) protect privately held financial and medical data. Among the numerous regulations and statutory enactments of this period are: (i) the Federal Privacy Act of 1974 ("Privacy Act");[101] (ii) the Freedom of Information Act ("FOIA");[102] (iii) the Family Educational Right to Privacy Act

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96. Robbin, *supra* note 93, at 495-96.

97. According to Robbin:

> By the mid-1970s, however, the Watergate Affair and the Nixon Administration's highly publicized wiretapping and surveillance activities radically altered Americans' assessment of the importance of personal privacy. Between March 1974 and April 1978, Americans became very concerned about privacy in their personal life, with between 90% and 97% in March 1974 (Harris Poll #7481) and June 1976 (Harris Poll #7684), respectively, rating privacy as "very important" in their personal life. However, by April 1978 (Harris Poll #7804), the percentage of respondents who ranked privacy as "very important" declined to 79%.

Id.

98. Federal Communications Act of 1934 § 605, 47 U.S.C. § 605 (1996) ("[N]o person not being authorized by the sender shall intercept any communication and divulge or publish the existence, content, substance, purport, effect, or meaning of such intercepted communication to any person."). The Supreme Court in *Nardone v. United States*, 302 U.S. 379 (1957), restricted the scope of § 605 to prohibit only the disclosure of tapped communications—not the wiretaps themselves.

99. *See generally* John Podesta & Peter Swire, *Speaking Out About Wiretaps,* WASH. POST, Aug. 30, 2002, at A23.

100. *See, e.g.,* NAACP v. Alabama, 357 U.S. 449 (1958) (striking down Alabama statute that attempted to force the NAACP to disclose its members' names); Katz v. United States, 389 U.S. 347, 360 (1967) (holding that wiretap of defendant's phone-booth telephone calls violated defendant's "reasonable expectation of privacy"); Omnibus Crime and Control and Safe Streets Act of 1968, 18 U.S.C. §§ 2510-20 (2002) (generally referred to as the "Wiretapping Act", this enactment greatly curtailed the ability of government to engage in wiretaps without warrants).

101. Privacy Act of 1974, Pub. L. No. 93-579, 88 Stat. 1896 (codified as amended at 5 U.S.C.A. § 552a (West 2004)) [hereinafter Privacy Act].

102. Freedom of Information Act, 5 U.S.C. § 552 (2002), *amended by* Electronic Freedom of Information Act Amendment of 1996, Pub. L. No. 104-231, 110 Stat. 3048 to 3054 [hereinafter FOIA].

("FERPA");[103] (iv) the Fair Credit Reporting Act ("FCRA");[104] and (v) regulations governing social security, employment, education, health, and other records.[105] These enactments, although substantially improving the privacy and confidentiality of federally controlled and other sensitive data, did not achieve all that privacy advocates had hoped. Instead, these measures sought to retain the balance between access and privacy set up during prior regimes by emphasizing trust-promoting measures that penalized post-collection disclosures and set out guidelines for appropriate data disclosures. The privacy regime set up at the end of the second privacy wave focused on three main goals: (i) assuring individuals that government-held data would not be used for secondary purposes without permission; (ii) securing privacy as an individual right to be overcome only by showings of substantial countervailing need; and (iii) providing a check on unrestrained government by opening up databases and practices to public scrutiny.[106] These three goals, as well as the lim-

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103. Family Educational Rights and Privacy Act of 1974, 20 U.S.C. § 1232g (2002); 34 CFR § 99 (2004) [hereinafter FERPA].

104. Fair Credit Reporting Act, 15 U.S.C. § 1681-81x (2004) [hereinafter FCRA].

105. For example, regulations governing the disclosure of personal information by the Internal Revenue Service echo those of the more general Privacy Act—although not enacted until 1976—including provisions regarding the publication of statistical studies. "No publication or other disclosure of statistics or other information required or authorized [by various provisions] shall in any manner permit the statistics, study, or any information so published, furnished, or otherwise disclosed to be associated with, or otherwise identify, directly or indirectly, a particular taxpayer. I.R.C. § 6108(c) (2004). *See also* I.R.C. § 6103 (2005) (making tax returns and information confidential and prohibiting disclosures without specific Congressional authorization); I.R.C. § 7431 (2004) (creating a civil remedy for unauthorized disclosures). *See also* Allan Karnes & Roger Lively, *Striking Back at the IRS: Using Internal Revenue Code Provisions to Redress Unauthorized Disclosures of Tax Returns or Return Information*, 23 SETON HALL L. REV. 924 (1993).

The Social Security Administration is similarly obligated to maintain confidentiality of records in its possession. *See* Social Security Act § 1106 (codified at 42 U.S.C. § 1306(a)(1) (2004)).

The Census Bureau is also subject to legislation mandating the confidentiality of survey data. *See* 13 U.S.C. §§ 8-9 (2005) (census data must be kept confidential). *See also* McNichols v. Klutznick, 644 F.2d 844 (10th Cir. 1981) (census data not subject to ordinary discovery in suit challenging apportionments).

Not all administrative agencies have always operated under similar confidentiality restrictions. The Bureau of Labor Statistics, for instance, was never legally required to keep information confidential although, as a matter of agency practice and policy it is so required. *See Confidential Nature of BLS Records*, COMMR'S ORDER 3-93, §7(a) (Dep't of Labor Aug. 18, 1993) ("[D]ata collected . . . under a pledge of confidentiality shall be treated in a manner that will ensure that individually identifiable data will be used only for statistical purposes and will be accessible only to authorized persons."). *See also* George T. Duncan & Stephen F. Roehrig, *Mediating the Tension between Information Privacy and Information Access: The Role of Digital Government*, *in* PUBLIC INFORMATION TECHNOLOGY 94, 99 (G. David Garson, ed., 2003) (noting that BLS is not legally obligated to secure the confidentiality of individually identifiable data).

106. *See generally* Ronald Backes, *Freedom, Information, Security*, 10 SETON HALL CONST. L.J. 927, 936 (2000) ("The FOIA rests upon a foundation of open government and the need in a democratic society for public disclosure of information concerning government operations."); Heather E. Kilgore, *Signed, Sealed, Protected: Solutions To Agency Handling Of Confidential Business Information In Informal Rulemaking*, 56 ADMIN. L. REV. 519 (2004); Department of Justice, Office of Information and Privacy, FREEDOM OF INFORMATION ACT GUIDE (2004), http://www.usdoj.gov/oip/foi-act.htm (last visited Mar. 14, 2005) (providing an extensive overview of the FOIA including its history and judicial treatment).

ited nature of legal protection, can be seen in the overarching structure of the major privacy laws of the period.[107]

The Privacy Act of 1974, for example, sought to control the "impact of computer data banks on individual privacy"[108] but limited its reach to federally controlled data banks.[109] Intended, as Marc Rotenberg has claimed, to "set out a comprehensive regime limiting the collection, use and dissemination of personal information held by government agencies,"[110] the Act placed a number of administrative burdens on the collection, analysis, and sharing of data by federal agencies. Among these burdens were requirements that agencies make it possible for individuals to: (i) determine what data or records have been collected or otherwise held by affected agencies;[111] (ii) prohibit or restrict the ability of agencies to use data for purposes other than those for which it was originally colleted;[112] (iii) gain access to, copy, and amend or correct, any data held by affected agencies;[113] (iv) be assured that federally-held data is secure, current, and used solely for lawful purpose;[114] and (v) pursue civil penalties against agencies or individuals that violate these rules.[115] Despite these various empowerments, the privacy of collected data was still subject to a number of exceptions and limitations—the most significant of which is a provision allowing agencies to disclose information for "routine uses" that are "compatible" with the reasons for original collection.[116]

Partly intended to combat unrestrained government surveillance by granting individuals the right to view any federally controlled records about them, the Privacy Act also sought to grant individuals control over their records.[117] Its provisions were based, in large part, on a Code of Fair Information Practices ("FIP") put forth by the then-Department of

107. Marc Rotenberg, *Fair Information Practices and the Architecture of Privacy: (What Larry Doesn't Get)*, 2001 STAN. TECH. L. REV. 1, 39-42 (2001).

108. COMMITTEE ON GOVERNMENT OPERATIONS UNITED STATES SENATE & COMMITTEE ON GOVERNMENT OPERATIONS HOUSE OF REPRESENTATIVES, LEGISLATIVE HISTORY OF THE PRIVACY ACT OF 1974, S. 3418 (Public Law 93-579), at 300 (Sept. 1976) [hereinafter PRIVACY ACT: LEGISLATIVE HISTORY].

109. The official legislative history declared the Act a "landmark achievement in securing for each citizen . . . the right of privacy with respect to confidential information held by the Federal Government." *Id.* at v.

110. Rotenberg, *supra* note 107, at 39.

111. 5 U.S.C. § 552a(d)(1) (2004).

112. § 552a(b).

113. § 552a(d)(2)(B).

114. § 552a(e)(4)-(10).

115. § 552a(g)(1).

116. § 552a(a)(7); 5 U.S.C. § 552a(b)(3).

117. Privacy Act, *supra* note 101.

Health, Education, and Welfare in 1973.[118] Among the various approaches outlined in the FIP are:

> 1) A prohibition against the keeping or creation of secret databases;
>
> 2) The principle that individuals must have the means and ability to access and, if necessary, correct their data and records;
>
> 3) A prohibition on the disclosure or use of collected data without explicit informed consent by respondents as to such disclosures or uses;
>
> 4) A requirement that all data collectors, analyzers, and handlers take steps to ensure the security and accuracy of all data.[119]

According to the Privacy Act, no federal agency may "disclose any record [about an individual] . . . except pursuant to a written request by, or with the prior written consent of, the individual to whom the record pertains."[120] As many have noted, "the Privacy Act begins from a presumption of personal control over government-held data and vests individuals with the power to waive privacy in such data at their own discretion."[121]

Placing control in the hands of the individual to whom the information pertains accomplishes a number of goals. First, it grounds the Privacy Act's provisions in an individual right to personal privacy (rather than a mere factor in an overall cost-benefit analysis). Second, it ensures that individuals have the power to inspect government records and practices—promoting accountability and democracy. Finally, it assures individuals that their data, once voluntarily disclosed for one purpose, will not be used for another or shown to a third party without explicit consent.

This framework, clearly intended to restore confidence in the confidentiality of personal records, was also balanced by a keen understanding of the importance of data sharing.[122] The data sharing provisions are motivated, in part, to promote open government. In particular, the Privacy Act and its confidentiality and privacy guarantees are subject to numerous exceptions, including conforming to requests for data under the Freedom of Information Act.[123] In addition to this important goal, the

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118. SECRETARY'S ADVISORY COMMITTEE ON AUTOMATED PERSONAL DATA SYSTEMS, U.S. DEP'T OF HEALTH, EDUC. & WELFARE, RECORDS, COMPUTERS, AND THE RIGHTS OF CITIZENS, Sec. V (1973), *available at* http://aspe.hhs.gov/datacncl/1973privacy/c5.htm.

119. 5 U.S.C. § 552a (2004).

120. § 552a(b).

121. RAUL, *supra* note 11, at 24.

122. *Id.* ("Congress . . . recognized that the proper policy for government-held personal information consists of a delicate balance between privacy and access.").

123. The Privacy Act, despite its broad support of personal control over data nevertheless included numerous exceptions intending to seek a delicate balance between privacy and access including:

Privacy Act also contains an explicit nod to statisticians' concerns as noted in the Privacy Act's relationship to the Federal Reports Act,[124] a statute that dictates the circumstances under which data can be shared between federal agencies.

The Privacy Act was enacted after the FOIA and is subject to FOIA's rules mandating public access to government-held records.[125] Incorporating the above-mentioned principle that open government fosters democratic governance in an era of feared tyranny, the FOIA empowers "any person" to request "records" maintained by federal agencies.[126] At first blush, this principle seems antithetical to the pro-privacy regime of the Privacy Act and others. After all, the data requested by "any person" include, quite possibly, individually identifiable data that the affected individual would rather keep silent.

To avoid gutting the privacy framework based on individual control, trust, and access, FOIA contained two specific privacy promoting

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1. To the agency's own officers or employees;
2. Pursuant to an FOIA request;
3. For routine agency uses provided such uses are disclosed to the public;
4. The Bureau of Census for purposes of carrying out the census or other official surveys;
5. To statisticians and researchers solely for statistical research or reporting provided such records do not identify individuals;
6. To a US jurisdiction for law enforcement purposes;
7. To Congress;
8. Pursuant to a court order;
9. To a Consumer Reporting Agency in accordance with the Fair Credit Reporting Act.

5 U.S.C. §§ 552a(b)(1-12)(2004).

124. For an overview of the Federal Reports Act of 1942, 44 U.S.C. §§ 3501-3511 (1942) [hereinafter FRA], *see* John V. N. Philip, *The Paperwork Reduction Act in* United Steelworkers of America v. Pendergrass*: Undue Restriction and Unrealized Potential*, 89 COLUM. L. REV. 920, 922-23 (1989). Although recently overhauled by the e-Government Act of 2002, the FRA governed the sharing of information between federal agencies on four conditions:

1. If the information is in the form of statistical totals or summaries;
2. If the information was not collected under a confidentiality guarantee;
3. If the persons supplying the information consent to its transfer; or
4. If the receiving agency has mandatory authority to collect such data.

FRA, *supra*. Later amendments to the FRA required federal agencies to submit request for further data gathering to the Comptroller General who must approve the proposed surveys—to avoid duplication. *See generally* Federal Records Act, 44 USC § 3101 (1950) (establishing the framework for records management programs in Federal Agencies). One of the more important enactments requiring the publication of reports and statistical data to be publicly disclosed. *See* The Brooks Act, Pub. L. No. 89-306, 92 Stat. 2541, Pub. L. No. 95-595, 31 U.S.C. § 68a (2004). According to this Act, the Department of the Treasury must render overall Government financial reports to the President, the Congress and the public. Under this Act, each agency must furnish the Secretary of the Treasury with reports and information relating to the agency's financial condition and operations as the Secretary may require for effective performance. The Secretary's responsibilities include the system of central accounting and financial reporting for the Government. The Brooks Act, Pub. L. No. 89-306, Pub. L. No. 92-582, 40 U.S.C.§ 901 et seq. *See also* Paperwork Reduction Act of 1980, Pub. L. No. 96-511, 94 Stat. 2812 (1980) (codified as amended at 44 U.S.C. §§ 3501-3520 (1982 & Supp. IV 1986)). Under this Act, Congress requires that government agencies submit all proposed information gathering, included in proposed regulations, to the Office of Management and Budget (OMB) for approval.

125. *See* 5 U.S.C. §§ 552a(b)(2), (f) (2005)

126. § 552(a)(3)(A).

rules: (i) "personnel and medical files and similar files . . . which would constitute a clearly unwarranted invasion of personal privacy";[127] and (ii) "records or information compiled for law enforcement purposes . . . which could reasonably be expected to constitute an unwarranted invasion of personal privacy,"[128] were exempt from disclosure. Statisticians, in particular, viewed the initial exceptions to FOIA requests as narrow—merely imposing the need to balance the privacy of individuals against the proposed public goods (including transparency, efficiency, and tailored rulemaking).[129] However, the consequence of embedding privacy into the framework of individual, and occasionally constitutional, rights led to an increasing tendency of judges and regulators to privilege the right of the individual to his privacy over that of the countervailing public goods arising out of forced disclosure.[130]

Through the 1960s and 1970s, various statutes were enacted that imposed some level of responsibility on data collectors to protect the confidentiality of data in their possession. FCRA,[131] for example, passed in 1970, regulates the collection and use of personal information by consumer credit reporting agencies ("CRAs").[132] Burdens are placed on CRAs to protect consumer credit data[133] by, at least in part,[134] only pro-

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127. § 552(b)(6).

128. § 552(b)(7)(C).

129. *See generally Report of the Ad Hoc Committee*, *infra* note 155. President Johnson, in signing FOIA into law, declared:

> This legislation springs from one of our most essential principles: A democracy works best when the people have all the information that the security of the Nation permits. No one should be able to pull curtains of secrecy around decisions which can be revealed without injury to the public interest.

Lyndon B. Johnson, 2 PUB. PAPERS 841 (1967), (*quoted in* H.R. Rep. No. 104-795, at 8 (1996)), *reprinted in* 1996 U.S.C.C.A.N. 3448, 3451).

130. *See* Lillian R. BeVier, *Information About Individuals in the Hands of Government*, 4 WM. & MARY BILL RTS. J. 455, 477-78 (1995) (noting courts' preference to value individual privacy over data access and open government); Hoefges et al., *supra* note 31, at 16-17 (noting same).

131. 15 U.S.C. § 1681 (2005).

132. A "consumer reporting agency" is generally defined as any entity that regularly engages in the creation and dissemination of consumer reports. 15 U.S.C. § 1681a(f).

133. Credit data are generally included as part of a general "consumer report." A consumer report is defined as a report touching on an individual's creditworthiness, credit standing, credit capacity, character, general reputation, personal characteristics, or mode of living. 15 U.S.C. § 1681a(d).

134. The FCRA imposes a number of affirmative obligations on CRAs. In particular, CRAs are required to implement "reasonable procedures to assure maximum possible accuracy" in all reports. 15 U.S.C. § 1681e(b). In addition to this overarching obligation are a number of specific directions:

> 1. CRAs, or parties acting on consumer reports, must inform individuals of any adverse actions taken as a result of information contained within a consumer report.
> 2. CRAs must ensure that consumer reports do not contain obsolete data.
> 3. When an individual disputes information contained in a consumer report, the CRA must delete that information if it cannot confirm the information's accuracy within 30 days.
> 4. CRAs must delete any obsolete or incorrect data as soon as possible after discovery or notice.

See 15 U.S.C. § 1681e.

viding such information for "permissible purposes,"[135] including strict penalties for disclosures considered impermissible.[136]

FERPA was passed in reaction to the "the growing evidence of the abuse of student records across the nation."[137] FERPA, like other regulations of the period, favored an individual rights model of privacy protection and imposed liability against data collectors for impermissible releases of private data.[138] FERPA specifically granted students the sole right to access educational records for inspection and review[139] and forbade educational institutions from releasing such records without explicit permission[140] subject to numerous exceptions.[141] As with other laws, these new exceptions assured respondents that such data, once disclosed, would only be used for statistical purposes and would not be disclosed to any third parties for any purpose.[142] As we will explain, this strong privacy regime was not to outlast the security jangles following 9/11.[143]

All of these laws, and the various regulations governing control of information in individual agencies, not only sought to promote individual privacy rights, but also worked to reassure individuals that data in government hands for statistical purposes would not be used for secondary, non-statistical, purposes such as tax or other law enforcement. Various commentators have noted how "[m]ost individuals agree to provide personal information to . . . governments because the benefits [outweigh] the price of diminished privacy."[144] However, "[t]he cornerstone of that agreement . . . is the individual's assumption that the information will not be used for purposes other than those for which it was collected."[145]

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135. 15 U.S.C. § 1681b.

136. The FCRA includes robust civil and criminal penalties against violators. It authorizes private lawsuits and provides for the recovery of economic and, in some cases, punitive damages as well as costs and fees. 15 U.S.C. §§ 168ln - 168lo. Criminal penalties are also available for those who fraudulently obtain consumer reports from CRAs or for officers of CRAs for intentional unauthorized disclosures of consumer reports. 15 U.S.C. §§ 168lq - 1681r. Finally, the FCRA contains a two-year statute of limitations that requires actions to be brought "2 years after the date of discovery by the plaintiff of the violation that is the basis for such liability." 15 U.S.C § 1681p(1). Most courts have held that the statute of limitations under the FCRA runs from the date of the violation by the CRA. *See* Rylewicz v. Beaton Services, Ltd., 888 F.2d 1175, 1181 (7th Cir. 1989); Houghton v. Ins. Crime Prevention Inst., 795 F.2d 322, 324 (3d Cir. 1986); Clay v. Equifax, Inc., 762 F.2d 952, 961 (11th Cir. 1985).

137. 121 CONG. REC. 13,990 (1975) (remarks of Sen. Buckley before the Legislative Conference of the National Congress of Parents & Teachers, Mar. 12, 1975).

138. According to the sponsors of the Act, "[t]he purpose of the Act is two-fold - to assure parents of students . . . access to their education records and to protect such individuals' rights to privacy by limiting the transferability of their records without their consent." 120 CONG. REC. 39,862 (1974) (Joint Statement in Explanation of Buckley/Pell Amendment, Dec. 13, 1974).

139. 20 U.S.C. §1232g(a)(1)(A-B) (2002).

140. §1232g(a)(1)(A).

141. §1232g(b).

142. *Id.*

143. *See* Sylvester & Lohr, *supra* note 4.

144. Carol R. Williams, *Note: A Proposal for Protecting Privacy During the Information Age*, 11 ALASKA L. REV. 119, 134-35 (1994).

145. *Id.* at 134-35.

Law enforcement activities of the 1960s and 1970s raised fears that statistical and individually identifiable data in government hands for administrative or research purposes could quite easily be co-opted for enforcement purposes.[146] The Privacy Act's, FERPA's, FCRA's, and other laws' prohibitions on secondary uses were intended to counteract these fears and restore confidence in the benign and beneficial nature of government purpose. In some cases, courts have imposed a "secondary use" element to determine whether disclosure requests under FOIA are too intrusive of individual privacy rights.[147] As we shall see, the fear of secondary uses rekindled following 9/11 is driven not only by renewed dread of government malfeasance but also by a pervasive sense of privacy erosion caused by private-sector data collection efforts.[148]

The lack of a comprehensive privacy law governing the collection and dissemination of personal information by the private sector forced the courts to consider the extent to which privacy was protected by the Constitution. Privacy advocates, generally frustrated at the lack of a comprehensive "right to information privacy" sought recognition of the right in United States courts.[149] Despite these efforts, the courts have yet to explicitly recognize such a right—but they have come pretty close. In 1977, the Supreme Court upheld a New York statute requiring the reporting of certain medical prescriptions.[150] Rejecting a lawsuit by physicians and patients that the statute violated their right to privacy, the Supreme Court concluded that an individual's right to privacy, with "roots in the Constitution," was implicated, but found that the statute sufficiently protected that right.[151] In a later decision, the Court held that "both the common law and the literal understandings of privacy encompass the individual's control of information concerning his or her person."[152] Many other cases have continued to expand and clarify this "right to information privacy," but none have held it applicable to data once disclosed.[153]

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146. *Cf.* United States Dep't of Justice v. Reporters Comm. for Freedom of the Press, 489 U.S. 749, 751-52 (1989) (example of feared conduct).

147. Hoefges et al., *supra* note 31, at 25 (noting that "the Court seemed to suggest that secondary effects of disclosure were relevant" to determining the level of intrusion into personal privacy by allowing disclosure) (referring to Dep't of State v. Wash. Post Co., 456 U.S. 595, 599 (1982)).

148. Cristi Allen, *Trust in Government*, DECISION ANALYST, June 13, 2001, http://www.decisionanalyst.com/publ_data/2001/Attitudes.asp (showing the declining trust in the federal government, particularly information collecting agencies).

149. Appellee's Brief at 15-20, Whalen v. Roe, 429 U.S. 589 (1977) (No. 75-839), 1976 WL 181401.

150. Whalen v. Roe, 429 U.S. 589 (1977).

151. *Whalen*, 429 U.S. at 605.

152. *Reporters Comm. For Freedom of Press*, 489 U.S. at 764.

153. *See, e.g.*, Nat'l Archives & Records Admin. v. Favish, 541 U.S. 157, 160, 165-66 (2004) (holding that because family did not disclose the materials, the right of privacy was still intact); United States Dep't. of Justice v. Landano, 508 U.S. 165, 177-78 (1993) (implicitly assuming that no right of privacy attaches to data once disclosed).

In the end, at the close of the second privacy wave, legislation and judicial decisions had gone far in restoring trust between respondents and federal data collectors by focusing on two main principles: (i) individual control over the use of and access to their data records; and (ii) legally mandated requirements that data collectors control access to data. Rather than focusing on the comprehensive privacy protections that many desired, the legislative response sought no more than to restore a balance between access and privacy through a legal regime that focused on trust and accountability. As President Ford noted in 1976:

> I do not favor establishing a separate Commission or Board bureaucracy empowered to define privacy in its own terms and to second guess citizens and agencies. I vastly prefer an approach which makes Federal agencies fully and publicly accountable for legally mandated privacy protections and which gives the individual adequate legal remedies to enforce what he deems to be his own best privacy interests.[154]

Although not the comprehensive approach that many desired, it appears that the balance sought by the limited reach of the Privacy Act, the FOIA, and similar statutes was largely successful in increasing voluntary compliance with federal statistical surveys and studies.

III. PRIVACY IN STATISTICAL PRACTICE

The above discussion on the rise of privacy in American law parallels the development of statistical society codes of conduct. In particular, this section notes how statistical societies and practice, despite a different emphasis on the importance of individual privacy, have long been concerned with privacy, both as an individual right and as a source of trust enhancement in statistical agencies. As in the legal arena, statistical concepts of privacy and confidentiality developed in concert with contemporary technological and political changes, and we argue that much of the present day confidentiality ethos in statistics responds to issues from the first two waves of privacy concern.

As the Ad Hoc Committee on Privacy and Confidentiality for the American Statistics Association noted in 1977:

> Efficiency in terms of cost, accuracy, timeliness, and convenience through use of existing records and limited transfer of records among designated agencies for purposes agreed to by the affected agencies should be balanced against any added risks to privacy that such transfers may entail. Demands for collection of particular items of infor-

154. PRIVACY ACT: LEGISLATIVE HISTORY, *supra* note 108, at 956.

> mation should always be subject to the check of the expected social benefit-to-cost ratio.[155]

At the same time as the government is seeking to protect individual privacy, it is requiring both private industry and public agencies to collect ever increasing amounts of data.[156] In addition to these concerns, there is an increasing pressure for efficiency, both economic and legal.[157] Economic efficiency requires agencies to share data they collect—it is deeply wasteful, obviously, to require the same data to be collected twice for legitimate government programs. Yet, as we have seen, law's attempts to fulfill the promise of individual liberty and sensitivity result in a general prohibition against secondary uses in the absence of explicit prior consent without sufficient regard for the potential value of such uses and the minimal (or potentially minimalized) danger to privacy.[158]

Much of the preceding material has focused on a history of the concept of privacy in law with some reference to statistical approaches; in law the conception of privacy as a right, and in statistics the idea of a necessary balance between the responsibilities of confidentiality to the respondent and data access to the public. In this section we note that, statistical societies were founded with the goal of bringing the benefits of statistical analysis to society.[159] Many of those benefits depend on having summary statistics, or even portions of data collected, available to the citizenry. As James Madison argued, the census should "embrace some other objects besides the bare enumeration of the inhabitants" in order to provide legislators with more information for benefiting the country.[160]

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155. *Report of the Ad Hoc Committee on Privacy and Confidentiality*, 31 AM. STATISTICIAN 2, 59-78, 60 (1977) [hereinafter *Report of the Ad Hoc Committee*].

156. Stephen E. Feinberg & Leon C.R.J. Willenborg, *Introduction to the Special Issue: Disclosure Limitation Methods for Protecting the Confidentialtiy of Statistical Data*, 14 J. OFF. STAT. 337, 337-39 (1998).

157. Ivan Fellegi has argued that trust is an essential component of statistical agencies' success in serving these larger social goals:

> [T]he less trust there is in a society (whether this is based on the assumption of doubtful integrity or suspected incompetence), the more there is a need for an objective and visibly unbiased mechanism to resolve real or potential conflicts in the design of government programs, and to provide information on the basis of which their performance can be assessed once they are implemented. Official statistics, if their provider is truly trusted, can often serve in such a capacity.

Ivan P. Fellegi, *Official Statistics—Pressures and Challenges ISI President's Invited Lecture, 2003*, 72 INT'L STAT. REV. 139, 141 (2004).

158. *See generally* Federal Committee on Statistical Methodology, Statistical Policy Working Paper 2, *Report on Statistical Disclosure and Disclosure-Avoidance Techniques* 1 (May 1978), *available at* http://www.fcsm.gov/working-papers/sw2.html.

159. *See infra* Part IIIA.

160. 1 ANNALS OF CONG. 1115 (Joseph Gales ed., 1834), *available at* http://memory.loc.gov/ammem/amlaw/lwaclink.html (follow "Browse the Annals" hyperlink; then follow "1st 1789-91" hyperlink; then follow "1st session" hyperlink listed under "House"; then enter "1115" in the box). Madison's views, however, were not necessarily shared by others at the time. In a letter to Thomas Jefferson on Feb. 14, 1790, Madison wrote:

> A Bill for taking a census has passed the House of Representatives, and is with the Senate. It contained a schedule for ascertaining the component classes of the Society, a kind

In 1940, the centenary of the establishment of American Statistical Association ("ASA"), Halbert Dunn wrote that access to official statistics is fundamental to democracy itself:

> At the birth of this nation about a century and a half ago, the foremost thought in the mind of its people was the maintenance of personal freedom for which the citizen had struggled and for which he had been willing to die. In recent years, however, a number of factors have tended to undermine this freedom. The more important of these are: Concentration in relatively few hands of the agencies which disseminate information to the public, advancement in the knowledge of how to control human behavior by the use of psychology, and the extremely rapid growth of totalitarian ideology. How many persons appreciate the importance of the census method and its resultant statistical information in the maintenance of the democratic principles to which the country is dedicated?[161]

Dunn argued that census data should be readily available, and that scope, timeliness and availability of census data, "linked to the citizen's right and *willingness to question*, will prove a bulwark of strength to our democracy throughout the next century."[162] In this view, the collection and analysis of data is not merely an ancillary component of governance. Rather, the collection of valid statistical data is seen as *central* and *indispensable*, not only for good governance, but for any kind of *effective* governance. "The government *cannot* fulfill its regulatory mission unless those who are subject to the regulations provide regulators with truthful and relevant information that will enable them to monitor the activities of the regulated entities for compliance."[163] As a result, and as hinted at in the prior discussions, statisticians and policymakers with statistical inclinations have long viewed privacy as a *necessary* component of statistical practice if for no other reason than that it promotes voluntary, truthful, and comprehensive disclosures.

Statisticians have long been aware of the importance of protecting persons who participate in statistical studies. Although data have been used for millennia, statistics as a profession is very young with many dating its origins as a mature and distinct discipline no earlier than

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> of information extremely requisite to the Legislator, and much wanted for the science of Political Economy. A repetition of it every ten years would hereafter afford a most curious and instructive assemblage of facts. It was thrown out by the Senate as a waste of trouble and supplying materials for idle people to make a book.

Letter from James Madison to Thomas Jefferson (Feb. 14, 1790), *in* 1 THE REPUBLIC OF LETTERS: THE CORRESPONDENCE BETWEEN THOMAS JEFFERSON AND JAMES MADISON, 1776-1826, at 654 (James Morton Smith ed., 1995).

161. Halbert L. Dunn, *Census—Past and Future*, 35 J. AM. STAT. ASS'N 242, 242 (1940).

162. *Id.* at 250.

163. BeVier, *supra* note 130, at 456 (emphasis added).

1900.[164] Although late in maturing, statistical study, as discussed in the prior section, has been a subject of governmental interest since the Founding.

A. The Origins of Statistical Societies

From early in this country's history, scientific associations in the United States were concerned about official statistics. For example, in 1800, the Connecticut Academy of Arts and Sciences requested Congress to expand the census and:

> [B]egged leave to request their honors to direct by law that the next census of the inhabitants of the United States might comprehend much more exactly analyses of the population with respect to age, might indicate the number of persons not born in the United States, the number of persons in each leading occupation, the number of married persons, of widows, and so on.[165]

From the outset, the ASA was closely connected with the gathering and dissemination of official government statistics. On several occasions in the nineteenth century, the Association petitioned Congress about Decennial Census issues or provided advice about the scope and conduct of the census.[166]

The development of statistical study in the United States paralleled that in Britain, and an examination of the evolution of privacy notions in both countries is instructive. The Statistical Society of London (now called the Royal Statistical Society) was established in 1834, and the ASA followed suit in 1839.[167] The prospectus of the Statistical Society of London stated its purpose to "procure, arrange and publish facts calculated to illustrate the condition and prospects of society."[168] According to the first constitution of the ASA, the goal of the new society was "to collect, preserve and diffuse statistical information in the different departments of human knowledge."[169] The *Journal of the Statistical Society of London* started in 1838 and morphed into the *Journal of the Royal*

164. STEPHEN M. STIGLER, THE HISTORY OF STATISTICS: THE MEASUREMENT OF UNCERTAINTY BEFORE 1900 1 (1986).

165. Lunt, *supra* note 37, at 75.

166. *See* R.L. Mason et al., *A Brief History of the American Statistical Association, 1839-1989*, 44 AM. STATISTICIAN 68, 69 (1990).

167. *Id.* at 68 (noting that following the precedent in England, it was originally called the American Statistical Society, but a regrettable acronym prompted a quick name change to "the American Statistical Association" in 1840).

168. Athelstane Baines, *The History and Development of Statistics in Great Britain and Ireland*, *in* THE HISTORY OF STATISTICS, THEIR DEVELOPMENT AND PROGRESS IN MANY COUNTRIES 365, 385 (John Koren ed., 1918).

169. John Koren, *The American Statistical Association*, *in* THE HISTORY OF STATISTICS, THEIR DEVELOPMENT AND PROGRESS IN MANY COUNTRIES 3, 3 (John Koren ed., Burt Franklin, 1918).

Statistical Society in 1887. *Publications of the American Statistical Association* commenced in 1888.

Not surprisingly, since the concept of individual privacy was not found in other arenas, it is not found to be of paramount concern in the early history of the statistical societies. Many of the scholarly papers in the early volumes of the *Journal of the Statistical Society of London* and the *Publications of the American Statistical Association* consisted of tabulations of agricultural statistics and descriptions relating to statistics of conditions of laborers, children, trade, manufactures, and other topics. Many of the authors express the exuberance of a child with a new toy when noting the possible uses of statistics to help society. The first article in the *Journal of the Statistical Society of London* stated how "every subject relating to mankind itself, forms a part of Statistics."[170]

Until the close of the nineteenth century, statistical practice, like law, remained relatively unconcerned with privacy. Promoters of statistics such as Florence Nightingale were more concerned with documenting the sanitary conditions of hospitals and needless deaths of injured soldiers in the Crimean War than with protecting their privacy. She wrote: "I stand at the altar of the murdered men, and while I live, I fight their cause" and her main weapon was statistical tables and graphs.[171] Given these goals, privacy was not of great concern.

B. Confidentiality and Privacy in Statistical Literature

The earliest mention of confidentiality protection found in the publications of the Royal Statistical Society or ASA related to protecting the reputations of medical practitioners.[172] Benjamin Phillips, surgeon to the Mary-le-bone Infirmary, wrote that he did not publish the names of the doctors performing amputations "because there is great difference in the results, which might easily be explained to the satisfaction of medical men; but which, in non-professional minds, might readily raise a prejudice against the practice of individuals; on which account I have preferred suppressing the names in the memoir."[173] As with the United States Census, the earliest concern about privacy in the statistical asso-

170. *Introduction* to 1 J. STAT. SOC'Y LONDON 1, 2 (1839). Many of the articles in the early issues of the Proceedings begin with a statement of the potential usefulness of statistics for solving a discipline's problems. *See, e.g.*, Arthur Saunders Thomson, *A Statistical Enquiry on Fever*, 1 J. STAT. SOC'Y LONDON 278, 278 (1838) ("There is no science in which statistical investigation is more necessary than in medicine; and there are few to which it has hitherto been less applied."). A common theme of the early articles is the insufficiency of available data, and that better data could solve the problems of poverty, trade imbalances, public health, and most other societal issues.

171. Edwin W. Kopf, *Florence Nightingale as Statistician*, 15 PUBLICATIONS AM. STAT. ASS'N 388, 390 (1916). Florence Nightingale was elected to be the first female member of the Royal Statistical Society in 1858. *Id.* at 394.

172. *See* Benjamin Phillips, *Mortality of Amputation*, 1 J. STAT. SOC'Y LONDON 103, 105 (1839).

173. *Id.*

ciations was related to commercial and professional interests, not as a matter of individual dignity or liberty.

The use of the word "privacy" with respect to a right of an individual occurs much later in the statistical literature and not, at first, in the United States. One of the earliest discussions of privacy, as the word is currently understood, was written in 1900 regarding the British Census and its privacy implications:

> The usual conception [of the census] seems to be that a rather seedy stranger drops a curiously complicated paper (which has to be read at various angles) containing certain foolish, certain other impertinent, and other again unintelligible and futile questions concerning one's maid servant and the stranger that happens to be within one's gates, and that the said paper is called for the next morning, your inmost family details unsympathetically perused, probably with the remark that your declaration of occupation indicates that you do not know your own business. The one drop of comfort lies in the assurance that if you find that your wife's age has become the common property of your court or alley, you are at liberty to complain of a breach of official confidence, which, however, is not in England, I believe, punishable by law.[174]

By 1900, in the United States, breaches of confidentiality of census data and concepts of private information had been introduced into the law. Soon thereafter, the first explicit mention of privacy in ASA publications was written in 1908, by Kate Holladay Claghorn.[175] In her article, Claghorn expressed concern that "among the host of newcomers into the statistical field with a fresh idea for a statistical investigation for every day of the year, it seems as if the preoccupation with each successive new scheme prevents any critical examination of those already brought to completion."[176] She mentioned the possible harm to the families who were being studied in the statistical investigation:

> These inquiries are in the main carried on, not merely from pure scientific interest, but for some purpose of social betterment; and it is not so very long ago that persons with such purposes were warned over and over again by their guides and advisers of the dangers of invading the privacy of the home and the necessity of keeping strictly within the limits of confidence, kindness, and personal relation in the

174. J.A. Baines, *On Census Taking and Its Limitations*, 63 J. ROYAL STAT. SOC'Y 41, 42-43 (1900).

175. Kate Holladay Claghorn, *The Use and Misuse of Statistics in Social Work*, 11 PUBL'NS AM. STAT. ASS'N 150, 164 (1908).

176. *Id.* at 151.

> work of investigation, which was to be tolerated only in so far as it was a necessary means for securing the benefit of the family itself.[177]

Claghorn balanced the harms of "invading the privacy of the home" with the benefits to society and insisted that the data collection should lead to benefits for the specific families being studied.[178] Following Claghorn's article, the statistical literature more frequently mentions privacy of persons who are subjects of statistical investigations and the importance of keeping their information confidential.[179] By the 1930s, it is largely taken for granted in statistical literature that the confidentiality of respondents must be protected. This increasing emphasis on confidentiality in the statistical literature paralleled the changes in the Census Acts—the 1880 Census Act required enumerators to swear an oath that they would not disclose information to anyone except their supervisors.[180] The Director of the Census, however, could disclose information relating to individuals, and in 1917, the Director supplied transcripts of information to draft boards.[181] By 1930, however, "the agency began interpreting confidentiality much more strictly."[182]

During the 1940s and 1950s, some statisticians anticipated concerns that were to be more fully voiced during the second wave of concern about privacy. Stuart Rice stressed that:

> [D]ata supplied to an agency of government for statistical purposes should not be allowed, through disclosure, to cause individual hardship or disadvantage. It should not be used to support legal action against the respondent in the courts. It should not fall into the hands

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177. *Id.* at 164.

178. *See id.* at 164-65.

179. *See, e.g.*, F. Stuart Chapin, *The Budgets of Smith College Girls*, 15 PUBL'NS AM. STAT. ASS'N 149, 149 (1916) (outlining the procedures for keeping the data confidential). Chapin noted:

> The accounts were strictly confidential. Personal privacy was guaranteed by the following plan of administration: the student presidents of every college house distributed the books in September, and each month reminded the students of their share in the investigation; at the end of the month each student tore off the completed sheet and turned it in; since each account book and every one of its sheets bore the same number, the final assembling of the nine sheets of any one book was not a difficult matter. The stub, with its monthly totals, was retained by the student.

Id. at 149

Similarly, respondents to a survey on household expenditure were told:

> All information given will be treated as *strictly confidential.* Particulars respecting individual households will not be published or disclosed in any way. You are not asked to give your name or address anywhere on the form. Your Association will know that you are filling in a form, but it will not see it when completed; the Civil Service Statistical & Research Bureau will see the details on the form, but it will not know who has filled these in.

Philip Massey, *The Expenditure of 1,360 British Middle-Class Households in 1938-39*, 105 J. ROYAL STAT. SOC'Y 159, 162 (1942).

180. *Census Confidentiality*, *supra* note 27, at 8.

181. *Decennial Census*, *supra* note 26, at 36.

182. *Census Confidentiality*, *supra* note 27, at 13.

> of business competitors who would find therein a competitive advantage.[183]

Rice added, however, that concern about disclosure of information should not become an "unreasoned fetish"[184] that prevented federal statistical agencies from sharing information with each other. Morton Kramer was typical among statisticians in the late 1960s in voicing more contemporary concerns about privacy due to increased technology:

> The collection of such data has created concerns on the part of individual citizens and members of various groups . . . who believe collection of such data invades the citizen's rights to privacy. These concerns are aggravated further by fears generated by the spectre of computers bringing together pieces of information from various official records for a given individual and of the possible use of such information to the detriment of the individual citizen.[185]

During the 1970s, reflecting the increased concern about privacy in all arenas, statistical journal articles, books, and panels concerning confidentiality proliferated. Survey respondents' right to have their data protected from disclosure was not questioned. The literature still held that statistical analyses benefit society, but acknowledged the costs, material and psychological, to respondents.[186] Ivan Fellegi, currently the chief statistician of Canada, suggested methods and media for data dissemination that would minimize disclosure risk.[187]

Although individual statisticians wrote about the need for protecting confidentiality of respondents in the professional journals, the statistical associations did not make formal statements supporting principles of privacy and confidentiality until after legal changes were introduced. They did, however, often serve in an advisory capacity to federal agencies on matters of confidentiality. The ASA instituted a Commission on Statistical Standards in 1949 to develop ethical guidelines for statisticians. *The American Statistician* published several papers in 1952 on professional ethics.[188] In these papers, exactly one mention is made of

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183. Stuart A. Rice, *Problems of Coordinating the United States Statistical System*, 49 J. AM. STAT. ASS'N 438, 443-44 (1954).

184. *Id.* at 444 (italics removed from original).

185. Morton Kramer, *Statistics of Mental Disorders in the United States: Current Status, Some Urgent Needs and Suggested Solutions*, 132 J. ROYAL STAT. SOC'Y: SERIES A (GENERAL) 353, 392 (1969).

186. *See* A. Ross Eckler, *Statisticians and Shoemakers ("Who is Worse Shod than the Shoemaker's Wife," From Heywood's Proverbs)*, 65 J. AM. STAT. ASS'N 9, 17 (1970) (discussing the psychological costs).

187. Ivan P. Fellegi, *On the Question of Statistical Confidentiality*, 67 J. AM. STAT. ASS'N 7, 15-17 (1972). Another interesting article in this respect is Lester R. Frankel, *Statistics and People—The Statistician's Responsibilities*, 71 J. AM. STAT. ASS'N 9, 12-13 (1976) (devoting large part of ASA presidential address to confidentiality issues).

188. *See* Andrew T. Court, *Standards of Statistical Conduct in Business and Government*, AM. STATISTICIAN, Feb. 1952, at 6, 6; Morris H. Hansen, *Statistical Standards and the Census*, AM.

confidentiality: "If source material is furnished him [the statistician] on condition that the respondent should not be specifically identified, he preserves this anonymity."[189] In 1951, the ASA created an Advisory Committee on Statistical Policy which dealt with issues of confidentiality of individual returns.[190] Jean Gibbons detailed the subsequent history of ethical codes by the ASA, noting that due to lack of general support, the issue of a code of ethics "apparently lost its momentum."[191]

The issue of a professional code of ethics was revived in the 1980s, and this time confidentiality concerns played a prominent role.[192] This led to the establishment of the Ad Hoc Committee of Professional Ethics (now a permanent committee) and the 1989 ASA Ethical Guidelines for Statistical Practice. These guidelines were revised in the 1990s in part to reflect increasing concerns about confidentiality.[193]

In response to the passage of the Freedom of Information Act in 1966 and the Privacy Act of 1974, the ASA established the Ad Hoc Committee on Privacy and Confidentiality in 1975.[194] The committee distinguished between administrative and statistical data: the former are collected "for the purpose of taking action on or controlling actions of an individual person or other entity,"[195] while the latter are used only for calculating statistics such as averages or correlations.[196] "The very essence of statistical analysis is that the identity of individual units of which it is composed is immaterial. Individuals should not be identifiable in the output of a statistical system."[197] The Committee generally approved the provisions in the Privacy Act[198] and emphasized the importance of the legal protections assuring confidentiality: "Agencies should not make unqualified promises of confidentiality unless supported by a legal shield that confers upon the records in their custody unbreachable protection against disclosure."[199] In an interesting parallel with modern-

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STATISTICIAN, Feb. 1952, at 7, 7-10 (1952); Theodore H. Brown, *The Statistician and His Conscience*, AM. STATISTICIAN, Feb. 1952, at 14, 14-18 (1952). These articles were largely concerned with the statistician's responsibility to produce honest and accurate statistics, to detail limitations of studies, and to resist pressure from outside forces to obtain desired results.

189. William W. K. Freeman, *Discussion of "The Statistician and His Conscience"*, AM. STATISTICIAN, Feb. 1952, at 18, 20.

190. *See* Rice, *supra* note 183, at 446.

191. Jean D. Gibbons, *A Question of Ethics*, AM. STATISTICIAN, Apr. 1973, at 72, 75.

192. *See* Jonas H. Ellenberg, *Ethical Guidelines for Statistical Practice: A Historical Perspective*, 37 AM. STATISTICIAN 1, 2-3 (1983).

193. AM. STATISTICAL ASS'N, ETHICAL GUIDELINES FOR STATISTICAL PRACTICE (1999), http://www.amstat.org/profession/index.cfm (follow "Ethical Guidelines for Statistical Practice" hyperlink) [hereinafter ASA GUIDELINES].

194. *Report of the Ad Hoc Committee*, *supra* note 155, at 59. Statisticians also took part in the debate leading up to the Privacy Act. *Id.*

195. *Id.* at 60.

196. *Id.*

197. *Id.* at 60-61.

198. *Id.* at 73. The committee noted, though, that "We find little evidence that federal statistical agencies have been other than scrupulous about these matters." *Id.*

199. *Id.*

day concerns about possible uses of government data for law enforcement,[200] the committee appeared to be concerned, not that the federal statistical agencies might voluntarily disclose information, but that they might be compelled to release information by the courts or through an executive order.[201]

Similar developments occurred in Britain, with one major difference. In 1971, the Royal Statistical Society was asked by the Privy Council to nominate representatives to a committee discussing confidentiality of the census.[202] The Society addressed issues of confidentiality in its 1977 report to the Data Protection Committee.[203] In contrast to the results of ASA deliberations in the United States, the Society preferred to have the Authority provide a code of conduct for protection of data rather than legal sanctions:

> It is not thought that the Authority needs powers to enforce the use of such a code of conduct. . . . [T]he publicity it would give to an information system which departed seriously from the code of conduct would, in our view, be sanction enough to bring serious abuse to an end, and in any case, the complainant could ultimately have recourse to the courts.[204]

One of the provisions of the Royal Statistical Society report with salient implications for the post-9/11 world is that national security systems should have no exemption from requirements of confidentiality.[205]

Concern about privacy and confidentiality in the statistical literature has largely followed the same waves as found in the legal arena. Corresponding to the current popular concerns about online data gathering and data sharing, the statistical literature has seen a resurgence of articles and books about methods for protecting the data of persons participating in medical studies and surveys. In the third wave of the statistical literature on confidentiality, much emphasis has been placed on possible statistical solutions for protecting data from undesired disclosure[206] as well as greater risks to data from new computer technology, increased availability of databases,[207] and increasingly sophisticated methods for matching

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200. *See* Sylvester & Lohr, *supra* note 4.

201. *See Report of the Ad Hoc Committee*; *supra* note 155, at 69-70 (discussing St. Regis Paper Co. v. U.S., 368 U.S. 208, 217-20 (1961) (holding that confidentiality considerations do not protect the subpoena of economic census reports in the hands of a private company)).

202. *See generally* P.G. Moore, *Security of the Census of Population*, 136 J. ROYAL STAT. SOC'Y: SERIES A (GENERAL) 583 (1973) (discussing the results of the committee).

203. *Evidence from the Royal Statistical Society to the Data Protection Committee*, 140 J. ROYAL STAT. SOC'Y: SERIES A (GENERAL) 210 (1977).

204. *Id.* at 215.

205. *Id.* at 216.

206. *See generally* CHANCE, Summer 2004 (entire volume devoted to confidentiality issues).

207. For just one example, PublicRecordFinder.com provides links to thousands of databases worldwide, and allows searches by name, address, telephone, social security number, or other pieces of information. One can access records that include information about current and previous ad-

data records.[208] The ASA continues to take a leading role in promoting the discussion of privacy issues relating to statistics through the Committee on Privacy and Confidentiality and places many resources on its website.[209] Recent writings by statisticians on confidentiality, and various methods that have been proposed for protecting confidentiality of respondents' information, are discussed elsewhere.[210]

C. Confidentiality and Statistical Codes of Ethics

The statistical societies, and the statistical literature in general, carefully distinguish between privacy and confidentiality. Privacy is generally viewed in the more traditional legal sense of "the right to be let alone."[211] Statisticians typically do not view this as the issue most relevant to statistical practice. Some have concluded that "the individual who wants [to be left alone seeks to invoke] his absolute privacy [and] is [therefore] unwilling to participate in voluntary statistical inquiries or to provide data about his personal situation . . . ."[212]

The more common variation on privacy articulated by statisticians is "confidentiality." Confidentiality is closely associated with information privacy as used by the law and, specifically, with the concern for secondary uses. As one author put it, "[t]he concern about privacy . . . centers around the question of making such information available to others, possibly unknown to the respondent, without his or her consent, thereby increasing the knowledge of the 'others' about him."[213] Another author was even clearer:

> Confidentiality is specifically the quality or state of being confidential (private or secret), i.e., not freely disclosed. . . . Hence, the confidentiality of information relates to the trust of the provider of the information that the information will not be inappropriately disseminated or used in identifiable form to hurt him.[214]

The more important distinction between most legal uses of privacy and the statistics profession's use of the term confidentiality is the source

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dresses, birthday, roommates, property, marriage, divorce, legal judgments, bankruptcies, criminal history, and more. PublicRecordFinder.com Home Page, http://www.publicrecordfinder.com (last visited Sept. 18, 2005).

208. *See generally supra* note 206.

209. American Statistical Association Privacy, Confidentiality, and Data Security web site, http://www.amstat.org/comm/cmtepc/index.cfm (last visited Sept. 18, 2005).

210. *See* Sylvester & Lohr, *supra* note 4.

211. Olmstead v. United States, 277 U.S. 438, 478 (1928).

212. Joseph W. Duncan, *Confidentiality and the Future of the U.S. Statistical System*, 30 AM. STATISTICIAN 54, 55 (1976).

213. Fellegi, *supra* note 187, at 7-8.

214. Duncan, *supra* note 212, at 55-56. *See also* CONFIDENTIALITY, DISCLOSURE, AND DATA ACCESS: THEORY AND PRACTICAL APPLICATION FOR STATISTICAL AGENCIES (P. Doyle et al. eds., 2001).

of the default rule in statistics society's various policies.[215] The codes of ethics of the major statistical societies emphasize protecting the confidentiality of data given by persons and businesses participating in statistical studies but consistently note the limitations imposed on attempts at "complete" confidentiality. Some excerpts from various codes of standards and ethics follow.

> • "Protect the privacy and confidentiality of research subjects and data concerning them, whether obtained directly from the subjects, from other persons, or from administrative records. Anticipate secondary and indirect uses of the data when obtaining approvals from research subjects; obtain approvals appropriate for peer review and for independent replication of analyses."[216]
>
> • "Be aware of legal limitations on privacy and confidentiality assurances. Do not, for example, imply protection of privacy and confidentiality from legal processes of discovery unless explicitly authorized to do so."[217]
>
> • "Fellows shall in their professional practice have regard to basic human rights and shall avoid any actions that adversely affect such rights. Enquiries involving human subjects should, as far as practicable, be based on the freely given informed consent of subjects. The identities of subjects should be kept confidential unless consent for disclosure is explicitly obtained."[218]
>
> • "Statistical inquiries involving the active participation of human subjects should be based as far as practicable on their freely given informed consent."[219]
>
> • "Statistical data are unconcerned with individual identities. They are collected to answer questions such as 'how many?' or 'what proportion?', not 'who?'. The identities and records of co-operating (or non-cooperating) subjects should therefore be kept confidential, whether or not confidentiality has been explicitly pledged."[220]

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215. "The OECD defined a set of privacy principles more than 20 years ago that struck a balance between the need for the free flow of information and the fundamental human right to privacy." PAUL ASHLEY ET AL., FROM PRIVACY PROMISES TO PRIVACY MANAGEMENT 1, http://www.semper.org/sirene/publ/AsSP_02.PrivacyAsNewParadigm-preproceedings.pdf (last visited Sept. 18, 2005).

216. ASA GUIDELINES, *supra* note 193.

217. *Id.*

218. THE ROYAL STATISTICAL SOCIETY CODE OF CONDUCT 1 (1993), http://www.rss.org.uk (follow "Professional Membership" hyperlink; then follow "Code of Conduct" hyperlink) (last visited Sept. 18, 2005).

219. INTERNATIONAL STATISTICAL INSTITUTE DECLARATION ON PROFESSIONAL ETHICS, cl. 4.2 (1985), http:/isi.cbs.nl/ethics.htm [hereinafter ISI DECLARATION].

220. *Id.* cl. 4.5.

- "Statisticians should take appropriate measures to prevent their data from being published or otherwise released in a form that would allow any subject's identity to be disclosed or inferred."[221]

- "Avoid disclosure or authorization to disclose, for personal gain or benefit to a third party, confidential information acquired in the course of professional practice without the prior written permission of the employer or client, or as directed by a court of law."[222]

As evidenced by the codes of ethics of the statistical societies, it is widely held that an ethical statistician protects the confidentiality of the data provided by subjects in medical studies and by respondents to surveys. At the same time, these guidelines also emphasize the importance of making data available so that results can be confirmed by independent investigators and society can benefit from the information.

- "Promote sharing of (nonproprietary) data and methods. As appropriate, make suitably documented data available for replicate analyses, metadata studies, and other suitable research by qualified investigators."[223]

- "Governmental policy decisions regarding public health, criminal justice, social equity, education, the environment, the siting of critical facilities, and other matters depend in part on sound statistics."[224]

- "Statistical inquiry is predicated on the belief that greater access to well-grounded information is beneficial to society. The fact that statistical information can be misconstrued or misused, or that its impact can be different on different groups, is not in itself a convincing argument against its collection and dissemination."[225]

- "There can be no absolute safeguards against breaches of confidentiality, that is the disclosure of identified or identifiable data in contravention of an implicit or explicit obligation to the source. Many methods exist for lessening the likelihood of such breaches, the most common and potentially secure of which is anonymity."[226]

These stated principles reveal a different approach to privacy than found in law. A review of legislative and judicial approaches to privacy

221. *Id.* cl. 4.6.

222. STATISTICAL SOCIETY OF CANADA CODE OF ETHICAL STATISTICAL PRACTICE (Draft, Sept. 29, 2003), http://www.ssc.ca/main/about/code_e.html. The Statistical Society of Canada has perhaps the weakest confidentiality protections of those considered here. Their guidelines, and those of the Royal Statistical Society, permit court-ordered disclosure. The ethical guidelines of the ASA and International Statistical Institute do not specify exceptions to confidentiality principles when directed by a court of law.

223. ASA GUIDELINES, *supra* note 193, Part IIF.

224. *Id. See also infra*, Part IB.

225. ISI DECLARATION, *supra* note 219, cl. 1.1.

226. *Id.* cl. 4.6.

reveals law's tendency to view privacy as an intrinsic individual right—as a floor for determining permissibility of exchange and intervention.[227] The law makes privacy the starting point for determining permissibility of statistical practices, thereby elevating it to a position of preference in the hierarchy of determining what releases are or are not permissible. In early days of statistics, often a similar "absolute" conception of confidentiality was taken, and "confidentiality was always thought about in terms of the protection of individual and establishment data and not the release of data . . . ."[228] In modern statistical usage, however, confidentiality is often thought of in terms of how to implement confidentiality protections in practice while maintaining usability of the data.[229]

The various ethical codes of statistical societies differ on the degree of protection that should be afforded to respondents, however. The ASA and the Royal Statistical Society both still emphasize that individual data collected under a pledge of confidentiality should not be disclosed, but their codes of ethics do not address the problem that confidentiality may be violated in spite of the utmost efforts of statisticians. The International Statistical Institute guidelines perhaps best reflect recent thinking, through the statement cited above, that "no absolute safeguards" are possible.[230] With the advent of new computational and statistical methodology that may be used to combine data sources and possibly identify individuals, it may be time to update the ethical guidelines to address the new information landscape.

IV. THE LESSONS OF CONFIDENTIALITY

A. Legal Lessons

By the end of the 1970s, legal approaches to privacy had generally settled into a series of broad, if at times inconsistent, principles and regulations intended to strike the balance between privacy and access, trust and security. As discussed above, the law moved from a pro-disclosure regime to a newer framework intended to promote the trustworthiness of government institutions while protecting individuals from bad actors, poor management, and unintended consequences.

Despite the widespread view that privacy is a right fundamental to American democracy, it has not, as discussed above, enjoyed long-standing legal protection.[231] Privacy's legal novelty is further compli-

227. See Sylvester & Lohr, *supra* note 4.

228. Stephen E. Fienberg & Aleksandra B. Slavkovic, *Making the Release of Confidential Data from Multi-Way Tables Count*, CHANCE, Summer 2004, at 5, 5.

229. *See id.*

230. ISI DECLARATION, *supra* note 219, cl 4.6.

231. *Cf.* JUDITH WAGER DECEW, PRIVACY: LAW, ETHICS, AND THE RISE OF TECHNOLOGY 9 (1997) ("In the United States, formal legal protection for privacy has developed only during the last hundred years.").

cated by the approach law has taken to the subject. As demonstrated by the above, the law has taken a piecemeal approach to privacy protection, shielding individuals and their information in certain circumstances, but not in others, and prohibiting some practices while promoting others. Given the multitude of privacy-invocations in American law, it is should not be surprising that the term itself has been employed in numerous ways.

In legal circles, privacy is often used as a general term encompassing different and often contradictory values. Some of the more famous iterations protect an individual's: (i) right of free action, equality, or autonomy;[232] (ii) physical space (both in ownership and access);[233] (iii) freedom of thought and secrecy;[234] (iv) anonymity and seclusion;[235] and (v) "control over information."[236] It is this last sub-category that encom-

232. *See* Griswold v. Connecticut, 381 U.S. 479 (1965); *see also* Richard A. Epstein, *Deconstructing Privacy: And Putting It Back Together Again, in* THE RIGHT TO PRIVACY 1, 9 (Ellen Frankel et al., eds., 2000) [hereinafter PRIVACY] (noting "the simple observation that the prohibition against eavesdropping and similar forms of behavior satisfies the condition of formal equality" of individuals); Louis Henkin, *Privacy and Autonomy,* 74 COLUM. L. REV. 1410 (1974); Ingrid Schüpbach Martin, *The Right to Stay in the Closet: Information Disclosures by Government Officials*, 32 SETON HALL L. REV. 407 (2002) (analyzing informational privacy in the context of individual dignity and autonomy); Jed Rubenfeld, *The Right to Privacy*, 102 HARV. L. REV. 737 (1989) (grounding privacy in individual autonomy); ELLEN ALDERMAN & CAROLINE KENNEDY, THE RIGHT TO PRIVACY (1995) (providing a current review of United States privacy approaches and noting their relationship to concepts of liberty and autonomy).

233. *See* Illinois v. Rodriguez, 497 U.S. 177, 181 (1990) (privacy offers protection of home against "warrantless entry."); Minnesota v. Olson, 495 U.S. 91, 99-100 (1990) (overnight guest has privacy interest in owner's home); Gouled v. United States, 255 U.S. 298, 309 (1921) (privacy extends to papers in private desk drawers). *See also* Stephen Daren Blevit, *A Tale of Two Amendments: Property Rights and Takings in the Context of Environmental Surveillance*, 68 S. CAL. L. REV. 885 (1995); David J. Phillips, *Beyond Privacy: Confronting Locational Surveillance in Wireless Communication*, 8 COMM. L. POL'Y 1 (2003) (privacy rights are intimately entwined with rights to physical space); Note, *Privacy, Technology, and the California "Anti-Paparazzi" Statute*, 112 HARV. L. REV. 1367 (1999).

234. *See, e.g.*, KIM LANE SCHEPPELE, LEGAL SECRETS 181-190 (1988); SISSELA BOK, SECRETS: ON THE ETHICS OF CONCEALMENT AND REVELATION (1983); Charles Fried, *Perfect Freedom, Perfect Justice*, 78 B.U. L REV. 717 (1998) (discussing the problematic founding of privacy in issues of freedom of thought and conscience); Marc Rotenberg, *Privacy and Secrecy After September 11*, 86 MINN. L. REV. 1115 (2002) (discussing the relationship between privacy and secrecy); Benjamin S. DuVal, Jr., *The Occasions of Secrecy,* 47 U. PITT. L. REV. 579 (1986). *See also* Sandra L. Macklin, *Students' Rights in Indiana: Wrongful Distribution of Student Records and Potential Remedies*, 74 IND. L. J. 1321, 1322 (1999). Macklin notes the many ways that individuals approach privacy, including her view that

> Different people interpret the term 'privacy' differently. For some, it simply refers to 'the right to be left alone,' while for others it may have a more complex association, such as 'the right' to an abortion. Still for others, it may mean the right to be secure in the solitude of one's own home, free from governmental intrusions.

Id.

235. *See* H. Tristram Engelhardt Jr., *Privacy and Limited Democracy: The Moral Centrality of Persons*, *in* PRIVACY *supra* note 232, at 120-26; Warren & Brandeis., *supra* note 66; Paul Rosenzweig, *Civil Liberty and the Response to Terrorism*, 42 DUQ. L. REV. 663, 710 (2004) ("[A]dvances in information technology will unreasonably erode the privacy and anonymity to which American citizens are entitled"). *See also* Phillip Kurland, *The Private I*, U. CHI. MAG., Autumn 1976, at 7, 8 (characterizing three facets of privacy, broadly characterized as anonymity, secrecy, and autonomy) (quoted in Whalen v. Roe, 429 U.S. 589, 599 n.24 (1977)).

236. Numerous authors have written on this subject. *See, e.g.*, Lloyd Weinreb, *The Right to Privacy*, *in* PRIVACY, *supra* note 232, at 25, 34 ("When people speak of a right to privacy, they

passes most of the principles and laws that affect statistical practice and forms the core of our attention here.

As we have noted above, the second wave of privacy regulation attempted to restore the trust individuals had in government prior to various high-profile abuses. In so doing, the laws and judicial decisions that sought to restore balance to the privacy/access dichotomy and promote trust in government institutions did so by: (i) grounding privacy in the rights of individuals to control the original collection and the subsequent use of most data; (ii) promoting open government wherever possible by empowering individuals to access records and, in some cases, take action to correct errors or otherwise hold agencies accountable; (iii) penalizing agencies and individuals who broke the trust set up by legal frameworks by, among other actions, prohibiting certain secondary uses; and (iv) although not discussed above, creating a clear legal distinction between individually-identifiable data and purely statistical data—imposing greater legal obligations and administrative burdens on the collection, use, and dissemination of the former while providing for a far more permissive regime for the latter.

1. Privacy Founded in Individual Liberty and Autonomy

The law's emphasis on privacy as a legal, perhaps constitutionally-based,[237] right has important implications for its regulation. In particular, privacy's categorization as an individual right often works to tip the scales in its favor when faced with competing requests for disclosure. A review of legislative and judicial frameworks reveals, as noted above, a number of different uses of the term "privacy" based on the nature of the intrusion, the status of the affected individual and the individual or entity seeking to so intrude, or the kind of information or access requested. Yet, despite these numerous contexts and differences, legal approaches to privacy up through the 1970s indicate the law's preference to approach privacy as an individual right to be protected against intrusions—whether by other individuals, private industry, or government.

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mostly have in mind informational privacy, a person's control over others' acquisition and distribution of information about himself."); Parent, *supra* note 83; Daniel J. Solove, *Conceptualizing Privacy*, 90 CAL. L. REV. 1087, 1151-52 (2002) (arguing that individualized conceptions of privacy direct approaches to resolving privacy tensions in the Information Age).

237. The most famous, and controversial, attempt to ground privacy in the Constitution is Roe v. Wade, 410 U.S. 113 (1973). *See also* Amy Peikoff, *No Corn On This Cobb: Why Reductionists Should Be All Ears For Pavesich*, 42 BRANDEIS L. J. 751, 753 (2004) ("Most recently, the Supreme Court, in *Lawrence v. Texas*, [539 U.S. 558 (2003)] 'embrace[d] the [Constitutional] right-to-privacy line of cases that began with its birth control decision in 1965 and culminated 30 years ago in the abortion decision, *Roe v. Wade*.'"); Anne C. Hydorn, *Does the Constitutional Right to Privacy Protect Forced Disclosure of Sexual Orientation?*, 30 HASTINGS CONST. L.Q. 237, 238 (2003) (noting that the right to privacy is never explicitly mentioned in the United States Constitution, but the Supreme Court has rooted it in the First, Third, Fourth, Fifth, Ninth and Fourteenth Amendments); Ken Gormley, *One Hundred Years of Privacy*, 1992 WIS. L. REV. 1335, 1392 (1992).

Conceiving of privacy as an individual right results in legal decisions and frameworks that view privacy as the default rule for determinations of the permissibility of data access issues. As a result of this default rule, laws and legal decision-making place burdens on data-collectors rather than users and subjects. Indeed, as discussed earlier, most federal laws place burdens on agencies and other data collectors to demonstrate that the need for the data *outweighs* the individual's right to privacy. The FOIA, although ostensibly neutral or, perhaps even disclosure friendly, has nevertheless been increasingly interpreted as favoring privacy.[238] As several commentators have noted, the FOIA framework, protecting as it does the privacy of individuals against unwanted access, has two consequences: (i) courts have, over time, interpreted the individual interest in privacy in such a way that it must be *substantially outweighed* by the right of public access;[239] and (ii) the strengthening of individual rights-based privacy has allowed some agencies to use privacy as a "shield" to prevent otherwise appropriate disclosures.[240]

As many have noted, "the instrumental function that privacy advocates believe a right to informational privacy serves is to support the freedom of self-definition. . . . This freedom in turn enhances individual autonomy . . . ."[241] Perhaps the clearest indications we have of law's preference to place privacy in the context of an individual autonomy right is in the explicit adoption of FIP frameworks in the Privacy Act and FRCA.[242] This framework, as noted earlier, seeks to provide to individuals the maximum amount of control over disclosure of their information. Protecting privacy by focusing on issues of control, disclosure, and access is consistent with a conception of privacy as central to protecting "liberty"[243] and "autonomy"[244] interests.

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238. Hoefges et al., *supra* note 31, at 26.

239. *Id.* at 15. ("[S]ince FOIA was passed, the Supreme Court [has] created a framework for balancing public access and personal privacy interests in disputes over the release of government-held information . . . . These cases remain controversial, and commentators have accused the Court of judicially legislating a balancing scheme that strongly favors individual privacy over public access despite evidence of congressional legislative intent to the contrary.").

240. BeVier, *supra* note 130, at 485. ("[T]he Supreme Court has interpreted [the FOIA] so as to enhance agencies' ability to invoke them as shields to repel requests that records containing personally identifiable information about individuals be released."). *See also* Hoefges et al., *supra* note 31, at 24. ("[Supreme Court] opinions have made a profound impact on constricting the boundaries of disclosure under FOIA in privacy cases, and have gone a long way toward skewing the . . . balancing test in a manner that favored withholding over disclosure.").

241. BeVier, *supra* note 130, at 468.

242. *See id.* at 468–69, 478–79.

243. *See* citations in *supra* note 232. *See also* Peikoff, *supra* note 237, at 787; Tamara F. Kushnir, *It's My Body, It's My Choice: The Partial-Birth Abortion Ban Act Of 2003*, 35 LOY. U. CHI. L.J. 1117, 1130 (2004) ("[T]he right of a woman to choose to have an abortion is a fundamental liberty interest protected by the right to privacy."); Eileen Fry-Bowers, *Controversy And Consequence In California: Choosing Between Children And The Constitution*, 25 WHITTIER L. REV. 889, 900–01 (2004) ("[T]he New Jersey Supreme Court held that an offender had a protectible liberty interest in his privacy and reputation . . . .")

244. *See* BeVier, *supra* note 130, at 468-69. *See also* Nonnie Shivers, *Firing "Immoral" Public Employees: If Article 8 of the European Convention on Human Rights Protects Employee Privacy*

Interestingly, in the desire to privilege individual rights above those of the public goods derived from open access, the privacy regimes erected by the adoption of FIP in the Privacy Act are, ironically, quite burdensome on individuals.[245] For the notice, access, and consent provisions to fulfill their promise of promoting individual liberty and autonomy, the individuals so served must be aware of their rights, understand the nature of the threats posed by releasing their data and, ultimately, be willing to enforce the rights given.[246] To make matters worse, many of the notice and consent provisions inherent in the FIP and the Privacy Act, as well as the individual rights model in its entirety, require a specific knowledge of how to read and periodically search the Federal Register because that is where such notices are published.[247] Finally, even where individuals undertake all these responsibilities, their remedies are greatly limited.[248] Government, on the other hand, can quite afford the few suits that may be brought. In the end, government holds all the cards—often rendering the individual rights model ineffective as well as inefficient.

Without passing judgment on this view of privacy, it is worth noting here for three reasons: (i) it may result in poor exchanges between public goods and individual autonomy;[249] (ii) it places significant burdens on

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Rights, Then Why Can't We?, 21 ARIZ. J. INT'L & COMP. L. 621, 641 (2004) ("Privacy has also been said to include 'an autonomy or control over the intimacies of personal identity.'").

245. *See generally,* Solove, *Access*, *supra* note 78, at 1172 (noting that it is "[f]requently . . . up to the individual to take significant steps to protect privacy [and] . . . [i]n many instances, individuals are never even given notice or an opportunity to assert a privacy interest when records containing their personal information are disclosed.").

246. Most federal privacy statutes rely on individual enforcement for violations. However, numerous privacy advocacy groups have been successful in upholding individuals' privacy rights. *See* Hetcher, *supra* note 5.

247. For example, the recent passage of the Confidential Information Protection and Statistical Efficiency Act ("CIPSEA"), as it relates to the FOIA, does require that any data exchanges between federal agencies must be publicly disclosed to provide sufficient notice to individuals to object to such disclosures—however, the notices are printed in the Federal Register—hardly a place where most people are likely to notice. *See* 44 U.S.C. § 3504(c)(6) (2004). FOIA requires a wide variety of public disclosures of agency data and reports, including publication of proposed rules and decisions, 5 U.S.C. § 552(a)(1)(A)-(E) & a(2) (2004), and also all records received and held including a reasonable descriptions of their content, *id.* § 552(a)(3)(A) (2004). It is this last disclosure requirement that generates much of the FOIA litigation in federal courts.

248. In many cases, individuals are not able to recover damages (FERPA) or otherwise engage in lawsuits against individual agencies for improper disclosures (IRS). *But see* 42 U.S.C. § 1983 (Supp. II 1996); 26 U.S.C. § 7431 (2000) *supra* Part IIC (stating civil damages for unauthorized inspection or disclosure of returns and return information must be prosecuted by injured individuals); *see also* Sandra L. Macklin, *Students' Rights in Indiana*, 74 IND. L.J. 1321, 1326 (1999). Macklin notes:

> There was, however, some question about whether FERPA's purpose is to address individual records violations or only to prevent systematic violations. The law on its face does not answer this question, but every court which has addressed the issue has said that FERPA protects against systematic violations only. While no court has ruled that FERPA allows a private cause of action, many courts have said that the Buckley Amendment creates a privacy interest under § 1983.

Id. (ciations omitted).

249. As other have noted, the move toward individual informational privacy deeply affected statistical practice, although as Robbin seems to imply, not for the worse:

individuals to enforce their rights;[250] (iii) it marginalizes statistical ethics and practices that favor a more explicit cost-benefit analysis that balances individual privacy against public goods without privileging either; and (iv) it does not protect against later government actions that seek to disrupt traditional barriers against secondary uses because data once collected under a pledge of confidentiality may later lose that status. We take up most of these issues in another paper that looks at legal changes following 9/11.[251]

2. Commitment to Open Government

Closely linked to the argument that privacy is associated with personal autonomy and liberty, a second characteristic of the second wave privacy frameworks is a commitment to open government. Evincing general mistrust or fear of unrestricted government—and appropriately so given the historical context in which these laws were enacted—this commitment to open government requires federal agencies to disclose records they may have,[252] honor public record requests by the public,[253] and obtain individual consent *prior* to data collection or use for any new data requests.[254]

In contrast to the general free-rein provided to private sector efforts, this approach conveys "a principled commitment to limited government powers . . . ."[255] As referenced throughout this paper, data access, open government, and restrictions on data collection and analysis by government agencies are often seen as checks against unrestricted and potential tyrannical governance.[256] FIP, and the 1973 Report by the Department of Health, discussed previously, are examples of this approach and, as others have concluded, "[t]he lasting legacy of the report and its Code of Fair Information Practices is the need to protect privacy, at least in part,

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> The social research community had historically enjoyed a special relationship with government, one that permitted researchers extraordinary access to administrative and statistical records based on their potential contribution for solving social problems. . . . The privileged access of the social research community to government information was, however, irrevocably altered by the mid-1970s, as a result of a series of court cases and state government intrusions into private lives that clarified the failure of existing laws to protect informational privacy.

Robbin, *supra* note 93, at 502.

250. *See generally* BeVier, *supra* note 130, at 480 (describing the excessive and almost unrealistic burden of enforcement placed on individuals).

251. *See* Sylvester & Lohr, *supra* note 4.

252. *See, e.g.*, 5 U.S.C. § 552a(b) (2004) (Privacy Act provides that "[n]o agency shall disclose any record which is contained in a system of records by any means of communication to any person, or to another agency, except pursuant to a written request by, or with the prior written consent of, the individual to whom the record pertains . . . .").

253. *See, e.g.*, FOIA, 5 U.S.C. § 552a(d)(2004).

254. *See, e.g.*, 13 U.S.C. § 9(a)(2004).

255. Helen Nissenbaum, *Privacy as Contextual Integrity*, 79 WASH. L. REV. 119, 127 (2004).

256. *See also* Katz, *supra* note 11, at 57.

as one powerful mechanism for leveling the playing field in a game where participants have unequal starting positions."[257]

Courts have also explicitly acknowledged that access to records held in government databases—even where such records implicate some privacy interest—is essential to upholding open government. In 1978, for example, the Supreme Court, in *Nixon v. Warner Communications, Inc.*,[258] noted that: "It is clear that the courts of this country recognize a general right to inspect and copy public records and documents . . . . American decisions generally do not condition enforcement of this right on a proprietary interest in the document or upon a need for it as evidence in a lawsuit."[259] The reason, according to the Court, for such open access is predicated on the principle that citizens must "keep a watchful eye on the workings of public agencies . . . ."[260]

As already noted, however, the commitment to open government is in some tension with a principled commitment to individual privacy rights grounded in autonomy: "The difficulty is that as the ambit of privacy law expands, the amount of information available to the public diminishes, thus blocking access to potentially valuable information that the electorate may need to make informed decisions about self-rule."[261]

3. Focus on Post-Disclosure Penalty Schemes

A further feature of the legal regime arising out of the first and second privacy waves was the application of legal penalties against data collectors for data disclosure and misuse.[262] In so doing, however, this approach penalizes the gatherer and gatekeeper of data—punishing those who do not adequately protect data while, generally, avoiding penalties against those who misuse data.[263] For example, FCRA imposes penalties against CRAs that allow data to be released to third parties for improper uses.[264] It does not specifically penalize those who make improper re-

257. Nissenbaum, *supra* note 255, at 128.

258. 435 U.S. 589 (1978).

259. *Nixon*, 435 U.S. at 597.

260. *Id.* at 598 (citation omitted).

261. Martin E. Halstuck, *Shielding Private Lives from Prying Eyes*, 11 COMM. L. CONSPECTUS 71, 73 (2000).

262. For example, census employees who disclose restricted data are subject to criminal liabilty. *See* 13 U.S.C. § 214 (2004) (imposing $5000 fine, five years imprisonment, or both). *See also* 13 U.S.C. § 9 (a)(2004) (limiting data disclosure by census employees).

263. For example, recent passage of HIPAA imposes liability against health care institutions that do not adequately secure data while remaining silent on the penalties to be imposed against individuals that link data improperly protected or disclosed. *See* Health Insurance Portability and Accountability Act of 1996 (HIPAA), Pub. L. No. 104-191, § 101, 110 Stat. 1936 (1996) (codified as amended at 29 U.S.C. §§1181-87) (1996); 45 C.F.R. § 164.502(b)(1) (2005) (HIPAA's privacy rule require covered entities to "make reasonable efforts to limit [use or disclosure of] protected health information to the minimum necessary to accomplish the intended purpose of the use, disclosure, or request."). *See also* Peter D. Jacobson, *Medical Records And HIPAA: Is It Too Late To Protect Privacy?*, 86 MINN. L. REV. 1497, 1506 (2002).

264. *See* FCRA, *supra* note 104, § 1681(b).

quests or who otherwise engage in secondary uses of data—although these individuals and entities may be liable under other laws.[265]

In keeping with this general preference for focusing civil and criminal penalties against those who either refuse or fail to protect the confidentiality of statistical data, federal agencies are often liable for security failures and other data releases that do not comport with federal regulations. The focus on disclosure-related penalties does, of course, make a good deal of sense by placing burdens on collectors to secure data and control their releases. That said, these frameworks tend to avoid trickier questions about the *uses* of data—failing to differentiate between different data uses and merely declaring that *all* disclosures are improper without consent or regulatory approval.[266] For obvious reasons, this focus may result in either substantial inefficiencies by foreclosing beneficial secondary uses that do not threaten privacy or requiring substantial security-investments that far outweigh the intrusive nature of the potential disclosure, or, conversely, allowing for disclosures that may comport with earlier permissions or regulatory provisions that are injurious to individual privacy.

4. Differentiated Rules for Types of Statistical Data

Related to the idea that individuals have a right to keep their secrets, another approach applied to legal privacy frameworks is differentiation based on the nature of the information disclosed.[267] This approach has two different branches: (i) a differentiated privacy approach for sensitive versus innocuous data;[268] and (ii) a differentiated approach for individually identifiable data versus anonymous data.[269]

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265. The Electronic Communications Privacy Act, for example, imposes liability on individuals that access federal computers and cause harm. Electronics Communications Privacy Act, 18 U.S.C. §§ 2510–3127 (1994); *See generally* Julie J. McMurray, *Privacy In The Information Age: The Need For Clarity In The ECPA*, 78 WASH. U. L.Q. 597 (2000); Computer Fraud and Abuse Act of 1986 (CFAA), Pub. L. No. 99-474, § 2, 100 Stat. 1213 (1986). The 1986 Act was the first to include the specific anti-hacking provision under 18 U.S.C. § 1030(a)(5) (2002).

266. 13 U.S.C. § 9 regulates privacy of information collected in the census. Section 9 requires information gathered by the Bureau be kept confidential and be used exclusively for statistical purposes. The statute provides penalties for employees who willfully disclose such information illegally. Section 9(a) expressly restricts the Census Bureau from: (1) using the information for any purpose other than statistics, (2) making any publication allowing any individual to be identified or (3) permitting any unauthorized person to examine the census reports.

267. *See generally* FRED H. CATE, PRIVACY IN THE INFORMATION AGE 80–100 (1997) (detailing the differentiation of privacy protections based on the nature of the information in question).

268. *See generally* Gramm-Leach-Bliley Act, Pub. L. No. 106-102, 113 Stat. 1338 (1999) (codified as amended in scattered sections of 12 U.S.C. and 15 U.S.C.) (setting out privacy protections for financial data); Health Insurance Information Portability and Accountability Act of 1996, Pub. L. No. 104-191, 110 Stat. 1936 (1996) (codified as amended in scattered sections of 18 U.S.C.; 26 U.S.C.; 29 U.S.C.; 42 U.S.C.) (setting standards for the privacy and security of individually identifiable medical data).

269. Bradburn and Straf distinguish between information about individuals and statistical data, which they define as "a representation of information that does not identify any individual." Norman

Based on societal standards of sensitivity, certain kinds of information are granted higher levels of privacy protection than others. In the 1960s and 1970s, for example, congressional committees and public interest groups urged the federal government to enact privacy legislation to protect sensitive data such as financial or medical information.[270] In addition, following the experience of the Holocaust, the importance of keeping census data confidential quickly became more than just a matter of trust and voluntary compliance. In making judgments about what kinds of information to protect, federal law did not approach privacy from the perspective of the individual, but rather, seemed attuned to a general "sense" of societal approval for privacy for these data but not others. As others have noted, this approach captures the widely held view that "the degree of sensitivity of information [is a] key factor in determining whether a privacy violation has occurred or not."[271] Regardless of the underlying mechanism, the fact remains that legal responses have privileged these distinctions.

A second differentiation regime is the law's approach to individually identifiable data versus data that cannot be used to identify individuals, here termed anonymous data. Put simply, federal law and regulations place significant restrictions on data considered to be individually identifiable—including requirements of informed consent for collection and disclosure, as well as contractual obligations to ensure confidentiality on disclosees. Anonymized data, on the other hand, may be generally released between statistical agencies and, in many cases, to the general public, without fear of legal repudiations. This all makes perfect sense insofar as the risks to privacy are minimized where the individual cannot be identified.[272]

However, the concept of "anonymized data"—data incapable of being manipulated to identify individuals—is far more slippery than commonly believed. We are not urging regulators to abandon privacy requirements, nor are we suggesting that a regime of strict liability for disclosures that, despite reasonable efforts, result in individual identification, become the standards for statistical regulation. Indeed, enactment of either of these regimes would be a disaster either for the trust that individuals have in government data or, conversely, would eradicate nearly all the substantial value derived from data analysis and sharing. That

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M. Bradburn & Miron L. Straf, *Information and Statistical Data: A Distinction With a Difference*, 19 J. OFF. STAT. 321, 322 (2003).

270. *See, e.g.*, Gramm-Leach-Bliley Act, Disclosure of Nonpublic Personal Information, 15 U.S.C. §§ 6801–09 (2000); Health Insurance Portability and Accountability Act of 1996, Administrative Simplification, 42 U.S.C. §§ 1320d, -1 to -8 (Supp. V 1999); Cable Communications Policy Act of 1984, Protection of Subscriber Privacy, 47 U.S.C. § 551 (1994).

271. Nissenbaum, *supra* note 255, at 128.

272. For an interesting discussion of the relationship between disclosure risks and the potential utility of such disclosures, *see* George T. Duncan & S. Lynne Stokes, *Disclosure Risk vs. Data Utility: The R-U Confidentiality Map as Applied to Topcoding*, CHANCE, Summer 2004, at 16.

said, it is important that, as we come to understand the approach that law takes, and the choices it makes in enacting one form of privacy regulation or another, the nature of "reasonable efforts" and "anonymous data" or "data incapable of being individually identified" be taken into consideration in the standards enacted. As we argue elsewhere[273] the current privacy regime would be greatly served by explicitly recognizing the right of statistical agencies to focus more on potential uses of data and, importantly, to use statistical norms to define "individually identifiable" or "anonymized" data rather than focusing purely on common-sense, intuition, or market-based notions of reasonable efforts.

B. Confidentiality and Statistical Practice

As seen above, statistical societies' approaches emphasize balancing the public goods inherent in statistical study with maintaining confidentiality of the data. In so doing, they explicitly acknowledge that in some cases it may be impossible to keep data completely confidential and simultaneously useful for society.[274] Our history has also revealed that for much of the nineteenth and twentieth centuries, statistical societies and their codes of ethics appear to be somewhat behind the law and public opinion in calling for confidentiality and privacy. Whereas legal commentators and policymakers began to call for confidentiality and privacy by the mid-nineteenth century, and entrenched certain privacy rights into the law by the early twentieth, statistical societies did not seem to have been as concerned with privacy and confidentiality until the twentieth century and, indeed, did not seem to have made it of paramount concern to statistical praxis. Paradoxically, during the last half of the twentieth century they became a strong advocate for confidentiality of gathered data.

In this subsection, we discuss these two related emphases of statistical practice: (i) the balance between data confidentiality and utility; and (ii) the evolution of statistical societies from organizations committed to improving the accuracy of statistics to societies also dedicated to promulgating and implementing ethical standards for modern statistical practice.

1. Balancing Data Confidentiality and Utility

Many statisticians have called for balancing the disparate demands for data and confidentiality. Henry Wynn, 1976 president of the Royal Statistical Society, wrote:

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273. Sylvester & Lohr, *supra* note 4.
274. *See* ISI DECLARATION, *supra* note 219, cl. 4.6.

> The importance of getting the balance right between the protection of an individual's privacy and society's right to open government cannot be overemphasized. . . . The increase in the use of computers is seen as a threat to personal privacy, and it is natural that the Government should seek to legislate to protect that privacy.[275]

Wynn called for caution in going too far to protect privacy: "I certainly believe that individuals should be protected from misuse of information on them. However, there is a danger that the balance could be upset and shift away from protection of the individual and shift towards protection of data in some more global sense."[276] Tore Dalenius took the view that the Swedish Data Act, in its concerns about confidentiality, curtailed research too much.[277] Dalenius wrote that he did not share the view "that those responsible for producing statistics are also responsible for ensuring that it is *impossible* to infer information about individuals from published data, if 'impossible' is to be understood literally: the condition expressed by 'impossible' is too strong . . . ."[278]

It is vital that statisticians understand the law's preference to use "privacy" when it means "confidentiality" and, more importantly, its use of individual privacy as a right to be overcome upon a showing of strong public need. The balance between public goods and this right is one that statisticians should not, and perhaps cannot, take for granted in legal developments. As this paper has discussed, the evolution of information privacy law has been increasingly marked by this elevation of individual privacy. Although spurred on mainly by private industry data collection practices, it is entirely possible, and in the case of the European Union's approach a reality, that reactions to private industry data collection and usage practices can have great negative effect on public service statistical work.

Official statistics are, in essence, a matter of trust. Politicians, businesses, and citizens must be able to have confidence that statistics provided by the federal statistical agencies are accurate and independent of political pressure. The United Nations Fundamental Principles of Official Statistics state:

> Bearing in mind that the essential trust of the public in official statistical information depends to a large extent on respect for the fundamental values and principles which are the basis of any society which seeks to understand itself and to respect the rights of its members. . . . To retain trust in official statistics, the statistical agencies need to de-

275. Henry P. Wynn, *Freedom of Statistical Information*, 141 J. ROYAL STAT. SOC'Y: SERIES A (GENERAL) 1, 2 (1978).

276. *Id.* at 3.

277. *See* Tore Dalenius, *Data Protection Legislation in Sweden: A Statistician's Perspective*, 142 J. ROYAL STAT. SOC'Y: SERIES A (GENERAL) 285, 292 (1979).

278. *Id.* at 297.

> cide according to strictly professional considerations, including scientific principles and professional ethics, on the methods and procedures for the collection, processing, storage and presentation of statistical data.[279]

In order to produce accurate statistics, statistical agencies must also preserve the trust of the public that data they provide will not be used to harm them. We have seen how the notion of harm from statistics has expanded from the early ideas about harm accruing from lack of information, to possible harm from revealing business data, to the current embracing of an individual right to control his or her information through informed consent and assurances of confidentiality. The United States Census Bureau, anticipating and responding to concerns about privacy, has increased efforts to assure the public of the confidentiality of its data collection.[280]

Before 9/11, there was every indication that these assurances were largely working. The 1999-2000 Surveys of Privacy Attitudes concluded that between 1996 and 2000 there was increased distrust of data sharing but no increase in distrust of the Census Bureau's confidentiality assurances; an indicator of general privacy concerns in fact declined significantly between 1999 and 2000.[281] That said, only 25% of people surveyed answered that they are sure that the Census Bureau protects confidentiality of names and addresses, and only 17% said that other government agencies cannot get names and addresses of census respondents.[282] There is evidence that general publicity about privacy and confidentiality issues increases concerns about confidentiality of data collected by the government.[283] At the same time, paradoxically, the public has expressed willingness for law enforcement agencies to have greater access to information about individuals.[284] The paradox might be explained by

279. UNITED NATIONS, STATISTICS DIVISION, FUNDAMENTAL PRINCIPLES OF OFFICIAL STATISTICS (adopted 1994), http://unstats.un.org/unsd/methods/statorg/FP-English.htm.

280. The Census Bureau's efforts to assure respondents that their data will be kept confidential have increased in recent years. A brochure on privacy states that "The Census Bureau Has an Unbroken Record of Protecting the Public's Privacy[,]" relating incidents when the Secret Service or other agencies attempted to obtain individuals' census information and were denied. U.S. CENSUS BUREAU, UNITED STATES CENSUS2000: THE CENSUS BUREAU GOES ALL OUT TO PROTECT YOUR PRIVACY 2 (1999), http://www.census.gov/dmd/www/pdf/d3238c.pdf [hereinafter *Census Goes All Out*]. It emphasizes that "[t]he Census Bureau's dedication to confidentiality plays an important role in everything that it does—including hiring, training, planning procedures and reporting." *Id.* at 1.

281. ELEANOR SINGER ET AL., FINAL REPORT ON THE 1999-2000 SURVEYS OF PRIVACY ATTITUDES 4 (2001), *available at* http://www.census.gov/pred/www/rpts/SPAN_SPA.pdf.

282. *Id.* at 25.

283. Elizabeth A. Martin, *Privacy Concerns and the Census Long Form: Some Evidence from Census 2000*, *in* PROCEEDINGS OF THE ANNUAL MEETING OF THE AMERICAN STATISTICAL ASSOCIATION (2001), *available at* http://www.amstat.org/sections/SRMS/Proceedings/y2001/Proceed/00466.pdf. *See also* ELEANOR SINGER, CENSUS 2000 TESTING, EXPERIMENTATION, AND EVALUATION PROGRAM TOPIC REPORT NO. 1, TR-1, PRIVACY RESEARCH IN CENSUS 2000 4-7 (2003), *available at* http://www.census.gov/pred/www/rpts/TR-1.pdf.

284. *See, e.g.*, Gary Langer, *Poll: Americans Believe Stopping Terror is More Important than Privacy* (2004), http://abcnews.go.com/sections/us/DailyNews/terror_poll020610.html ("Seventy-nine percent say it's more important right now to investigate terrorism, even if that means intruding

a hypothesis that people are very protective of their own information (their right to privacy) while wanting the government to have access to others' data if they think that will lead to greater public safety. Nevertheless, the conflicting desires in the post-9/11 age to have greater privacy and greater security simultaneously necessitates a revised approach to confidentiality of privately collected and government data.[285]

2. Statistical Accuracy and Ethics

One conclusion that can be drawn from the history we have provided is that statistical societies appear to have lagged behind both public opinion and law in the call for greater confidentiality and privacy. The clearest explanation for this appears to be that the statistical profession rose in the early nineteenth century and took as its first challenge to correct the perceived deficiencies of prior censuses and other forms of data collection. Faced with the deficiencies of these early censuses, especially that of 1840,[286] statisticians formed societies in part to urge for better practice in the *conduct* and *review* of the census.

Statisticians were particularly outraged at the use of the 1840 Census to support pro-slavery arguments of high "Negro insanity."[287] Unable to correct the deficiencies and repugnance of these questions, statisticians founded the ASA to, in part, lobby for a more appropriate 1850 Census.[288] Faced with these kinds of disputes, it is hardly surprising that

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on personal privacy. Just 18 percent say it's more important not to intrude on privacy, even if that limits counterterrorism efforts."); Dalia Sussman, *Poll: Vast Majority of Americans Say War on Terror Isn't War on Them* (2004), http://abcnews.go.com/sections/us/DailyNews/liberties_poll021001.html ("This continues a string of poll results in which most Americans have not seen the government's anti-terrorism efforts as damaging their rights.").

285. An issue we take up with greater detail in another paper. *See* Sylvester & Lohr, *supra* note 4.

286. *See* Davis, *supra* note 36.

287. Albert Deutsch, *The First U.S. Census of the Insane (1840) and Its Use as Pro-Slavery Propaganda*, 15 BULL. HIST. MED. 469, 478-80 (1944). Sadly, Deutsch points out that the eugenic and deficient bases for the claims of high levels of "Negro insanity" among free versus slaves, were still prevalent into the mid twentieth century. According to Deutsch:

> The flagrant, socially harmful errors of the 1840 census continued to be spread abroad under the sanction of Congress. The errors repeatedly found their way into lay and professional journals. In 1851 the *American Journal of Insanity*—now the official organ of the American Psychiatric Association, under the more recent title, *American Journal of Psychiatry*—reprinted without comment a newspaper article, which stated: 'It is obvious, from the following schedule (taken from the 1840 census), that there is an awful prevalence of idiocy and insanity among the free blacks over the whites, and especially over the slaves.'

Id. at 478. The "findings" of the 1840 Census that free-blacks held a much higher insanity rate was used in making the pro-slavery arguments that freed blacks were worse off than slaves. *Id.* at passim.

288. According to Davis:

> Among the many voices raised, the most significant was that of the American Statistical Association. Founded in 1839, the new organization was an active critic of the official statistics on Negro insanity, data already being cited in the national controversy over slavery. As the result of its futile struggle to get corrections made in the Census of 1840, the Association became committed to the fight for a better census in 1850.

early statistical societies had more pressing concerns about federal statistical practice than confidentiality or privacy.

Indeed, for most of the nineteenth century, statisticians and statistical societies were inclined to focus their attention far more on improving the accuracy and amount of gathered data than they were on the confidentiality or privacy of individuals or their data. As already noted, early statistical publications and statements consisted mainly of long tables, analysis of data, and the basic conclusion that, to paraphrase, "if only we could get *more* data we could really solve problem *x*."[289] A widespread view that statistics could cure numerous societal ills is found throughout the earliest discussions of the profession.[290] Thus, writings of the period focused more on reforming the practice of statistics,[291] urging greater scientific method,[292] or otherwise proposing reforms to increase statistical usefulness.[293]

Those associated with the census were also prone to waxing eloquently about the value of statistical analysis. In a speech given to the ASA, Robert Porter, superintendent of the 1890 Census, defended the

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Davis, *supra* note 36. See *also* Francis A. Walker, *Remarks of President Walker at Washington*, 5 PUBL. AM. STAT. ASS'N 179, 183–84 (1897) (discussing Dr. Edward Jarvis' founding of the ASA and his work "in connection with the . . . statistics of the unfortunate classes, particularly the insane.").

289. *See Report of Ad Hoc Committee, supra* note 155 and accompanying text.

290. Given the nascent nature of statistical societies, it is interesting to look at the writings from other countries including Great Britain. For example, in an early address by an official of the British Association (Economic Science and Statistics), it is declared that "There is scarcely a moral art [that statistics] should not be able to take cognizance." Nassau W. Senior, *Opening Address of Nassau W. Senior, Esq., as President of Section F (Economic Science and Statistics), at the Meeting of the British Association, at Oxford, 28th June, 1860,* 23 J. STAT. SOC'Y LONDON 357, 361 (1860). In a later address, another English statistician urged his fellows to:

> [E]xtend the science which this Society was founded to promote. Statistics . . . is . . . in its essence the science of politics without party colouring; it embraces all the affaires in which governments, municipalities, local boards, and vestries are concerned. From this bare announcement its transcendent importance is evident.

William Farr, *Inaugural Address Delivered at the Society's Rooms, 12, St. James Square, London, on Tuesday, 21st November, 1871* 34 J. STAT. SOC'Y LOND. 409, 409 (1871).

American statisticians, although writing later than their British counterparts, appear equally enthused about the possibilities of statistical analysis for solving society's ills. Most writings from the period initially remark on the American appetite for statistical society. *See, e.g.*, Walker, *supra* note 288, at 179 (For "the American people . . . the interest in facts and data of an authoritative character is greater than anywhere else in the world . . . ."); Charles F. Pidgin, *How to Make Statistics Popular*, 2 PUBL. AM. STAT. ASS'N 107, 107 (1890) (noting a letter from a distinguished statistician, that the United States "is hungry for information; everything of a statistical character, or even of a statistical appearance, is taken up with an eagerness that is almost pathetic."); Henry C. Adams, *Statistics and Economics, an Outline of Statistical Science, with Especial Reference to the Use of Statistics in Political Economy and Social Science*, 1 PUBL. AM. STAT. ASS'N 216, 217 (1889) (book review) ("In this country . . . the popular demand for statistical information is constantly forcing the government to undertake new lines of inquiry.").

291. *See* RICHMOND MAYO–SMITH, STATISTICS AND ECONOMICS: AN OUTLINE OF SCIENCE, WITH ESPECIAL REFERENCE TO THE USE OF STATISTICS IN POLITICAL ECONOMY AND SOCIAL SCIENCE (Guggenheimer, Weil & Co 1888).

292. *See* Farr, *supra* note 290, at 409.

293. *See generally* Walker, *supra* note 288 (urging statisticians to be more upfront about the value of the statistics they collect).

accuracy and methodology of government statistical practice.[294] He was especially proud of the new electronic tabulating machines (Hollerith) which, he argued, for the first time enabled tabulation of statistics in any manner imaginable.[295] He was particularly taken with the view that, through technology and statistical analysis:

> A card which means nothing to the uninitiated is converted into a pauper or a criminal, whose sin and suffering are as palpable as if the man himself were bodily present in the room. The groups into which they are cast are like the divisions of an army from the corps to the battalion. Under the mysterious influence of the electric current running through the machine, they organize themselves, as though possessed of volition, into these groups and sub-groups, with a precision superior to that shown in any movement of disciplined troops at the word of military command. I can compare this current to nothing less intelligent and powerful than the voice of the archangel, which, it is said, will call the dead to life and summon every human soul to face his final doom.[296]

Faced with such enthusiasm it is easy to see why the potential negatives of statistical practice faded into the background. Indeed, Porter's comments demonstrate how little the concept of confidentiality had changed since 1810. At one point, Porter discussed how some had urged the 1890 Census to inquire into private economic matters, including mortgage values.[297] According to Porter, "[t]he amount of irritation which would have been aroused . . . cannot be estimated. The enumeration of the people would have been endangered."[298] As in 1810, statisticians continued to be concerned about the sensitivity of commercial data solely because of the detrimental effect such inquiries may have on general data collection efforts.

Despite these early views about the infallibility or promise of statistics, some tentative efforts at reform were undertaken. Such efforts, however, focused more on reforming the science and administration of statistical practice and did not, with rare exceptions, focus on the potential harms to privacy and confidentiality that would form the core of more modern discussions. During the last decade of the nineteenth century, for example, the ASA lobbied for a permanent office of the Census Bureau,[299] with the hope that this reform would reduce the inconsisten-

294. *See* Robert P. Porter, *The Eleventh Census*, 2 PUBL. AM. STAT. ASS'N 321, 322–24 (1891).
295. *Id.* at 330.
296. *Id.* at 339 (quoting "Mr. Wines").
297. *Id.* at 352–60.
298. *Id.* at 355.
299. American Statistical Association, *Permanent Census Office*, 7 PUBL. AM. STAT. ASS'N 1, 1-3 (1901). Numerous other writings demonstrate that statisticians favored establishment of a permanent statistical bureau. Some were in favor of a government office and others for private institutions. *See* Roland P. Falkner, *Proposed Statistical Legislation*, 3 PUBL. AM. STAT. ASS'N 69, 69-74

cies among statistics collected by different government agencies—a reform finally made real in 1902 with establishment of the permanent Census Bureau. In his presidential address to the ASA in 1908, Carroll Wright commented on the newly formed Census Bureau and focused on the ethical obligation of the statistician to "tell the story of our present state" that will "endure through all time."[300] The focus was, obviously, to expand the power of statistics —there was no mention of regard for the confidentiality or privacy of its subjects.

Concurrent publications continued to stress the importance of statistical study for curing society's ills. The preponderance of articles published in the first decades of the twentieth century continued to focus on the inaccuracies and limitations of current statistics—urging for continued increases in available data and better methodologies to solve problems.[301] Many early articles were devoted to social problems such as poverty or family desertion, discussions with obvious confidentiality and privacy implications, but the thrust of these writings was the need to quantify and classify the problem more accurately—with little attention paid to the privacy of the study's subjects.

For example, a 1907 article studying disadvantaged children in New York was concerned with documenting child health problems and, in so doing, required families under study to list their children's names.[302] The authors of the study did not view this as an intrusion into family privacy and indeed seemed incredulous that "[m]any families were surprised that their children's names should . . . [be] given . . . [and] refused to answer questions as to their living conditions."[303] Prominent statisticians also continued to urge for greater and greater data collection. S.N.D. North, for example, favored a census conducted every five years since "It has come to be understood that among the first duties . . . of a government to the people whose welfare is in its keeping is their sanitary and hygienic protection; and this duty cannot be effectively performed without the intensive knowledge of the people which only a census affords."[304]

(1892) (favoring government census office); Pidgin, *supra* note 290, at 114 ("There should also be a Central Statistical Bureau of the United States . . . organized on a private commercial basis.").

Falkner's article also includes mention of an interesting provision of the proposed statistical legislation he examined. He notes that the legislation sought to adopt a new method of inducing compliance with a proposed census on property ownership and debt. According to Falkner, the legislation included a "curious feature . . . a provision for the publication of the names of all persons who refuse to answer the questions." Falkner, *supra* at 74.

300. Carroll D. Wright, *Address of Carroll D. Wright, President of the American Statistical Association, at its Annual Meeting in Boston, Jan. 17, 1908*, 11 PUBL. AM. STAT. ASS'N 1, 15 (1908).

301. *See, e.g.*, Bradburn & Straf, *supra* note 269, at 321-25.

302. New York Committee on Physical Welfare of School Children, *Physical Welfare of School Children: An Examination of the Home Conditions of 1,400 New York School Children Found by School Physicians to Have Physical Defects*, 10 PUBL. AM. STAT. ASS'N 271 (1907).

303. *Id.* at 278.

304. S.N.D. North, *Uniformity and Co-Operation in the Census Methods of the Republics of the American Continent*, 11 PUBL. AM. STAT. ASS'N 295, 298 (1908).

Kate Holladay Claghorn, who, as mentioned earlier, was one of the first persons to express concern for individual privacy in the statistical literature, was also one of the first to express skepticism about the omnipotence of statistics.[305] Chiefly concerned with the living conditions facing immigrants in New York, she was a proponent of statistics but favored focusing on individual conditions in addition to aggregates.[306] As a result, she was suspicious of claims that statistics alone could improve society or individual living conditions.[307] While registrar of records in the Tenement House of New York, Claghorn wrote an article, *The Limitations of Statistics*,[308] in which she critiqued the prevailing view that more careful collection of data could improve, for example, government efficiency and effectiveness.[309] Such views, according to Claghorn, promised too much from statistical method and reflected "the present rage for putting every conceivable thing in the shape of 'statistics' and beginning every enterprise of any sort whatever with a long and elaborate and costly research . . . ."[310]

As statistical societies grew and statistical practice matured, the enthusiasm and hope that surrounded the discipline became tempered. The limitations of statistics were reflected in many of these same writings—with early twentieth century authors, while still hopeful of statistics' promise, urging their peers to make statistics more popular,[311] more easily understandable,[312] or presented to the general public with more realistic assessments about their accuracy or usefulness.[313] In the end, it is not surprising that statisticians did not view privacy or confidentiality as essential concerns of statistical practice. It was not until the discipline had, itself, matured and settled into political and scientific life that questions of effects and unintended harms crept into the discussion. Whatever the beginnings of confidentiality and privacy in statistics, these societies and their practitioners have now become strong advocates for increasing confidentiality and privacy protections in statistical practice.

CONCLUSION

In this article, we have explored the history and practice of confidentiality in data collection in the United States. By no means comprehensive, this review has nevertheless shed light on a number of important

305. *See* Kate Holladay Claghorn, *The Limitations of Statistics*, 11 PUBL. AM. STAT. ASS'N 97, 97-98 (1908) (book review).

306. *See generally* Kate Holladay Claghorn, *Immigration in its Relation to Pauperism*, 24 ANNALS AM. ACAD. POL. & SOC. SCI. 187 (1904) (discussing relevant conditions facing an entire population of immigrants and also highlighting individuals in the population).

307. *See* Claghorn, *supra* note 175, at 165-66.

308. Claghorn, *supra* note 305, at 97.

309. *Id.*

310. *Id.* at 101.

311. *See* Pidgin, *supra* note 290, at 115.

312. *See* Walker, *supra* note 288, at 180-81.

313. *Id.* at 185-86.

policy and practical considerations for the future of government statistical programs. As we have discussed, initial government programs that relied on voluntary data disclosures were met with high levels of individual suspicion. Initial legislative responses that focused on public disclosures or criminal penalties in order to increase compliance were largely unsuccessful precisely because they failed to address the underlying problem—mistrust of governmental purpose.

Recent events have stirred currents of mistrust. In particular, passage of the so-called USA PATRIOT Act ("The Patriot Act") and its provisions for abrogating the confidentiality of federally-held statistical data may erode trust in statistical agencies.[314] In another paper, we have examined the role that The Patriot Act has played in eroding citizens' trust in government.[315] Numerous commentators and pollsters have also chronicled the rise of mistrust among the American citizenry.[316] The

314. The full name of the act is the "United and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001," Pub.L. No. 107-56, 115 Stat. 272 (2001) [hereinafter "Patriot Act"]. The impact of the Patriot Act on statistical confidentiality is an issue we take up in greater detail in Sylvester & Lohr, *supra* note 4.

315. Sylvester & Lohr, *supra* note 4.

316. A recent poll conducted by the Ponemon Institute, a private industry pollster, declared that "the general public holds a relatively low or negative impression of various federal government organizations that are presented in our survey." Thomas Claburn, *Report: People Don't Trust Government To Protect Privacy*, INFO. WEEK (Feb. 13, 2004), http://www.informationweek.com/story/showArticle.jhtml?articleID=17700220 (quoting a survey of more than 6,300 Americans sponsored by Carnegie Mellon University's CIO Institute). According to this survey, only 22% of Americans felt favorably toward the Justice Department's treatment of individual privacy. *Id.* In addition, "Subjects cited loss of civil liberties (64%), surveillance into personal life (63%), and monitoring of e-mail and web activities (47%) as having the biggest impact on their privacy perceptions." *Id.*

According to one source, the level of individuals having "no trust" in government is sharply on the increase even after 9/11. Press Release, Decision Analyst, Inc., Surprising Number of Americans Say They Have No Trust In U.S. Government, Government Agencies, Survey Shows (June 13, 2001), http://www.decisionanalyst.com/publ_data/2001/Attitudes.asp (detailing that one in seven Americans claim to have "no trust" in government). Other polls have shown that, despite some rise in trust in matters of national security, high levels of distrust continue for issues of domestic importance. *See* Gary Langer, *Water's Edge Greater Trust in Government Limited to National Security*, Jan. 15, 2002, http://abcnews.go.com/sections/politics/DailyNews/poll0120115.html. In addition, there is some poll evidence indicating rising distrust among younger Americans. Carl Weiser, Survey: *Young People Losing Trust in Government*, Jan. 16, 2004, http://www.usatoday.com/news/politicselections/nation/2004-01-16-youngvoters-gns_x.htm. *See also* John Samples, *Americans Don't Trust Big Government on Home Front, Says ABC Poll*, Jan. 31, 2002, http://www.cato.org/dailys/01-31-02.html; Garry Langer, *Trust in Government . . . to do What?*, PUB. PERSP. July/Aug. 2002, at 7, passim; Robert J. Blendon et al., *Changing Attitudes in America*, *in* WHY PEOPLE DON'T TRUST GOVERNMENT, 205, 206-07 (Joseph S. Nye, Jr. et al, eds. 1997). *But see* The NES Guide to Public Opinion and Electoral Behavior, *Trust in Government Index 1948-2002*, http://www.umich.edu/~nes/nesguide/toptable/tab5a_5.htm (using proprietary index score, the NES survey ranked trust in government as 27 in 1980, 29 in 1990, 34 in 1998, 36 in 2000, and 43 in 2002). The data is not entirely clear. Many surveys continue to show spikes of trust in government following 9/11. For example, the National Election Studies group that seeks to poll individuals about general attitudes toward government, including trust, have concluded that overall trust in government is rising. The NES Guide to Public Opinion and Electoral Behavior, *Trust the Federal Government 1958-2002*, http://www.umich.edu/~nes/nesguide/toptable/tab5a_1.htm (indicating a large recent increase in the percentage of people who trust the government "most of the time."). However, it is not clear that these surveys account for differential areas of trust—where some may trust in national security but not other areas. Other writers also indicate increased trust in government post-

exact effect this rise in mistrust has or may have on government statistical programs is uncertain; however, the United States Census Bureau is certainly aware of increased public concern about privacy and is trying to preemptively reassure the public that information is kept completely confidential and is never given to law enforcement agencies.[317]

In this article, we have related the evolution of the concept of privacy in law and the parallel concept of confidentiality in statistical practice. Current laws and codes of ethics reflect the times and mores during which they were developed. Law has evolved to view privacy as a right; all statistical codes of ethics now strongly assert that confidentiality of respondents' information must be maintained.

We have seen, however, that confidentiality was not a prominent feature of statistical codes of ethics until after the second wave of privacy concern during the 1960s and 1970s. At that time, despite the nascent computer technology, accessing confidential information or matching records required a great deal of exertion: many records, for example, could only be found by poring over files in a courthouse basement. The ethical codes of statistical societies still reflect to some extent the assumption that confidentiality will be breached primarily by deliberate releases of information.

In light of recent events, this assumption is questionable. The data company ChoicePoint, which performs data mining and manipulation on 19 billion data records for clients, was recently found to have sold data on 145,000 people to a con artist.[318] Mr. Oluwatosin paid for all of the records and ordered them in small batches so as not to alert ChoicePoint security systems.[319] In March 2005, it was announced that criminals used stolen passwords to obtain information on 32,000 persons in a database owned by LexisNexis.[320] There are likely many other examples in which unauthorized individuals have obtained confidential data but where the perpetrators have not been caught. It is even possible, although the Census Bureau maintains that it has a perfect record of main-

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9/11. Virginia A. Chanley, *Trust in Government in the Aftermath of 9/11: Determinants and Consequences*, 23 POL. PSYCHOL. 469, 471-73, 479 (2002).

317. The Census Bureau recently announced the appointment of its first Chief Privacy Officer, and the launching of a new Data Stewardship Web Page. Press Release, U.S. Census Bureau, Census Bureau Names Gerald W. Gates as First Chief Privacy Officer (Mar. 1, 2005), http://www.census.gov/Press-Release/www/releases/archives/miscellaneous/004060.html. One of the headings on the new web page is "Partnership and Trust": it is emphasized that "We honor privacy, protect confidentiality, share our expertise globally, and conduct our work openly." http://www.census.gov (follow "Data Protection & Privacy Policy " hyperlink; then follow "Partnership and Trust" hyperlink) (last visited Sept. 21, 2005).

318. Greg Fulton et al., *Are Your Secrets Safe?* TIME, Mar. 7, 2005, at 46-47.

319. *Id.*

320. Ellen Simon, *Data Broker Says Personal Records of 32,000 Vulnerable*, EAST VALLEY TRIB., Mar. 10, 2005, at B3, *available at* http://www.detnews.com/2005/technology/0503/12/tech-113016.htm.

taining confidentiality,[321] that individuals have been identified by persons who just have never been caught.

Much of the concern about privately collected data is also transferable to data collected by the federal government. As Senator Patrick Leahy stated regarding databanks collected by private entities:

> The temptation will be more and more—especially in a polarized society and a society where there is a fear, whether it's the Red Scare in the fifties or terrorism in this century—to use those databanks. . . . At some point it doesn't matter if they're private or public, at some point they will be used by the government to determine who is a good American and who is a bad American. Not determined through prosecution, trial, but based on what came up on someone's computer screen.[322]

In the end, we believe that a better understanding between lawyers and statisticians about the tensions that arise between what is legal, what is trust-enhancing, and what is statistically possible, provides an avenue for both better legislative and statistical practice. We further posit that legal regimes would be greatly improved if increased collaboration with statisticians was included as an aspect of any new regulation about data access and protection. Finally, we believe that federal statistical practice should be subject to legal frameworks that more consciously approve of statistical association codes of ethics for aiding in determinations concerning appropriate data releases and anonymization techniques. At the same time, we believe that there must be a legal shield protecting data given under a pledge of confidentiality from being used to harm individual respondents.[323]

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321. *See Census Bureau Goes All Out*, *supra* note 280 at 2. *But see* Bohme & Pemberton, *supra* note 27, at 8. Bohme and Pemberton detail numerous possible breaches in confidentiality and privacy at the Census Bureau. According to Bohme and Pemberton, "Census confidentiality—or perhaps the maintenance of privacy—left something to be desired in 1910." *Id.* The authors go on to detail how "the Census Bureau . . . permitted the public unrestricted access to the census records from 1790 through 1880" and only restricted access to the later censuses because of difficulties in binding and displaying the volumes. *Id.* at 9. During World War I, the Census Bureau provided information to the "Department of Justice, local draft boards, and individuals . . . in connection with cases where the individuals had been arrested for draft evasion." *Id.* As they discuss, in 1917, the Solicitor General, when asked about the propriety of using census data to aid in the draft, concluded:

> [T]he Director of the Census might, in the exercise of his discretion, furnish to the officials in charge of the execution of the Selective Service Law, information in regard to the names and ages of individuals, as it did not appear that any person would be harmed by the furnishing of such information for the purpose for which it was desired.

Id. (citing Letter of E.R. Magie, Acting Solicitor, to the Secretary of Commerce (Jan. 15, 1920)). Such breaches of confidentiality, although apparently legal, were also employed to aid in deportation proceedings. *Id.* at 9-10. Of interest is the fact that strict confidentiality was given to *economic* data as it had traditionally been since 1810. *Id.* at 2.

322. ROBERT O'HARROW, JR., NO PLACE TO HIDE 33 (2005) (quoting Leahy on Dec 10, 2003).

323. For a fuller discussion of these conclusions and recommendations *see* Sylvester & Lohr, *supra* note 4.

Technological advances and sociological changes ultimately compel rethinking some of the ethical underpinnings of modern statistical practice. Medical ethics guidelines developed during the early-to-mid twentieth century have had to be updated and modified to adapt to genome-based research and other scientific innovations. We are at a similar point with the statistical codes of ethics. It is important to see that they developed in response to the particular technological and popular concerns of the 1970s. To stay relevant, the ethical codes now need to be updated to deal with today's problems, and statistical societies need to continue encouraging scientific work on confidentiality protection. In this endeavor, statisticians can benefit from a better understanding of the concepts of privacy codified in law.

It was not widely noted at the time, but 1890 marked a turning point in the conception of legal and statistical privacy. As we have demonstrated, after 1890 legal and statistical disciplines implemented changes that both responded to and spurred new notions of individual privacy and human dignity. It is widely known that the advent of new technologies and the increase of urbanization compelled much of the legal change we note. Statisticians, however, were equally affected by new technologies at the end of the nineteenth century. In particular, 1890 saw the introduction of the Hollerith machines used to tabulate data in the United States Census.[324] Although primitive by today's standards, the Hollerith machines inaugurated the computer age of information processing—greatly increasing the efficiency and potential of government data analysis. Of course, these same potentials carried with them the spectre of increased dangers to privacy and confidentiality. As technology changed, so statistical societies, as in law, sought to arrange their affairs to deal with the new potentials and threats. We believe that the United States is at a similar point in its history—where technology creates both potentials and dangers for statistical practice and individual privacy. In this new era of unprecedented access to information about individuals and unprecedented need for reliable data about society, we must be wary of clinging to tried and true methods without deeper analysis. We must be prepared to consider new policies, practices, codes, and regulations to seek the best solutions to the problems we face. Ultimately, we believe this cannot be done by either discipline in isolation from the other.

324. *See* Joel Shurkin, ENGINES OF THE MIND: THE EVOLUTION OF THE COMPUTER FROM MAINFRAMES TO MICROPROCESSORS 78 (1996).