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The Marketplace of Ideas is in Chaos. Chaos Theory Would Like a Word

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THE MARKETPLACE OF IDEAS IS IN CHAOS. CHAOS THEORY WOULD LIKE A WORD

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ABSTRACT

The marketplace of ideas is the Supreme Court's dominant tool for rationalizing expansive First Amendment safeguards. The model, however, is fundamentally flawed. Enlightenment-based assumptions about truth and human rationality that justices installed into the theory's foundations have been criticized by scholars and, in the era of powerful algorithms and generative AI, are becoming even more suspect. The space is in a state of chaos. Perhaps chaos theory can help. The theory provides a lens through which to revise marketplace theory and therefore re-examine First Amendment free-expression rationales. Chaos theory identifies that Enlightenment-era positivistic, reductionist thinking fails to account for variables and does not allow for linear outcomes. A chaos-infused marketplace accounts for human diversity and revises truth assumptions.

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No one has ever seen the marketplace of ideas. Despite justices' efforts to describe a generally ordered space for democratic discourse, the marketplace is an imagined space, with shapes and contours that were conjured in jurists' and thinkers' minds and described to others. The marketplace of ideas, in this line of thinking, shares more in common with C.S. Lewis's Narnia or J.R.R Tolkien's Middle Earth than the Grand Canyon or Niagara Falls.[1] We can go to the Grand Canyon and gaze at its breathtaking depths or hear the deafening roar of standing near Niagara Falls, but we can't experience the conceptual marketplace of ideas with our senses any more than we can go beyond Lewis's and Tolkien's written words to visit the spaces they imagined and described. Words are all we have when it comes to the marketplace of ideas. This crucial fact about the space's nature helps highlight often-ignored chaotic elements within the Supreme Court's most powerful model for rationalizing expansive free-expression safeguards.[2]

Of course, the imagined nature of the marketplace of ideas does not diminish its importance; it merely contributes to its tendency toward chaos. The marketplace constructs a powerful set of rationales for why we have freedom of expression. Those rationales for a generally open exchange of ideas, which rely on certain understandings of truth and human rationality, manifests in powerful ways in the real world. We have created an imagined space that directs real decisions about freedom of expression, something that is both a fundamental human right and an indispensable requirement of democratic society. The First Amendment's promises of freedom of expression have essentially come to be built upon the marketplace's assumptions. The Supreme Court concluded as much in *Red Lion Broadcasting Co. v. FCC* in 1996, reasoning, "[i]t is the purpose of the First Amendment to preserve an uninhibited marketplace of ideas in which truth will ultimately prevail."[3]

While the marketplace approach has become the Supreme Court's dominant tool for rationalizing expansive free-expression safeguards, justices have rarely

1. *See* C.S. LEWIS, THE LION, THE WITCH, AND THE WARDROBE, at i (Macmillan Pub. Co. eds., 1950); J.R.R. TOLKIEN, THE HOBBIT, Preface (1966) (for more about the imagined worlds they created); *See also Grand Canyon National Park*, NAT'L PARK SERV., https://www.nps.gov/grca/index.htm [https://perma.cc/V3GT-TB9A]; *Niagara Falls State Park*, https://www.niagarafallsstatepark.com/ [https://perma.cc/3PJG-PVAH] (for more about these unique spaces).

2. *See* Columbia Broad. Sys., Inc. v. Democratic Nat'l Comm., 412 U.S. 94, 144 (1973) (Brennan, J., dissenting) (stating one of the marketplace theory's crucial architects, Justice Brennan's role in marketplace theory). *See also* C. EDWIN BAKER, HUMAN LIBERTY AND FREEDOM OF SPEECH 3 (1989); FREDERICK SCHAUER, FREE SPEECH: A PHILOSOPHICAL ENQUIRY 15 (1982) (regarding the place marketplace theory holds in interpreting the First Amendment).

3. 395 U.S. 367, 390 (1969).

questioned the theory's assumptions.[4] What if justices' imaginations of the space are incorrect? Much is at stake when the Court builds expansive First Amendment free-expression safeguards on assumptions about the nature of an imagined space. Essentially, the weight of democratic discourse is on the marketplace's assumptions. Can the theory and its assumptions bear the significant weight justices have placed upon it? That weight is only increasing. New technologies have fundamentally altered the way people encounter ideas and others, making that question more difficult to answer. Powerful corporate algorithms have redirected the flow of ideas, sorting and moving people and information into likeminded streams.[5] At the same time, increasingly powerful AI tools, particularly OpenAI's ChatGPT and Google's Bard, portend to do even more to alter the information environment as their outputs further enmesh non-human communicators into human discourse.[6] Bots, algorithms, and social media tools, taken together, have also increased the power and influence of misinformation and disinformation, and are fueling conspiracy theories.[7] The crucial, imagined marketplace is increasingly characterized by chaos. Technological and social shifts would seem to fundamentally undermine the marketplace of ideas, as it has been imagined and described. Of course, many scholars have concluded technological change has had nothing to do with the marketplace approach's failures to accurately construct a space for democratic

4. W. Wat Hopkins, *The Supreme Court Defines the Marketplace of Ideas*, 73 JOURNALISM & MASS COMMC'N Q. 40, 40 (1996).

5. *See* Itai Himelboim, Stephen McCreery & Marc Smith, *Birds of a Feather Tweet Together: Integrating Network and Content Analyses to Examine Cross-Ideology Exposure on Twitter*, 18 J. COMPUT.-MEDIATED COMMC'N 154, 166–71 (2013); W. Lance Bennett & Shanto Iyengar, *A New Era of Minimal Effects? The Changing Foundations of Political Communication*, 58 J. COMMC'N 707, 720–22 (2008); MANUEL CASTELLS, THE RISE OF THE NETWORK SOCIETY 2–3 (2d ed. 2000) (for more about how information flows and communities form in networked environments).

6. *See* Stephen Shankland, *Why We're Obsessed With the Mind-Blowing ChatGPT AI Chatbot*, CNET (Feb. 19, 2023), https://www.cnet.com/tech/computing/why-were-all-obsessed-with-the-mind-blowing-chatgpt-ai-chatbot/ [https://perma.cc/77V6-A884]; Cade Metz, *What Makes A.I. Chatbots Go Wrong?*, N.Y. TIMES (Mar. 29, 2023), https://www.nytimes.com/2023/03/29/technology/ai-chatbots-hallucinations.html [https://perma.cc/CK7F-NBR7]; Jyoti Narayan et al., *Elon Musk and Others Urge AI Pause*, REUTERS (Apr. 5, 2023), https://www.reuters.com/technology/musk-experts-urge-pause-training-ai-systems-that-can-outperform-gpt-4-2023-03-29/ [https://perma.cc/J89V-GS8A] (regarding the potentially disruptive nature of emerging generative AI technologies).

7. *See* Tiffany Hsu & Stuart A. Thompson, *Disinformation Researchers Raise Alarms About AI Chatbots*, N.Y. TIMES (Feb. 8, 2023), https://www.nytimes.com/2023/02/08/technology/ai-chatbots-disinformation.html [https://perma.cc/P68F-RP52]; Will Knight, *AI Can Write Disinformation Now—And Dupe Human Readers*, WIRED (May 24, 2021), https://www.wired.com/story/ai-write-disinformation-dupe-human-readers/; James Vincent, *Google and Microsoft's Chatbots Are Already Citing One Another in a Misinformation Shitshow*, THE VERGE (Mar. 22, 2023), https://www.theverge.com/2023/3/22/23651564/google-microsoft-bard-bing-chatbots-misinformation [https://perma.cc/2966-NNT3], for more information about the impacts these new tools are having on the flow of ideas.

discourse. They have emphasized that the marketplace of ideas, as justices have constructed it, has never operated as it was intended.[8]

This article examines the crucial question of whether the marketplace of ideas approach, as indispensable as it has become for rationalizing expansive freedom of expression protections, fails to properly describe the space it seeks to define. To do so, this article draws from chaos theory, asking the central question: What if the marketplace of ideas has always been *defined by chaos*? What if, in their efforts to create certainty, generations of justices and legal thinkers created an imagined space, complete with foundational assumptions and carefully conjured maps, that was never as orderly and mappable as was assumed? Crucially, jurists and legal scholars have romanticized Justice Holmes's dissent in *Abrams v. United States*.[9] They have compared it to John Milton's *Areopagtica* and lauded it as a decision for the ages.[10] Justice Holmes's dissent, however, was unsupported and incomplete.[11] It left us without any theoretical lens through which to understand and implement the marketplace concept. Over time the Court sought to complete what Justice Holmes started by attaching Enlightenment assumptions to the foundations of the marketplace concept.[12] These ideas, however, are antithetical to Justice Holmes's legal and personal philosophies. Justice Holmes rejected absolute truth, questioned human rationality, and characterized law as an illogical, nonlinear process and the legal profession as being in the business of prediction.[13]

8. *See* BAKER, *supra* note 2, at 3-4; Jerome Barron, *Access to the Press. A New First Amendment Right*, 80 HARV. L. REV. 1641, 1641 (1967); Derek E. Bambauer, *Shopping Badly: Cognitive Biases, Communications, and the Fallacy of the Marketplace of Ideas*, 77 U. COLO. L. REV. 649, 653 (2006), for examples of legal scholars' concerns with the foundational assumptions of marketplace theory.

9. 250 U.S. 616, 624-31 (1919) (Holmes, J., dissenting); *See* Barron, *supra* note 8, at 1643; Vincent Blasi, *Holmes and the Marketplace of Ideas*, 2004 SUP. CT. REV. 1, 2 (2004); Felix Frankfurter, *Twenty Years of Mr. Justice Holmes' Constitutional Opinions*, 36 HARV. L. REV. 909, 923 (1923), for information about how Justice Holmes's dissent was received (referring to Justice Holmes' dissent in *Abrams* as a decision that "will live as long as the august majesty of English prose has power to thrill").

10. JOHN MILTON, AREOPAGITICA AND OF EDUCATION 51 (George Sabine ed., 1951); Letter from Felix Frankfurter to Oliver W. Holmes (Nov. 26, 1919), *in* HOLMES & FRANKFURTER: THEIR CORRESPONDENCE, 1912-1934, at 76 (Robert M. Mennel & Christine L. Compston eds., 1996).

11. *Abrams*, 250 U.S. at 624-31 (Holmes, J., dissenting). Justice Holmes also did not build on or associate the idea with other thinkers, despite taking part in similar cases the next term. *See* Pierce v. United States, 252 U.S. 239 (1920); Schaefer v. United States, 251 U.S. 466 (1920); Gilbert v. Minnesota, 254 U.S. 325 (1920), for examples. *See also infra* Part III.A.

12. *See* New York Times v. Sullivan, 376 U.S. 254, 269-79 (1964); Lamont v. Postmaster General, 381 U.S. 301, 307-08 (1965) (Brennan, J., concurring); *Red Lion*, 395 U.S. at 390, for examples.

13. Oliver W. Holmes, *The Path of the Law*, 110 HARV. L. REV. 991, 991 (1997). In the article, Justice Holmes explains, "[t]he object of our study, then, is prediction, the prediction of the incidence of the public force through the instrumentality of the courts." In a letter to British jurist

In many ways, Justice Holmes's thinking consistently acknowledged the chaos in the systems people build to create certainty. He challenged his colleagues on the Court to pick any line of reasoning and he would find a way to relate it to the case they were considering.[14] He contended, "[t]he life of the law has not been logic: It has been experience. The felt necessities of the time, the prevalent moral and political theories, institutions of public policy . . . even prejudices which judges share with their fellow-men."[15] He assumed truth would vary for individuals based on their experiences.[16] Now, well into an era characterized by widespread shifts in communication technologies, the fundamentally flawed Enlightenment foundations the Court installed beneath its primary tool for rationalizing expansive protections for freedom of expression are wearing and breaking.[17] Marketplace theory must be revised to acknowledge the chaos inherent in democratic discourse. The world, as Justice Holmes was apt to point out, is not quite as orderly as is often believed.[18]

Enlightenment thinkers saw order in the world. When they did not see order, they constructed ways to create it, often manipulating reality and pushing aside subtleties. Galileo Galilei and Francis Bacon, influential figures in Enlightenment thought, contributed objective, detached empirical methods to "measure what is measurable and make measurable what is not so."[19] Enlightenment thinkers ignored the chaos. They underestimated and downplayed variables that seemed unimportant or that were too difficult to measure. Galileo's and Bacon's fellow Enlightenment thinkers, such as Milton and John Locke, applied these foundational assumptions about the physical world to human liberty, emphasizing truth could be discovered and falsity

Frederick Pollock, Justice Holmes questioned human rationality, concluding "[p]eople are born fools and damned for not being wiser." *See* Letter from Oliver W. Holmes to Frederick Pollock (Apr. 2, 1926), *in* THE ESSENTIAL HOLMES 42-43 (Richard A. Posner ed., 1992).

14. LOUIS MENAND, THE METAPHYSICAL CLUB 340 (2001).

15. OLIVER WENDELL HOLMES, JR., THE COMMON LAW 1 (1881).

16. Oliver Wendell Holmes, *Natural Law*, 32 HARV. L. REV. 40, 41 (1918).

17. *See* Jared Schroeder, *Fixing False Truths: Rethinking Truth Assumptions and Free-Expression Rationales in the Networked Era*, 29 WM. & MARY BILL RTS. J. 1097, 1141-42 (2021); Robert L. Kerr, *From Holmes to Zuckerberg: Keeping the Marketplace-of-Ideas Theory Viable in the Age of Algorithms*, 24 COMMC'N L. & POL'Y 477, 481-84 (2019); Jessica Maddox & Jennifer Malson, *Guidelines Without Lines, Communities Without Borders: The Marketplace of Ideas and Digital Manifest Destiny in Social Media Platform Policies*, 6 SOC. MEDIA + SOC'Y 1, 2-8 (2020), for more about the marketplace approach's difficulties in the networked era.

18. *See* Letter from Oliver W. Holmes, Jr. to Harold Laski (May 8, 1918) (on file with Harvard Law School Digital Suite); Letter from Oliver W. Holmes to Frederick Pollock (Apr. 2, 1926), *supra* note 13, at 108; Letter from Oliver W. Holmes to William James (Mar. 24, 1907) (on file with Harvard Law School Digital Suite), for examples of Justice Holmes's consistent rejection of an ordered, absolute-truth-based world.

19. Emilio Prospero et al., *Learning from Galileo: Ventilator-Associated Pneumonia Surveillance*, 186 AM. J. RESPIRATORY & CRITICAL CARE MED. 1308, 1309 (2012).

vanquished when individuals were free to communicate ideas.[20] Difficult-to-account for details, such as access to the space, the nature of truth, and the potential that people make sense of the world differently were dismissed in favor of their one-size-fits-all Enlightenment approach. They created a set of rationales for human liberty that placed immense faith in individual rationality and the discovery of truth.

In 1644, in *Areopagitica,* Milton famously argued, "[l]et her and falsehood grapple; who ever knew Truth put to the worse in a free and open encounter?"[21] Many of those who wrote the *Declaration of Independence* and the *Constitution* in the eighteenth century were children of the Enlightenment.[22] They read and ascribed to the era's assumptions regarding an orderly, measurable world and an understanding of human nature that was fundamentally rational in its experience in the world.[23] The framers wrote these assumptions about certainty and order into the founding documents and, influenced by these documents and the Enlightenment assumptions that were baked into them, Supreme Court justices gradually installed them into the very foundations of the nation's free expression regime in the form of the marketplace of ideas theory.[24] The marketplace approach's foundational assumptions of an orderly, rational communication environment have persisted within the modern Court, as justices have used such building blocks to rationalize increasingly expansive protections for communication.[25] Indeed, marketplace theory is the Court's primary tool for explaining how it understands free expression.[26]

A free-expression regime based on these assumptions, however, carries substantial theoretical baggage. These concepts were attacked by Justice Holmes

20. *See* MILTON, *supra* note 10, at 45; JOHN LOCKE, THE SECOND TREATISE OF GOVERNMENT AND A LETTER CONCERNING TOLERATION 35 (2002); JEAN-JACQUES ROUSSEAU, DISCOURSE ON POLITICAL ECONOMY AND THE SOCIAL CONTRACT 32-34 (Christopher Betts ed., 1994).

21. MILTON, *supra* note 10, at 50 (arguing against England's licensing requirements, which required approval before a person could publish).

22. R. Randall Kelso, *The Natural Law Tradition on the Modern Supreme Court: Not Burke, but the Enlightenment Tradition Represented by Locke, Madison, and Marshall*, 26 ST. MARY'S L.J. 1051, 1074 (1995); Steven D. Smith, *Recovering (from) Enlightenment*, 41 SAN DIEGO L. REV. 1263, 1265 (2004).

23. Smith, *supra* note 22, at 1265.

24. *Id.* at 1286.

25. *See*, Snyder v. Phelps, 562 U.S. 443, 461 (2011); First Nat'l Bank of Boston v. Bellotti, 435 U.S. 765, 784-85 (1978); Va. State Bd. of Pharmacy v. Va. Citizens Consumer Council, 425 U.S. 748, 773 (1976); Brown v. Ent. Merchants, 564 U.S. 786, 804 (2011); United States v. Alvarez, 567 U.S. 709, 729-30 (2012); *see also* McConnell v. FEC, 540 U.S. 93, 258-59 (2003) (Scalia, J., concurring in part and dissenting in part) ("The premise of the First Amendment is that the American people are neither sheep nor fools. . . . Given the premises of democracy, there is no such thing as *too much* speech.").

26. RICHARD A. SCHWARZLOSE, THE MARKETPLACE OF IDEAS: A MEASURE OF FREE EXPRESSION 33 (1989); BAKER, *supra* note 2, at 3.

before, during, and after he wrote the marketplace approach into the Court's vocabulary.[27] An Enlightenment-funded conceptualization of free expression assumes an ordered, or orderable, world where truth is generally universal and shared by all, and individuals are for the most part rational. Absent such assumptions, the entire argument that "the ultimate good desired is better reached by free trade in ideas – that the best test of truth is the power of the thought to get itself accepted in the competition of the market"[28] or that "more speech, not enforced silence"[29] is the best path, would be foolish. Why contend more speech, rather than less, is the best course if there is no expectation people are capable of making sense of the world around them or governing themselves? Scholars have long questioned whether truth should be understood as generally universal and the same for all, as Enlightenment thinkers did.[30] Others have identified inequalities regarding who can access the marketplace in order to communicate their ideas and that not all ideas reach audiences with the same frequency and intensity.[31] Increasing polarization and fragmentation, the emergence of AI tools that have the power to overwhelm the marketplace with a single idea and drown out human contributions to discourse, and the Court's equivocation of money and speech, have all undermined the marketplace's foundational assumptions.[32] These seemingly minor variables that thinkers ignored in past generations have grown exponentially in the twenty-first century. The networked communication environment has challenged the idea that Enlightenment-founded order is the best basis for rationalizing free expression in democratic society. Historian David Hollinger captured these concerns when he highlighted, "[t]he Enlightenment, it seems, has led us to suppose that all

27. Letter from Oliver W. Holmes to Frederick Pollock (Apr. 2, 1926), *supra* note 13, at 42-43; *Abrams*, 250 U.S. at 630 (Holmes, J., dissenting); Felix S. Cohen, *The Holmes-Cohen Correspondence*, 9 J. HIST. IDEAS 3, 3 (1948).

28. *Abrams*, 250 U.S. at 630 (1919) (Holmes, J., dissenting).

29. Whitney v. Cal., 274 U.S. 357, 377 (1927) (Brandeis & Holmes, J. J., concurring).

30. *See* BAKER, *supra* note 2, at 12; Richard Rorty, *The Enlightenment and 'Postmodernism'*, *in* WHAT'S LEFT OF ENLIGHTENMENT 24-25 (Keith Michael Baker & Peter Hanns Reill eds., 2001); G.W.F HEGEL, PHENOMENOLOGY OF THE SPIRIT 46 (Oxford University Press ed. 1977); HANS-GEORG GADAMER, TRUTH & METHOD 269 (Joel Weinsheimer & Donald G. Marshall trans., 2d rev. ed. 2004).

31. Robert Schmuhl & Robert Picard, *The Market Place of Ideas*, *in* THE PRESS 141, 145-46 (Geneva Overholser & Kathleen Hall Jamieson eds., 2005); Stanley Ingber, *The Marketplace of Ideas: A Legitimizing Myth*, 1984 DUKE L.J. 1, 15 (1984); Barron, *supra* note 8, at 1641-43.

32. Jared Schroeder, *Marketplace Theory in the Age of AI Communicators*, 17 FIRST AMEND. L. REV. 22, 60-61 (2018); Molly K. McKew, *How Twitter Bots and Trump Fans Made #ReleasetheMemo Go Viral*, POLITICO (Feb. 4, 2018), https://www.politico.com/magazine/story/2018/02/04/trump-twitter-russians-release-the-memo-216935 [https://perma.cc/U7GA-SVMM]; Kate Starbird, *Disinformation's Spread: Bots, Trolls, and All of Us*, NATURE (July 24, 2019), https://www.nature.com/articles/d41586-019-02235-x [https://perma.cc/68J8-AWLP].

people are pretty much alike."[33] He found it "blinded us to uncertainties of knowledge by promoting an ideal of absolute scientific certainty."[34]

Chaos theory contends this boiling down of human behavior into a monolithic sameness is fundamentally problematic. Perhaps twenty-first-century technologies are the catalysts for this realization that marketplace theory, as conceived and implemented as a rationale for free expression, is fundamentally inadequate and requires revision. This article puts forth chaos theory as a novel, relatively unexplored lens to re-examine and revise freedom-of-expression rationales in the twenty-first century. Chaos theory has had almost no role in First Amendment jurisprudence or scholarship. In fact, First Amendment theory, much as physics and other sciences, has provided little attention to the difficult-to-explain phenomena.[35] Such aberrations, often dismissed as "noise" by scientists, generally have not fit into the orderly world of social—or physical—science research.[36] Similarly, they have found little place in First Amendment theory, where the powers of precedent and judicial decision-making have encouraged courts to brush aside concerns that the world is not as ordered as is often assumed. In other words, the courts have ignored seemingly small aberrations in marketplace theory which have slowly pulled us off course. Meteorologists have found seemingly small factors, even to the millionths place, can make weather forecasts completely incorrect.[37] The same can be said for marketplace assumptions in the twenty-first century. Problems within the original model, alongside changes in technology and society, have gradually introduced more and more chaos into the trajectory of First Amendment precedents.

Chaos theory lives in the unpredictability of phenomena. It does not contend there is no shared truth, as perhaps postmodern thinkers might assume, but that Enlightenment-funded approaches fail to acknowledge fundamental problems within the models people create. In regard to marketplace theory, efforts to construct a rational, truth-based conceptual space for discourse neglected certain amounts of "noise" or unpredictability.[38] As marketplace theory struggles to explain free expression during a time of unpredictable change in human discourse in the twenty-first century, this article proposes revising marketplace theory by installing chaos theory's central assumptions as part of the

33. David A. Hollinger, *The Enlightenment and the Genealogy of Cultural Conflict in the United States*, *in* WHAT'S LEFT OF THE ENLIGHTENMENT 9 (Keith Michael Baker & Peter Hanns Reill eds., 2001).

34. *Id.* at 8.

35. JAMES GLEICK, CHAOS: MAKING A NEW SCIENCE 3 (2008).

36. *Id.* at 5; LEONARD SMITH, CHAOS: A VERY SHORT INTRODUCTION 2-6 (2007).

37. GLEICK, *supra* note 35, at 16-22.

38. Warren Smith & Matthew Higgins, *Postmodernism and Popularisation: The Cultural Life of Chaos Theory*, 9 CULTURAL ORG. 93, 94 (2003); Mark J. Roe, *Chaos and Evolution in Law and Economics*, 109 HARV. L. REV. 641, 641 (1996).

foundational rationales for First Amendment safeguards. This article begins by outlining the central assumptions and historical development of chaos theory, particularly in regard to nonlinearity and exponential growth. It follows by identifying the theoretical foundations and precedential development of marketplace theory, as well as legal scholars' criticisms of the theory's assumptions. The article concludes by proposing how conceptual building blocks from chaos theory can be incorporated into the foundational assumptions of marketplace theory to create a more vibrant, relevant rationale for free expression during a time of substantial change in the flow of information in democratic society.

II. MAKING SENSE OF CHAOS

Chaos theory has historically been associated with mathematics.[39] The approach emphasizes how slight changes in conditions can give rise to strikingly great consequences.[40] The theory does not assume natural and social systems are or should be without order.[41] It is not anarchy theory. Instead, the theory contends substantially more unpredictability is present in the systems we use to understand the world around us than traditional theories acknowledge. Scholars also contend chaos increases and becomes more apparent during times of crisis, such as the ongoing revolution in communication technologies that has brought powerful algorithms, social media, and generative AI, like ChatGPT, into the space for democratic discourse.[42] Legal scholar Mark Roe emphasized, "[c]haos theory sees the original conditions deeply affecting us later, even when those original underlying conditions are long since gone."[43] The theory highlights the problems with reductive efforts to systematize and scientize phenomena into measurable, predictable systems. To this end, economics historian David Levy emphasized, "chaos theory is congruous with the postmodern paradigm, which questions deterministic positivism as it acknowledges the complexity and diversity of experience."[44] Chaos theory, however, is not a postmodern approach.[45] The two share common concerns regarding Enlightenment

39. *Chaos Theory*, ENCYC. BRITANNICA (Aug. 17, 2023), https://www.britannica.com/science/chaos-theory [perma.cc/YU26-WDKU].

40. *Chaos Theory*, OXFORD ENG. DICT. (Dec. 2022), https://www.oed.com/view/Entry/30539?redirectedFrom=chaos+theory#eid9817242 [https://perma.cc/72M4-BR9N].

41. SMITH, *supra note* 36, at 2-3; GLEICK, *supra* note 35, at 5-6.

42. THOMAS S. KUHN, THE STRUCTURES OF SCIENTIFIC REVOLUTIONS 77 (2d ed. 1970); Roe, *supra* note 38, at 663.

43. Roe, *supra* note 38, at 663.

44. David Levy, *Chaos Theory and Strategy: Theory, Application, and Managerial Implications*, 15 STRATEGIC MGMT. J. 167, 169 (1994).

45. *See Postmodernism*, STAN. ENCYC. OF PHIL., https://plato.stanford.edu/entries/postmodernism/ [https://perma.cc/75ZT-W8V4], for more about the assumptions of postmodernism.

assumptions about truth and its failure to account for the diversity of human experience.[46] They differ, however, in that chaos theory is aimed at identifying the variables and assumptions that lead the search for truth astray. As mathematician Leonard Smith explained, "[c]haos is important, in part, because it helps us cope with unstable systems by improving our ability to describe, to understand, perhaps even to forecast them."[47]

The theory assumes the systems scholars construct to explain the world undervalue inherent nonlinearity, uncertainty, and unpredictability.[48] The systems fail to account for the "noise."[49] As Smith explained, "[n]oise gives rise to *observational uncertainty*, chaos helps us to understand how small uncertainties can become large uncertainties, once we have a model for the noise."[50] Thus, chaos theory can be understood as a helper theory, which seeks to include the "noise" in the models we create for understanding the world around us. As science historian James Gleick explained, those who ascribe to chaos theory "feel that they are turning back a trend in science toward reductionism, the analysis of systems in terms of their constituent parts. . . . They believe that they are looking for the whole."[51]

Legal scholars have identified substantial "noise" within marketplace theory's foundational assumptions.[52] Before this article examines marketplace theory through the chaos-approach's lens, this section explores the origins of chaos theory, as well as the theory's conceptual building blocks regarding nonlinearity, the butterfly effect, and exponential growth, all with the question of marketplace theory and the crisis of emerging communication technologies in mind.

A. Nonlinearity and the Slaying of Laplace's Demon

Chaos theory is not tied to a certain figure or period.[53] One historian placed its origins in late nineteenth-century physics, though decades passed before scientists addressed nonlinear dynamics as something other than "noise."[54] Scholars in a variety of disciplines, however, agree the creation of Laplace's demon marked a crucial step in what the theory would come to represent.[55] The

46. *Id.*

47. SMITH, *supra* note 36, at 1-2.

48. Euel Elliott & L. Douglas Kiel, *Introduction*, *in* CHAOS THEORY IN THE SOCIAL SCIENCES 1 (L. Douglas Kiel & Euel Elliott eds., 1996).

49. SMITH, *supra* note 36, at 4.

50. *Id.*

51. GLEICK, *supra* note 35, at 5.

52. *See infra* Part III.C.

53. Michael Shermer, *Exorcising Laplace's Demon: Chaos and Antichaos, History and Metahistory*, 34 HIST. & THEORY 59, 61 (1995).

54. *Id.* at 61-62.

55. GLEICK, *supra* note 35, at 14.

"demon" was created by French scholar Pierre-Simon de Laplace in 1814 to support Enlightenment era, Newtonian assumptions about the world and to represent his argument that all phenomena can be traced to previous causes.[56] Laplace contended, given a complete knowledge of all basic building blocks of nature and the forces that act amongst them, the demon could determine every future event.[57] In this sense, Laplace's demon set the ordered, Enlightenment assumptions about scientific processes and human rationality on their highest setting. As Smith explained, "[f]or Laplace's Demon, chaos poses no barrier to prediction."[58] In many ways, Laplace's demon shares assumptions with the Enlightenment-funded marketplace's expectation that truth will vanquish falsity. Both Laplace's creation and the marketplace approach conjure a linear structure in which past events, such as the flow of ideas, lead to predictable outcomes, such as the discovery of truth. In both instances, the model offers an imagined tool for explaining real-life phenomena. Both do so while failing to account for a vast number of variables. Crucially, Laplace's demon was a tool for conveying the assumption that all events *can* be determined from past occurrences.[59] Laplace's creation says nothing about the ability of humans to predict outcomes, something the Enlightenment-funded marketplace concept also fails to account for.[60] Even if scholars accept the possibility of a chaos-free model, it does not mean any such lens for understanding the world exists.

While science has sought to conjure Laplace's creation into existence by constructing models using what is known to predict the unknown, chaos theorists have contributed a series of assumptions that admonish us to account for the inherent unpredictability of phenomena—natural and human. Foremost among these is the concept of *nonlinearity*, which rejects assumptions that the procedural lines identified in models and systems people create can accurately represent reality and predict phenomena, such as weather patterns or judicial precedent.[61] Essentially, Laplace's demon was based on the assumption that all phenomena occur in a linear, therefore predictable, order.[62] Meteorologist Edward Lorenz, the creator of the nonlinearity concept, explained a linear process is consistent and proportional.[63] Linearity tells us that if a person buys

56. Roman Frigg et al., *Laplace's Demon and the Adventures of His Apprentices*, 81 PHIL. OF SCI. 31, 33 (2014).

57. *Id.*

58. SMITH, *supra* note 36, at 3.

59. *Id.*

60. RICHARD GREEN, THE THWARTING OF LAPLACE'S DEMON: ARGUMENTS AGAINST THE MECHANISTIC WORLD-VIEW 14-15 (Richard H. Green ed., 1995).

61. *See* GLEICK, *supra* note 35, at 23-24 for more about the basic assumptions of nonlinearity; *see also* EDWARD N. LORENZ, THE ESSENCE OF CHAOS 161 (1993), for how these understandings have been applied.

62. *See* Frigg et al., *supra* note 56, at 33.

63. LORENZ, *supra* note 61, at 161.

one dozen eggs for a dollar, then buying two dozen eggs will be two dollars.[64] Linearity is predictable and Enlightenment thinkers, in their efforts to systematize and forecast phenomena, taught us to conceptualize the world according to linear systems that ignore a variety of variables, such as, in the egg example, sales, buying in bulk, or differences in price and quality between brands. Such nuanced considerations complicate models and are difficult to account for consistently. Lorenz emphasized any chaotic system is inherently nonlinear.[65] In other words, Lorenz contended the complex nature of phenomena must be accounted for. In his groundbreaking paper, "Deterministic Nonperiodic Flow," he put forth three purposely simple equations that were meant to explain the nature of fluid during the convection process.[66] All three equations failed to explain the behavior of the water during the experiment.[67] The diagrams that mapped his results in the paper, which has become like "an ancient scroll" to scientists, showed the complete chaos and disorder in the results.[68] He concluded, "[w]hen our results concerning the instability of nonperiodic flow are applied to the atmosphere . . . they indicate that prediction of the sufficiently distant future is impossible by any method, unless the present conditions are known exactly."[69] In short, weather prediction is nonlinear and it must account for variables big and small. The process cannot be followed in a simple line that is comparable to the reasoning that if one dozen eggs are one dollar, then two dozen eggs are two dollars. Weather prediction requires scientists to account for a variety of variables, many of which appear insignificant.

Crucially, Lorenz's paper and the concept of nonlinearity are a type of indictment of ordered systems and predictive models people create to explain and predict the world. Other scientists have applied the nonlinearity concept to their fields to help improve models. Scientists who sought to retheorize how physiological structures, such as respiratory systems, form and function in different living things, turned to chaos theory.[70] They explained, "[t]he variable, complicated structure, and behavior of living systems seem as likely to be verging on chaos as converging on some regular pattern."[71] In recognizing and accounting for the complexity and uncertainty of these systems, the scientists concluded the absence of variety, the very chaos of the systems, often signaled

64. *Id.* at 162.

65. *Id.*

66. Edward N. Lorenz, *Deterministic Nonperiodic Flow*, 20 J. ATMOSPHERIC SCIS. 130, 134 (1963).

67. *Id.* at 135.

68. GLEICK, *supra* note 35, at 30.

69. Lorenz, *supra* note 66, at 141.

70. Bruce J. West & Ary L. Goldberger, *Physiology in Fractal Dimensions*, 75 AM. SCIENTIST 354, 354-65 (1987).

71. *Id.* at 354.

health problems were present or expected.[72] They found traditional models "deliberately neglected the variability" in the systems.[73] The doctors used a chaos-based approach that accounted for widespread uncertainty to better project how the systems form and function. Both this example and Lorenz's findings center around the recognition that systems that were once thought to be linear were enriched and improved by the acceptance that they were nonlinear. Gleick explained, "[n]onlinear systems generally cannot be solved and cannot be added together."[74] He continued, "[n]onlinear terms tend to be the features that people want to leave out when they try to get a good, simple understanding."[75] Thus, to create a simple predictive tool, individuals must ignore variables that, while they appear minor, can add up to substantial problems with the model.

Social scientists have applied nonlinear assumptions to fields such as economics, sociology, and political science.[76] By doing so, they have worked to account for long ignored variables in the models and theories their fields use—the very foundational assumptions within their areas of study—ultimately calling for improved, more complete approaches. For example, in his legal and economics research Roe identified path dependence as an important and poorly accounted for variable in economics research.[77] The inertia and influence past decisions have on economics, he reasoned, are difficult to measure and can introduce significant chaos into models.[78] In examining the economic marketplace through the chaos theory lens, he concluded "[w]hat survives depends not just on efficiency but on the initial, often accidental conditions (chaos theory), on the history of problems that had to be solved in the past."[79] His chaos-minded lens, in short, allowed him to identify variables that helped to more accurately model phenomena in his field. Public policy scholars Euel Elliott and Douglas Kiel came to similar conclusions about nonlinearity in social science fields. They concluded "[t]he social realm is clearly nonlinear, where instability and unpredictability are inherent, and where cause and effect are often a puzzling maze."[80] Elliott and Kiel emphasized social structures are characterized by chaos, thus making the nonlinearity concept a crucial tool for

72. *Id.* at 364.

73. *Id.* at 362.

74. GLEICK, *supra* note 35, at 23-24.

75. *Id.* at 24.

76. Roe, *supra* note 38, at 642; Levy, *supra* note 44, at 171; EUEL ELLIOTT & L. DOUGLAS KIEL, CHAOS THEORY IN THE SOCIAL SCIENCES: FOUNDATIONS AND APPLICATIONS 1-3, 10-14 (1997).

77. Roe, *supra* note 38, at 643.

78. *Id.* at 642.

79. *Id.* at 641.

80. ELLIOTT & KIEL, *supra* note 76, at 2.

conceptualizing and studying them.[81] Levy came to similar conclusions about chaos theory. He lamented the strategic management field suffered from lack of a truly useful set of predictive tools and models.[82] Levy contended chaos theory's non-linearity assumptions provided the type of lens the field needed.[83] He explained, "[c]haos theory is a promising framework that accounts for the dynamic evolution of industries."[84] While nonlinearity has found little attention among First Amendment scholars, the concept provides a new lens through which to reconceptualize marketplace theory during a time of substantial technological change.

B. Underestimating Butterfly Wings

Lorenz's groundbreaking article about nonlinearity foreshadowed another building block of chaos theory: *exponential growth*. Exponential growth refers to the expectation that, in a nonlinear system, uncertainty will grow rapidly over time.[85] Lorenz observed this phenomenon, to his consternation, in his weather modeling.[86] Like a clockmaker, he inputted a dozen climate-related variables into his 1960 Royal McBee computer and set a weather-prediction model in motion.[87] He soon observed that, slowly, day by day, his computer's weather predictions became less and less accurate.[88] Weather prediction is not like clockmaking. There are too many variables. It's not a matter of creating a machine and setting it in motion. The little variables he left out of the model made its predictions just a little off at first and then progressively and exponentially more inaccurate as time elapsed.[89] Lorenz hinted at this concern in his original 1963 article on nonlinearity, explaining, "nonperiodic solutions are ordinarily unstable with respect to small modifications, so that slightly differing initial states can evolve into considerably different states."[90] Years later, he returned to exponential growth when he put forth the question within an article title, "Does the Flap of a Butterfly's Wings in Brazil Set Off a Tornado in Texas?"[91] His question has in many ways taken on a life of its own, particularly in popular culture.[92] Importantly, however, it takes his nonlinearity

81. *Id.* at 3.
82. Levy, *supra* note 44, at 168.
83. *Id.*
84. *Id.* at 176.
85. SMITH, *supra* note 36, at 22-23.
86. GLEICK, *supra* note 35, at 11-17.
87. *Id.* at 11-12.
88. *Id.* at 16.
89. *Id.*
90. Lorenz, *supra* note 66, at 130.
91. LORENZ, *supra* note 61, at 14.
92. *See* THE BUTTERFLY EFFECT (New Line Cinema 2004); JURASSIC PARK (Amblin Entertainment 1993); SCRUBS: MY BUTTERFLY (NBC television broadcast Mar. 16, 2004); LIFE IS STRANGE (Dontnod Entertainment 2015), for examples. Life is Strange is a video game that deals

observations a step further, getting at the effects underacknowledged variables might have on predictive models. The butterfly wings metaphor suggests that the small, often unaccounted for variables, which have historically been disregarded by scientists, can have a significant, disproportionate impact on models and theories. Such a conclusion aligns with the nonlinearity concept overall. Political science scholar Thad Brown emphasized that identifying something as nonlinear does not do enough to explain its chaotic behavior.[93] He contended "[t]he source of irregularity is the nonlinear system's property of separating initially close trajectories exponentially fast."[94] In a state of nonlinearity, it makes sense that the unaccounted variables would not be linear and predictable in their impacts upon a model or theory.[95]

Many scholars have used the "rice map" or "wheat map" illustration to explain exponential growth.[96] One version of the story suggests a ruler, thankful for the invention of chess, offered the inventor a sum of rice that doubled per square on the chessboard.[97] Looking at the sixty-four squares on the chess board, the ruler thought this would be a fine gift for the inventor.[98] He did not realize he was vastly underestimating the power of exponential growth. If a person starts with one grain of rice on the first square, two on the second square, and four on the third square, the total would reach more than 18.4 quintillion grains on the sixty-fourth square, which is more than the entire world's rice production during the past 2,000 years.[99] What appeared to be a small gift—one that started with a single grain of rice—escalated exponentially. Chaos theorists contend the same effect occurs in scientific models that fail to account for all the potential variables that might influence how we understand phenomena.[100] Importantly, not all unaccounted for or incorrectly considered variables double at each step. The number could be multiplied by one hundred or one thousand per step. Thus, when Lorenz suggested a butterfly's wings, as small and insignificant as they are, could lead to major weather shifts, he was accounting for exponential growth.

with the main character's ability to make changes that change the future. In Jurassic Park, Jeff Goldblum's character, Dr. Ian Malcom, specializes in chaos theory and uses the theory to explain why unexpected outcomes are occurring at Jurassic Park.

93. Thad A. Brown, *Nonlinear Politics*, *in* CHAOS THEORY IN THE SOCIAL SCIENCES: FOUNDATIONS AND APPLICATIONS 119, 119-38 (L. Douglas Kiel & Euel Elliott eds., 1996).

94. *Id.*

95. SMITH, *supra* note 36, at 23-24.

96. *Id.* at 23. *See also* Sergio Ernesto Negri, *On the Origins of Chess*, CHESSBASE (May 19, 2018), https://en.chessbase.com/post/on-the-origins-of-chess-part-2-india [https://perma.cc/CVG2-MQ25].

97. SMITH, *supra* note 36, at 22.

98. *Id.*

99. *Id.* at 23.

100. *Id.* at 19.

The exponential growth concept, as it has developed alongside nonlinearity, has been applied in a variety of fields. In medicine, Ivo Janecka used chaos theory as a tool for reimagining how scientists can understand the spread of cancerous cells so that they can be better controlled.[101] The new model accounted for the exponential growth of such cells in the chaotic system. Janecka explained "[c]haos is characterized by exponential iterations with a potential for runaway growth acceleration."[102] Within the proposed model, Janecka found the body's exponential increase in cancer cells, which takes place on the "outer edge of chaos," can be limited using a "differentiation of cancer stem cells."[103] In a different use entirely, a team of astrophysicists sought to recreate the movement of a galaxy.[104] The scientists emphasized the power of the butterfly effect on their modeling, contending reenacting such movements is made nearly impossible because of small, rather than large variables.[105] They concluded, "minute differences, close to the machine precision, that we introduce between sets of otherwise identical 'shadow' simulations at early cosmic times grow over billions of years by many orders of magnitude."[106] They continued, "[w]e hence determine that 'the butterfly effect' is present in our cosmological hydrodynamical simulations."[107] Importantly, acknowledging the limits of their models and the presence of exponential growth of seemingly small variables allowed them to revise their efforts to better understand these complex systems. On a much smaller scale, a group of quantum physicists found "weak quantum chaos" in a study of how particles move over time.[108] They contended their study opened the door to future examinations of "weakly chaotic systems, which exhibit dynamical late-time mixing but do not display any exponential butterfly effect."[109] In each of these studies, scientists used chaos theory's exponential growth and butterfly effect concepts as a lens through which to better understand and approach longstanding questions in their fields.

Social science scholars have applied the exponential growth concept to political and economic research.[110] Brown, in examining chaos in political

101. Ivo P. Janecka, *Cancer Control Through Principles of Systems Science, Complexity, and Chaos Theory: A Model*, 4 INT'L J. MED. SCIS. 164, 164-73 (2007).

102. *Id.* at 168.

103. *Id.* at 164.

104. Shy Genel et al., *Quantification of the Butterfly Effect in Cosmological Simulations and Implications for Galaxy Scaling Relations*, 871 ASTROPHYSICAL J. 1, 1 (2019).

105. *Id.* at 18.

106. *Id.*

107. *Id.*

108. Ivan Kukuljan, Sašo Grozdanov & Tomaž Prosen, *Weak Quantum Chaos*, 96 PHYSICAL REV. 1, 1 (2017).

109. *Id.* at 2.

110. *See* Brown, *supra* note 93, at 119; Paul-Henri Gurian, Euel Elliott & Daniel Everett, *An Application of Nonlinear Dynamics to the Presidential Nomination Process*, 41 BEHAV. SCI. 271, 271-72 (1996); Bob McKercher, *A Chaos Approach to Tourism*, 20 TOURISM MGMT. 425, 429

behavior, emphasized forecasting future political behavior requires accounting for a variety of difficult-to-measure variables. He explained, "[c]haos exists when the long-term prediction of a system is impossible because uncertainty in the system's initial state grows exponentially fast over time."[111] Similarly, a group of researchers concluded the U.S. presidential nomination system "exhibits behavior consistent with nonlinear dynamics."[112] The authors contended exponential growth, via the butterfly effect, can help explain why relatively small changes during the primary process can lead to major changes in the outcome.[113] In economics, Bob McKercher, in a study that applied chaos theory as a tool for better explaining shifts in the tourism industry, emphasized how the butterfly wings concept can help explain why "seemingly similar destination areas can evolve in completely different manners."[114] He explained tourism is nonlinear, and accepting the chaotic nature of the industry will help researchers better predict ebbs in flows in different areas.[115] Using these understandings, McKercher constructed a new, nonlinear model of influences on tourism. Similarly, in studying oil prices, a group of researchers concluded that with care, short-term price predictions could be relatively accurate.[116] Longer-term projections, however, were fraught with variables that, when considered through the exponential-growth lens, make models relatively inaccurate. The authors explained, "long-range prediction based on 'technicals' or statistical forecasting techniques becomes treacherous, as the slightest errors in function formulation will multiply exponentially."[117] In each of these instances, the application of the exponential-growth lens helped researchers improve the way long-studied phenomena were understood.

Ultimately, chaos theory, via the nonlinearity and exponential-growth concepts, has provided a constructive set of assumptions through which to reimagine how we make sense of and theorize phenomena, whether they are meteorological, physical, or social. The theory calls on and provides the building blocks needed for scholars and scientists to avoid the reductionism and positivism that characterize Enlightenment thought. Importantly, justices and legal scholars have installed Enlightenment assumptions about truth, rationality, and society into the very foundations of marketplace theory. Thus, the concerns chaos theory has highlighted about the traditionally Enlightenment-funded approaches to understanding the world provide substantial conceptual material

(1999); Bahram Adrangi et al., *Chaos in Oil Prices? Evidence from Futures Markets*, 23 ENERGY ECON. 405, 405-07 (2001).

111. Brown, *supra* note 93, at 119.

112. Gurian et al., *supra* note 110, at 283.

113. *Id.* at 276.

114. McKercher, *supra* note 110, at 429.

115. *Id.* at 433.

116. Adrangi et al., *supra* note 110, at 422.

117. *Id.* at 407.

for revising marketplace theory. This is especially true in an era of chaos-funded change in how citizens communicate and make sense of the world around them.

III. ONE THEORY, DIFFERENT MARKETPLACES

Justice Holmes introduced marketplace theory into the Court's precedential vocabulary in his famous dissent in *Abrams* in 1919.[118] While Justice Holmes's foundational dissent, the first in which a Supreme Court justice argued in favor of the free expression safeguards promised in the First Amendment, brought economic, market-based imagery into the Court's First Amendment discourse, it did not include any footnotes or citations.[119] In other words, Justice Holmes did not explicitly associate the marketplace of ideas concept, which he called "the theory of our Constitution,"[120] with any specific thinkers or ideology. He introduced an idea that lacked inherent foundational assumptions, which are the building blocks of any theory. Justice Holmes essentially identified the need for a protected space for democratic discourse but left mapping the landscapes and terrain to others. Over time, jurists and legal scholars filled in the gaps. In search of a set of rationales for free expression, justices married the ordered-world assumptions from Enlightenment thinkers with the marketplace concept, ultimately transforming it into a tool that is primarily founded upon the type of reductive, positivist thinking that chaos theorists have historically pushed back against. This section examines the Court's gradual installation of Enlightenment assumptions into the foundations of marketplace theory, Justice Holmes's generally pragmatic assumptions about truth and human rationality, the "noise" or problems scholars have identified in the theory, and how emerging technologies are altering the marketplace in the twenty-first century.

A. The Certain Marketplace

In the decade that followed Justice Holmes's dissent in *Abrams*, he had about a half-dozen opportunities to apply, buttress, or further develop the marketplace concept.[121] He never mentioned it again. The marketplace concept's absence from Justice Holmes's opinions after 1919 reinforces the conclusion that he did not intend to name and define a particular set of assumptions about the First Amendment. The Court heard three cases similar to *Abrams* in 1920. In each case, the Court referenced *Abrams*, but did not mention the marketplace metaphor. [122] In *Pierce v. United States* and *Schaefer v. United*

118. *Abrams*, 250 U.S. at 630 (Holmes, J., dissenting).

119. *Id.* at 629-31.

120. *Id.* at 630.

121. *See Pierce*, 252 U.S. at 239; *Schaefer*, 251 U.S. at 466; *Gilbert*, 254 U.S. at 325; United States ex. rel. Milwaukee Soc. Democratic Publ'g v. Burleson, 255 U.S. 407 (1921); Gitlow v. New York, 268 U.S. 652 (1925); *Whitney*, 274 U.S. at 357.

122. *Schaefer*, 251 U.S. at 477; *Pierce*, 252 U.S. at 253; *Gilbert*, 254 U.S. at 332.

States, both Espionage Act cases like *Abrams*, Justice Holmes joined Justice Louis Brandeis's dissenting opinions.[123] Justice Brandeis disagreed with the Court's decision to limit expression in both cases.[124] In constructing his argument, he explored the boundaries of the clear-and-present-danger test Justice Holmes introduced in *Schenck v. United States* the previous year.[125] Justice Brandeis supported the test in *Schaefer*, explaining: "[t]his is a rule of reason. Correctly applied, it will preserve the right of free speech both from suppression by tyrannous, well-meaning majorities and from abuse by irresponsible, fanatical minorities."[126] He continued, "[l]ike many other rules for human conduct, it can be applied correctly only by the exercise of good judgment; and to the exercise of good judgment, calmness is, in times of deep feeling and on subjects which excite passion, as essential as fearlessness and honesty."[127] Thus, Justice Brandeis's dissent included hints of Enlightenment concepts, but did not provide a connection between them and the marketplace. Justice Holmes declined to sign on to Justice Brandeis's dissent in the third case, *Gilbert v. Minnesota*, which dealt with a state law that was similar to the Espionage Act.[128] Instead, he wrote a one-sentence concurring opinion that did not address free expression.[129] While broadening the number of precedents and opinions that addressed the First Amendment's meaning, these cases did little to clarify the marketplace approach's assumptions or install Enlightenment ideas into the Court's First Amendment reasoning. Instead, the marketplace concept languished, lacking any explicit foundational assumptions as the Supreme Court continued to construct the initial rationales for free expression.

This changed in *Gitlow v. New York* in 1925 and *Whitney v. California* two years later.[130] Justice Holmes, joined in dissent as he was in *Abrams* by Justice Brandeis, disagreed with the Court's conclusion in *Gitlow* that New York's criminal syndicalism law did not conflict with the First Amendment.[131] Justice Holmes did not explicitly return to the marketplace concept in his dissent, but

123. *Schaeffer*, 251 U.S. at 482 (Brandeis, J., dissenting); *Pierce*, 252 U.S. at 253 (Brandeis, J., dissenting); the Court heard *Schaeffer* on the same day as *Abrams* but did not announce its decision until March 1, 1920. The Court heard arguments in *Pierce* about a week after it announced its decision in *Abrams*.

124. *Schaefer*, 251 U.S. at 494; *Pierce*, 252 U.S. at 273.

125. 249 U.S. 47, 52 (1919); *Schaeffer*, 251 U.S. at 482; *Pierce*, 252 U.S. at 255.

126. *Schaefer*, 251 U.S. at 482.

127. *Id.* at 482-83.

128. 254 U.S. at 334 (Holmes, J., concurring).

129. Justice Holmes's enigmatic concurring opinion in *Gilbert*: "The Chief Justice, being of the opinion that the subject-matter is within the exclusive legislative power of Congress, when exerted, and that the action of Congress has occupied the whole field, therefore dissents." *Id.*

130. *Gitlow,* 268 U.S. at 652; *Whitney*, 274 U.S. at 357.

131. *Gitlow*, 268 U.S. at 672-73 (Holmes, J., dissenting).

referred to assumptions that placed significant trust in human rationality and the discovery of truth.[132] He concluded:

> Every idea is an incitement. It offers itself for belief and if believed it is acted on unless some other belief outweighs it or some failure of energy stifles the movement at its birth. The only difference between the expression of an opinion and an incitement in the narrower sense is the speaker's enthusiasm for the result. Eloquence may set fire to reason.[133]

Justice Holmes communicated in his dissent that he understood *Abrams* and *Schaefer* as clarifying how he understood the First Amendment, though the reference is cryptic.[134] Weeks after the *Gitlow* decision was announced, however, Justice Holmes provided a clearer connection regarding his thinking in *Abrams* and *Gitlow* in a letter to Lewis Einstein, who was at the time the United States' diplomat to Czechoslovakia.[135] He wrote, "I had my whack on free speech some years ago in the case of one Abrams, and therefore did no more than to lean to that and add that an idea is always an incitement."[136] He continued, "the usual notion is that you are free to say what you like if you don't shock *me*. Of course the value of the constitutional right is only when you do shock people."[137] Ultimately, Justice Holmes's dissent in *Gitlow*, written before the Court had struck down a law because it conflicted with the First Amendment, reinforced rationales for free expression that first appeared in the *Abrams* dissent.

Two years later, in *Whitney*, Justice Brandeis, with Justice Holmes joining his concurring opinion, introduced three foundational Enlightenment assumptions into the Court's record.

Emphasizing the Enlightenment ideas of those who wrote the nation's founding documents, Justice Brandies communicated government was meant to benefit the individual.[138] Such a conclusion aligns with classic libertarian thinking that makes it society's role to benefit the individual, rather than a more collectivist approach in which the individual is expected to benefit society.[139] Justice Brandeis also addressed the nature of truth, aligning it with Enlightenment assumptions about an objective, discoverable truth, rather than a self-made, subjective truth that is more commonly found in phenomenological

132. *Id.*

133. *Id.* at 673.

134. *Id.*

135. Letter from Oliver W. Holmes to Lewis Einstein (July 11, 1925), *in* THE ESSENTIAL HOLMES 322 (2d ed. 1992); *Lewis David Einstein (1877-1967)*, OFF. OF HISTORIAN, https://history.state.gov/departmenthistory/people/einstein-lewis-david [https://perma.cc/32A7-HX6R].

136. Letter from Oliver W. Holmes to Lewis Einstein (July 11, 1925), *supra* note 135, at 322.

137. *Id.*

138. *Whitney*, 274 U.S. at 375 (Brandeis, J., concurring).

139. Fred S. Siebert, *The Libertarian Theory of the Press*, *in* FOUR THEORIES OF THE PRESS 40-41 (Fred S. Sibert et al. eds., 1956).

and pragmatic understandings.[140] Justice Brandeis explained, "freedom to think as you will and to speak as you think are means indispensable to the discovery of political truth; that without free speech and assembly discussion would be futile."[141] Finally, Justice Brandeis touched on Enlightenment truth's required partner–human rationality.[142] He associated free expression with the ability of individuals to use "the deliberative forces" to discover truth.[143]

Four years later, in the *Near v. Minnesota* prior restraint case, the Court wove more connections between Enlightenment thought and free-expression rationales.[144] Chief Justice Charles Evans Hughes, writing the first decision in which justices struck down a law because it conflicted with the First Amendment, turned to the First Continental Congress's letter to the "Inhabitants of Quebec."[145] The letter was written by John Dickinson, a principle figure in the Continental Congress and former governor of Pennsylvania and Delaware. Dickinson was an enthusiastic supporter of Enlightenment thinker John Locke's ideas, which he discussed in his personal writings and the Quebec letter.[146] In the letter, he wrote,

> It is better to leave a few of its noxious branches to their luxuriant growth, than, by pruning them away, to injure the vigour of those yielding the proper fruits. And can the wisdom of this policy be doubted by any who reflect, that to the press alone. . . . [T]he world is indebted for all the triumphs which have been gained by reason and humanity over error and oppression.[147]

By calling upon these ideas to rationalize free expression in *Near*, Chief Justice Hughes continued the work Justice Brandeis started in *Whitney*, intertwining free expression and Enlightenment assumptions regarding the nature of truth, human rationality, and the role of the individual in society. Despite this infusion of Enlightenment ideas regarding an orderable, predictable world filled with rational individuals, the Court still had not associated the marketplace and Enlightenment assumptions.

This started to change in the 1940s and 50s in cases such as *Thornhill v. Alabama*, *Bridges v. California*, and *Rumely v. U.S.* Justices, seeking rationales for expanding safeguards for free expression, associated the marketplace and Enlightenment ideas. The Court struck down a state law that criminalized

140. *Whitney*, 274 U.S. at 375.

141. *Id.*

142. *Id.* at 375-76.

143. *Id.* at 375.

144. *See* Near v. Minnesota, 283 U.S. 697, 713-18 (1931).

145. *Id.* at 717.

146. Letter from John Dickinson, Delegate of Delaware, to the Inhabitants of Quebec (Oct. 1774) (on file with the Library of Congress). Dickinson also wrote the "Olive Branch Petition" in 1775, the American colonies' final effort to avoid war with Great Britain.

147. James Madison, "The Report of 1800," (Jan. 7, 1800).

picketing in *Thornhill* in 1940.[148] Justice Murphy, writing for the Court, reasoned the public requires information to be able to evaluate ideas.[149] Thus, censoring speech provides "no opportunity to test the merits of ideas by competition for acceptance in the market of public opinion."[150] A year later, Justice Felix Frankfurter, who exchanged numerous letters with Justice Holmes when Frankfurter was a professor at Harvard and Justice Holmes was on the Court, dissented when his colleagues struck down contempt-of-court convictions against a group of newspapers in *Bridges.*[151] Justice Frankfurter concluded: "A trial is not a 'free trade in ideas,' nor is the best test of truth in a courtroom 'the power of the thought to get itself accepted in the competition of the market.'"[152] In *Rumely* in 1953, Justice William O. Douglas associated Enlightenment ideas and the marketplace in his concurring opinion, explaining:

> Like the publishers of newspapers, magazines, or books, this publisher bids for the minds of men in the market place of ideas. The aim of the historic struggle for a free press was "to establish and preserve the right of the English people to full information in respect of the doings or misdoings of their government."[153]

Thornhill, Bridges, and *Rumely*, together, placed the marketplace and Enlightenment reasoning within the same decisions, but generally did not include an explicit association between them. This next step, finalizing the installation of Enlightenment assumptions into the foundations of marketplace theory and then making the marketplace the dominant rationale for free expression, occurred in the 1960s.

In *New York Times v. Sullivan* in 1964, Justice William Brennan drew on Justice Brandeis's Enlightenment-based reasoning from *Whitney*,[154] considered James Madison's Enlightenment-founded discussion of the flow of information and the power of government,[155] and pulled in the marketplace concept in one of the Court's definitive statements about the meaning and role of the First Amendment.[156] The Court's decision in *Sullivan* represents a convergence point in which history, theory, and precedent flowed into the same space as justices

148. Thornhill v. Alabama, 310 U.S. 88, 105-06 (1940).

149. *Id.* at 104.

150. *Id.* at 105.

151. Bridges v. California, 314 U.S. 252, 279 (1941) (Frankfurter, J., dissenting). Frankfurter looked up to Holmes. Early in his legal career, he wrote an article in the Harvard Law Review about Justice Holmes's decisions. *See* Felix Frankfurter, *The Constitutional Opinions of Justice Holmes*, 29 HARV. L. REV. 683, 684 (1916). He congratulated Justice Holmes on his dissent in *Abrams* in a letter in 1919. He wrote, "now I may tell you the gratitude and, may I say it, the pride I have in your dissent." HOLMES & FRANKFURTER, *supra* note 10, at 75.

152. *Bridges*, 314 U.S. at 283 (Frankfurter, J., dissenting).

153. Rumely v. United States, 345 U.S. 41, 56 (1953) (Douglas, J., concurring).

154. *Sullivan*, 376 U.S. at 282.

155. *Id.* at 274.

156. *Id.* at 275.

set out to rationalize expansive free expression safeguards. Within the same passage as the Court's crucial, and often-cited, "debate on public issues should be uninhibited, robust, and wide-open"[157] conclusion, Justice Brennan framed the First Amendment's purpose as being to "assure unfettered interchange of ideas for the bringing about of political and social changes desired by the people."[158] The passage is followed by a 150-word quote about the intent of the authors of the "Bill or Rights" drawn from Justice Brandeis's concurring opinion in *Whitney*.[159] Later in the opinion, Justice Brennan specifically cited Milton's Enlightenment-idea-infused masterwork, *Areopagitica*.[160] Justice Brennan focused on the passages of Milton's argument against government controls on the flow of information that focused on truth vanquishing falsity—the very primordial building blocks of Enlightenment thought.[161] Milton explained in the passage, "[t]ruth be in a field, we do injuriously by licensing and prohibiting to misdoubt her strength. Let her and Falsehood grapple; who ever knew Truth put to the worse in a free and open encounter?"[162] *Sullivan* marked the moment Enlightenment thinkers, history, and precedent came together in the same space, making it the decision that did the most to draw the lines and contours on the map for the space for discourse and to establish the marketplace concept as being forever supported by Enlightenment-based ideas.

A year later, Justice Brennan expanded on the meaning of the marketplace, adding concern for its safety in *Lamont v. Postmaster General.*[163] The Court struck down a law that empowered the Postal Service to halt Communist political information from being delivered.[164] Justice Brennan reasoned, "[t]he dissemination of ideas can accomplish nothing if otherwise willing addressees are not free to receive and consider them. It would be a barren marketplace of ideas that had only sellers and no buyers."[165] Once again, Justice Brennan's concerns were based on assumptions that individuals, if given the opportunity to evaluate all potential ideas, will employ rationality to discern truth. The Court completed installing Enlightenment ideas into the foundations of the marketplace concept in *Red Lion Broadcasting Co. v. FCC* four years later.[166] In upholding and rationalizing the FCC's fairness doctrine, the Court reasoned, "[i]t is the purpose of the First Amendment to preserve an uninhibited

157. *Id.* at 270.

158. *Id.* at 269 (quoting Roth v. United States, 354 U.S. 476, 484 (1957)).

159. *Sullivan*, 376 U.S. at 270 (quoting Whitney v. California, 274 U.S. 357, 375-76 (1927) (Brandeis, J., concurring)).

160. *Id.* at 279 n.19.

161. *Id.*

162. MILTON, *supra* note 10, at 50.

163. 381 U.S. 301, 308 (1965) (Brennan, J., concurring).

164. *Id.* at 305.

165. *Id.* at 308.

166. 395 U.S. 367, 390 (1969).

marketplace of ideas in which truth will ultimately prevail."[167] Beyond the opinion's more explicit association between the First Amendment, the marketplace of ideas, and Enlightenment concepts, the surrounding passages cited Justice Holmes's dissent from *Abrams* and the passage in *Sullivan* that associated the marketplace and Enlightenment concepts.[168]

After the 1960s, with a relatively complete map of the Enlightenment-based marketplace in hand, the Court started using the characteristics of the space for discourse to rationalize expanding free-expression safeguards. The Court employed the metaphor in justifying the expansion of limited First Amendment safeguards for commercial speech in the mid-1970s, reasoning the "relationship of speech to the marketplace of products or of services does not make it valueless in the marketplace of ideas."[169] The Court concluded rational individuals can evaluate even somewhat misleading advertising and that commercial information is valuable to society.[170] Similarly, in expanding free expression protections to corporations, the Court reasoned corporations can contribute important information to the marketplace of ideas and therefore should have the same or similar First Amendment rights as citizens.[171] In coming to this conclusion, the Court overturned a law that had limited corporate speech in *First National Bank v. Bellotti* in 1978, two years after First Amendment rights were expanded to include commercial speech.[172] In *Bellotti*, the Court reasoned,

> [S]peech [is] indispensable to decision making in a democracy, and this is no less true because the speech comes from a corporation rather than an individual. The inherent worth of the speech in terms of its capacity for informing the public does not depend upon the identity of its source.[173]

Assumptions that more information, regardless of speaker or motive, is best for society were once again behind justices' reasoning. The Court cited the passage from *Bellotti* in its decision in *Citizens United v. FEC* in 2010,[174] where justices struck down a law that limited corporate and union expenditures on election messages.[175] The Court reasoned, "[t]he purpose and effect of this law is to prevent corporations, including small and nonprofit corporations, from

167. *Id*.

168. *Id.* (citing New York Times Co. v. Sullivan, 376 U.S. 254, 270 (1964); Abrams v. U.S., 250 U.S. 616, 630 (1919) (Holmes, J., dissenting)).

169. Bigelow v. Virginia, 421 U.S. 809, 826 (1975). *See also Va. State Bd.*, 425 U.S. at 759-60, 773 (expanding reasoning advanced in *Bigelow*).

170. *See* Bates v. State Bar of Ariz., 433 U.S. 350, 383 (1977).

171. *First Nat'l Bank*, 435 U.S. at 776-77.

172. *Id.*

173. *Id.* at 777.

174. 558 U.S. 310, 355 (2010) (citing *First Nat'l Bank*, 435 U.S. at 792).

175. *Id.* at 372.

presenting both facts and opinions to the public."[176] Two years later, in *United States v. Alvarez*, the Court drew heavily from Enlightenment-based assumptions about the marketplace when it struck down the Stolen Valor Act, which criminalized making false claims about receiving military honors.[177] In rationalizing its reasoning, the Court again placed immense faith in human rationality to separate truth from falsity. The Court reasoned, "[s]ociety has the right and civic duty to engage in open, dynamic, rational discourse. These ends are not well served when the government seeks to orchestrate public discussion through content-based mandates."[178]

While these instances where the Court has used the Enlightenment-funded marketplace approach to rationalize expanding free expression are not comprehensive, they illustrate, when taken with the history of the marketplace approach's theoretical foundations, how justices have fashioned the metaphor into a certain type of lens and rationalizing tool for free expression. Justices essentially drew a map of what the layout for discourse looks like and used it as a guide and rationale for a certain type of space. The lens, however, fails to pick up on a substantial amount of chaos, or noise, in the free expression universe. It is, in other words, an imperfect map. Features and landmarks were left off, making the space difficult to navigate. Justice Holmes, as well as legal scholars, have addressed these concerns in what are essentially chaos theory-based arguments about how we should understand the First Amendment.

B. The Holmesian Marketplace

Justice Holmes was not an adherent to Enlightenment thought—or any school of thought. He read and corresponded about a wide range of ideas, often dabbling with them before rejecting them as insufficient.[179] His voracious and open-minded reading habits have often lead scholars and historians to see whatever type of idealism they were looking for in Holmes's writing.[180] Holmes was, perhaps, an idealist before he was shot three different times, survived a near-deadly case of dysentery in a battlefield hospital, and watched countless friends die during the Civil War.[181] By the time he was on the Court, he was

176. *Id.* at 355.

177. 567 U.S. 709, 715-16, 728 (2012).

178. *Id.* at 728.

179. Allen Mendenhall, *Consistently Inconsistent: On Oliver Wendell Holmes Jr.*, L.A. REV. BOOKS (Aug. 27, 2019), https://lareviewofbooks.org/article/consistently-inconsistent-on-oliver-wendell-holmes/ [https://perma.cc/U4LA-KHQ8].

180. *Id.*

181. Brenda Wineapple, *Hardened by War: The Contradictions of Oliver Wendell Holmes Jr.*, THE NATION (Aug. 13, 2019), https://www.thenation.com/article/archive/oliver-wendell-holmes-jr-a-life-in-war-law-ideas-stephen-budiansky-book-review/ [https://perma.cc/Y2MP-TEWU]; *see* Oliver W. Holmes, *The Class of 1861: A Poem*, *in* THE MIND AND FAITH OF JUSTICE HOLMES 8 (Max Learner ed., 1943); letter from Oliver W. Holmes to Amelia Holmes (his mother) (June 7,

decidedly agnostic to ideas. His personal letters tell a story of an insatiably curious reader whose opposition to a thinkers' ideas was generally in direct proportion to the author's zeal and enthusiasm for them.[182] His extensive book collection included the works of Jane Austen, William Cullen Bryant, John Dewey, Johann Wolfgang Goethe, Nathanial Hawthorne, G.W.F. Hegel, Thomas Hobbes, Abraham Lincoln, Martin Luther, Edgar Allen Poe, and Plato.[183] He disliked Austen's novels, concluding "it is for others — not for me."[184] Hegel, one of the founding figures in Western philosophy, didn't fare much better. He found his ideas "little better than an intentional mystification, though I daresay he thought he believed it."[185] Dewey's ideas were better received, though he didn't escape Justice Holmes's critique. Of Dewey's work, he explained, "[i]t is badly written," but "[f]ew indeed, I should think, are the books that hold so much of life with an even hand."[186] Crucially, Justice Holmes's curiosity and love of reading should not be confused with him being idealistic. He was explicit in this regard. In one article, he concluded sticking rigidly with a certain truth or idea is a danger for an individual or an institution.[187] Holmes wrote, "[t]o rest upon a formula is a slumber that, prolonged, means death."[188]

In this regard, Justice Holmes's interest in Enlightenment assumptions is best framed as one of many areas of thought he explored and rejected. His consistent critique of fundamental Enlightenment assumptions helps reinforce that Holmes never sought to create an Enlightenment-based marketplace of ideas. He referred to certainty in the truth as "a mirage" in a 1929 letter to longtime friend Harold Laski, a socialist who was a professor at the London School of Economics.[189] In 1918, a year before he wrote his dissent in *Abrams*,

1864), *in* TOUCHED WITH FIRE 143 (Mark DeWolfe Howe ed., 1947), for explicit examples of how Justice Holmes viewed the war in 1861 versus how he viewed it in 1864.

182. *See* Letter from Oliver W. Holmes to Harold Laski (Apr. 20, 1917) (on file with Harvard Law School Digital Suite), regarding Justice Holmes's love of reading.

183. *See* Estate of Justice Oliver Wendell Holmes: The Library: Beverly Farms, Massachusetts 6, 31, 17, 48, 74, 77, 95, and 283 (on file with Harvard Law School Digital Suite), for lists of books that were catalogued in Justice Holmes' personal libraries after his death.

184. Letter from Oliver W. Holmes to Nina Gray (Aug. 15, 1929) (on file with Harvard Law School Digital Suite).

185. Letter from Oliver W. Holmes to John T. Morse (Aug. 21, 1905) (on file with Harvard Law School Digital Suite).

186. Letter from Oliver W. Holmes to Harold Laski (Dec. 4, 1926) (on file with Harvard Law School Digital Suite).

187. Oliver Wendell Holmes, *Ideals and Doubts*, 10 ILL. L. REV. 1, 3 (1915-16).

188. *Id.*

189. Letter from Oliver W. Holmes to Federick Pollock (Apr. 2, 1926), *supra* note 13, at 107. Laski lectured briefly at Harvard and Yale, but his Marxist ideas, which were unpopular in post-World War I America, led to his departure. During that time, however, he became friends with Justice Holmes, as well as then-law professor Felix Frankfurter. *Harold Joseph Laski*, BRITANNICA (June 26, 2023), https://www.britannica.com/biography/Harold-Joseph-Laski [https://perma.cc/PK

Justice Holmes explained in a law review article that "certitude is no test of certainty. We have been cock-sure of many things that were not so."[190] Within the same passage, he touched on a variety of variables, such as education and where a person is from, that might influence their conclusions regarding "truth."[191] Using his experience in the war to make his point, he explained, "while one's experience thus makes certain preferences dogmatic for oneself, recognition of how they came to be leaves one able to see that others, poor souls, may be equally dogmatic about something else."[192] He continued, "we all, whether we know it or not, are fighting to make the kind of world that we should like—but that we have learned to recognize that others will fight and die to make a different world, with equal sincerity or belief."[193] In other words, the author of the marketplace metaphor was not an Enlightenment thinker. His thinking appears most associated with pragmatism, though he always rejected the label.[194]

Justice Holmes communicated, again and again, that he understood truth as self-formed, rather than universal. In letters to Laski and to Frederick Pollock, a renowned British jurist, Justice Holmes posited that the best anyone can do when it comes to the truth is "bet."[195] To Pollock in 1929, he explained, "I describe myself as a *bet*tabilitarian. I believe that we can *bet* on the behavior of the universe in its contact with us. We bet we can know what it will be."[196] Earlier that year, he emphasized truth is merely "the system of my intellectual limitations—there being a tacit reference to what I bet is or will be the prevailing can't help of the majority of that part of the world that I count."[197] These experience-founded conceptualizations of truth and the interaction of individuals with the world around them align with the American pragmatism movement, the inventor and founder of which were, early in their lives, friends with Justice Holmes. Charles Sanders Peirce coined the term "pragmatism" and

A5-FUBB]; *Laski Appointed Lecturer at Yale*, HARV. CRIMSON (Jan. 29, 1919), https://www.thecrimson.com/article/1919/1/29/laski-appointed-lecturer-at-yale-pharold/ [https://perma.cc/LG7T-WTZC].

190. Holmes, *supra* note 16, at 40.

191. *Id.* at 40-43.

192. *Id.* at. 41.

193. *Id.*

194. For examples of Holmes' pragmatic thinking patterns, see Letter from Oliver W. Holmes to William James (Mar. 24, 1907) (on file with Harvard Law School Digital Suite); Letter from Oliver W. Holmes to William James (Apr. 1, 1907) (on file with Harvard Law School Digital Suite); Letter from Oliver W. Holmes to William James (Oct. 13, 1907) (on file with Harvard Law School Digital Suite).

195. Letter from Oliver W. Holmes to Frederick Pollock (Apr. 2, 1926), *supra* note 13, at 108.

196. *Id.*

197. *Id.* at 107.

William James developed it into a philosophy. [198] The three thinkers, along with other Boston intellectuals, formed the Metaphysical Club in the early 1870s.[199] While Justice Holmes explicitly distanced himself from James's thinking, he mentioned him often in letters and, along with James's work, read a great deal of later pragmatic thinker John Dewey.[200]

Justice Holmes also held Chauncey Wright, who was part of the Metaphysical Club, in high regard, referring to him as an originator of the "bettabilatrian" idea and "a philosopher of real merit."[201] Wright, who died at 45 years old in 1875, can be understood as a connector between Justice Holmes's pragmatic thinking, the ideas James later developed into a complete pragmatic theory, Enlightenment thought, and chaos theory. Wright intertwined positivism, scientific certainty, and the human senses, calling upon David Hume's Enlightenment thought and John Stewart Mill's appropriation of such thought to nineteenth-century concerns.[202] In other words, Wright circled and debated chaos-associated concerns but, as with other thinkers of his time, never explicitly acknowledged it. In a letter to a Canadian astronomer just months before his death, he explained, "[w]e do not hope to predict the weather with certainty. . . but we nevertheless believe the complex phenomena of the weather to be made up of elementary regular sequences."[203] While Wright's use of weather prediction aligns with one of the primary sources of early chaos-theory research, he was actually making a point about the predictability of human action, considering whether human action should be predicted via human will or determinism.[204] Wright explained, "[t]his problem is quite distinct from any anticipation we may have that we may become acquainted so intimately with the

198. WILLIAM JAMES, PRAGMATISM: A NEW NAME FOR SOME OLD WAYS OF THINKING 26 (Frederick Burkhardt et al. eds., 1978). James stated pragmatism was "oddly-named." *Id.* at 23; *Charles Sanders Pierce*, STAN. ENCYC. OF PHIL., https://plato.stanford.edu/entries/peirce/ [https://perma.cc/W65U-PMKC].

199. MENAND, *supra* note 14, at 215-16, 226.

200. No record of Justice Holmes and John Dewey meeting in person exists. They read each other's work, however. Justice Holmes described to a friend that in Dewey's EXPERIENCE & VIRTUE, he "read sentences that I didn't understand, for his style is horrid, but I thought that I never anywhere had read a philosophical work that felt our Universe so deeply and so widely." *See* Letter from Oliver Wendell Holmes to Nina Gray (Jan. 2, 1927) (on file with Harvard Law School Digital Suite). When he died in 1935, Justice Holmes had three of Dewey's books on his shelf. *See* Estate of Justice Holmes: The Library: Beverly Farms (on file with Harvard Law School Digital Suite).

201. Letter from Oliver W. Holmes to Frederick Pollock (Apr. 2, 1926), *supra* note 13, at 108.

202. *Chauncey Wright*, STAN. ENCYC. OF PHIL., https://plato.stanford.edu/entries/wright/#Pos [https://perma.cc/TH9H-YENE].

203. Letter from Chauncey Wright to Simon Newcomb (May 18, 1865), *in* THE LETTERS OF CHAUNCEY WRIGHT: WITH SOME ACCOUNT OF HIS LIFE 74 (James Bradley Thayer ed., 1878).

204. *Id.* at 72-74.

springs of human action as to be able to predict with certainty the course of an individual's conduct."[205]

Justice Holmes's affection for Wright, who was eleven years his senior,[206] along with his interactions with foundational pragmatic thinkers and his own personal, extra-judicial writings, communicate the author of marketplace theory's original use in the Court's vocabulary was anything but an Enlightenment thinker. It would be a stretch to label him as a chaos theorist, but he came far closer to acknowledging the inherent non-linearity and exponential growth concerns inherent in human discourse than the justices who followed him and installed positivist, reductionist assumptions into the very foundations of marketplace theory. The intersection of Holmes's more chaotic influences can be seen in the *Abrams* dissent itself, where just after introducing the marketplace concept, Justice Holmes explained, "[e]very year if not every day we have to *wager* our salvation upon some prophecy based upon imperfect knowledge."[207] Justice Holmes foreshadowed the "bettabilitarian" approach to truth he developed late in his life in his justification of the marketplace concept in 1919.[208] Thus, if we can identify any substantial ideological association with the marketplace metaphor in *Abrams*, it does not come from Enlightenment thought, but rather the tendrils of American pragmatism that lead back to Justice Holmes's various associations with its founders. Pointing out the pragmatic, rather than Enlightenment, influences in *Abrams*, however, does not change the fact that the Court eventually made positivistic, reductionist assumptions about truth and human rationality the foundations of the marketplace approach. Legal scholars, however, have found substantial problems with such conclusions.

C. The Problematic Marketplace

Legal scholars have identified substantial problems with the Enlightenment-based foundations of the marketplace rationale for free expression.[209] The foundations, which were never philosophically steady, have started to crack as the nature of communication shifts in the twenty-first century. Legal scholars' concerns, while they do not explicitly refer to chaos theory, share common characteristics with the nonlinearity and exponential-growth arguments scientists have used to criticize natural and social-science models for decades.[210]

205. *Id.* at 74.

206. *See* Letter from Chauncey Wright to Simon Newcomb (May 18, 1865), *supra* note 203; Edmund Fuller, *Oliver Wendell Holmes, Jr.*, BRITANNICA (Sept. 22, 2023), https://www.britannica.com/biography/Oliver-Wendell-Holmes-Jr [https://perma.cc/QU82-SWD3] (highlighting age difference between Holmes and Wright).

207. *Abrams*, 250 U.S. 616, 630 (Holmes, J., dissenting) (emphasis added).

208. *Id.*

209. *See* Barron, *supra* note 8, at 1641-42; Bambauer, *supra* note 8, at 653; Ingber, *supra* note 31, at 3-4; BAKER, *supra* note 2, at 6-15, for examples.

210. *See supra* Part II.

Jerome Barron, who constructed access theory as an alternative understanding of the First Amendment just as justices were cementing Enlightenment assumptions into the foundations of the marketplace approach, provided a blunt evaluation of the theory. He explained, "[o]ur constitutional theory is in the grip of a romantic conception of free expression, a belief that the 'marketplace of ideas' is freely accessible. But if ever there were a self-operating marketplace of ideas, it has long ceased to exist."[211] A few years later, Barron reiterated the marketplace is a romantic, rather than practical, conceptualization of free expression.[212] He was not alone in these sentiments.

Chief Justice Rehnquist, in a rare critique of the marketplace by the Court, put forth similar questions in his dissent in the *Central Hudson Gas & Electric Corp. v. Public Service Commission* commercial speech case in 1980.[213] He concluded, "[t]here is no reason for believing that the marketplace of ideas is free from market imperfections any more than there is to believe that the invisible hand will always lead to optimum economic decisions in the commercial market."[214] In both of these instances, the authors questioned the expectations that the marketplace will reliably produce truth. In particular, they questioned the model, much as a chaos-theory-minded meteorologist might question forecasting tools, asking whether the theory can reliably predict truth will emerge and falsity will fail.

In his dissent in *Central Hudson* Chief Justice Rehnquist cited constitutional scholar Edwin Baker.[215] Baker explicitly characterized the marketplace's problems as a "failure of assumptions," emphasizing the truth-related conceptualizations were of particular concern.[216] He rejected reductionist truth, finding "truth is not objective."[217] He contended a person's conceptualization of truth is influenced by a variety of factors, such as "a person's personal history or position in society."[218]

Baker and Barron are not alone in their concerns about fundamental, unaccounted for problems in the marketplace model. Legal scholar Frederick Schauer explained, "our increasing knowledge about the process of idea transmission, reception, and acceptance makes it more and more difficult to accept the notion that truth has some inherent power to prevail in the

211. Barron, *supra* note 8, at 1641.

212. Jerome A. Barron, *Access–The Only Choice for the Media?*, 48 TEX. L. REV. 766, 780-81 (1970).

213. 447 U.S. 557, 592-97 (1980) (Rehnquist, C.J., dissenting).

214. *Id.* at 592.

215. *Id.*

216. BAKER, *supra* note 2, at 12.

217. *Id.*

218. *Id.* at 7.

marketplace of ideas."[219] Legal scholar Stanley Ingber came to a similar conclusion, finding, "[i]n order to be discoverable, however, truth must be an objective rather than a subjective, chosen concept."[220] Of course, these questions about Enlightenment-funded versions of the nature of truth were a central part of Justice Holmes's critique of positivism in the first part of the twentieth century.[221] Justice Holmes rejected objective truth, generally accepting a more self-made, experience-based approach.[222]

Such concerns about the theory's truth assumptions interrelate with scholars' critiques of the rationality building block. Baker contended people's "value-oriented criteria," such as their tastes, perceptions, interests, and desires, influence what they find to be true.[223] He explained, "[t]he adequacy of the marketplace of ideas must be reconsidered once the assumption of objective truth is replaced with the view that people individually and collectively choose or create rather than 'discover' their perspectives, understandings, and truths."[224] Law scholar Derek Bambauer came to similar conclusion in his critique of marketplace theory, contending, "cognitive psychology and behavioral economics show that humans operate with significant, persistent perceptual biases that skew our interactions with information. These biases undercut the assumption that people reliably sift data to find truth."[225] Justice Holmes raised similar questions about human rationality and placing trust in people's abilities to objectively evaluate information to discern truth.[226] As he famously explained in a letter to his friend Laski in 1920, "if my fellow citizens want to go to Hell I will help them. It's my job."[227] Six years later, in a letter to Pollock, he explained, "[p]eople are born fools and damned for not being wiser."[228] Thus, the human rationality assumption, upon which the Court placed increasing weight as it employed the marketplace rationale to expand First Amendment

219. Frederick Schauer, *The Role of the People in First Amendment Theory*, 74 CALIF. L. REV. 761, 777 (1986).

220. Ingber, *supra* note 31, at 15.

221. *See supra* Part III.B.

222. Oliver Wendell Holmes, *Natural Law*, 32 Harv. L. Rev. 40, 40 (1918).

223. BAKER, *supra* note 2, at 12-13.

224. *Id.* at 13.

225. Bambauer, *supra* note 8, at 651.

226. Holmes, *supra* note 16, at 40.

227. Letter from Oliver W. Holmes to Harold J. Laski (Mar. 4, 1920), *in* HOLMES-LASKI LETTERS: THE CORRESPONDENCE OF MR. JUSTICE HOLMES AND HAROLD J. LASKI 1916-1935, at 249 (Mark DeWolfe Howe ed., 1953).

228. Letter from Oliver W. Holmes to Frederick Pollock (Apr. 2, 1926), *supra* note 13, at 42-43.

protections to areas such commercial and corporate speech, was generally rejected by Justice Holmes and has been questioned by legal scholars.[229]

Alongside recognizing the biases in human lenses, scholars have identified inequalities in access to participation in the marketplace and factors that influence the messages people encounter.[230] Legal scholars have emphasized the lenses individuals use to understand the world are influenced by the frequency and intensity of the messages they encounter.[231] Some communicators have greater power to get their messages out in the marketplace than others. Similarly, some people will receive certain messages, while others will not. This has become particularly true in the choice-rich, fragmented networked environments. Media scholars Robert Schmuhl and Robert Picard explained that marketplace theory might have held up in an environment where a few information sources reached relatively homogenous groups, but these assumptions begin to fall apart in the complex modern information ecosystems.[232] They concluded "[t]he belief of Milton or Holmes in a self-righting principle that yields truth is not only chancy but also doubtful."[233]

Ultimately, with the chaos-theory lens outlined earlier in this article in mind, concerns about the marketplace's foundational assumptions can be understood as questions about the viability of the model. Jurists, along with legal scholars, have constructed the marketplace metaphor to help explain or rationalize free expression. When Justice Holmes, legal scholars, and others question the theory's Enlightenment assumptions, they can be understood as contending the model, as it has been constructed, fails to account for important variables. The conditions the model was constructed to explain, however, have also changed as networked communication tools have fundamentally transformed how individuals understand themselves and others.

D. The Marketplace and Emerging Technology

Justices did not have bots in mind when they constructed the Enlightenment-based marketplace-of-ideas rationale for freedom of expression. They could not have foreseen powerful corporate algorithms that sort people based on information they have collected about them. Similarly, generative AI tools, such as ChatGPT and Google's Bard, were unthinkable outside of science-fiction novels when justices were drawing their maps of the imagined space for discourse. While we can identify inherent, built-in chaos in the marketplace

229. *See* First Nat'l Bank v. Bellotti, 435 U.S. 765, 783 (1978); Citizens United v. Fed. Election Comm'n, 558 U.S. 310, 369 (2010); Bigelow v. Virginia, 421 U.S. 809, 826 (1975); Virginia State Bd. of Pharmacy v. Virginia Citizens Consumer Council, Inc., 425 U.S. 748, 763-65 (1976).

230. Barron, *supra* note 8, at 1641-42; Schmuhl & Picard, *supra* note 31, at 145-47; Ingber, *supra* note 31, at 15.

231. Ingber, *supra* note 31, at 15.

232. Schmuhl & Picard, *supra* note 31, at 145-47.

233. *Id.* at 147.

concept's Enlightenment-based building blocks, the networked era's communication revolution has introduced new and environment-changing variables and concerns that substantially impact the theory's ability to describe the space for democratic discourse. Essentially, the imagined space justices pictured when drawing the Enlightenment-based marketplace of ideas map in the twentieth century no longer matches the shapes and contours of the communication environment in the twenty-first. The landscape has changed.

Ultimately, the assumptions regarding truth vanquishing falsity and the steadfast power of human rationality that were celebrated in building rationales for free expression find even greater difficulty when human discourse moves into virtual spaces. These spaces do not resemble the types of imagined, pastoral, and open-to-all cobble-stoned public places justices have envisioned and communicated about when rationalizing expansive free-expression safeguards. Rather, virtual spaces are corporate spaces designed to create engagement and information-sharing, rather than a flow of information or exchange of ideas.[234] Powerful algorithms, for example, divert people away from any type of shared space where they can come together and encounter ideas and individuals they were not seeking.[235] The algorithms in many ways preempt the battle in which truth vanquishes falsity in a free exchange of ideas because the range of ideas people encounter is narrowed by the data corporations have collected about them and the determinations that data leads to. At the same time, when people are grouped with generally like-minded individuals by algorithms, truth in that community is often predetermined, or at least substantially narrowed, by the group's predominant views.[236] Such a system precludes any scenario where truth vanquishes falsity in a free and open exchange of ideas. The Enlightenment-based marketplace model fails to account for these substantial and fundamental changes in the shapes and contours of the space for discourse.

These concerns are amplified in the choice-rich virtual environment. After algorithms sort people based on perceived common interests, individuals are required to choose the people, ideas, and information sources they wish to connect with. The selection process cannot be avoided when each person has access to so many pieces of information. Scholars have found, when given a choice, like-minded individuals generally "flock together."[237] The consequences

234. DIPAYAN GHOSH, TERMS OF DISSERVICE: HOW SILICON VALLEY IS DESTRUCTIVE BY DESIGN 16-17 (2020).

235. *Id.* at 17.

236. Itai Himelboim, Stephen McCreery & Marc Smith, *Birds of a Feather Tweet Together: Integrating Network and Content Analyses to Examine Cross-Ideology Exposure on Twitter*, 18 J. COMPUT.-MEDIATED COMM. 154, 167-71 (2013); CASTELLS, *supra* note 5, at 3-4; W. Lance Bennett & Shanto Iyengar, *A New Era of Minimal Effects? The Changing Foundations of Political Communication*, 58 J. COMM. 707, 720 (2008).

237. *See* GHOSH, *supra* note 234, at 131-33; SIVA VAIDHYANATHAN, ANTISOCIAL MEDIA: HOW FACEBOOK DISCONNECTS US AND UNDERMINES DEMOCRACY 183-84 (2018).

of an information environment that is shaped both by powerful corporate algorithms and the human tendency toward homophily has important implications for democratic discourse and the marketplace in the twenty-first century. As legal scholar Cass Sunstein explained, "[w]hen society is fragmented, diverse groups will tend to polarize in a way that can breed extremism, and even hatred or violence."[238] Sociologist Manuel Castells communicated similar concerns, emphasizing that the very nature of the communication environment influences human discourse. He explained, "[a]lthough each individual human mind constructs its own meaning by interpreting the communicated materials on its own terms, this mental processing is conditioned by the communication environment."[239] Thus, a communication environment that is polarized by design represents a grave departure from the conceptual marketplace that was envisioned by Milton and installed into the nation's First Amendment rationales by the Supreme Court in the twentieth century. Such an environment also requires a look at the chaos that has been built into the model—particularly the unintended consequences and exponential growth of variables that were ignored in the marketplace's creation and are influencing the trajectory of democratic discourse.

Virtual spaces also empower non-human entities to take part in democratic discourse—no physical existence required.[240] Bots allow individuals or groups of human actors to artificially dominate and manipulate the marketplace by programming countless non-human entities to distort the space in their favor. Bots do not become emotional or fatigued. They have no stake in the issues they comment about and no ethical concerns about misleading or misinforming people. In this line of thinking, the conceptual space for discourse is more a puppet show than a marketplace. By pulling the strings that control their AI puppets, a solitary person can populate the marketplace with an army of bots that communicate a single idea.[241] Using these types of strategies, bots can be used to push human actors from the marketplace, drowning out the free exchange of ideas with a flood of bot-based messages, and creating a false impression of consensus by "spamming" the marketplace with a single idea. The

238. CASS R. SUNSTEIN, #REPUBLIC: DIVIDED DEMOCRACY IN THE AGE OF SOCIAL MEDIA 57 (2017).

239. MANUEL CASTELLS, NETWORKS OF OUTRAGE AND HOPE: SOCIAL MOVEMENTS IN THE INTERNET AGE 6 (2012).

240. Bobby Chesney & Danielle Citron, *Deep Fakes: A Looming Challenge for Privacy, Democracy, and National Security*, 107 CALIF. L. REV. 1753, 1764-67 (2019)*; see* Jared Schroeder, *Saving the Marketplace from Market Failure: Reorienting Marketplace Theory in the Era of AI Communicators*, 28 WM. & MARY BILL RTS. J. 689, 697-701 (2019).

241. Andrew Solender, *Bot Army Behind 'Reopen America' Push on Social Media, Study Finds*, FORBES (May 22, 2020), https://www.forbes.com/sites/andrewsolender/2020/05/22/bot-army-behind-reopen-america-push-on-social-media-study-finds/?sh=60dc1a2739b2 [https://perma.cc/93L5-NSQR]; McKew, *supra* note 32; Starbird, *supra* note 32.

marketplace approach's competition of ideas, particularly the type of wrestling match between truth and falsity Milton envisioned, never takes place in this environment.[242] Instead, individuals or groups use their virtual platforms, including using deepfakes and bots, to spread misinformation and disinformation that play on the biases of fragmented online communities to enrage and energize people to action.[243]

Generative AI tools, such as OpenAI's ChatGPT, raise even more questions about the power and role of non-human entities in the space for discourse.[244] These tools can search vast amounts of information and use what they find to construct reports, ultimately removing human actors from the information-gathering and creation process. Bloomberg, for example, announced BloombergGPT in April 2023.[245] The tool can leverage all the vast amounts of economic data Bloomberg has to create insights about the financial industry.[246] Imagine similar tools for political projections and legal decisions. The increasing presences of these types of AI actors with the flow of ideas fundamentally alters the shapes and contours of the space for discourse.

Overall, the introduction of virtual spaces fundamentally transforms the assumption-weak traditional marketplace into a multiverse of generally ideologically homogenous marketplaces where the products, or ideas, are limited to those that align with the biases of the group.[247] In this scenario, citizens do not *shop* for truth amid a broad selection of ideas. Instead, the truths that emerge with the various discourses are generally pre-determined, as community members pre-order the truth before ever evaluating the product. In this sense, the twenty-first-century marketplace is much more like shopping on Amazon, where algorithms predetermine the products and deals shoppers see and customize what they see to fit the perceived interests. This also means that

242. MILTON, *supra* note 10, at 50.

243. MANUEL CASTELLS, THE POWER OF IDENTITY 6-12 (1997); SUNSTEIN, *supra* note 238, at 9-10.

244. *See* Kevin J. Delaney, *How Generative AI Will Change All Knowledge Work*, TIME (Dec. 18, 2022), https://time.com/charter/6242075/how-generative-ai-will-change-all-knowledge-work/ [https://perma.cc/SV63-FGWL]; Melissa Heikkilä, *We Are Hurtling Toward a Glitchy, Spammy, Scammy, AI-Powered Internet*, MIT TECH. REV. (Apr. 4, 2023), https://www.technologyreview.com/2023/04/04/1070938/we-are-hurtling-toward-a-glitchy-spammy-scammy-ai-powered-internet/ [https://perma.cc/J8JP-P3JP] (regarding the impact generative artificial intelligence tools will have on the creation and dissemination of information).

245. Joshua Benton, *What if ChatGPT Was Trained on Decades of Financial News and Data? BloombergGPT Aims to be a Domain-Specific AI for Business News*, NIEMANLAB (Apr. 3, 2023), https://www.niemanlab.org/2023/04/what-if-chatgpt-was-trained-on-decades-of-financial-news-and-data-bloomberggpt-aims-to-be-a-domain-specific-ai-for-business-news/ [https://perma.cc/999F-LHTS].

246. *Id.*

247. BRIAN MCNAIR, CULTURAL CHAOS: JOURNALISM, NEWS AND POWER IN A GLOBALISED WORLD 136-38 (2006); Schroeder, *supra* note 32, at 60-64.

truth varies from community to community, as the algorithms do little to encourage the types of debates between free individuals that Enlightenment thinkers envisioned and generations of justices labored to install within the marketplace's foundations. Broadly, we are looking at a fundamentally different marketplace.

IV. TOWARD A CHAOS-AIDED MARKETPLACE OF IDEAS

The marketplace metaphor's meaning has never been static. Justice Holmes did not provide a theoretical foundation for the metaphor during his time on the Court.[248] He argued for a protected space but provided little in regard to the foundational assumptions needed to navigate such a space.[249] During the decades that followed his dissent in *Abrams*, justices, in search of free-speech rationales, gradually installed Enlightenment assumptions into the marketplace's foundations, directing it toward a generally positivistic orientation regarding truth and human rationality. These assumptions were a departure from Justice Holmes's generally pragmatic understandings, which conceptualized truth as more experience-funded and human rationality as a substantially flawed characteristic.[250] Similarly, as the Court installed and sealed these Enlightenment-based conclusions beneath the marketplace's foundations, legal scholars were identifying crucial theoretical oversights in the Court's thinking.[251] To translate their concerns into the language used by those who study chaos, legal scholars raised concerns about variables that were not properly accounted for in the marketplace model.[252] The Enlightenment-based marketplace's assumptions of truth, human rationality, and the flow of information in society, they contended, were fundamentally flawed.[253] The emergence and widespread adoption of networked technologies, most recently advanced generative AI tools, have only reinforced these concerns, radically altering the flow of information and the very shape of the conceptual marketplace. The meaning of marketplace theory, and the theoretical structures upon which it is built, are thus struggling under the weight of paradigmatic shifts in communication technology and longstanding flaws in their original design.

Chaos theory provides a fresh lens through which to understand and address the fundamental and emerging problems with the marketplace model for rationalizing free expression. While chaos theory is often misunderstood as a resignation to an anarchic nature of phenomena in the world, it is in reality a constructive tool for improving the theories we use when we seek to explain the

248. *See supra* Part III.
249. *Id.*
250. *See supra* Part III.B.
251. *See supra* Part III.C.
252. *Id.*
253. *Id.*

world around us. Much as meteorologists and physicists have applied the theory to improve forecasting and explanatory models, chaos theory helps us identify the inherent failures of marketplace theory's Enlightenment-based foundations. The chaos lens provides helpful new reasoning for why the Enlightenment-funded marketplace is an incomplete model for rationalizing expansive free-expression protections. Chaos theory emphasizes, in particular, that the marketplace approach fails to adequately account for the nonlinearity that is so crucially a part of human discourse and the often-outsized impact commonly ignored variables have as time progresses. These oversights include the generally positivist, Enlightenment-funded conceptualizations of truth and the failure to account for human diversity in the flow of information. Enlightenment thought has traditionally suffered from the reductionist conceptualization that people are generally the same.[254] While understanding people as being similar simplifies the model, it also weakens it. Such a boiling down of human diversity immediately causes problems. Accounting for the fact that individuals receive information differently, and that not all have the same access to the marketplace, gets at the nonlinearity and exponential growth concerns that are central to chaos theory.

The model is improved when it accounts for differences in access to the marketplace and how the ideas are received. Expression and the development of human understanding, which Enlightenment thought associated with truth and human rationality, is complex and must be understood as a nonlinear process that includes far more variables than traditional marketplace thought has considered. While this makes the model more complex, it also makes it more accurate. Gleick explained, "[w]here chaos begins, classical science stops. For as long as the world has had physicists inquiring into the laws of nature, it has suffered special ignorance about disorder."[255] Thus the marketplace approach's traditional expectation that truth will succeed and falsity will fail in a generally free exchange of ideas can be substantially refined and aided by chaos theory. A revised marketplace, which accounts for the chaos the generally reductive Enlightenment thinkers ignored, would include the following.

A. Resituating Truth Within the Nonlinear Space for Human Discourse

This chaos-influenced adjustment to marketplace theory introduces two crucial revisions. First, it addresses the truth and human rationality assumptions, substituting revised building blocks that better account for the inherent nonlinearity present in human discourse. This revision is done by introducing a more pragmatic assumption regarding self-formed truths, a change that connects with Justice Holmes's conceptualization of truth and addresses legal scholars' longstanding concerns. It also acknowledges that people, based on a variety of

254. Hollinger, s*upra* note 33, at 8-9.

255. GLEICK, s*upra* note 35, at 3.

factors, are rational in different ways.[256] Justice Holmes rejected many labels, but he identified himself as a "*bet*tabilitarian," contending the best anyone can do is *bet* on what is true.[257] Legal scholars have rejected the Enlightenment-based marketplace's assumptions regarding a singular or universal truth.[258] In the chaos-based model, free expression is protected so individuals can encounter ideas and share their own as they communicate with others and come to conclusions about the world around them. Truth no longer vanquishes falsity, as Milton envisioned it, in this model.[259] Instead, this revision acknowledges human diversity and eschews assumptions that people are generally the same.

The traditional marketplace, in this sense, is characterized by people evaluating ideas and coming to conclusions, much as products are considered in a market. The departure from traditional marketplace theory, however, is that the chaos-based model does not require a winner. Instead, it acknowledges that some products, or ideas, will be accepted by people, while other people will conclude a differing product, or idea, is better. Truth in the chaos-funded marketplace is personal and self-formed. Such a truth is also the product of each person's experiences and the biases that inherently come with racial, religious, and other influences that make up a person's understanding of the world. In a chaos-theory sense, this revision accounts for the types of smaller, difficult-to-deal-with variables that reductive thought has often ignored. This is important as these variables substantially influence models' viability in the fragmented, polarized twenty-first-century information environment. Such an approach does not diminish the importance of First Amendment safeguards for freedom of expression, it merely improves the model used to rationalize and explain these protections.

B. Accounting for Noise in the Marketplace Model

The chaos-infused marketplace makes the availability of information, rather than truth winning and falsity failing, its inflection point. In other words, the Enlightenment-based marketplace rationalizes free expression as being needed so an outcome—truth—can occur. As a result, justices have rationalized widespread protections for free expression. The chaos-based approach shifts the inflection point to the need for information to flow, drawing away from an outcome-focused result. It is a subtle, but important adjustment. Removing the outcome-based emphasis, which relates to the previous change regarding the nature of truth, addresses the inherent nonlinearity in human communication.

256. *See supra* Part III.B-C.

257. Letter from Oliver W. Holmes to Frederick Pollock (Apr. 2, 1926), *supra* note 13, at 108; *see also Abrams*, 250 U.S. at 630 (Holmes, J., dissenting).

258. BAKER, *supra* note 2, at 12-13; Schauer, *supra* note 219, at 776-77; Ingber, *supra* note 31, at 15.

259. MILTON, *supra* note 10, at 50-51.

The Enlightenment-based marketplace does not account for variations in the intensity and frequency of messages. These variations are comparable to the types of variables Lorenz left out of his early efforts to create a computer model that would accurately predict the weather.[260] Lorenz's model became increasingly inaccurate because, in creating the model, he left seemingly insignificant factors out. Those factors became exponentially impactful, drawing his model more off course each day. In the Enlightenment-based marketplace model, the power, frequency, and intensity of messages and speakers has generally been ignored. The chaos lens indicates failing to account for these variables has limited the marketplace model's accuracy. These variations have become particularly important in the choice-rich, algorithm controlled twenty-first century communication environment.

If free expression is protected so individuals can come to conclusions about the world around them, rather than so people can discover universal, same-for-all truths, variables regarding people's access to the marketplace and the frequency and intensity of messages can no longer be ignored. The chaos-funded marketplace, in other words, accounts for more inequalities and differing sources of information. Thus, the revision emphasizes process more than outcome, allowing for nonlinearity in the communication process.

Ultimately, a chaos-infused marketplace approach revitalizes the model by accounting for the often ignored but exponentially important variables of human diversity, variances in the strengths and frequencies of messages, and concerns about access and limitations that determine who can and cannot participate in the exchange of ideas. In an overlapping sense, the chaos-infused marketplace also accounts for the inherent nonlinearity in human communication and meaning-making.

Taken together, these revisions alter marketplace theory in important ways. They remove the Enlightenment's problematic assumptions regarding sameness and homophily. They also draw the theory far closer to Justice Holmes's thinking regarding truth and human rationality. Finally, the chaos-influenced revisions place marketplace theory in a far better position in the networked-communication era by acknowledging the choice-rich and heavily fragmented nature of online discourse.

A chaos-infused marketplace still assumes a vibrant flow of information and discourse among citizens. But it accounts for the nonlinearity inherent in human communication and the exponential growth of problems that occur when the exchange of ideas is understood in reductionist, positivistic Enlightenment terms, rather than a personal, individual human process that is informed by a variety of variables that do not lend themselves to easy measurement. In other words, chaos theory helps relieve the burden of sameness, a conceptualization that has plagued Enlightenment thought that truth is an en-masse rather than

260. GLEICK, *supra* note 35, at 11-13.

personal function. The revised theory presents a nuanced adjustment, which emphasizes protecting the flow of information and the process of discovery via individuals. It downplays the truth-wins orientation of the traditional marketplace, replacing it with a focus on safeguarding the availability of information and discourse among individuals. Such a shift is comparable to changes physical and social scientists have made in other fields. Lorenz, for example, did not conclude weather forecasting models were without any value.[261] He identified unaccounted for variables that were undermining the accuracy of forecasting models. The models were adjusted to either account for more variables or acknowledge their limitations.[262] A revised, chaos-inclusive marketplace seeks to adjust the theory in light of the variables it has traditionally failed to account for.

Ultimately, a chaos-infused marketplace of ideas would provide jurists with a theoretical foundation needed to, for example, limit certain types of AI communication because such expression harms and distorts, rather than encourages, the flow of ideas and discourse in a democratic society. Where a traditional marketplace generally assumes truth will emerge, despite the distortions, the influence of chaos theory within the marketplace approach would provide room for rationalizing such limits. This approach could allow jurists to consider that, since people engage with truth differently and represent a diversity of rationalities, AI entities could at times be regulated. This version of the marketplace of ideas remains distant from government regulation based on the government's limitations of "good" or "bad" ideas. Instead, it focuses on protecting a space for discourse. Limiting AI entities that repeat the same messages, could find support in such a line of thinking. The limitation can be rationalized based on a chaos-infused marketplace theory that emphasizes protecting the space and flow, rather than the outcome. Similarly, efforts to limit deepfake pornography, another AI-generated scourge, could find support within a chaos-influenced marketplace of ideas. This is not because accounting for chaos is inherently intended to limit expression. A marketplace approach supported by chaos assumptions could just as easily support expansive free-expression safeguards for AI that contributes to human discourse. Ultimately, this version of marketplace theory shifts the emphasis of First Amendment theory from an approach that fails to recognize crucial variables in the development of truth, to one that recognizes human diversity in the flow of ideas, while accounting for foundational variables in the marketplace system and creating a more nuanced approach.

261. *Id.* at 15-16.
262. *Id.*