

Expert Rebuttal Report of Joel H. Steckel, Ph.D.

Public Redacted Version

**THE SUPERIOR COURT OF THE STATE OF ARIZONA
IN AND FOR THE COUNTY OF MARICOPA**

STATE OF ARIZONA, *ex rel.* MARK
BRNOVICH, Attorney General

Plaintiff,

v.

GOOGLE LLC, a Delaware limited liability
company,

Defendant.

Case No. CV2020-006219

Expert Rebuttal Report of Joel H. Steckel, Ph.D.

June 8, 2022

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I. INTRODUCTION

A. Qualifications

1. I am a Professor of Marketing at the Leonard N. Stern School of Business, New York University, where I have taught since January 1989. I was the Chairperson of the Marketing Department for six years, from July 1998 to June 2004. From August 2012 until September 2021, I served as the Vice Dean for Doctoral Education at the school. Overlapping that interval, from August 2016 until August 2019, I also served as the Acting Chairperson of the school's Accounting Department. Prior to being promoted to Vice Dean, I was the faculty director of the Stern School Doctoral Program for five years, from May 2007 to July 2012. I have also held either permanent or visiting faculty appointments at the Graduate School of Business, Columbia University; the Anderson Graduate School of Management, U.C.L.A.; the School of Management, Yale University; and the Wharton School, University of Pennsylvania. I received my B.A. *summa cum laude* from Columbia University in 1977, and M.B.A., M.A., and Ph.D. degrees from the Wharton School, University of Pennsylvania in 1979, 1980, and 1982, respectively. I was elected to Phi Beta Kappa at Columbia University and Beta Gamma Sigma at the Wharton School. These are the national honor societies for the respective disciplines I studied at these institutions.
2. I was the Founding President of the INFORMS (Institute for Operations Research and Management Science) Society on Marketing Science, the foremost professional group for the development and application of management science theory and tools in marketing. In addition, I am a member of the American Marketing Association, the American Statistical Association, the Association for Consumer Research, the American Psychological Association, the American Association for Public Opinion Research, and the Society for Consumer Psychology.
3. My fields of specialization within marketing include marketing and survey research methodology, marketing and branding strategies, electronic commerce, and managerial decision making. I am an author of four books and over 50 articles. In the course of my scholarly research, teaching, and consulting work, I have studied issues of marketing

research, branding, use of consumer surveys, and their roles in consumer choice and marketing strategy.

4. One of the books I co-authored is a textbook entitled *Marketing Research*, in which I provide numerous detailed guidelines on survey methodology. This book has been adopted at several of the country's major business schools. During one of my sabbaticals I served as an in-house consultant at the market research firm, Directions for Decisions (DFD), headquartered in Jersey City, New Jersey. DFD's growth allowed it to be acquired by RTi Research, another research firm, headquartered in Norwalk, Connecticut.
5. I have sat on the editorial boards of many major journals over the years. From July 2010 until March 2017, I served as a co-Editor-in-Chief of the journal *Marketing Letters*. In that capacity I evaluated over 200 research studies each year for six and a half years. I served as a gatekeeper, deciding what got published in the journal, and what did not. As such, my evaluations of the scientific reliability and validity of each study are subject to the scrutiny of the academic community. The community would consider any study that does not conform to the scientific standards of my profession that appeared in the journal as a black mark on my record. To my knowledge, no such instance occurred during my tenure. I also consider the fact that the journal's publisher, the international firm, Springer-Verlag, kept me on in this prestigious position long past the expiration of my term (July 2014) as validation of my performance in evaluating research. My professional qualifications are described further in my curriculum vitae, which is attached as **Appendix A**.
6. During the course of my professional career, I have designed, conducted, supervised, and/or evaluated hundreds of consumer surveys. In that work I have formulated and evaluated sampling strategies, supervised and rendered opinions on sample selections, designed questionnaires, analyzed data, and interpreted results. I have also evaluated similarly purposed survey work performed by others.
7. I have served as an expert witness on marketing research, marketing strategy, branding, trademark, and issues related to consumer decision making in a variety of litigation matters. In the past four years, I testified as an expert witness in the matters listed in **Appendix B**.

8. For my work in this matter, I am being compensated at my standard consulting rate of \$1,075 per hour plus any associated work or travel expenses. Working under my direction and guidance, personnel at Analysis Group, Inc. (“Analysis Group”), a consulting firm, have assisted me in the preparation of this report. I also receive compensation based on the fees charged by Analysis Group. Neither my compensation nor that of Analysis Group is contingent upon my findings, the testimony I may give, or the outcome of this litigation.
9. In forming my opinions, I have reviewed documents and other materials provided to me by Counsel or obtained from public sources. The sources I considered are identified in this report or accompanying exhibits, as well as listed in the attached **Appendix C**.
10. Should additional relevant documents or information be made available to me, I may amend or supplement my opinions as appropriate.

B. Relevant Allegations

11. Plaintiff State of Arizona *ex rel.* Mark Brnovich, Attorney General (“Plaintiff”) brings this action against Google LLC (“Defendant” or “Google”), a technology company with its principal place of business in Mountain View, California.¹ “[I]n connection with the sale and advertisement of Google products and services,”² including Android devices, Plaintiff alleges that Defendant engaged in “widespread and systemic use of deceptive and unfair business practices to obtain information about the location of its users, including its users in Arizona, which Google then exploits to power its lucrative advertising business.”³ According to the Complaint, Google products include an “array of location-related settings” which “misleads and deceives users of Google’s products into believing that they are not sharing location information when they actually are[,]”⁴ and “[a]s part of activating and setting up their [Google Android and third-party Android phones] after purchasing them for consideration,

¹ Complaint for Injunctive and Other Relief, State of Arizona, *ex rel.* Mark Brnovich, Attorney General, v. Google LLC, Superior Court of the State of Arizona in and for the County of Maricopa, May 27, 2020 (hereafter, “Complaint”), ¶¶ 13-15.

² Complaint, ¶ 160.

³ Complaint, ¶ 1.

⁴ Complaint, ¶ 42.

consumers purportedly ‘consent’ to [the array of settings] that result[s] in Google’s collection of location data.”⁵

12. Specifically, Plaintiff alleges that “two of the primary settings through which Google misleads, deceives, and conceals material facts from users are Location History and Web & App Activity.”⁶ Plaintiff alleges that Google engages in “deceptive and unfair acts and practices by making the deceptive misrepresentation and false promise that ‘[w]ith Location History off, the places you go are no longer stored,’ when in fact Google continued to collect and store user location information even with Location History turned off.”⁷ Plaintiff further alleges that “[e]ven with Location History off, Google still collected and stored location data via (at least) its Web & App Activity setting,” which “defaulted to ‘on.’”⁸

C. Assignment

13. I have been retained by Willkie Farr & Gallagher LLP, Counsel for Google, to review the Plaintiff’s expert reports by Dr. Colin Gray and Dr. Douglas Schmidt (“Gray Report” and “Schmidt Report”). Specifically, I have been asked to determine whether certain opinions and conclusions at pages 2-3 and 11-15 of Dr. Gray’s report and in Dr. Schmidt’s report, as they pertain to consumer behavior and consumer perceptions, were developed in a scientifically appropriate and valid manner.⁹
14. In addition, I have been asked to develop and conduct a survey in response to certain allegations by Plaintiff. Specifically, the survey provides relevant evidence with respect to Dr. Gray’s hypothesized claims that “users do not understand and are deceived by location tracking and settings” and that the “user deception [...] negatively impacts users’ ability to

⁵ Complaint, ¶ 22.

⁶ Complaint, ¶ 50.

⁷ Complaint, ¶ 161.

⁸ Complaint, ¶¶ 53, 161.

⁹ Expert Report of Colin M. Gray, Ph.D., State of Arizona, *ex rel.* Mark Brnovich, Attorney General, v. Google LLC, Superior Court of the State of Arizona in and for the County of Maricopa, No. CV2020-006219, May 4, 2022 (hereafter, “Gray Report”), pp. 2-3 and 11-15; Expert Report of Douglas C. Schmidt, Ph.D., State of Arizona, *ex rel.* Mark Brnovich, Attorney General, v. Google LLC, Superior Court of the State of Arizona in and for the County of Maricopa, No. CV2020-006219, May 4, 2022 (hereafter, “Schmidt Report”).

make informed decisions about how location tracking is enabled or disabled across multiple controls.”¹⁰ To address these claims, the survey (“WAA Study”) examines whether a “Modified Location History Disclosure,” that I understand from counsel was available (in substantive form) to consumers from October 2018 through the present, affects whether consumers are more likely to turn the Web & App Activity (“WAA”) setting off when Location History is also turned off relative to how likely they are to turn the WAA setting off after viewing the Location History help page available to consumers in August 2018 (“2018 Location History Disclosure”).

II. SUMMARY OF OPINIONS

15. Based on my review and analysis of the WAA Study, relevant materials, and application of established academic and industry principles, as well as my academic training and expertise in marketing, research design, and consumer behavior, my opinions in this matter are:

- 1) The methodology used in a consumer study dictates what conclusions may be drawn. All of the Google user studies relied on by Plaintiff’s experts (to the extent they are user studies) are qualitative, small-sample research studies that cannot be used to (and were not being used by Google to) (1) draw conclusions about a broader user population, (2) empirically assess any case-specific topic or context, or (3) establish any causal link between Google’s allegedly deceptive disclosures and consumer perception or behavior.
- 2) The Gray Report presents a number of conclusions that are based on a purely conceptual and subjective collection of assumptions (which I identify and discuss in Section III.C) without specific analysis of Google’s settings and disclosures and their causal impact on consumer behavior or perception. In doing so, the Gray Report ignores the purpose and limitations of the Google user studies it cites, which renders its broad conclusions about consumer behavior and perception invalid and ungeneralizable to a broader user population. Further, the Gray Report

¹⁰ Gray Report, pp. 12, 15.

fails to provide any causal link between Google's user interface ("UI") and consumers' resulting behavior.

- 3) The Schmidt Report and its 2018 Study rely on only a single Android device being carried by a single user over the course of one single day, which cannot scientifically reflect any conclusions about a broader user population. The study also uses a synthetic account with Location History turned on, which is not reflective of the scenario at issue in this case where Location History is off and WAA is on, and is therefore irrelevant to the current matter. Further, neither the Schmidt Report nor the Nielson Report it cites provide any evidence pertaining to the impact of disclosures on consumers' perceptions and behaviors.

16. The empirical findings from my test/control experiment undercut Plaintiff's expert's claim that "users' ability to make informed decisions about how location tracking is enabled or disabled across multiple controls" is "negatively impact[ed]" by "user deception."¹¹ Specifically, the WAA Study examines decision making pertaining to selecting certain settings, and finds that presenting a modified disclosure about WAA storing location-related data when Location History is turned off has *no effect* on whether consumers turn the WAA setting off while Location History is also turned off. Further, the modified disclosure has *no effect* on whether consumers keep the Location History setting off or turn it on.

III. THE THEORIES PURPORTED BY PLAINTIFF'S EXPERTS LACK EMPIRICAL SUPPORT

17. Plaintiff's experts, Dr. Gray and Dr. Schmidt, each presents unsubstantiated and sweeping conclusions about general consumer behavior that lack appropriate empirical support. Due to the lack of specific, case-relevant evidence that would causally tie Google's alleged deception to consumer behavior, Plaintiff's experts' conceptual and unfounded theories about consumer behavior in this specific case are invalid and cannot be generalized to the relevant, broad population of Google users. Rather than conducting or relying on rigorous, replicable, empirical tests to assess the legitimacy of their theories about how consumers perceive and

¹¹ Gray Report, p. 15.

respond to matters related to this case, Dr. Gray and Dr. Schmidt rely on limited qualitative, subjective, and irrelevant support that was not designed to inform the primary issues in this matter. As such, Dr. Gray and Dr. Schmidt cannot provide valid information as to how Google users make decisions or how they perceive information. In particular, Plaintiff's experts fail to provide any empirical support that establishes a causal link between Google's allegedly deceptive disclosures and consumer behavior or perception.

18. Plaintiff's experts' reliance on the limited qualitative, subjective support to present sweeping conclusions about general consumer behavior is scientifically inappropriate. In the sections below, I outline the limitations of the qualitative support Plaintiff's experts rely on and explain that: (1) the Gray Report inadequately relies on a compilation slide deck that is not a scientifically valid study; (2) the Gray Report relies on Google user studies that cannot be used to draw causal conclusions about consumer behavior or perception in the relevant user population; (3) the Gray Report fails to provide a causal link between Google's user interface (UI) and consumers' resulting behavior; and (4) the Schmidt Report fails to provide a causal link between Google's location collection and consumers' resulting behavior.

A. Dr. Gray Relies On A Compilation Slide Deck That Is Not A Scientifically Valid Study And Is Inadequate To Draw Causal Conclusions About Consumer Behavior Or Perception In The Relevant User Population

19. The Gray Report cites one slide deck (GOOG-GLAZ-00205306.R) as evidence of four separate Google internal studies that purportedly support Dr. Gray's conclusions about consumer behavior and perception in the relevant user population.¹² However, the slide deck is a compilation, not a user study. It contains a subjective collection of observations that the unidentified author(s) extracted from various studies without providing relevant context, without a scientific approach, and without a stated objective. Furthermore, the deck is silent with respect to any details (e.g., methodology, how the data were collected and analyzed) that would allow a reader to assess the validity of the collection of statements and observations. The Gray Report ignores these limitations.

¹² Gray Report, pp. 12-13, citing GOOG-GLAZ-00205306.R.

20. First, the compilation itself does not embody scientific research and does not follow a scientific process. In contrast to scientifically rigorous publications or research summaries, the compilation deck does not include a description of its overall purpose, research, or conclusions. Instead, the compilation contains an unstructured collection of citations, hyperlinks, and notions from unidentified author(s). Without the elements of a scientifically rigorous process, Dr. Gray's use of the compilation deck to draw scientifically valid conclusions is inappropriate.
21. In particular, the individual underlying user studies mentioned in the compilation deck lack necessary context, including about how they were designed, conducted, and analyzed. The compilation deck does not reveal any details about the underlying studies' respective purposes, fielding dates, research protocols, assumptions, survey and interview scripts, study methodology (i.e., whether participants were asked only open-ended question, followed a moderator script, or reviewed one or more user interfaces), moderator or interviewer characteristics which can affect results, participant characteristics (i.e., demographics, interest in privacy, level of ability to navigate settings and menus structure), participant incentives, and results and conclusions.
22. Without such details, it is impossible for any expert to comment on the bases of the results presented. Such transparency is the cornerstone of scientific inquiry. Without it and the accompanying accountability, Dr. Gray's conclusions could hardly be called scientific.

B. Dr. Gray Relies On Google User Research That Is Inadequate To Draw Causal Conclusions About Consumer Behavior Or Perception In The Relevant User Population

23. The Gray Report relies on five Google user studies to support its conclusions, four of which were described only in a cursory manner in a compilation deck of ten studies that Dr. Gray cites.¹³ As discussed above, Dr. Gray did not have sufficient information about the studies referenced in the compilation deck to draw any scientifically sound conclusions. Further, all of the studies from the compilation deck that he relies on are qualitative, small-sample studies and cannot be used to (1) draw conclusions about a broader user population, (2)

¹³ GOOG-GLAZ-00205306.R; Conversation with Dr. Gretchen Gelke.

empirically assess any case-specific topic or context, or (3) establish any causal link between Google's allegedly deceptive disclosures and consumer behavior or perception.

24. The distinction between qualitative and quantitative research is crucial, especially in the context of accurately determining consumer behavior, as the methodology used in a consumer study dictates what conclusions may be drawn. Qualitative research, such as qualitative interviews or focus groups, can be helpful to generate high-level indications underlying certain topics, or to provide additional context for quantitative research. In this vein, “[q]ualitative research is designed to learn more about consumers’ underlying motives by asking them questions in an unstructured manner. It allows researchers to form hypotheses regarding consumer actions and to better define research areas so as to know the kinds of questions to ask in more structured surveys or experiments.”¹⁴ Even though, at times, qualitative research may be used to help inform decision making, such use has limited purpose. Qualitative research is not suitable to draw conclusions about a population’s behavior or perceptions, as the purpose of qualitative research is “to gain insight rather than prove something to be true or false.”¹⁵ Indeed, as my co-authors and I note in *Marketing Research*, “[s]imply observing customers provides a wealth of information, though not necessarily generalizable results.”¹⁶
25. In contrast, generalizable results — i.e., results that are deduced from taking a measurement from an appropriate subsample of a population and concluding that the population as a whole is represented in this measurement — require specific conditions to be fulfilled. The Federal Judicial Center’s *Manual for Complex Litigation* outlines the statistical standards necessary to estimate the characteristics of a population from a statistical sample, including ensuring that:

1. The population was properly chosen and defined;

¹⁴ Assael, H., 2004. *Consumer Behavior. A Strategic Approach*, Houghton Mifflin Company, (hereafter, “Assael, 2004”), p. 17.

¹⁵ Lehmann, D. R., Gupta, S., and Steckel, J.H., 1998. *Marketing Research*, Addison-Wesley, (hereafter, “Lehmann, Gupta, and Steckel, 1998”), p. 130.

¹⁶ Lehmann, Gupta, and Steckel, 1998, p. 130.

2. The sample chosen was representative of that population;
3. The data gathered were accurately reported;
4. The data were analyzed in accordance with accepted statistical principles;
5. Questions asked participants were clear and not leading;
6. The underlying research was conducted by qualified persons following proper interview procedures;
7. The process was conducted so as to ensure objectivity.¹⁷

26. Similarly, the *Manual for Complex Litigation* references the *Reference Guide on Survey Research* for important questions concerning the identification of the appropriate population and sampling frame, including:

1. Was an appropriate universe of population identified?
2. Did the sampling frame approximate the population?
3. How was the sample selected to approximate the relevant characteristics of the population?
4. Was the level of nonresponse sufficient to raise questions about the representativeness of the sample?
5. What procedures were used to reduce the likelihood of a biased sample?
6. What precautions were taken to ensure that only qualified respondents were included in the survey?¹⁸

27. Notably, it appears Plaintiff's experts failed to consider these well-established requirements in their reliance on Google user studies. Specifically, Plaintiff's experts either ignore or brush over the fact that most of the Google user studies provide very little, if any, information on the methodology used, sample recruitment, and generalizability. For the information that is

¹⁷ Federal Judicial Center, 2004. *Manual for Complex Litigation*, Fourth Edition, pp. 1-798 (hereafter, "Manual for Complex Litigation, 2004"), p. 103.

¹⁸ Manual for Complex Litigation, 2004, p. 501.

made available about the user studies referenced in the documents on which Plaintiff's experts rely, it is clear that such studies do not meet any scientific requirements for reliability or validity (internal, external, or construct).¹⁹

28. In fact, all of the Google user studies the Gray Report relied on or indirectly referenced have very small sample sizes, ranging from four to eight United States respondents (where any were included), and sometimes a similar number of overseas respondents. Such small sample sizes suggest that the purpose of these studies pertained to idea generation and exploratory work, rather than gaining insights about a broad user population. Indeed, I understand from Dr. Gelke, Senior Manager, User Experience at Google, that the purpose of each of the studies referenced in the Gray Report was to gain a preliminary understanding of the range of possible user reactions and views for various products and services.²⁰ Notably, the Gray Report appears to recognize that the Google internal studies it relies on are different from scientific studies that rely on statistical hypothesis testing to draw conclusions about the perceptions and behaviors of a broader population. In contrast, Dr. Gray relies on studies that, in his own words, consist of or implement a "think aloud protocol" in unstructured one-on-one interviews and usability testing, "where users are asked to describe what they are thinking as they conduct a task or view UI elements."²¹ Such a qualitative "protocol" is not a scientifically rigorous method of drawing valid conclusions about consumer perceptions or behaviors across a population.
29. In addition to small sample size studies indicating a qualitative, exploratory method, small sample sizes also significantly limit the internal and external validity as well as the reliability

¹⁹ Internal, external, and construct validity pertain to the different inferences that can be drawn from research. Internal validity refers to "inferences about whether observed covariation between A and B reflects a causal relationship from A to B in the form in which the variables were manipulated or measured." External validity generalizations are "the validity of inferences about whether the causal relationship holds over variation in persons, settings, treatment, and measurement variables." Construct validity generalizations are "the degree to which inferences are warranted from the observed persons, settings, and cause and effect operations included in a study to the constructs that these instances might represent." Shadish, W. R., Cook, T.D., and Campbell, D. T., 2002. *Experimental and Quasi-Experimental Designs for Generalized Causal Inference*, Houghton Mifflin Company, pp. 53, 38.

²⁰ Conversation with Dr. Gretchen Gelke.

²¹ Gray Report, p. 12; Conversation with Dr. Gretchen Gelke.

of the study's measures and findings, as minor changes to the group's composition can lead to varying findings.²² In other words, studies of small sample size do not yield stable results. For example, in a study with only six participants, such as one of the studies that Dr. Gray relies on, adding one or two more participants could swing the results by as much as 25%.²³ In contrast, my empirical study (discussed below in Section IV) samples 1,122 respondents and balances the inbound sample to the United States Census on age, gender, and region to ensure that its results have external validity and are generalizable.

30. Further, many of the Google user studies relied upon by Plaintiff's experts recruited respondents from outside the United States. Putting aside the qualitative nature and the small sample size of these studies, the fact that the studies' samples were comprised of non-United States respondents significantly limits the relevancy of its findings; consumer behavior and perception can vary substantially by (and within a) country, especially regarding topics such as data usage and expectations regarding privacy.²⁴ As such, any conclusions drawn about consumer behavior and perception among the United States population based on qualitative insights gained from six to thirteen respondents from outside the United States is highly unreliable.
31. Additionally, I understand from Dr. Gelke that Google user studies target specific user segments, and typically focus on users who are sensitive to privacy because these users are most likely to provide feedback that enables Google to identify and address potential challenges. Notably, the fact that Google's recruitment for its user studies is "biased" to include at least some privacy-sensitive users further highlights how the findings from the user studies are not representative of the broad user population.
32. Lastly, many of the Google user studies relied upon by Dr. Gray were not purporting to reflect a statistically accurate assessment of general user behavior or perceptions, but were rather aimed at improving Google's offerings. The Gray Report acknowledges this different

²² Lehmann, Gupta, and Steckel, 1998, p. 131.

²³ GOOG-GLAZ-00205306.R. For example, results could change from 0/6 to 2/8.

²⁴ Bellman, S. et al., 2004. "International Differences in Information Privacy Concerns: A Global Survey of Consumers," *The Information Society*, Vol. 20, No. 5, pp. 313-324.

purpose, noting that the goals of Google's user studies included testing to "identify opportunities to further develop or refine product offerings."²⁵ I understand from Dr. Gelke that one of the studies Dr. Gray points to in the compilation deck is a rapid iterative testing and evaluation (RITE) study. Consistent with Google's purpose to "identify opportunities to further develop or refine product offerings," RITE studies changed or modified unreleased concept mocks reflecting potential future product UI elements in the middle of the study, which further limits the relevance of findings from the study to accurately reflect the general population much less the real-world location settings.²⁶ In relying on exploratory studies to draw his conclusions, Dr. Gray ignores that these studies do not even purport to reflect general user behavior or perceptions of offerings or settings as they exist in the real world and consequently have no external validity.

C. The Gray Report Fails to Provide Any Valid Causal Link Between Google's User Interface and Consumers' Resulting Behavior

33. The Gray Report presents a number of conclusions that are based on a purely conceptual and/or subjective collection of assumptions (which I identify and discuss below) without specific and valid analysis of Google's settings and disclosures and their causal impact on consumer behavior or perception. In particular, the Gray Report concludes that "Google's Android user interface ("UI"), the UI of other Google services, and Google disclosures regarding its settings contain specific dark patterns that hide important complexity from end users and are designed in a manner that would lead users to think they are managing the totality of location tracking when they are not."²⁷ To support these broad conclusions about consumer behavior and perception, the Gray Report cites a number of Google documents and states that "Google's internal research confirms that users do not understand and are deceived by location tracking and settings."²⁸ However, as explained in Section III A above, these studies cannot be used (and were not being used by Google, according to Dr. Gelke) to (1)

²⁵ Gray Report, p. 12.

²⁶ Conversation with Dr. Gretchen Gelke; GOOG-GLAZ-00205306.R at 15.R.

²⁷ Gray Report, p. 2.

²⁸ Gray Report, p. 12.

draw conclusions about a broader user population, (2) empirically assess any case-specific topic or context, or (3) establish any causal link between Google's allegedly deceptive disclosures and consumer perception or behavior. The Gray Report ignores the purpose and limitations of these studies, which renders its broad conclusions about consumer behavior and perception unreliable and ungeneralizable.

Statement on alleged deception pertaining to difference between location reporting and location history (Gray Report, Page 12)

34. The Gray Report further concludes that “Google’s internal research confirms that users do not understand and are deceived by location tracking and settings,” and in support of this statement, the Gray Report cites a 2014 Google slide deck titled “Simplifying Location History Settings.”²⁹ Based on my review, this PowerPoint presentation does not present a rigorous scientific study, and instead appears to be a single Google employee’s ideas about Android’s user interface. As such, Dr. Gray’s characterization of the materials as internal research is incorrect. Ignoring the apparent lack of a scientific backup for the thoughts contained in this slide deck, the Gray Report emphasizes that the presentation “was framed by the problem that ‘Most users don’t understand difference between location reporting and location history’ (GOOG-GLAZ-00002914 at 916)—an issue that appeared to be a baseline issue of user confusion that was driving further product iteration.”³⁰ However, the presentation also contained stated goals of “reduc[ing] confusion around Location History settings,” “provid[ing] better transparency,” and “provid[ing] better controls” and could be considered to highlight Google’s commitment to improve transparency and avoid confusion – aspects that the Gray Report avoids mentioning.³¹
35. Further, even the Gray Report makes clear that the slide deck is an internal product presentation and not a valid study: “This project presentation showed mock-ups of potential design changes that could ‘provide better transparency,’ ‘reduce confusion around Location

²⁹ GOOG-GLAZ-00002914.

³⁰ Gray Report, p. 12.

³¹ GOOG-GLAZ-00002914, at 917.

History settings,' and 'provide better controls.'"³² The Gray Report cannot reasonably rely on this business presentation to make scientific conclusions about general consumer understanding as it relates to location reporting and location history.

Statement on alleged deception pertaining to similar controls (Gray Report, Pages 12-13)

36. The Gray Report states that "[a] separate December 2017 study also showed that when users were asked to change specific settings that included location controls, [REDACTED]

[REDACTED]
[REDACTED] (GOOG-GLAZ-00205306.R at 11.R)."³³ Dr. Gray further states that "[t]his finding revealed that [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]³⁴ He uses this to conclude that there are generally [REDACTED]

[REDACTED]³⁵

37. As discussed above in Section III.A, Dr. Gray's evidence for this study is a one-page excerpt from a presentation summarizing and compiling out-of-context insights from multiple small-sample, purely exploratory studies conducted in different countries related to information architecture and usability. I understand from Dr. Gelke that this presentation includes information from at least ten separate studies administered by different people over different years in different countries, and that these studies were designed to be qualitative and pick up on high-level signals that were not intended or expected to produce information that was empirically representative of attitudes, expectations, or perceptions of Google's entire user population. The document itself is not and does not purport to be a user study.³⁶

Nonetheless, the Gray Report relies on this compilation deck of high-level signals in its

³² Gray Report, p. 12; GOOG-GLAZ-00002914, at 917.

³³ Gray Report, pp. 12-13.

³⁴ Gray Report, pp. 12-13.

³⁵ Gray Report, p. 13, citing GOOG-GLAZ-00205306.R at 311.

³⁶ GOOG-GLAZ-00205306.R.

attempt to establish consumer deception, cherry-picking one finding about a Google Maps prompt from [REDACTED] respondents to assert it “revealed” that users were deceived.³⁷ A qualitative finding based on eight respondents is by no means sufficient evidence for the broad conclusion drawn by the Gray Report.

38. In addition, the Gray Report makes false assumptions and improperly conflates two studies. Specifically, Dr. Gray incorrectly conflates two separate studies conducted in 2014 as a single study conducted in 2017.³⁸ I understand from Dr. Gelke that the studies concern different topics: one concerns select Google Account permissions available in 2014 while the other concerns a hypothetical Google Maps app pop-up. I also understand the studies had different research questions, assumptions, types of participants, and conclusions. They therefore cannot be viewed as a single study with a unified set of conclusions as Dr. Gray attempts to do in his report. Dr. Gray asserts that these two studies (which he conflates as one study) show none of the participants knew how to find (unspecified) “location controls” and

[REDACTED]³⁹ The Gray Report also states that this [REDACTED]

[REDACTED]⁴⁰ I understand from Dr. Gelke that neither study specifically concerned the location control settings. One study of six participants included questions on a

[REDACTED] It did not study location controls generally, location history, or location reporting. I understand the other study of eight participants concerned a [REDACTED] and is not

³⁷ Gray Report, p.13, citing GOOG-GLAZ-00205306.R at 11.R [REDACTED]

³⁸ Gray Report, p. 12; Conversation with Dr. Gretchen Gelke.

³⁹ Gray Report, p. 12.

⁴⁰ Gray Report, p. 13.

directly related to location controls. Overall, it appears that the Gray Report makes false assumptions pertaining to the compilation deck and presents conclusions that are unsupported.

39. Apart from Dr. Gray's false assumptions and conflation of the two 2014 studies, there are also limitations with relying on either study to make general conclusions about user perception. First, one study has a sample size of only six respondents and one has a sample size of only eight respondents which, as discussed in Section III.B, is inadequate to draw conclusions about the general user population and is subject to varying findings depending on minor changes to the sample's composition. Additionally, as I discussed above, qualitative, small-size studies are an inadequate means to extensively examine consumer perceptions and behavior or extrapolate to a broader population. Further, the compilation deck provides no information on (i) how the study was conducted (i.e., whether participants were asked only open-ended questions, followed a moderator script, or reviewed one or more user interfaces), or (ii) the characteristics of participants makeup of the study (i.e., demographics, interest in privacy, level of ability to navigate settings and menus). However, as I understand from Dr. Gelke, both studies selected non-representative samples of users.⁴¹ One study focused on participants who use Google Maps several times a week. Since the study omitted other relevant user groups who use Google Maps more or less frequently (e.g., every day or once a month), its findings therefore cannot be extrapolated to a broad population group.⁴² The other study was agnostic to Maps experience and instead focused on "advanced" and "expert" Android internet search users, once again, omitting other relevant user groups. Considering the small sample sizes, different participant characteristics, and the studies' qualitative nature, the Gray Report cannot rely on these studies (which it improperly characterizes as a single study) to conclude consumer deception pertaining to the similarity of controls.⁴³

⁴¹ Conversation with Dr. Gretchen Gelke.

⁴² Conversation with Dr. Gretchen Gelke.

⁴³ Conversation with Dr. Gretchen Gelke.

Statement on alleged deception pertaining to user engagement with the “learn more” link
(Gray Report, Page 13)

40. The Gray Report cites another set of out-of-context studies referenced in the same compilation deck (GOOG-GLAZ-00205306.R) to support the assertion that [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] Dr. Gray also states that [REDACTED]
[REDACTED] (GOOG-GLAZ-00205306.R at 315.R).”⁴⁴ Once again, Dr. Gray conflates at least three studies examining different issues as a single one concerning WAA disclosures in an attempt to bolster his conclusion that Google studies prove consumers were confused about the WAA setting. However, none of the studies cited by Dr. Gray were focused solely on the WAA setting. I understand from Dr. Gelke that the one study that resulted in the [REDACTED]
[REDACTED] comment concerned possible variations of the Google Now onboarding flow, not WAA.⁴⁵ Another concerned broad-use consent, possible designs for Google’s Take-Out feature, and data control flows.⁴⁶ A third concerned five varying topics, ranging from use of audio on Android to Google Now setup flows.⁴⁷
41. Similar to the Gray Report’s previous citations to this compilation deck, conclusions about user behavior that are made without knowledge of the context of the studies from which these findings are retrieved are unreliable and do not allow for scientifically valid conclusions regarding the perceptions and behaviors of a broader population. Nonetheless, Dr. Gray ignores that the compilation deck provides no insight into how the referenced studies were conducted, how respondents were recruited, who composed the sample, or in which country the studies took place. All were small-size studies that suffer from the

⁴⁴ Gray Report, p. 13.

⁴⁵ Conversation with Dr. Gretchen Gelke.

⁴⁶ Conversation with Dr. Gretchen Gelke.

⁴⁷ Conversation with Dr. Gretchen Gelke.

problems discussed above.⁴⁸ Furthermore, because the deck Dr. Gray cites (GOOG-GLAZ-00205306.R) provides no details about the underlying studies, Dr. Gray ignores that one of the studies he relies on used the RITE (rapid iterative testing and evaluation) methodology that changed the stimuli presented to respondents several times over the course of the study.⁴⁹ The Gray Report ignores that such an unstructured, exploratory approach can have a role in idea exploration, but is not suited to support scientific conclusions about a broader user population. As such, the Gray Report fails to provide any reliable evidence that the relevant user population in the United States does not engage with the “learn more” link. The anecdotal remarks pointed out in the Gray Report’s conclusion are not scientific evidence of user behavior and cannot be used to render valid conclusions about a broad user population.

Statement on location settings (Gray Report, p. 13)

42. The Gray Report states that [REDACTED]

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As with the compilation deck, although this statement references user studies, the document relied upon is not a user study. Instead, the document the Gray Report cites is a Google employee’s internal presentation.⁵¹ I understand from Dr. Gelke that when the employee drafted the [REDACTED] slide Dr. Gray relies upon in his report (at p. 13), the employee drew primarily from the press articles discussing purported user confusion, and secondarily from her own interpretation of Google’s user studies, adding her own gloss to those findings, which included the viewpoint of members of the press, journalists, her past experience, and any other Android users that came to mind. The presentation does not explain any details about the studies conducted.⁵² As such, the limited qualitative, subjective support offered by the Gray Report cannot be used to draw conclusions about a broader population and cannot be used to empirically assess any case-specific topic.

⁴⁸ Conversation with Dr. Gretchen Gelke.

⁴⁹ Conversation with Dr. Gretchen Gelke.

⁵⁰ Gray Report, p. 13, citing GOOG-GLAZ-00275934 at 939.

⁵¹ Conversation with Dr. Gretchen Gelke.

⁵² GOOG-GLAZ-00275934.

Statement on WAA (Gray Report, p. 13)

43. The Gray Report states that a “study showed that ‘only [REDACTED] participants understand the relation between the sWAA and the WAA,’” and “[REDACTED] didn’t understand the sWAA text and the effect this could have in their experience.”⁵³ Once again, Dr. Gray relies on the compilation deck and selects a convenient quote from it without knowledge of the relevant context and characteristics of the studies underlying the quoted statement. The Gray Report ignores that the compilation deck provides no insight into how the study was conducted, how respondents were recruited, what questions they were asked, how participants responded, or whether the quote he presents reflected the thoughts of any other study participant. Dr. Gray also ignores that the study appears to have been conducted in Barcelona,⁵⁴ and may not be suited to predict the perceptions or behaviors of United States-based users, who are known to have different attitudes towards privacy-related topics compared to European users.⁵⁵ Ultimately, the Gray Report fails to provide valid evidence that a broad user population in the United States would not understand the consequences related to their WAA and sWAA settings.

Statement on alleged deception pertaining to user perception of default settings (Gray Report, p. 14)

44. The Gray Report states that “[i]n yet another user study regarding user expectations, Google found that ‘[f]or many users, [device location (“DL”)] off means no location data will be used,’ despite the fact that when DL is off, Google still collects user location data (GOOG-GLAZ-00256277 at 282).”⁵⁶ This document is a presentation summarizing insights gained from 13 “semi-structured” interviews with users involving various exercises and scenarios.⁵⁷ A review of this presentation highlights numerous limitations that render any conclusions

⁵³ Gray Report, p. 13, citing GOOG-GLAZ00205306.R at 312.

⁵⁴ GOOG-GLAZ-00205306.R at 312. Conversation with Dr. Gretchen Gelke.

⁵⁵ Bellman, S. et al., 2004. “International Differences in Information Privacy Concerns: A Global Survey of Consumers,” *The Information Society*, Vol. 20, No. 5, pp. 313-324.

⁵⁶ Gray Report, p. 14.

⁵⁷ GOOG-GLAZ-00256277 at 280.

about general consumer behavior or perception unreliable. Specifically, this study involved “13 semi-structured interviews” with respondents, only four of whom were users in the United States.⁵⁸ As discussed previously, findings from a qualitative study involving four respondents from the United States are extremely limited, lack construct validity, and cannot be used to draw conclusions about consumer perception outside the context of the study.

45. The presentation twice recognizes the reduced validity of its findings and cautions the reader accordingly. First, on the same page Dr. Gray cites, the summary mentions the “CAVEAT” that the limited sample size underlying this research at best reflects rough trends in the sampled population.⁵⁹ In addition, the presentation devotes an entire slide immediately prior to the summary slide cited by Dr. Gray to list five substantial limitations, including that the study is “not representative, “[s]elf-report may not reflect actual behavior outside the study session” and that “[p]rivacy attitudes often depend on the situation; feedback in [the] study does not reflect all situations.”⁶⁰ The Gray Report not only ignores these limitations, but also glosses over statements that do not fit its implicit assumption of consumer perceptions being negative towards location tracking, i.e., it assumes the conclusion. For example, a key insight highlighted in the presentation is that users’ comfort with coarse location tracking depends on “[p]recision, benefit and transparency.”⁶¹
46. Similar to focus groups, “semi-structured” interviews are suited for concept exploration, but not for drawing conclusions about how a broader population would perceive certain topics or behave in certain contexts.⁶² Due to the face-to-face, non-blind, and unstructured nature of such interviews, results cannot be expected to be consistent even for a single respondent. As

⁵⁸ GOOG-GLAZ-00256277 at 280.

⁵⁹ GOOG-GLAZ-00256277 at 282.

⁶⁰ GOOG-GLAZ-00256277 at 281.

⁶¹ GOOG-GLAZ-00256277 at 312.

⁶² Assael, 2004, p. 17 (“Qualitative research is designed to learn more about consumers’ underlying motives by asking them questions in an unstructured manner. It allows researchers to form hypotheses regarding consumer actions and to better define research areas so as to know the kinds of questions to ask in more structured surveys or experiments.”).

such, the Gray Report provides no valid evidence related to user perception of location-related settings.

Statement on alleged deception pertaining to users' ability to make informed decisions about location tracking (Gray Report, p. 15)

47. The Gray Report states that “[i]f the goal is obtaining meaningful user consent, these sources point towards a product that is known to be broken, with broad user deception that negatively impacts users’ ability to make informed decisions about how location tracking is enabled or disabled across multiple controls. The precise purpose and impact was generally unknown to users.”⁶³ As discussed above, the Gray Report inappropriately relies on a Google compilation slide deck, four exploratory, small-sample studies briefly referenced therein, and a handful of other non-research documents it purports are “studies” to draw sweeping conclusions about consumer behavior and perception. The Gray Report fails to evaluate the reliability of these studies and distinguish them from a Google employee’s unsupported opinions that may not be shared by Google’s staff who oversee these research efforts.⁶⁴ Due to the qualitative nature of these studies, the extremely small sample sizes, and the fact that many rely on findings from respondents outside of the United States, the Gray Report’s conclusions about user behavior and perception cannot be relied upon and cannot be generalized to the general user population.

Assertions that employee statements are Google user studies (Gray Report, p. 14)

48. Besides the documents discussed above (at Sections III.A-C), the Gray Report cites a number of additional documents to support its assertion that “Google’s [i]nternal [s]tudies [c]onfirmed [t]hat [u]sers [d]o [n]ot [u]nderstand and [a]re [d]eceived.”⁶⁵ Some of the cited documents are not “studies” at all. For example, Dr. Gray cites emails from employees (GOOG-GLAZ-00057861),⁶⁶ as well as what appears to be meeting notes (GOOG-GLAZ-

⁶³ Gray Report, p. 15.

⁶⁴ Gray Report, pp. 12-13, citing GOOG-GLAZ-00205306.R.

⁶⁵ Gray Report, p. 11.

⁶⁶ Gray Report, p. 14; GOOG-GLAZ-00057861.

00046967),⁶⁷ product team presentation decks (GOOG-GLAZ-00027795),⁶⁸ and product review documents (GOOG-GLAZ-00100799; GOOG-GLAZ-00099239).⁶⁹ None of these are “internal studies,” and none can provide scientifically valid assessments of user behavior and perceptions in the general population.

49. In summary, the Gray Report ignores the purpose and limitations of the Google user studies and other documents cited, which renders its broad conclusions about consumer behavior and perception invalid and ungeneralizable to a broader user population.

D. The Schmidt Report Fails to Provide Any Causal Link Between Google’s Location Collection and Consumers’ Resulting Behavior

50. The Schmidt Report relies predominantly on a purported study conducted by Dr. Schmidt on August 15, 2018 (the “2018 Study”), which was meant to “replicate an average user’s daily activities using an Android mobile phone device.”⁷⁰ In particular, a single researcher who was the only participant in the study carried an Android mobile phone throughout one single day.⁷¹ According to the Schmidt Report, “[p]rior to the study, the phone was wiped by conducting a factory data reset and configured as a new device with default settings left on to avoid prior user information associated with the device. A new Google account was created with Location History turned on.”⁷²
51. The Schmidt Report concludes that “[t]he 2018 Study empirically evaluated how Google collects user data in a variety of ways.”⁷³ The Schmidt Report describes its objective as “to consider whether and to what extent my 2018 Study supports or refute[s] the conclusions reached by Dr. Nielson in his declaration.”⁷⁴ Based on this objective, the Schmidt Report concludes that a number of opinions rendered in the Nielson Declaration are supported by the

⁶⁷ Gray Report, p. 13; GOOG-GLAZ-00046967.

⁶⁸ Gray Report, p. 14; GOOG-GLAZ-00027795.

⁶⁹ Gray Report, p. 14; GOOG-GLAZ-00100799; GOOG-GLAZ-00099239.

⁷⁰ Schmidt Report, p. 2.

⁷¹ Schmidt Report, p. 2.

⁷² Schmidt Report, p. 2.

⁷³ Schmidt Report, p. 2.

⁷⁴ Schmidt Report, p. 4.

results of the 2018 Study, including that “[w]hen a consumer purchases an Android Device, he or she receives a device that Google uses to track that user’s location.”⁷⁵

52. The Schmidt 2018 Study, as it relates to an “average user’s daily activities using an Android mobile phone device,”⁷⁶ cannot be used as a means to reliably and scientifically draw conclusions about a broader user population. First, the 2018 Study relies on only a single Android device being carried by a single user taking pre-determined actions over the course of one single day. Such a methodology cannot be used to reliably — or even remotely realistically — describe “average user’s daily activities using an Android mobile phone device,”⁷⁷ as it is infeasible to subsume the daily routines of all Android mobile phone users into a series of tasks that would reflect the variation of tens of millions of Android smartphone users in the United States. In that vein, an attempt to draw conclusions about the broader user population is not scientifically valid, as one user’s use of one Android device on one day is not necessarily representative of overall use of the broader population.
53. Second, the 2018 Study uses a synthetic account with settings that were selected for the purposes of this one-person study. Specifically, this account has Location History turned on, which I understand results in data collected in the study not being reflective of the scenario at issue in this case where Location History is off and WAA is on.⁷⁸

IV. THE EMPIRICAL FINDINGS OF THE WAA STUDY UNDERCUT THE THEORIES PURPORTED BY PLAINTIFF’S EXPERTS

54. I conducted the WAA Study to determine whether and to what extent a modified disclosure about Google Location Collection as compared to the August 2018 Location History help page that Plaintiff claims is misleading affects whether relevant users review and change their default Google account settings, and specifically the Location History and WAA settings. Using well-accepted principles of survey design, administration, and analysis, the WAA Study finds that presenting a Location History help page with a modified disclosure

⁷⁵ Schmidt Report, p. 6.

⁷⁶ Schmidt Report, p. 2.

⁷⁷ Schmidt Report, p. 2.

⁷⁸ Schmidt Report, p. 2.

(the “Modified Location History Disclosure”)⁷⁹ to consumers about WAA storing location-related data when Location History is turned off has no effect on whether consumers would change their Location History setting. In particular, the modified disclosure has no effect on whether consumers turn the WAA setting off while Location History is also turned off. I discuss the study design, administration, and data analysis in turn below.

A. Study Design

55. In the sections that follow, I provide an overview of the study design, including discussion of the target population, experimental approach, survey stimuli, and avoidance of demand artifacts.⁸⁰ Throughout, I demonstrate how my experimental approach adheres to best practices, both generally for marketing research and for research conducted for the purpose of litigation.⁸¹ The WAA Study was administered online, using Research Results’ survey panel partners.^{82, 83}

⁷⁹ Relative to the Location History help page stimulus shown to respondents in the “2018 Location History Disclosure Group,” the Location History help page stimulus shown to respondents in the “Modified Location History Disclosure Group” contains the following modifications, together, the “Modified Location History Disclosure”: (1) the sentence “With Location History off, the places you go are no longer stored” was removed, and (2) additional detail on “When Location History is on” and “When Location History is off” was included based on the corresponding 2022 help page (similar language I understand was also included in prior Location History help pages dating back to October 2018), with a disclosure under “When Location History is off” that states “Some location data may continue to be saved in other settings, like Web & App Activity, as part of your use of other services, like Search and Maps, even after you turn off Location History.” See **Appendix G** for screenshots of the stimuli. See also, “Manage your Location History,” *Google Account Help*, available at <https://support.google.com/accounts/answer/3118687?hl=en>, accessed on June 2, 2022; “Manage or delete your Location History,” *Wayback Machine*, August 16, 2018, available at <https://web.archive.org/web/20180816060212/https://support.google.com/accounts/answer/3118687?hl=en>.

⁸⁰ Demand artifacts are situations in which the methodology and/or survey suggest to respondents that they should provide a particular response that is “demanded” by the survey or researcher. For a discussion of demand artifacts, see Sawyer, A.G., 1975. “Demand Artifacts in Laboratory Experiments in Consumer Research.” *Journal of Consumer Research*, Vol. 1, No. 4 (hereafter “Sawyer, 1975”), pp. 20-30.

⁸¹ I closely adhere to the standards set forth in the “Reference Guide on Survey Research” and the “Manual for Complex Litigation.” Both are critical references for designing and conducting valid and reliable studies used in litigation. See Diamond, S.S., 2011. “Reference Guide on Survey Research,” in *Reference Manual on Scientific Evidence*, Third Edition, National Academies Press, (hereafter “Diamond, 2011”), pp. 359-423. See also Manual for Complex Litigation, pp. 1-798.

⁸² Respondents were required to take the survey using a tablet, laptop, or desktop computer. The survey was in the field from May 19 to June 6, 2022.

⁸³ Research Results programs surveys and works with panel companies to recruit high quality respondents. See “Sampling,” *Research Results*, available at https://researchresults.com/sampling_1pgr/, accessed on June 2, 2022.

1. Target Population and Sample

56. In the *Reference Guide on Survey Research*, Dr. Shari Diamond writes, “[o]ne of the first steps in designing a survey ... is to identify the target population (or universe). The target population consists of all elements (i.e., individuals or other units) whose characteristics or perceptions the survey is intended to represent.”⁸⁴ The target population for my WAA Study consisted of United States residents who have recently used their Google account. Consistent with this definition, I recruited respondents residing in the United States who (1) have a Google account (e.g., to access Gmail, Google Drive, etc.), and (2) have used their Google account in the past six months. To remove those with specialized knowledge or expertise, the WAA Study excluded respondents who work for or have family members who work for a company that is an electronics retailer or manufacturer; or an internet technology or social media company; or a market research or advertising agency.
57. I instituted survey start quotas based on the United States census for age, gender, and geographical region. By restricting survey starts such that potential respondents match the United States population, I obtained a respondent group that was representative of consumers who have recently used their Google account. To allow for a comparison of Arizona consumers to the overall United States population, I also oversampled consumers in Arizona.

2. Experimental Approach and Survey Stimuli

58. I implemented a test/control experimental design for the WAA Study. Test/control experimental designs randomly assign respondents to one of two (or more) experimental groups, or “conditions,” to determine the effect of a particular characteristic, claim, or other feature.⁸⁵ After being exposed to the respective survey stimuli for each experimental group, all respondents perform the same task that measures respondents’ reactions to the characteristic of interest (in this case, the inclusion or not of the Modified Location History Disclosure in the Location History help page). The purpose of a control condition is to account for possible alternative explanations of responses and reactions to a hypothesized

⁸⁴ Diamond, 2011, p. 376.

⁸⁵ Diamond, 2011, pp. 397-401.

causal characteristic. If analyzed without a comparison to a control or baseline, reactions to a stimulus could reflect factors other than the characteristic of interest. As such, a conclusion that respondents' reactions were caused by the characteristic of interest may be incorrect.

59. After passing the screener and qualifying for the WAA Study, all respondents were asked to review “a set of Google account help pages that are similar to what they might come across online” (Q0). Respondents were then randomly assigned to one of two experimental conditions to view the corresponding stimuli (Q1):

- a) an “*Original 2018 Location History Disclosure Group*,” wherein respondents reviewed the real-world “Manage or delete your Location History” help page from 2018, a “See and control your search activity” help page about Web & App Activity, and two help pages on distractor topics (“Control what others see about you across Google services” and “View, delete, or pause watch history”);⁸⁶ and
- b) a “*Modified Location History Disclosure Group*,” wherein respondents reviewed four identical help pages, except the “Manage or delete your Location History” help page was modified to include additional information explaining location history collection in more detail. Specifically, in the “manage or delete your Location History” page shown to the Modified Location History Disclosure Group, (1) the sentence “With Location History off, the places you go are no longer stored” was removed, and (2) additional detail on “When Location History is on” and “When Location History is off” was included based on the corresponding 2022 help page,⁸⁷ with a disclosure under “When Location History is off” that states “Some location data may continue to be saved in other settings,

⁸⁶ “Manage or delete your Location History,” *Wayback Machine*, August 16, 2018, available at <https://web.archive.org/web/20180816060212/https://support.google.com/accounts/answer/3118687?hl=en>; “See and control your search activity,” *Wayback Machine*, July 29, 2018, available at <https://web.archive.org/web/20180729093635/https://support.google.com/websearch/answer/54068>; “Control what others see about you across Google services,” *Wayback Machine*, July 30, 2018, available at <https://web.archive.org/web/20180730053701/https://support.google.com/accounts/answer/6304920>; “View, delete, or pause watch history (signed in),” *Wayback Machine*, July 30, 2018, available at <https://web.archive.org/web/20180730112752/https://support.google.com/youtube/answer/95725>.

⁸⁷ “Manage your Location History,” *Google Account Help*, available at <https://support.google.com/accounts/answer/3118687?hl=en>, accessed on June 2, 2022.

like Web & App Activity, as part of your use of other services, like Search and Maps, even after you turn off Location History.”⁸⁸

The “Manage or delete your Location History” help pages as shown to respondents in the Original 2018 Location History Disclosure Group and to respondents in the Modified Location History Disclosure Group are shown in **Appendix G**.

60. Respondents were shown their respective four help pages one at a time, were required to review each help page for at least 30 seconds, and were able to scroll and zoom in on the webpages as they would be able to do if they were reviewing the stimuli in the real world. The order in which the four help page stimuli were presented to each respondent was randomized to account for any order effects.
61. After viewing the four help pages, respondents were asked “Were you or were you not able to review the articles in the previous screens?” (Q2). Respondents who selected “Yes, I was able to review the pages in the previous screen” proceeded to the following question, while others were terminated from the survey.
62. Respondents were then asked an attention check question (Q3): “What of the following topics, if any, did the articles in the previous screens discuss?” Respondents were given several answer options, including: the correct answers “Location History,” “Web and App Activity,” “Youtube Watch History,” and “Personal Information”; two “red herring” answer options to check for respondent attention; and “None of the above,” and “Don’t know / Unsure.” Respondents who selected “Location History” and at least one of “Web and App Activity,” “Youtube Watch History,” and “Personal Information,” and did not select either of the red herring answer options, proceeded to the key task of the study.
63. Respondents were told in Q4 that they “will see a settings menu that you may see while using your Google account,” and then asked in Q5 to “[i]magine that the settings associated with your Google account related to the help topic pages you just reviewed are set as shown in the following menu.” Respondents were asked “Would you or would you not consider changing

⁸⁸ See **Appendix G** for the full set of stimuli shown to respondents.

these settings associated with your Google account?” Respondents who indicated that they would consider changing the settings proceeded to Q6, while others skipped to the end of the survey.

Figure 1.






Example screenshot of settings menu with defaults
as shown to respondents in the WAA Study in Q5

YouTube Watch History On
Location History Off
Web & App Activity On
Gender Only you
Birthday Only you

64. Respondents who indicated that they would consider changing the settings were shown a realistic screen of the settings in Q6 and instructed that “Below, you will have the opportunity to review the Google account settings shown. If you wish to adjust a setting, click the toggle button as you would while using your Google account.”⁸⁹

⁸⁹ The setting topics shown appear near each other in Google account settings. See “Data & Privacy,” *Google Account*, available at <https://myaccount.google.com/data-and-privacy?hl=en>, accessed on June 2, 2022. Italicized descriptions of each setting are adapted from 2018 period language. “How To Stop Youtube From Saving Watch History - iPhone/Android/mobile/iPad/Tablet,” *YouTube*, January 16, 2018, available at <https://www.youtube.com/watch?v=AAVGLoF4Y6E>, accessed on June 2, 2022; “How to change the birth date in Google Account,” *YouTube*, July 29, 2018, available at https://www.youtube.com/watch?v=Nk5-_h_lcWE, accessed on June 2, 2022; “How to Change Gender in Gmail Account,” *YouTube*, September 22, 2017, available at <https://www.youtube.com/watch?v=2yOqopqptDc>, accessed on June 2, 2022; “How to change

Figure 2.
Example screenshot of settings menu with toggles
as shown to respondents in the WAA Study in Q6

YouTube Watch History <i>Make it easier to find your recently watched videos on YouTube and improve your recommendations.</i>	 On
Location History <i>Saves where you go with your devices to give you personalised maps, recommendations based on places you've visited, and more.</i>	 Off
Web & App Activity <i>Saves your activity on Google sites and apps to give you faster searches, better recommendations, and more personalised experiences in Maps, Search, and other Google Services.</i>	 On
Gender <i>Indicating your gender lets Google know how to refer to you.</i>	 Only you
Birthday <i>Your birthday lets Google know you're old enough to use certain services.</i>	 Only you
I do not want to change any of these settings	<input type="checkbox"/>

65. Clickable thumbnails of each of the four help articles previously shown to respondents were available to respondents in my key questions Q5 and Q6, if they wished to re-review.
66. By comparing the percentage of respondents who turned settings on or off between respondents in the Original 2018 Location History Disclosure Group and the Modified Location History Disclosure Group, I am able to isolate the causal effect, if any, of the characteristic of interest, in this case the Modified Location History Disclosure, on whether consumers change the relevant account settings.
67. Screenshots of the survey as it appeared to respondents are included in **Appendix D**.

3. Avoidance of Demand Artifacts

68. A good survey methodology seeks to avoid demand artifacts; that is, situations in which the methodology and/or survey suggest to respondents that they should provide a particular response that is “demanded” by the survey.⁹⁰ To avoid demand artifacts, I implemented a “blind” approach, ensured that questions were asked in a double-sided manner, randomized

gender in Google account,” *YouTube*, April 6, 2019, available at <https://www.youtube.com/watch?v=GbTYLQ79acU>, accessed on June 2, 2022; GOOGL-GLAZ-00299199, pp. 308, 311.

⁹⁰ For a discussion of demand artifacts, see Sawyer, 1975, pp. 20-30.

answer options, conducted pretests, and avoided giving respondents any indication that the survey was related to a litigation involving Google. I discuss each of these elements in turn below.

69. Double-Blind methodology. Respondents did not know the sponsor or purpose of the study, nor was this information identified to them at any time before, during, or after their completion of their interview. This ensured that respondents would not adapt their behavior or responses to what they perceived the sponsor of the survey wanted.⁹¹ Additionally, since the study was administered online by a computer program, there was no way for the survey administrator (i.e., the computer) to provide any cues indicating the sponsor or purpose of the study. Web-based surveys are recognized for providing reliable data because they generate high response rates, elicit truthful answers because of their anonymous nature, and do not introduce potential interviewer bias.⁹²
70. Double-sided questions. To prevent each of the questions from being leading,⁹³ I assigned “balanced and explicit emphasis to the neutral as well as affirmative and negative positions,”⁹⁴ and provided a “Don’t know / Unsure” option for appropriate questions. Thus, the relevant questions were balanced and did not provide respondents contextual cues as to what answers to provide.⁹⁵
71. Rotation and randomization. According to the *Reference Guide on Survey Research*, “the order in which response alternatives are provided in a closed-ended question can influence

⁹¹ Diamond, 2011, pp. 410-411.

⁹² Miller, J., 2006. “Online Marketing Research,” in *The Handbook of Marketing Research*, eds. Rajiv Grover and Marco Vriens, Sage Publications, Chapter 7, pp. 110-131, (hereafter, “Miller, 2006”), pp. 111-112.

⁹³ See Diamond, 2011, p. 388 (“[w]hen unclear questions are included in a survey, they may threaten the validity of the survey by systematically distorting responses if respondents are misled in a particular direction”).

⁹⁴ Jacoby, J., 2012. “Are Closed-Ended Questions Leading Questions?” in *Trademark and Deceptive Advertising Surveys: Law, Science, and Design*, eds. Shari S. Diamond and Jerre B. Swann, American Bar Association, (hereafter, “Jacoby, 2012”), p. 275.

⁹⁵ Diamond, 2011, p. 390 (“[T]he survey can use a quasi-filter question to reduce guessing by providing ‘don’t know’ or ‘no opinion’ options as part of the question... By signaling to the respondent that it is appropriate not to have an opinion, the question reduces the demand for an answer and, as a result, the inclination to hazard a guess just to comply.”).

the answers.”⁹⁶ In order to avoid such potential order effects, the *Reference Guide on Survey Research* recommends that “the order of the response choices in a survey should be rotated.”⁹⁷ As a result of these recommendations, the order in which answer options were presented to respondents was randomized for relevant questions. The full questionnaire presented in **Appendix E** describes the questions for which the order of answer options was randomized.

72. Pretesting. According to the *Reference Guide on Survey Research*, “texts on survey research generally recommend pretests as a way to increase the likelihood that questions are clear and unambiguous, and some courts have recognized the value of pretests.”⁹⁸ A pretest is standard practice that aims to confirm that all questions in a survey are understood by respondents, that the survey is navigable, and that respondents cannot guess the purpose of the study.⁹⁹ Before the WAA Study was fielded, 11 pretests were conducted under my direction, with respondents from the target population.¹⁰⁰ The questions used in my pretest were in accordance with best research practices to explore respondent understanding of the measure of interest.
73. Follow-up question to test for litigation awareness. According to the *Reference Guide on Survey Research*, “it is standard interview practice in surveys conducted for litigation to do double-blind research whenever possible: Both the interviewer and the respondent are blind

⁹⁶ Diamond, 2011, p. 395.

⁹⁷ Diamond, 2011, p. 396.

⁹⁸ Diamond, 2011, p. 388.

⁹⁹ See Diamond, 2011, pp. 388-389 (The “Reference Guide on Survey Research” recommends pretests be conducted on a sample of people who would be eligible to take the actual survey. Furthermore, the “Reference Guide on Survey Research” recommends that “interviewers observe the respondents for any difficulties they may have with the questions and probe for the source of any such difficulties so that the questions can be rephrased if confusion or other difficulties arise.”).

¹⁰⁰ It is standard practice to pretest approximately 10 respondents, or until the researcher is confident that the questions in the survey are understood by respondents, that the survey is navigable, and that respondents cannot guess the purpose of the study. Pretest respondents are not included in the final sample. Prior to finalizing the survey, 11 pretests were conducted under my direction, focusing on the presentation of the stimuli and the question wording. No changes were made as a result of these pretests, as respondents found the survey easy to understand and could not glean the purpose of the study. See **Appendix F** for the pretest moderator script.

to the sponsor of the survey and its purpose.”¹⁰¹ At the end of the survey, all respondents were asked whether they were aware of any pending litigation involving Android devices. The results of this follow-up question were used to confirm that none of my results were being driven by respondents potentially aware of the current litigation.

B. Data Analysis

74. As described in Section IV.A.2, by comparing the percentage of respondents who review and change the default settings between the Original 2018 Location History Disclosure Group and the Modified Location History Disclosure Group, it is possible to isolate the effect on respondents, if any, of the Modified Location History Disclosure.

1. Response Statistics

75. A total of 1,122 respondents completed the WAA Study. The Original 2018 Disclosure Group comprised 561 respondents, the Modified Disclosure Group comprised 561 respondents. A complete description of the response rate and completion rate for the full WAA Study sample is provided in **Exhibit 1**.¹⁰²

2. Analysis of Responses

76. Based on my analysis of the WAA Study, I first find that there is no statistically significant difference between the percentage of respondents in the Original 2018 Location History Disclosure Group who keep the default Location History setting and the percentage of respondents in the Modified Location History Disclosure Group who keep the default Location History setting. In particular, 83% of respondents in the Original 2018 Location History Disclosure Group kept the Location History setting in the off position, compared to 82% of respondents in the Modified Location History Disclosure Group who kept the default setting in the off position. This difference is not statistically significant,¹⁰³ and these findings

¹⁰¹ Diamond, 2011, pp. 410-411.

¹⁰² See my backup materials for descriptive statistics of the demographic characteristics for my WAA Study analytical sample.

¹⁰³ The p-value is calculated using the chi-squared test; for this test, $p = 0.88$. A $p\text{-value} < 0.05$ would indicate that there is a statistically significant difference between the respondents in each experimental group who keep “Location History” off or turn it on.

demonstrate that the Modified Location History Disclosure has no causal impact on the percentage of users who change the Location History setting. These results are summarized in **Exhibit 3** and **Figure 3** below.

Figure 3.

Results of WAA Study
Comparison of “Location History” Setting Decision
(All Respondents, N = 1,122)

Between Respondents Who Viewed the Original 2018 Location History Disclosure
and Respondents Who Viewed the Modified Location History Disclosure

Q5: “Would you or would you not consider changing these settings associated with your Google account?”
Q6: “[...] If you wish to adjust a setting, click the toggle button as you would while using your Google account.”^[1]

Respondents decide to... ^[2]	2018 Location History Disclosure Group ^[3]		Modified Location History Disclosure Group ^[4]		Test of Equality of the Two Distributions ^[5]
	Number of Respondents	Share of All Respondents	Number of Respondents	Share of All Respondents	P-value
		(N = 561)		(N = 561)	
Keep “Location History” off	463	83%	461	82%	0.88
Turn “Location History” on	98	17%	100	18%	
Total - Survey Completes	561		561		

Notes:

[1] Respondents who selected “Yes, I would consider changing these settings associated with my Google account related to the Google help pages I just reviewed” in Q5 (“Would you or would you not consider changing these settings associated with your Google account?”) were asked Q6.

[2] The initial position for the “Web & App Activity” toggle is on. The initial position for the “Location History” toggle is off.

[3] Respondents in the “2018 Location History Disclosure” condition were shown 2018 versions of Google help pages for Location History, Web & App Activity, Youtube Watch History, and Personal Information.

[4] Respondents in the “Modified Location History Disclosure” condition were shown 2018 versions of Google help pages for Location History, Web & App Activity, Youtube Watch History, and Personal Information, with a modified disclosure from 2022 in the Location History help page.

[5] The p-value is calculated using the chi-squared test, a nonparametric test that allows for the comparison of categorical variables. A p-value < 0.05 would indicate that there is a statistically significant difference between the setting decisions by respondents in the “2018 Location History Disclosure” and “Modified Location History Disclosure” conditions.

77. Additionally, **Exhibit 5** and **Figure 4** below show the percentage of respondents in each experimental group who, having reviewed Google’s help pages and disclosures and decided to keep the “Location History” off, also decided to keep the “Web & App Activity” setting on.

Figure 4.

Results of WAA Study
Comparison of “Web & App Activity” Setting Decision
(Respondents Who Keep the “Location History” Setting Off, N = 924)
Between Respondents Who Viewed the Original 2018 Location History Disclosure
and Respondents Who Viewed the Modified Location History Disclosure

Q5: “Would you or would you not consider changing these settings associated with your Google account?”

Q6: “[...] If you wish to adjust a setting, click the toggle button as you would while using your Google account.”^[1]

	2018 Location History Disclosure Group^[2]		Modified Location History Disclosure Group^[3]		Test of Equality of the Two Distributions^[4]
	Number of Respondents	Share of Respondents	Number of Respondents	Share of Respondents	P-value
Respondents Who Keep “Location History” Off, and decide to...					
Keep “Web & App Activity” on ^[2]	315	68%	304	66%	0.50
Turn “Web & App Activity” off ^[3]	148	32%	157	34%	
Total - Respondents Who Keep “Location History” Off	463	100%	461	100%	

Notes:

[1] Respondents who selected “Yes, I would consider changing these settings associated with my Google account related to the Google help pages I just reviewed” in Q5 (“Would you or would you not consider changing these settings associated with your Google account?”) were asked Q6.

[2] Respondents in the “2018 Location History Disclosure” condition were shown 2018 versions of Google help pages for Location History, Web & App Activity, Youtube Watch History, and Personal Information.

[3] Respondents in the “Modified Location History Disclosure” condition were shown 2018 versions of Google help pages for Location History, Web & App Activity, Youtube Watch History, and Personal Information, with a modified disclosure from 2022 in the Location History help page.

[4] The p-value is calculated using the chi-squared test, a nonparametric test that allows for the comparison of categorical variables. A p-value < 0.05 would indicate that there is a statistically significant difference between the setting decisions by respondents in the “2018 Location History Disclosure” and “Modified Location History Disclosure” conditions.

78. Notably, there is no statistically significant difference between the percentage of respondents who decide to keep “Location History” off and also keep “Web & App Activity” on in the Original 2018 Location History Disclosure Group and the Modified Location History Disclosure Group.¹⁰⁴ This result is contrary to Plaintiff’s expert’s claim that “users’ ability to make informed decisions about how location tracking is enabled or disabled across multiple controls” is “negatively impact[ed]” by “user deception”¹⁰⁵ caused by the Original 2018 Location History disclosure. The results of the WAA Study demonstrate that the decisions users make about whether to change the “Web & App Activity” setting, even when

¹⁰⁴ The p-value is calculated using the chi-squared test; for this test, p = 0.50.

¹⁰⁵ Gray Report, p. 15.

“Location History” is turned off, are not affected by the amended language presented in the Modified Location History Disclosure. As sensitivity analyses, I conducted the same key analyses for each of the following subsets: Arizona respondents only, excluding litigation aware respondents, and excluding laggards.¹⁰⁶ My conclusions remain the same after the sensitivity analyses.

V. RESTATEMENT OF CONCLUSIONS

79. In conclusion, as stated above, the Google user studies relied on by Dr. Gray are qualitative, small-sample research studies that cannot (and were not being used by Google to) be used to (1) draw conclusions about a broader user population, (2) empirically assess any case-specific topic or context, or (3) establish any causal link between Google’s allegedly deceptive disclosures and consumer perception or behavior. The Gray Report ignores the purpose and limitations of the Google user studies it cites, and presents a number of conclusions that are based on a purely conceptual and subjective collection of assumptions without specific analysis of Google’s settings and disclosures and their causal impact on consumer behavior or perception. Further, the Schmidt Report and its 2018 Study cannot scientifically reflect any conclusions about a broader user population, and the Schmidt Report does not offer any evidence pertaining to the impact of disclosures on consumers’ perceptions and behaviors.
80. The empirical findings from my test/control experiment undercut Dr. Gray’s theories that “users do not understand and are deceived by location tracking and settings” and that the “user deception [...] negatively impacts users’ ability to make informed decisions about how location tracking is enabled or disabled across multiple controls.”¹⁰⁷ Specifically, the WAA Study finds that presenting a modified disclosure about WAA storing location-related data when Location History is turned off has no impact on whether consumers decide to turn the

¹⁰⁶ Based on a visual review of distribution of survey completion times, for my laggard sensitivity analysis, I removed respondents who completed the survey in more than 15.5 minutes. After this cutoff point, a histogram of the survey completion times shows a gap in the response time distribution followed by a minimal number of occurrences across the remaining response time range (i.e., a “long tail”).

¹⁰⁷ Gray Report, pp. 12, 15.

WAA setting control off while the Location History setting control is also turned off. Further, the modified disclosure has no effect on whether consumers keep the Location History setting control off or turn it on.

A handwritten signature in cursive script, reading "Joel Steckel".

Joel Steckel

June 8, 2022

Exhibit 1
Survey Response Statistics

Status	N	% of Total
Completed Survey	1,122	29.9%
Screened Out of Survey, due to:	1,815	48.4%
<i>Age or sex mismatch</i> ^[1]	14	0.4%
<i>Employment conflict</i> ^[2]	90	2.4%
<i>Not a Google Account user</i> ^[3]	717	19.1%
<i>Selected red herring</i> ^[4]	38	1.0%
<i>Has not recently used Google Account</i> ^[5]	213	5.7%
<i>Unable to view stimuli</i> ^[6]	24	0.6%
<i>Failed attention check</i> ^[7]	473	12.6%
<i>Recent “online accounts” survey experience</i> ^[8]	246	6.6%
Self-Termination ^[9]	491	13.1%
Quota Full ^[10]	325	8.7%
Total - Clicked on Survey Link	3,753	100.0%

Notes:

[1] Respondents who indicated that they were under 18 or that they preferred not to indicate their age or sex were screened out of the survey. Additionally, respondents who indicated an age or sex which did not match the value the panel company had on file were screened out of the survey.

[2] Respondents who indicated that they or their family members were employed by “An electronics retailer or manufacturer,” “An internet technology or social media company,” or “A marketing, market research, or advertising agency” were screened out of the survey.

[3] Respondents who did not select “Google account (e.g., to access Gmail, Google Drive, etc.)” in response to S6 (“Which of the following types of personal online accounts do you have, if any?”) were screened out of the survey.

[4] Respondents who selected “OLED Betamax account (e.g., to access Solar Music, Sunny, etc.)” in response to S6 (“In the past six months, which of the following, if any, have you purchased new?”) were screened out of the survey.

[5] Respondents who did not select “Google account (e.g., to access Gmail, Google Drive, etc.)” in response to S7 (“You indicated that you have the following personal online accounts. Which of the following accounts, if any, have you used in the past six months?”) were screened out of the survey.

[6] Respondents who indicated they were unable to view the stimuli in response to Q2 (“Were you or were you not able to review the articles in the previous screens?”) were screened out of the survey.

[7] Respondents who did not correctly identify the topics discussed in the stimuli or incorrectly selected a topic that was not discussed in the stimuli in response to Q3 (“What of the following topics, if any, did the articles in the previous screens discuss?”) were screened out of the survey.

[8] Respondents who indicated that they had participated in a survey about “Online accounts” in the last 30 days were screened out of the survey.

[9] Respondents who dropped out of the survey are listed as self-termination.

[10] Respondents who started the survey after the quota for their respective region, age, and gender had been filled were terminated in order to ensure a balanced incoming sample.

[11] The completion rate, calculated as the total number of completes / total respondents who started the main questionnaire, was 70.4%.

Exhibit 2
Comparison of “Web & App Activity” Setting Decision (All Respondents, N = 1,122)
Between Respondents Who Viewed the 2018 Location History Disclosure
and Respondents Who Viewed the Modified Location History Disclosure

Q5: “Would you or would you not consider changing these settings associated with your Google account?”

Q6: “[...] If you wish to adjust a setting, click the toggle button as you would while using your Google account.” ^[1]

	2018 Location History Disclosure Group ^[3]		Modified Location History Disclosure Group ^[4]	
	Number of Respondents	Share of Respondents	Number of Respondents	Share of Respondents
Respondents decide to... ^[2]				
Keep “Web & App Activity” on	401	71%	393	70%
Turn “Web & App Activity” off	160	29%	168	30%
Total - Survey Completes	561		561	

Notes:

[1] Respondents who selected “Yes, I would consider changing these settings associated with my Google account related to the Google help pages I just reviewed” in Q5 (“Would you or would you not consider changing these settings associated with your Google account?”) were asked Q6.

[2] The initial position for the “Web & App Activity” toggle is on. The initial position for the “Location History” toggle is off.

[3] Respondents in the “2018 Location History Disclosure” condition were shown 2018 versions of Google help pages for Location History, Web & App Activity, Youtube Watch History, and Personal Information.

[4] Respondents in the “Modified Location History Disclosure” condition were shown 2018 versions of Google help pages for Location History, Web & App Activity, Youtube Watch History, and Personal Information, with a modified disclosure from 2022 in the Location History help page.

Exhibit 3
Comparison of “Location History” Setting Decision (All Respondents, N = 1,122)
Between Respondents Who Viewed the 2018 Location History Disclosure
and Respondents Who Viewed the Modified Location History Disclosure

Q5: “Would you or would you not consider changing these settings associated with your Google account?”

Q6: “[...] If you wish to adjust a setting, click the toggle button as you would while using your Google account.” [1]

	2018 Location History Disclosure Group ^[3]		Modified Location History Disclosure Group ^[4]		Test of Equality of the Two Distributions ^[5]
	Number of Respondents	Share of All Respondents (N = 561)	Number of Respondents	Share of All Respondents (N = 561)	P-value
Respondents decide to... ^[2]					
Keep “Location History” off	463	83%	461	82%	0.88
Turn “Location History” on	98	17%	100	18%	
Total - Survey Completes	561		561		

Notes:

[1] Respondents who selected “Yes, I would consider changing these settings associated with my Google account related to the Google help pages I just reviewed” in Q5 (“Would you or would you not consider changing these settings associated with your Google account?”) were asked Q6.

[2] The initial position for the “Web & App Activity” toggle is on. The initial position for the “Location History” toggle is off.

[3] Respondents in the “2018 Location History Disclosure” condition were shown 2018 versions of Google help pages for Location History, Web & App Activity, Youtube Watch History, and Personal Information.

[4] Respondents in the “Modified Location History Disclosure” condition were shown 2018 versions of Google help pages for Location History, Web & App Activity, Youtube Watch History, and Personal Information, with a modified disclosure from 2022 in the Location History help page.

[5] The p-value is calculated using the chi-squared test, a nonparametric test that allows for the comparison of categorical variables. A p-value < 0.05 would indicate that there is a statistically significant difference between the setting decisions by respondents in the “2018 Location History Disclosure” and “Modified Location History Disclosure” conditions.

Exhibit 4

Comparison of “Location History” and “Web & App Activity” Setting Decision (All Respondents, N = 1,122)
Between Respondents Who Viewed the 2018 Location History Disclosure
and Respondents Who Viewed the Modified Location History Disclosure

Q5: “Would you or would you not consider changing these settings associated with your Google account?”

Q6: “[...] If you wish to adjust a setting, click the toggle button as you would while using your Google account.” ^[1]

Respondents decide to... ^[2]	2018 Location History Disclosure Group ^[3]		Modified Location History Disclosure Group ^[4]	
	Number of Respondents	Share of All Respondents (N = 561)	Number of Respondents	Share of All Respondents (N = 561)
Keep “Location History” off	463	83%	461	82%
<i>And keep “Web & App Activity” on</i>	315	56%	304	54%
<i>And turn “Web & App Activity” off</i>	148	26%	157	28%
Turn “Location History” on	98	17%	100	18%
Total - Survey Completes	561		561	

Notes:

[1] Respondents who selected “Yes, I would consider changing these settings associated with my Google account related to the Google help pages I just reviewed” in Q5 (“Would you or would you not consider changing these settings associated with your Google account?”) were asked Q6.

[2] The initial position for the “Web & App Activity” toggle is on. The initial position for the “Location History” toggle is off.

[3] Respondents in the “2018 Location History Disclosure” condition were shown 2018 versions of Google help pages for Location History, Web & App Activity, Youtube Watch History, and Personal Information.

[4] Respondents in the “Modified Location History Disclosure” condition were shown 2018 versions of Google help pages for Location History, Web & App Activity, Youtube Watch History, and Personal Information, with a modified disclosure from 2022 in the Location History help page.

Exhibit 5
Comparison of “Web & App Activity” Setting Decision (Respondents Who Keep the “Location History” Setting Off, N = 924^[1])
Between Respondents Who Viewed the 2018 Location History Disclosure
and Respondents Who Viewed the Modified Location History Disclosure

Q5 “Would you or would you not consider changing these settings associated with your Google account?”

Q6 “[...] If you wish to adjust a setting, click the toggle button as you would while using your Google account.”^[1]

	2018 Location History Disclosure Group ^[2]		Modified Location History Disclosure Group ^[3]		Test of Equality of the Two Distributions ^[4]
	Number of Respondents	Share of Respondents	Number of Respondents	Share of Respondents	P-value
Respondents Who Keep “Location History” Off, and decide to...					
Keep “Web & App Activity” on ^[2]	315	68%	304	66%	0.50
Turn “Web & App Activity” off ^[3]	148	32%	157	34%	
Total - Respondents Who Keep “Location History” Off	463	100%	461	100%	

Notes:

[1] Respondents who selected “Yes, I would consider changing these settings associated with my Google account related to the Google help pages I just reviewed” in Q5 (“Would you or would you not consider changing these settings associated with your Google account?”) were asked Q6.

[2] Respondents in the “2018 Location History Disclosure” condition were shown 2018 versions of Google help pages for Location History, Web & App Activity, Youtube Watch History, and Personal Information.

[3] Respondents in the “Modified Location History Disclosure” condition were shown 2018 versions of Google help pages for Location History, Web & App Activity, Youtube Watch History, and Personal Information, with a modified disclosure from 2022 in the Location History help page.

[4] The p-value is calculated using the chi-squared test, a nonparametric test that allows for the comparison of categorical variables. A p-value < 0.05 would indicate that there is a statistically significant difference between the setting decisions by respondents in the “2018 Location History Disclosure” and “Modified Location History Disclosure” conditions.

APPENDIX A

CURRICULUM VITAE

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EDUCATION

UNIVERSITY OF PENNSYLVANIA, THE WHARTON SCHOOL

Doctor of Philosophy Degree (Marketing/Statistics) awarded, May 1982.
Dissertation Title: "A Game Theoretic and Experimental Approach to the Group Choice Phenomenon in Organizational Buying Behavior;" Professor Yoram Wind, advisor.

Master of Arts Degree (Statistics) awarded May 1980.

Master of Business Administration Degree (Management Science) awarded with Distinction, May 1979.

Elected to Beta Gamma Sigma, May 1979.

COLUMBIA UNIVERSITY

Bachelor of Arts (Mathematics) awarded Summa Cum Laude, May 1977.

Elected to Phi Beta Kappa, May 1977.

ACADEMIC POSITIONS

Vice Dean for Doctoral Education, Stern School of Business, New York University, August 2012-August 2021.

Accounting Department, Acting Chairperson, Stern School of Business, August 2016 – August 2019.

Director PhD Programs, Stern School of Business, New York University, May 2007-July 2012.

Marketing Department Chairperson, Stern School of Business, New York University, July 1998-June 2004.

Professor and Associate Professor, Stern School of Business, New York University, January 1989 - present. Taught courses in Business Strategy, Marketing Management, Marketing Research, Corporate Reputation and Branding, Models of Pricing and Promotion, Field Studies in the New Economy, Marketing Engineering, and Analytic Marketing for Management Consulting. Also taught Doctoral Seminars in Mathematical Models in Marketing and Behavioral Research Methods.

Visiting Professor, Wharton School, University of Pennsylvania, January 1995 - December 1995. Taught Core Marketing course.

Visiting Professor, Escola de Pós-Graduação em Ciências Económicas e Empresariais, Universidade Católica Portuguesa, May - June 1992, May - June 1993. Taught Industrial Marketing and Marketing Strategy.

Associate Professor and Assistant Professor, Graduate School of Business, Columbia University, July 1981 - December 1988. Taught MBA-level courses in Industrial Marketing, Marketing Planning, and Marketing Research. Taught three Ph.D.-level Marketing Seminars and Applied Multivariate Statistics.

Visiting Associate Professor, School of Organization and Management, Yale University, September - December 1988. Taught graduate course in Marketing Strategy.

Visiting Assistant and Associate Professor, Graduate School of Management, University of California at Los Angeles, July 1984 - June 1985, January - March 1987. Taught Advanced Marketing Management, Marketing Research, and Strategic Marketing Planning.

Assistant Instructor, Department of Statistics, University of Pennsylvania, July 1979 - June 1980. Assisted in undergraduate and MBA-level courses in Statistics. Taught undergraduate course in Calculus.

Teaching Assistant, Department of Mathematics, Columbia University, September 1976 - May 1977. Assisted in courses in Number Theory and Differential Equations.

PROFESSIONAL INTERESTS

Marketing Strategy and Marketing Research. In particular, marketing research methodology, marketing and branding strategies, digital marketing, legal aspects of marketing, and managerial decision making.

PUBLICATIONS

Books

Legal Aspects of Marketing Theory (ed. with J. Gersen), New York: Cambridge University Press, Forthcoming.

Shift Ahead: How the Best Companies Stay Relevant in a Changing World (with A. Adamson), New York: AMACOM, 2018.

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“A Stochastic Multidimensional Scaling Methodology for the Empirical Determination of Convex Indifference Curves in Consumer Preference/Choice Analysis” (with W.S. DeSarbo and K. Jedidi), Psychometrika, Vol. 56, No. 2, June 1991.

“A Polarization Model for Describing Group Preferences” (with V. Rao), Journal of Consumer Research, Vol. 18, No. 1, June 1991.

“On the Creation of Acceptable Conjoint Analysis Experimental Designs,” (with W.S. DeSarbo and V. Mahajan), Decision Sciences, Vol. 22, No. 2, Spring 1991.

“Longitudinal Patterns of Group Decisions: An Exploratory Analysis” (with K.P. Corfman and D.R. Lehmann), Multivariate Behavioral Research, Vol. 25, No. 3, July 1990.

“Investing in the Stock Market: Statistical Pooling of Individual Preference Judgments,” (with N. Capon), Annals of Operations Research, Vol. 23, 1990.

“Judgmental Forecasts of Key Marketing Variables: Rational vs. Adaptive Expectations” (with R. Glazer and R. Winer), International Journal of Forecasting, Vol. 6, No. 3, July 1990.

“Committee Decision Making in Organizations: An Experimental Test of the Core,” Decision Sciences, Vol. 21, No. 1, Winter 1990.

“Towards a New Way to Measure Power: Applying Conjoint Analysis to Group Purchase Decisions” (with J. O'Shaughnessy), Marketing Letters, Vol. 1, No. 1, December 1989.

“The Formation and Use of Key Marketing Variable Expectations and their Impact on Firm Performance: Some Experimental Evidence” (with R. Glazer and R. Winer), Marketing Science, Vol. 8, No. 1, Winter 1989.

“A Heterogeneous Conditional Logit Model of Choice” (with W. Vanhonacker), Journal of Business and Economic Statistics, Vol. 6, No. 3, July 1988.

“Estimating Probabilistic Choice Models from Sparse Data: A Method and an Application to Groups” (with D.R. Lehmann and K. Corfman), Psychological Bulletin, Vol. 95, No. 1, January 1988.

“A Friction Model for Describing and Forecasting Price Changes” (with W.S. DeSarbo, V.R. Rao, Y.J. Wind and R. Colombo), Marketing Science, Vol. 6, No. 4, Fall 1987.

“Group Process and Decision Performance in a Simulated Marketing Environment” (with R. Glazer and R. Winer), Journal of Business Research, Vol. 15, No. 6, December 1987.

“Effective Advertising in Industrial Supplier Directories” (with D.R. Lehmann), Industrial Marketing Management, Vol. 15, No. 2, April 1985.

Book Chapters

“Use of Conjoint Analysis in Litigation: Challenges, Best Practices, and Common Mistakes” (with R. Befurt, N. MacMenamin, and A. Pour), in Legal Aspects of Marketing Theory (ed. with J. Gersen), New York: Cambridge University Press, Forthcoming.

“Choice Experiments: Reducing Complexity and Measuring Behavior Rather than Perception” (with R. Fair, K. Shampanier, and A. Cai), in Legal Aspects of Marketing Theory (ed. with J. Gersen), New York: Cambridge University Press, Forthcoming.

“The Inevitable Decline of American Political Discourse,” in Review of Marketing Research, Vol. 17, D. Iacobucci (ed.), Emerald Publishing, 2019.

“Dynamic Decision Making in Marketing Channels”, with S. Gupta, and A. Banerji, in Experimental Business Research, A. Rapoport and R. Zwick (eds.), Boston, MA: Kluwer Academic Publishers, 2002.

Refereed Proceedings

“PIONEER: Decision Support for Industrial Product Planning” in Efficiency and Effectiveness in Marketing, Proceedings of the American Marketing Association Educator's Conference, Vol. 54, 1988, G.L. Frazier and C.A. Ingene, eds., Chicago.

“Mathematical Approaches to the Study of Power: A Critical Review” in Advances in Consumer Research, Vol. XII, 1985, E. Hirschman and M. Holbrook, eds., Provo, UT.

“On Obtaining Measures from Ranks” in An Assessment of Marketing Thought and Practice, Proceedings of the American Marketing Association Educator's Conference, Vol. 48, B.J. Walker, ed., 1982, Chicago.

Other

“Find the Open Door: A Reflection,” in “Reflections of Eminent Marketing Scholars,” Foundations and Trends in Marketing, Special Issue, Forthcoming.

“How Smart Marketers Gauge the Future to Shift Ahead of Consumer Needs” (with A. Adamson), American Management Association Playbook, December 18, 2017, <http://playbook.amanet.org/training-articles-marketers-shift-ahead-consumer-needs/>

“Paul Green: The Hulk Hogan of Marketing,” essay in the Legends of Marketing Series.

“Jerry Wind A Man Ahead of His Time,” essay in the Legends of Marketing Series.

“Forecasting Online Shopping,” Stern Business, Fall/Winter 2000, pp. 22-27.

“Method to Their Madness,” The Industry Standard, August 7, 2000.

Book review of The Application of Regression Analysis by D.R. Wittink, Journal of Marketing Research, Vol. 26, No. 4, November 1989.

Co-author (with many others) of The Statistics Problem Solver, Research and Education Association, New York, 1978.

CONFERENCE PRESENTATIONS

“Trademark Law’s Shallow Empiricism: An Experimental and Theoretical Investigation,” (with B. Beebe, R. Germano, and C. Sprigman), Tri State Region IP Workshop, January 2021.

“The Evolving Business Ph.D.,” The Third Annual Global PhD Colloquium,” Fordham University, April 2019.

“Testing for Trademark Dilution in the Court and Lab,” (with B. Beebe, R. Germano, and C. Sprigman), Munich Summer Institute, June 2018.

“Trademark Dilution: Searching for the Elusive Unicorn,” Conference on Empirical Legal Studies, Cornell University, October 2017.

“Measuring Trademark Dilution”, Conference on Empirical Analysis of Intellectual Property, NYU Law School, October 2014.

“Using Surveys in Intellectual Property Cases: What’s the Damage,” AIPLA Spring Meeting, May 2013, Seattle WA.

“Trademark Dilution: An Elusive Concept in the Law,” Conference on Brands and Branding in Law, Accounting, and Marketing Kanan Flagler School, University of North Caroline, April 2012

“The Role of Consumer Surveys in Trademark Infringement Cases: Evidence from the Federal Courts,” (with R. Bird), AMA Summer Educator’s Conference, August 2010, Boston.

“Global Market Share Dynamics: Winners and Losers in a Tumultuous World,” (with P. Golder and S. Chang), INFORMS Marketing Science Conference, June 2010, Cologne, Germany.

"Use and Abuse of Consumer Perception Research in Antitrust and Advertising Cases," ABA Antitrust Section Spring Meeting, March 2009, Washington, DC.

“New Product Development: The Stock Market as Crystal Ball,” (with D. Markovich), INFORMS Marketing Science Conference, Atlanta, GA., June 2005.

“Modeling Credit Card Usage Behavior: Where is my VISA and Should I Use It?,” (with Y. Chen), INFORMS Marketing Science Conference, College Park, Md., June 2003.

“Using Capital Markets as Market Intelligence: Evidence from the Pharmaceutical Industry,” (with D. Markovich and B. Yeung), INFORMS Marketing Science Conference, College Park, Md., June 2003.

“Using Capital Markets as Market Intelligence: Evidence from the Pharmaceutical Industry,” (with D. Markovich and B. Yeung), Share Price Accuracy and Transition Economies Conference, U. of Mich. Law School, Ann Arbor, Mi., May 2003.

“Modeling Internet Site Visit Behavior,” (with E. Bradlow and O. Sak), Joint Statistical Meetings, Indianapolis, August 2000.

"Consumer Strategies for Purchasing Assortments within a Single Product Class," (with Jack K.H. Lee), INFORMS Fall Conference, Philadelphia, November 1999.

“When Do Purchase Intentions Predict Sales?” (with V. Morwitz and A. Gupta), AMA Advanced Research Techniques Forum, Santa Fe, NM, June 1999.

“Modeling New Product Preannouncements as a Signaling Game,” (with H. Jung), University of Mainz Conference on Competition in Marketing, Germany, June 1999.

“A Multiple Idea Point Model: Capturing Multiple Preference Effects from within an Ideal Point Framework,” (with J. Lee), Joint Statistical Meetings, Dallas, TX, Aug. 1998.

“Modeling New Product Preannouncements as a Signaling Game,” (with H. Jung), INFORMS Marketing Science Conference, Fontainbleau, France, July 1998.

“Dynamic Decision-Making in Marketing Channels: Traditional Systems, Quick Response, and POS Information,” (with S. Gupta and A. Banerji), NYU Conference on Managerial Cognition, May 1998.

“When Do Purchase Intentions Predict Sales?” (with V. Morwitz and A. Gupta), INFORMS International Meetings, Barcelona, July 1997.

“Mental Models in Competitive Decision Making: A Blessing and A Curse,” Conference on Competitive Decision Making, Charleston, SC, June 1997.

“When Do Purchase Intentions Predict Sales?” (with V. Morwitz and A. Gupta), INFORMS Marketing Science Conference, Berkeley, March 1997.

“Model Adequacy versus Model Comparison: Is the ‘Best’ Model Any ‘Good’?, ” (with A. Ansari and P. Manchanda), INFORMS Marketing Science Conference, Berkeley, March 1997.

“Dynamic Decision-Making in Marketing Channels: Traditional Systems, Quick Response, and POS Information,” (with S. Gupta and A. Banerji), First Conference in Retailing and Service Sciences, Banff, 1994.

“Dynamic Decision-Making in Marketing Channels: Traditional Systems, Quick Response, and POS Information,” (with S. Gupta and A. Banerji), Behavioral Decision Research in Management Conference, Boston, 1994.

“Modeling Consideration Set Formation: The Role of Uncertainty,” (with B. Buchanan and S. Sen), TIMS Marketing Science Conference, Tucson, 1994.

“A Cross-Cultural Analysis of Price Conjectures to Environmental Changes,” (with V. Rao), TIMS Marketing Science Conference, St. Louis, 1993.

“Decision-Making in a Dynamic Distribution Channel Environment,” (with S. Gupta and A. Banerji), TIMS Marketing Science Conference, St. Louis, 1993.

“Cross Validating Regression Models in Marketing Research,” (with W. Vanhonacker), TIMS Marketing Science Conference, London, 1992.

“The Influence of Stock Price on Marketing Strategy,” (with D. Gautschi and D. Sabavala), TIMS Marketing Science Conference, Wilmington, DE, 1991.

“A Polarization Model for Describing Group Preferences” (with V. Rao), ORSA/TIMS National Fall Meetings, Philadelphia, 1990.

“A Polarization Model for Describing Group Preference,” (with V. Rao), Behavioral Decision Research in Management Conference, Philadelphia, 1990.

“Conflict Resolution and Repeat Buying” (with S. Gupta), TIMS Marketing Science Conference, Champaign, Ill., 1990.

“Variety Seeking at the Group Level” (with S. Gupta), Association for Consumer Research Fall Meetings, New Orleans, 1989.

“On Using Attraction Models to Allocate Resources in a Competitive Environment,” TIMS Marketing Science Conference, Durham, NC, 1989.

“Multidimensional Scaling with Convex Preferences” (with W.S. DeSarbo), ORSA/TIMS National Fall Meetings, St. Louis, 1987.

“A Social Comparison Model for Describing Group Preference Evaluations” (with V. Rao), TIMS Marketing Science Conference, Jouy-en-Josas, France, 1987.

“The Day the Earth Stood Still,” Association for Consumer Research Fall Meetings, Toronto, 1986.

“A Friction Model for Describing and Forecasting Price Movements” (with W. DeSarbo, V. Rao, Y. Wind, and R. Colombo), ORSA/TIMS National Fall Meetings, Miami Beach, 1986.

“An Eigenvalue Method for Measuring Consumer Preferences” (with E. Greenleaf and R. Stinerock), TIMS Marketing Science Conference, Dallas, 1986.

“Creating Conjoint Analysis Experimental Designs without Infeasible Stimuli” (with W. DeSarbo and V. Mahajan), TIMS Marketing Science Conference, Dallas, 1986.

“The Mediating Role of Information in Marketing Managers' Decisions” (with R. Glazer and R. Winer), TIMS Marketing Science Conference, Dallas, 1986.

“Incorporating Interdependencies of Utility Functions into Models of Bargaining” (with S. Gupta), ORSA/TIMS National Fall Meetings, Atlanta, 1985.

“The Formation of Key Marketing Variable Expectations” (with R. Glazer and R. Winer), ORSA/TIMS National Fall Meetings, Atlanta, 1985.

“Does the Nash Equilibrium Really Describe Competitive Behavior?: The Case of Cigarette Advertising,” TIMS Marketing Science Conference, Nashville, 1985.

“A Heterogeneous Conditional Logit Model of Choice” (with W. Vanhonacker), ORSA/TIMS National Fall Meetings, Dallas, 1984.

“Using a ‘Robust’ Response Function to Allocate Resources in a Competitive Environment,” TIMS Marketing Science Conference, Chicago, 1984.

“Longitudinal Models of Group Choice Behavior,” (with D. Lehmann and K. Corfman), ORSA/TIMS National Fall Meetings, Orlando, 1983.

“Considerations of Optimal Design of New Task Industrial Products,” ORSA/TIMS National Fall Meetings, San Diego, 1982.

“Game Theoretic Choice Models in Organizational Buying Behavior,” TIMS Special Interest Conference in Marketing Measurement and Analysis, Philadelphia, 1982.

OTHER RESEARCH IN PROGRESS

Measuring Likelihood of Confusion (with B. Beebe, R. Germano, and C. Sprigman)

Marketing Research in the Courtroom vs. the Boardroom: What are the Differences and Do They Matter? (with R. Bird)

The Impact of Trademark Litigation Outcomes on Brand Equity and Marketing Decision Making (with R. Bird)

Modeling the Tradeoffs between Marketing Research and Flexible Manufacturing.

INVITED SEMINARS

Columbia University	Spring 1991, Summer 1994
Cornell University	Fall 1983, Spring 1989
Georgetown University	Fall 2006
Pennsylvania State University	Fall 1996, Fall 2006
Rutgers University	Spring 1994
Temple University	Fall 1995
University of California, Berkeley	Spring 1990
University of California, Los Angeles	Spring 1985, Spring 1996
University of California, San Diego	Fall 2003
University of Florida	Spring 1992
University of Mainz, Germany	Summer 1998
University of Michigan	Spring 1993
University of Pennsylvania	Spring 1992, Spring 1995, Spring 1998
University of Southern California	Spring 1987
Washington University, St. Louis	Spring 2003

EDITORIAL SERVICE

Editorships

Co-Editor-in-Chief, *Marketing Letters*, July 2010 – March 2017

Guest editor, special section of Marketing Science on the history of marketing science theory and practice, 2001.

Consulting editor in marketing, Addison-Wesley Longman Academic Publishers, Boston, MA, 1993-1999.

Guest editor, special issue of Journal of Retailing on the use of panel and point of sale data, 1992.

Other

Member of Advisory Board (current), Marketing Letters.

Have served on editorial board or as ad-hoc referee for Journal of Marketing, Journal of Marketing Research, Stanford Law Review, Management Science, Marketing Science, Journal of Consumer Research, Journal of Retailing and Consumer Services, Manufacturing and Service Operations Management, Decision Sciences, Journal of Business and Economic Statistics, Journal of Econometrics, Journal of Retailing, Strategic Information Systems, Review of Marketing Science, Corporate Reputation Review, and Journal of Business Research.

SERVICE

Dissertation Committees Chaired

Joseph Pancras (co-chair)	(Marketing - New York University)
Sergio Meza (co-chair)	(Marketing – New York University)
Dmitri Markovich	(Marketing – New York University)
Heonsoo Jung	(Marketing - New York University)
Jack Lee	(Marketing - New York University)
Asim Ansari (co-chair)	(Marketing - New York University)
Shahana Sen (co-chair)	(Marketing - New York University)

Dissertation Committees Served on

Tingting Fan (Marketing – New York University)
Kei-Wei Huang (Information Systems – New York University)
Sherrif Nassir (Marketing – New York University)
Jane Gu (Marketing – New York University)
Orkun Sak (Marketing – University of Pennsylvania)
Atanu Sinha (Marketing - New York University)
Louis Choi (Marketing - Columbia University)
Sunder Narayanan (Marketing - Columbia University)
Carol Rhodes (Ed. Psych. - Columbia University)
Rita Wheat (Marketing - Columbia University)
Robert Stinerock (Marketing - Columbia University)
Bruce Buchanan (Business Economics - Columbia University)
Chen Young Chang (Marketing - University of Pennsylvania)

Other Discipline Related Service

Chairperson, Marketing Committee, INFORMS, January 2006 – June 2010.
Past President, INFORMS Society on Marketing Science, January 2004 – December 2005.
Founding President, INFORMS Society on Marketing Science, January 2003 – December 2003.
President, INFORMS College on Marketing, January 2002 – December 2002.
President Elect, INFORMS College on Marketing, January 2000- December 2001.
Secretary-Treasurer, INFORMS College on Marketing, January 1998-December 1999.
Association of Consumer Research, Annual Program Committee, 1999.
Co-Organizer of 1996 Conference on Consumer Choice and Decision Making, Arden House, Harriman, New York, June 1996.
Organized Marketing Sessions at Fall 1989 TIMS/ORSA Joint National Meetings, New York, October 1989.

Other University Related Service

Member, NYU Doctoral Affairs Committee, September 2017 – August 2021.

Member, Research Resources Committee, Stern School of Business, September 2009 – August 2021.

Chair, Statistical and Quantitative Reasoning Task Force, Stern School of Business, September 2005 – August 2007.

Member, Specialization Committee, Stern School of Business, September 2004 - f.

Member, PhD Oversight Committee, Stern School of Business, January 2006 – May 2007.

Member, Executive Committee, Digital Economy Initiative, Stern School of Business, January 2000 – August 2002.

Member, Board of Directors, Center for Information Intensive Organizations, Stern School of Business, September 1998 – December 1999.

Member of MBA Committee, Stern School of Business, New York University, 1989-December 1998. Committee was responsible for supervising redesign of MBA programs in 1991 and 1995, Chairman September 1997-August 1998.

Member of Stern MBA Curriculum Review Committee, September 1997-December 1998. Committee redesigned MBA Core.

Member of Stern School Committee on Improving Consulting Activities, July 1998-December 1998.

Member of Building Committee, Stern School of Business, New York University, 1990-1992.

Member of Research Committee, Stern School of Business, New York University, 1990-1991.

Elected member of Columbia University Senate. Served on Budget Review and Alumni Relations Committees, 1986-1988.

AWARDS

Awarded the J. Parker Bursk Memorial Prize as the outstanding student participating in the Department of Statistics, University of Pennsylvania, 1979.

Dissertation was awarded Honorable Mention in the 1982 American Marketing Association Dissertation Competition.

Dissertation was named Winner of the 1983 Academy of Marketing Science Dissertation Competition.

Invited speaker at the J. Parker Bursk Memorial Prize Luncheon, Department of Statistics, University of Pennsylvania, 1992.

Invited speaker at American Marketing Association Doctoral Consortium, University of Southern California, 1999.

Cited for outstanding editorial support, Fordham University Pricing Center, Sept. 2002.

Named one of the inaugural winners of the Best Reviewer Award for the *Journal of Retailing*, 2003.

Work recognized by West publishing as one of the outstanding 2012 law review articles on Intellectual Property.

Work recognized with the Highly Commended Paper Award at the Literati Network Awards for Excellence 2013.

SELECTED CONSULTING AND OTHER PROFESSIONAL ACTIVITIES

AOL MovieFone, Inc., New York, NY. Performed general consulting on analyzing caller data for telephone movie information service; Consulted as expert in conjunction with damage assessment in legal proceedings.

Citicorp, New York, NY. Built choice model for bank services. Gave lectures on Marketing Strategy to CitiCards executives.

Directions for Decisions, Inc., New York, NY and Jersey City, NJ. Consulted on segmentation study of sports apparel market, designed and implemented “Construction Test”, a concept design decision tool. Performed general consulting on marketing research practice on an ongoing basis.

Federal Trade Commission, Washington, D.C. Served as consultant on branding strategies in antitrust investigation.

J.C. Penney Co., New York, NY. Performed sales-advertising response analysis. Work was done on request for Management Decision Systems, Inc., Weston, MA.

Pfizer Pharmaceuticals, New York, NY. Conducted seminar on conjoint analysis.

SilverBills, Inc., New York, NY. Member board of advisors.

Union Carbide Corporation, Danbury CT. Built econometric model to forecast prices.

Various Expert Witness Engagements. Clients include Amazon, AT&T, Avon, Brother International, Capri Sun, Dyson, Epson, Hershey's, JP Morgan Chase, Gerber Products, Johnson & Johnson, K-Swiss, Mead Johnson, Merck KGAA, Microsoft, Monster Cable, McDonald's, New Balance, Pelaton, Playtex, PNC Financial, Proctor & Gamble, Roche, Samsung, Seagate, Sergio Garcia, Sharp, TiVo, Under Armour, Wal-Mart, Warnaco, and various plaintiffs in consumer class actions.

MEMBERSHIPS

American Marketing Association

American Statistical Association

Association for Consumer Research

The Institute for Operations Research and Management Science (INFORMS)

Society for Consumer Psychology

American Association for Public Opinion Research

APPENDIX B

TESTIMONY IN LAST FOUR YEARS

Testimony in the Last Four Years

Depositions

Mizner Court Holdings, LLC, and San Marco Holdings, LLC, v. Country Club Maintenance Association, Inc., d/b/a Broken Sound Master Association, Case No. 15-CA-000864 (AB), Circuit Court of the 15th Judicial Circuit in and for Palm Beach County.

Wasser, Joshua, Ila Gold, and Roberto Israel Barajas-Ramos, on behalf of themselves and all others similarly situated, vs. All Market Inc., Case No.: 16-cv-21238- Scola/Otazo-Reyes, United States District Court (Southern District of Florida, Miami Division).

Car-Freshener Corporation and Julius Samann Ltd. vs. American Covers, LLC F/K/A American Covers, Inc. D/B/A Handstands, Energizer Holdings, Inc., and Energizer Brands, LLC, Civil Action No.: 5:17-cv-171 (TJM/ATB), United States District Court (Northern District of New York).

Spangler Candy Company vs. Tootsie Roll Industries, LLC, Case No. 3:18-cv-1146, United States District Court (Northern District of Ohio, Western Division - Toledo).

Merck & Co., Inc. and Merck Sharp & Dohme Corp., v. Merck KGaA, Case No. 2:16-cv-00266-ES-MAH, United States District Court (District of New Jersey).

Quidel Corporation vs. Siemens Medical Solutions USA, Inc., Siemens Healthcare Diagnostics, Inc., and Does 1-50 Inclusive, Case No. 3:16-cv-3059 BTM AGS, United States District Court (Southern District of California).

Jeff Young, individually and on behalf of all others similarly situated, vs. Cree, Inc., Case No. 4:17-cv-06252-YGR, United States District Court (Northern District of California – Oakland Division).

The Renault Thomas Corporation d/b/a Discount Tire, vs. Mavis Tire Supply LLC., Civil Action No. 1:18-cv-05877-TCB, United States District Court (Northern District of Georgia – Atlanta Division).

Ryan Porter and Haarin Kwon, individually and on behalf of all others similarly situated, vs. NBTY, Inc., United States Nutrition, Inc., Healthwatchers (DE), Inc., and Met-Rx Nutrition, Inc. Case No. 15-cv-11459 MSS YBK, United States District Court (Northeastern District of Illinois – Eastern Division).

Mahindra & Mahindra Ltd. and Mahindra Automotive North America v. FCA US LLC, Case No.: 2:18-CV-12645-GAD-SDD, United States District Court (Eastern District of Michigan); In the Matter of Certain Motorized Vehicles and Components Thereof, Investigation No. 337-TA-1132, United States International Trade Commission, Washington D.C.

Susan Wang, Rene Lee and all others similarly situated, v. StubHub, Inc., Superior Court of the State of California for the County of San Francisco (Case No: CGC-18564120).

Match Group, LLC, v. Bumble Trading Inc., Bumble Holding, LTD., Badoo Trading Limited, Magic Lab Co., Worldwide Vision Limited, Badoo Limited, Badoo Software Limited, Badoo

Software Limited, and Badoo Technologies Limited, United States District Court for the District of Texas Waco Division, No. 6:18-CV-00080-ADA.

Brian Gozdenovich, on behalf of himself and all others similarly situated v. AARP, Inc., AARP Services, Inc., AARP Insurance Plan, Unitedhealth Group, Inc. and United Healthcare Insurance Company, United States District Court, District of New Jersey, Case No. 2:18-cv-02788-MCA-MAH.

American Dairy Queen Corporation v. W.B. Mason Co., Inc., United States District Court (District of Minnesota), Civ. Act. No. 0:18-cv-00693-SRM-ECW.

Maglula, LTD. v. Amazon.com, Inc., and Amazon.com Services, LLC (United States District Court For the Eastern District of Virginia, Alexandria Division -Civil Action No.: 1:19-cv-01570-LO-IDD.

Capri Sun GMBH v. American Beverage Corporation, United States District Court for the Southern District of New York; 1:19-cv-1422.

Biologics, Inc. D/B/A Biologics by McKesson Corporation v. OptumRx, Inc., AAA Case No. 01-20-0007-3159 (American Arbitration Association).

Tiffany and Company and Tiffany (NJ) LLC v. Costco Wholesale Corporation, United States District Court, Southern District of New York case number 13 Civ. 1041.

Theta, IP, LLC. v. Samsung Electronics Co., Ltd., and Samsung Electronics America, Inc., United States District Court for the Western District of Texas, Waco Division, Civil Action No.: 6:20-cv-00160-ADA.

Eric Fishon and Alicia Pearlman, individually and on behalf of all others similarly situated v. Peloton Interactive, Inc., United States District Court, Southern District of New York, Case No. 1:19-CV-11711-LJL.

24-7 Bright Star Healthcare, LLC. v. Res-Care, Inc. d/b/a BrightSpring Health Services, United States District Court for the Northern District of Illinois Eastern Division, Case No. 1:21-cv-4609.

Trial

People of the State of California vs. Overstock.com, Inc., Case No. RG10-546833. Superior Court of California, (County of Alameda).

Church & Dwight Co., Inc. v. SPD Swiss Precision Diagnostics GmbH, Civil Action No.: 14-CV-585 (AJN), United States District Court (Southern District of New York).

Dayna Craft (withdrawn), Deborah Larsen, Wendi Alper-Pressman, Individually and On Behalf of All Others Similarly Situated v. Philip Morris Companies, Inc., a corporation, and Philip

Morris Incorporated, a corporation, Case No. 2202-00406-02 , Division No. 6 (Missouri Circuit Court, Twenty-Second Judicial Circuit, City of St. Louis)

Hearing

In the Matter of Distribution of the 2010, 2011, 2012, 2013 Cable Royalty Funds, (Before the Copyright Royalty Judges, Washington D.C.) Docket No. 14-CRB-0010-CD (2010-13)

Daubert Hearing

Visteon Technologies, LLC. v. Garmin International, Inc., Civil Action No. 2:10-cv-10578-PDB-MAR (United States District Court, Eastern District of Michigan – Southern Division)

Arbitration Hearing

Biologics, Inc. D/B/A Biologics by McKesson Corporation v. OptumRx, Inc., AAA Case No. 01-20-0007-3159 (American Arbitration Association).

APPENDIX C

Materials Considered

APPENDIX C – MATERIALS CONSIDERED

Case Documents

Filings

Complaint for Injunctive and Other Relief, State of Arizona, *ex rel.* Mark Brnovich, Attorney General, v. Google LLC, Superior Court of the State of Arizona in and for the County of Maricopa, May 27, 2020.

Expert Reports

Expert Report of Colin M. Gray, Ph.D., State of Arizona, *ex rel.* Mark Brnovich, Attorney General, v. Google LLC, Superior Court of the State of Arizona in and for the County of Maricopa, No. CV2020-006219, May 4, 2022.

Expert Report of Douglas C. Schmidt, Ph.D., State of Arizona, *ex rel.* Mark Brnovich, Attorney General, v. Google LLC, Superior Court of the State of Arizona in and for the County of Maricopa, No. CV2020-006219, May 4, 2022.

Bates-Stamped Documents

GOOG-GLAZ-00046967

GOOG-GLAZ-00027795

GOOG-GLAZ-00002914

GOOG-GLAZ-00057861

GOOG-GLAZ-00205306.R

GOOG-GLAZ-00275934

GOOG-GLAZ-00256277

GOOG-GLAZ-00100799

GOOG-GLAZ-00099239

GOOG-GLAZ-00299199

Academic Literature

Assael, H., 2004. *Consumer Behavior. A Strategic Approach*, Houghton Mifflin Company.

Bellman, S. et al., 2009. “International Differences in Information Privacy Concerns: A Global Survey of Consumers,” *The Information Society*, Vol. 20, No. 5, pp. 313-324.

Diamond, S.S., 2011. “Reference Guide on Survey Research,” in *Reference Manual on Scientific Evidence*, Third Edition, National Academies Press.

Federal Judicial Center, 2004. *Manual for Complex Litigation*, Fourth Edition.

Jacoby, J., 2012. “Are Closed-Ended Questions Leading Questions?” in *Trademark and Deceptive Advertising Surveys: Law, Science, and Design*, eds. Shari S. Diamond and Jerre B. Swann, American Bar Association, pp. 261-284.

Lehmann, D.R., Gupta, S., and Steckel, J.H., 1998. *Marketing Research*, Addison-Wesley.

Miller, Jeff, “Online Marketing Research,” in *The Handbook of Marketing Research*, eds. Rajiv Grover and Marco Vriens, Sage Publications, Chapter 7, pp. 110-131.

Sawyer, A.G., 1975. “Demand Artifacts in Laboratory Experiments in Consumer Research,” *Journal of Consumer Research*, Vol. 1, No. 4.

Shadish, W. R., Cook, T.D., and Campbell, D. T., 2002. *Experimental and Quasi-Experimental Designs for Generalized Causal Inference*, Houghton Mifflin Company.

Public Documents

“Control what others see about you across Google services,” *Wayback Machine*, July 30, 2018, available at <https://web.archive.org/web/20180730053701/https://support.google.com/accounts/answer/6304920>.

“Data & Privacy,” *Google Account*, available at <https://myaccount.google.com/data-and-privacy?hl=en>, accessed on June 2, 2022.

“How to Change Gender in Gmail Account,” *YouTube*, September 22, 2017, available at <https://www.youtube.com/watch?v=2yOqopqptDc>.

“How to change gender in Google account,” *YouTube*, April 6, 2019, available at <https://www.youtube.com/watch?v=GbTYLQ79acU>.

“How to Change the birth date in Google Account,” *YouTube*, July 29, 2018, available at https://www.youtube.com/watch?v=Nk5-_h_lcWE.

“How To Stop Youtube From Saving Watch History - iPhone/Android/mobile/iPad/Tablet,” *YouTube*, January 16, 2018, available at <https://www.youtube.com/watch?v=AAVGLoF4Y6E>.

“Manage or delete your Location History,” *Wayback Machine*, August 16, 2018, available at <https://web.archive.org/web/20180816060212/https://support.google.com/accounts/answer/3118687?hl=en>.

“Manage your Location History,” *Google Account Help*, available at <https://support.google.com/accounts/answer/3118687?hl=en>, accessed on June 2, 2022.

“Sampling,” *Research Results*, available at https://researchresults.com/sampling_1pgr/, accessed on May 31, 2022.

“See and control your search activity,” *Wayback Machine*, July 29, 2018, available at <https://web.archive.org/web/20180729093635/https://support.google.com/websearch/answer/54068>.

“View, delete, or pause watch history (signed in),” *Wayback Machine*, July 30, 2018, available at <https://web.archive.org/web/20180730112752/https://support.google.com/youtube/answer/95725>.

Other

Conversation with Dr. Gretchen Gelke.


APPENDIX D

WAA Study Screenshots

0%

Please check the box below if you are human.

☐ I'm not a robot


reCAPTCHA
[Privacy](#) - [Terms](#)

Continue »

If you experience any problems with this survey, please email techsupport@researchresults.com

0%

Thank you for your participation in our study. All your answers will remain confidential. Please try to answer all questions to the best of your ability. We are interested in your opinions and reactions. There are no right or wrong answers and we will not try to sell you anything based on your answers. Please do not consult any outside sources (e.g., internet or phone) while taking the survey.

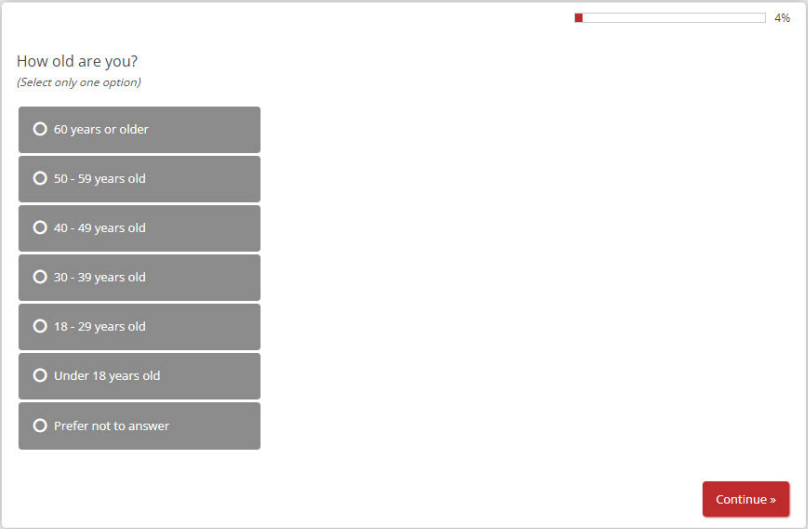
If you do not know, do not recall, are unsure, or have no opinion, please do not try to guess and simply select the "Don't Know / Unsure" option.

The "Back" button on your browser has been disabled for the duration of the survey. Please do not use it while taking the survey.

☐ If you understand these instructions and agree to participate in this survey, please check this box and click "Continue."

Continue >

If you experience any problems with this survey, please email techsupport@researchresults.com



How old are you?
(Select only one option)

☐ 60 years or older

☐ 50 - 59 years old

☐ 40 - 49 years old

☐ 30 - 39 years old

☐ 18 - 29 years old

☐ Under 18 years old

☐ Prefer not to answer

Continue >

If you experience any problems with this survey, please email techsupport@researchresults.com

A horizontal progress bar with a red segment on the left and a white segment on the right, followed by the text "9%".

Please indicate your sex:
(Select only one option)

☐ Female

☐ Male

☐ Prefer not to answer

Continue >

If you experience any problems with this survey, please email techsupport@researchresults.com

13%

In which state do you currently reside?
(Select only one option)

Select one...

Continue >

If you experience any problems with this survey, please email techsupport@researchresults.com

18%

Are you or any of your family members employed by...?
(Select all that apply)

☐ A home hardware or power tools manufacturer or retailer

☐ An internet technology or social media company

☐ A university or school

☐ An electronics retailer or manufacturer

☐ An outdoor recreation or sporting goods manufacturer or retailer

☐ A marketing, market research, or advertising agency

☐ None of the above

Continue »

If you experience any problems with this survey, please email techsupport@researchresults.com

22%

Which of the following types of personal online accounts do you have, if any?
(Select all that apply)

☐ OLED Betamax account (e.g., to access Solar Music, Sunny, etc.)

☐ Amazon account (e.g., to access Amazon Prime, Audible, etc.)

☐ Facebook account (e.g., to access Facebook, Messenger, etc.)

☐ Google account (e.g., to access Gmail, Google Drive, etc.)

☐ Microsoft account (e.g., to access Outlook, OneDrive, etc.)

☐ Apple account (e.g., to access iCloud, iMessage, etc.)

☐ None of the above

☐ Don't know/Unsure

Continue »

If you experience any problems with this survey, please email techsupport@researchresults.com

27%

You indicated that you have the following personal online accounts. Which of the following accounts, if any, have you used in the past six months?

(Select all that apply)

☐ Google account (e.g., to access Gmail, Google Drive, etc.)

☐ None of the above

☐ Don't know/Unsure

Continue >

If you experience any problems with this survey, please email techsupport@researchresults.com

31%

Have you taken any surveys in the last 30 days on any of these topics?
(Select all that apply)

☐ Video games

☐ Online accounts

☐ Sporting goods or outdoor gear

☐ Home hardware or power tools

☐ Clothing

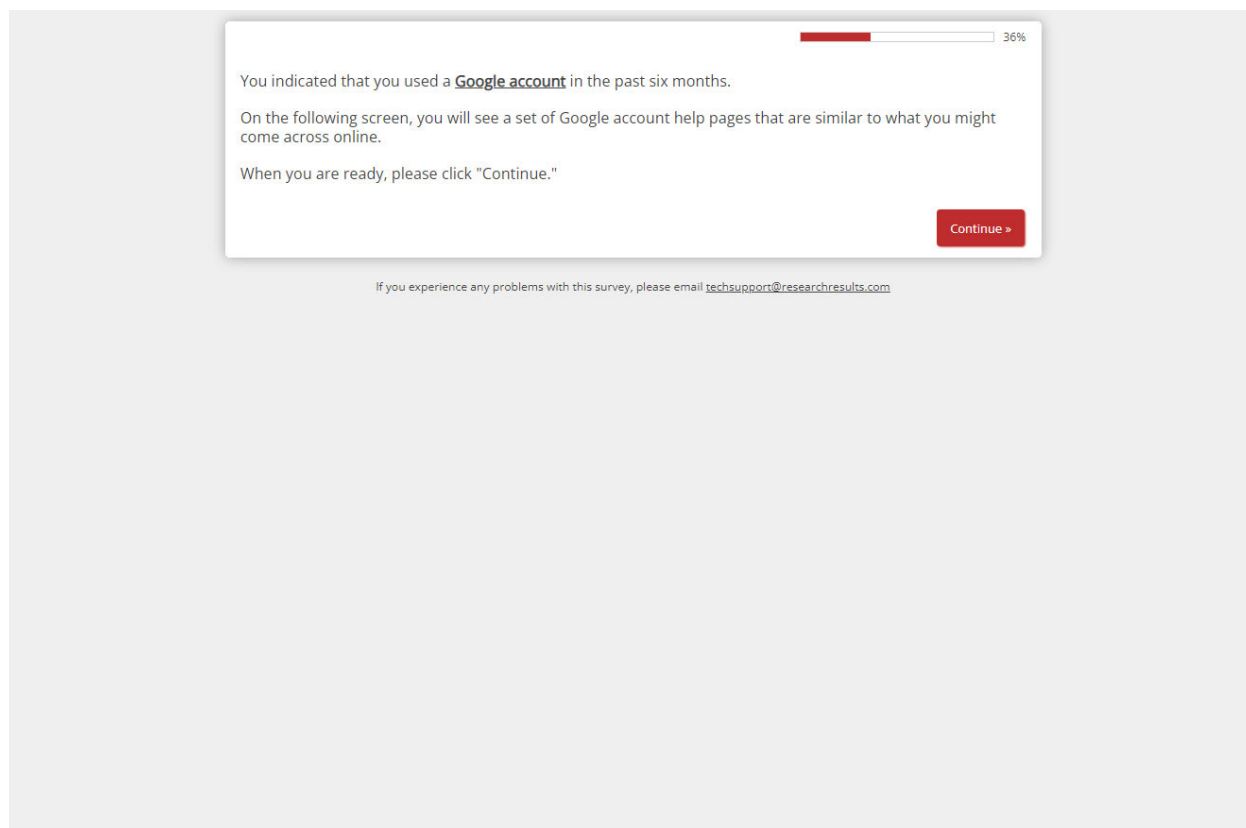
☐ Cosmetics

☐ Home sound systems

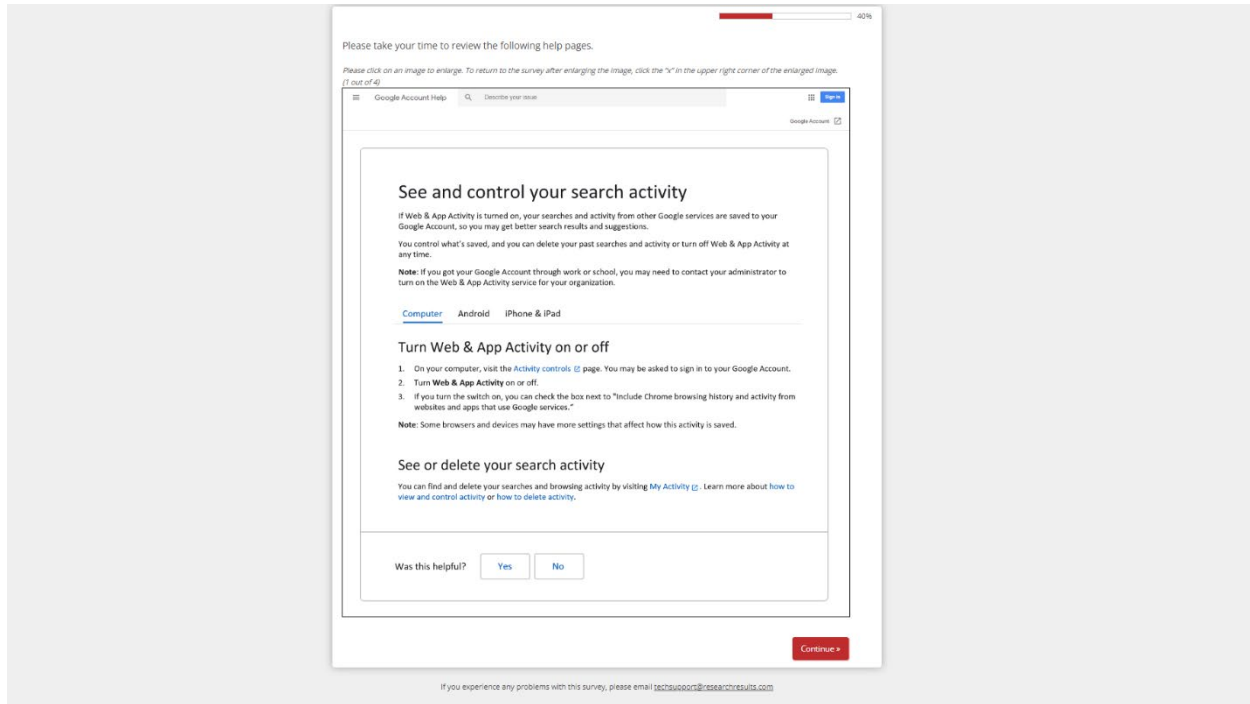
☐ None of the above

Continue >

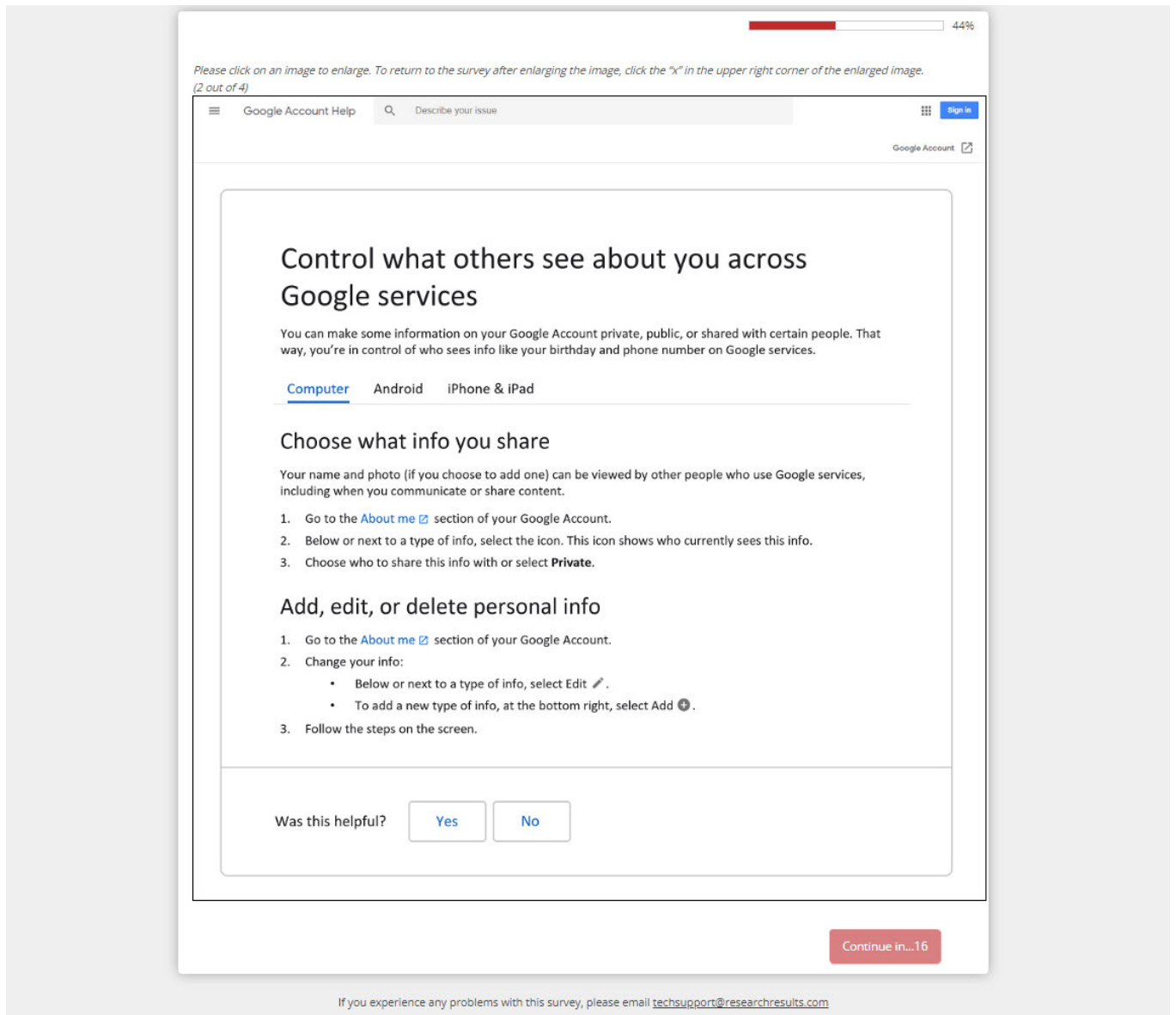
If you experience any problems with this survey, please email techsupport@researchresults.com



“See and Control Your Search Activity” Help Page



“Control what others see about you across Google Services” Help Page



Amended Location History Page

Please click on an image to enlarge. To return to the survey after enlarging the image, click the "X" in the upper right corner of the enlarged image. (4 out of 15)

Google Account Help

How do you use...

Google Account

Manage or delete your Location History

Your Location History helps you get better results and recommendations on Google products. For example, you can see recommendations based on places you've visited with signed-in devices, or traffic predictions for your daily commute.

You control what's saved in your Location History, and you can delete your history at any time.

Notes: Some of these steps work only on Android 8.0 and up. [Learn how to check your Android version.](#)

[Learn what applies in Android 4.1 through 4.3 or for iPhone and iPad.](#)

Turn Location History on or off

You can turn off Location History at any time. When you turn off Location History for your Google Account, it's off for all devices associated with that Google Account.

You can also turn off Location Services for a device. [Learn how.](#)

Turn Location History on/off using device settings (Android 2.3 & up)

Turn Location History on/off using a website

When Location History is on

- Google only receives Location History for each device where you are signed in and you have Location Reporting turned on.
- You can change the Location Reporting setting for each device where you're signed in, and limit which devices provide location data to be included in Location History. If you want to change your Location History settings, you can choose to:
 - Report your location from only some of your devices, but not others.
 - Report your location from all your devices.
 - Turn off Location History for your Google Account. Your location won't be reported from any of your devices and you will not have new Location History recorded to your account.
- Your settings for other location services on your device, like Google Location Services, Location Sharing, and Find My Device, aren't changed.

When Location History is off

- Your device's locations will not be automatically saved to your Location History.
- Previous activity is not deleted from your Location History. You can [manually delete your Location History](#).
- Your settings for other location services on your device, like Google Location Services, Location Sharing, and Find My Device, aren't changed.
- Some location data may continue to be saved in other settings, like Web & App Activity, as part of your use of other services, like Search and Maps, even after you turn off Location History.

Delete Location History

You can delete all of your Location History or only parts of it. If you delete your entire history, some apps may not work correctly.

Delete Location History using device settings (Android 2.3 & up)

Delete Location History using a website

Usage & diagnostics for Location History

When you turn on Location History, you also let your device send diagnostic information to Google about what's working and not working for Location History.

All usage and diagnostic information is used in accordance with [Google's privacy policy](#).

What information your device could share

How shared information helps Google improve

Related articles

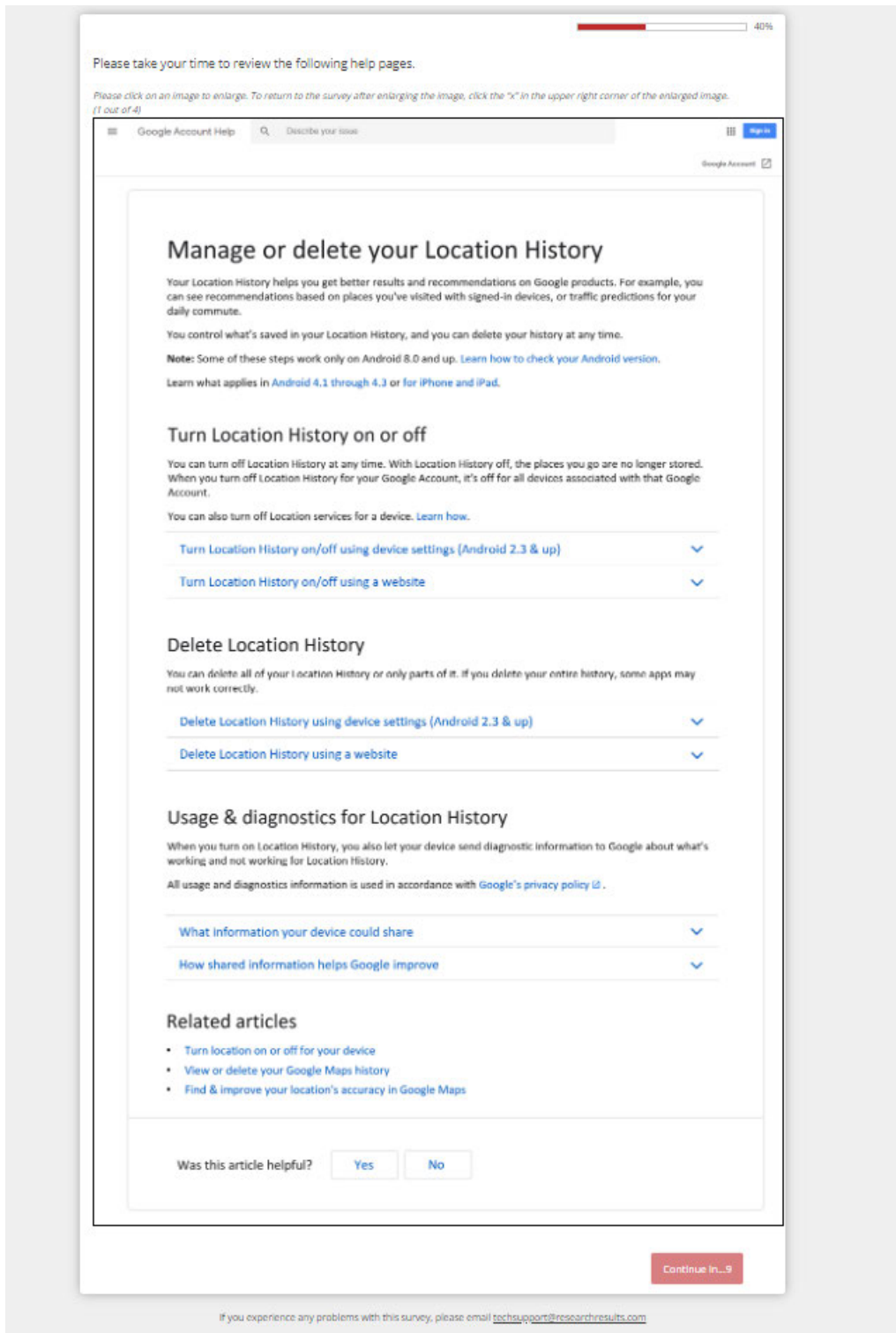
- Turn location on or off for your device
- View or delete your Google Maps history
- Find & improve your location's accuracy in Google Maps

Was this article helpful?

[Continue](#)

If you experience any problems with this survey, please email technicalresearch@gsa.com

2018 Location History Page



“View, delete, or pause watch history” Help Page

Please click on an image to enlarge. To return to the survey after enlarging the image, click the "x" in the upper right corner of the enlarged image. (4 out of 4)

53%

YouTube Help

Describe your issue

Sign in

YouTube

View, delete, or pause watch history (signed in)

YouTube watch history makes it easy to find videos you recently watched and improves your video recommendations. You can control your watch history by deleting or pausing your history. You can delete individual items or delete your entire history. When you pause history, any videos that you watch while history is paused won't show in history and won't be used to improve your recommendations. You can unpaue your history to start recording history again.

If you've been offline or lost your internet connection after pausing your watch history, we recommend you check your watch history when you get back online to make sure history appears as you expect. As always, you can delete any videos that appear in your history. To view or delete what you've previously searched for on YouTube, check out your [search history](#).

When you're signed in, changes you make to your account's watch history will appear on all devices you sign in to with this account. When you're signed out, you may still receive recommendations based on the watch history of your specific browser or app. To protect your privacy, this history isn't viewable but can still be cleared or paused. Those controls will apply to the browser or app.

You can access your watch history within the YouTube app via the instructions below. Your watch history is saved in your Google Account if **Videos you watch on YouTube** is turned on.

View, delete, or pause watch history (signed in)

Go to myactivity.google.com to find videos that you've viewed while signed in. This includes videos that you have watched while signed in to the YouTube app on mobile devices, as well as youtube.com. It also includes videos you've watched in a YouTube player on other websites while signed in to Google Chrome. Changes you make to your account watch history will be reflected on all devices you sign in to with this account.

Was this helpful?

Yes No

Continue in...4

If you experience any problems with this survey, please email techsupport@researchresults.com

A horizontal progress bar with a red segment on the left and a white segment on the right. The text "58%" is located at the end of the bar.

Were you or were you not able to review the articles in the previous screens?
(Select only one option)


☐ Yes, I was able to review the pages in the previous screens.

☐ No, I was not able to review the pages in the previous screens.

☐ Don't know / Unsure

Continue »

If you experience any problems with this survey, please email techsupport@researchresults.com



What of the following topics, if any, did the articles in the previous screens discuss?
(Select all that apply)

- ☐ Youtube Watch History
- ☐ Location History
- ☐ Personal Information
- ☐ Microphone Settings
- ☐ Payment Settings
- ☐ Web and App Activity
- ☐ None of the above
- ☐ Don't know / Unsure

Continue »

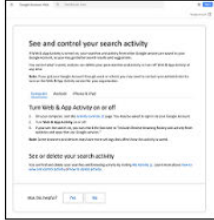
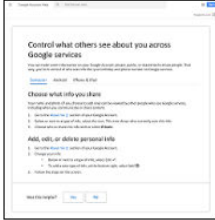
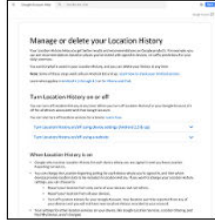
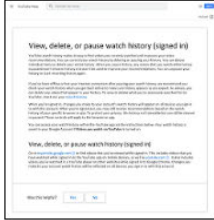
If you experience any problems with this survey, please email techsupport@researchresults.com

For the following question, you will see a settings menu that you may see while using your Google account.
When you are ready, please click "Continue."

Continue »

If you experience any problems with this survey, please email techsupport@researchresults.com

83%

Please click to enlarge.

Imagine that the settings associated with your Google account related to the help topic pages you just reviewed are set as shown in the following menu.

Web & App Activity On
Gender Only you
Birthday Only you
Location History Off
YouTube Watch History On

Would you or would you not consider changing these settings associated with your Google account?

☐ Yes, I would consider changing these settings associated with my Google account related to the Google help pages I just reviewed.


☐ No, I would not consider changing these settings associated with my Google account related to the Google help pages I just reviewed.

☐ Don't know / Unsure

Continue »

If you experience any problems with this survey, please email techsupport@researchresults.com

92%



Please click to enlarge.

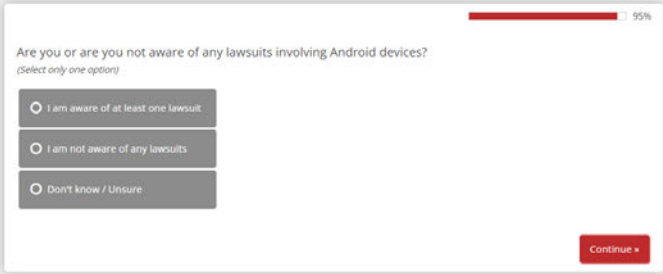
Please take your time to review the settings menu. These are settings that you would see while on the settings menu of your Google account.

Below, you will have the opportunity to review the Google account settings shown. If you wish to adjust a setting, click the toggle button as you would while using your Google account.

Web & App Activity Saves your activity on Google sites and apps to give you faster searches, better recommendations, and more personalised experiences in Maps, Search, and other Google Services.	<input checked="" type="checkbox"/> On
Gender Indicating your gender lets Google know how to refer to you.	<input type="checkbox"/> Only you
Birthday Your birthday lets Google know you're old enough to use certain services.	<input type="checkbox"/> Only you
Location History Saves where you go with your devices to give you personalised maps, recommendations based on places you've visited, and more.	<input type="checkbox"/> Off
YouTube Watch History Make it easier to find your recently watched videos on YouTube and improve your recommendations.	<input checked="" type="checkbox"/> On
I do not want to change any of these settings	<input type="checkbox"/>

[Continue](#)

If you experience any problems with this survey, please email techsupport@researchresults.com



Are you or are you not aware of any lawsuits involving Android devices?
(Select only one option)

☐ I am aware of at least one lawsuit

☐ I am not aware of any lawsuits

☐ Don't know / Unsure

Continue »

If you experience any problems with this survey, please email techsupport@researchresults.com

Survey Completed - Thank You

Thank you for your participation. Those are all the questions we have for you today. All of your responses have been successfully recorded in our database, and you are now free to surf the Internet or to close your Web browser altogether. Again, thank you for your time, energy, and participation.

If you experience any problems with this survey, please email techsupport@researchresults.com

APPENDIX E

WAA Study Script

Programmer Instructions

[PROGRAMMER NOTES IN BOLD CAPS AND IN BRACKETS]

[FOR CLOSED-ENDED QUESTIONS, DO NOT ALLOW RESPONDENT TO CLICK “NEXT” WITHOUT CHOOSING AN ANSWER OPTION. FOR OPEN-ENDED QUESTIONS, DO NOT ALLOW RESPONDENT TO CLICK “NEXT” WITHOUT TYPING IN AN ANSWER OR CHOOSING ANOTHER ANSWER OPTION IF PRESENT.]

[ROTATE ORDER OF YES/NO ANSWERS IN THE FIRST INSTANCE OF A YES/NO QUESTION. USE THE SAME ORDER FOR ALL OTHER YES/NO QUESTIONS. NOTE THAT YES AND NO ARE NOT EXPLICITLY STATED IN THE ANSWER OPTIONS.]

[DISABLE THE BROWSER “BACK” BUTTON]

Introduction and Screening

[NO SURVEY/SECTION TITLES TO BE DISPLAYED TO RESPONDENTS]

[18+ NATIONAL SAMPLE OF AT LEAST 1,000 TOTAL COMPLETES; I.E., AT LEAST 500 PER EXPERIMENTAL GROUP. OVERSAMPLE RESPONDENTS FROM ARIZONA, SO THAT AT LEAST 300 RESPONDENTS ARE FROM ARIZONA.]

[FOR THE NATIONAL SAMPLE, PANEL MEMBERS WHO START THE SURVEY AND ANSWER QUESTIONS S2-S5 SHOULD BE MATCHED TO THE CENSUS ON AGE AND SEX DISTRIBUTION IN THE UNITED STATES.]

[DETECT DEVICE RESPONDENT IS USING; IF IT’S A SMARTPHONE (NOT A DESKTOP, LAPTOP, OR TABLET COMPUTER), INSTRUCT TO LOG BACK IN WITH APPROVED DEVICE WITH THE MESSAGE: “Sorry, your device cannot be used for this survey. Please close this window and go to a desktop, laptop computer, or tablet device to take the survey to maximize your window. Once you are at one of these devices, click on the same link to take the survey.”]

[EACH QUESTION ON A NEW PAGE UNLESS OTHERWISE SPECIFIED]

S0. Digital fingerprinting

S1. Captcha

Thank you for your participation in our study. All your answers will remain confidential. Please try to answer all questions to the best of your ability. We are interested in your opinions and reactions. There are no right or wrong answers and we will not try to sell you anything based on your answers. Please do not consult any outside sources (e.g., internet or phone) while taking the survey.

If you do not know, do not recall, are unsure, or have no opinion, please do not try to guess and simply select the “Don’t Know / Unsure” option.

The “Back” button on your browser has been disabled for the duration of the survey. Please do not use it while taking the survey.

- ☐ If you understand these instructions and agree to participate in this survey, please check this box and click “Continue.”

S2. How old are you? *(Select only one option)* **[RANDOMIZE BETWEEN THIS ORDER AND REVERSE; KEEP “PREFER NOT TO ANSWER” LAST]**

- ☐ Under 18 years old **[TERMINATE]**
- ☐ 18 – 29 years old
- ☐ 30 – 39 years old
- ☐ 40 – 49 years old
- ☐ 50 – 59 years old
- ☐ 60 years or older
- ☐ Prefer not to answer **[TERMINATE]**

[TERMINATE IF AGE DOES NOT MATCH THE VALUE ON FILE]

S3. Please indicate your sex: *(Select only one option)* **[RANDOMIZE “FEMALE” AND “MALE”]**

- ☐ Male
- ☐ Female
- ☐ Prefer not to answer **[TERMINATE]**

[TERMINATE IF SEX DOES NOT MATCH THE VALUE ON FILE]

S4. In which state do you currently reside? *(Select only one option)*

[INSERT DROP DOWN MENU FOR STATE]

[FOR THE NATIONAL SAMPLE, THOSE WHO ARE ASKED S5 SHOULD BE BALANCED TO THE CENSUS ON AGE, SEX, AND REGION FOR THE UNITED STATES OVERALL.]

S5. Are you or any of your family members employed by...? *(Select all that apply)*

[RANDOMIZE ORDER; KEEP “None of the above” LAST]

- ☐ An outdoor recreation or sporting goods manufacturer or retailer
- ☐ A home hardware or power tools manufacturer or retailer
- ☐ An electronics retailer or manufacturer **[TERMINATE]**
- ☐ A university or school
- ☐ An internet technology or social media company **[TERMINATE]**
- ☐ A marketing, market research, or advertising agency **[TERMINATE]**
- ☐ None of the above **[EXCLUSIVE]**

S6. Which of the following types of personal online accounts do you have, if any? *(Select all that apply)* **[RANDOMIZE ORDER; KEEP “None of the above” AND “Don’t know/Unsure” LAST]**

- ☐ Google account (e.g., to access Gmail, Google Drive, etc.)
- ☐ Amazon account (e.g., to access Amazon Prime, Audible, etc.)
- ☐ Microsoft account (e.g., to access Outlook, OneDrive, etc.)
- ☐ Facebook account (e.g., to access Facebook, Messenger, etc.)
- ☐ Apple account (e.g., to access iCloud, iMessage, etc.)
- ☐ OLED Betamax account (e.g., to access Solar Music, Sunny, etc.) **[RED HERRING; TERMINATE]**
- ☐ None of the above **[EXCLUSIVE; TERMINATE]**
- ☐ Don’t know/Unsure **[EXCLUSIVE; TERMINATE]**

[CONTINUE TO S7 IF “Google account (e.g., to access Gmail, Google Drive, etc.)” IS SELECTED IN S6. OTHERWISE, TERMINATE.]

S7. You indicated that you have the following personal online accounts. Which of the following accounts, if any, have you used in the past six months? **[KEEP SAME ORDER AS SHOWN TO RESPONDENT IN S6; KEEP “None of the above” AND “Don’t know/Unsure” LAST]**

- ☐ **[PIPE IN SELECTED ANSWER OPTIONS FROM S6]**
- ☐ None of the above **[EXCLUSIVE; TERMINATE]**
- ☐ Don’t know/Unsure **[EXCLUSIVE; TERMINATE]**

[TERMINATE IF “Google account (e.g., to access Gmail, Google Drive, etc.)” IS NOT SELECTED IN S7.]

S8. Have you taken any surveys in the last 30 days on any of these topics? *(Select all that apply)* **[RANDOMIZE ORDER; KEEP “NONE OF THE ABOVE” LAST]**

- ☐ Sporting goods or outdoor gear
- ☐ Home hardware or power tools
- ☐ Online accounts **[TERMINATE]**
- ☐ Clothing
- ☐ Video games
- ☐ Cosmetics
- ☐ Home sound systems
- ☐ None of the above **[EXCLUSIVE]**

[RECORD IF THE RESPONDENT QUALIFIES OR NOT. FOR NON-QUALIFYING RESPONDENTS, DISPLAY PANEL'S TERMINATION PAGE.]

Main Survey - Viewing Help Pages

Q0. You indicated that you used a **Google account** in the past six months.

On the following screen, you will see a set of Google account help pages that are similar to what you might come across online.

When you are ready, please click "Continue."

[INCLUDE "CONTINUE" BUTTON.]

[NEXT PAGE]

Q1. Please take your time to review the following help pages.

[RANDOMLY ASSIGN RESPONDENTS TO ONE OF TWO GROUPS:

- 1. TEST - 2018 REAL WORLD DISCLOSURE**
- 2. CONTROL - MODIFIED DISCLOSURE**

[SHOW STIMULI TO EACH GROUP AS DESCRIBED BELOW:

- 3. TEST - 2018 REAL WORLD DISCLOSURE**
 - 1. LOCATION:**
"MANAGE YOUR LOCATION HISTORY" HELP PAGE WITH REAL-WORLD DISCLOSURE
 - 2. WAA:**
***EXCERPT* OF "SEE AND CONTROL YOUR SEARCH HISTORY" HELP PAGE (SAME IN BOTH GROUPS)**
 - 3. YOUTUBE:**
***EXCERPT* OF "VIEW, DELETE, OR PAUSE WATCH HISTORY (SIGNED IN)" HELP PAGE (SAME IN BOTH GROUPS)**
 - 4. PERSONAL:**
***EXCERPT* OF "CONTROL WHAT OTHERS SEE ABOUT YOU ACROSS GOOGLE SERVICES" (SAME IN BOTH GROUPS)**
- 4. CONTROL - MODIFIED DISCLOSURE**
 - 1. LOCATION:**
"MANAGE YOUR LOCATION HISTORY" HELP PAGE WITH MODIFIED DISCLOSURE

2. WAA:
EXCERPT OF “SEE AND CONTROL YOUR SEARCH HISTORY”
HELP PAGE (SAME IN BOTH GROUPS)
3. YOUTUBE:
EXCERPT OF “VIEW, DELETE, OR PAUSE WATCH HISTORY
(SIGNED IN)” HELP PAGE (SAME IN BOTH GROUPS)
4. PERSONAL:
EXCERPT OF “CONTROL WHAT OTHERS SEE ABOUT YOU
ACROSS GOOGLE SERVICES” (SAME IN BOTH GROUPS)]

[SHOW FULL PAGE SCROLLABLE IMAGE OF EACH OF THE FOUR HELP PAGES,
IN RANDOM ORDER, ON SEPARATE SCREENS.

INCLUDE A “CONTINUE” BUTTON ON THE BOTTOM RIGHT AT THE END OF
EACH ARTICLE.

THERE SHOULD BE A 30 SECOND DELAY BEFORE THE “CONTINUE” BUTTON
APPEARS AFTER EACH ARTICLE. PRESENT A COUNT-DOWN BUTTON WITH
THE FOLLOWING TEXT: “*The “Continue” button will appear in X seconds.*” (REMOVE
THIS TEXT WHEN X=0) FOLLOWED BY “Click “Continue” when ready.”

IMMEDIATELY ABOVE THE ARTICLE, INSERT THE INSTRUCTION “*Please click to
enlarge.*” To return to the survey after enlarging the image, click the “x” in the upper right
corner of the enlarged image.” INCLUDE AN “ENLARGE” BUTTON ON TOP OF EACH
ARTICLE. IF THE “ENLARGE” BOTTON IS CLICKED, ENLARGE THE TEXT OF
THE ARTICLE. PIPE RESPONDENT’S PROGRESS OUT OF FOUR ARTICLES
UNDER “PLEASE CLICK ON AN IMAGE TO ENLARGE” INSTRUCTION (“[[X]]
OUT OF 4”)]

[NEXT PAGE]

Q2. Were you or were you not able to review the articles in the previous screens? (*Select only
one option*) [RANDOMIZE ORDER; KEEP “Don’t know / Unsure” LAST]

- ☐ Yes, I was able to review the pages in the previous screens.
- ☐ No, I was not able to review the pages in the previous screens. [TERMINATE]
- ☐ Don’t know / Unsure [TERMINATE]

Q3. What of the following topics, if any, did the articles in the previous screens discuss? (*Select
all that apply*) [RANDOMIZE ORDER; KEEP “Don’t know / Unsure” LAST]

- ☐ Location History
- ☐ Web and App Activity
- ☐ Youtube Watch History
- ☐ Personal Information
- ☐ Payment Settings [TERMINATE]

- ☐ Microphone Settings [TERMINATE]
- ☐ None of the above [TERMINATE]
- ☐ Don't know / Unsure [TERMINATE]

[TERMINATE IF RESPONDENT DOES NOT SELECT “Location History” and AT LEAST ONE of “Web and App Activity” OR “Youtube Search History” OR “Personal Information.”]

[NEXT PAGE]

Q4. For the following question, you will see a settings menu that you may see while using your Google account.

When you are ready, please click “Continue.”

[INCLUDE “CONTINUE” BUTTON]

[KEEP CLICKABLE THUMBNAILS OF EACH OF THE HELP ARTICLES SHOWN AVAILABLE TO RESPONDENTS ABOVE THE QUESTION TEXT IN Q5 AND Q6. BELOW THE THUMBNAILS, INSERT THE INSTRUCTION “*Please click to enlarge.*”]

Q5. Imagine that the settings associated with your Google account related to the help topic pages you just reviewed are set as shown in the following menu.

[SHOW STATIC SETTINGS WITH THE DEFAULTS BELOW, SHOWN IN SAME RANDOM ORDER AS HELP ARTICLES STIMULI SHOWN PREVIOUSLY; GROUP GENDER AND BIRTHDAY TOGETHER. DISPLAY IN TABLE AS SHOWN BELOW IN BLACK AND GRAY TEXT.]

Location History Off
Web & App Activity On
YouTube Watch History On
Gender Only you
Birthday Only you

Would you or would you not consider changing these settings associated with your Google account?

- ☐ Yes, I would consider changing these settings associated with my Google account related to the Google help pages I just reviewed.
- ☐ No, I would not consider changing these settings associated with my Google account related to the Google help pages I just reviewed. **[SKIP TO F1]**
- ☐ Don't know / Unsure **[SKIP TO F1]**

[CONTINUE TO Q6 IF “Yes, I would consider changing these settings associated with my Google account related to the Google help pages I just reviewed.” IS SELECTED. OTHERWISE, SKIP TO QUESTION F1.]

[NEXT PAGE]

Q6. Please take your time to review the settings menu. These are settings that you would see while on the settings menu of your Google account.

Below, you will have the opportunity to review the Google account settings shown. If you wish to adjust a setting, click the toggle button as you would while using your Google account.

[SHOW STIMULI TO BOTH GROUPS AS DESCRIBED BELOW, IN THE SAME RANDOM ORDER AS HOW THE CORRESPONDING HELP PAGES WERE SHOWN TO THE RESPONDENT INITIALLY; GROUP GENDER AND BIRTHDAY TOGETHER;

USE A SLIDING BUTTON AS SHOWN BELOW, DEFAULTED TO THE SETTINGS SHOWN BELOW. ALLOW RESPONDENTS TO CLICK THE SLIDING BUTTON TO TOGGLE BETWEEN “OFF”/“ON” AND “ONLY YOU” / “ANYONE.”.]

[TO CONTINUE, RESPONDENTS MUST CHANGE AT LEAST ONE SETTING OR SELECT “I do not want to change any of these settings”. IF A RESPONDENT DOES NOT CHANGE A SETTING OR SELECT “I do not want to change any of these settings”, DISPLAY THE FOLLOWING: *To continue, please either change a setting or select “I do not want to change any of these settings.”*]

Location History

Saves where you go with your devices to give you personalised maps, recommendations based on places you’ve visited, and more.

 Off

Web & App Activity

Saves your activity on Google sites and apps to give you faster searches, better recommendations, and more personalised experiences in Maps, Search, and other Google Services.

 On

YouTube Watch History

Make it easier to find your recently watched videos on YouTube and improve your recommendations.

 On

Gender

Indicating your gender lets Google know how to refer to you.

 Only you

Birthday

Your birthday lets Google know you’re old enough to use certain services.

 Only you

☒ I do not want to change any of these settings

[IF RESPONDENT SELECTS “I do not want to change any of these settings”, SET ALL TOGGLES BACK TO ORIGINAL DEFAULT PLACEMENT.]

[NEXT PAGE]

Follow-up Questions

F1. Are you or are you not aware of any lawsuits involving Android devices? *(Select only one option)* **[KEEP “DON’T KNOW / UNSURE” LAST.]**

- ☐ I am aware of at least one lawsuit
- ☐ I am not aware of any lawsuits
- ☐ Don’t know / Unsure

[GO TO PANEL ‘THANK YOU’ PAGE]

APPENDIX F

WAA Study Pretest Moderator Instructions

Pretest Moderator Instructions

The pretest sample will include respondents who meet the study screening criteria. A minimum of ten pretest interviews will be conducted over the phone by a trained, blind-to-the-purpose interviewer with blind-to-the-purpose respondents.

Notes to moderator are in brackets, bolded, and all capital letters.

[Section I: Introduction and Questionnaire]

[MODERATOR TO READ]

Hello, **[FIRST NAME]**? My name is _____. Thank you so much for agreeing to help us out today. I am going to be on Zoom while you take an online survey, and will be here the entire time you are taking the survey, so feel free to “think out loud” or bring up anything you would like while you are taking the survey. Please be thorough in your responses and take as much time as you need. After you are done taking the survey, I will ask you a couple of follow-up questions. Does that all sound okay?

Great, thank you. The link to the survey is in the calendar invitation you received. If you are comfortable doing so, could you share your screen as you are taking the survey?

[ALLOW THE RESPONDENT TO TAKE THE SURVEY AND FINISH]

[Section II: Follow-up Questions]

[QUESTIONS TO ASK AFTER THE RESPONDENT FINISHED RESPONDING TO ALL SURVEY QUESTIONS AND INDICATES SO. ADD PROBES SUCH AS “ANYTHING ELSE” TO CONFIRM THAT RESPONDENTS HAVE GIVEN A COMPLETE ANSWER.]

Q1. Did you have any problems or difficulties while taking the survey?

Q2. Did you have any problems or difficulties while viewing the images or thumbnail images in the survey?

Q3. Did you have any problems or difficulties while using the toggles in the survey?

Q4. Did you think any questions were unclear? If so, which ones and why?

Q5. Did you think any answer options were unclear? If so, which ones and why?

Q6. Did you or did you not have any difficulty viewing any parts of the survey?

Q7. What do you think might be the purpose for conducting this survey?

Q8. What makes you think so?

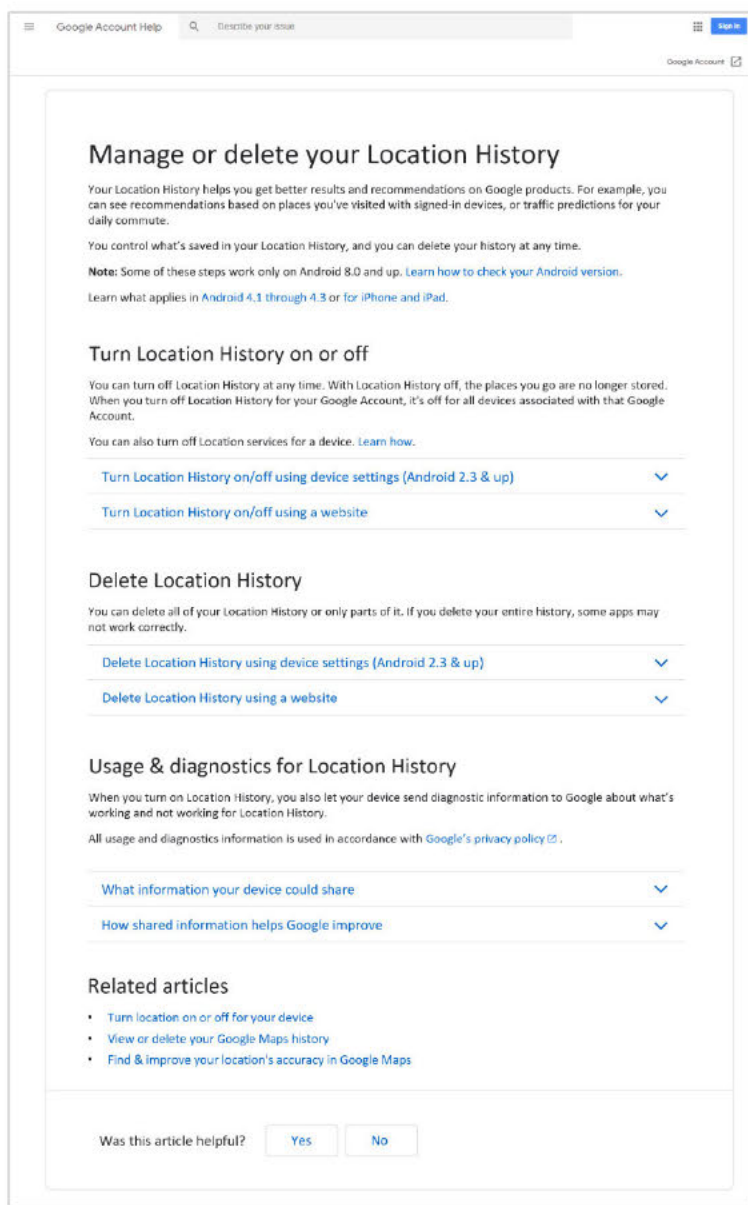
Q9. Is there anything else you would like to say about the survey?

Thank you so much for your time. Your participation is appreciated and we will make sure you get credit for completing this survey.

APPENDIX G

WAA Survey Stimuli

(2018 Location History Disclosure Group):
“Manage Your Location History” Help Page with 2018 Real-World Disclosure



(Modified Location History Disclosure):
“Manage Your Location History” Help Page with 2022 Modified Disclosure

Google Account Help

Describe your issue

Sign in

Google Account

Manage or delete your Location History

Your Location History helps you get better results and recommendations on Google products. For example, you can see recommendations based on places you've visited with signed-in devices, or traffic predictions for your daily commute.

You control what's saved in your Location History, and you can delete your history at any time.

Note: Some of these steps work only on Android 8.0 and up. [Learn how to check your Android version.](#)

Learn what applies in [Android 4.1 through 4.3](#) or for [iPhone and iPad](#).

Turn Location History on or off

You can turn off Location History at any time. When you turn off Location History for your Google Account, it's off for all devices associated with that Google Account.

You can also turn off Location services for a device. [Learn how.](#)

Turn Location History on/off using device settings (Android 2.3 & up)

Turn Location History on/off using a website

When Location History is on

- Google only receives Location History for each device where you are signed in and you have Location Reporting turned on.
- You can change the Location Reporting setting for each device where you're signed in, and limit which devices provide location data to be included in Location History. If you want to change your Location History settings, you can choose to:
 - Report your location from only some of your devices, but not others.
 - Report your location from all your devices.
 - Turn off Location History for your Google Account. Your location won't be reported from any of your devices and you will not have new Location History recorded to your account.
- Your settings for other location services on your device, like Google Location Services, Location Sharing, and Find My Device, aren't changed.

When Location History is off

- Your device's locations will not be automatically saved to your Location History.
- Previous activity is not deleted from your Location History. You can [manually delete your Location History](#).
- Your settings for other location services on your device, like Google Location Services, Location Sharing, and Find My Device, aren't changed.
- Some location data may continue to be saved in other settings, like Web & App Activity, as part of your use of other services, like Search and Maps, even after you turn off Location History.

Delete Location History

You can delete all of your Location History or only parts of it. If you delete your entire history, some apps may not work correctly.

Delete Location History using device settings (Android 2.3 & up)

Delete Location History using a website

Usage & diagnostics for Location History

When you turn on Location History, you also let your device send diagnostic information to Google about what's working and not working for Location History.

All usage and diagnostics information is used in accordance with [Google's privacy policy](#).

What information your device could share

How shared information helps Google improve

Related articles




- [Turn location on or off for your device](#)
- [View or delete your Google Maps history](#)
- [Find & improve your location's accuracy in Google Maps](#)


Was this article helpful?

Yes

No

(Both Experimental Groups):
“See and Control Your Search Activity” Help Page

 Google Account Help  Describe your issue 

Google Account 

See and control your search activity


If Web & App Activity is turned on, your searches and activity from other Google services are saved to your Google Account, so you may get better search results and suggestions.

You control what's saved, and you can delete your past searches and activity or turn off Web & App Activity at any time.

Note: If you got your Google Account through work or school, you may need to contact your administrator to turn on the Web & App Activity service for your organization.


[Computer](#) [Android](#) [iPhone & iPad](#)

Turn Web & App Activity on or off

1. On your computer, visit the [Activity controls](#)  page. You may be asked to sign in to your Google Account.
2. Turn **Web & App Activity** on or off.
3. If you turn the switch on, you can check the box next to "Include Chrome browsing history and activity from websites and apps that use Google services."

Note: Some browsers and devices may have more settings that affect how this activity is saved.

See or delete your search activity

You can find and delete your searches and browsing activity by visiting [My Activity](#) . Learn more about [how to view and control activity](#) or [how to delete activity](#).

Was this helpful?

[Yes](#)

[No](#)

(Both Experimental Groups):
“View, Delete or Pause Watch History (Signed In)” Help Page

YouTube Help

Describe your issue

Sign in

YouTube

View, delete, or pause watch history (signed in)

YouTube watch history makes it easy to find videos you recently watched and improves your video recommendations. You can control your watch history by deleting or pausing your history. You can delete individual items or delete your entire history. When you pause history, any videos that you watch while history is paused won't show in history and won't be used to improve your recommendations. You can unpause your history to start recording history again.

If you've been offline or lost your internet connection after pausing your watch history, we recommend you check your watch history when you get back online to make sure history appears as you expect. As always, you can delete any videos that appear in your history. To view or delete what you've previously searched for on YouTube, check out your [search history](#).

When you're signed in, changes you make to your account's watch history will appear on all devices you sign in to with this account. When you're signed out, you may still receive recommendations based on the watch history of your specific browser or app. To protect your privacy, this history isn't viewable but can still be cleared or paused. Those controls will apply to the browser or app.

You can access your watch history within the YouTube app via the instructions below. Your watch history is saved in your Google Account if **Videos you watch on YouTube** is turned on.

View, delete, or pause watch history (signed in)

Go to myactivity.google.com to find videos that you've viewed while signed in. This includes videos that you have watched while signed in to the YouTube app on mobile devices, as well as youtube.com. It also includes videos you've watched in a YouTube player on other websites while signed in to Google Chrome. Changes you make to your account watch history will be reflected on all devices you sign in to with this account.

Was this helpful?

Yes

No

(Both Experimental Groups):
“Control What Others See About You” Help Page

Google Account Help

Describe your issue

Sign in

Google Account

Control what others see about you across Google services

You can make some information on your Google Account private, public, or shared with certain people. That way, you're in control of who sees info like your birthday and phone number on Google services.



[Computer](#) [Android](#) [iPhone & iPad](#)

Choose what info you share

Your name and photo (if you choose to add one) can be viewed by other people who use Google services, including when you communicate or share content.

- Go to the [About me](#) section of your Google Account.
- Below or next to a type of info, select the icon. This icon shows who currently sees this info.
- Choose who to share this info with or select **Private**.

Add, edit, or delete personal info

- Go to the [About me](#) section of your Google Account.
- Change your info:
 - Below or next to a type of info, select Edit .
 - To add a new type of info, at the bottom right, select Add .
- Follow the steps on the screen.

Was this helpful?

Yes

No

APPENDIX H

**Example Survey Invite Screenshots
(Not Customized)**



New Opportunity to earn MileagePlus® award miles

Survey Length: 10 Minutes

Participate now by [clicking here »](#)

You're Invited!

Dear (Name),

Thanks for participating!

-The Opinion Miles Club Team

[Take this survey now »](#)



OPINION CHAMP

Hello [FIRST_NAME] [LAST_NAME]!

We have matched your profile to participate in a survey.

Before you start, remember that quality is important to us and our partners. Please answer honestly and do not rush.

100 points=\$1

[Click here to start](#)

Best regards,

Team Opinion Champ

Project information

Estimated duration	15 min
Reward	1200 points
Mobile friendly	Yes
Tablet friendly	Yes
Desktop / laptop friendly	Yes

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