

# **Privacy Indexes: A Survey of Westin's Studies**

Ponnurangam Kumaraguru, Lorrie Faith Cranor

CMU-ISRI-5-138  
December 2005

Institute for Software Research International  
School of Computer Science  
Carnegie Mellon University  
Pittsburgh, PA 15213-3890

## **Abstract**

Since the late 1970's Dr. Alan Westin has conducted over 30 privacy surveys. For each of his surveys, Westin has created one or more Privacy Indexes to summarize his results and to show trends in privacy concerns. Many privacy researchers are interested in using these privacy indexes as benchmarks to which they can compare their own survey results. However, the details of how the indexes were calculated have not been reported except in the original survey reports. These reports were originally distributed in paper form, and many are no longer readily available. We obtained paper copies of five of these survey reports and found a sixth report online. We also found summaries of eight additional reports online. Here we report on the methodology used each year to calculate the privacy indexes and draw some conclusions about which indexes can be used to infer privacy trends.

This research was supported in part by the Institute for Software Research International, Carnegie Mellon University and by the Carnegie Mellon CyLab.

**Keywords:** *privacy survey, privacy index, privacy attitudes, medical privacy, consumer privacy, e-commerce, privacy fundamentalist, privacy pragmatist, privacy unconcerned.*

## 1. Introduction

Dr. Alan Westin conducted over 30 privacy-related surveys between 1978 and 2004 [21]. These surveys cover general privacy, consumer privacy, medical privacy, and other privacy-related areas. For most of these surveys Westin created a “Privacy Index” to summarize his results and to show trends in privacy concerns. Unfortunately, the details of how Westin calculated these privacy indexes have not been reported except in the original survey reports. These reports were originally distributed in paper form, and the early ones are no longer readily available. Some of the more recent survey reports are currently available for purchase from Privacy & American Business.<sup>1</sup> We were able to obtain paper copies of five of these survey reports [10], [12], [13], [15], [17] and were able to find a sixth report online [4]. We were also able to obtain the executive summary of eight additional reports online [5], [6], [7], [11], [14], [16], [18], [19]. Table 1 provides the information regarding reports discussed in this paper.

**Table 1: Details of the studies discussed in this paper**

Year	Name of study	Report / Summary found	Source type
1990	Equifax Executive Summary	Summary	Online
1991	Harris-Equifax Consumer Privacy Survey	Report	Hard copy
1992	Equifax Executive Summary	Summary	Online
1993	Health Information Privacy Survey	Report	Hard copy
1994	Equifax-Harris Consumer Privacy Survey	Report	Hard copy
1995	1995 Equifax / Harris Consumer Privacy Survey	Summary	Online
1996	Equifax-Harris Consumer Privacy Survey	Report	Hard copy
1997	The results of Commerce, Communication, and Privacy Online for Privacy & American Business	Summary	Online
1998	E-Commerce & Privacy: What Net Users Want	Report	Hard copy
1998	The Privacy Concerns and Consumer Choice	Summary	Online
1999	DoubleClick, Inc. and Privacy &	Summary	Online

<sup>1</sup> Privacy & American Business, Report Order form, <http://www.pandab.org/RptOrderForm.pdf>, visited on 10 Aug 04.

	American Business		
1999	Freebies and Privacy: What Net Users Think	Summary	Online
2001	Privacy On & Off the Internet: What Consumers Want	Report	Hard copy
2003	Most People Are “Privacy Pragmatists” Who, While Concerned about Privacy, Will Sometimes Trade it Off for Other Benefits	Summary	Online

Westin’s surveys measure attitudes and concerns about privacy and provide data on how these attitudes and concerns change over time. Westin has surveyed the general level of privacy concern of the public and has also studied the attitudes about specific privacy-related topics, for example, confidence in organizations that handle personal information, acceptance of a national identification system, and use of medical records for research. He has also investigated changes in privacy attitudes after September 11, 2001 [4]. Some of Westin’s surveys were commissioned by companies or organizations that were interested in privacy issues relevant to their particular line of business. In each survey report, Westin provides insights designed to help organizations respond to privacy concerns with appropriate policies, products, and services. All of these surveys were conducted via telephone and surveyed randomly-selected statistical samples of the United States adult population. Because they are random-sample surveys and are statistically representative, they serve as useful benchmarks for comparisons with surveys conducted in other countries or surveys conducted with convenience samples.

Westin created several privacy indexes to summarize his survey results and show privacy trends over time. While creating the indexes, Westin classified the public into three categories. Westin has interchangeably used the following categories to refer to the groups of people that he created: (1) High and Fundamentalist, (2) Medium and Pragmatist, (3) Low and Unconcerned.<sup>2</sup> Of the 14 survey reports (complete or summaries) that we examined, six specified the values for all the three categories while one report provided the value for the High category only. The rest of the reports did not discuss about the privacy indexes.

We also found other studies where the researchers have directly or indirectly compared the indexes described by Westin to the results obtained by them in their own studies [1], [2]. Many privacy researchers around the globe are interested in using these privacy indexes as benchmarks to which they can compare their own survey results and also use these indexes to classify people in other countries. In this paper, we report the methodology used by Westin to calculate the privacy indexes and draw some conclusions about which indexes can be used to infer privacy trends.

The remainder of this paper is organized as follows: In the following section, we present Westin’s methodology for creating privacy indexes. We include the text of the questions from which the privacy indexes were obtained.<sup>3</sup> In the discussion section, we present some conclusions about these privacy indexes and present some criticism that has been raised about these surveys.

---

<sup>2</sup> To be consistent with the reports written by Westin, we have also used the terms as presented in Westin’s reports.

<sup>3</sup> When reproducing survey questions in this report, we have omitted those parts of the question that are not relevant to the privacy indexes under discussion. We have included the actual question and question numbers from the original surveys, displaying them in bold, italic font.

## 2. Creation of Privacy Indexes

In this section, we present the methodology used by Westin for creating the indexes for each of the reports that we obtained. We present the methodology in chronological order of the study. We provide the actual questions from the reports, options provided to the samples, results for these specific questions and definitions given by Westin for the categories of people.

### 2.1. Harris – Equifax Consumer Privacy Survey – 1990 and 1991

The earliest privacy index we studied was Westin’s “General Privacy Concern Index,” developed as part of the 1990 study. In order to gain a better understanding of privacy concerns, Westin used a series of four questions to divide respondents into three groups, representing levels of privacy concern. As reported in Westin’s 1991 survey report [10], respondents were asked:<sup>4</sup>

1. Whether they are very concerned about threats to their personal privacy today.
2. Whether they agree strongly that business organizations seek excessively personal information from consumers.
3. Whether they agree strongly that the Federal government since Watergate is still invading the citizen’s privacy.
4. Whether they agree that consumers have lost all control over circulation of their information.

The answers to these questions were used to assign each respondent to a privacy concern group as follows:

High	–	3 or 4 privacy-concerned answers
Moderate	–	2 privacy-concerned answers
Low	–	1 or no privacy-concerned answers

Westin then examined respondents’ responses to all the other privacy-related questions in the 1990 study and found that the general privacy concern index was a good predictor for relating general concern level and privacy concern level.

Using the classification mentioned above, Westin divided the respondents into the following categories :

**The privacy Fundamentalists:** Fundamentalists are generally distrustful of organizations that ask for their personal information, worried about the accuracy of computerized information and additional uses made of it, and are in favor of new laws and regulatory actions to spell out privacy rights and provide enforceable remedies. They generally choose privacy controls over consumer-service benefits when these compete with each other. About 25% of the public are privacy Fundamentalists.

**The Pragmatic:** They weigh the benefits to them of various consumer opportunities and services, protections of public safety or enforcement of personal morality against the degree of intrusiveness of personal information sought and the increase in government power involved. They look to see what practical procedures for accuracy, challenge and correction of errors the business organization or government agency follows when consumer or citizen evaluations are involved. They believe that business organizations or government should “earn” the public’s trust rather than assume automatically that they have it. And, where consumer matters are involved, they want the opportunity to decide whether to opt out of even non-evaluative uses of their personal information as in compilations of mailing lists. About 57% of public fall into this category.

**The Unconcerned:** The Unconcerned are generally trustful of organizations collecting their personal information, comfortable with existing organizational procedures and uses are ready to forego privacy claims to secure consumer-service benefits or public-order values and not in favor of the enactment of new privacy laws or regulations. About 18% of public fall into this category.

---

<sup>4</sup> We were unable to obtain the complete report of the 1990 study. The privacy index that we have provided here for the year 1990 is from the 1991 report [10].

In the 1991 study, Westin created the “Consumer Privacy Concern Index.” He used questions about business use of personal information as the basis for creation of the index. He used the response of the following question to create the index [10]:

**4 a.** Do you agree or disagree with the following statement (READ EACH ITEM)? Do you agree / disagree very strongly or somewhat strongly?

1. Consumers have lost all control over how personal information about them is circulated and used by companies.

Agree very strongly	1	( 37 ) <sup>5</sup>
Agree somewhat strongly	2	( 34 )
Disagree somewhat strongly	3	( 20 )
Disagree very strongly	4	( 3 )
Neither / Not sure	5	( 4 )

2. My privacy rights as a consumer in credit reporting are adequately protected today by law and business practices

Agree very strongly	1	( 10 )
Agree somewhat strongly	2	( 27 )
Disagree somewhat strongly	3	( 29 )
Disagree very strongly	4	( 20 )
Neither / Not sure	5	( 4 )

For creating the index, Westin considered the privacy-oriented position to be “agree”<sup>6</sup> for the first question (**4 a 1**) and for the second question (**4 a 2**), he regarded the privacy-oriented position to be “disagree.” The 1991 report describes how these responses were used to create the Consumer Privacy Concern Index [10]:

If a person did not take the privacy-oriented position on either of the two statements, we scored them as a Low in Consumer Privacy Concern. If they took one of the two pro-privacy views, we considered them to have Moderate concern. And if they took the strongest privacy-oriented position on both of the statements, we considered them to have High concern. We tested the power of the index by looking whether those who scored highest on this index were the most privacy-oriented in answering most of the other attitude and policy questions on the 1991 survey, whether those scoring lowest on the index were the least concerned with privacy on those questions, and moderates were in the middle.

Westin in the 1991 report provided the comparison of the index values for 1990 and 1991 studies [10]:

Consumer privacy concerns for 1991 and 1990 is as follows

		1990	1991
High concern	–	46 %	41%
Moderate concern	–	36 %	39%
Low concern	–	17 %	20%

## 2.2. Harris-Equifax Health Information Privacy Survey – 1993

Westin created the “Medical Privacy Concern Index” and “Computer Fear Index” as part of his 1993 survey. Westin used “Medical Sensitivity Index” (described below) and an additional two

<sup>5</sup> The numbers in parenthesis are the exact values from the reports.

<sup>6</sup> Westin has used “agree” to be sum of “agree very strongly” and “agree somewhat;” this was not clearly mentioned in the reports. Similar aspects were seen in few other reports also [15], [17].

questions to create the Medical Privacy Concern Index. The additional two questions to create the index were [12]:

**A 2.** (Have/do) you or (has/does) a member of your immediate family (READ ITEM), or not?

1. Ever used the services of a psychologist, psychiatrist, or other mental-health professional.

Yes	(22 ) <sup>7</sup>
No	(77 )
Not Sure	(1 )

**D1.** Do you believe that (READ EACH ITEM) has ever disclosed your personal medical information in a way that you felt was improper, or not?

Health insurance companies	( 15 – 82 – 3 ) <sup>8</sup>
A clinic or hospital that treated you or a family member	( 11 – 87 – 2 )
Public health agencies	(10 – 86 – 4 )
Your employer or a family member's employer	( 9 – 89 – 1 )
A doctor who has treated you or a family member	( 7 – 92 – 1 )
A pharmacy or druggist who filled a prescription for you or a family member	( 3 – 95 - 1 )

The Medical Sensitivity Index was based on two questions measuring computer fear and two questions measuring concern over the circulation of medical information among various organizations. The two questions measuring concern for circulation of medical information were:

**C2.** Please tell me for each of the following statements whether you agree strongly, agree somewhat, disagree somewhat, or disagree strongly?

1. It concerns me that my medical information is being seen today by many organizations beyond those that I go to for health care services.

Agree Strongly	( 32 )
Agree somewhat	( 29 )
Disagree somewhat	( 22 )
Disagree strongly	( 14 )
Not sure	( 4 )

**L 4.** Under national health-care reform, each person might be assigned an identification number for health insurance purposes. How concerned would you be to have such a health information number assigned to you – very concerned, somewhat concerned, not very concerned or not concerned at all?

Very concerned	( 28 )
Somewhat concerned	( 29 )
Not very concerned	( 22 )
Not concerned at all	( 20 )
Not sure	( 1 )

The two questions measuring computer fear were:

**K1.** How concerned are you that many health care providers you use today employ computers in some of their operations, such as patient billing and accounting, laboratory work, and keeping some medical records – are you concerned, some what concerned, not too concerned, not concerned at all?

Very concerned	( 8 )
Somewhat concerned	( 21 )
Not too concerned	( 31 )

<sup>7</sup> During this year Westin also conducted the study among leaders of organizations, but these values are not discussed in this report. In this report, we provide the values for the “Total Public” as mentioned in Westin’s report.

<sup>8</sup> The values are presented in the order of “Yes,” “No” and “Not sure.”

Not concerned at all	( 40 )
Not sure	( ** ) <sup>9</sup>

**L1.** Under national health care reform, computers are expected to be used extensively to manage and monitor operations. Some of these uses will involve individual medical records. In general, would such use of computers worry you – a great deal, a little or not at all?

A great deal	( 23 )
A little	( 47 )
Not at all	( 29 )
Not sure	( 1 )

Responses to questions **C2, K1, L1, and L4** were first combined to form a Medical Sensitivity Index. If a respondent answered 3 or 4 questions with the strongest privacy position, he or she was placed in the High category; if a respondent answered 1 or 2 questions with the strongest privacy position, he or she was placed in the Medium category. Respondents with no strong privacy answers were placed in the Low category of Medical Sensitivity Index. Dividing the public into these three groups produced the following distribution:

High	-	13%
Medium	-	45%
Low	-	42%

Westin specified that Medical Sensitivity Index proved to be strongly correlated with privacy orientations of a large majority of the respondents. Respondents scoring highest in the Medical Sensitivity Index took the most privacy-oriented position on the majority of the questions; respondents with Medium Medical Sensitivity Index occupy middle positions; and respondents with Low Medical Sensitivity Index were the least privacy oriented. Using the results from the above questions **A2** and **DI**, along with the Medical Sensitivity Index, Westin created the Medical Privacy Concern Index. Westin found 48% of the public fell into the category of High Medical Privacy Concern Index. Westin in his report (referring to the results for the above questions) mentioned [12]:

Each of these measures as we have already discussed produced strong correlation between these respondents and strong privacy-oriented positions on a majority of the 39-question data set. After eliminating duplications among the three sets of respondents, we found 48% of public – representing 89 million Americans - fall into the High Medical Concern.

As mentioned earlier, in the 1993 study, Westin also created the Computer Fear Index. He asked the following questions for creating the index:

**X3.** Do you agree strongly, agree somewhat, disagree somewhat or disagree strongly?

1. If privacy is to be preserved, the use of computers must be sharply restricted in the future.

Agree strongly	( 40 )
Agree somewhat	( 31 )
Disagree somewhat	( 17 )
Disagree strongly	( 10 )
Not sure	( 2 )

---

<sup>9</sup> The value for this option was less than 0.5%, so no specific values were provided in Westin’s report. Values provided with ( \*\* ) hereafter in this report specifies percentages less than 0.5%. We also suspect that all the values presented in the Westin’s reports were rounded off to the nearest integer values.

**K1.** How concerned are you that many health care providers you use today employ computers in some of their operations, such as patient billing and accounting, laboratory work, and keeping some medical records – are you very concerned, somewhat concerned, not too concerned, not concerned at all?

Very concerned	(8%)
Somewhat concerned	(21%)
Not too concerned at all	(31%)
Not concerned at all	(40%)
Not sure	( ** )

18% of public are very concerned that their health care provides are using computer today.

**L1.** Under national health care reform, computers are expected to be used extensively to manage and monitor operations. Some of these uses will involve individual medical records. In general, would such use of computers worry your – a great deal, a little or not at all?

A great deal	( 23 )
A little	( 47 )
Not at all	( 29 )
Not sure	( 1 )

Westin used the above questions (**X3.1, K1, L1**) to create the Computer Fear Index. Westin proposed [12]:

People with 2 or 3 of above answers were rated as high in computer fear; 1 answer as medium and no answer as Low. The public divided into three groupings as follows:<sup>10</sup>

High Computer Fear	-	22%
Medium Computer Fear	-	32%
Low Computer Fear	-	47%

### 2.3. Equifax-Harris Consumer Privacy Report – 1994

In the 1994 study [13], Westin created the “Distrust Index”. Westin used the following questions to derive the index.

**H1.** For each of the following statements, please tell me whether you tend to agree or disagree? Do you agree strongly, agree somewhat, disagree somewhat or disagree strongly?

- Technology has almost gotten out of control ( 23 – 28 – 25 – 21 – 1 )<sup>11</sup>
- Government can generally be trusted to look after our interests ( 5 – 15 – 28 – 52 - \*\* )
- The way one votes has no effect on what the government does ( 24 – 22 – 26 – 27 – 1 )
- In general business helps us more than harm us ( 34 – 42 – 14 – 8 – 1 )

Westin specified [13]:

To create the Distrust Index, we examined each respondent’s answers to the four questions.<sup>12</sup> If a respondent gave 3-4 distrustful answers (e.g., agrees that voting has no effect; disagrees that government can generally be trusted; disagrees that business helps more than harms; and agrees that technology is almost out of control), we classify that respondent as High in distrust; two distrustful answers are scored as Medium distrust; one as Low distrust; and no distrustful answers are called No distrust.

The values for the classification were:

<sup>10</sup> Here Westin mentions the privacy orientation as the answers to the questions asked to the respondents.

<sup>11</sup> Values specified are in the order of “Agree strongly,” “Agree somewhat,” “Disagree somewhat,” “Disagree strongly” and “Not sure.”

<sup>12</sup> Here Westin refers to the four parts of the question mentioned above in **H1**.

High Distrust	-	31%
Medium Distrust	-	38%
Low Distrust	-	26%
No Distrust	-	5%

Westin showed a direct correlation between the respondent's distrust level and respondent's position for a majority of the privacy issues. Westin showed this correlation in the 1990, 1993 and 1994 studies. In one of his remarks regarding this correlation, Westin argued the following [13]:

The degree of pro-privacy orientation on each issue goes up in a step-by-step rise as the level of distrust increases. For example, 51% of public is very concerned about threats to personal privacy, but 61% of those High in distrust are very concerned; 53% of those with Medium distrust; 42% of those Low in distrust; and only 24% of respondents who are Not Distrustful say they are very concerned about threats to their personal privacy today.

## 2.4. Equifax-Harris Consumer Privacy Report – 1996

In the 1996 study [15], Westin created the "Privacy Concern Index". The following questions were used for creating the index:

**A1.** How would you rate each of the following consumer issues in terms of their importance to you? Is this very important to you, somewhat important, not very, or not at all important?

### 5. Protecting the privacy of consumer information

Very Important	( 65 )
Somewhat important	( 23 )
Not very important	( *** ) <sup>13</sup>
Not at all important	( *** )
Don't know	( @@ ) <sup>14</sup>
Refused	( @@ )

**A 2a.** Have you personally ever been the victim of what you felt was an improper invasion of privacy, or not?

Yes, has been victim	( 24 )
No, have not been victim	( @@ )
Don't know	( @@ )
Refused	( @@ )

**A 3.** The present system in the U.S. for protecting the confidentiality of consumer information used by business combines THREE main controls; voluntary privacy practices adopted by companies, individual lawsuits and court decisions, and federal and state laws in specific industries.

Some experts feel that congress should create a permanent federal government Privacy Commission, as some European countries have done. This Commission would examine new technology development and could issue and enforce privacy regulations governing ALL business in the U.S.

Other experts believe the present system is flexible enough to apply those consumer privacy rights that the American public wants to have protected, and that creating a federal Commission gives too much authority to the federal government.

Which of these choices do you think is best for the U.S.?

Creating a federal government Privacy Commission	( 28 )
Using the present system to protect consumer privacy rights	( 67 )
Neither	( *** ) <sup>15</sup>

<sup>13</sup> ( \*\*\* ) together they were specified to be 10%

<sup>14</sup> ( @@ ) hereafter in this report specifies when the values were not addressed in Westin's reports.

Don't know	( ***)
Refused	( @@ )

**A 5.** Here are some predictions about how well the privacy of information about consumers will be protected in the year 2000. Which of the following comes closest to the way you feel – consumer privacy protection will get better, will get worse, or will remain about the same as it is today?

Consumer privacy will get better	( 17 )
Consumer privacy will get worse	( 44 )
Consumer privacy will remain about the same	( 39 )
Don't know	( @@ )
Refused	( @@ )

**E 3.** Here are some statements about the internet. (READ EACH ITEM) Do you agree strongly, agree somewhat, disagree somewhat, or disagree strongly?

1. The providers of on-line services should be able to track the places users go on the Internet in order to send these users targeted marketing offers

Agree strongly	( 7 )
Agree somewhat	( 25 )
Disagree somewhat	( 32 )
Disagree strongly	( 32 )
Don't know	( @@ )
Refused	( @@ )

**G 2.** Health care system researchers sometimes use patient records to study the value and costs of specific medications and treatments in order to improve programs for handling diseases. These researchers do not release any information that would identify specific patients. If your identity were kept strictly confidential, AND obtaining your permission in advance was NOT feasible, how acceptable would it be for your medical information to be used as part of that type of general research project – very, somewhat, not very, or not at all acceptable?

Very acceptable	( 18 )
Somewhat acceptable	( 39 )
Not very acceptable	( 12 )
Not at all acceptable	( 31 )
Don't know	( @@ )
Refused	( @@ )

Westin used the following six options for each of the questions mentioned above for creating the index respectively (e.g. the response “very important” to the question **A1.5** is modified as a statement “Privacy of consumer information is very important”) [15]:

- Privacy of consumer information is very important
- Personally a victim of privacy invasion
- Favor a general federal regulatory privacy commission
- Believe consumer privacy will get worse by year 2000
- Disagree that online services can track users for marketing to them
- Not acceptable to use medical records of health-system research without advance consent.

Westin divided the total public into High privacy concern (taking the samples whose response matched with 4, 5, or 6 of the above options), Medium privacy concern (taking the samples whose response matched with 2 or 3 of the above options), and Low privacy concern (taking the samples whose response matched with 1 or none of the above options) groups. Using this division Westin categorized the respondents into the following groups:

---

<sup>15</sup> ( \*\*\*) together they were specified as 5%

Privacy Fundamentalists: The respondents in this group were from the High privacy concern group as classified before. 25%<sup>16</sup> of the respondents belonged to privacy Fundamentalists.

To this segment, consumer privacy is very important, they feel that they have been victims of privacy invasions, they are pessimistic about the future of privacy protection and about a third of them favor creating a general federal regulatory agency on consumer privacy.

Privacy Pragmatists: The respondents in this group were from the Medium privacy concern group as classified before. 59 % of the respondents were privacy Pragmatists.

They are concerned about consumer privacy; they look at promised consumer-service benefits before they willingly give personal information to businesses. They seek safeguards and fair information practices when their personal information is sought to be used by business; and most of them favor using the present system of sectoral regulation by government and voluntary policies by business rather than creating a general federal privacy agency with regulatory powers.

Privacy Unconcerned: The respondents in this group were from the Low privacy concern group as classified before. 16 % of the respondents were classified as privacy Unconcerned.

They are not concerned about consumer privacy, do not feel victimized are ready to give their information for consumer benefits, and a large majority of them are not supportive of a general federal regulatory agency for consumer privacy.

## **2.5. E-commerce & Privacy: What Net Users want, 1998**

In the 1998 study [17], Westin did not create any privacy index; instead Westin asked a question regarding personal privacy. This question was also asked in some of the other studies [10], [12], [13]:

**Q1017.** How concerned are you about threats to your personal privacy in America today - very concerned, somewhat concerned, not very concerned, or not concerned at all?<sup>17</sup>

Very concerned  
Somewhat concerned  
Not very concerned  
Not concerned at all  
Don't know  
Refused

Westin found that 87% of computer users say they are concerned, with 56% “very concerned” and 31% “somewhat concerned”.

## **2.6. Privacy On and Off the Internet: What Consumers Want, 2001**

Westin in his 2001 report [4] provides the definition of the “Privacy Segmentation Index” created for the studies conducted between 1995 and 1999 [9], [14], [15], [20] Westin used the following question to derive the index in these studies:

**Q206.** For each of the following statements, how strongly do you agree or disagree?

---

<sup>16</sup> In the report [15], the values for the individual groups were specified as: privacy fundamentalists – 24%, privacy pragmatists – 60% and privacy unconcerned – 16%. But the values provided in one of the foot notes of the report were: Privacy Unconcerned – 16%, Privacy Pragmatists – 59% and Privacy Fundamentalists – 25%. We have used the later value as the results in this paper, as the values of the groups sum up to 100%.

<sup>17</sup> We report this question here, as we use this information in later analysis. In this report we refer to this question as the “common question.”

1. Consumers have lost all control over how personal information is collected and used by companies.
2. Most businesses handle the personal information they collect about consumers in a proper and confidential way.
3. Existing laws and organizational practices provide a reasonable level of protection for consumer privacy today.

For each of the above statements the following options were provided:

- Strongly Disagree
- Somewhat Disagree
- Somewhat Agree
- Strongly Agree

We were able to obtain the values for 1990 and 2000 only [9], [20]; the values were:<sup>18</sup>

**Table 2:** Percentage of responses for the questions during 1990 and 2000<sup>19</sup>

	1999 [9]		2000 [20]	
	Strongly / Somewhat Agree	Strongly / Somewhat Disagree	Strongly/ Somewhat Agree	Strongly/ Somewhat Disagree
Consumers have lost all control over how personal information is collected and used by companies.	80	20	77	20
Most businesses handle the personal information they collect about consumers in a proper and confidential way.	64	34	54	43
Existing laws and organizational practices provide a reasonable level of protection for consumer privacy today	59	38	51	47

In these studies (1995 – 1999), Westin used the following definitions for classifying the public into three categories:

Privacy Fundamentalists are respondents who agreed (strongly or somewhat) with the first statement (Q206 - 1) and disagreed (strongly or somewhat) with the second (Q206 - 2) and third statements (Q206 – 3).

Privacy Unconcerned are those respondents who disagreed with the first statement (Q206 - 1) and agreed with the second (Q206 - 2) and third statements (Q206 – 3).

All other respondents were categorized into Privacy Pragmatists. For studies conducted between 1995 and 1999, Westin has provided the values in the 2001 report as follows (we provide the values for the above groups):

<sup>18</sup> Westin in his 2001 report specifies that he has derived the privacy segmentation index for the studies conducted between 1995 and 1999; but we did not find any mention of the privacy segmentation index in the 1996 report [15].

<sup>19</sup> The total of the values obtained for all the categories except for the first category in 1999 did not total to 100; since we did not have the reports for 1999 and 2000, we were not able to check these values.

The values for fundamentalist, unconcerned and pragmatists were found to be:

Privacy Fundamentalists: This group sees privacy as an especially high value, rejects the claims of many organizations to need or be entitled to get personal information for their business or governmental programs, thinks more individuals should simply refuse to give out information they are asked for, and favors enactment of strong federal and state laws to secure privacy rights and control organizational discretion.

This group consists of about 25% of the American public.

Privacy Unconcerned: This group doesn't know what the "privacy fuss" is all about, supports the benefits of most organizational programs over warnings about privacy abuse, has little problem with supplying their personal information to government authorities or businesses, and sees no need for creating another government bureaucracy (a "Federal Big Brother) to protect someone's privacy.

This group consists of about 20% of the American public.

Privacy Pragmatists: This group weighs the value to them and society of various business or government programs calling for personal information, examines the relevance and social propriety of the information sought, wants to know the potential risks to privacy or security of their information, looks to see whether fair information practices are being widely enough observed, and then decides whether they will agree or disagree with specific information activities – with their trust in the particular industry or company involved being a critical decisional factor. The pragmatists favor voluntary standards and consumer choice over legislation and government enforcement. But they will back legislation when they think not enough is being done - or meaningfully done - by voluntary means.

This group consists of about 55% of the American public.

Westin in his 2001 report also presents the value and procedure for obtaining the "Core Privacy Orientation Index." Westin created this index for the studies conducted in mid - 2000 and 2001. For deriving the index, Westin used the same questions, options and the categories as in the above study (1995 – 1999). Using the same definitions provided above, Westin derived the following results for the mid – 2000 study:

Privacy Fundamentalists	–	25 %
Privacy Unconcerned	–	12 %
Privacy Pragmatists	–	63 %

Westin provided the following comments for the change in behavior of people in this study (mid – 2000) compared to earlier studies:

What this documents is something that makes good sense in terms of what we see happening all around us - that unconcern about privacy among the public has dropped, and 88% of the public now registers Medium to High consumer privacy concerns. But it also suggests that Privacy Fundamentalism is NOT increasing. Instead, an even larger segment of the public than in the mid to late 1990's, almost two-thirds, is adopting the Privacy Pragmatist - show me and let me decide - position.

To obtain the core privacy orientation index for 2001 study, Westin used the same question as in the above studies (1995 – 1999):

**Q206.** For each of the following statements, how strongly do you agree or disagree?

1. Consumers have lost all control over how personal information is collected and used by companies. ( 32 – 47 – 16 – 5 )<sup>20</sup>
2. Most businesses handle the personal information they collect about consumers in a proper and confidential way. ( 3 – 41 – 19 – 18 )

---

<sup>20</sup> Specified in the order of "strongly disagree," "somewhat disagree," "somewhat agree," "strongly agree."

- Existing laws and organizational practices provide a reasonable level of protection for consumer privacy today. ( 4 – 34 – 45 – 18 )

The following options were provided to the respondents to select from:

Strongly Disagree  
Somewhat Disagree  
Somewhat Agree  
Strongly Agree

In this 2001 study, Westin used the following definitions for classifying the public into three categories:

Privacy Fundamentalists are respondents who agreed (strongly or somewhat) with the first statement (Q.206 - 1) and disagreed (strongly or somewhat) with the second (Q.206 - 2) and third statements (Q.206 – 3).

Privacy Unconcerned are those respondents who disagreed with the first statement (Q.206 - 1) and agreed with the second (Q.206 - 2) and third statements (Q.206 – 3).

Privacy Pragmatists are all other respondents.

The values for fundamentalist, unconcerned and pragmatists were found to be:

Privacy Fundamentalists: At the maximum extreme of privacy concern, Privacy Fundamentalists are the most protective of their privacy. These consumers feel companies should not be able to acquire personal information for their organizational needs and think that individuals should be proactive in refusing to provide information. Privacy Fundamentalists also support stronger laws to safeguard an individual's privacy.

This group consists of 34% of the American public.

Privacy Unconcerned: These consumers are the least protective of their privacy - they feel that the benefits they may receive from companies after providing information far outweigh the potential abuses of this information. Further, they do not favor expanded regulation to protect privacy.

This group consists of 8% of the American public.

Privacy Pragmatists: Privacy Pragmatists weigh the potential pros and cons of sharing information; evaluate the protections that are in place and their trust in the company or organization. After this, they decide whether it makes sense for them to share their personal information.

Majority of the American public (58%) belong to this group.

## 2.7. Harris Privacy Survey - 2003

In the 2003 study [6], to obtain the privacy index, Westin asked the following question:

For each of the following statements, how strongly do you agree or disagree?<sup>21</sup>

- Consumers have lost all control over how personal information is collected and used by companies. ( 69% agreeing )
- Most businesses handle the personal information they collect about consumers in a proper and confidential way. ( 54% disagreeing )
- Existing laws and organizational practices provide a reasonable level of protection for consumer privacy today. (53% disagreeing )

Following options were provided to the respondents to choose from:

Strongly Disagree  
Somewhat Disagree  
Somewhat Agree

---

<sup>21</sup> As we took this information from the summary this does not have a question number; also we were not able to obtain the complete breakup percentage for each options. So we provide the values that we obtained from the summary.

## Strongly Agree

Replies to these three questions have the following results:

1. 69% of adults agree,<sup>22</sup> "Consumers have lost all control over how personal information is collected and used by companies." This is a decline of eleven points from 80% who felt this way in 1999.
2. 54% of the public disagree that "most businesses handle the personal information they collect about consumers in a proper and confidential way." This is an increase of nineteen points from only 35% who felt this way in 1999.
3. 53% of all adults disagree that "existing laws and organizational practices provide a reasonable level of protection for consumer privacy today." This is an increase of fifteen points from 38% in 1999.

Using above values Westin classified the public into three categories:

Privacy Fundamentalists: Some people feel very strongly about privacy matters. They tend to feel that they have lost a lot of their privacy and are strongly resistant to any further erosion of it.

This group consists of 26% of the American public.

Privacy Unconcerned: At the other extreme there are people who have no real concerns about privacy and who have far less anxiety about how other people and organizations are using information about them.

This group consists of 10% of the American public.

Privacy Pragmatists: who have strong feelings about privacy and are very concerned to protect themselves from the abuse or misuse of their personal information by companies or government agencies.

This group consists of 64% of the American public.

### 3. Discussion

This study was conducted to provide an understanding of the methodology, questions and results used by Westin to create the privacy indexes. Westin in his surveys, created several privacy indexes to summarize his results and to show trends in privacy concerns among the public. As mentioned earlier Westin used these indexes to classify people into three groups. He has interchangeably used the following to describe these three groups: (1) High and Fundamentalist, (2) Medium and Pragmatist, (3) Low and Unconcerned. We showed that Westin has used different questions to derive the same index (e.g. 1990 study [10] and 1996 study [11]). Also Westin did not create or provide the same indexes for all the studies which could have aided direct comparison.

---

<sup>22</sup> Westin has considered "strongly agree" and "somewhat agree" together for "agree" and "strongly disagree" and "somewhat disagree" together for "disagree".

**Table 3 :** Values and names for various privacy indexes. We were not able to obtain the index name for the 2004 study.<sup>23</sup>

<b>Year of Study</b>	<b>Index</b>	<b>Category name with % of population in the study</b>
1990 [10]	General Privacy Concern Index	Privacy Fundamentalists – 25%
		Privacy Unconcerned – 18%
		Privacy Pragmatists – 57%
1990 [10]	Consumer Privacy Concern Index	High Concern – 41%
		Medium Concern – 39%
		Low Concern – 20%
1991 [10]	Consumer Privacy Concern Index	High Concern – 46%
		Medium Concern – 36%
		Low Concern – 17%
1993 [12]	Medical Sensitivity Index	High – 13%
		Medium – 45%
		Low – 42%
1993 [12]	Medical Privacy Concern Index	High – 48%
1993 [12]	Consumer Fear Index	High – 22 %
		Medium – 32 %
		Low – 47 %
1994 [13]	Distrust Index	High Distrust - 31%
		Medium Distrust - 38%
		Low Distrust - 26%
		No Distrust - 5%
1996 [15]	Privacy Concern Index	Privacy Fundamentalists – 25%
		Privacy Unconcerned – 16%
		Privacy Pragmatists – 59%
1995 – 1999 [4]	Privacy Segmentation Index	Privacy Fundamentalists – about 25%
		Privacy Unconcerned – about 20%
		Privacy Pragmatists – about 55%
Mid – 2000 [4]	Core Privacy Orientation Index	Privacy Fundamentalists – 25%
		Privacy Unconcerned – 12%
		Privacy Pragmatists – 63%
Late – 2001 [4]	Core Privacy Orientation Index	Privacy Fundamentalists – 34%
		Privacy Unconcerned – 8%
		Privacy Pragmatists – 58%
2003 [6]	Core Privacy Orientation Index	Privacy Fundamentalists – 26%

<sup>23</sup> Information provided in the summary of 2001 survey gives the details for 1995 – 1999. Since we had the complete report for 1996, we have provided the exact values from the 1996 survey report. Also we have provided the values only from the summary and reports which we were able to find.

		Privacy Unconcerned – 10%
		Privacy Pragmatists – 64%
2004 [3]		High - 35%

**Table 4 :** Values for each option from the common question; the column “Total” provides the sum of the column “Very concerned” and the column “somewhat concerned.”<sup>24</sup>

Year	Very concerned	Somewhat concerned	Not very concerned	Not concerned at all	Not sure	Total
1978 [13]	31%	33%	17%	19%	1%	64%
1983 [13]	48%	29%	15%	7%	0%	77%
1990 [13]	46%	33%	14%	6%	1%	79%
1991 [13]	48%	31%	12%	7%	1%	79%
1992 [13]	47%	31%	13%	8%	2%	78%
1993 [13]	49%	30%	11%	6%	3%	79%
1994 [13]	51%	33%	10%	5%	1%	84%
1995 [14]	47%	35%	DNA	DNA	DNA	82%
1996 [15]	DNTAQ	DNTAQ	DNTAQ	DNTAQ	DNTAQ	DNTAQ
1998 [17]	55%	33%	DNA	DNA	DNA	88%
1998 [18]	56%	31%	DNA	DNA	DNA	87%
2001 [4]	DNTAQ	DNTAQ	DNTAQ	DNTAQ	DNTAQ	DNTAQ
2003 [6]	DNA	DNA	DNA	DNA	DNA	DNA
2004 [3]	DNA	DNA	DNA	DNA	DNA	DNA

DNA – Data Not Available, DNTAQ – Did Not Ask The Question

Table 3 provides the values for each privacy index created by Westin; Table 4 provides the percentage of personal privacy concern level for the common question mentioned in Section 2.5. From Table 3, we can see that during 1994 – 2000 the percentage of Fundamentalists in the public have remained almost the same, around 25% but the number of Unconcerned had decreased from 42 % in 1993 to 12 % in 2000 and reduced further to 10 % in 2003. However Pragmatist group was varying between 30% and 64%, 64% in 2003 being the highest to date of all the surveys. From Table 4 we can see that the percentage of personal privacy concern (“very concerned” or “somewhat concerned”) was around 80 % in almost all the studies, except for 88% during 1998. Using the results from his studies, Westin showed a strong correlation between the index values and the responses for the “common question” (e.g. higher the concern for personal privacy, higher the possibility of being in the category of “High or Fundamentalist.”)

In his reports Westin specifies that in recent years the position of – “Show me and let me decide” – [4] which is the Pragmatist (around 60%) view is prevailing among the public. This is consistent with the data in Table 3. The percentage of “Unconcerned” has been steadily decreasing for the last few years. In his reports Westin mentions that this might be due to more people getting to know more about technology and also becoming aware of various means to protect their privacy.

Westin stated, “Surveys show that consumer privacy concerns have not been lessened by 9/11” [8]. This can be seen in Table 3 for mid-2000 and late-2001. An increase of 9% (due to a decrease of 4% in Unconcerned and 5% in Pragmatist) in Fundamentalist shows that Americans are more worried about privacy post 9/11.

<sup>24</sup> We have presented all the values from the reports and the summaries that we have discussed in this report.

### 3.1. Closer look at the questions used for creating the indexes:

From Table 5 we can see that the criteria used for deriving the indexes have been different for different studies and also the indexes' names have been different.

**Table 5** summarizes the different aspects that Westin used for deriving the privacy indexes (For the purpose of comparison we have provided only necessary details and all details provided are taken exactly from Westin reports).

Year of study	Criteria used for deriving the privacy index
<p>1990 (General Privacy Concern Index)</p>	<p>Whether they are very concerned about threats to their personal privacy today.</p> <p>Whether they agree strongly that business organizations seek excessively personal information from consumers.</p> <p>Whether they agree strongly that the Federal government since Watergate is still invading the citizen's privacy.</p> <p>Whether they agree that consumers have lost all control over circulation of their information.</p>
<p>1991 (Consumer Privacy Concern Index)</p>	<p>Agreement for the statements :</p> <p>Consumers have lost all control over how personal information about them is circulated and used by companies</p> <p>My privacy rights as a consumer in credit reporting are adequately protected today by law and business practices</p>
<p>1993 (Medical Privacy Concern Index)</p>	<p>Ever used the services of a psychologist, psychiatrist, or other mental-health professional.</p> <p>Do you believe your personal information has been disclosed? And there were other 4 questions which were all related to medical information.</p>
<p>1993 (Computer Fear Index)</p>	<p>If privacy is to be preserved, the use of computers must be sharply restricted in the future.</p> <p>Concern level in usage of computers in medical services (patient billing, accounting)</p>
<p>1994 (Distrust Index)</p>	<p>Technology has almost gotten out of control</p> <p>Government can generally be trusted to look after our interests</p> <p>The way one votes has no effect on what the government does</p> <p>In general business helps us more than harm us</p>
<p>1995 – 2003 (Privacy Segmentation &amp; Core Privacy Orientation Index)</p>	<p>Consumers have lost all control over how personal information is collected and used by companies.</p> <p>Most businesses handle the personal information they collect about consumers in a proper and confidential way.</p> <p>Existing laws and organizational practices provide a reasonable level of protection for consumer privacy today.</p>

From this analysis we can say that the results produced by these different surveys conducted by Westin cannot be directly compared because of the following reasons:

- The indexes derived in the different studies did not use the same criteria (questions) for deriving them.
- The options (answers) used for obtaining the indexes were different for different studies.

These indexes could be directly compared to any similar study if and only if:

- The same questions are analyzed as asked by Westin
- The options for the questions provided are the same as those provided by Westin.
- The criteria used for deriving the indexes should be the same as the criteria used by Westin in deriving the particular index.

We see that the criteria for deriving the indexes have been consistent since 1995 and also the names given to the privacy indexes have been consistent. This helps us in understanding the privacy trend from 1995.

Apart from questions related to privacy index and general privacy concern, Westin's privacy studies also include many other questions that may be of use to privacy researchers. However, it is important to keep in mind that these questions were usually asked in the context of studies commissioned by corporations that intended to use the results as part of their efforts to influence the public policy process. Thus, privacy activists have been critical of the design of some of these questions and the ways the results have been reported [3].

Other groups and organizations have shown concern towards Westin's categorization. Electronic Privacy Information Center (EPIC), in their criticism, say that Westin has chosen "Pejorative" terms to describe those who care a great deal about privacy – "Fundamentalists." EPIC mentions that the behavior of the samples who are classified as "Fundamentalists" by Westin are not unreasonable and so they must not be referred and seen as people who are paranoid about privacy issues. Also, Professor Oscar Gandy in "The Role of Theory in the Policy Process" comments on the Equifax report of 1990. He mentions that the extent to which people had read or heard about "the potential use or misuse of computerized information about consumers" influences their level of privacy concerns. The more the people heard or read, the more they were concerned about threats to their privacy and the more concerned they were about the sale of personal information by industry [3].

We expect this report to help researchers in gaining an understanding of the questions, results and criteria for analysis of the privacy indexes created by Westin. We hope this study will help privacy researchers by giving a perspective of various privacy indexes created by Westin. In this report we only provide the results obtained by Westin; we did not perform any survey or study to evaluate the values presented in this report. As shown earlier, most of the indexes created by Westin cannot be directly compared.

In this study, we analyzed only the reports that we were able to obtain [Table 1]. Westin has conducted more than 30 survey studies and we analyzed only 14 of them. But we suspect the reports that we have analyzed are a good sample of the studies. Also the studies mentioned in this report were the studies mostly referenced in other reports and publications. A report based on all the 30 studies would help to generalize the findings further. One of the future research questions is to study time or the situation (political, legal and social) in which the study was conducted and to correlate it with the responses by the samples. We suspect these could have had an impact on the responses obtained by Westin.

## Acknowledgements

The authors would like to thank Dr. Alessandro Acquisti, Heinz School, Carnegie Mellon University, for his suggestions on the initial draft of this report. The authors also wish to thank Edward Barr and Sarah Jameson of Carnegie Mellon University for their feedback on the presentation and language of the paper. This research was partially supported by Institute for Software Research International, Carnegie Mellon University. This research was also partially funded by Carnegie Mellon CyLab.

## References

- [1]. ACQUISTI, A., AND GROSSKLAGS, J. Privacy and Rationality: Preliminary Evidence from Survey Data. In *Proceedings. In Third Workshop on Economics and Information Security, 2004*. (May 2004).
- [2]. CRANOR, L. F., REAGLE, J., AND ACKERMAN, M. S. Beyond Concern: Understanding Net Users' Attitudes About Online Privacy. Tech. rep., Retrieved June 18, 2004, <http://www.research.att.com/resources/trs/TRs/99/99.4/99.4.3/report.htm>, September 25-27, 1999.
- [3]. ENTERPRISE PRIVACY INFORMATION CENTRE. Public Opinion on Privacy. 2005. Retrieved June 18, 2005, <http://www.epic.org/privacy/survey/default.html>.
- [4]. HARRIS INTERACTIVE. Privacy On & Off the internet: What Consumers Want. Tech. rep., Retrieved Aug 27, 2004, [http://www.aicpa.org/download/webtrust/priv\\_rpt\\_21mar02.pdf](http://www.aicpa.org/download/webtrust/priv_rpt_21mar02.pdf), November 2001. Conducted for Privacy & American Business, 1,529 interviewees.
- [5]. PRIVACY & AMERICAN BUSINESS. Executive Summary. 1999. Retrieved Aug 20, 2004, <http://www.pandab.org/doubleclicksummary.html>
- [6]. TAYLOR, H. Most People Are "Privacy Pragmatists" Who, While Concerned about Privacy, Will Sometimes Trade It Off for Other Benefits. 2003. Conducted among 1,010 respondents. Retrieved Aug 18 2004, [http://www.harrisinteractive.com/harris\\_poll/index.asp?PID=365](http://www.harrisinteractive.com/harris_poll/index.asp?PID=365).
- [7]. WESTIN, A. Freebies and Privacy: What Net Users Think. 1999. Retrieved Aug 20, 2004, <http://www.pandab.org/sr990714.html>.
- [8]. WESTIN, A. Consumer, Privacy and Survey Research. 2003. Retrieved Aug 17, 2004, [http://www.harrisinteractive.com/advantages/pubs/DNC\\_AlanWestinConsumersPrivacyandSurveyResearch.pdf](http://www.harrisinteractive.com/advantages/pubs/DNC_AlanWestinConsumersPrivacyandSurveyResearch.pdf)
- [9]. WESTIN, A., AND HARRIS INTERACTIVE. IBM-Harris Multi-National Consumer Privacy Survey. Tech. rep., 1999. Approximately 5,000 adults of the U.S., Britain and Germany.
- [10]. WESTIN, A., AND HARRIS LOUIS & ASSOCIATES. Harris-Equifax Consumer Privacy Survey. Tech. rep., 1991. Conducted for Equifax Inc. 1,255 adults of the U.S. public.
- [11]. WESTIN, A., AND HARRIS LOUIS & ASSOCIATES. Equifax Executive Summary. 1992. Conducted among 1,254 adults of the U.S. public. Retrieved Aug 20, 2004, <http://www.privacyexchange.org/iss/surveys/eqfx.execsum.1992.html>.
- [12]. WESTIN, A., AND HARRIS LOUIS & ASSOCIATES. Health Information Privacy Survey. Tech. rep., 1993. Conducted for Equifax Inc. 1,000 adults of the U.S. public.

- [13]. WESTIN, A., AND HARRIS LOUIS & ASSOCIATES. Equifax-Harris Consumer Privacy Survey. Tech. rep., 1994. Conducted for Equifax Inc. 1,005 adults of the U.S. public.
- [14]. WESTIN, A., AND HARRIS LOUIS & ASSOCIATES. 1995 Equifax/Harris Consumer Privacy Survey- Executive Summary. Conducted for Equifax Inc. 1,006 adults of the national public. Retrieved Aug 20, 2004, <http://www.mindspring.com/~mdeeb/equifax/cc/parchive/svry95/docs/summary.html>.
- [15]. WESTIN, A., AND HARRIS LOUIS & ASSOCIATES. Equifax-Harris Consumer Privacy Survey. Tech. rep., 1996. Conducted for Equifax Inc. 1,005 adults of the U.S. public.
- [16]. WESTIN, A., AND HARRIS LOUIS & ASSOCIATES. Executive Summary. 1997. The results of Commerce, Communication, and Privacy Online for Privacy & American Business. 1,009 computer using adults. Retrieved Aug 20, 2004, <http://www.privacyexchange.org/iss/surveys/computersurvey97.html>.
- [17]. WESTIN, A., AND HARRIS LOUIS & ASSOCIATES. E-Commerce & Privacy: What Net Users Want. Tech. rep., 1998. Conducted for Privacy & American Business and PricewaterhouseCoopers. 1,011 adults of the national public.
- [18]. WESTIN, A., AND HARRIS LOUIS & ASSOCIATES. Executive Summary. 1998. Findings from the survey - The Privacy Concerns and Consumer Choice. Retrieved Aug 18, 2004, <http://www.privacyexchange.org/iss/surveys/1298execsum.html>.
- [19]. WESTIN, A., AND HARRIS LOUIS & ASSOCIATES. Equifax Executive Summary. 1990. Findings from the Survey - Consumers in the Information Age for Equifax Inc. 2,254 adults of the national public. Retrieved Aug 20, 2004, <http://www.privacyexchange.org/iss/surveys/eqfx.execsum.1990.html>.
- [20]. WESTIN, A., AND OPINION RESEARCH CORPORATION. Public Records and the Responsible Use of Information. Tech. rep., 2000. Conducted for the Center for Social and Legal Research and sponsored by ChoicePoint, Inc.
- [21]. WESTIN, A., AND THE STAFF OF THE CENTER FOR SOCIAL & LEGAL RESEARCH. Bibliography of Surveys of the U.S. Public, 1970-2003. 2003. Retrieved June 19, 2004, <http://www.privacyexchange.org/iss/surveys/surveybibliography603.pdf>.