Spring 2007

The Physics of Fourth Amendment Privacy Rights

Omar Saleem
Florida A & M University College of Law, omar.saleem@famu.edu

THE PHYSICS OF FOURTH AMENDMENT PRIVACY RIGHTS

OMAR SALEEM*

INTRODUCTION

Albert Einstein's relativity theories radically altered perceptions of the space-time continuum and constitute the greatest scientific achievements of the twentieth century.[1] During his enduring pursuit of the universal and immutable laws governing the universe, he found comfort in reading Feodor Dostoyevsky's *The Brothers Karmamazov*, and considered it the best book he had ever read.[2] Einstein believed that Dostoyevsky's work gave him more insight than any other novelists.[3] In *The Brothers Karmamazov*, Dostoyevsky explored the criminal process.[4] Einstein's esteem for theoretical physics and Dostoyevsky serves as a conduit for this article's discussion about the similarities between the evolution of theoretical physics and the criminal process related to Fourth Amendment privacy rights.[5]

---

* Associate Dean of Academic Affairs and Professor of Law, Florida A&M University College of Law., Orlando, Florida; B.A. 1985, City University of New York at Queens College; J.D. 1988, North Carolina Central University School of Law; LL.M. 1992, Columbia University School of Law. (omar.saleem@famu.edu).

1. Frederic Golden, Person of the Century, TIME MAGAZINE, Jan. 3, 2000, *available at* http://www.time.com/time/time100/poc/magazine/albert_einstein5a.html. In addition to his relativity theories, Einstein published numerous other outstanding papers and over twenty reviews of scientific papers. *See* ALICE CALAPRICE, DEAR PROFESSOR EINSTEIN 52 (2002).

2. DENIS BRIAN, EINSTEIN A LIFE 108 (1996).

3. Robert F. Cochran, *Crime, Confession, and the Counselor-at-law: Lessons from Dostoyevsky*, 35 HOUS. L. REV. 327 n.21 (1998) (quoting MALCOLM V. JONES, DOSTOYEVSKY: THE NOVEL OF DISCORD 11 (1976)).

4. William Burnham, *The Legal Context and Contribution of Dostoevsky's Crime and Punishment*, 100 MICH. L. REV. 1227, 1229 (2002) (indicating that in the Brothers Karamazov Book IX focuses on the prelude to a criminal trial and Book XII consist of an entire criminal jury trial).

5. Golden, *supra* note 1 (indicating it is well recognized that Einstein's theories of relativity reverberate beyond science, greatly influencing modern culture from painting to poetry). A cursory view of criminal procedure jurisprudence and relativity reveals that both impact virtually every aspect of human activity. Relativity ubiquitously defines the physical universe on the macro-cosmic plane, and provides an understanding of the movement of terrestrial bodies. Criminal procedure jurisprudence empowers societies to direct, confine, define, and punish human behavior from the cradle to the grave. *See* GORDON POST, AN INTRODUCTION TO THE LAW 1 (1963) (discussing criminal procedure's span of influence in society).

Part I demonstrates that law and science share traits of rationality, a quest for universality, and theoretical evolution. Part II traces the parallel paths of Fourth Amendment privacy rights and theoretical physics. The works of physicists such as Aristotle and Ptolemy are contrasted with the *Boyd v. United States*[6] and *Weeks v. United States*[7] Supreme Court decisions because initially, in both theoretical physics and Fourth Amendment privacy cases, there was a lack of precision. Following this discussion, there is a focus on the works of scientists such as Copernicus, Kepler, Galileo and Newton along with the Supreme Court decisions of *Silverthorne Lumber v. United States*[8], *Carroll v. United States*[9], and *Olmstead v. United States*[10]and its progeny because they were pivotal in providing redirection and the foundation for the modern era. Part III illustrates the radical alterations in theoretical physics created by Einstein's relativity discoveries and the radical alterations in Fourth Amendment privacy rights created by the U.S. Supreme Court's decision in *Katz v. United States*[11]. Both Einstein's relativity and the *Katz's* two-prong test for Fourth Amendment privacy rights demonstrated a variance from absolutism to fluidity. In the final part of the article, the author will hypothesize that both Einstein's relativity contributions and the Supreme Court's decision in *Katz* have answered some questions and formulated others, all of which unveil exciting future challenges in the area of theoretical physics and Fourth Amendment privacy law.

I. LAW AND THEORETICAL PHYSICS: COMMON TRAITS

Law and theoretical physics share traits of rationality, a quest for universality, and theoretical evolution. The first trait, rationality, permeates both law and theoretical physics. Einstein's achievements demonstrate that imagination, intuitiveness and rational thought are fundamental to theoretical physics. An Einstein biographer reflected on how Einstein discovered relativity, and shared an insight that after intensive thought and reasoning, Einstein awoke one morning in a state of tremendous agitation.[12] Einstein felt

6. 116 U.S. 616 (1886).
7. 232 U.S. 383 (1914).
8. 251 U.S. 385 (1920).
9. 267 U.S. 132 (1925).
10. 277 U.S. 438 (1928).
11. 389 U.S. 347 (1967).
12. *See* BRIAN, *supra* note 2, at 60-61.

a storm broke loose in his mind, and that he had tapped God's thoughts and found the master plan for the universe.[13]

Another example of Einstein's creative rational thought was described by a Harvard physicist who entered Einstein's archives after Einstein's death and was overwhelmed by the brilliance he found there because, "Unlike the textbook idea of working from experiments, to theory, to testing that theory, he worked in grand leaps from thought experiments. . . ."[14] In another instance, when Einstein was asked about the location of his laboratory he pointed to his pen.[15] In similar composure, Einstein expressed his reliance on rational thought when he stated, "[i]magination is more important than knowledge."[16] Moreover, Einstein criticized German philosopher Ernst Mach's observational approach to scientific discovery and wrote that Mach's "weakness was thinking that theories arise from observational discovery and not from mental invention."[17]

Similar to theoretical physics, the study of law is profoundly linked to rationality.[18] This rational underpinning was at the heart of the late Harvard Professor Christopher Columbus Langdell's position that law should be taught as a science. Langdell posited that legal cases are best analyzed through a Socratic-type dialogue between the law professor and students.[19] During this dialogue, law students develop logical reasoning, understanding of legal rules, and an appreciation for policy considerations. According to advocates of this approach the study and application of law is a reasoning process through which principles are tested by their consequences, and conversely, actual consequences are judged in light of principles.[20] Some legal scholars perceive

---

13. *Id.*

14. Thomas Hayden, *The Inner Einstein*, U.S. NEWS & WORLD REPORT, Dec. 9, 2002, at 60, 63.

15. AMERICAN MUSEUM OF NATURAL HISTORY SKIRBALL CULTURAL CENTER 4 (2002).

16. *See* David J. Dempsey, *Master the Magic of Storytelling*, 29 VT. B. J. 32 (Fall 2003) (illustrating how Einstein's quote aids in law practice).

17. JOHN H. LEINHARD, INVENTING MODERN PHYSICS 62-62 (2003).

18. L.G. Boonin, *Concerning the Relation of Logic to Law*, 17 J. LEGAL EDUC. 155 (1965).

19. LISSA GRIFFIN & BENNETT L. GERSHMAN, THE LAW SCHOOL EXPERIENCE: LAW, LEGAL REASONING AND LAWYERING 33 (2000). The Socratic Method is one of many different teaching methods used by law professors. For an extensive recitation of law teaching methods, *see* Arturo Lopez Torres & Mary Kay Lundwall, *Moving Beyond Langdell II: An Annotated Bibliography of Current Methods for Law Teaching*, 35 GONZ. L. REV. 1, 50-54 (2000).

20. *See* Carl Auerbach, *Legal Education and Some of its Discontents*, 34 J. LEGAL EDUC. 43, 58-65 (1984), *cited in* JOHN MAKIDISI, INTRODUCTION TO THE STUDY OF LAW 11 (2d ed. 2000).

law as a theoretical subspecies of science.[21] Described in another fashion, law has the purported rational features of transcendent, acontextual, universal legal truths or pure procedures.[22] Law is a logical process involving building blocks or precedents, which provide assurance that decision making bodies promote fairness and rationality.[23] Rationality is such an integral aspect of law that its alleged absence raised major concerns in the battle between Democrats and Republicans concerning the Gore-Bush presidential votes when certain Supreme Court Justices were strongly criticized for allegedly allowing their personal and political views to cloud their rational thought.[24]

The second common trait in both law and theoretical physicists is a search for universality. There has been considerable investigation and discussion among theoretical physicists about a unified theory to clarify and convert quantum mechanics (subatomic level) and relativity (celestial level) into a precise mathematical formula.[25] Einstein failed to develop such a theory; and since his death, scientists grappled with the development of a unified theory. Theoretical physicists have been exploring string theory, which explores elementary ingredients beyond electrons and protons into smaller filaments which vibrate, comparable to the vibration of strings.[26] It is through string theory that theoretical physicists hope to develop a unified theory.

The universality discourse dominating theoretical physics is reflected in the discussions among legal scholars who have pondered the possibility of a unified theory for constitutionally related cases.[27] Judge Richard Posner

---

21. GRANT GILMORE, THE AGES OF AMERICAN LAW 42-43 (1977). *Contra* RICHARD POSNER, THE PROBLEMS OF JURISPRUDENCE 70 (1990) (arguing that law is closer to metaphysics and theology than to science); *see also* LAURENCE TRIBE & MICHAEL C. DORF, ON READING THE CONSTITUTION 96 (1991) (stating that mathematics and law differ because legal arguments center on truth and falsity of the preliminary assumption).

22. PATRICIA J. WILLIAMS, THE ALCHEMY OF RACE AND RIGHTS 8-9 (1991) (The author includes other features such as "the hypostatization of exclusive categories and definitional polarities," and the existence of objective voices by which the "transcendent, universal truths find their expression.").

23. *See* Tracey E. George & Robert J. Pushaw, Jr., *How Is Constitutional Law Made?*, 100 MICH. L. REV. 1265 (2002).

24. *See* ALAN M. DERSHOWITZ, SUPREME COURT INJUSTICE 19-50 (2001).

25. Presently, modern theoretical physics has two governing theories: Einstein's theory of Relativity and the theories of quantum mechanics. The former describes activity on the terrestrial level while the latter explains activity on the subatomic level. *See* STEPHEN HAWKING, A BRIEF HISTORY OF TIME: FROM THE BIG BANG TO BLACK HOLES 60 (1988).

26. BRIAN GREENE, THE ELEGANT UNIVERSE 142-43 (2003).

27. *See* Roberto L. Corrada, *Justifying a Search for a Unifying Theory of Unconstitutional Conditions*, 72 DENV. U. L. REV. 1011 (1995) (discussing unifying theory in both law and science).

described the search for a legal unified theory as a quest for unity in multiplicity.[28] Some legal scholars have proclaimed that the discovery of a single legitimate set of constitutional theories is more difficult than the quest for the Holy Grail and Einstein's search for a unified theory.[29] In their view, a unified theory for law is "too hard," "impossible," "futile and simplistic," and "fraught with an extraordinary intellectual conceit."[30] Justice O'Connor exemplified this position in her observations that Establishment Clause cases cannot be reduced to a single test, and a "Grand Unified Theory...may turn out to be neither grand nor unified."[31] Others have argued that despite the difficulty of formulating such a theory, legal scholars, similar to scientists, should seek a unified theory, despite concerns about futility and impossibility.[32] These legal scholars believe that a unifying theory of unconstitutional conditions would develop other principles and explain otherwise unrelated ideas and situations.[33] In their view, law and science resemble each other because the underlying theories are similar, and both disciplines are steeped in indeterminacy, uncertainty, and intuitiveness.[34] Despite prolonged efforts to develop a unified theory, at the dawn of the 21st century, neither legal scholars nor theoretical physicists have devised such a theory.

The third common trait among theoretical physicists and law is continual theoretical evolution. Neither theoretical physics nor law has experienced abrupt revolutionary change. Both disciplines have undergone change via numerous contributions over long spans of time. The current status of physics is the product of such past notables as Ptolemy, Copernicus, Tycho Brahe, Kepler, Galileo, and Newton.[35] Einstein described Galileo as the father of

---

28. POSNER, *supra* note 21 (arguing that such a quest is not unique to science, but also the project of law, theology and metaphysics).

29. *See* Glenn A. Phelps & John B. Gates, *The Myth of Jurisprudence: Interpretive Theory in the Constitutional Opinions of Justice Rehnquist and Brennan*, 31 SANTA CLARA L. REV. 567, 569 (1991).

30. Corrada, *supra* note 27 (citing such scholars as Frederick Schauer, Larry Alexander, Laurence Tribe, and Michael C. Dorf).

31. Rosenberger v. Rector and Visitors of Univ. of Va., 515 U.S. 819, 852 (1995) (O'Connor, J., concurring).

32. Corrada, *supra* note 27, at 1015 (arguing attempts to explain the need for a unifying theory might be valid even if unification is ultimately impossible).

33. *Id.*

34. *Id.*

35. *See* AMIR D. ACZEL, EN ENTANGLEMENT THE GREATEST MYSTERY IN PHYSICS 12 (2001) (explaining how each theoretical physicists built upon the foundation laid by others. For example, Newton's classical mechanic, and the concept of causality, was built on the foundation laid by Descartes, Galileo, Kepler and Copernicus).

modern physics, and Einstein believed that Newton was aware of the flaws in his theories of gravity, but left the probability of clarity to future generations.[36]

Justice Oliver Wendell Holmes portrayed the evolution of law when he compared the development of law to plant life because both undergo stages of development. According to Justice Holmes, one should be hesitant to affirm universal truths for social ideas and be content to prove the best for the here and now, with the assurance that law evolves and that one knows nothing about the absolute best in the cosmos and the permanent best for society.[37] Justice Holmes further stated that the rational study of law is the study of history, and without history, law lacks rationality.[38] Similarly, Blackstone reasoned that judicial decisions should defer to the proverbial wisdom of the past.[39] Such wisdom is rooted in legal precedents, history, and social policies and undergoes a continuing evolution.[40]

II. PARALLEL PATHS: FOURTH AMENDMENT PRIVACY AND PHYSICS

As discussed above, law and science have the common traits of rationality, universality, and continual theoretical evolution. Fourth Amendment privacy law and theoretical physics are subsets of law and science, respectively. A closer examination of both of these areas is useful to illustrate underlying connections and explore metaphorical similarities tacit in Einstein's appreciation of both theoretical physics and Dostoyevsky's works.

The evolution of Fourth Amendment privacy rights spans over a century and encompasses cases such as *Boyd*, *Weeks*, *Silverthorne Lumber*, *Carroll*, *Olmstead*, *On Lee*, *Katz*, and the *Katz* progeny.[41] The development of theoretical physics is associated with great thinkers such as Aristotle, Copernicus, Kepler, Galileo, Newton, Maxwell, Michelson-Morley, Albert Einstein, and post-Einstein scholars. In similar style, both the Fourth Amendment privacy rights and theoretical physics have experienced periods

---

36. DAVA SOBEL, GALILEO'S DAUGHTER 326 (noting that Einstein stated, "Galileo . . . is the father of modern physics – indeed of modern science altogether").

37. CLARENCE MORRIS, THE GREAT LEGAL PHILOSOPHERS SELECTED READINGS IN JURISPRUDENCE 427-28 (1959).

38. *Id.*

39. DANIEL J. BOORSTIN, THE MYSTERIOUS SCIENCE OF LAW 115 (1941).

40. *See, e.g.*, Larry Alexander, *Constrained by Precedent*, 63 S. CAL. L. REV. 1 (1989); Earl Matz, *The Nature of Precedent*, 66 N.C. L. REV. 367 (1988); Frederick Schauer, *Precedent*, 39 STAN. L. REV. 571 (1987).

41. *See supra* notes 6-11.

of stagnation and change. For example, prior to the Supreme Court's 1967 decision in *Katz*, Fourth Amendment privacy rights were rigid and subject to a limited trespass-type analysis. Comparably, prior to Einstein's discoveries in 1905, the field of theoretical physics was steeped in disarray and absolutism.

In ancient times, Aristotle hypothesized that the planets and sun orbited the earth and circles were the natural state of motion for terrestrial bodies.[42] Aristotle further believed that the earth was at the center of the universe with different laws of physics than the celestial realm, and that the sun was a perfect circle without blemishes.[43] Ptolemy expanded upon Aristotle's theories in his studies of planetary motion, although he too envisioned an earth-centered universe. Both Aristotle and Ptolemy postulated certain ideas in the realm of physics, and despite some errors, they contributed to later scientific discoveries. Similar to theoretical physics, Fourth Amendment privacy law has developed over time and earlier decisions have shaped the discourse.

One of the earliest Fourth Amendment privacy decisions is *Boyd v. United States*.[44] In *Boyd*, the defendant was suspected of fraud, and the state ordered him to produce business invoices.[45] The Court held that a state order demanding compulsory production of a person's papers was a search in violation of the Fourth Amendment.[46] The *Boyd* Court articulated an "intimate relationship" between the Fourth Amendment's unreasonable search and seizure clause and the Fifth Amendment's prohibition against compulsory self-incrimination.[47] The Court stated that the Fourth and Fifth Amendments cast "great light on each other," and an order requiring the defendant to produce self-incriminating papers as evidence, in violation of the Fifth Amendment, simultaneously constituted an unreasonable search and seizure in violation of the Fourth Amendment.[48] The Court principally accentuated an intimate or symbiotic relationship between the Fourth and Fifth Amendments wherein the Amendments were inseparable and government conduct which violated one Amendment violated the other.

---

42. *See* PETER BECHMANN, A HISTORY OF PI 40, 63 (1971) (indicating Aristotle was far more ignorant of physics and mathematics compared to Greeks of his time, and that Aristotle had a long string of unfounded speculations void of quantitative relations).

43. J. RICHARD GOTT, TIME TRAVEL IN EINSTEIN'S UNIVERSE 40 (2001).

44. 116 U.S. 616 (1886).

45. *Id.* at 617-20.

46. *Id.* at 638.

47. *Id.* at 633.

48. *Id.*

Following *Boyd*, the Court decided *Weeks v. United States*[49], in which the defendant was arrested without a warrant for using the postal service to transmit illegal lottery tickets.[50] After the police arrested the defendant, they went to his house and conducted a warrantless search and seized various papers and other articles.[51] The search in *Weeks* was in violation of the Fourth Amendment because the police had neither a warrant for the defendant's arrest, nor a warrant to search his premises.[52] The *Weeks* decision is renowned as the first case in which the exclusionary rule applied to federal prosecutions.[53] The decision, however, has further significance because it reinforced the *Boyd*'s Fourth and Fifth Amendment symbiotic relationship analysis. The *Weeks* Court stated, "[b]oth these Amendments [Fourth and Fifth] contemplated perpetuating, in their full efficacy, by means of a constitutional provision, principles of humanity and civil liberty. . . ."[54] Furthermore, "[t]he tendency of those who execute the criminal laws of the country to obtain conviction by means of unlawful seizures [Fourth Amendment] and enforced confessions [Fifth Amendment]. . . should find no sanction in the judgments of the courts."[55] The *Weeks* Court specified that the Fourth and Fifth Amendments, in conjunction, extend beyond breaking into doors and rummaging of drawers and, collectively, the amendments encompass indefeasible rights of security, liberty and property.[56]

The result of *Boyd* and *Weeks* was the perception that a violation of the Fourth Amendment triggered a violation of the Fifth Amendment and vice versa. *Boyd*'s and *Weeks*' expression of an intimate or symbiotic relationship between the Fourth and Fifth Amendments, wherein the Amendments revolved around one another, proved somewhat amiss and similar to the flawed Aristotelian/ Ptolemaic position in theoretical physics that the sun revolved around the earth. Both Fourth Amendment privacy rights and theoretical physics lacked clarity and accuracy in the early stages of their development. Nonetheless, the *Boyd* and *Weeks* decisions precipitated the exclusionary rule, and also recognized certain

49. 232 U.S. 383 (1914).
50. *Id.* at 386.
51. *Id.*
52. *Id.* at 397-99.
53. *See* Wolf v. Colorado, 338 U.S. 28, 69 (1949) (The Court stated, ". . . [I]n the *Weeks* case, this Court "for the first time" held that "in a federal prosecution the Fourth Amendment barred the use of evidence secured through an illegal search and seizure."). The Exclusionary rule was later applied to the states in Mapp v. Ohio, 367 U.S. 643 (1961).
54. *Weeks*, 232 U.S. at 391.
55. *Id.* at 392.
56. *Id.* at 391.

indefeasible rights, and privacy protections. In parallel fashion, Aristotle and Ptolemy contributed to discussions of planetary motion, which paved the way for further development in theoretical physics by Copernicus, Tycho Brahe and Kepler.

Progress in theoretical physics was furthered by Copernicus, who changed the study of physics and motion. He challenged the Aristotelian/ Ptolemaic system of the universe, based on an earth-centered universe and hypothesized an alternative sun-centered or heliocentric universe.[57] Copernicus was followed by Kepler, who used Tycho Brahe's data on planetary positions. Kepler mathematically expressed laws for the planetary ellipses, and he dispelled the long held Aristotelian/Ptolemaic belief that planets moved in perfect circles. Copernicus and Kepler's contributions were pivotal in the study of planetary motion and enabled theoretical physicists to make tremendous strides in the proper direction.[58] Copernicus's heliocentric-hypothesized alternative universe is, in fact, at the crux of Einstein's special theory of relativity, which provides in part, that the earth is not a special place with respect to the laws of physics.

Reminiscent of Copernicus's and Kepler's scientific contributions signifying turning points in theoretical physics, the *Silverthorne Lumber Company v. United States*[59] and *Carroll v. United States*[60] decisions signify a turning point in Fourth Amendment privacy law. Comparatively, Copernicus and Kepler disputed the claim that the sun revolved around the earth, while the *Silverthorne Lumber* and *Carroll* decisions challenged the perspective that the Fourth and Fifth Amendments symbiotically evolved around one another, and that a violation of one Amendment was a violation of the other.

In *Silverthorne Lumber,* the defendants were arrested and detained in their homes while government officials went to the defendants' corporation and seized papers and effects without a warrant.[61] The Court stated that the

---

57. SOBEL, *supra* note 36, at 49-52. Copernicus was not alone in his position, other cultures were well aware of such findings. For a detailed discussion of other cultures with astronomical insights *see, e.g.*, DICK TERESI, LOST DISCOVERIES: THE ANCIENT ROOTS OF MODERN SCIENCE—FROM THE BABYLONIANS TO THE MAYA 92-92 (2002), *cited in* Jon Hanson & David Yosifon, *The Situation: An Introduction to the Situational Character, Critical Realism, Power Economics, and Deep Capture*, 152 U. PA. L. REV. 129, n. 291 (2003).

58. *See* RICHARD FEYNMAN, THE CHARACTER OF THE PHYSICAL LAW 15-18 (1965).

59. *See* Silverthorne Lumber Co. v. United States, 251 U.S. 385 (1920). Turning points are vital because as Einstein noted, "It is the theory which decides what you can observe." *See* J. Bernstein, *The Secret of the Old One*, THE NEW YORKER, Mar. 17, 1973, at 44, 69.

60. Carroll v. United States, 267 U.S. 132 (1925).

61. *Silverthorne*, 251 U.S. at 390.

Fourth Amendment would be reduced to a mere form of words if it allowed the Government to admit wrongfully obtained evidence.[62] Along with reinforcing the exclusionary rule, the Court implicitly eliminated the intimate or symbiotic relationship between the Fourth and Fifth Amendments perpetuated in the *Boyd* and *Weeks* decisions.[63] The *Silverthorne Lumber* Court specified that although the corporation was not protected by the Fifth Amendment, it was nonetheless entitled to the Fourth Amendment's protection against unreasonable search and seizure.[64] This holding sparked life into Fourth Amendment privacy rights independent of the Fifth Amendment.

Following *Silverthorne Lumber*, the Court decided *Carroll v. United States*, which further clarified Fourth Amendment privacy law. In *Carroll*, the Court affirmed the defendants' convictions for transporting liquor illegally and held that although the officers lacked a search warrant the search was reasonable because the officers had probable cause to search the defendant's vehicle.[65] The Court reasoned that to require a search warrant for all searches would limit searches to property or premises, and it may be unreasonable to require a search warrant for an automobile.[66] The focus in *Carroll* demonstrated a clear shift away from a discussion about an intimate or symbiotic relationship between the Fourth and Fifth Amendments and a shift towards a more pronounced reasonableness inquiry.[67] The *Silverthorne Lumber* and *Carroll* decisions focused on reasonableness and facilitated a mode of analysis for Fourth Amendment privacy law, which led to the holding in *Katz*.[68]

In stark similarity, both Fourth Amendment privacy rights after *Silverthorne Lumber* and *Carroll* and theoretical physics after Copernicus and Kepler became engulfed in perspectives which were absolute and rigid. Specifically, in the area of Fourth Amendment privacy rights, the *Olmstead* Court held that a Fourth Amendment privacy right was violated only when an actual common law trespass by law enforcement officers occurred, and in

---

62. *Id.* at 392.
63. *Id.*
64. *Id.*
65. *Carroll*, 267 U.S. at 155-59.
66. *Id.*
67. Both *Silverthorne Lumber* and *Carroll*, decided in the 1920s, restricted the link between the Fourth and Fifth Amendments. Approximately forty years later, the Court emphatically limited the scope of this relationship when it held that the Fifth Amendment was limited to testimonial evidence and failed to include blood samples. *See* Schmerber v. California, 384 U.S. 757, 765 (1966).
68. The first clause of the Fourth Amendment prohibits unreasonable searches and seizures, and the second clause requires probable cause and particularity for warrants. U.S. CONST. amend. IV.

theoretical physics the combined works of Galileo and Newton postulated an absolute and unchanging physical universe.

Galileo gave credence to Copernicus's heliocentric universe, and stated that Copernicus' system of the universe was "much more probable than that other view of Aristotle and Ptolemy."[69] Galileo, with his self-constructed telescope, uncovered several important facts about the four moons around Jupiter, the various phases of Venus, and the theories of motion.[70] The moons around Jupiter provided a glimpse of another solar system and led to the realization that other planets besides Earth had moons, and that there was nothing special about Earth. The phases of Venus proved that Venus did not orbit the earth and that Aristotle and Ptolemy were wrong in their belief that the earth was at the center of the universe. In Galileo's rejection of Aristotle's theory that objects need force to remain in motion, Galileo mathematically formulated the law of inertia.[71] According to Galileo, absent an outside force, the natural state of motion is in a straight line at constant speed.[72] This approach was at odds with the Aristotelian view that the natural state of motion was at a state of rest.[73] Furthermore, Galileo concluded that "objects of different mass fall with equal speed in the earth's gravitational field."[74] His theories supported Copernicus' perception of a heliocentric universe, and his mathematical approach to define motion opened the door for modern theoretical physics.[75] Newton followed Galileo and furthered the study of theoretical physics.

Born in 1642, Newton conveyed the full force of mathematics into the study of physics. When mathematics was unavailable, he invented the mathematics to explain his observations and investigations.[76] He provided the world with, among other achievements, mathematical expressions for the laws of motion and gravity.[77] Building upon the discoveries of Galileo, Newton's first law of motion or mechanics is known as the "fundamental law of the

---

69. SOBEL, *supra* note 36, at 52.

70. TONY ROTHMAN, INSTANT PHYSICS 26-28 (1995).

71. *Id.* at 25-28.

72. *Id.* at 28.

73. GARY ZUKAV, THE DANCING WU LI MASTERS 21 (1979).

74. STAN GIBILISCO, UNDERSTANDING EINSTEIN'S THEORIES OF RELATIVITY 180 (1983).

75. *See* ARTHUR W.J.G. ORD-HUME, PERPETUAL MOTION: THE HISTORY OF OBSESSION 35 (1977) (stating that Galileo was not satisfied with mere philosophical discussion and that he sought to test his ideas with mathematics and experimentation).

76. *See* CHARLES DARWIN, HIS DAUGHTER & HUMAN EVOLUTION 305 (2001). Newton was so brilliant that Charles Darwin, whose ideas are central to biology, compared his own attempts to understand the natural universe to a dog's attempt to understand Newton's ideas.

77. GREENE, *supra* note 26, at 54-57.

mechanics of Galileo-Newton."[78] In contrast to Aristotle's theory of motion, Newton argued that the natural state of motion is in a straight line and at a constant speed.[79] Therefore, an object moves in a straight line forever unless acted upon by an outside force.[80] This differed from the Aristotelian view that the natural inclination of an object was to come to a complete rest. Newton's laws of motion altered the way we perceive motion and facilitated space travel, satellite deployment, and other scientific achievements.[81] After hundreds of years, Newton's laws continue to provide the basis for mechanics.[82] The result of Newton's laws of motion and gravity was a perception of time and space as "absolute and immutable entities that provided the universe with a rigid, unchanging arena."[83]

The Newtonian viewpoint of an absolute and unchanging universe is similar to the Court's analysis of Fourth Amendment privacy rights depicted in *Olmstead v. United States*.[84] In *Olmstead,* the Government installed numerous wire taps along ordinary telephone wires, in the basement of office buildings, and streets near the defendants' homes to overhear conversations in which the defendants were implicated in criminal acts in violation of the National Prohibition Act.[85] The *Olmstead* Court cited *Boyd, Weeks, Silverthorne Lumber*, along with other cases, and stated that precedent mandated a Fourth Amendment violation only upon showing that a government agent's conduct constituted an actual physical invasion of the home or curtilage as

78. ALBERT EINSTEIN, RELATIVITY: THE SPECIAL AND GENERAL THEORY 13 (1961).

79. ROBERT GILMORE, ONCE UPON A UNIVERSE 135 (2003).

80. *Id.*

81. Newton introduced the concept of artificial satellites in 1686. Amazingly, for the next 250 years the idea was forgotten. *See* ROGER R. BATE, DONALD D. MUELLER, & JERRY E. WHITE, FUNDAMENTALS OF ASTRODYNAMICS 151 (1971). At the close of the twentieth century Newton's discoveries resulted in a $60 billion satellite industry. *See* LOU DOBBS, SPACE: THE NEXT BUSINESS FRONTIER 58 (2001) (providing a detailed discussion on the profits of space exploration). *See also* DR. BEN BOVA, FAINT ECHOES, DISTANT STARS 194 (2003) (demonstrating that Newton's laws of motion and gravity enabled greater understanding of comets).

82. In Book I of *The Principia*, Newton provides the three laws of motions as follows: First, everything continues in its state of rest or uniform motion in a straight line unless it is compelled to change that state by forces impressed upon it. Second, the rate of change of momentum is proportional to the force impressed and is in the same direction as that force. Third, to every action, there is always opposed an equal reaction. *See* BATE, MUELLER & WHITE, *supra* note 82, at 3.

83. BRIAN GREENE, THE FABRIC OF THE COSMOS 8 (2004).

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

85. *Id.* at 455-56. *Olmstead* was the first electronic surveillance case to come before the Court.

defined by local property law.[86] The result was that Fourth Amendment privacy law was inextricably bound and limited to common law trespass to property. The requirement of a physical trespass under common law became the reference point and background for Fourth Amendment privacy rights.

Following *Olmstead* the Court decided *Goldman v. United,*[87] *On Lee v. United States,*[88] and *Silverman v. United States.*[89] The *Goldman, On Lee,* and *Silverman* decisions formed the *Olmstead* progeny by affirming the principle that a physical trespass must be present to constitute a violation of Fourth Amendment privacy law protections. The collective impact of these decisions reduced Fourth Amendment privacy rights to an absolute and rigid approach similar to the Newtonian perspective of an absolute and unchanging universe. Nonetheless, Justice Murphy, in his dissent in *Goldman*, lodged the kernel for possible change when he projected that modern scientific achievements demonstrate the government's intrusion into a person's home could occur in the absence of a physical trespass.[90] He stated, "Every unjustifiable intrusion by the government upon the privacy of the individual, whatever the means employed, must be deemed a violation of the Fourth Amendment."[91] In Justice Murphy's view, it is immaterial where the intrusion occurs; moreover, a physical trespass is not necessary for an invasion of Fourth Amendment privacy rights.

Twenty-five years after Justice Murphy's dissent in *Goldman*, his rationale served as the basis for the *Katz* decision, which overruled *Olmstead.* Technological developments challenged the legitimacy of ensconcing Fourth Amendment privacy rights in a rigid common law property trespass analysis.[92] The *Olmstead* perspective in Fourth Amendment privacy rights and the Newtonian perspective in theoretical physics both proposed rigid and absolute notions lacking fluidity. In turn, the *Katz* decision rescued Fourth Amendment privacy law and Einstein's discoveries redeemed theoretical physics.

---

86. *Id.* at 466.

87. Goldman v. United States, 316 U.S. 129 (1942).

88. *See* On Lee v. United States, 343 U.S. 747 (1952). Other cases have also rejected a Fourth Amendment claim based on misplaced confidence and have indicated that we necessarily assume a risk when we speak. Lopez v. United States, 373 U.S. 427 (1963); Hoffa v. United States, 385 U.S. 293 (1966); Berger v. New York, 388 U.S. 41 (1967).

89. *See* Silverman v. United States, 365 U.S. 505 (1961); *see also* Clinton v. Virginia, 377 U.S. 158 (1964).

90. Goldman v. United States, 316 U.S. 129, 136 (1940) (Murphy, J., dissenting).

91. *Olmstead,* 277 U.S. at 478.

92. The Court has also been compelled to examine the relationship between common law torts law and constitutional law. *See* DeShaney v. Winnebago County Dep't of Social Services, 489 U.S. 189 (1989) (the Court refused to elevate tort law to a federal constitutional level).

III. EINSTEIN'S RELATIVITY AND THE *KATZ* DECISION

When Albert Einstein offered his scientific discoveries at the dawn of the nineteenth century the study of theoretical physics was in chaos. Newton's discoveries, over two hundred years before Einstein, were at odds with the discoveries of James Clerk Maxwell and others who had made tremendous scientific achievements in electromagnetism. Maxwell explained the phenomenon of light and magnetism in mathematical terms and characterized electromagnetism as waves. Relying upon the works of Maxwell and others, Einstein later rejected Newton's concept of "absolute space-time."[93] Einstein unified the fields of mechanics and electromagnetism and proved that massive bodies cause space-time to curve and gravity is a manifestation of the curvature of space-time.[94]

An illustration of Einstein's theory is depicted in the hypothetical involving the use of a rubber sheet, a pebble, and a bowling ball. The rubber sheet represents space and the bowling ball represents Earth. The bowling ball when placed on the rubber sheet causes an indentation in the rubber sheet and the pebble would slant towards the bowling ball. The slant represents gravity, which in Einstein's view, arises from space and time curvature caused by matter.[95] According to Einstein, the universe is a place which is neither absolute nor static. Einstein verified that the universe is interactive and fluid and that space is more than a mere background; rather, it is an active participant.

Einstein further proved that the speed of light, and all electromagnetic radiation, is always the same irrespective of any particular perspective.[96] Einstein proved, contrary to the Aristotelian/Ptolemaic system of the universe, that there is no special frame of reference, nor does one frame of reference have an advantage over another with respect to the speed of light or absolute

---

93. *See* ALBERT EINSTEIN, ESSAYS IN SCIENCE 37 (1934) (indicating that Einstein's general theory of relativity divested space and time of the absoluteness described by Newton).

94. ALBERT EINSTEIN, SIDELIGHTS ON RELATIVITY 10-22 (1983).

95. ZE'EV ROSENKRANZ, THE EINSTEIN SCRAPBOOK 41 (12002) (indicating, "Matter tells space how to bend; space tells matters how to move."); *see also* LAWRENCE M. KRAUSS, THE PHYSICS OF STAR TREK 34 (1995) (explaining how curvature of space time creates both a paradox and fascinating observations about space travel).

96. GORDON KANE, SUPERSYMMETRY: UNVEILING THE ULTIMATE LAWS OF NATURE 6 (2000) (indicating that special relativity has two postulates: the laws of nature are the same regardless of where they are formulated or tested, and the speed of light in vacuum . . . is the same regardless of the condition under which it is measured).

motion.[97] For example, if a rocket ship (ship #1) traveled in the direction of the sun and another rocket ship (ship #2) traveled at the same speed in the opposite direction, away from the sun, it would seem that the light from the sun would take longer to reach ship #2. Einstein proved that the speed of light is constant and that it would reach both rockets at the same speed, which is 186,000 miles per second or 670 million miles per hour. Therefore, the speed of approach (ship #1) or recession (ship #2) is irrelevant, because the speed of light is always the same.[98] The laws of physics are therefore independent of specific space-time coordinates and applicable to all frames of reference.

Einstein's refinement of theoretical physics is similar to the impact that the 1967 Supreme Court case of *Katz v. United States*[99] had in defining Fourth Amendment privacy rights. The *Katz* decision marked a revolution in Fourth Amendment privacy rights with the genesis of an alternative "search" doctrine. In *Katz*, the defendant was suspected of transmitting wagering information by telephone in violation of federal law.[100] The police installed a listening device outside a public telephone booth where defendant placed his calls to overhear the defendant's calls.[101] The *Katz* Court held that the government's conduct constituted a search because the government invaded the individual's reasonable expectation of privacy.[102] Justice Harlan, in his concurring opinion, provided the test to replace the physical trespass requirement previously upheld in *Olmstead* and its progeny.[103] Justice Harlan formulated a reasonable expectation of privacy test to determine what constitutes a search.[104] In Justice Harlan's view, first, a person must exhibit an actual (subjective) expectation of privacy and, second, the individual's subject expectation of privacy must be "one that society [objective] is prepared to recognize as reasonable."[105]

The *Olmstead* trespass standard for analyzing Fourth Amendment privacy issues succumbed to the "subjective-objective" analysis in Harlan's concurring opinion. The *Katz* Court indicated that the "constitutionally protected area" paradigm deflected from the proper position that the "Fourth amendment protects people not places."[106] The right of privacy is the right to be left alone

97. GIBILISCO, *supra* note 74, at 3-4.
98. *See* GREENE, *supra* note 26, at 32.
99. Katz v. United States, 389 U.S. 347 (1967).
100. *Id.* at 348-54.
101. *Id.*
102. *Id.* at 359.
103. *Id.* at 362 (Harlan, J., concurring).
104. *Id.* at 361-62 (Harlan, J., concurring).
105. *Id.* at 361 (Harlan, J., concurring).
106. *Id.* 350-51.

by other people, and what a person seeks to preserve as private may have Fourth Amendment protection.[107] *Katz* dispelled the *Olmstead*-Newtonian type perspective of a detached-absolutism uniformly entrenched in common law trespass. In the *Olmstead*-Newtonian-type world, the property law of trespass was absolute and stood apart from other events. Irrespective of the individual conduct or technological advancements, the *Olmstead*-Newtonian perspective was that a Fourth Amendment violation only occurred when the government committed a physical trespass as defined by local property law or a "constitutionally protected area." *Katz* altered this rigid test similar to Einstein altering Newtonian physics. Post-Einstein space was perceived as an active participant rather than a background, and post-*Katz* Fourth Amendment privacy rights became a more dynamic or fluid quantity independent of trespass law.[108]

The "subjective-objective" analysis in *Katz* is reminiscent of Einstein's discoveries concerning the speed of light, and Einstein's reference to light speed could be extended to the logic in the Court's decision in *Katz*. The *Katz* decision embraced two discrete questions: first, whether the individual's conduct exhibited an "actual (subjective) expectation of privacy," and second, whether that subjective expectation of privacy is "one that society (objective) is prepared to recognize as reasonable." The *Katz* subjective-objective analysis is similar to the speed of light because it discounts individual idiosyncrasies or the location of the individual. Just as the speed of light is the same in all directions, the *Katz* test is the same whether an individual is on land, at home or in a public place. Dissimilar from the *Olmstead* trespass theory, the *Katz* subjective-objective analysis is independent of the location of the individual. Consequently, both Einstein's relativity and *Katz*'s Fourth Amendment privacy rights perpetuate an egalitarian and objective sphere of activities.

IV. CHALLENGES AHEAD

Katz's impact on Fourth Amendment privacy rights is parallel to Einstein's relativity theories impact on theoretical physics because both *Katz* and relativity altered prevailing perceptions and methodologies, and ushered

---

107. *Id.*

108. For an insightful analysis of Newton's and Einstein's views as applicable to constitutional analysis, *see* Laurence H. Tribe, *The Curvature of Constitutional Space: What Lawyers Can Learn from Modern Physics*, 103 HARV. L REV. 1, 4-7 (1989) (exploring the paradigm shifts in theoretical physics to illustrate the need for a revised constitutional jurisprudence).

forth continuing challenges. At the dawn of the new millennium, social progress,[109] the Internet,[110] and technology have ushered forth a magnitude of privacy concerns and expanded the discussions of Fourth Amendment privacy rights.[111] The Court, for example, has refused to recognize a Fourth Amendment right to privacy in: (1) bank records[112]; (2) automobile areas when a person fails to claim property or possessory interests[113]; (3) numbers dialed on one's telephone[114]; (4) open fields or areas outside one's curtilage[115]; (5) packages or "effects" opened by a private individual not acting as a government agent[116]; (6) photographs taken from navigable airspace[117]; (7) trash bags placed on the curb[118]; (8) email messages sent to an AOL chat room[119]; and (9) when a person rents a locker and fails to pay the storage and the rental facility has a lien.[120] Conversely, the Court has upheld Fourth Amendment privacy rights in the home,[121] containers in cars,[122] beeper

109. Privacy rights engulf a multitude of issues involving arrest and conviction records, bank and financial records, cable television, computer security and crime, credit reporting and investigation, criminal justice information systems, electronic surveillance, employment records, government information about individuals, identity theft, insurance records, library records, mailing lists, medical records, polygraphs for employment, privileged communications, social security numbers, student records, tax records, telephone records, employment services and testing (urinalysis, genetic, and blood test), and wiretaps. *See* ROBERT ELLIS SMITH, COMPILATION OF STATE AND FEDERAL PRIVACY LAWS (2002).

110. For a discussion on Internet privacy, *see* In re Pharmatrak, Inc Privacy Litigation, 220 F. Supp.2d 4 (D. Mass. 2002); Smyth v. Pillsbury, Co. 914 F. Supp. 97 (E.D. Pa. 1996); Konop v. Hawaiian Airlines, Inc., 302 F.3d 868 (9th Cir. 2002); Pamela Samuelson, *Privacy as Intellectual Property?* 52 STAN. L. REV. 1125 (2000); Julie E. Cohen, *Examined Lives: Informational Privacy and the Subject as Object*, 52 STAN. L. REV. 1373 (2000); DAVID M. DOUBILET & VINCENT I. POLLEY, EMPLOYEE USE OF THE INTERNET AND E-MAIL: A MODEL CORPORATE POLICY 2002; R. BLANPAIN & M. COLUCCI, THE IMPACT OF THE INTERNET AND NEW TECHNOLOGIES ON THE WORKPLACE (2000). For an in-depth discussion of the connection between the Internet and privacy, *see* DOUG ISENBERG, THE GIGA LAW GUIDE TO INTERNET LAW 151-02 (2002).

111. Symposium, *The Effect of Technology on the Fourth Amendment Analysis and individual Rights*, 72 MISS. L. J. 1 (2002).

112. United States v. Miller, 425 U.S. 435 (1976).

113. Rakas v. Illionis 439 U.S. 128 (1978).

114. Smith v. Maryland, 442 U.S. 735 (1979).

115. Oliver v. United States, 466 U.S. 170 (1984).

116. United States v. Jacobsen, 466 U.S. 109 (1984).

117. Dow Chemicals v. United States, 476 U.S. 227 (1986).

118. California v. Greenwood, 468 U.S. 35 (1988).

119. United States v. Charbonneau, 979 F. Supp. 1177 (S.D. Ohio 1997).

120. United States v. Poulsen, 41 F.3d 1330 (1994).

121. Payton v. New York, 445 U.S. 573 (1980).

122. United States v. Ross, 465 U.S. 798 (1982).

monitoring in a home when the beeper reveals information inconspicuous to visual surveillance,[123] and heat emission from a home.[124]

The result is an absence of a bright line as to what constitutes an invasion of privacy or search in violation of the Fourth Amendment .[125] For example, in *O'Connor v. Ortega*, the Court was presented with whether a person has a reasonable expectation of privacy in the workplace.[126] It stated that whether a public employee has a Fourth Amendment privacy right, "depends on the context . . . and requires balancing the employee's legitimate expectation of privacy against the government's need for supervision."[127] Technological development will continue to distend the *Katz* two-prong objective-subjective analysis because privacy is linked to whether an individual has a reasonable expectation of privacy. Such expectations are under enormous tension and present concerns about whether Fourth Amendment Privacy rights can keep pace with technological development.

Perhaps the *Katz* decision left Fourth Amendment privacy law where Einstein's discoveries left theoretical physics.[128] The crux of modern physics at the dawn of the twentieth century developed into two separate and incompatible theories: relativity and quantum theory. The former explains the movement of terrestrial bodies, while the latter describes the behavior of atomic and subatomic particles.[129] The theories are incompatible and have resulted in a scientific schism for theoretical physicists, wherein there are laws to define the subatomic world and a different set of laws defining the non-subatomic world.[130]

---

123. United States v. Karo, 468 U.S. 705 (1984); *compare* United States v. Knotts, 460 U.S. 276 (1983).

124. Kyllo v. United States, 533 U.S. 27 (2001).

125. For a discussion of bright-line tests in the Fourth Amendment, *see* Omar Saleem, *The Age of Unreason: The Impact of Reasonableness, Increased Police Force, and Colorblindness on Terry "Stop and Frisk"*, 50 OKLA. L. REV. 451,463-64 (1997).

126. O'Connor v. Ortega, 480 U.S. 715, 717 (1987).

127. *Id.*

128. This statement paraphrases one made by Senator Leahy who stated new technologies have "left communications privacy laws where Einstein's insight left Newtonian physics." Michael S. Leib, *E-Mail and the Wiretap Laws: Why Congress Should Add Electronic Communication to Title III's Statutory Exclusionary Rule and Expressly Reject A "Good Faith" Exception*, 34 HARV. J. ON LEGIS. 393, 403 (1997).

129. LAWRENCE M. KRAUSS, COSMOLOGICAL ANTIGRAVITY 88 (2002).

130. LEE SMOLIN, THREE ROADS TO QUANTUM GRAVITY 3 (2001) (explaining how quantum theory was invented to explain Newtonian physics and general relativity explains space and time. According to the author, ". . . general relativity breaks fails to explain the behavior of atoms and molecules and quantum theory explains the behavior of atoms, but is incompatible with descriptions of space and time).

Physicists and Fourth Amendment scholars are at a crossroad. Physicists struggle to do what Einstein failed to do, namely, bridge the gap between relativity and quantum mechanics via a unifying "theory of everything."[131] Within such a paradigm mathematics could be used to predict events in the physical universe.[132] Physicists, however, have failed to construct and implement such a theory and at best are struggling with string theory. Similarly, Fourth Amendment privacy law, rested in the U.S. Constitution, is confronted with tremendous technological development.[133] The challenge is whether the *Katz* analysis will effectively balance individual Fourth Amendment privacy rights against the government's legitimate need for information in a world in which technological developments are expanding exponentially.

131. *See* Alan Boyle, MSNBC.com, *Einstein's Revolution Enters Second Century*, *available at* http://www.msnbc.msn.com/id/7327050/?GT1=6428 (last visited Mar. 21, 2007) (discussing how Einstein's accomplishments continue to spark innovations 100 years later).

132. HAWKIN, *supra* note 25, at 155-56.

133. The Constitution is the fundamental source of U.S. jurisprudence because it defines the parameters of all legal principles and rules in the U.S. legal system. *See* JOHN MAKIDISI, ISLAMIC PROPERTY LAW 8 (comparing the U.S. fundamental source of law with the Islamic fundamental sources which include the Quran and sunna).