

The Myth of Fourth Amendment Circularity

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The Supreme Court's decision in Katz v United States made people's reasonable expectations of privacy the touchstone for determining whether state surveillance amounts to a search under the Fourth Amendment. Ever since Katz, Supreme Court justices and numerous scholars have referenced the inherent circularity of taking the expectations-of-privacy framework literally: people's expectations of privacy depend on Fourth Amendment law, so it is circular to have the scope of the Fourth Amendment depend on those same expectations. Nearly every scholar who has written about the issue has assumed that the circularity of expectations is a meaningful impediment to having the scope of the Fourth Amendment depend on what ordinary people actually expect. But no scholar has tested the circularity narrative's essential premise: that popular sentiment falls into line when salient, well-publicized changes in Fourth Amendment law occur.

Our Article conducts precisely such a test. We conducted surveys on census-weighted samples of US citizens immediately before, immediately after, and long after the Supreme Court's landmark decision in Riley v California. The decision in Riley was unanimous and surprising. It substantially altered Fourth Amendment law on the issue of the privacy of people's cell phone content, and it was a major news story that generated relatively high levels of public awareness in the days after it was decided. We find that the public began to expect greater privacy in the contents of their cell phones immediately after the Riley decision, but this effect was small and confined to the 40 percent of our sample that reported having heard of the decision. One year after Riley, these heightened expectations had disappeared completely. There was no difference from baseline two years after Riley either, with privacy expectations remaining as they were prior to the decision. Our findings suggest that popular privacy expectations are far more stable than most judges and commentators have been assuming. Even in the ideal circumstance of a clear, unanimous, and widely reported decision, circularity in Fourth Amendment attitudes is

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both weak and short lived. In the longer term, Fourth Amendment circularity appears to be a myth.

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INTRODUCTION

It is very difficult to find any proposition in Fourth Amendment law to which every judge, lawyer, and scholar subscribes. One striking point about which nearly everyone—left, right, and center—agrees, however, is that there is a degree of circularity in the *Katz v United States*¹ “reasonable expectations of privacy” test.² Among those expressing concern about this circularity are Justices Samuel Alito, Anthony Kennedy, Antonin Scalia, and John Paul Stevens, Judges Alex Kozinski, Richard Posner, and George MacKinnon, and Professors Jed Rubenfeld, Dan Solove, Amitai Etzioni, Erwin Chemerinsky, David Sklansky, and Paul Schwartz.³ In this Article, we show that this widely shared concern is misplaced.

¹ 389 US 347 (1967).

² *Id.* at 362 (Harlan concurring).

³ See text accompanying notes 5–36.

Justice John Marshall Harlan II's opinion in *Katz* makes a person's reasonable expectations of privacy the touchstone for determining whether police surveillance amounts to a search and, therefore, is subject to restrictions under the Fourth Amendment.⁴ Under *Katz* and the numerous cases that follow its approach, the government conducts a search when it invades an "expectation of privacy . . . that society is prepared to recognize as 'reasonable.'"⁵ If the government's surveillance intrudes on such an expectation, the Fourth Amendment is implicated and the government must either get a search warrant or satisfy one of the limited exceptions to the warrant requirement.⁶ If the government's surveillance does not implicate a reasonable expectation of privacy, then the Fourth Amendment is inapplicable and no warrant is required.⁷

The exact meaning of *Katz*'s reasonable-expectation-of-privacy test is controversial, but its text has led some scholars to argue that the test should depend in part on how everyday members of the public think about privacy.⁸ And in some prominent post-*Katz* cases, the Supreme Court has said it is doing exactly

⁴ *Katz*, 389 US at 361 (Harlan concurring) (stating that police conduct amounts to a search, thereby implicating the Fourth Amendment, when "a person [exhibits] an actual (subjective) expectation of privacy and [when] the expectation [is] one that society is prepared to recognize as 'reasonable'"). The test from Harlan's concurrence subsequently became the key Fourth Amendment inquiry, embraced repeatedly by the Supreme Court over time. See, for example, *California v. Ciraolo*, 476 US 207, 211 (1986) ("The touchstone of Fourth Amendment analysis is whether a person has a 'constitutionally protected reasonable expectation of privacy.'"), citing *Katz*, 389 US at 360 (Harlan concurring); *Kyllo v. United States*, 533 US 27, 32–33 (2001) (describing the Supreme Court majority's application of Harlan's *Katz* test in several cases).

⁵ *Katz*, 389 US at 361 (Harlan concurring).

⁶ See *Riley v. California*, 134 S Ct 2473, 2482 (2014).

⁷ See *Florida v. Riley*, 488 US 445, 449 (1989).

⁸ See, for example, Christopher Slobogin, *Privacy at Risk: The New Government Surveillance and the Fourth Amendment* 114 (Chicago 2007); Jeremy A. Blumenthal, Meera Adya, and Jacqueline Mogle, *The Multiple Dimensions of Privacy: Testing Lay "Expectations of Privacy"*, 11 U Pa J Const L 331, 336–37 (2009); Henry F. Fradella, et al, *Quantifying Katz: Empirically Measuring "Reasonable Expectations of Privacy" in the Fourth Amendment Context*, 38 Am J Crim L 289, 338–42 (2011); Matthew B. Kugler and Lior Jacob Strahilevitz, *Actual Expectations of Privacy, Fourth Amendment Doctrine, and the Mosaic Theory*, 2015 S Ct Rev 205, 219, 230; Christine S. Scott-Hayward, Henry F. Fradella, and Ryan G. Fischer, *Does Privacy Require Secrecy? Societal Expectations of Privacy in the Digital Age*, 43 Am J Crim L 19, 45–58 (2015); Christopher Slobogin and Joseph E. Schumacher, *Reasonable Expectations of Privacy and Autonomy in Fourth Amendment Cases: An Empirical Look at "Understandings Recognized and Permitted by Society"*, 42 Duke L J 727, 732 (1993); Bernard Chao, et al, *Why Courts Fail to Protect Privacy: Race, Age, Bias, and Technology*, 106 Cal L Rev *6–19 (forthcoming 2018), archived at <http://perma.cc/MA8V-PJKT>.

that.⁹ The problem that many have identified with this approach to *Katz* is that reasonable people should expect the privacy rights granted to them by the courts. So expectations define the scope of legal protection, but the legal protections themselves should define the expectations.

This potential circularity gives rise to a practical problem. Once the state begins using an investigative technique, and especially once the courts authorize the state to do so, ordinary people's expectations of privacy may adjust. Thus, even if people expected privacy in a context at some earlier point in time, subsequent actions by the government can erode these expectations, enabling the state to conduct invasive surveillance in the future without having to secure a warrant. If this understanding of expectations is correct, the Fourth Amendment provides little protection against a government that acts strategically; all it need do is move incrementally and publicize what it is doing. Further, the judicial determination of whether an expectation of privacy exists would be largely empty; even if the court gets the answer "wrong," public expectations would soon adapt to make it "right." For those who argue that the reasonableness of a privacy expectation should depend on whether the expectation is widely shared, this is an especially salient problem. If public expectations are a function of whatever the Supreme Court said last, then the Court accounting for such expectations would result in it talking to itself.

The Fourth Amendment circularity hypothesis is intuitive and easy to grasp. There are just two problems with the circularity story: (1) there is no hard empirical evidence supporting it, and (2) an empirical literature in political science provides ample reason to doubt it. In this Article, we present new data that suggest that popular expectations of privacy are very stubborn. Though expectations move a little right after a major Supreme Court decision substantially changes Fourth Amendment law, within a span of months expectations snap right back to where they were beforehand and they remain stable thereafter. As best we can tell from this data, the circularity of reasonable expectations of privacy is a myth.

Part I of the Article presents the problem of circularity. At stake in this discussion is the feasibility of incorporating public expectations into the doctrine. If expectations are independent of

⁹ See text accompanying note 27.

current case law, then looking to public expectations can provide a correcting impulse against an out-of-touch judiciary. If, on the other hand, expectations merely reflect what courts have said, then there is no point to considering public attitudes; no information would be gained. The Part begins by explaining the Supreme Court's concern that expectations of privacy would become an empty concept, and that a government could strategically condition the populace to accept ever-greater privacy invasions. We then identify many Fourth Amendment scholars expressing the same concern. Lastly, we examine a literature from political science and psychology commenting on public reactions to Supreme Court decisions. This literature informed our skepticism that the public would uncritically mirror the Court's rulings.

In Part II, we describe the case at the core of our study: *Riley v California*.¹⁰ The case established a new rule for the searching of electronic devices incident to arrest. This case was well suited to prompting a major change in public expectations. The ruling was clear; it was broad; it was surprising; it was unanimous; and it prompted a torrent of media coverage. As Fourth Amendment cases go, we could not have hoped for better; it stacked the deck in favor of finding a change of expectation. *And yet no lasting change was observed.*

In Part III, we present the empirical study itself. We recruited census-representative participants in four waves: one right before the decision, one right after, a one-year follow-up, and a two-year follow-up. We found a small shift in the direction of the Court's decision in the survey conducted immediately after the decision came down. However, this shift (1) was specific to the exact question in *Riley* and did not generalize to related questions, (2) was present only among those who reported having heard of the decision, and (3) disappeared the following year. Put another way, the Supreme Court managed to move privacy expectations only slightly and only for a very short time. Based on these data, circularity does not seem to be a problem.

In Part IV, we examine the implications of these data for Fourth Amendment doctrine and relate our findings back to the political science literature on the effects of Supreme Court decisions on public attitudes. We also show that a nearly simultaneous Supreme Court decision, *Burwell v Hobby Lobby Stores, Inc.*,¹¹

¹⁰ 134 S Ct 2473 (2014).

¹¹ 134 S Ct 2751 (2014).

had a short-lived, polarizing effect on the public. This finding underscores the complicated interplay between the Supreme Court and the general public and adds further reason to believe that circularity is neither strong nor common.

I. THE (ALLEGED) PROBLEM OF CIRCULARITY

Prior to this study, many legal thinkers were concerned by the potential for circularity. Not long before his appointment to the federal bench, then-Professor Richard Posner observed that “it is circular to say that there is no invasion of privacy unless the individual whose privacy is invaded had a reasonable expectation of privacy; whether he will or will not have such an expectation will depend on what the legal rule is.”¹² This sums up the alleged problem of circularity perfectly: reasonable people should not expect more privacy than the courts have told them will be protected. If the level of privacy expected by society is both the cause and consequence of Fourth Amendment jurisprudence, then the entire area of law reduces to a discussion of chickens, eggs, and primacy.

The circularity of the *Katz* inquiry is an idea with a long and distinguished pedigree. The Supreme Court’s first recognition of the potential circularity problem arose in *Rakas v Illinois*,¹³ decided in 1978. In footnote twelve, the Court talked about the circularity problem:

[I]t would, of course, be merely tautological to fall back on the notion that those expectations of privacy which are legitimate depend primarily on cases deciding exclusionary-rule issues in criminal cases. Legitimation of expectations of privacy by law must have a source outside of the Fourth Amendment, either by reference to concepts of real or personal property law or to understandings that are recognized and permitted by society.¹⁴

The Court is noting that it is illogical and unappealing to base whether someone has a reasonable expectation of privacy on whether the court cases say he or she does.¹⁵ To avoid this kind of

¹² Richard A. Posner, *The Uncertain Protection of Privacy by the Supreme Court*, 1979 S Ct Rev 173, 188.

¹³ 439 US 128 (1978).

¹⁴ Id at 143 n 12.

¹⁵ See, for example, *Sparing v Village of Olympia Fields*, 266 F3d 684, 689 (7th Cir 2001) (referring to the “unmistakable circularity” of such an approach); *United States v*

doctrinal circularity, courts are to determine whether a reasonable expectation of privacy exists based on considerations extrinsic to Fourth Amendment doctrine, such as property law and popular expectations.

But looking to public attitudes escapes circularity only if one believes that those attitudes won't generally be driven by the doctrine itself. Within a year of *Rakas*, the Supreme Court would start worrying about the problem of feedback between what courts say and what the public expects. We refer to this hypothesized feedback as *attitudinal circularity*, the idea that "understandings that are recognized . . . by society" will themselves be determined by legal pronouncements.¹⁶ If attitudinal circularity is a real concern, then one of the solutions the *Rakas* Court offered for the problem of doctrinal circularity is no solution at all: the content of the doctrine would still depend on the content of the doctrine, just with the additional step of popular expectations being influenced by, and in turn influencing, doctrine. As the parade of scholars expressing concern over this kind of circularity indicates, there is an intuitive plausibility to the notion that the privacy expectations of reasonable people, those expectations to which *Katz* refers, are dependent on the pronouncements of courts.

A. The Development of Circularity Concern

The Supreme Court's first comments on attitudinal circularity appeared in *Smith v Maryland*,¹⁷ which involved the government's use of a pen register to determine what outgoing calls were being placed from a robbery suspect's home.¹⁸ The Court in *Smith* applied the *Katz* framework, yet in doing so, the majority made the following observation:

Situations can be imagined, of course, in which *Katz*' two-pronged inquiry would provide an inadequate index of Fourth Amendment protection. For example, if the Government were suddenly to announce on nationwide television that all

Johnson, 561 F2d 832, 851 (DC Cir 1977) (MacKinnon concurring) ("*Katz* . . . incorporates a fair amount of circularity. One will have a reasonable expectation of privacy over those areas that courts tell him he may reasonably expect to be private."). See also David L. Faigman, *Constitutional Fictions: A Unified Theory of Constitutional Facts* 25 (Oxford 2008).

¹⁶ *Rakas*, 439 US at 143 n 12.

¹⁷ 442 US 735 (1979).

¹⁸ *Id* at 737–38.

homes henceforth would be subject to warrantless entry, individuals thereafter might not in fact entertain any actual expectation of privacy regarding their homes, papers, and effects. . . . In such circumstances, where an individual's subjective expectations had been "conditioned" by influences alien to well-recognized Fourth Amendment freedoms, those subjective expectations obviously could play no meaningful role in ascertaining what the scope of Fourth Amendment protection was. In determining whether a "legitimate expectation of privacy" existed in such cases, a normative inquiry would be proper.¹⁹

Here the Court is bringing attitudinal circularity to the forefront. The hypothetical example chosen by the Court posits that the government's action (a frightening, Orwellian announcement that reaches millions of Americans) changes the attitudes of the citizenry. After the announcement, expectations of privacy have dissipated, and the government can invoke the (now) low privacy expectations of the citizenry if any lawyer tries to challenge the legality of the new policy in court. Such hypothetical (and unrealistic) circumstances could indeed create a logical problem for the doctrine.²⁰ This hypothetical attacks the idea that popular attitudes are largely indifferent to state action, which seemed intuitive to the Court in *Rakas*. Therefore, the clever *Rakas* remedy of looking at people's beliefs no longer helps resolve matters. To deal with this attitudinal circularity problem, the Court would need to ignore people's actual attitudes and instead answer hard normative questions about what level of privacy people ought to expect.

That said, it is worth underscoring that there are no documented instances of the federal government acting in a manner as brazen as what is described in the *Smith* hypothetical.²¹ There

¹⁹ *Id.* at 740 n 5.

²⁰ See *United States v Scott*, 450 F3d 863, 867 (9th Cir 2006) (Kozinski) ("[I]mposing such a regime outright [] can contribute to the downward ratchet of privacy expectations."); *Johnson*, 561 F2d at 851 (MacKinnon concurring).

²¹ The initiation of mandatory baggage screening for airline passengers in January 1973 is a somewhat close example, though at the time such screening began, regular air travel was a luxury out of reach for most Americans. See John Rogers, *Bombs, Borders, and Boarding: Combatting International Terrorism at United States Airports and the Fourth Amendment*, 20 Suffolk Transnatl L Rev 501, 507 (1997) (discussing the history of baggage screening).

is presumably a first time for everything, but the *Smith* hypothetical would be unprecedented in this country.²² Setting it aside, popular expectations could easily be sufficiently impervious to changes in the law or police practices to allow the kinds of doctrinal uses referenced in *Rakas*. The proper empirical question is whether the kinds of governmental actions that we regularly see, such as new statutes or Supreme Court opinions, can meaningfully move attitudes.

In its post-*Smith* pronouncements, the Court has continued to refer to the Fourth Amendment's circularity problem, but in terms that make it harder to determine whether the Court is referencing doctrinal circularity or attitudinal circularity. In the Court's 2001 *Kyllo v United States*²³ opinion, the majority observed that the "*Katz* test—whether the individual has an expectation of privacy that society is prepared to recognize as reasonable—has often been criticized as circular, and hence subjective and unpredictable."²⁴ Subjectivity and unpredictability could be a problem associated with either doctrinal uncertainty (the judges get to declare the law is whatever they say it is) or attitudinal uncertainty (what the law is depends on how judges think people are reacting, an inquiry that is itself subjective and hard to predict). More recently, Justices Kennedy, Alito, and Stevens have all opined on the Fourth Amendment's circularity problem, referencing the issue in ways that sometimes hint that a particular form of circularity is on their mind and sometimes express misgivings in more ambiguous terms.²⁵

²² Such dramatic changes may be more likely in countries that are autocratic or are experiencing democratic backsliding. In such regimes, circularity could be significant, though gathering reliable public opinion data may be challenging, and popular expectations would be unlikely to have any genuine doctrinal relevance.

²³ 533 US 27 (2001).

²⁴ *Id.* at 34.

²⁵ See *United States v Jones*, 565 US 400, 427 (2012) (Alito concurring in the judgment) (citations omitted):

The *Katz* expectation-of-privacy test avoids the problems and complications noted above, but it is not without its own difficulties. It involves a degree of circularity, and judges are apt to confuse their own expectations of privacy with those of the hypothetical reasonable person to which the *Katz* test looks. In addition, the *Katz* test rests on the assumption that this hypothetical reasonable person has a well-developed and stable set of privacy expectations. But technology can change those expectations. Dramatic technological change may lead to periods in which popular expectations are in flux and may ultimately produce significant changes in popular attitudes.

More broadly, the Supreme Court has been all over the map in terms of its approach to the Fourth Amendment.²⁶ Basing Fourth Amendment protections on what ordinary people actually expect has ample doctrinal support, but it is a contested methodology for deciding what constitutes a search. In some of its decisions, the Court's sense of popular expectations plays a significant or even decisive role, though invariably the Court is relying on justices' educated guesses about public expectations rather than on scientific data.²⁷ In other cases, the Court essentially ignores these expectations or insists they are irrelevant.²⁸ The purported circularity of expectations of privacy may be one reason (among others) why the Court has never committed itself to a consistent methodology that is tied to popular understandings of Americans' control over their persons, houses, papers, and effects.²⁹

See also Justice Kennedy, Transcript of Oral Argument, *City of Los Angeles v Patel*, Docket No 13-1175, *12 (US Mar 3, 2015):

If you prevail in this case and a member of the Court sits down to write the opinion, does he or she have to use the phrase “reasonable expectation of privacy” and say there is no reasonable expectation of privacy in our society, in our culture, in our day, or do we just forget that phrase? In—in a way, as we all know it’s circular, that if we say there is a reasonable expectation, then there is.

See also *Samson v California*, 547 US 843, 863 (2006) (Stevens dissenting) (citation omitted):

Nor is it enough, in deciding whether someone’s expectation of privacy is “legitimate,” to rely on the existence of the offending condition or the individual’s notice thereof. The Court’s reasoning in this respect is entirely circular. The mere fact that a particular State refuses to acknowledge a parolee’s privacy interest cannot mean that a parolee in that State has no expectation of privacy that society is willing to recognize as legitimate—especially when the measure that invades privacy is both the *subject* of the Fourth Amendment challenge and a clear outlier. With only one or two arguable exceptions, neither the Federal Government nor any other State subjects parolees to searches of the kind to which petitioner was subjected. And the fact of notice hardly cures the circularity

²⁶ See *United States v Maynard*, 615 F3d 544, 558 (DC Cir 2010), *affd*, *Jones*, 565 US 400; Orin S. Kerr, *Four Models of Fourth Amendment Protection*, 60 Stan L Rev 503, 504–08 (2007).

²⁷ Kerr, 60 Stan L Rev at 508–11 (cited in note 26) (discussing Supreme Court cases that follow what Kerr calls the “probabilistic model”), citing *Bond v United States*, 529 US 334, 338–39 (2000), *Minnesota v Olson*, 495 US 91, 98–99 (1990), and *California v Ciraolo*, 476 US 207, 215 (1986); Chao, et al, 106 Cal L Rev at *12–16 (cited in note 8) (discussing other cases that employ the same method). See also *City of Ontario v Quon*, 560 US 746, 757–60 (2010) (using employees’ expectations, based on their understanding of the law, policies, and technologies, to determine the scope of the Fourth Amendment).

²⁸ See Kerr, 60 Stan L Rev at 511–12 (cited in note 26) (discussing Supreme Court cases that treat popular expectations as irrelevant), citing *Illinois v Caballes*, 543 US 405, 408–09 (2005), *United States v Miller*, 425 US 435, 443 (1976), and *United States v Ross*, 456 US 798, 822 (1982).

²⁹ See Kerr, 60 Stan L Rev at 544 (cited in note 26) (noting that the Supreme Court is most likely to adhere to the probabilistic model of what government conduct constitutes

B. The Scholarly Consensus on Attitudinal Circularity

Circularity has been a major point of discussion in Fourth Amendment scholarship, and without looking too hard one can identify a great many instances of well-regarded scholars articulating the attitudinal circularity concern. These scholars include Professors Amitai Etzioni,³⁰ Jed Rubenfeld,³¹ Daniel Solove,³² Erwin Chemerinsky,³³ David Sklansky,³⁴ and Paul Schwartz,³⁵

a search when a group of strongly held “social norms [] are difficult for the government to manipulate” and less likely to adhere to the model in other circumstances).

³⁰ See Amitai Etzioni, *Eight Nails into Katz’s Coffin*, 65 Case W Reserve L Rev 413, 414–19 (2014) (“It is difficult to comprehend why the well-established observation that *Katz* is tautological is not itself sufficient to lay *Katz* to rest.”).

³¹ See Jed Rubenfeld, *The End of Privacy*, 61 Stan L Rev 101, 132–33 (2008) (“[T]he circularity problem [] afflicts expectations-of-privacy analysis. An announcement that all telephone calls will henceforth be monitored deprives people of their reasonable expectations of privacy in such calls.”).

³² See Daniel J. Solove, *Fourth Amendment Pragmatism*, 51 BC L Rev 1511, 1524 (2010) (arguing that “judicial decisions about reasonable expectations of privacy would have a bootstrapping effect,” such that a Supreme Court “pronouncement would affect people’s future expectations”).

³³ See Erwin Chemerinsky, *Rediscovering Brandeis’s Right to Privacy*, 45 Brandeis L J 643, 650 (2007) (“Moreover, the Fourth Amendment approach to protecting privacy based on whether there is a ‘reasonable expectation of privacy’ also poses serious problems. The government seemingly can deny privacy just by letting people know in advance not to expect any.”).

³⁴ See David Alan Sklansky, *Too Much Information: How Not to Think about Privacy and the Fourth Amendment*, 102 Cal L Rev 1069, 1072 n 8 (2014) (citations omitted):

The Court nicely illustrated the potential of the *Katz* test for circularity the following term when it upheld the routine collection of DNA samples from felony arrestees, reasoning in part that arrestees have reduced “expectations of privacy”—and citing for that proposition earlier decisions by the Court authorizing searches incident to arrest. “Reasonable expectations of privacy” can be defined by social norms rather than legal rules, but the *Katz* test runs into a different kind of circularity: the tendency over time for people to become accustomed to governmental violations of privacy.

³⁵ See Paul M. Schwartz, *Privacy and Participation: Personal Information and Public Sector Regulation in the United States*, 80 Iowa L Rev 553, 573 (1995):

[T]he Supreme Court’s search for reasonable expectations of privacy is tautological. The Fourth Amendment is held to be applicable in those circumstances in which people reasonably expect it to be applicable. Thus, when a desire for privacy is incommensurate with the general social view of reasonable privacy (or, more accurately, the Supreme Court’s estimation of this view), Fourth Amendment protection does not exist. This amendment applies only when society already awaits it.

Schwartz goes on to emphasize feedback between technological development and popular expectations, a point later echoed by Professor Paul Ohm. See Paul Ohm, *The Fourth Amendment in a World without Privacy*, 81 Miss L J 1309, 1339–47 (2012).

among many others.³⁶ Now, not all of these scholars are concerned about circularity to the same degree. Some, including Professors Michael Abramowicz, Mary Coombs, and Orin Kerr, regard the problem as “modest” or occasional, noting that circularity will be of minimal concern when subtle changes in doctrine fly under the public’s radar.³⁷

At this point, it is worth introducing a distinction between two possible versions of the attitudinal circularity hypothesis. The strong version states that a well-publicized Supreme Court decision (or unchallenged action by Congress or the executive) will have the effect of swiftly changing privacy expectations. People will hear of the decision, word will spread through their social networks, and expectations will adjust accordingly. That is the version of circularity we set out to test in this project.

In contrast, the weak version of circularity instead states that such governmental actions will have the effect of changing privacy expectations only over an extended period, perhaps decades,

³⁶ See, for example, Ronald J. Bacigal, *Some Observations and Proposals on the Nature of the Fourth Amendment*, 46 *Geo Wash L Rev* 529, 536 (1978) (“[T]he major inadequacy of exclusive reliance on the reasonably prudent man standard is that the standard merely reflects existing conditions without considering their desirability. The government can unilaterally change existing conditions and thus the expectations of reasonably prudent men.”); Jim Harper, *Reforming Fourth Amendment Privacy Doctrine*, 57 *Am U L Rev* 1381, 1392 (2008) (“[The reasonable expectation test’s] circularity is especially problematic here at the onset of the Information Age. . . . If proponents of government surveillance can mold expectations to their advantage, they can have broad access to communications.”). Ohm articulates a variation on the traditional attitudinal circularity account. See Ohm, 81 *Miss L J* at 1310–26 (cited in note 35) (“[T]he punch line is both easy to state and preordained almost to the point of being tautological—in a world without privacy, a Fourth Amendment built around reasonable expectations of privacy will no longer apply.”). Ohm emphasizes how popular expectations change in response to the use of new technologies more than case-law developments, though which technologies get adopted is in part dependent on court rulings.

³⁷ See Michael Abramowicz, *Constitutional Circularity*, 49 *UCLA L Rev* 1, 60–62 (2001) (identifying popular conceptualization of the Constitution as a potential solution to the circularity problem); Mary I. Coombs, *Shared Privacy and the Fourth Amendment, or the Rights of Relationships*, 75 *Cal L Rev* 1593, 1596 (1987). Although Kerr is concerned with *Katz*’s potential circularity, see Orin S. Kerr, *The Fourth Amendment in Cyberspace: Can Encryption Create a “Reasonable Expectation of Privacy?”*, 33 *Conn L Rev* 503, 512–13 (2001) (“By linking Fourth Amendment protection to the presence of extraconstitutional rights, the rights-based conception ensures that the government cannot use its mere ability to invade privacy [as in the *Smith* hypothetical] as a basis for eradicating Fourth Amendment protection.”), his views on circularity have evolved over time. In subsequent scholarship, Kerr astutely noted that popular expectations cannot be completely determined by their response to government practices and court pronouncements. See Kerr, 60 *Stan L Rev* at 511 n 34 (cited in note 26). Kerr described the degree of attitudinal circularity as “modest.” *Id.*

as the change in law filters down through police behavior and popular culture.³⁸ Put another way, the strong version of circularity involves people watching CNN, Fox, and *The Daily Show*, and the weak version involves people watching *Law and Order*.

Most scholars discussing the circularity hypothesis are not clear about which version they are endorsing, and we do not want to put words in their mouths. But many of them have used the circularity critique to either suggest that the *Katz* test is incoherent³⁹ or to specifically criticize the incorporation of public expectations in *Katz*.⁴⁰ On the other hand, scholars like Professors Christopher Slobogin and Christine Scott-Hayward, and the two of us,⁴¹ have argued that the courts should regularly examine reliable survey evidence to determine whether a reasonable expectation of privacy exists under *Katz*.⁴² We think that survey data ought to be informative or dispositive on the question of popular expectations of privacy, and that such data can be gathered at the outset of litigation. But if people are highly responsive to changes in legal rules, then popular expectations could shift significantly even during the course of a case as people respond to legal developments in the case itself or in similar cases arising in other jurisdictions. If ordinary people's expectations of privacy are determined mainly by what courts or the executive say the law is, or are basically indeterminate,⁴³ then our social science survey approach has little to recommend it. In our view, public expectations should work as a corrective to outdated or obscure precedents and out-of-touch judges. If popular attitudes instead largely reflect

³⁸ See, for example, *Dickerson v United States*, 530 US 428, 443 (2000) (“We do not think there is such justification for overruling *Miranda*. *Miranda* has become embedded in routine police practice to the point where the warnings have become part of our national culture.”).

³⁹ See, for example, Chemerinsky, 45 Brandeis L J at 650 (cited in note 33); Bacigal, 46 Geo Wash L Rev at 536 (cited in note 36); Harper, 57 Am U L Rev at 1392 (cited in note 36); Schwartz, 80 Iowa L Rev at 573 (cited in note 35).

⁴⁰ See, for example, Sklansky, 102 Cal L Rev at 1072 n 8 (cited in note 34); Solove, 51 BC L Rev at 1523–24 (cited in note 32).

⁴¹ See Slobogin, *Privacy at Risk* at 13 (cited in note 8); Kugler and Strahilevitz, 2015 S Ct Rev at 212 (cited in note 8); Scott-Hayward, Fradella, and Fischer, 43 Am J Crim L at 58 (cited in note 8); Slobogin and Schumacher, 42 Duke L J at 774–75 (cited in note 8); Matthew B. Kugler, Comment, *The Perceived Intrusiveness of Searching Electronic Devices at the Border: An Empirical Study*, 81 U Chi L Rev 1165, 1207–10 (2014).

⁴² See, for example, William Baude and James Y. Stern, *The Positive Law Model of the Fourth Amendment*, 129 Harv L Rev 1821, 1852 (2016) (describing the “standard objections based on the circularity of the enterprise” in which survey approaches to *Katz* are engaged).

⁴³ See Orin S. Kerr, *Do We Need a New Fourth Amendment?*, 107 Mich L Rev 951, 964–65 (2009).

the most recent actions of those same judges, looking to expectations gains society nothing while further muddling an already confused area of law.

But circularity is an effective critique of our position only if one adopts a strong, or at least stronger, conception of it. If one assumes that public expectations adapt only over the span of decades, then there is no difficulty in running surveys to assess public attitudes in Fourth Amendment litigation; the attitudes would still be “real” and not the immediate product of the government action. It is only if the attitudes change quickly that the survey researchers would find the ground shifting under their feet.

Testing the attitudinal circularity hypothesis therefore becomes an urgent project for the first principles of Fourth Amendment law. If ordinary people’s actual expectations of privacy are relatively stable and don’t depend on government pronouncements in the short-to-medium term, then privileging those attitudes through doctrine may well be desirable. The case for turning to social expectations in Fourth Amendment law would look a lot like the case for examining social norms when trying to determine the content of property law⁴⁴ or deferring to trade usages in contract litigation.⁴⁵ Widespread, shared beliefs probably (though not inevitably) reflect accumulated societal wisdom.⁴⁶ And the more stable ordinary people’s expectations of privacy are, the more predictive and stable social science studies conducted at one point in time will be at a later date.⁴⁷ Conversely, the more unstable, reactive, and random public attitudes are, the more reason to favor alternative theories that define the proper scope of the Fourth Amendment without any reference to popular expectations.⁴⁸ Answering the empirical question of whether attitudes

⁴⁴ See *Ghen v Rich*, 8 F 159, 162 (D Mass 1881); *Swift v Gifford*, 23 F Cases 558, 559 (D Mass 1872). See also Robert C. Ellickson, *Order without Law: How Neighbors Settle Disputes* 203–04 (Harvard 1991).

⁴⁵ See Lisa Bernstein, *Custom in the Courts*, 110 Nw U L Rev 63, 68–70 (2015).

⁴⁶ See Edmund Burke, *Reflections on the Revolution in France* 39–41 (Bobbs-Merrill 1st ed 1955) (Thomas H.D. Mahoney, ed) (originally published in 1790).

⁴⁷ See Kerr, 107 Mich L Rev at 964 (cited in note 43); Kugler and Strahilevitz, 2015 S Ct Rev at 234 (cited in note 8).

⁴⁸ See, for example, Baude and Stern, 129 Harv L Rev at 1830–33 (cited in note 42); Barry Friedman and Cynthia Benin Stein, *Redefining What’s “Reasonable”: The Protections for Policing*, 84 Geo Wash L Rev 281, 289–99 (2016); Kerr, 60 Stan L Rev at 503 (cited in note 26); Orin S. Kerr, *An Equilibrium-Adjustment Theory of the Fourth Amendment*, 125 Harv L Rev 476, 525–29 (2011); Silas J. Wasserstrom and Louis Michael Seidman, *The Fourth Amendment as Constitutional Theory*, 77 Georgetown L J 19, 104 (1988).

are circular thus has a major impact on the normative question whether we should (or even can) look to such attitudes when formulating doctrine.

We therefore consider what actually happens when the Supreme Court issues a new decision on the scope of Fourth Amendment protection. When a particular decision is not widely known, logically it is unlikely to immediately change society's expectations of privacy.⁴⁹ However, some decisions receive widespread media coverage, and knowledge of even a little-known decision's content conceivably could permeate the population over time. The extent to which this really happens in Fourth Amendment cases is unclear. It is possible that these cases are just a flash in the pan, known to some people for an instant and then immediately forgotten, with only lawyers and law students remembering that they ever happened. It is also possible that they instead have long-term ripples that alter societal beliefs through news coverage, mass-media content, interactions with law enforcement, word of mouth, social media, and subtler mechanisms.

C. Existing Work on Attitudinal Responses to Supreme Court Decisions

Although a great deal of legal scholarship takes the notion of attitudinal circularity for granted, one of our frustrations in confronting the existing literature has been that it all ignores a large body of related political science research. For decades, political scientists have been studying precisely how the public responds to major Supreme Court decisions. Yet legal scholars, as far as we know, haven't previously made any connection between this literature and circularity.

1. Psychological literature on attitude change.

In reviewing the political science literature, it is helpful to consider the various (somewhat conflicting) findings through the lens of the psychological literature on persuasion. Two general theories are relevant here. The first is called motivated cognition. Imagine two people who strongly disagree about an issue, perhaps the death penalty. If pressed, these people would likely describe their views on the death penalty as stemming in part from

⁴⁹ Abramowicz, 49 *UCLA L Rev* at 61–62 (cited in note 37); Coombs, 75 *Cal L Rev* at 1596 (cited in note 37).

different factual assumptions about how potential criminals respond to the existence of capital punishment, the number of mistaken convictions, the overall crime rate, and a variety of other questions. One might optimistically think that the level of disagreement would decline were these two people exposed to new studies on the efficacy of capital punishment. Persuasion would not be total—no one gives up *that* easily—but the two sides should come closer together. This, sadly, does not happen. A classic study by Professors Charles Lord, Lee Ross, and Mark Lepper found that those exposed to information supporting their position become more extreme in their support, as one would expect. But those exposed to information opposed to their position question the new data, moving far less than did those whose views were reinforced.⁵⁰ The overall level of disagreement actually increased due to this biased assimilation of information.⁵¹

Similar motivated cognition effects arise as people shape their assimilation and processing of new information to minimize the tension between it and their existing beliefs.⁵² This biased processing has been demonstrated in a number of contexts, including perceptions of video evidence.⁵³ The relevance of motivated cognition to public reactions is straightforward: as in other contexts, we should expect people confronted by court decisions that run counter to their prior preferences and beliefs to resist those decisions rather than be immediately persuaded by them.

The second relevant theory is the Elaboration Likelihood Model (ELM) of persuasion. This model posits that the impact of a persuasive message will vary depending on the extent to which listeners are willing and able to process the message in depth. Listeners who are not motivated to think deeply about an issue will respond to “peripheral” characteristics—a liked or attractive source, for instance—whereas those who are motivated to think

⁵⁰ See generally Charles G. Lord, Lee Ross, and Mark R. Lepper, *Biased Assimilation and Attitude Polarization: The Effects of Prior Theories on Subsequently Considered Evidence*, 37 *J Personality & Soc Psychology* 2098 (1979).

⁵¹ *Id.* at 2101–08.

⁵² See Ziva Kunda, *The Case for Motivated Reasoning*, 108 *Psychological Bull.* 480, 484 (1990); Leon Festinger, Henry W. Riecken, and Stanley Schachter, *When Prophecy Fails: A Social and Psychological Study of a Modern Group That Predicted the Destruction of the World* 193–215 (Harper & Row 1956).

⁵³ See generally Albert H. Hastorf and Hadley Cantril, *They Saw a Game: A Case Study*, 49 *J Abnormal & Soc Psychology* 129 (1954). See also Dan M. Kahan, et al., “*They Saw a Protest*”: *Cognitive Illiberalism and the Speech-Conduct Distinction*, 64 *Stan L Rev* 851, 853 (2012) (replicating the effect in the context of video evidence).

deeply about the issue will respond based more on “central” characteristics, such as the quality of the argument.⁵⁴ Those who are motivated enough to attend to central characteristics often discount peripheral cues, meaning that the value of, say, a celebrity endorsement would be sharply limited to a highly attentive audience. Persuasion via the central route is more likely to lead to long-term attitude change whereas persuasion via the peripheral route is as superficial as the name suggests—short term and not especially predictive of behavior.⁵⁵

One of the better predictors of the level of effort that a listener will put into processing a message is their degree of personal involvement and the strength of their initial attitude.⁵⁶ Those who have a personal connection to an issue will attend to the message more. However, as suggested by the literature on motivated cognition, this will not necessarily lead to more *accurate* processing.⁵⁷ Listeners could easily spend that additional processing power trying to counterargue against a persuasive message.

2. Political science literature on reactions to Supreme Court decisions.

Keep these psychological principles in mind as we consider the political science literature. The modern era of political science investigations into the relationship between Supreme Court decisions and public opinion began with an empirical study by

⁵⁴ See Richard E. Petty and John T. Cacioppo, *The Elaboration Likelihood Model of Persuasion*, 19 *Advances Experimental Soc Psychology* 123, 131 (1986); Richard E. Petty and Daniel T. Wegener, *The Elaboration Likelihood Model: Current Status and Controversies*, in Shelly Chaiken and Yaacov Trope, eds, *Dual-Process Theories in Social Psychology* 41, 42 (Guilford 1999).

⁵⁵ See Richard E. Petty and John T. Cacioppo, *Communication and Persuasion: Central and Peripheral Routes to Attitude Change* 21 (Springer 1986) (“Attitude changes that result mostly from processing issue-relevant arguments (central route) will show greater temporal persistence, greater prediction of behavior, and greater resistance to counterpersuasion than attitude changes that result mostly from peripheral cues.”).

⁵⁶ See generally Richard E. Petty, John T. Cacioppo, and Rachel Goldman, *Personal Involvement as a Determinant of Argument-Based Persuasion*, 41 *J Personality & Soc Psychology* 847 (1981) (showing that personal relevance increases attention to message quality and decreases the importance of peripheral cues).

⁵⁷ See generally *id.* But see Lauren C. Howe and Jon A. Krosnick, *Attitude Strength*, 68 *Ann Rev Psychology* 327, 337–38 (2017); Julia R. Zuwerink and Patricia G. Devine, *Attitude Importance and Resistance to Persuasion: It's Not Just the Thought That Counts*, 70 *J Personality & Soc Psychology* 931, 939–42 (1996) (showing that strong attitudes are more resistant to change).

Professor Robert Dahl, a towering figure in American political science.⁵⁸ Dahl wrote in 1957 that although Congress usually got its way eventually in cases in which the Supreme Court invalidated legislation, there were some cases in which the Supreme Court thwarted the will of Congress either through lasting invalidation or substantial delay.⁵⁹ In such cases, Dahl wrote, the Court prevailed because it was an important agent of political leadership in the United States and had a basis for power—“the unique legitimacy attributed to its interpretations of the Constitution.”⁶⁰ Particularly when different branches of government were in conflict with one another and when it was adopting a solution that comported with “explicit or implicit norms held by the political leadership,” the Supreme Court could make national policy.⁶¹ This hypothesized persuasion is based on approval of the source, which is generally viewed as a peripheral cue in ELM terms.⁶²

Dahl’s study used an analysis of governmental action to develop his thesis but did not examine public opinion polling. Subsequent scholars set out to test his idea that the Supreme Court could influence national policy via what he called its “unique legitimacy.”⁶³ Some of these scholars identified data that supported Dahl’s legitimacy theory. For example, Professors John Hanley, Michael Salamone, and Matthew Wright found that the Supreme Court’s decision in *Roe v Wade*⁶⁴ increased public support for abortion rights, at least in the short run.⁶⁵ An ingenious research paper by Professors Katerina Linos and Kimberly Twist studied the effect on popular opinion of the media coverage of Supreme Court decisions dealing with health care and immigration.⁶⁶ They found that when respondents had been exposed (via television,

⁵⁸ See generally Robert A. Dahl, *Decision-Making in a Democracy: The Supreme Court as a National Policy-Maker*, 6 J Pub L 279 (1957).

⁵⁹ See *id.* at 291.

⁶⁰ *Id.* at 293.

⁶¹ *Id.* at 294.

⁶² See Petty and Cacioppo, 19 *Advances Experimental Soc Psychology* at 134–36 (cited in note 54).

⁶³ Dahl, 6 J Pub L at 293 (cited in note 58).

⁶⁴ 410 US 113 (1973).

⁶⁵ See John Hanley, Michael Salamone, and Matthew Wright, *Reviving the Schoolmaster: Reevaluating Public Opinion in the Wake of Roe v. Wade*, 65 *Polit Rsrch Q* 408, 416–18 (2012).

⁶⁶ See Katerina Linos and Kimberly Twist, *The Supreme Court, the Media, and Public Opinion: Comparing Experimental and Observational Methods*, 45 *J Legal Stud* 223, 227–30 (2016).

radio, print reporting, or the like) to one-sided coverage of a salient decision that was supportive of what the Court had done, respondents' views moved in a strongly pro-Court direction.⁶⁷ This effect largely disappeared, however, when individuals were exposed to more balanced coverage of the new decision that described its pros and cons.⁶⁸ An impressive book by Professor Valerie Hoekstra also provided a mixed picture. Hoekstra studied the localized public response in four communities where disputes that made their way to the Supreme Court arose.⁶⁹ She found that the disputes garnered a lot of local press attention, and in two of the four cases there was a discernible if small shift in local sentiment toward the Court's position after a Supreme Court decision.⁷⁰ But in the other two cases she studied, no such shift occurred.⁷¹

As the political science research continued, many empirically oriented scholars collected data that did not match Dahl's legitimacy thesis. Instead they were finding that some groups would fall in line after a major Supreme Court decision while others would strongly resist it, consistent with a motivated cognition response. This data helped give rise to the structural response model, first articulated by Professors Charles Franklin and Liane Kosaki.⁷² According to Franklin and Kosaki, salient Supreme Court cases are likely to persuade some groups of voters while sparking a backlash among others, with the reactions depending on whether the decision agreed with each group's initial predisposition. When one observes no change in public sentiment after a major Supreme Court decision, it is possible that the decision and the resulting media coverage didn't change minds. But it is also possible that many minds changed, with the people who were pushed into support and opposition roughly canceling each other out.⁷³ Under this account, the public sentiment on a germane issue could become more polarized after a major Supreme Court

⁶⁷ See id at 249.

⁶⁸ See id at 246.

⁶⁹ See generally Valerie J. Hoekstra, *Public Reaction to Supreme Court Decisions* (Cambridge 2003).

⁷⁰ See id at 112–14.

⁷¹ See id.

⁷² See Charles H. Franklin and Liane C. Kosaki, *Republican Schoolmaster: The U.S. Supreme Court, Public Opinion, and Abortion*, 83 Am Polit Sci Rev 751, 768–69 (1989).

⁷³ See id at 753–54, 767–68.

decision than it was beforehand, again consistent with a motivated cognition response.⁷⁴

Studies of popular reactions to decisions concerning homosexual sodomy suggest that those decisions may have polarized opinion in this way. Both *Bowers v Hardwick*⁷⁵ (which upheld a criminal prohibition on sodomy) and *Lawrence v Texas*⁷⁶ (which struck them down) sparked a significant decline in popular support for same-sex relationships.⁷⁷ To be sure, overall support for same-sex relationships has risen very dramatically since *Bowers*, but both Supreme Court decisions were followed by erosions in such support. Indeed, it took several years after *Lawrence* was decided for popular support for same-sex relationships to reach the approval levels they garnered just before the decision.⁷⁸ Gallup polling data reveal that there have been only two periods since 1979 in which a plurality of Americans said that “homosexual relations between consenting adults . . . should not be legal”: 1986 to 1989 (right after *Bowers*) and 2003 (right after *Lawrence*).⁷⁹ But demographic characteristics strongly predicted whether Americans were likely to rally around gay rights or reject them after the decisions.⁸⁰ This negative overall effect obscured the fact that groups that were more likely to support same-sex relationships became more favorable to homosexuality during the same period, while those groups that were less likely to be supportive became even less so.⁸¹ More recent work supports their findings, producing evidence of partisan polarization in the response to *Hobby Lobby*, a 2014 Supreme Court decision.⁸² Follow-up work on the structural model produced more confounding

⁷⁴ Interestingly, the response to *Roe* loomed large for Franklin and Kosaki as well, even though they took very different implications from it than Hanley, Salamone, and Wright. Compare *id.* at 767–68, with Hanley, Salamone, and Wright, 65 *Polit Rsrch Q* at 416–18 (cited in note 65).

⁷⁵ 478 US 186 (1986).

⁷⁶ 539 US 558 (2003).

⁷⁷ See James W. Stoutenborough, Donald P. Haider-Markel, and Mahalley D. Allen, *Reassessing the Impact of Supreme Court Decisions on Public Opinion: Gay Civil Rights Cases*, 59 *Polit Rsrch Q* 419, 423–25 (2006).

⁷⁸ See *id.* at 430.

⁷⁹ See Gallup, *Gay and Lesbian Rights*, archived at <http://perma.cc/FAJ9-KRF6>.

⁸⁰ See Stoutenborough, Haider-Markel, and Allen, 59 *Polit Rsrch Q* at 428–29 (cited in note 77).

⁸¹ *Id.* at 429.

⁸² See Aziz Z. Huq and Avital Mentovich, *The Polarizing Court* *36–40 (unpublished manuscript, 2015) (on file with author).

findings, with mixed results concerning how the public responds when the Court issues several decisions about the same topic.⁸³

Finally, in recent years a new model has emerged to describe the popular reaction to prominent Supreme Court decisions. Professor Joseph Ura's thermostatic model posits that when the Supreme Court makes increasingly liberal decisions, the populace will embrace decreasingly liberal policy views, and vice versa.⁸⁴ The thermostatic model regards the American populace as interested in stability in the short run, such that they will pull back against decisions that seem to alter the status quo. Over the long run, though, the thermostatic model posits that the kind of legitimization effect that Dahl hypothesized will occur. Ura describes his data as indicating "a complex interaction between the Supreme Court and the mass public characterized by short-term backlash against Supreme Court decisions in public mood followed by a long-run movement in public opinion toward the ideological position taken up by the Court."⁸⁵ Notably, the thermostatic model focuses on the aggregate effects of all the Supreme Court's salient or high-profile decisions in a particular term, rather than trying to isolate the effects of a single Supreme Court decision concerning abortion, the Second Amendment, the death penalty, or election law.⁸⁶

3. Implications of these literatures for the current project.

Having surveyed this rich literature, let's examine what it might tell us—and what it might not tell us—about attitudinal circularity in expectations of privacy. First, it is unlikely that the public will simply fall into line with the Supreme Court's pronouncements about search-and-seizure law. In many of the political science papers, there was zero net impact on public attitudes, and in some cases the effect was actually negative. Also, most

⁸³ For cases in which the Supreme Court rendered several decisions about a topic (as with abortion or the death penalty), some evidence suggests that only the Supreme Court's first major decision on a topic seemed to generate a discernible impact on popular opinion. See Timothy R. Johnson and Andrew D. Martin, *The Public's Conditional Response to Supreme Court Decisions*, 92 *Am Polit Sci Rev* 299, 306 (1998). But other research examining the abortion data through a different lens failed to replicate that finding. See Danette Brickman and David A.M. Peterson, *Public Opinion Reaction to Repeated Events: Citizen Response to Multiple Supreme Court Abortion Decisions*, 28 *Polit Behav* 87, 95–107 (2006).

⁸⁴ Joseph Daniel Ura, *Backlash and Legitimation: Macro Political Responses to Supreme Court Decisions*, 58 *Am J Polit Sci* 110, 111–13 (2014).

⁸⁵ *Id.* at 118.

⁸⁶ See *id.* at 120.

Fourth Amendment decisions are not particularly salient. They do not receive significant media coverage, and as a result, the overwhelming majority of citizens do not know they happened.⁸⁷ As scholars in this area are quick to point out, the public knows little about what the Court does.⁸⁸ What the public does not know is unlikely to change its mind.

It might strike a reader as surprising to think that the Court would have *no* effect as often as not: Should it not matter that a relatively liked institution has endorsed a particular position? Well, yes, it should. But endorsement by a respected source is generally a peripheral cue. So for the endorsement to matter the public must not be so attentive to the issue that it will focus on the merits rather than getting distracted by peripheral indicators. Persuasion of this sort occurs in a sweet spot of shallow processing—the listener paying enough attention to be aware but not so much as to really engage—and is likely to be particularly fragile.⁸⁹

Second, when a highly significant Supreme Court criminal procedure decision (like *Katz*, *Miranda v Arizona*,⁹⁰ or *United States v Jones*⁹¹) is announced and the public is engaged, we should not be so quick to assume that the public will be persuaded by the Court's moral judgment. The structural response model suggests that the public will become more polarized after the Court's intervention, and will not collectively follow it. Motivated cognition, which indicates that those opposed to a Court decision will counterargue against it, and the ELM, which posits that source characteristics are generally peripheral cues unlikely to persuade those who are thinking deeply about an issue, both support the skepticism of the structural model. Persuasion might be expected under a legitimacy theory, and it could happen in the long run under the thermostatic theory. But even the thermostatic model would predict a short-run backlash against the Court's judgment, suggesting the *opposite* of attitudinal circularity.

The collection of mixed effects just reviewed does not even address the question of how well insights drawn from outside the

⁸⁷ This phenomenon of citizen ignorance about important developments in government is hardly unique to the work of courts. See generally Ilya Somin, *Democracy and Political Ignorance: Why Smaller Government Is Smarter* (Stanford 2d ed 2016).

⁸⁸ See, for example, Hoekstra, *Public Reaction to Supreme Court Decisions* at 112–14 (cited in note 69).

⁸⁹ See Petty and Cacioppo, 19 *Advances Experimental Soc Psychology* at 179–82 (cited in note 54).

⁹⁰ 384 US 436 (1966).

⁹¹ 565 US 400 (2012).

Fourth Amendment will translate to the search-and-seizure context. Might some of the heterogeneity just reviewed be a function of the different issues studied, which ranged from abortion, to capital punishment, to gay rights, to purely local issues? It seems possible.

The complexity and disagreement of the political science literature contrasts with the widespread acceptance of attitudinal circularity among Supreme Court justices and leading Fourth Amendment scholars. Given this divergence, empirical work examining how the public updates its beliefs about the state of search-and-seizure law in response to a major change in the content of the law would be valuable. We will describe our effort to fill this gap in Parts II and III. Our main goals for the study were threefold: (1) to expand on the existing literature by measuring the impact of a Fourth Amendment decision, which had not previously been done, (2) to track both the immediate and long-term effects of the decision, and (3) to assess a range of privacy attitudes so we could determine exactly how public expectations shifted in the wake of the decision.

II. *RILEY V CALIFORNIA*

Empirically assessing attitudinal circularity requires information about privacy expectations before and after a major Supreme Court decision on the scope of the Fourth Amendment. Such decisions are uncommon, and major polling organizations do not regularly poll on privacy expectations, let alone poll with the level of specificity needed to measure the impact of a particular case.⁹² A golden opportunity to test the attitudinal circularity hypothesis arose in early 2012, when the Supreme Court decided *Jones*. That surprising and widely publicized decision substantially altered Fourth Amendment law, suggesting that the Constitution might protect information about a vehicle's movements from one public place to another.⁹³ But nobody thought to use precise polling to obtain a before-and-after snapshot of public attitudes on GPS tracking. Even if scholars had tried, the timing of the *Jones* decision was so unpredictable⁹⁴ that there was a significant danger that the pre-*Jones* polling might occur several

⁹² See, for example, Valerie J. Hoekstra and Jeffrey A. Segal, *The Shepherding of Local Public Opinion: The Supreme Court and Lamb's Chapel*, 58 J Polit 1079, 1083–84 (1996).

⁹³ *Jones*, 565 US at 404.

⁹⁴ The case was argued in early November and handed down in late January. See Lee Epstein, William M. Landes, and Richard A. Posner, *The Best for Last: The Timing of*

months before the Court's decision, increasing the chances that some extrinsic factor explained any observed shifts in attitudes. We conceptualized the present project by bemoaning the missed opportunity in *Jones* and wondering whether lightning might strike a second time.

The following year we realized there might be precisely such an opportunity in *Riley*. Two consolidated Fourth Amendment cases concerning police searches of cell phones were calendared for the last week of oral argument in the Supreme Court's 2013 term. Cases argued near the end of the term are usually handed down at the end of the term,⁹⁵ so we could time our polling with much more precision than usual. We did not expect that *Riley* would be nearly as big of a deal as it turned out to be, but there was a chance of something major happening in Fourth Amendment law, so we figured paying for two nationally representative samples was a worthwhile gamble.

David Riley's case involved the recovery of pictures from his smartphone, and the consolidated case of Brima Wurie involved the recovery of an address from a flip phone's contact list.⁹⁶ Existing case law had been read to allow warrantless searches of physical containers in the arrestees' possession—like purses, wallets, and briefcases—incident to arrest.⁹⁷ So an arrested person could expect a warrantless search of any personal papers they were carrying, including address books and the like. A literal-minded application of precedent would have applied the same rule to cell phones: Why should it matter whether a seized address book is physical or electronic? As Judge Posner observed not long before *Riley*, "It's not even clear that we need a rule of law specific to cell phones or other computers. If police are entitled to open a pocket diary to copy the owner's address, they should be entitled to turn on a cell phone to learn its number."⁹⁸ Before *Riley*, the federal appellate courts frequently upheld warrantless searches of cell phones incident to arrest.⁹⁹ Writing on SCOTUSblog before oral

U.S. Supreme Court Decisions, 64 Duke L J 991, 1021 (2015) (finding evidence that important Supreme Court cases are decided later in the term).

⁹⁵ See Epstein, Landes, and Posner, 64 Duke L J at 993 (cited in note 94).

⁹⁶ *Riley*, 134 S Ct at 2480–82.

⁹⁷ See *United States v Robinson*, 414 US 218, 236 (1973) (contents of a cigarette pack); *United States v Carrion*, 809 F2d 1120, 1123, 1128 (5th Cir 1987) (billfold and address book); *United States v Watson*, 669 F2d 1374, 1383–84 (11th Cir 1982) (wallet); *United States v Lee*, 501 F2d 890, 892 (DC Cir 1974) (purse).

⁹⁸ *United States v Flores-Lopez*, 670 F3d 803, 807 (7th Cir 2012).

⁹⁹ See, for example, *United States v Curtis*, 635 F3d 704, 711–13 (5th Cir 2011); *United States v Murphy*, 552 F3d 405, 411–12 (4th Cir 2009); *United States v Finley*, 477

argument, Lyle Denniston anticipated that the Court would be “cautious,” perhaps deciding “these cases narrowly,” in a manner that treated smartphones and flip phones differently.¹⁰⁰ A few days later, summarizing oral arguments in the two cases, Denniston seemed certain of little except his “strong impression that the Justices would stay away from flat rules: either that police can always search any such device that they take from an arrested person, or that they could not search its contents at all.”¹⁰¹ We think the average citizen knew essentially nothing about the cases before they were decided, and the lawyers that were following them do not appear to have expected a sea change in the law.

Despite these modest expectations, *Riley* charted a new course. The Court likened the argument that cell phones were “materially indistinguishable” from briefcases to “saying a ride on horseback is materially indistinguishable from a flight to the moon. Both are ways of getting from point A to point B, but little else justifies lumping them together.”¹⁰² Cell phones simply contain too much information to treat them like physical papers.¹⁰³ So the Court fashioned a bright-line rule, albeit with a caveat that police could dispense with the need for a warrant in standard-ish “exigent circumstances.”¹⁰⁴ As the chief justice concluded his opinion: “Our answer to the question of what police must do before searching a cell phone seized incident to an arrest is accordingly simple—get a warrant.”¹⁰⁵

Most surprisingly, the Court’s ruling against the government was unanimous,¹⁰⁶ and Chief Justice John Roberts’s opinion received prominent and generally celebratory media coverage in the

F3d 250, 259–60 (5th Cir 2007). See also *Flores-Lopez*, 670 F3d at 809–10 (permitting a limited cell phone search incident to arrest, while reserving the question of whether a more invasive search would have been permissible without a warrant).

¹⁰⁰ Lyle Denniston, *Argument Preview: Police and Cell Phone Privacy* (SCOTUSblog, Apr 25, 2014), archived at <http://perma.cc/QPQ7-3NSM>.

¹⁰¹ Lyle Denniston, *Argument Analysis: Limiting a Search? Sure, but How?* (SCOTUSblog, Apr 29, 2014), archived at <http://perma.cc/F9NQ-DWX2>.

¹⁰² *Riley*, 134 S Ct at 2488.

¹⁰³ See *id.* at 2491–93.

¹⁰⁴ See *id.* at 2487. For a discussion of *Riley*’s potential impact on the exigent circumstances exception, see Richard H. McAdams, *Riley’s Less Obvious Tradeoff: Forgoing Scope-Limited Searches*, 48 *Tex Tech L Rev* 97, 129–31 (2015) (predicting that the “refusal to recognize a scope-limited search will put pressure on lower courts to expand the exigent circumstances exception”).

¹⁰⁵ *Riley*, 134 S Ct at 2494.

¹⁰⁶ See Adam Gershowitz, *Symposium: Surprising Unanimity, Even More Surprising Clarity* (SCOTUSblog, June 26, 2014), archived at <http://perma.cc/RJA8-EW8J> (describing

days following the ruling. Political scientists observe that the existence of dissents in prominent Supreme Court cases tends to draw significant media attention, resulting in an increased likelihood of a polarized public response to a ruling by the Court.¹⁰⁷ But when the public reads one-sided, positive coverage of an opinion, they are likely to be persuaded by what the Court has done.¹⁰⁸ So the unanimity of *Riley* amplified the “treatment dosage” in terms of judicial influence on public beliefs.

Riley figured prominently in the nightly news broadcast for the major networks on the evening of the decision, with NBC and CBS making it their lead story and ABC discussing it as their second story of the night.¹⁰⁹ Stories about *Riley* were front-page news in most of the nation’s largest circulation newspapers as well,¹¹⁰ another factor that political scientists view as meaningful in determining whether a case can be described as sufficiently salient to capture public attention.¹¹¹ The *Los Angeles Times* called *Riley* the Supreme Court’s “most sweeping and surprising

the Court’s surprising unanimity, its decision to opt for a bright-line rule instead of a standard, and its refusal to compromise based on the type of phone and digital information at issue).

¹⁰⁷ See Stoutenborough, Haider-Markel, and Allen, 59 *Polit Rsrch Q* at 425 (cited in note 77).

¹⁰⁸ See text accompanying note 68.

¹⁰⁹ See Transcript of *World News Tonight with Diane Sawyer* (ABC, June 25, 2014) (available on Westlaw at 2014 WLNR 17743541) (reporting *Riley* as the second story, with anchor Diane Sawyer calling it a “landmark ruling” and a commentator calling it “probably the most important privacy ruling in the digital age”); Transcript of *CBS Evening News* (CBS, June 25, 2014) (available on Westlaw at 2014 WLNR 17458527) (reporting *Riley* as the first story, with anchor Scott Pelley noting that “the Supreme Court justices spoke with one voice today” and CBS News correspondent Jan Crawford calling it “a major victory for privacy rights in the modern digital era”); Transcript of *NBC Nightly News* (NBCUniversal, June 25, 2014) (available on Westlaw at 2014 WLNR 17465369) (reporting *Riley* as the first story, with anchor Brian Williams calling it “[a] big victory for personal privacy” and commentator Tom Goldstein saying, “It was almost a shock, the breadth with which the justices were willing to protect private information that’s . . . on computers and cell phones on the internet”).

¹¹⁰ See, for example, Robert Barnes, *Justices Limit Phone Searches*, *Wash Post* A1 (June 26, 2014); Jess Bravin, *Supreme Court: Police Need Warrants to Search Cellphone Data; Supreme Court Says Privacy Interests Outweigh Police Convenience*, *Wall St J* A1 (June 25, 2014); Adam Liptak, *Major Ruling Shields Privacy of Cell Phones: Supreme Court Says Phones Can’t Be Searched without Warrant*, *NY Times* A1 (June 25, 2014); David G. Savage, *Court Limits Phone Searches: In 9-0 Ruling, Justices Say Police Need Warrant to Access Cell Info*, *Chi Trib* C1 (June 26, 2014). The story did not make front-page news in *USA Today*. See Richard Wolf, *Supreme Court Limits Phone Searches: Cell-phones More Private than Other Searchable Objects*, *USA Today* 2A (June 26, 2014).

¹¹¹ See Brickman and Peterson, 28 *Polit Behav* at 97 (cited in note 83).

criminal-law opinion in years.”¹¹² *The Washington Post* emphasized the surprising nature of the decision, especially given the uncertainty apparent when the case was argued: “During oral arguments, the justices seemed divided over the issue. But they united behind soaring language from Roberts about privacy concerns in the digital era.”¹¹³ *The New York Times* described the case as a “sweeping victory for privacy rights in the digital age,” and prominently quoted Professor Kerr’s assessment that the Court had thrust the Fourth Amendment into “a new digital age. You can’t apply the old rules anymore.”¹¹⁴ *The Wall Street Journal* called *Riley* “a watershed, showing that all nine justices are keen to re-examine categorical rules written for an earlier era.”¹¹⁵

Two Google Trends graphs show a spike in attention in *Riley v California* (top chart) immediately after the decision and a similar spike in mentions of “phone” and “warrant” (bottom chart) at the same time, though with more consistent sustained interest after the decision.

GOOGLE TRENDS: *RILEY V CALIFORNIA*



GOOGLE TRENDS: PHONE + WARRANT



¹¹² David G. Savage, *Court Deems Phones Private: In a Major Ruling, Justices Say Police Cannot Search the Digital Devices without a Warrant*, LA Times A1 (June 26, 2014).

¹¹³ Barnes, *Justices Limits Phone Searches*, Wash Post at A1 (cited in note 110).

¹¹⁴ Liptak, *Major Ruling Shields Privacy of Cell Phones*, NY Times at A1 (cited in note 110).

¹¹⁵ Bravin, *Supreme Court: Police Need Warrants to Search Cell Phone Data*, Wall St J at A1 (cited in note 110).

Riley therefore represented an unambiguous change in law.¹¹⁶ As Kerr observed immediately in the wake of the decision, “*Riley* can be fairly read as saying that computers are a game-changer.”¹¹⁷ This conclusion had implications for a variety of parts of Fourth Amendment law, ranging from warrant specificity, to searches at the national border, to long-term electronic monitoring in public places.¹¹⁸ Professor Paul Ohm described *Riley* as a “significant milestone in constitutional criminal procedure” and a “privacy opinion for the ages.”¹¹⁹ He added that “*Riley v. California* is not the only recent pronouncement from the Supreme Court embracing a new vision of the Fourth Amendment in a technological age, but it is the most important.”¹²⁰ Whatever the merits of the *Riley* opinion, from a social science perspective, its unanimity and clarity, and the media’s reaction to it, made it a nearly ideal vehicle for studying the public response to Supreme Court decisions. As evidently the only empirical researchers studying the effects of *Riley* on popular beliefs in real time, we had gotten a very lucky break.

At the same time, we should note that *Riley* was not quite perfect for our purposes. First, while it generated a lot of media coverage by Fourth Amendment standards, the case was not *Brown v Board of Education*¹²¹ or *Bush v Gore*.¹²² Second, a more potent test would have emerged if *Riley* had held by a 9–0 vote that cell phone searches incident to arrest *were* lawful. While such a result would have been more consistent with pre-*Riley* precedents, it would have been less consistent with what people

¹¹⁶ Courts in recent years have held that evidence gathered from pre-*Riley* searches of cell phones incident to arrest are admissible under the Fourth Amendment’s good-faith exception, meaning that before *Riley*, officers were well within their rights to believe they had the authority to search a cell phone incident to an arrest. See, for example, *United States v Gary*, 790 F3d 704, 708–10 (7th Cir 2015); *United States v Eccleston*, 615 Fed Appx 767, 781–83 (4th Cir 2015).

¹¹⁷ Orin Kerr, *The Significance of Riley* (Wash Post, June 25, 2014), archived at <http://perma.cc/YR8S-9RWH>.

¹¹⁸ See, for example, Casey A. Taylor, Note, *The Fiction of Privacy under the Fourth Amendment: Examining Warrantless Cell Phone Searches in the Context of Riley v. California*, 42 N Ky L Rev 395, 415–16 (2015); Natasha H. Duarte, Recent Development, *The Home out of Context: The Post-Riley Fourth Amendment and Law Enforcement Collection of Smart Meter Data*, 93 NC L Rev 1140, 1153–63 (2015); Kugler, Comment, 81 U Chi L Rev at 1207–10 (cited in note 41); Kugler and Strahilevitz, 2015 S Ct Rev at 245–59 (cited in note 8).

¹¹⁹ Paul Ohm, *The Life of Riley* (v. California), 48 Tex Tech L Rev 133, 133–34 (2015).

¹²⁰ Id at 141–42.

¹²¹ 347 US 483 (1954).

¹²² 531 US 98 (2000).

believed the law to be prior to the decision, leaving more room (statistically) for a big public response. Third, most Americans have not been arrested, so asking laypeople what they would anticipate in such circumstances involves a degree of speculation on their part. Alas, it is hard to think of examples of nonconsensual government surveillance that the courts regard as a Fourth Amendment “search” and to which most people have been subjected. This follows because nonconsensual searches typically require warrants, and the costs of obtaining such warrants are significant.¹²³ Thus, that particular problem may be insoluble. We take some comfort in the regular portrayal of arrests in television programs and movies, which gives many Americans who have never been arrested some sense of what they entail.

Fourth and finally, *Riley* did not actually decide whether people had a reasonable expectation of privacy in their cell phones. The case assumed such an expectation existed and then asked whether it was reasonable to have a blanket exception to the search warrant requirement for searches of cell phones incident to arrest. This complexity went essentially unmentioned in the mass media coverage of *Riley*, so we think that the percentage of the population attuned to this doctrinal detail was close to zero. As we explain below, we were interested in determining whether laypeople in *Riley*’s position—arrested while carrying a cell phone—would expect the police to be able to search the phone’s contents without a warrant, so the technical distinction over which branch of Fourth Amendment law was at issue should have no effect on the degree of privacy that people would expect.

As this Article was going to press, the Supreme Court was awaiting argument in the case of *Carpenter v United States*.¹²⁴ *Carpenter* presents a “reasonable expectations of privacy” question under *Katz*—whether the police’s use of stored cell-site information to determine a person’s location amounts to a search. In our previous work, we have collected data showing that Americans generally do expect privacy in these situations, with those expecting privacy outnumbering those who do not by a ratio

¹²³ See Max Minzner, *Putting Probability Back into Probable Cause*, 87 Tex L Rev 913, 922 (2009).

¹²⁴ *United States v Carpenter*, 819 F3d 880 (6th Cir 2016), cert granted, 137 S Ct 2211 (2017). In the interests of full disclosure, the authors note that they were principal drafters of, and are signatories to, the Brief of Amici Curiae Empirical Fourth Amendment Scholars in Support of Petitioner, *Carpenter v United States*, Docket No 16-402 (US filed Aug 14, 2017) (available on Westlaw at 2017 WL 3530963) (“Empirical Fourth Amendment Brief”).

of 1.57 to 1.¹²⁵ *Carpenter* will present different limitations from those present in *Riley*, though what those limitations will be may not be clear until after the case is decided. Based on the results of this project, we predict that the decision in *Carpenter*, whether it is to affirm or reverse, will have little effect on Americans' expectations of privacy in their historical cell-site records.

III. AN EMPIRICAL TEST OF CIRCULARITY

Because *Riley* was argued so late in the term, it was possible to approximate when the decision would issue with relatively high certainty. This allowed us to schedule the first two waves of our four-wave survey to closely bracket the decision. The first wave was administered June 11–13, 2014, and *Riley* was handed down on June 25, 2014. Wave II was administered July 1–2, 2014, one week after the decision, to measure its immediate impact. To measure the longer-term effect, we conducted Wave III a year after that, May 26 to June 2, 2015, and Wave IV a year after that, July 21 to August 4, 2016. Notably, the Edward Snowden revelations began approximately a year before Wave I, placing them outside the study period. Another major privacy event, the San Bernardino iPhone unlocking controversy, occurred between Waves III and IV.¹²⁶

For each wave, a weighted sample of adult American citizens was recruited by Toluna, a professional survey firm with an established panel.¹²⁷ The exact demographics of each wave are reported in Appendix A. Though there are some other minor variations in representation across waves, there were no substantial shifts in age, sex, race, or ethnicity, and all were controlled for in the main analysis. The samples for Waves I and II were targeted at approximately 700 usable participants. Due to the addition of a number of measures that are not relevant to this study, we increased the sample to 1400 for Wave III and 1300 for Wave IV.

¹²⁵ See Kugler and Strahilevitz, 2015 S Ct Rev at 260 (cited in note 8) (Table 9).

¹²⁶ See Eric Lichtblau and Katie Benner, *Apple Fights Order to Unlock San Bernardino Gunman's iPhone* (NY Times, Feb 17, 2016), online at <http://www.nytimes.com/2016/02/18/technology/apple-timothy-cook-fbi-san-bernardino.html?mcubz=0> (visited Aug 29, 2017) (Perma archive unavailable); Ellen Nakashima, *FBI Paid Professional Hackers One-Time Fee to Crack San Bernardino iPhone* (Wash Post, Apr 12, 2016), archived at <http://perma.cc/8ZL5-GPHD>.

¹²⁷ Specifically, the samples were matched with US census data to be representative on sex, age, and race/ethnicity. We undersampled participants with low education levels in our first three samples, but we controlled for this in statistical analysis and it did not impact results.

Participants who failed an attention-check question were not able to complete the study, and those who finished the study in less than one-third the median completion time were removed from analysis. The final numbers of participants in each wave are reported in Table 1.

A. Main Dependent Measure

Because the *Riley* decision changed the treatment of cell phone searches incident to arrest, the primary study measure assessed privacy expectations in that context. Participants were randomly assigned to imagine that a person was being arrested for either possession of cocaine or attempted murder. We used the two different crimes so that we could be more confident that our results were not idiosyncratic to crime type. As discussed below, crime type had no impact on our change over time story.

Participants were asked two types of questions about a variety of possible searches, with each question intended to tap a slightly different perspective. One asked, “Would the arrestee (i.e., the person being arrested) reasonably expect that police will [conduct a particular search]?” and the other asked, “Under the Constitution, can the police do this to the arrestee without first getting a search warrant?”¹²⁸ The first question was answered on five-point scales ranging from “Definitely Not” to “Definitely Yes.” The “reasonably expect” question places greater emphasis on what is likely to happen, while the “warrant” question instead emphasizes what the participant believes the Constitution requires. As part of a previous project, we experimented with a variety of different ways of asking about expectations of privacy. For example, we asked whether a search violated people’s “privacy,” “expectations of privacy,” or “reasonable expectations of privacy,” as well as altering whether the question asked about “people’s” privacy or “your” privacy.¹²⁹ Though using a first-person framing produced slightly higher privacy expectations overall, we found no other differences.¹³⁰ Here we opted for a third-person framing because we thought it odd to ask participants to imagine themselves being arrested for attempted murder.

The searches the participants were asked to consider were split into eight physical searches and eight cell phone searches.

¹²⁸ See Appendix C.

¹²⁹ Kugler and Strahilevitz, 2015 S Ct Rev at 248 n 170 (cited in note 8).

¹³⁰ See id.

The particular searches were selected to represent a range of intrusiveness to allow for variance in responses. The physical searches included items such as “search his car for any packages he might be carrying and open the packages” and “perform a body cavity search.” The electronic searches included “search the phone for a list of most recent calls” and “use the phone to open his Facebook app and read his newsfeed and messages.” The text for all searches is included in Appendix C. Because the change in law was specific to cell phones and cell phone searches were explicitly differentiated from physical searches, the physical-search questions served as a control.

To simplify the analysis, composite variables were created for both the physical and electronic searches by averaging the responses to each of the eight scenarios. As a result, there were composite “expectation” scores, which ranged from one to five, with higher numbers indicating a greater expectation of privacy, and composite “warrant” scores, which ranged from zero to one and indicated the percentage of the eight scenarios for which warrants were believed to be required.¹³¹ Greater “expectations of privacy” are therefore indicated by higher “expectation” scores and higher “warrant” scores.

An ANCOVA¹³² was conducted on these measures that controlled for a variety of demographic variables to account for the minor cross-sample variations, and we treated participant wave and attributed crime condition (cocaine or attempted murder) as independent factors.¹³³ Though there were main effects of attributed crime on the electronic and physical expectation measures, this factor did not have a significant effect on the warrant measure and did not interact significantly with wave for

¹³¹ All four composites were highly reliable: Expectation-Electronic $\alpha = .96$, Warrant-Electronic $\alpha = .95$, Expectation-Physical $\alpha = .85$, Warrant-Physical $\alpha = .80$. In the survey itself, higher scores on the expectation measure indicated greater expectation of *searches*, but the coding was flipped for analysis to ease interpretation.

¹³² Analysis of Covariance. This analysis compares means across conditions while controlling for (holding constant) other factors as in regression. Given the same inputs, an ANCOVA and a multiple regression are statistically interchangeable.

¹³³ Specifically, the ANCOVA controlled for sex, age, Black or Southeast Asian race, Hispanic ethnicity, and educational attainment. These were selected *ex ante*, but the results were robust to a variety of possible other arrangements, including raw (unadjusted) means. Presented dependent variable means are estimated for the mean scores on each of the controls.

either measure.¹³⁴ More importantly, there were significant differences across waves on both of the electronic-search dependent measures (expectation and warrant). As shown in Table 1, both of the measures shifted in a pro-privacy direction between Waves I (two weeks before) and II (one week after) and then shifted back to baseline for Waves III (one year after) and IV (two years after). The two physical-search dependent measures did not differ significantly across waves.¹³⁵ We present a regression model of these effects in Appendix E.

¹³⁴ There was a significant main effect on the electronic $F(1, 4112) = 44.63$, $p < .001$ and physical $F(1, 4112) = 31.92$, $p < .001$ expectation measures, but not on either warrant measure ($F_s < 1$). This may indicate that some participants were reading expectation as a matter of what police would bother to do while reading the warrant question as covering what the police were legally allowed to do. It was to deal with this type of interpretative ambiguity that we asked both questions.

¹³⁵ This could also have been analyzed as a mixed ANCOVA with physical versus electronic search as a within-subject factor. When this analysis is conducted, there is a significant interaction between search type and wave, supporting the story presented here.

TABLE 1: ADJUSTED MEANS ON PRIMARY DEPENDENT MEASURES¹³⁶

	Wave I: Premeasure <i>N</i> = 700	Wave II: One Week <i>N</i> = 751	Wave III: One Year <i>N</i> = 1399	Wave IV: Two Years <i>N</i> = 1294	<i>F</i> (<i>df</i> ₁ , <i>df</i> ₂)	η^2
<i>Electronic Search</i>						
Expectation (<i>N</i> = 4132)	2.79 _a (0.05)	3.00 _b (0.05)	2.74 _a (0.04)	2.78 _a (0.04)	5.96*** (3, 4118)	0.004
Warrant (<i>N</i> = 4132)	0.66 _a (0.02)	0.72 _b (0.01)	0.66 _a (0.01)	0.65 _a (0.01)	4.80** (3, 4118)	0.003
<i>Physical Search</i>						
Expectation (<i>N</i> = 4132)	2.31 (0.04)	2.41 (0.04)	2.34 (0.03)	2.40 (0.03)	1.83 (3, 4118)	0.001
Warrant (<i>N</i> = 4132)	0.48 (0.01)	0.50 (0.01)	0.47 (0.01)	0.48 (0.01)	1.72 (3, 4118)	0.001
<i>GPS Tracking</i>						
Composite (<i>N</i> = 3089)	3.53 (0.05)	3.54 (0.05)	3.56 (0.08)	3.50 (0.04)	0.29 (3, 3075)	0.000
<i>Other REP</i>						
Webcam (<i>N</i> = 2796)	4.03 _a (0.05)	4.02 _a (0.05)	3.87 _b (0.06)	3.75 _b (0.06)	5.94*** (3, 2782)	0.006
Facial Rec (<i>N</i> = 2796)	2.67 _a (0.06)	2.69 _a (0.06)	2.56 _{ab} (0.06)	2.47 _b (0.06)	2.94* (3, 2782)	0.003
Park Camera (<i>N</i> = 2796)	2.58 (0.06)	2.56 (0.06)	2.41 (0.06)	2.48 (0.06)	1.83 (3, 2782)	0.002
Stingray (<i>N</i> = 2796)	3.16 (0.06)	3.11 (0.05)	3.18 (0.06)	3.14 (0.06)	0.34 (3, 2782)	0.000
ISP Emails (<i>N</i> = 2096)		3.26 _a (0.06)	2.96 _b (0.06)	3.07 _b (0.06)	7.44*** (2, 2084)	0.007
Cell Site (<i>N</i> = 2096)		2.88 (0.06)	2.88 (0.06)	2.87 (0.06)	0.02 (2, 2084)	0.000
Hotel Registry (<i>N</i> = 2683)			2.92 (0.04)	2.93 (0.04)	0.05 (1, 2673)	0.000

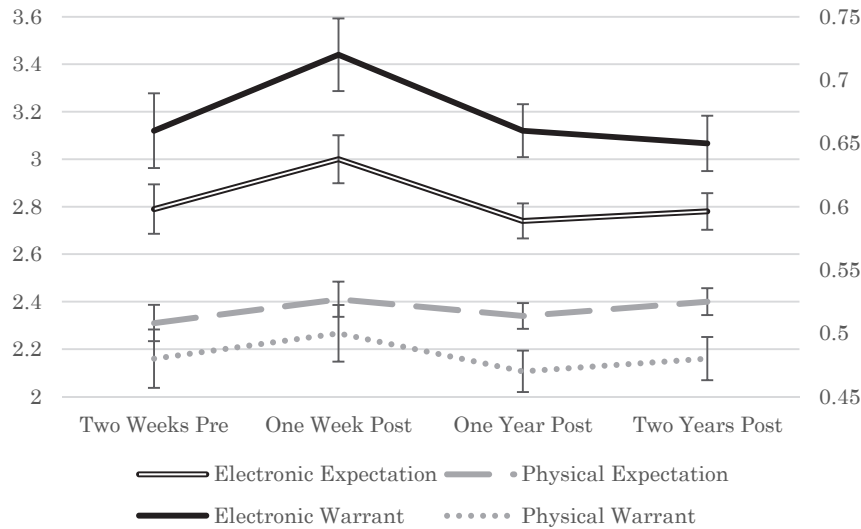
Note: Numbers are means (standard errors in parentheses). If a measure differs significantly across conditions, scores on that measure that do not share a subscript are significantly different from each other.

¹³⁶ The reader might be wondering why the number of participants varies so much across questions. Though the main *Riley* questions were identical across all waves, variants were introduced for some of the other questions. A large number of participants in Wave III received different versions of the GPS monitoring questions, and from Wave III on, there were two variants of the “Other REP” questions, an original and an “author’s preferred” version that removed language we believed was biasing. Because the subject of interest in this Article changes over time, only results from the versions of the questions used in Wave I were analyzed. Results from Wave III of the “author’s preferred” version are reported in Kugler and Strahilevitz, 2015 S Ct Rev at 260 (cited in note 8).

The difference between Waves I and II on the electronic measures somewhat supported the circularity critique: immediately in the wake of a relevant Supreme Court decision, people appear to be updating their expectations on both measures to match the new guiding law. And this is not a general change in privacy expectations but rather a change targeted to the content of the decision; expectations regarding physical searches did not change significantly. What follows Wave II undermines the circularity critique, however: expectations returned to their baseline a year after the decision and they remained there the following year. The best interpretation of these data is that the effect of *Riley* on public attitudes was small—the effect sizes are quite modest—and that even this small effect was likely short lived.

These data are displayed in Figure 1A. Note that while the physical-search expectation and warrant measures (the two lower lines) are flat across wave, the electronic measures (the two higher lines) both move significantly in the two-week post-decision wave and then return to their starting levels in the third wave.

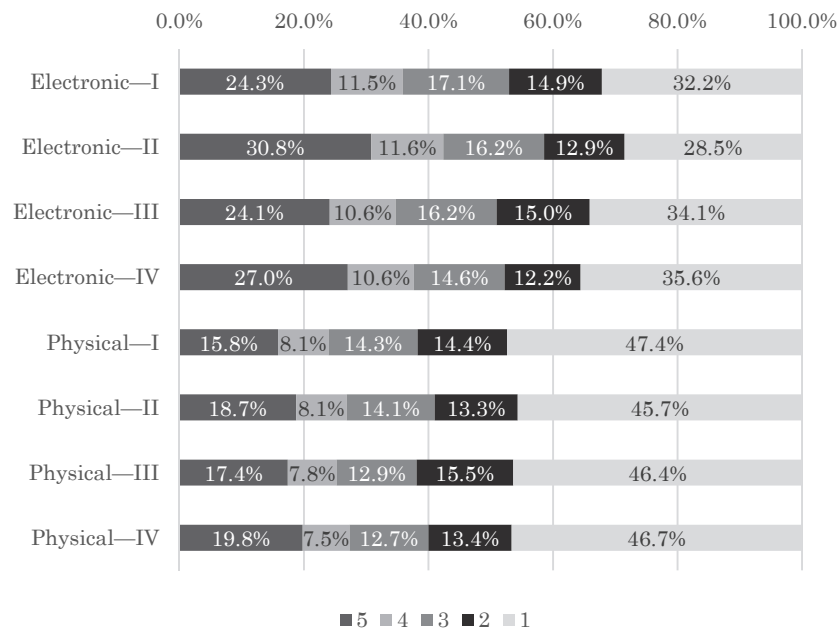
FIGURE 1A. CHANGES IN EXPECTATIONS AND PERCEIVED WARRANT REQUIREMENTS ACROSS WAVES



Note: Error bars represent 95 percent confidence intervals.

Recall that the expectations question was asked using a 1–5 scale. Another way to visualize the data is to look at the frequency with which people used each of those response options across waves. This data is presented in Figure 1B, with higher numbers on the left side of the graph. As can be seen, the number of low privacy expectation “1” responses drops substantially in Wave II for the electronic measure, and there is a corresponding rise in the number of high privacy expectation “5” reactions, representing an increase in privacy expectations. This is not evident in the other waves, and the pattern is also not seen for the physical expectation measures.

FIGURE 1B. HISTOGRAM OF RESPONSES TO EXPECTATION MEASURES



B. Comparison Dependent Measures

Many commentators considering the *Riley* decision speculated that it would have a major impact on other areas of Fourth Amendment law. As noted above, the general question whether “computers are different” appears in several different guises, and *Riley* itself can be read as having serious implications for the mosaic theory, which, if adopted, would substantially rewrite a

number of key precedents.¹³⁷ We therefore asked about a number of other searches to see whether expectations regarding them were impacted by the *Riley* decision. These questions were of the form used in our prior research, asking, “Would it violate people’s reasonable expectations of privacy if law enforcement [performed various searches]?” with the possible responses ranging from 1 (“Definitely Not”) to 5 (“Definitely Yes”).¹³⁸ Again, higher numbers indicate greater expectations of privacy. The wording of the particular questions is given in Appendix C. The cross-wave comparison on these questions used the same controls as the ANCOVA reported on the main measures, though it omitted the crime-type factor as it was not relevant (only the arrest questions referred to it).¹³⁹

If there is substantial feedback between judicial decisions and public expectations, then expectations on some of these questions should also change, and the change should fit the pattern of increasing privacy expectations immediately after the *Riley* decision that persist or perhaps even strengthen over time. This is not observed on any measure. One set of these questions, discussed in our prior paper on the mosaic theory, asked about tracking a person’s car on public streets using its onboard GPS system for various lengths of time (an instant, a day, a week, and a month).¹⁴⁰ The mean response to these questions did not differ significantly across waves even though this issue arguably also reduces to “quantity makes it different” and “electronic surveillance is different,” the exact issues highlighted by Chief Justice Roberts in *Riley*. Likewise, the use of data from a camera in the public park was not viewed differently across waves.

¹³⁷ See Orin S. Kerr, *The Mosaic Theory of the Fourth Amendment*, 111 Mich L Rev 311, 313 (2012) (citation omitted):

Under the mosaic theory, searches can be analyzed as a collective sequence of steps rather than as individual steps. Identifying Fourth Amendment searches requires analyzing police actions over time as a collective “mosaic” of surveillance; the mosaic can count as a collective Fourth Amendment search even though the individual steps taken in isolation do not.

¹³⁸ Kugler and Strahilevitz, 2015 S Ct Rev at 246, 260 (cited in note 8).

¹³⁹ As indicated, we changed how we asked these questions during the research program. See note 136. The original wordings for some of these items described the people searched as criminal “suspects,” which has the impact of significantly deflating privacy expectations because it is more reasonable to search someone who is suspected of a crime. For consistency, Table 1 reports responses only from the participants in each wave who received the “old” versions of the questions. Responses to the “new” versions are available in our prior paper. See Kugler and Strahilevitz, 2015 S Ct Rev at 258–60 (cited in note 8).

¹⁴⁰ See Kugler and Strahilevitz, 2015 S Ct Rev at 258–60 (cited in note 8).

The only searches that are viewed differently across time periods are the remote activation of a laptop's webcam, the use of facial recognition technology at a public sporting event, and obtaining a person's emails from their internet service provider (ISP). The shifts in these attitudes, however, are in the wrong direction entirely; privacy expectations are *reduced* in Waves III and IV. Also, the changes in these attitudes did not come in Wave II, as they should have were *Riley* the cause.

1. Hotel guest registries.

One of the searches included in Waves III and IV asked participants whether it would violate people's reasonable expectations of privacy if police:

Searched a hotel's guest register to obtain the names, home addresses, and assigned hotel room numbers of the guests who stayed there on a particular night?¹⁴¹

This search was inspired by *City of Los Angeles v Patel*,¹⁴² which presented a facial challenge to a California statute requiring hotel operators to keep such records and open them to police inspection upon request. *Patel* was the only major Fourth Amendment search case decided by the Supreme Court during the 2014 term. On June 22, 2015, the Court held 5–4 that the statute was in violation of the Fourth Amendment. Both Justice Sonia Sotomayor's majority opinion and Justice Scalia's dissent focused on the administrative search exception and whether hotels were a sufficiently regulated industry that they could be made to turn over records without having the option of precompliance review. Sotomayor described the hotel operator's privacy expectations in terms of how dangerous their industry was compared to those previously labeled as closely regulated.¹⁴³ Scalia instead would have the question turn on "the expectations of those who enter such a line of work,"¹⁴⁴ and specifically whether hotel operators understood their business to be so regulated that book inspections were par for the course. But neither would have made the question turn on the privacy expectations of hotel guests.

The case was pending at the time we ran Wave III, and we timed that wave so that the case would be likely to come down

¹⁴¹ See Appendix C.

¹⁴² 135 S Ct 2443 (2015).

¹⁴³ *Id.* at 2454 (Sotomayor).

¹⁴⁴ *Id.* at 2461 (Scalia dissenting).

shortly after the wave was completed. Because public privacy expectations were not at stake in *Patel* the way they were in *Riley* and the decision as written did not emphasize them, we did not run the same kind of post-decision survey that year. Wave IV, however, can still serve as a one-year-out comparison. As with *Riley*, privacy expectations were the same as they were on the pre-decision baseline one year after the *Patel* decision. The two means are virtually identical (see Table 1). If there was an initial effect of the decision, it was gone by that time.

The *Patel* decision would not have been the best candidate for Fourth Amendment circularity, and we do not want to overinterpret reactions to this fairly insignificant case. The issue got much less coverage than *Riley*'s, and the impact on the public's privacy was one step removed. But to the extent that one can draw conclusions, the *Patel* pattern supports the *Riley* story: if the Supreme Court had any effect on public privacy expectations, that effect was gone within a year.

C. Knowledge of the *Riley* Decision

It was expected that those who had heard of the *Riley* decision and could explicitly remember it would have different reactions than those who had not and could not. Therefore at the end of the *Riley* portion of the survey, participants were asked:

On June 25, 2014, the US Supreme Court announced its decision in *Riley v California*. The Court decided whether a warrant was required before the police could search the cell phone of someone they had just arrested. Had you heard about the Supreme Court's decision in that case prior to this survey?¹⁴⁵

As shown in Table 2, 40 percent of the sample in Wave II reported having heard of the decision, as did 21 percent in Wave III and 22 percent in Wave IV. These numbers seem somewhat high based on previous work on awareness of Supreme Court decisions, so there may be some false-positive reports. Even major Supreme Court cases often achieve only modest fame,¹⁴⁶ though awareness is often higher immediately after a decision.¹⁴⁷ If the 40 percent

¹⁴⁵ See Appendix C.

¹⁴⁶ See *Landmark Cases: Which Supreme Court Rulings Are Americans Familiar With?* (C-SPAN, Oct 1, 2015), archived at <http://perma.cc/M8LT-H9SB>.

¹⁴⁷ See Valerie J. Hoekstra, *The Supreme Court and Local Public Opinion*, 94 *Am Polit Sci Rev* 89, 92–93 (2000). See also Charles H. Franklin, Liane C. Kosaki, and Herbert

figure is to be believed, it would be on level with national knowledge in the wake of *Planned Parenthood v Casey*.¹⁴⁸ As we noted above, however, *Riley* was something of a Fourth Amendment superstar and received an impressive amount of media coverage, so the figure may not be as outlandish as the *Casey* comparison makes it appear.¹⁴⁹ Those who had heard about *Riley* generally said they had first heard about it from television coverage (47.2 percent), with the next most frequently attributed source being internet news sites and blogs (16.5 percent). The full list of possibilities and the frequency with which they were cited is in Appendix B. In any event, it is noteworthy, though not surprising, that the number of the respondents who claimed to have known about a decision declined by half within a year.

To assess the impact of this self-reported knowledge, an ANCOVA was conducted that used a variable that combined wave with whether the participant reported having heard of *Riley* as its primary predictor. The ANCOVA otherwise employed the same controls as in the main analysis. There were thus seven groups (one for Wave I and two for each of the other waves, one group reporting knowledge and the other not). There were significant differences across these groups on both of the electronic-search measures but on neither of the physical-search measures.¹⁵⁰ Post hoc analyses of the electronic measures revealed that there was a significant difference in Wave II between those who reported having heard of the *Riley* decision and those who had not. As can be seen in Table 2, those in Wave II who had heard of the *Riley* decision had significantly stronger privacy expectations than those who did not, and there was no difference between people in Wave I (who *could not* have heard of a decision that hadn't happened yet) and those in Wave II who said they *had not* heard of *Riley*. So the increase in privacy expectations observed in Wave II is being driven entirely by those who claim to have heard of the decision.

M. Kritzer, *The Salience of U.S. Supreme Court Decisions* *16 (unpublished manuscript, 1993), archived at <http://perma.cc/C3ZG-62YR> (noting a month-long uptick in awareness).

¹⁴⁸ Hoekstra, *Public Reactions to Supreme Court Decisions* at 73–75 (cited in note 69).

¹⁴⁹ See notes 100–18 and accompanying text.

¹⁵⁰ Electronic Expectation, $F(6, 4112) = 4.85$, $p < 0.001$, $\eta^2 = 0.007$; Electronic Warrant, $F(6, 4112) = 4.74$, $p < 0.001$, $\eta^2 = 0.007$; Physical Expectation, $F(6, 4112) = 2.06$, *ns*, $\eta^2 = 0.003$; Physical Warrant, $F(6, 4112) = 1.32$, *ns*, $\eta^2 = 0.002$.

TABLE 2. ADJUSTED MEANS ON PRIMARY DEPENDENT MEASURES AS A FUNCTION OF SELF-REPORTED *RILEY* KNOWLEDGE

	Wave I: Premeasure	Wave II: One Week		Wave III: One Year		Wave IV: Two Years	
Know <i>Riley</i>	—	No	Yes	No	Yes	No	Yes
<i>Electronic Search</i>							
Expectation	2.79 _{bc} (0.05)	2.88 _b (0.07)	3.19 _a (0.08)	2.78 _{bc} (0.04)	2.64 _c (0.08)	2.79 _{bc} (0.04)	2.75 _{bc} (0.08)
Warrant	0.66 _{bc} (0.02)	0.68 _c (0.02)	0.77 _a (0.02)	0.67 _b (0.01)	0.63 _{bc} (0.02)	0.67 _{bc} (0.01)	0.62 _c (0.02)
<i>Physical Search</i>							
Expectation	2.31 (0.04)	2.46 (0.05)	2.35 (0.06)	2.37 (0.03)	2.26 (0.06)	2.43 (0.03)	2.33 (0.06)
Warrant	0.48 (0.01)	0.50 (0.01)	0.49 (0.02)	0.47 (0.01)	0.46 (0.02)	0.48 (0.01)	0.45 (0.02)
% Know <i>Riley</i>	—	40.29		21.09		22.41	

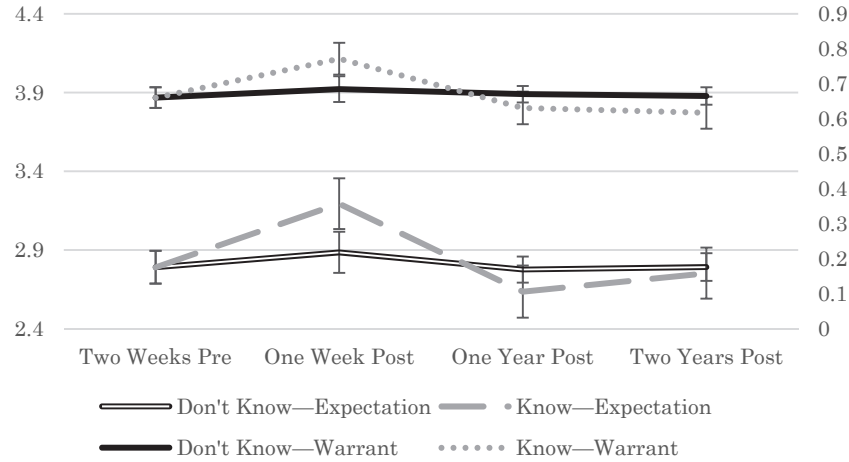
Note: Numbers are means (standard errors in parentheses). If a measure differs significantly across conditions, scores on that measure that do not share a subscript are significantly different from each other.

In Waves II and IV, there were no significant differences on these privacy measures between those who claimed to have heard of *Riley* and those who did not. The nonsignificant differences in those waves are actually in the wrong direction, with those claiming to have heard of *Riley* having *lower* privacy expectations and *less* protective beliefs about warrant requirements than others. So, in addition to fewer people in Waves III and IV claiming to have heard of *Riley*, this claim seems to mean something different in those waves than it did in Wave II.

The change-over-time data are also depicted in Figure 2. Note here that the “Don’t Know” lines are flat across waves whereas the “Know” lines show changes in Wave II but then return to baseline in Wave III.¹⁵¹

¹⁵¹ Because participants could not know of *Riley* before the decision was issued, the overall data are used for both the “Know” and “Don’t Know” lines in Wave I.

FIGURE 2. CHANGES IN EXPECTATIONS AND WARRANT REQUIREMENTS DEPENDING ON WHETHER THE PARTICIPANTS KNEW OF *RILEY*



Note: Error bars represent 95 percent confidence intervals.

Results on another measure support the interpretation that knowledge of the decision has a different meaning in the later waves. In each wave, participants were asked four questions assessing their knowledge of the Supreme Court. For example, participants were asked to identify the chief justice and state how many justices currently sit on the Court.¹⁵² From these four questions a scale was created ranging between zero and one that reflected the proportion of questions each participant had gotten correct. Scores on this measure across the later three waves were analyzed in a 3 (wave) by 2 (knowledge of *Riley*) ANOVA.¹⁵³ Results showed a significant interaction between knowledge of *Riley* and wave.¹⁵⁴ Though those claiming to know about *Riley* did better on the knowledge test in each wave, this difference was largest in the second wave, indicating that the difference in claimed knowledge had the most meaning at that time point.¹⁵⁵ Because

¹⁵² All questions are given in Appendix C. Note that the number-of-justices question was artificially difficult in Wave IV because the correct answer had changed following Scalia's death.

¹⁵³ An ANOVA (Analysis of Variance) compares the means across conditions without statistically controlling for other factors. An ANOVA with only two conditions would effectively be a t-test.

¹⁵⁴ $F(2, 3419) = 3.25, p < 0.05, \eta^2 = 0.002$.

¹⁵⁵ Wave II: $F(1, 748) = 25.79, p < 0.001, \eta^2 = 0.033, \mu_{know} = 0.60, \sigma_{know} = 0.31, \mu_{not} = 0.48, \sigma_{not} = 0.33$.

those who said they knew of *Riley* objectively did know more about the Court, this gives us increased confidence that a meaningful number of participants were reporting their knowledge accurately, particularly in Wave II.

D. Informing about *Riley*

At the close of the experiment, after all the other data had been collected, we told people about the *Riley* decision's holding and then readministered the main electronic-search dependent measures. The text of this disclosure is in Appendix C. Participants in Waves II through IV therefore responded to the electronic expectation and warrant questions twice: at the start of the study, before they were told of the decision, and at the close of the study, after they had been. This design was, in our view, likely to provoke a kind of demand characteristic: having just been given arguably relevant information about their privacy expectations by the survey itself, we could reasonably expect that participants would echo that information back to us.¹⁵⁶ We thought, however, that these data could present a useful point of comparison.

A mixed ANOVA was conducted on these electronic expectation and warrant questions that employed crime type, wave, and prior knowledge of the *Riley* decision as between subject factors and the timing of the questions, whether they were before or after having been told of the *Riley* decision's holding, as a within-subject factor.¹⁵⁷ There were significant differences between the expectation and warrant data gathered at the start of the study and that gathered after the participants had been informed of the *Riley* decision. After having been told of the decision, participants

Wave III: $F(1, 1390) = 3.82$, $p = 0.05$, $\eta^2 = 0.003$, $\mu_{know} = 0.48$, $\sigma_{know} = 0.35$, $\mu_{not} = 0.44$, $\sigma_{not} = 0.31$.

Wave IV: $F(1, 1289) = 12.25$, $p < 0.001$, $\eta^2 = 0.009$, $\mu_{know} = 0.45$, $\sigma_{know} = 0.32$, $\mu_{not} = 0.38$, $\sigma_{not} = 0.30$.

¹⁵⁶ The experimental approach has been used previously by political scientists. See generally, for example, Patrick J. Egan and Jack Citrin, *The Limits of Judicial Persuasion and the Fragility of Judicial Legitimacy* (Institute of Governmental Studies Working Paper, July 2011), archived at <http://perma.cc/GQ4P-5AYG>. See also generally Paul Grice, *Studies in the Way of Words* (Harvard 1989) (describing the general norms of conversation, such that listeners will generally assume that information with which they are presented is relevant to the ongoing conversation and is informative); Austin Lee Nichols and Jon K. Maner, *The Good-Subject Effect: Investigating Participant Demand Characteristics*, 135 *J Gen Psychology* 151 (2008).

¹⁵⁷ The usual effects of wave, crime type, and the interaction between wave and prior knowledge of *Riley* were again observed, but they were simply as reported before.

expected more privacy on both measures.¹⁵⁸ Table 3 contains the mean electronic-search expectations. This main effect of telling participants about *Riley* was qualified by an interaction with whether the participant reported having previously been aware of it.¹⁵⁹ Though all participants had greater privacy expectations after having been told of the *Riley* decision, this change was greatest when the participant reported no prior knowledge of the case.¹⁶⁰

TABLE 3. ELECTRONIC-SEARCH EXPECTATIONS BEFORE AND AFTER HAVING BEEN TOLD ABOUT *RILEY*

	Prior Knowledge	(Informed about <i>Riley</i>)	
		Pre	Post
Expectation	No	2.83 (0.03)	3.67 (0.03)
	Yes	2.83 (0.05)	3.24 (0.05)
Warrant	No	0.67 (0.01)	0.84 (0.01)
	Yes	0.67 (0.01)	0.73 (0.01)

Note: Numbers are means (standard errors in parentheses).

These results provide something of a cautionary tale for the measurement of circularity in Fourth Amendment attitudes. As we saw above, only a small subset of people actually changed their expectations in the wake of the *Riley* decision, and this change in their expectations was short lived. But this alternative method of assessing circularity, telling people what the Supreme Court said and then immediately asking them about the subject, yields a very different answer. Because the question of circularity is motivated by a concern that surveys of the general public's privacy attitudes will be confounded by Supreme Court decisions, it is the former method, which does not beat participants over the head with the Supreme Court's reasoning, that is appropriate.

¹⁵⁸ Expectation: $F(1, 3421) = 438.33$, $p < 0.001$, $\eta^2 = 0.114$.

Warrant: $F(1, 3421) = 167.75$, $p < 0.001$, $\eta^2 = 0.047$.

¹⁵⁹ Expectation: $F(1, 3421) = 52.13$, $p < 0.001$, $\eta^2 = 0.015$.

Warrant: $F(1, 3421) = 37.43$, $p < 0.001$, $\eta^2 = 0.011$.

¹⁶⁰ The means in the "pre" column are identical across knowledge conditions. Recall that knowledge of *Riley* was not associated with greater privacy expectations in Waves III and IV; it was actually nonsignificantly associated with lesser expectations. Because this analysis collapses across waves, the positive relationship between knowledge of *Riley* and privacy expectations in Wave II gets washed out by the other two waves.

E. Comparison to Another Domain: *Hobby Lobby*

A very prominent case involving the Affordable Care Act's¹⁶¹ contraception mandate, *Hobby Lobby*, was decided on June 30, 2014, five days after *Riley* and one day before Wave II.¹⁶² Because Waves I and II were going to bracket that case as well as *Riley*, we also asked about it in each of our survey waves. The response to this case underscores the relatively modest effect that the Supreme Court sometimes has on public attitudes and also highlights differences across legal domains. We explained the question at stake in *Hobby Lobby* like this:

Federal law requires large employers to offer health insurance coverage to their full-time workers. By law, employer-sponsored health insurance plans must cover the costs of certain medical procedures for any employees who wish to obtain them. A separate federal law, the Religious Freedom Restoration Act, prevents the government from imposing substantial burdens on the sincere exercise of religious rights without a compelling justification.

Imagine the owners of a family-owned, for-profit business with 13,000 employees sincerely object on religious grounds to providing one of the following medical procedures as part of the company's health insurance plan.

The described company is modeled after *Hobby Lobby* itself. After this prompt, participants were asked whether such a company should be able to exclude from its healthcare plan coverage for three different medical services: abortion, birth control, and flu shots. For each service, participants responded on a five-point scale that ranged from 1 ("Definitely Not") to 5 ("Definitely Yes"), with a midpoint of 3. The three different types of treatment were included to assess whether any effect found on the one immediately at issue in the case, birth control, would generalize to others. In *Hobby Lobby*, the Supreme Court held that a for-profit company could invoke the Religious Freedom Restoration Act's¹⁶³ protections to resist a mandate that its health insurance plan cover contraceptives.¹⁶⁴

¹⁶¹ Patient Protection and Affordable Care Act, Pub L No 111-148, 124 Stat 119 (2010).

¹⁶² See generally *Hobby Lobby*, 134 S Ct 2751.

¹⁶³ Pub L No 103-141, 107 Stat 1488 (1993), codified at 42 USC § 2000bb et seq.

¹⁶⁴ *Hobby Lobby*, 134 S Ct at 2775.

TABLE 4. RESPONSES TO THE *HOBBY LOBBY* QUESTIONS

	Wave I	Wave II	Wave III	Wave IV
Abortion	2.97 (0.06)	3.11 (0.06)	3.13 (0.04)	3.01 (0.05)
Birth Control	2.62 _{ab} (0.06)	2.77 _b (0.06)	2.75 _b (0.04)	2.60 _a (0.05)
Flu Shot	2.30 (0.06)	2.23 (0.06)	2.35 (0.04)	2.26 (0.04)

Note: Numbers are means (standard errors in parentheses). If a measure differs significantly across conditions, scores on that measure that do not share a subscript are significantly different from each other.

The same type of ANCOVA that was employed to measure cross-wave differences on the *Riley* questions was also used here. There were no significant differences across waves for the abortion and flu shot questions, and as can be seen in Table 4, the differences that were observed on the birth control question were small and hard to interpret.¹⁶⁵ An inspection of the means suggests that the public's understanding of the law moved in the direction of the Court's decision between Waves I and II, the immediate before and after waves, and then moved back to its initial level of support for religious exceptions in Wave IV. But the change between Waves I and II is nonsignificant, and the only significant difference is between Wave IV and the two waves that immediately preceded it.

Unlike in the *Riley* case, here we do not have a significant attitudinal move in the direction of the decision the Supreme Court reached.¹⁶⁶ There could be any number of reasons for this. Perhaps the public had stronger and more divided initial opinions in *Hobby Lobby*; it was, after all, a 5–4 decision. Or perhaps something in our description of the issue polarized respondents. We return to the possibility of polarization in Part IV.

Two patterns from *Riley* do hold, however, as seen in Table 5. First, those in Waves II–IV who reported having heard of the decision were more likely to support the Court's outcome in favor of the employer. Unlike last time, however, there is no interaction here between knowledge and study wave; the size of the knowledge effect does not differ across waves. Second, after participants were told of the Court's holding (here, as with

¹⁶⁵ Abortion: $F(3, 4118) = 2.24$, $p = 0.08$, $\eta^2 = 0.002$.

Birth Control: $F(3, 4118) = 3.05$, $p < 0.05$, $\eta^2 = 0.002$.

Flu Shot: $F(3, 4118) = 1.23$, $p = 0.30$, $\eta^2 = 0.001$.

¹⁶⁶ This response replicates what Professors Aziz Z. Huq and Avital Mentovich found in a longitudinal study of *Hobby Lobby* conducted on Amazon Mechanical Turk, an online platform that the professors used to conduct their study. See Huq and Mentovich, *The Polarizing Court* at *40 (cited in note 82).

Riley, we readministered the main dependent measures after telling participants of the holding), they shifted substantially in the direction of it.

One might wonder whether having previously answered the same questions shortly before has some impact on participant's willingness to change their answers in response to information about the case. For the *Riley* questions, this concern is muted because (1) the original *Riley* questions came at the very start of the study, leaving quite a lot of time between the initial and final measures, and (2) the *Riley* measures were sufficiently numerous and complex that participants would have had substantial difficulty recalling exactly what they said. For *Hobby Lobby*, this concern is somewhat greater because the questions were simpler, and so easier to remember, and the initial *Hobby Lobby* questions came closer to the end of the study, meaning that they were also closer in time to the post-measure. But even for *Hobby Lobby*, there was some gap between pre- and post-measures, so any priming would have been limited.

TABLE 5. EFFECT OF *Hobby Lobby* KNOWLEDGE ON POST-DECISION VIEWS

	(Prior Knowledge of <i>Hobby Lobby</i>)		$F(df_1, df_2)$	η^2
	Yes	No		
Abortion	3.19 (0.04)	2.96 (0.04)	12.73*** (1, 3415)	0.004
Birth Control	2.79 (0.04)	2.60 (0.04)	10.57** (1, 3415)	0.003
Flu Shot	2.32 (0.04)	2.23 (0.04)	2.76+ (1, 3415)	0.001
(Informed about <i>Hobby Lobby</i> in Study)				
	Pre	Post	$F(df_1, df_2)$	η^2
Abortion	3.07 (0.03)	3.29 (0.03)	50.73*** (1, 3420)	0.015
Birth Control	2.70 (0.03)	3.13 (0.03)	178.85*** (1, 3420)	0.050
Flu Shot	2.28 (0.03)	2.66 (0.03)	169.41*** (1, 3420)	0.047

Note: Numbers are means (standard errors in parentheses). *, **, and *** indicate p values of less than 0.05, 0.01, and 0.001 respectively. + represents $p < 0.10$ to show nonsignificant effects that may be of interest.

One other revealing note regarding this data is that more people reported having heard of *Hobby Lobby* than of *Riley*: 65 percent in Wave II, and 46 percent and 42 percent in Waves III and IV, respectively. This makes a substantial amount of sense; *Hobby Lobby* was the main Affordable Care Act case of its term, and it addressed high-political-salience questions regarding reproductive rights and freedom of religion.

IV. IMPLICATIONS AND LIMITATIONS

The attitudinal circularity hypothesis has been articulated so often and so widely as to make it almost axiomatic among lawyers and scholars who work on Fourth Amendment doctrine. Yet it remained untested. Our study of the popular response to *Riley* presented a golden opportunity to finally see how actual people reacted to a major change in privacy law. Fourth Amendment cases are rarely front-page news, rarely concern a topic that is both salient and readily comprehensible to laypeople, and are rarely unified. In *Riley*, the stars were perfectly aligned: the news was on the front page, smartphones are ubiquitous, and the Court was unanimous. And, even under these favorable conditions, the attitudinal circularity hypothesis failed with flying colors.

Based on our data, the most that can be said on behalf of the attitudinal circularity hypothesis is when the Supreme Court speaks prominently and unanimously in a manner that expands privacy rights, that expansion will be noticed by a minority of the public a week after the decision. Once a year, or two, has passed, the effect of the decision on popular expectations will have disappeared entirely. And decisions like *Riley* that involve one form of electronic surveillance do not have even short-term effects on popular attitudes about other forms. Recall that scholars have taken a broad view of the significance of *Riley* whereas the public's expectations about related searches did not change in response to it.¹⁶⁷ Any attitudinal circularity that exists in Fourth Amendment law is short lived and limited, even with respect to high-profile, surprising, and unanimous decisions like *Riley*.

The absence of any medium-term attitudinal circularity significantly buttresses the case for approaches to *Katz* that include public sentiment as a relevant or even decisive factor in determining whether a reasonable expectation of privacy exists. Popular

¹⁶⁷ See Part II.

beliefs about police surveillance seem to be very stable, and this stability makes them a potentially useful source of data for judges seeking to benefit from the wisdom of the crowds.

In addition to refuting a belief widely held in legal circles, our study also contributes to the political science literature on how the public responds to Supreme Court decisions. Recall the recent emergence of an important hypothesis in political science—the thermostatic model—which posits that when the Supreme Court moves in one direction, public opinion will immediately shift in the other direction, but then gradually follow the Court over the long run.¹⁶⁸ Our data indicate precisely the opposite dynamic, at least in this particular context. Our data are also in significant tension with the older legitimacy theory of popular response to Supreme Court decisions.¹⁶⁹ If anything, the data seem consistent with research suggesting that the Supreme Court’s decisions do little to influence popular opinion over the long run.¹⁷⁰

One theory that we cannot address with our *Riley* data is the structural response model. None of the personality or demographic measures sampled in Wave I predicted both initial expectations and perceived warrant requirements.¹⁷¹ We therefore cannot neatly divide our sample into groups prone to support and oppose the decision and compare the reactions of those groups once the decision was published. Our *Hobby Lobby* data, however, do allow for that kind of analysis. Though most demographics were entirely irrelevant to views on the critical issue—support for the birth control exemption—overall liberalism or conservatism was highly predictive in Wave I. A regression analysis then showed that the effect of political orientation became stronger in Wave II, meaning that liberals and conservatives differed more in Wave II than they did in Wave I. In Wave III, the difference returned to baseline before it actually reversed slightly in Wave IV. The principal result here is displayed in Figure 3 with liberal and conservative being estimated at the scale endpoints and moderate and its midpoint. Note the spreading of the liberal and conservative lines in the immediate post-decision data collection and then

¹⁶⁸ See text accompanying notes 84–85.

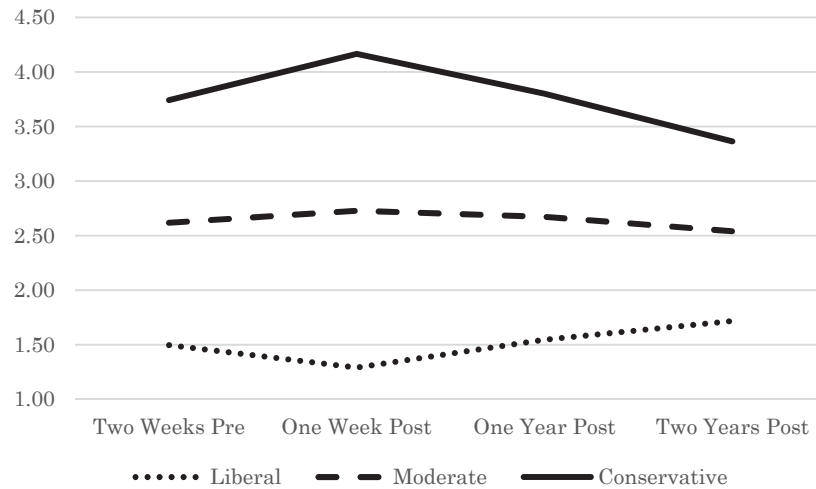
¹⁶⁹ See text accompanying notes 60–65.

¹⁷⁰ See, for example, Thomas R. Marshall, *Public Opinion and the Supreme Court* 145–56 (Unwin Hyman 1989); Johnson and Martin, 92 *Am Polit Sci Rev* at 306–07 (cited in note 83); Gerald N. Rosenberg, Book Review, *The Wonder of It All*, 45 *Tulsa L Rev* 679, 686–87 (2009).

¹⁷¹ One personality measure, Rightwing Authoritarianism, predicted perceived warrant requirements but not the expectations measures.

the gradual return to initial attitudes. The full regression analysis is reported in Appendix D.

FIGURE 3. SUPPORT FOR A BIRTH CONTROL EXEMPTION ACROSS WAVES



Our data from both *Riley* and *Hobby Lobby* most neatly support a narrative based on the Elaboration Likelihood Model (ELM) of persuasion.¹⁷² In the case of *Riley*, some portion of the population hears of the outcome immediately after the decision and, based on a general liking and respect for the Court, changes its view. But this persuasion is based on a peripheral cue, positive views on the source, and is not deeply processed or understood.¹⁷³ This explains both why the population does not generalize from the specific holding to other searches—they aren't thinking enough about the subject to see the connections that are so obvious to experts—and also why the persuasion is so fleeting. Our findings on *Hobby Lobby* point in the same direction. Though we observe an initial effect that is consistent with the structural response model, that effect fades quickly. Again, this shows a fundamentally shallow and limited effect, likely a function of shallow and limited processing of the decision. Though Hoekstra's

¹⁷² See text accompanying notes 54–57.

¹⁷³ See text accompanying note 54.

ELM-based theorizing ultimately produced mixed results,¹⁷⁴ our data suggest it may be a fruitful model for future exploration.

More important than our contribution to a general understanding of the effects of Supreme Court decisions is our ability to weigh in on a domain in which the legal doctrine directly incorporates popular beliefs. As a doctrinal matter, the beliefs of voters about the First Amendment or gun rights or separation of powers are irrelevant; the Supreme Court can be and sometimes is counter-majoritarian.¹⁷⁵ The relevance of public attitudes, if any, would be indirect and derive from a legal-realist conception that the Supreme Court often follows public opinion.¹⁷⁶ But in a couple domains of constitutional law—search-and-seizure law as well as capital punishment, and maybe gay rights—the Supreme Court has made popular beliefs doctrinally relevant, or even decisive.¹⁷⁷ *Riley* is therefore the rare case in which popular beliefs about what the law is can be directly relevant to the legal question before the Court. And here we have a clear result: the influence of a Fourth Amendment Supreme Court decision on public attitudes is minimal.

That said, our study still leaves some questions unresolved. When the Supreme Court articulated the hypothesis of attitudinal circularity in *Smith*, it did so against a backdrop of a government pronouncement that existing privacy rights had been erased.¹⁷⁸ In *Riley*, a substantial change in privacy law occurred, but in the opposite direction. The Supreme Court told the public

¹⁷⁴ See Hoekstra, *Public Reaction to Supreme Court Decisions* at 112–14 (cited in note 69). Recall that the data in two of her cases saw a shift in the Court's direction, and two did not. She had actually made a more complicated prediction—that the shift would occur in communities *neighboring* those immediately involved because they would be exposed to the decision in popular coverage but not have the self-interest motivations of the communities immediately involved—but that was not supported.

¹⁷⁵ See Alexander M. Bickel, *The Least Dangerous Branch: The Supreme Court at the Bar of Politics* 16–23 (Yale 2d ed 1986).

¹⁷⁶ See Robert G. McCloskey, *The American Supreme Court* 260 (Chicago 5th ed 2010) (Sanford Levinson, revised) (“[I]t is hard to find a single historical instance when the Court has stood firm for very long against a really clear wave of public demand.”).

¹⁷⁷ See, for example, *Bond v United States*, 529 US 334, 338–39 (2000) (deciding that squeezing a bus passenger's bag is a Fourth Amendment search based on the expectations that an ordinary passenger would have); *Roper v Simmons*, 543 US 551, 563–68 (2005) (striking down the juvenile death penalty under the Eighth Amendment's “evolving standards of decency” test); *Obergefell v Hodges*, 135 S Ct 2584, 2603 (2015) (noting the relevance under the Equal Protection Clause of “new insights and societal understandings [that] can reveal unjustified inequality within our most fundamental institutions that once passed unnoticed and unchallenged”).

¹⁷⁸ See *Smith*, 442 US at 740 n 5. See also text accompanying notes 17–20.

that they had greater privacy rights in their cell phones than previous judicial pronouncements had indicated. It is possible that the popular response to Fourth Amendment decisions is asymmetric, such that a different dynamic emerges when the government decreases privacy protections instead of increasing them. Were the Supreme Court to grant certiorari in a decision that gave it grounds to overrule *Katz* or *Riley*, there would be an opportunity to look for such asymmetries.¹⁷⁹ For instance, if the Supreme Court affirms in the *Carpenter* case presently pending before it, thereby disappointing the plurality of Americans who presently expect privacy in their cell-site information, this portion of the circularity hypothesis would be put to the test very nicely.¹⁸⁰ Similarly, we could look for such an asymmetry if the executive announced a new restriction on privacy rights. Until such an opportunity to test the effects of a reverse-*Riley* decision arises, however, our best assumption is that the public would respond to privacy-diminishing decisions in much the same way it responds to privacy-enhancing decisions.

The evidence we report here provides support for neither the weak version (slow-moving shifts in expectations) nor strong version (prompt shifts in expectations) of the attitudinal circularity

¹⁷⁹ The Supreme Court does not diminish privacy expectations very often in highly salient cases, but *Olmstead v United States*, 277 US 438 (1928), was a famous example of the Court arguably pegging legal expectations of privacy below extant popular expectations of privacy. The wiretapping that federal agents conducted in *Olmstead* was a violation of the laws of Washington state, where *Olmstead* resided and did business. *Id.* at 468–69. For that reason, the legally sophisticated *Olmstead* believed that even though the government could be wiretapping his calls, evidence gleaned from those calls could not be used to prosecute him. See Daniel J. Solove and Paul M. Schwartz, *Information Privacy Law* 272 (Aspen 5th ed 2015). Dissenting in *Olmstead*, Justice Oliver Wendell Holmes noted that in his view the Fourth Amendment prohibited the federal government's introduction of evidence that was gathered in violation of state law. See *Olmstead*, 277 US at 469–70 (Holmes dissenting). Arguably, *Smith*, which held that the police do not need a warrant to install a pen registry that tracks all the numbers dialed by a telephone customer, see 442 US at 745–46, and *California v Greenwood*, 486 US 35 (1988), which held that the police do not need a warrant to search the trash left outside people's homes, see *id.* at 43, were other salient examples of the same phenomenon. Even several years after *Greenwood* was decided, Slobogin and Schumacher found that survey respondents continued to regard the police search of the garbage outside someone's home as moderately intrusive. See Slobogin and Schumacher, 42 *Duke L.J.* at 738 (cited in note 8) (Table 1). Other cases for which the Court's result would have plausibly surprised most Americans concern issues that we suspect were not particularly salient to the average person. See generally, for example, *Florida v Riley*, 488 US 445 (1989) (finding no expectation of privacy against aerial surveillance of a greenhouse on private property); *United States v White*, 401 US 745 (1971) (finding no expectation of privacy against the recording of a conversation with an undercover informant).

¹⁸⁰ See text accompanying notes 124–25.

hypothesis.¹⁸¹ Though our study provides a better test of the strong version of circularity, we feel that by studying the effects of a landmark ruling one week, one year, and two years after the decision, we have gathered evidence that casts doubt on the weak version too. There has been no lasting movement at all in the direction of what the Court held. We picked up the immediate effect, such as it was, and then gave the effect time to either magnify as word spread or dissipate as memories faded. It dissipated.

Admittedly, it is possible that the lasting effects of *Riley* on the public's expectations will emerge after five years, or ten, or twenty. Maybe the public notices when the police change their enforcement practices to comply with a new decision even if it was blind to the decision itself. Once the public notices the new behavior, it may regard it as the new normal, and then brings its expectations of privacy in line with the new police practice. We cannot rule out that mechanism for weak-version circularity, but we think it does not present a serious problem. First, we think that the vast majority of police behaviors that are plausibly regarded as Fourth Amendment searches are essentially invisible to most of the public.¹⁸² Few people are searched, and entertainment media incorporate relatively little legal information. If people are not exposed to a police practice, they have no opportunity to become accustomed to it. The counterexample here is the *Miranda* warning, staple of countless police procedurals. But it is notable in part because it is one of the very few pieces of criminal procedure to make the transition to pop culture over the last fifty years. Perhaps indicative of this widespread lack of response to police practices, Professors Slobogin and Joseph Schumacher found that the public still viewed the use of confidential informants and the examining of bank records as highly intrusive even though these were Court-approved mainstays of police investigations for many years.¹⁸³

Second, it would likely take a particularly noxious change in law to create the opportunity for this slow-moving shift in expectations. If the Court initially rules in the direction of public

¹⁸¹ See text accompanying notes 37–43.

¹⁸² Certain police tactics might be more visible to a subpopulation. For example, residents of high-crime neighborhoods or public housing might be subject to more searches than the general population, and therefore their expectations may be more responsive to changes in police conduct. Under our approach, expectations of privacy are tied to the views of the median citizen, so opportunities to manipulate expectations of privacy by concentrating police surveillance on a relatively powerless constituency would be limited.

¹⁸³ See Slobogin and Schumacher, 42 *Duke L J* at 740 (cited in note 8).

expectations, there is little reason to expect the public to change its view; its expectations were vindicated. Only if the public is surprised might one expect a shift, and the magnitude of the shift depends on whether the new rule is shocking enough to generate notice. Under our preferred Fourth Amendment analysis, this would rarely happen; we think public expectations should play a large role in Fourth Amendment adjudication. Under the current (more muddled) approach, we still think such dynamics would be rare.

Finally, even if circularity operates on a generational time-scale, it would be wise to ask whether this dynamic gives rise to the original problem that concerned circularity proponents. Privacy expectations must come from *somewhere*. Presumably they are a product of, among other factors, cultural norms, technological capabilities, and political policies. If expectations update over time to reflect changing realities, this is to the public's credit. As we explained in Part I, circularity becomes a problem for our Fourth Amendment model only if expectations update so quickly that it becomes incoherent to ask government actors to consider what the public thinks.¹⁸⁴ The data presented here go a long way toward showing that public beliefs are more stable than that caricature assumes.

We will continue to insert the questions we have posed here into nationally representative surveys in the coming years, and if an interesting shift occurs, we will write about it. Our previous research, and research by other scholars,¹⁸⁵ gives us a very clear “before” measure of cell-site expectations preceding *Carpenter*, and it will be easy to gather “after” data. But the greater the temporal distance between a decision and a survey, the harder it is to conclude that any shifts in popular beliefs can be traced to the decision (or implementations of the decision) as opposed to other confounding factors. People who insist that the effects of a Supreme Court decision on popular expectations will emerge only after a decade or two may be articulating a nonfalsifiable hypothesis.

Our refutation of the attitudinal circularity hypothesis is not perfect, but we think our evidence is as convincing as any data are likely to get for the foreseeable future. To the extent that the law pays attention to empirical reality, the burden of proof has

¹⁸⁴ See Part I.B.

¹⁸⁵ See Empirical Fourth Amendment Brief at *3–10 (cited in note 124).

now shifted to those seeking to demonstrate that any version of attitudinal circularity is genuine.

CONCLUSION

Though privacy expectations can change somewhat immediately after a major Fourth Amendment decision, the change is concentrated among those who have explicit knowledge of the Supreme Court decision. Over time, this explicit knowledge appears to be forgotten, and expectations return to baseline. Therefore, the Supreme Court would not be “talking to itself” if it incorporated public expectations into its doctrinal analysis; privacy expectations appear to operate largely independent of changes in Supreme Court doctrine. Though the idea of reasonable expectations of privacy’s circularity is widely repeated among scholars and even the justices themselves, the first reliable empirical evidence indicates that, at best, the phenomenon is very short lived. At least in the medium term, Fourth Amendment circularity is a myth. And even if expectations of privacy might shift in the direction of judge-approved law enforcement practices over the course of decades, such circularity would not weaken the case for using rigorous survey techniques to inform judicial determinations of the Fourth Amendment’s scope.

We therefore conclude this Article by articulating a falsifiable hypothesis. During October Term 2017, the Supreme Court is likely to decide *Carpenter*, clarifying Fourth Amendment law regarding the warrantless collection of stored cell-site information. We have no strong prediction about whether the Court will expand or contract privacy rights in its opinion. But we do know what cell-site privacy expectations were in 2015 and 2016. And we predict that regardless of what the Court decides in *Carpenter* in 2018, those expectations will be very similar in 2019. We would be willing to bet on it.

APPENDIX

A. Sample Demographics

In the first three waves, close attention was paid to age, ethnicity, and sex. Following the census convention, “Hispanic” was asked separately from the racial categories, and “Sex” required a binary answer. In Wave IV, the sample was also carefully matched on educational attainment and regional representation. This made it important to control for education in cross-wave comparisons. Though more carefully matching the census on educational attainment was desirable, it did lead to an inconsistency across time periods. Though there are some other minor variations in representation across waves, only educational attainment shows a major shift.

	Wave I	Wave II	Wave III	Wave IV
% Female	51.71	51.06	50.18	52.55
<i>Age (years)</i>				
Median	46	52	47	46
Mean	46.28 (16.74)	50.48 (16.57)	46.30 (16.42)	46.18 (16.94)
<i>Political Orientation</i>				
Economic	4.15 (1.67)	4.30 (1.77)	4.32 (1.78)	4.29 (1.72)
Social	3.83 (1.76)	3.96 (1.85)	4.07 (1.92)	4.08 (1.81)
Overall	3.98 (1.64)	4.12 (1.70)	4.19 (1.79)	4.20 (1.69)
<i>Race/Ethnicity (%)</i>				
White	81.14	79.92	79.63	79.21
Black or AA	9.86	13.16	13.30	11.82
Indian or Native	1.86	1.46	2.00	2.40
SE Asian	4.57	4.52	4.15	2.86
Hawaiian/Pacific	1.00	0.40	0.57	0.31
Hispanic	16.71	16.76	17.08	17.16
<i>Education</i>				
Less than HS	2.00	1.20	2.00	10.97
HS Diploma/GED	30.57	34.04	34.31	32.61
Two-Year College	25.57	21.28	23.30	29.13
Four-Year College	28.14	29.12	28.02	18.08
Graduate Degree	13.71	14.36	12.37	9.20
Know <i>Riley</i>	—	40.29	21.09	22.41
<i>N</i>	700	751	1399	1294

Note: For age and political orientation, the numbers in parentheses represent standard deviations. Political orientation was measured on seven-point scales ranging from 1 (Very Liberal) to 7 (Very Conservative).

B. How People Heard of the *Riley* Decision, by Wave

Source	Wave II	Wave III	Wave IV	Total
Television Coverage	56.8%	37.1%	47.6%	47.2%
Internet Blogs/News Site	15.2%	19.4%	14.8%	16.5%
Close Friends	4.0%	9.9%	9.7%	7.8%
Acquaintances	3.0%	8.5%	4.1%	5.2%
Social Media Posts	2.0%	5.1%	7.2%	4.7%
Printed Newspaper/News Magazine	6.3%	4.4%	3.4%	4.7%
Radio Coverage	6.6%	2.7%	2.4%	3.9%
Coworkers	1.7%	6.1%	3.8%	3.8%
Relatives	3.0%	3.7%	3.4%	3.4%
Other	1.7%	3.1%	3.4%	2.7%
Total Respondents	303	294	290	887

C. Questionnaire Items

For Each Search, Participants Were Asked:

Would the arrestee (i.e., the person being arrested) reasonably expect that police will [conduct a particular search]?

Under the Constitution, can the police do this to the arrestee without first getting a search warrant?

Full List of Searches

Physical Searches	Search his car for any packages he might be carrying and open the packages.
	Open his briefcase or backpack to check whether it contains drugs.
	Fingerprint him.
	Open his backpack, find his diary, and read the diary to see if it contains anything incriminating.
	Take a DNA sample using a mouth swab.
	Take a blood sample.
	Strip search him.
	Perform a body cavity search on him.

Electronic Searches

Power on the phone and see what the start-up screen displays.

Turn off the phone to prevent its contents from being encrypted or deleted.

Search the phone for a list of most recent calls.

Search the phone for the ten most recent text messages.

Search the entire text message history.

Search the phone's browser for a list of recent Google searches.

Use the phone to access his email account and read his emails.

Use the phone to open his Facebook application and read his newsfeed and messages.

Subject the phone to a forensic examination to recover any pictures, documents, and emails that the arrestee may have deleted.

GPS Tracking Questions

Used a car's onboard GPS system to locate it on public streets at a single moment in time without the owner's permission?

Used a car's onboard GPS system to track its movements on public streets for one day without the owner's permission?

Same, but for one week?

Same, but for one month?

Other Reasonable-Expectation-of-Privacy Questions

Used remote activation software to turn on the webcam on a suspect's laptop without their permission?

Obtained from an Internet Service Provider copies of emails exchanged between two suspects in a criminal investigation?

Select "Definitely Not" for this line to show that you read the question. [This is an attention-check question.]

Used facial recognition software to check whether any of the fans entering the Super Bowl stadium match images of known terrorists?

Installed a video camera to watch a public park where criminal activity has recently occurred?

Obtained from a robbery suspect's cell phone company stored information about whether the suspect's cell phone was near the crime scene when the robbery was committed?

Used a fake cell tower to trick a suspect's phone into giving the police more accurate information about where the phone is?

Searched a hotel's guest register to obtain the names, home addresses, and assigned hotel room numbers of the guests who stayed there on a particular night?

Right-Wing Authoritarianism

It's great that many young people today are prepared to defy authority. (Reverse coded)

What our country needs most is discipline, with everyone following our leaders in unity.

Students at high schools and at university must be encouraged to challenge, criticize, and confront established authorities. (Reverse coded)

Obedience and respect for authority are the most important virtues children should learn.

Our country will be great if we show respect for authority and obey our leaders.

People should be ready to protest against and challenge laws they don't agree with. (Reverse coded)

Supreme Court Knowledge

Who is the current Chief Justice of the United States Supreme Court?	Antonin Scalia John Roberts William Rehnquist Elena Kagan
How many Justices currently sit on the United States Supreme Court? ¹⁸⁶	—
Which of the following voted to uphold the individual mandate portion	Clarence Thomas David Souter

¹⁸⁶ Unexpectedly, the correct answer to this question changed between Waves III and IV.

of the Affordable Care Act (also	John Roberts
known as “Obamacare”) in 2012?	Anthony Kennedy

How many women currently sit on	_____
the United States Supreme Court?	

Riley Questions

Riley Knowledge Question: On June 25, 2014, the US Supreme Court announced its decision in *Riley v California*. The Court decided whether a warrant was required before the police could search the cell phone of someone they had just arrested. Had you heard about the Supreme Court’s decision in that case prior to this survey? (Yes/No)

Riley Holding Description: In *Riley v California* the US Supreme Court decided that the police generally must get a warrant before examining the information on a person’s cell phone, even if that person has just been arrested. In light of this information, please re-answer the question on the next page.

Hobby Lobby Questions

If they sincerely object to providing coverage for ABORTION, should they be able to exclude that from their healthcare plan?

If they sincerely object to providing coverage for BIRTH CONTROL PILLS, should they be able to exclude them from their healthcare plan?

If they sincerely object to providing coverage for FLU SHOTS, should they be able to exclude them from their healthcare plan?

Hobby Lobby Knowledge Question: On June 30, 2014, the US Supreme Court announced its decision in *Burwell v Hobby Lobby Stores, Inc*. The Court decided whether a for-profit company whose owners sincerely objected on religious grounds to providing its employees with insurance coverage for contraceptives nevertheless had to provide such coverage under the Affordable Care Act. Had you heard about the Supreme Court’s decision in that case prior to this survey? (Yes/No)

Hobby Lobby Holding Description: In *Burwell v Hobby Lobby* the US Supreme Court decided that while all large for-profit employers are ordinarily required to provide health insurance coverage for contraceptives to their full-time employees, the government could not significantly penalize a corporation whose owners refused to provide contraceptive coverage because of the owners’ sincere religious objections. In light of this information, please re-answer the question on the next page.

D. *Hobby Lobby* Regression

A regression analysis was conducted of the Wave I data to determine whether any demographic or attitudinal factor sufficiently predicted views of the birth control exemption to allow for the kind of analysis required to test the structural response model. As can be seen in Table A1 below, the measure of political orientation had the strongest predictive power in Wave I.

TABLE A1. PREDICTIONS OF SUPPORT IN WAVE I FOR THE BIRTH CONTROL EXEMPTION AS A FUNCTION OF DEMOGRAPHIC AND ATTITUDINAL VARIABLES

	(Unstandardized Coefficients) B	(Standardized Coefficients) SE	β	<i>t</i>
Constant	2.297	0.142	—	16.138
Political Orientation	0.357	0.014	0.378	25.405***
Sex	-0.310	0.048	- 0.095	-6.517***
Age	-0.001	0.001	- 0.009	-0.590
Black	0.189	0.072	0.038	2.645**
Hispanic	0.124	0.063	0.029	1.962*
Education	0.096	0.022	0.066	4.428***
Authoritarianism	0.041	0.026	0.024	1.581
Supreme Court Knowledge	0.095	0.075	0.019	1.255

Note: *, **, and *** indicate *p* values of less than 0.05, 0.01, and 0.001 respectively.

A further regression was therefore conducted to examine whether the effect of political orientation changed across wave, as the structural response model predicted using the demographic factors controls. As can be seen in the next Table, the main effect of political orientation was qualified by interactions in the second and fourth waves, indicating that the effect was larger in Wave II and smaller in Wave IV. Political orientation was centered at 0 before this analysis was conducted, so it ranged from -3 to +3.

TABLE A2. PREDICTIONS OF SUPPORT FOR THE BIRTH CONTROL EXEMPTION AS A FUNCTION OF POLITICAL ORIENTATION AND ITS INTERACTIONS BY WAVE

	(Unstandardized Coefficients)		(Standardized Coefficients)	<i>t</i>
	B	<i>SE</i>	β	
Constant	2.488	0.117	—	21.320
Political Orientation	0.374	0.034	0.395	10.942***
Wave II	0.109	0.078	0.026	1.399
Wave III	0.054	0.069	0.016	0.789
Wave IV	-0.079	0.070	-0.023	-1.123
Wave II by Pol Orient	0.105	0.047	0.047	2.245*
Wave III by Pol Orient	0.001	0.041	0.001	0.035
Wave IV by Pol Orient	-0.100	0.042	-0.058	-2.382*
Sex	-0.301	0.047	-0.093	-6.406***
Age	-0.001	0.001	-0.006	-0.379
Black	0.189	0.071	0.038	2.647**
Hispanic	0.110	0.063	0.025	1.746
Education	0.088	0.021	0.060	4.132***

Note: *, **, and *** indicate *p* values of less than 0.05, 0.01, and 0.001 respectively.

To generate means for the figure presented in the paper, the value of the demographic variables was estimated at their means and the values for Liberal, Moderate, and Conservative were estimated at -3, 0, and +3, respectively. This produced the following set of values.

TABLE A3. ESTIMATES OF SUPPORT FOR BIRTH CONTROL
EXEMPTION BY WAVE AND POLITICAL ORIENTATION

	Liberal	Moderate	Conservative
Wave I	1.50	2.62	3.74
Wave II	1.29	2.73	4.17
Wave III	1.55	2.67	3.80
Wave IV	1.72	2.54	3.36

E. Regression Model of the *Riley* Data

There is no meaningful difference between the ANCOVA reported in text and the multiple regression reported here. ANCOVA makes more sense stylistically when the goal is to compare the means of two or more conditions, but both use the same fundamental math.

TABLE A4. PREDICTIONS OF PRIVACY EXPECTATIONS FOR ELECTRONIC AND PHYSICAL SEARCHES AS A FUNCTION OF WAVE

<i>Electronic Searches</i>	(REP Measure)		(Warrant Measure)	
	B	SE	B	SE
Constant	2.668	0.112	0.686	0.031
Wave II	0.198	0.074**	0.057	0.021**
Wave III	-0.058	0.066	-0.001	0.018
Wave IV	-0.026	0.067	-0.009	0.019
Age	0.006	0.001***	0.000	0.000
Sex	-0.028	0.045	0.012	0.013
Black	0.346	0.068***	0.013	0.019
SE Asian	-0.177	0.116	-0.072	0.033*
Hispanic	-0.041	0.060	-0.033	0.017
Education	-0.055	0.020**	-0.008	0.006
	$R^2 = 0.019$		$R^2 = 0.007$	
<i>Physical Searches</i>	(REP Measure)		(Warrant Measure)	
	B	SE	B	SE
Constant	2.312	0.082	0.546	0.024
Wave II	0.089	0.055	0.020	0.016
Wave III	0.026	0.048	-0.013	0.014
Wave IV	0.081	0.049	-0.004	0.015
Age	0.002	0.001	-0.001	0.000***
Sex	-0.006	0.033	-0.004	0.010
Black	0.268	0.050***	0.040	0.015**
SE Asian	0.035	0.085	0.008	0.025
Hispanic	-0.008	0.044	0.003	0.013
Education	-0.031	0.015*	-0.007	0.004
	$R^2 = 0.010$		$R^2 = 0.007$	

Note: *, **, and *** indicate p values of less than 0.05, 0.01, and 0.001 respectively.

Note that for both electronic-search dependent measures there is a significant coefficient for the Wave II dummy variable, indicating that the Wave II values differ from baseline (Wave I, with this coding) but that the coefficients for Waves III and IV are not significant, indicating they do not significantly differ from baseline.

This table replicates the analysis showing the effect on the electronic dependent measures of whether participants knew of the *Riley* decision.

TABLE A5. PREDICTIONS OF PRIVACY EXPECTATIONS FOR ELECTRONIC SEARCHES AS A FUNCTION OF WAVE AND KNOWLEDGE OF *RILEY*

	(REP Measure)		(Warrant Measure)	
	B	SE	B	SE
Constant	2.672	0.112	0.685	0.031
Wave II	0.089	0.085	0.025	0.024
Wave III	-0.022	0.068	0.008	0.019
Wave IV	-0.013	0.070	0.002	0.020
Age	0.006	0.001***	0.000	0.000
Sex	-0.025	0.045	0.012	0.013
Black	0.345	0.068***	0.013	0.019
SE Asian	-0.175	0.116	-0.072	0.033*
Hispanic	-0.034	0.060	-0.031	0.017+
Education	-0.052	0.021*	-0.006	0.006
Know <i>Riley</i>	0.273	0.105**	0.082	0.030**
Wave III by Know <i>Riley</i>	-0.441	0.141***	-0.127	0.040***
Wave IV by Know <i>Riley</i>	-0.326	0.141*	-0.132	0.040***
	$R^2 = 0.022$		$R^2 = 0.010$	

Note: *, **, and *** indicate p values of less than 0.05, 0.01, and 0.001 respectively. + represents $p < 0.10$ to show nonsignificant effects that may be of interest.

Wave I is again the overall reference category. Because knowledge of *Riley* begins only in Wave II, the Know *Riley* factor makes those knowing of *Riley* in Wave II the reference category

for the Wave III and IV *Riley* interactions. As can be seen, the overall effect of Wave II disappears when the population of those who know of the *Riley* decision is accounted for separately in the Know *Riley* line. So the difference between Wave I and Wave II is due to those in Wave II with knowledge of *Riley*. The interactions between knowledge of *Riley* and the Wave III and IV codes (Wave III by Know *Riley* and Wave III by Know *Riley*) indicate that knowing about *Riley* has a different effect in those Waves. Specifically, the positive effect of *Riley* knowledge in Wave II is completely eliminated in the subsequent Waves.