

# TIME IN THE LAW

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“ . . . the whips and scorns of time . . . the law’s delay.”  
William Shakespeare  
*Hamlet*, Act 3 Scene 1

“Time present and time past  
Are both perhaps present in time future,  
And time future contained in time past.  
If all time is eternally present  
All time is unredeemable.  
What might have been is an abstraction. . . .”  
T.S. Eliot  
“Burnt Norton” *Collected Poems 1909-1935*

## INTRODUCTION

Time is always necessary in the law, yet it is rarely examined.<sup>1</sup> It enters every part of how we practice, analyze,

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This article is dedicated to the senior female faculty and staff at the University of Colorado School of Law.

1. Considerations of the way time works in the law have been few. See CAROL J. GREENHOUSE, *A MOMENT’S NOTICE: TIME POLITICS ACROSS CULTURES* (1996); Carol J. Greenhouse, *Just in Time: Temporality and the Cultural Legitimation of Law*, 98 *YALE L.J.* 1631 (1989) [hereinafter Greenhouse]; David M. Engel, *Law, Time and Community*, 21 *L. & SOC’Y REV.* 605 (1987) [hereinafter Engel]. See also CHARLES F. WILKINSON, *AMERICAN INDIANS, TIME AND THE LAW* (1987) [hereinafter WILKINSON].

This is not to say that time is not an important subject in other related fields such as philosophy and social science. Classical sociological statements of time include EMILE DURKHEIM, *THE DIVISION OF LABOR IN SOCIETY* (George Simpson

project, and balance legal arguments; it is integral to our daily schedule, our client appointments, our classroom teaching time, our court dates, our tickler files, our view of our careers. And yet we rarely think about how “time” actually works, presuming that it is the simple linear measuring device that the clock creates for us. Time, in this view, lies as a temporal yardstick with the *present* as a small marker moving forward along the carefully calculated units at a perfectly even pace.

But this representation bears little resemblance to the complex ways we *juggle time* in our multi-tasking lives: we recreate *different layers of time* in our dreams and our memories; we *expect time* to bring us things in the future, such as the New Year holiday; or we attempt to *control time* with exercise, diet, meditation, and facelifts.

Time is also much more complex than a simple linear scale in the ways that we employ it as a device in our lives as lawyers. It functions in the law in a variety of ways. As a *measuring device* it determines trial deadlines<sup>2</sup> or the period of a time-share.<sup>3</sup> As a *value unit*, it tells us how many billable hours have accrued,<sup>4</sup> the length of a prison sentence,<sup>5</sup> the unit

trans., 1933) (1893); GEORGES GURVITCH, *THE SPECTRUM OF SOCIAL TIME* (Myrtle Korenbaum ed. & trans., 1964) [hereinafter GURVITCH]; HAROLD A. INNIS, *CHANGING CONCEPTS OF TIME* (1952); and P.A. Sorokin & R.K. Merton, *Social Time: A Methodological and Functional Analysis*, 42 AM. J. OF SOC. 615–29 (1956). To name a few of the modern social theorists who make time central to their analyses: BARBARA ADAM, *TIME AND SOCIAL THEORY* (1990) [hereinafter ADAM SOCIAL THEORY]; BARBARA ADAM, *TIMEWATCH: THE SOCIAL ANALYSIS OF TIME* (1995) [hereinafter ADAM TIMEWATCH]; NOWHERE: SPACE, TIME AND MODERNITY (Roger Friedland & Deirdre Boden eds., 1994); Barbara Adam, *Detraditionalization and the Certainty of Uncertain Futures*, in DETRADITIONALIZATION 134 (Paul Heelas et al. eds., 1996); ANTHONY GIDDENS, *THE CONSTITUTION OF SOCIETY: OUTLINE OF A THEORY OF STRUCTURATION* (1984) (hereinafter GIDDENS SOCIETY); ANTHONY GIDDENS, *A CONTEMPORARY CRITIQUE OF HISTORICAL MATERIALISM* (1981) [hereinafter GIDDENS MATERIALISM]; SCOTT LASH & JOHN URRY, *ECONOMIES OF SIGNS AND SPACE* (1994) [hereinafter LASH & URRY]; MICHAEL YOUNG, *THE METRONOMIC SOCIETY* (1988) [hereinafter YOUNG]. There are many others.

2. See Dennis Kennedy, *Timemap: Using Timelines to Make You Smarter and More Persuasive*, 26 VT. BUS. J. 25 (2000).

3. See Carl H. Lisman & Carol A. Cluff, *Timesharing*, C500 ALI-ABA 381 (1990) (Westlaw).

4. William G. Ross, *The Ethics of Hourly Billing by Attorneys*, 44 RUTGERS L. REV. 1 (1991).

5. Sentencing is all about time. Statutes, legislative history, and law reviews address what counts as “time served.” For time served concepts, see James B. Jacobs, *Sentencing by Prison Personnel: Good Time*, 30 UCLA L. REV. 217 (1982). For more on truth in sentencing, see Elizabeth T. Lear, *Is Conviction Ir-*

for which one is hired, or the proper time for a notification clause.<sup>6</sup> Time functions as a *delineator of rights* that are initiated and terminated at certain times<sup>7</sup> such as a statute of limitations on suits.<sup>8</sup> Time is a great *organizer* for telling us when we are supposed to go to lunch and how to order those chronological charts that we make for presentation at trial. Time can often determine what is *reasonable* or not,<sup>9</sup> such as a

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relevant?, 40 UCLA L. REV. 1179 (1993); Gregory W. O'Reilly, *Truth-In-Sentencing: Illinois Adds Yet Another Layer of "Reform" to Its Complicated Code of Corrections*, 27 LOY. U. CHI. L.J. 985 (1996). For life sentences, see William W. Hood III, *The Meaning of "Life" for Virginia Jurors and Its Effect on Reliability in Capital Sentencing*, 75 VA. L. REV. 1605 (1989). For discretion in sentencing, see Douglas A. Berman, *The Opportunity and Need for Judicial Lawmaking*, 11 STAN. L. & POL'Y REV. 93 (1999); Kay A. Knapp, *Allocation of Discretion and Accountability within Sentencing Structures*, 64 U. COLO. L. REV. 679 (1993); Mark A. McCallister & Michael Paul McGowan, *Sentencing*, 76 GEO. L.J. 1073 (1988); Kevin R. Reitz, *Sentencing Guideline Systems and Sentence Appeals: A Comparison of Federal and State Experiences*, 91 NW. U. L. REV. 1441 (1997); Paul H. Robinson, *A Sentencing System for the 21st Century?*, 66 TEX. L. REV. 1 (1987). For sentencing calculations, see David C. Wright et al., *The New Math of Sentence Calculation after Fields, Wickes, and Henderson*, 29 U. BALT. L.F. 25 (1999).

6. See Peter J. Whitmore, *A Statistical Analysis of Noncompetition Clauses in Employment Contracts*, 15 J. CORP. L. 483 (1990).

7. Such as copyright term extensions. See MARSHALL A. LEAFFER, UNDERSTANDING COPYRIGHT LAW 226 (3d ed. 1999).

8. Generally, the "time" of statutes of limitations begins to run (becomes temporally operative) when the cause of action accrues, when the right to institute and maintain a suit arises, or when there is a demand capable of present enforcement. Two legal theories or rules provide guidance to courts when deciding how to apply the statute of limitations: the continuing violations theory and the discovery rule. Despite its age, the operation and identity of the statute of limitations is not totally settled and the nature of its relationship to "time" has yet to be investigated. For more on the statute of limitations, see 4 CHARLES ALAN WRIGHT & ARTHUR R. MILLER, FEDERAL PRACTICE AND PROCEDURE § 1056 (2d ed. 1987); 19 CHARLES ALAN WRIGHT & ARTHUR R. MILLER, FEDERAL PRACTICE AND PROCEDURE § 4519 (2d ed. 1987); Brian Augustus Beckcom, *Pushing the Limits of Judicial Power: Tolling State Statutes of Limitations Under 28 U.S.C. § 1367(d)*, 77 TEX. L. REV. 1049 (1999); Michael D. Green, *The Paradox of Statutes of Limitations in Toxic Substances Litigation*, 76 CAL. L. REV. 965 (1988); Susan Lillian Holdsclaw, *Reviving a Double Standard in Statutes of Limitations and Repose: Rowan County Board of Ed. v. United States Gypsum Co.*, 71 N.C. L. REV. 879 (1993); David N. Mark, *Retroactivity of Statute of Limitations Rulings Under the Influence of Jim Beam*, 29 IDAHO L. REV. 361 (1992-93). A statute of limitations concept is also used when determining whether an entity is a "foreign state" for purposes of the Foreign Sovereign Immunities Act. See RALPH H. FOLSOM ET AL., INTERNATIONAL BUSINESS TRANSACTIONS IN A NUTSHELL 396-97 (6th ed. West Group 2000).

9. The Uniform Negotiable Instruments Law contemplates what is "reasonable time" in several instances. See RICHARD SPEIDEL & STEVE H. NICKES, NEGOTIABLE INSTRUMENTS AND CHECK COLLECTION (THE NEW LAW) IN A NUTSHELL 60, 61, 148, 149, 152 (4th ed. West Publishing Co. 1993). The Uniform

reasonable response time for police<sup>10</sup> or when a trial has been “speedy.”<sup>11</sup> It is a *power* that can be withdrawn or held over one’s head, such as when the other side threatens to delay the time of a trial<sup>12</sup> or a murder prosecution awaits the impending death of the victim under the federal year-and-a-day rule.<sup>13</sup> Time is part of the *professional duties* of a lawyer who must make timely filings<sup>14</sup> and complete contracts in which “time is of the essence,” and it *resolves conflicts*, such as when the IRS does not file for a claim within the ten-year period and the

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Customs and Practices for Documentary Credit Act also contemplates what is “reasonable time” when dishonoring a letter of credit. See ICC UNIFORM CUSTOMS AND PRACTICES FOR DOCUMENTARY CREDITS 20 (ICC Publishing, Paris 1993). Finally, contracts law addresses the “reasonable time” within which a buyer of goods must give notice in order to recover for a seller’s breach of an express warranty. See W.R. Habeeb, Annotation, *Time within Which Buyer of Goods Must Give Notice in Order to Recover Damages for Seller’s Breach of Express Warranty*, 41 A.L.R. 2D 812 (1955).

10. Lauren L. McFarlane, *Domestic Violence & Municipalities: Who Pays When the Police Will Not Respond?*, 41 CASE W. RES. L. REV. 929 (1991).

11. The Sixth Amendment guarantees a right to a speedy trial. The debate surrounding the definition of “a speedy trial” is a good example of contextual social judgments about time. For more on the legal arguments, see Brian P. Brooks, *A New Speedy Trial Standard for Barker v. Wingo: Reviving A Constitutional Remedy in an Age of Statutes*, 61 U. CHI. L. REV. 587 (1994); Alfredo Garcia, *Speedy Trial Swift Justice: Full-Fledged Right or “Second-Class Citizen?”*, 21 SW. U. L. REV. 31 (1992); Major Daniel P. Shaver, *Restoring the Promise of the Right to Speedy Trial to Service Members in Pretrial Arrest and Confinement*, 147 MIL. L. REV. 84 (1995); Randall S. Susskind, *Right to a Speedy Trial*, 30 AM. CRIM. L. REV. 1239 (1993); Paul R. Clevenger, Note, *Narrowing the Scope of the Speedy Trial Right: United States v. MacDonald*, 36 SW. L.J. 1213 (1983).

12. See Colonel Thomas G. Becker, *Games Lawyers Play: Pre-Preferral Delay, Due Process, and the Myth of Speedy Trial in the Military Justice System*, 45 A.F. L. REV. 1 (1998).

13. The rule prohibiting prosecution for murder if the victim does not die within a year and a day constitutes a conclusive presumption which has not been explicitly or implicitly overruled in a federal court. The rule is relevant in cases involving intentional infliction of AIDS. A recent article argues that justice would be best served by changing the rule to a rebuttable presumption. See Donald E. Walther, *Taming a Phoenix: The Year-and-a-Day Rule in Federal Prosecutions for Murder*, 59 U. CHI. L. REV. 1337 (1992).

14. See Mark Davies, *Keeping the Faith: A Model Local Ethics Law—Content & Commentary*, 21 FORDHAM URB. L.J. 61 (1993). Other examples of professional duties include the president’s duty to act upon a bill presented by Congress within ten days. Robert B. Dove, *Senate Enactment of a Law* (visited Feb. 15, 2001) <<http://Thomas.loc.gov/home/enactment/presact.html>>. Congress also has a duty to present bills to the president in a timely manner. See Bryan D. Sampson, *Congress’ Duty to Present Bills to the President in a Timely Manner*, J. CONTEMP. LEGAL ISSUES 41 (Fall 1988).

action is lost. Finally, it is an *intrinsic part of basic legal concepts*, such as precedent and stare decisis.<sup>15</sup>

And what of the different concepts of time that clash in the cases that we have to litigate? What about the argument that the optimal rate of exploitation of a resource should be set by the local interest rate, versus the argument of environmentalists for sustainable development commensurate with the continuation of the resource into an indefinite future?<sup>16</sup> What about an argument in a construction lawsuit as to the meaning of a "reasonable time for performance" when Irish stoneworkers have been brought over to build an *authentic Irish pub*?<sup>17</sup> What about a custody fight in which a working parent states that he defines quality time with his child as an hour playing on the weekend, and the other home-based parent states that quality time with a child only occurs over the course of an entire twenty-four-hour day?<sup>18</sup> What of the time sequence of a child who has only a partially reconstructed memory of past sexual abuse pieced together from dreams, hypnosis,

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15. Precedent refers to a decision of a court that furnishes an example or authority for a similar case or a similar question of law arising later in time. Stare decisis is a policy of the courts to stand by precedent and not to disturb settled points. Both of these principles involve many complex temporal issues concerning whether or not different events in the past will be resurrected and used in the present to affect the future. For more on precedent and stare decisis, see Jed I. Bergman, *Putting Precedent in Its Place: Stare Decisis and Federal Predictions of State Law*, 96 COLUM. L. REV. 969 (1996); David C. Bratz, *Stare Decisis in Lower Courts: Predicting the Demise of Supreme Court Precedent*, 60 WASH. L. REV. 87 (1984); Evan H. Caminker, *Why Must Inferior Courts Obey Superior Court Precedents?*, 46 STAN. L. REV. 817 (1994); Frank H. Easterbrook, *Stability and Reliability in Judicial Decisions*, 73 CORNELL L. REV. 422 (1988); William N. Eskridge, Jr., *The Case of the Amorous Defendant: Criticizing Absolute Stare Decisis for Statutory Cases*, 88 MICH. L. REV. 2450 (1990); Anthony T. Kronman, *Precedent and Tradition*, 99 YALE L.J. 1029 (1990); Gary Lawson, *The Constitutional Case Against Precedent*, 17 HARV. J.L. & PUB. POL'Y 23 (1994); Earl Maltz, *The Nature of Precedent*, 66 N.C. L. REV. 367 (1988); Thomas W. Merrill, *Judicial Deference to Executive Precedent*, 101 YALE L.J. 969 (1992); Henry Paul Monaghan, *Stare Decisis and Constitutional Adjudication*, 88 COLUM. L. REV. 723 (1988); Fredrick Schauer, *Precedent*, 39 STAN. L. REV. 571 (1987).

16. *Economy, Environment Closely Linked: Environment; Policy; Trends*, ATLANTA JOURNAL, July 29, 1991, at A14.

17. For information regarding the time it takes to make authentic Irish fireplaces, see Alexis DeLee, *Boulder, CO Pub to Reopen with Irish Atmosphere*, BOULDER DAILY CAMERA, July 13, 1999, at B1.

18. Kathy Graham, *Child Custody in the New Millennium: ALI's Proposed Model Contrasted with Oregon's Law*, 35 WILLAMETTE L. REV. 523 n.3 (1999).

intermittent quasi-hallucinatory flashbacks, and some memory segments?<sup>19</sup> Are these all the same kinds of *time*?

The importance of time in the law was dramatically illustrated by the November 2000 election and the resulting case of *Bush v. Gore*.<sup>20</sup> At the core of this case was a temporally delimited ritual, the presidential election, which was expanded due to the indeterminacy of the results. The response of many Americans to this expansion was one of real discomfort, much as it would be to temporal change in any major event, such as a wedding that is open-ended for several days. The unexpected closure of the election process likewise created relief in some and discomfort in others. On December eleventh at 10:00 P.M., the Supreme Court issued an opinion halting the recount of Florida votes. The opinion was issued just two hours before the "safe harbor deadline" of 12:00 A.M., by which time a state's election results are commonly certified to the federal government. In it, the Court stated that there was not enough "time" to conduct a recount that would satisfy constitutional standards before the safe harbor deadline.<sup>21</sup>

### A. *Approaches to Time*

Time, thus, is an important social construct in the law, but it is hard to ferret out its cultural encodings. While we may recognize that "temporality suffuses popular understandings of

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19. In criminal law, children's memories of past sexual abuse present several issues involving multiple types of time. Law review articles in this area tend to concentrate on the impact such memories have on the statute of limitations, the defendant's right to a speedy trial, and the legal validity of such memories. For more information on this topic, see Thomas G. Burroughs, *Retroactive Application of Legislatively Enlarged Statutes of Limitations for Child Abuse: Time's No Bar to Revival*, 22 IND. L. REV. 989 (1989); Jorge L. Carro & Joseph V. Hatala, *Recovered Memories, Extended Statutes of Limitations and Discovery Exceptions in Childhood Sexual Abuse Cases: Have We Gone Too Far?*, 23 PEPP. L. REV. 1239 (1996); Jessica E. Mindlin, *Child Sexual Abuse and Criminal Statutes of Limitation: A Model for Reform*, 65 WASH. L. REV. 189 (1990).

20. 121 S. Ct. 525 (2000).

21. *See Id.* The time issues in this case are fascinating. While comments for the decision have stressed the need to end the discomfort of the openness of the process, critics have talked about the meaninglessness of calendrical dates. As Thomas Friedman has observed, "[t]he five conservative justices essentially ruled that the sanctity of dates, even meaningless ones, mattered more than the sanctity of votes, even meaningful ones. The Rehnquist court now has its legacy: 'In calendars we trust.'" Thomas L. Friedman, *Medal of Honor*, N.Y. TIMES, Dec. 15, 2000, at A39.

law”<sup>22</sup> and that “the law is a central part of the time story,”<sup>23</sup> its role is little understood. My approach has been to look first at representations of time within the law literature and then at representations of time in other literatures to see what they tell us about time in the law. The purpose of this article is to begin a more thoroughgoing and open-ended conversation on time in the law by presenting here some of the variety of views of time that have appeared in other disciplines. While many of these time topics fall into different disciplinary areas and are thought of as unconnected, they are brought together here to show what they reveal about the use of time in our own discipline, the law.

Some of the various approaches this article presents include:

(1) *Mechanics of measuring time*—Through history technological innovation has allowed us to “keep” time with increasingly accurate devices—from sundials, hourglasses, and water clocks, to mechanical clocks, and now, the atomic cesium clock. These sections start the conversation on the relationship between the ways in which we measure time mechanically and the social formations it takes in the law.<sup>24</sup>

(2) *Historical representations of time*—Throughout history, we have represented or modeled time in various ways: as linear flow, as cyclical patterns moving progressively upward, as spirals that repeat the same general cyclical pattern, or as a single disruptive moment. These sections will look at some of the ways in which we have modeled time in the past.<sup>25</sup>

(3) *Technological changes that influence time*—Most technological changes directly affect the speed or manner in which we can accomplish an activity. The invention of the automobile, for example, drastically affected the concerns of Americans with movement from one spot to another. Today, the computer, fax, and other technologies are again contracting the time it takes to do activities.<sup>26</sup>

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22. Greenhouse, *supra* note 1, at 1631.

23. This comment was made by Guyora Binder when this paper was presented at a law school colloquium at SUNY Buffalo School of Law, January 2001.

24. See *infra* Part I.A–C.

25. See *infra* Part I.D and also new possible models of time in the law presented *infra* Part IV.B.

26. See *infra* Part I.A–C; Part V.A–B.

(4) *Metaphysical and scientific thinking about time itself*—Philosophical questions—what is time? how does it work?—have been profoundly important to the way we think about time.<sup>27</sup> In the past century, Albert Einstein's theory of relativity has drastically altered the way we understand time. These changes both influence and are influenced by the law.<sup>28</sup>

(5) *Time theorists' categories of time*—Time theorists have developed concepts or modalities of time in almost every discipline except for law. In each subject, these theorists choose two or three categories they decide are relevant: Fernand Braudel, a French historian, chose *la longue durée*, *conjecture*, and *événement*;<sup>29</sup> Henri Bergson, a philosopher, distinguished between the lived temporal *durée* and the uniform clock *temps*. The musician Jonathan Kramer in *The Time of Music* details the temporal categories of linearity and non-linearity, interlude, meter, rhythm, and absolute time.<sup>30</sup> And in *The Play of Time*, anthropologist Janet Hoskins describes the changes in the lives of the Kodi people of Indonesia when their local understanding of time, rooted in objects and seasons, is gradually overtaken by a state-imposed new order of clock time.<sup>31</sup>

27. A.N. Whitehead was just one of many modern philosophers who worked on the topic of time. In his book, *SYMBOLISM, ITS MEANING AND EFFECT* (1927), he wrote of the way in which the present is connected to the past, certainly a topic of real interest to many legal investigations such as precedent and stare decisis:

Time is known to us as the succession of our acts of experience, and thence derivatively as the succession of events objectively perceived in those acts. But this succession is not pure succession: it is the derivation of state from state, with the later state exhibiting conformity to the antecedent. Time in the concrete is the conformation of state to state the later to the earlier; and the pure succession is an abstraction from the irreversible relationship of settled past to derivative present.

*Id.* at 35.

28. See *infra* Part I.A–D; Part II; Part III.B–C.

29. See FERNAND BRAUDEL, *ON HISTORY* (Sarah Mathews trans., 1980) and *THE MEDITERRANEAN AND THE MEDITERRANEAN WORLD IN THE AGE OF PHILLIP II* (Sian Reynolds trans., 1972). Braudel envisioned different temporal scales that operate simultaneously within the same geographical space. For Braudel, time is understood only by combining the permanent and the ephemeral, the slow-moving and the fast. Braudel asserts that reality is always changing and simultaneously enduring. He split time into three categories—*longue durée*, *conjecture*, and *événement*.

30. See JONATHAN D. KRAMER, *THE TIME OF MUSIC: NEW MEANINGS, NEW TEMPORALITIES, NEW LISTENING STRATEGIES* (1988) [hereinafter KRAMER].

31. See *infra* Parts III, IV.C. See also JANET HOSKINS, *THE PLAY OF TIME: KODI PERSPECTIVES ON CALENDARS, HISTORY AND EXCHANGE* (1993).

(6) *Subjective experiences and the social formation of time*—As individuals, we recognize that time appears to be going much faster in some circumstances than it does in others; we notice that our grandparents are “living in the past” while our children are “continually present.” These subjective observations are also related to social formations of time, that is, social institutions and structures that regulate experiences of time. Both the social formation of time and the individual’s subjective experience of time vary greatly depending on the community in which one lives and works. For instance, Amish farmers living in rural Pennsylvania understand time in a very different way than do floor traders on the New York Stock Exchange.

Justice Rehnquist has recently become concerned about lawyers working too much, and many lawyers now state that they feel entirely saturated, overwhelmed with time commitments. This is due to the social formation of time in the law in our society. The identity of the legal self in this new millennium, then, is very much tied to these saturated perceptions of time.<sup>32</sup>

These six different approaches to time are intertwined throughout the article, although they do fall into some distinct sections as explained below. The presentation of several different aspects of social theory, scientific theory, and modern life here serves as a performative demonstration of the current multiplicity of time itself.

### *B. Key Points*

The purpose of this article is to present to a legal audience a chronological smorgasbord of the types of thinking that have surrounded the issue of time, and to show some of the ways in which these ideas might be useful in both legal analysis and legal practice. This article makes four major points with respect to time and the law.

The first point is that the law is deeply embedded with ideas about time that deserve our attention. Our legal notions of time are more complex and varied than simple linear clock units. Our practices, decisions, and thoughts about the law

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32. See Introduction, and *infra* Part III; Part IV; and Part V.

deserve a richer and more subtle understanding of time's relationship to law and law's relationship to time.

Second, these ideas can be investigated most effectively through three particular avenues, which will be called attributes, models, and forms of time in the law. *Attributes* of time in the law describe the basic nature of our use of time, such as its context dependency and the importance of time metaphors in legal language. *Models* of time—linear progression, cyclical process, or abrupt disjunction—are employed by lawyers in legal analysis and presentations. This article also explores the *forms* of time. Five are pertinent to our understanding of the role that time plays in the law—industrial clock time, transcendent time, natural time, social formation time, and physicists' time.

The third major point of this article is that a combination of technological advances and prevailing social theories has caused different eras in the past to take remarkably distinct approaches to time. During each historical epoch, social theories work in tandem with scientific discoveries to create specific regimes of time that are then reflected in the law. The law has historically used these regimes of time to organize and control social actions.

My final point is that now, although generally unrecognized, new scientific theories and views of time are working in tandem with social and cultural processes to widely affect society and the practice and production of law. It is, therefore, imperative that we as practitioners and academics reconsider our approach to time and that we employ and look to new models and forms of time. Perhaps we then can reconsider our position of promoting tradition and the past as opposed to the present or the future. Perhaps we also can begin adapting to the shift from conceptualizing time as a stable constant to the current cultural perception of time as a rapidly evolving, erratic, engine of constant change.

### *C. The Structure of this Article*

Part I of this article gives a brief description of the mechanics of measuring time through history. *Sections A* and *B* describe time measurement, starting with the Greek and Roman sundial and water clock, and then the invention of the mechanical clock during the Middle Ages. *Section C* moves

several centuries later to Western Europe and the United States between 1880 and 1918. This was a period rich with technological inventions, from the telephone and wireless telegraph, to the motion picture camera, the x-ray machine, and the airplane. *Section D* describes the *models* of time that developed during this period, from the evolutionary model of Charles Darwin to the bipolar model of Emile Durkheim. The social context of this important pre-war period, with its vibrant artistic and social culture, and its many technological changes, is of particular importance to the law today because most of the models lawyers now use for time arose during this forty-year period.

Part II presents the six basic *attributes* of time in the law. First, time in the law is socially constructed; while it has a separate experiential dimension related to our perception of change, growth, seasons, it is also given meaning and form through social conventions that are themselves, as a second point, highly context dependent. This means that the understanding of time in the context of the Fair Labor Standards Act, for example, will differ from its presentation in the Uniform Simultaneous Death Act. A third attribute is the subjective and objective nature of time in the law. For example, we recognize in the law that an individual's subjective experience of time during an almost-fatal accident may differ from objective clock-time. Similarly, we recognize that multiple understandings of the same factual circumstances will occur in the average trial; this is the fourth attribute, the coexistence of multiple understandings of time. People have different perceptions of time based on their age, social group, gender, cultural setting, and context, but they may also experience multiple timeframes while they are multi-tasking. A fifth attribute of time in the law is its dual nature of both irreversibility and reversibility, and the final attribute is the metaphorical nature of the presentation of time in the law demonstrated in phrases such as "the stream of time."

Part III of this article is concerned with the five basic *forms* that time takes in the law. *Section A* concerns *transcendent time*. All theorists dealing with social aspects of time discuss a timeless time, a transcendent aspect of time that is present in all societies. *Transcendent time* is commonly depicted in philosophical writings as an eternal idea of time, pure time, sacred time, non-linear, out-of-the-ordinary time, and it occurs

in the law both subjectively and objectively. *Section B* describes *natural time* in the law, the term that many time theorists employ for the environment, the seasons, lifecycles of animals, biorhythms, and experiencing "nature." Natural time occurs commonly in environmental law cases, in estate planning, American Indian law cases, and health law.

Perhaps the most common form of time in the law is *industrial clock time*, the division of time into regimented units facilitating paid employment and commercial transactions. *Section C* describes the ways in which the law creates, reinforces, alters, and responds to this linear regimentation through legislation and case law. Law reviews are filled with topics such as considerations of speedy trial, determining time on appeal, the notion of mandatory pretrial deadlines, jurisdictional time limits, the time extension of temporary restraining orders,<sup>33</sup> and the definition of "jail time" and "street time" credited toward parole.<sup>34</sup>

The last form of time in Part III, *social formation time* in *Section D*, is informed by the work of sociologist Georges Gurvitch, who created a temporal typology of different societies and economic systems. He reasoned that societies based on agricultural production without extensive use of highly automatic equipment, like feudal Europe for example, had an enduring sense of time that emphasized tradition and the natural environment. The legal systems connected to such societies reflect this intrinsic sense of time.

Unlike the previous sections, Part IV, *Saturated Time: The End of the Twentieth Century*, combines all of the different approaches to the issue of time—theoretical, technological, scientific, subjective, and social formational—to discuss the current era. It begins in *Section A* with an explanation of the pertinent *form* of time, Physicists' Time, through the work of Albert Einstein who discovered that the measurement of time and space were relative to the position of the observer. Much like the technological explosion at the turn of the last century, the late 1960s to 2000 saw the advent of orbiting satellites,

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33. I owe this insight to a discussion with Lucinda Findley about a case on which she was working that involved the status of a temporary restraining order past its effective date.

34. See David J. Oliveiri, Annotation, *Authority of United States Parole Commission to Credit Time Spent on Parole ("Street Time") toward Sentence to Be Served after Revocation of Parole*, 63 A.L.R. FED. 328 (1983).

computers, fax, the Internet, and other technologies that have created what is currently called the “technology-driven Western world.”<sup>35</sup> This section proposes that these theories and technologies have laid the foundation for and been influenced by an end-of-the-century, socio-cultural transformation.<sup>36</sup>

*Section B, Time Rushing Forward: A New Social Formation of Time*, describes this cultural shift at the end of the century in which individuals perceive that everything is simply going faster, and that they must accomplish more in less time than ever before. Many of the ideas of postmodern theory in academic circles are related to these social and technological changes. *Section C* points out that identity also can become saturated in this period, causing fragmented personalities and anxiety, a state which the psychologist Kenneth Gergen calls “multiphrenia.” *Section D* introduces *models* of time appropriate to the new technological and social changes. The law has continued to use the standard linear and cyclical models from the turn of the last century without adapting to or considering new possible time *models*. This section proposes four new *models* of time in the law based on computers, open time lines, chaos theory, and fractals as more likely to reflect the processes that we see occurring. Finally, Sections *E* and *F* link the new models of time to changes in the practice of law, in legal academia over the past thirty years, and in some First Amendment case law.

## I. HISTORICAL MOMENTS IN TIME

We understand time in a wide variety of ways—from the seasonal shifts of harvest, to the waxing and waning of the

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35. See JAMES GLEICK, *FASTER: THE ACCELERATION OF JUST ABOUT EVERYTHING* 10 (1999) [hereinafter GLEICK FASTER].

36. The dissolution of the traditional patriarchal family in the West, a reformulation of colonies into nation-states in Africa, Asia and elsewhere, the increased importance and power of global institutions (including the global spread of consumer capitalism and consumer television), and the end of the Cold War have all been part of this shift. For a discussion of these developments, see the three-volume series, MANUEL CASTELLS, *THE INFORMATION AGE: ECONOMY, SOCIETY AND CULTURE*; 1 MANUEL CASTELLS, *THE RISE OF THE NETWORK SOCIETY* (1996) [hereinafter CASTELLS VOL. ONE]; 2 MANUEL CASTELLS, *THE POWER OF IDENTITY* (1997) [hereinafter CASTELLS VOL. TWO]; 3 MANUEL CASTELLS, *END OF MILLENNIUM* (1998) [hereinafter CASTELLS VOL. THREE].

moon, to the soft moments of memory of a lost parent or grandparent that bring us to temporal halt. Each of these is an important type of time knowledge. We will be dealing in this background section with the history of time, from the Greeks' social understanding of time as the parts of the day, to the development of linear, marked categories of time in Europe and the United States.<sup>37</sup>

### A. Greek and Roman Concepts of Time

The Greeks and Romans believed that the sun was drawn by a charioteer across the sky during the day and sailed around the flat disc of the earth in a golden bowl at night. Greek philosophers argued over the nature of time and the possibility of temporal movement. Parmenides, for example, and his student Zeno, of the famous Zeno's paradox, rejected change as illogical and concluded that material reality was changeless, motionless, and unitary. Heraclitus, on the other hand, presented the idea that time flow was the ultimate and only reality.<sup>38</sup>

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37. This approach is biased toward Anglo-American representations in the sense that it does not include the many concepts of time that exist around the world or the concepts of time that various immigrant groups have brought with them into the United States in the past two hundred years. Such a research project in time in the law would be very interesting.

38. Parmenides (born 515 B.C.) was a Greek philosopher living in southern Italy who founded the school of philosophical thought called Eleaticism described in his work, *On Nature*. Prefiguring the ideas of Bergson and others, he discussed "becoming" and postulated a single eternal essence called "being" which he referred to as "all in one" which was changeless, motionless and unitary in nature. "The one has nothing to do with time and does not occupy any stretch of time," at page 935 of Plato's Dialogue entitled "Parmenides." See THE COLLECTED DIALOGUES OF PLATO, INCLUDING THE LETTERS 935 (Edith Hamilton & Huntington Cairns eds., 1961).

Zeno, of Elea, (495-430 B.C.) who was Parmenides' student, was famous for his paradoxes, but he also spoke and wrote on time and space which he demonstrated, following Parmenides, were a unity and indivisible. *Id.* at 920-56. In Cornford's translation, when Socrates met Parmenides and Zeno, the former was sixty-five and the latter forty, though Socrates was then quite young. See PLATO AND PARMENIDES; PARMENIDES' 'WAY OF TRUTH' AND PLATO'S 'PARMENIDES' (Francis MacDonald Cornford trans., 1939).

Heraclitus (540-480 B.C.) viewed fire as the essence that united all things and the dynamic equilibrium between sea and fire allowed for unity in spite of change. He is known for analogizing time flow and life to a river. In Plato's Dialogues, he is cited for the principle that "all things flow and nothing stands, with them the pushing principle was the cause and ruling power of all things. . . .", THE COLLECTED DIALOGUES OF PLATO, *supra*, at 438, and "all things are in motion

Plato thought that time appeared to flow in life, but that it was a poor reflection or imperfect copy of the Platonic World of Ideas, the timeless ultimate examples. He urged turning away from the material world that was illusory and constantly changing to the unyielding concepts of absolute goodness, justice, and beauty. For Aristotle, time was change through movement, and time had no reality independent of the movement that it measured. Time also existed independent of the human soul; it kept going regardless.<sup>39</sup> These central ideas—time as a flowing entity, time as change, and time as having no independent reality—continue to have currency in contemporary theory. Time measurement in the West began in Greece. Near the end of the fifth century B.C., the Greeks began to use the famous sundial of Menton by marking the equinoxes and the solstices with incisions on the far edges of a hollowed out hemisphere. By the fourth century, each of the famous Hellenic cities wanted a sundial, a *horologium* in Greek, to count the hours of the day. But even with the ability to mark time by the hour, time in ancient Greece and Rome was still primarily divided into calendrical seasons and the two parts of the day—before and after midday. Lawyers in Rome,

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and nothing at rest” and “you cannot go into the same water twice” in a stream, *id.* at 439.

39. Plato (428–348 B.C.) rested much of his philosophy on the eternal Forms or Ideas. “He maintained that the objects of knowledge, the things which could be defined, did exist, but were not to be identified with anything in the perceptible world. Their existence was in an ideal world outside space and time. These are the famous Platonic ‘Ideas’ so called by a transliteration of the Greek word *idea* . . .” W.K.C. GUTHRIE, *THE GREEK PHILOSOPHERS: FROM THALES TO ARISTOTLE* 88–89 (1950). They had a “full, complete and independent existence” outside of our own minds. *Id.* See also ROBERT S. BRUMBAUGH, *PLATO FOR THE MODERN AGE* (1962); J.E. RAVEN, *PLATO’S THOUGHT IN THE MAKING* (1965); A.E. TAYLOR, *THE MIND OF PLATO* (1922). Grube puts it this way:

The world-soul which partakes of mind and harmony is spread throughout the whole in a series of circles which correspond to the orbit of the sun, moon and planet according to the astronomical knowledge of time. It is these revolutions together with the light of the sun that make possible for men the conception of time, “the moving image of eternity.”

G.M.A. GRUBE, *PLATO’S THOUGHT* 165 (1935).

Aristotle (384–322 B.C.), who covered most of the sciences, arts and humanities in his writings, invented formal logic as we use it today and the study of zoology. His writings in ethical and political philosophy are still read and discussed today. Aristotle’s definition of time as change was discussed throughout the Middle Ages. For a discussion of his views of time, see PIERRE DUHEM, *MEDIEVAL COSMOLOGY: THEORIES OF INFINITY, PLACE, TIME, VOID, AND THE PLURALITY OF WORLDS* (Roger Ariew trans., 1985) (1959) [hereinafter DUHEM].

for example, had to know the point of midday as part of their practice. Jerome Carcopino, in his book, *Daily Life in Ancient Rome*, states that "one of the consult's subordinates was told . . . to keep a lookout for [the moment when the sun crossed the meridian] and to announce it to the people busy in the Forum, as well as to the lawyers who, if their pleadings were to be valid, must present themselves before the tribunal before midday."<sup>40</sup>

Before the First Punic War in 264 B.C., the morning had been divided into two halves in Rome, the *mane* (early morning) and the *ante meridiem* (forenoon), while the *de meridie* (afternoon) and the *suprema* (evening) constituted the second part of the day. After the war, a Roman consul named Valerius Messalla brought back a Greek *horologium* as booty from Sicily, but it wasn't until the second century B.C., as Pliny recounts, that the Romans received an accurate *horologium* calculated for their latitude and, as a consequence, began to take notice of the hourly divisions. They also began to use the water clock, or *clepsydra*, for days when the sun did not shine.<sup>41</sup>

But the use of hours for calculating time during the day did not become popular until the time of Christ. By 10 B.C., when Augustus had the great obelisk of Montecitorio built in the central plaza of Rome to mark with its shadow the lines of bronze set in marble on the Campus Martius below, people had begun to carry their own pocket sundials, called *solaria*, which were barely three centimeters in diameter.<sup>42</sup> Having a water clock in your house was a sign of social status for a middle and upper class household in the time of Emperor Trajan. On the days dedicated to civil suits in ordinary tribunals, the magistrates sat from sunrise until the end of the fourth hour,

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40. JEROME CARCOPINO, *DAILY LIFE IN ANCIENT ROME* 145 (Henry T. Rowell ed., E.O. Lorimer trans., 1940) [hereinafter CARCOPINO].

41. Pliny the Elder (23–79 A.D.) was a military commander and politician for much of his life who wrote voluminously during a period of quiescence when he became procurator in Spain. His *NATURAL HISTORY*, perhaps the first encyclopedia in thirty-seven books, was very famous throughout the Middle Ages as a central source for material on Roman life and thought. In Volume VII, 213–14 he discusses the first solar sun dial and at 215, the first water clock. See PLINY, *THE ELDER, NATURAL HISTORY, A SELECTION* (John F. Healy trans., 1991).

42. See 6 ERNST WILLIBALD EMIL HÜBNER, *CORPUS INSCRIPTIONUM LATINARUM* 702; SAMUEL BALL PLATNER & THOMAS ASHBY, *A TOPOGRAPHICAL DICTIONARY OF ANCIENT ROME* (1929).

then resumed sessions after a break.<sup>43</sup> In Latin, the phrase *aquam dare*, “to give water” and the phrase *aquam perdere*, “to lose water,” meant that the judge would allow more or less time on the court’s water clock for a lawyer to present a client’s case. Listen to the time management problems in a Roman court as described by Martial the epigrammatic poet, around the year 100 A.D.:

Seven water clock’s allowance you asked for in loud tones,  
Caecilianus, and the judge unwillingly granted them. But  
you speak much and long and, with back-tilted head, swill  
tepid water out of glass flasks. That you may once [and] for  
all sate your oratory and your thirst, we beg you, Caecilia-  
nus, now drink out of the water-clock!<sup>44</sup>

So, while both the Greeks and Romans had calendrical calculations and basic astronomy, daily time was a fluid measurement calculated primarily by the division between day and night and by the height and intensity of the sun. Later, they adopted the division by hours, but these were hours that varied greatly in length depending on the time of year. For example, the twelve hours of daylight and the twelve hours of night changed depending on the seasons and were equal only twice a year on the vernal and autumnal equinoxes. On December 22, for example, the Roman daylight period had “hours” which were barely forty-three minutes long, while the nighttime period had “hours” which were up to seventy-six minutes long. Imagine law school classes in which the length of the class period decreases up to the winter solstice and then increases to the summer equinox!

Carcopino has commented:

These simple facts had a profound influence on Roman life. For one thing, as the means of measuring the inconstant hours remained inadequate and empirical throughout antiquity, Roman life was never regulated with . . . the

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43. See CARCOPINO, *supra* note 40, at 185. He cites THE TWELVE TABLES, Part I, at 6.

44. *Id.* at 186. Marcus Valerius Martialis, who was born in a Roman colony in Spain and lived primarily in Rome from approximately 38 to 103 A.D., was considered the quintessential commentator on Roman life at the time. Carcopino notes that the judge granted two-and-one-half hours extra and Caecilianus’ drink would have subtracted about twenty minutes. See *id.*

mathematical precision . . . which tyrannises over the employment of our time. Busy as life was in the [Roman] Urbs, it continued to have an elasticity unknown to any modern capital . . . which is another way of saying that even in the great swarming city, life remained rural in style and in pace.<sup>45</sup>

### *B. Quantification in the Middle Ages*

The peasants of Europe, as the peasants of Greece and the Roman Empire, continued to regulate their lives according to the weather, seasonal changes, planting and harvest periods, dawn, and dusk throughout the Middle Ages. Church holy days, the Days of the Saints, Lent, Easter—these religious days and months dotted the annual calendar. The cyclical seasons of the year repeated and reiterated the liturgy of the church, the seeds were planted, the crops came up, older people died, babies were born. There was a deep incuriosity about time as we now experience it. The daily movement of the sun, the arrival of the spring wind, the disappearance of animals in the fall, arrival of the full moon, the first frost, the onset of seasonal rain—these were the diurnal and annual events that dictated the rhythm of life. Eugen Weber has described this pattern of seasonal, natural time which existed among the French peasantry until the twentieth century:

People's bodies . . . operated at a pace set by the heart and lungs. Working songs, walking songs, afterworking songs . . . imitated the rhythms of the work. Plowmen . . .

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45. *Id.* at 150. Carcopino notes also that the Romans loved to litigate and court congestion was a serious problem as early as 2 B.C. He notes this about Roman trials: "Magistrates and the public were closely packed and the debates took place in a stifling atmosphere. To complete the discomfort, the acoustics of the hall were deplorable, forcing the advocates to strain their voices, the judges their attention and the public, their patience." *Id.* There were paid applauders who acclaimed on command. "It is easy to imagine the discomfort and annoyance which a case inflicted on an attentive judge and a conscientious counsel when it had to be conducted in the middle of this mob, to the accompaniment of a continual uproar and periodic outbursts of mechanical applause." *Id.* at 188-89.

Alan Watson is an excellent source for materials on this period, particularly his *ROME OF THE XII TABLES* (1975). FUSTEL DE COULANGES, *THE ANCIENT CITY: A STUDY ON THE RELIGION, LAWS AND INSTITUTIONS OF GREECE AND ROME* (Willard Small trans., Boston Lothrop Lee Shepard 12th ed. 1901) is a classic work on this period, although not much read now.

worked to the rhythm of horses or oxen. Hoers would take a bite out of a hunk of bread, throw it ahead of them, hoe their way up to it and bite and throw again. Threshers' songs reproduced the rhythm of the flails.<sup>46</sup>

On the other hand, medieval scholars during this period, such as John Duns Scotus, Peter Aureol, William of Ockham, and Nicholas Bonet, were concerned with conceptual and intellectual issues of time. They questioned whether or not time kept going if the heavens were to stop (Duns Scotus thought it would), whether time consisted of something that existed outside of the mind (Peter Aureol thought that it was both inside and outside), and they worked on reconciling Aristotle's views on time with those of the church and of Saint Augustine in the eleventh book of the Confessions.<sup>47</sup>

46. EUGEN WEBER, PEASANTS INTO FRENCHMEN: THE MODERNIZATION OF RURAL FRANCE, 1870-1914 482 (1976). An excellent reference on this period is JACQUES LE GOFF, TIME, WORK AND CULTURE IN THE MIDDLE AGES (1980). One of his theses, as well as that of other medieval scholars, is that the ideology of the Middle Ages was framed in dualistic oppositions such as day/night, up/down, inside/outside. See THE MEDIEVAL IMAGINATION (1988). My favorite scholar on the legal milieu in this period is Paul Hyams; see his several articles and works including PAUL HYAMS, KINGS, LORDS AND PEASANTS IN MEDIEVAL ENGLAND: THE COMMON LAW OF VILLEINAGE IN THE TWELFTH AND THIRTEENTH CENTURIES (1980). For a discussion of Medieval time concepts connected to the law in an Asian culture, see REBECCA R. FRENCH, THE GOLDEN YOKE: THE LEGAL COSMOLOGY OF BUDDHIST TIBET 72, 73 (1995).

47. See DUHEM, *supra* note 39, at 295-366, which covers in depth the materials of thinkers on time in this period. As Duhem points out, "The memorable fourteenth-century discussions about the theories of place and movement received their starting point with Etienne Tempier's [the Bishop of Paris] decision; they were inaugurated by John Duns Scotus, who dared to assert the proposition that even if there exists no immobile term [as reference] a body can still move by local movement." *Id.* at 295.

As to the importance of St. Augustine (354-430 A.D.), Barbara Adam has stated:

Most theorists question the reality status of the past and future and they accord a special position to the present. The origin of these thoughts can be traced back to St. Augustine and his quest for the nature of time. Not every treatise of time refers to Heraclitus, Kant, Hegel, Husserl, Bergson, Heidegger, Schutz, or Whitehead but I have not come across a single study that does not mention St. Augustine's Confessions.

ADAM SOCIAL THEORY, *supra* note 1, at 33.

He posited that "past and future do not exist outside the mind. . . . '[T]he mind, which regulates this process, performs three functions; those of expectation, attention and memory. The future which it expects, passes through the present, to which it attends, into the past which it remembers' (St. Augustine Book XI, Section 28; p. 277)." *Id.*

In approximately 1270, someone in Europe invented the first European mechanical wheel clock, a large, cumbersome, and expensive machine that completed a full revolution in a twenty-four-hour period. The Chinese had invented astronomical calculators that could be thought of as clocks as early as the tenth century A.D.,<sup>48</sup> but they were never allowed out of the imperial realm to be used as public timepieces. Although historians do not know who invented the European wheel clock, the number of references in the historical records to clocks increased enormously by the year 1300. The city of Caen erected one of the first public mechanical clocks, called a *cloche*, on its main bridge in 1314, inscribing the words, "I give the hours voice, To make the common folk rejoice." The clock built in Strasbourg in 1354 had an automated astrolabe, a calendar, statues of the Christ child, Virgin Mary, and the Magi, a rooster that crowed, and a zodiac calendar. Even with imprecise and irregular chiming, public clocks and the bells that accompanied them were thought to bring joy and a new excitement to a medieval European city.<sup>49</sup>

Very soon thereafter, equal hourly periods and clocks were simultaneously and synchronically set to agree with each other; regulating life according to a clock became a possibility in European urban life. The abbot of a monastery in England wrote a treatise on the construction of clocks in the 1330s.<sup>50</sup> In 1335, the King of France permitted the aldermen of Amiens to use the town clock to control when the workers of the city began and finished their day. Some law cases started to be scheduled according to the bells of the public city clocks rather than the imprecise water clocks of the Romans with which Caecilianus had been urged to quench his thirst. Clocks were, in short, the new technology of the moment and changed the way people imagined, conceptualized, and organized the world. It was now possible to conceive of the earth and cosmos as an enormous clock that had been set in motion by God. This was a period of quantification in every discipline—in time,

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48. See JOSEPH NEEDHAM ET AL., *HEAVENLY CLOCKWORK: THE GREAT ASTRONOMICAL CLOCKS OF MEDIEVAL CHINA* 17-19 (1960).

49. See generally CARLO M. CIPOLLA, *CLOCKS AND CULTURE: 1300-1700* (1967); DAVID S. LANDES, *REVOLUTION IN TIME: CLOCKS AND THE MAKING OF THE MODERN WORLD* (1983).

50. See The Writings of Richard of Wallingford, in RICHARD OF WALLINGFORD: AN EDITION OF HIS WRITINGS (J.D. North ed. & trans., 1976).

astronomy, cartography, music, mathematics, drama, mechanics, and commerce.<sup>51</sup>

In contrast, the Greeks and Romans had not looked for the similarity and quantifiability of most of the objects around them in their daily life nor did they apply mathematics to the material world as readily. This sort of quantification was not often applied to aspects of daily existence in the early Middle Ages either.<sup>52</sup> But here in the late Middle Ages, quantification and measurement, particularly of time, exploded in the urban mercantile centers.<sup>53</sup> With Galileo's invention of the pendulum

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51. Two hundred years later, a print called *Temperance* by Pieter Bruegel the Elder in 1560 sums up many of the key ideas of this period. In the print, a female figure stands in the center of a scene of intense activity depicting what was interesting to people of Western Europe at that time, much as an advertisement for the TV series "The Sopranos" might contain interesting scenes from that drama today. *Temperance* is surrounded by images of measurement and calculation—astronomical, cartographical, commercial, mechanical, musical, mathematical, dramaturgical. In the upper right, an astronomer stands on the North Pole calculating the distance between the moon and a star while compasses, a square, a plumb bob, calipers, and other devices surround him. To the center right, five men stand arguing and debating, most likely over a law case or perhaps some issue in biblical law. Money is being counted in the lower left and tallies are being kept of the amounts. In the center, on the top of Lady Temperance's head, sits a mechanical clock which had been introduced approximately 250 years before. As Alfred Crosby, a professor of History and Geography at the University of Texas, has described this print,

Bruegel's print is a sort of potpourri of what quickened the attention of urban Western Europeans circa 1560. . . . Many of the people in Bruegel's picture are engaged in one way or another in visualizing the stuff of reality as aggregates of uniform units, as quanta: leagues, miles, degrees of angle, letters, guldens, hours, minutes, musical notes. The West was making up its mind . . . to treat the universe in terms of [uniform] quanta . . . and other symmetrical forms: music staves, platoons, ledger columns, planetary orbits. . . .

What shall we call this devotion to breaking down things and energies and practices and perceptions into uniform parts and counting them? Reductionism? Yes, but that is a baggy category. . . . This is quantification.

ALFRED W. CROSBY, *THE MEASURE OF REALITY: QUANTIFICATION AND WESTERN SOCIETY, 1250–1600* 10–11 (1997).

52. See *The Early Middle Ages: 500–1000* (Robert Brentano ed., 1964), in *SOURCES IN WESTERN CIVILIZATION* (Herbert H. Rowen ed., 1964) for a good source book on the Early Period.

53. Even the calendar was affected. In 1582, Pope Gregory XIII presided over a large conference of knowledgeable Catholic experts on time which presented him in 1582 with the new revision of the Roman Julian calendar, the Gregorian calendar which was slowly adopted throughout Europe. This has been discussed in a recent law review concerning the millennial shift. See R.D. Williams

and Christiaan Huygens' use of it to create the first pendulum timepiece around 1700, clocks became accurate to within a few seconds every day.<sup>54</sup> Today, of course, we have Cesium Atomic clocks that are accurate to the nanosecond.

*C. Technological and Social Changes from 1880 to World War I*

It was not until over two hundred years later, between 1880 and 1920, that sweeping technological innovations informed new forms of interaction and new modes of thought about time. Even a short list of the major inventions in this forty-year period is astonishing: the telephone, the wireless telegraph, the high-speed rotary press, x-ray machines, motion pictures, bicycles, the automobile, and the airplane. Each of these inventions radically transformed the ways in which humans experienced the temporal dimension. Simultaneity across space became a possibility.

By allowing individuals to travel at over four times their regular walking speed, the bicycle radicalized human-powered travel when pneumatic tires were invented in 1890. And the American-designed automobile "captured the imagination in the 1890s and became a major means of transportation in the first years of the twentieth century."<sup>55</sup> The airplane, invented in 1903, was so prevalent by 1910 that it played a significant military role in World War I. Charles Lindbergh's famous 1927 transatlantic flight from New York to Paris in thirty-three hours was considered a marker of the collapse of space and time in the twentieth century.

Invented first in 1876 by Alexander Graham Bell, the telephone made it possible to speak with someone who was not in the same place, or to put it differently, to be in two places at

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& Bruce T. Smyth, *Historical Development of the Year 2000 Problem: Challenging the Conventional Wisdom*, Part I of II, 16 No. 2 *COMPUTER LAW* 7 (1999).

54. Christiaan Huygens (1629–1695) was a famous Dutch mathematician and astronomer who was influenced by Rene Descartes, Blaise Pascal, and Gottfried Leibniz. His work in mechanical physics included a telescope that produced a clearer picture of the rings of Saturn. In 1666 he became one of the founding members of the French Academy of Sciences. His book, *HOROLOGIUM OSCILLATORIUM* (Richard J. Blackwell trans., Iowa State Univ. Press 1986) (1658) describes the use of the pendulum to regulate clocks.

55. STEPHEN KERN, *THE CULTURE OF TIME AND SPACE: 1880–1918* 113 (1983) [hereinafter KERN].

the same time, where you were speaking and where your voice was heard.<sup>56</sup> Not long afterward, the spread of the railroad and the wireless telegraph finally caused uniform public time to be adopted in Europe and the United States. Prior to the twentieth century, each city in the United States and Europe, even each small hamlet, had its own separate time. As one author has put it, “[a]round 1870, if a traveler from Washington to San Francisco set his watch in every town he passed through, he would set it over two hundred times.”<sup>57</sup> The Greenwich Prime Meridian was established in 1884, but it was the use of the wireless telegraph to coordinate railroad timetables and schedules that caused the eventual collapse of independent local times.<sup>58</sup>

In 1928, when Benjamin Cardozo was deciding the famous *Palsgraf* case about a woman standing on a railroad station platform who was injured when a conductor caused a passenger’s package to explode, the context for the case was rather different than the average first-year law student presumes.<sup>59</sup> The advance of technology, universal time, and industry were on the side of the railroad, not Mrs. Palsgraf, and as John Noonan demonstrates in his famous book, *Persons and Masks of the Law*, railroads were creating a new United States linking time and space. Cardozo thought that this new technology should not be saddled with the responsibility of being liable to an unforeseeable plaintiff, and so Mrs. Palsgraf lost.<sup>60</sup>

This was also the time period of the famous car scene of Kenneth Grahame’s *The Wind in the Willows*, in which Toad is

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56. Audio programs were broadcast through telephone receivers as early as the 1890s, a little known use of the early telephone much like the radio. In Budapest, Hungary in 1893, for example, one entrepreneur broadcast daily concerts, newspaper reviews, stock market reports and music through the telephone to over 6,000 subscribers. The wireless telegraph, invented during this period, was essential to the rescue of the survivors of the *Titanic* in 1912, which broadcast continuous calls for help in a 1,500 mile radius. See KERN, note 55, at 67–69.

57. *Id.* at 12.

58. In 1913, when a signal sent from the Eiffel Tower by the French government was relayed around the world to establish simultaneous global time, local time in Europe disappeared for good. *Id.* at 13–14.

59. See *Palsgraf v. Long Island R.R. Co.*, 162 N.E. 99 (N.Y. 1928).

60. Noonan points out that encouraging the railroad to unite the American continent and improve transportation was part of the congressional plan, which at that time included absorbing close to 6000 deaths a year and other injuries. See JOHN T. NOONAN, JR., *PERSONS AND MASKS OF THE LAW* 137 (1976).

seized with the passion of speed.<sup>61</sup> The French novelist Octave Mirbeau, noting the growth in numbers of automobiles in France to 100,000 by the year 1913, said of the modern man at that time:

His thoughts, feelings and loves are a whirlwind. Everywhere life is rushing insanely like a cavalry charge and it vanishes cinematographically like trees and silhouettes along a road. Everything around man jumps, dances, gallops in a movement out of phase with his own.<sup>62</sup>

Art, literature, and movies in this period reflected and encouraged many changes while inventing their own new formats and styles. The Impressionists, Futurists, and Cubists over the turn of the century investigated the concept of time in a variety of new ways—by painting the same scene through sequences of seasonal and diurnal changes (think of Ferdinand Léger's *The City* or Monet's *Haystacks* series), by showing the process of a person running or descending the stairs (Boccioni's sculpture, or Marcel Duchamp's painting, *Nude Descending a Staircase*), and by presenting several different perspectives of the same object at the same time (typical of Picasso's *Girl Before a Mirror* or *Seated Woman*).<sup>63</sup> One of the more interesting results of their experiments was camouflage, which was derived from Cubist painting and first used in World War I.<sup>64</sup>

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61. The car scene begins like this:

As the familiar sound broke forth, the old passion seized on Toad and completely mastered him, body and soul. As if in a dream he found himself, somehow, seated in the driver's seat . . . as the car devoured the street . . . he was only conscious that he was . . . Toad the terror . . .

KENNETH GRAHAME, *THE WIND IN THE WILLOWS* 120–21 (1961) (1908).

62. KERN, *supra* note 55, at 113.

63. Impressionism was a major movement in France in both painting and music from the late nineteenth to the early twentieth centuries. Futurism was an Italian art and literature movement during the same period that emphasized the vigor, speed, and excitement of the new machines that were affecting modern life. The Futurist Manifesto was announced in 1909 by Filippo Tommaso Marinetti to celebrate change and the new technology. Cubism was an art movement at the turn of the last century influenced by the work of Paul Cezanne, Georges Braque and Pablo Picasso. Cubism emphasized fragmented multiple perspectives of objects in a two-dimensional representation. See generally SAM HUNTER & JOHN JACOBUS, *MODERN ART: PAINTINGS, SCULPTURE, ARCHITECTURE* (1992).

64. Guirand de Scevola, a communications expert in the French Army in World War I, first thought of concealing artillery and soldiers under nets

Early novelists and filmmakers of this era were also experimenting with time. Author James Joyce expanded one day in the life of a single man to fill 500 pages in his novel, *Ulysses* (1922), and Virginia Woolf recalled the entire life of one woman over the course of a single day in *Mrs. Dalloway* (1925). From the original work of E.J. Marey, who photographed the flight of birds with several still cameras, and Eadweard Muybridge, who recorded a man doing handsprings, moving pictures or cinema was developed between 1893 and 1896 and became an unprecedented success. As Stephen Kern has noted:

By 1910, there were 10,000 nickelodeon [cinemas] in the United States alone, creating the need for about two hundred one-reel films a week. From the outset, the film industry was international with a mass appeal. Film expanded the sense of the present either by filling it with several non-contiguous events or showing one event from a variety of perspectives.<sup>65</sup>

A film by D.W. Griffith called *The Lonely Villa*, in 1909, portrayed two separate parties at the same time. Other films actually reversed time by showing the film backwards or took the viewer “from one place to another instantly” to achieve “the effect of his being ‘simultaneously here and there.’”<sup>66</sup> Suddenly, visual images of simultaneity and omnipresence, of reversing time and breaking time, were all possible. As one author has put it: “[W]hat did emerge from the growth of scientific and technical discovery, as the age of steam passed into the age of electricity, was the sense of an accelerated rate of change in all areas of human discourse.”<sup>67</sup>

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“splashed with earth colors” from the Cubists and cited them directly for his idea: “I employed the means Cubists used to represent them . . . [and hired] in my camouflage section some painters, who, because of their special vision, had an aptitude for denaturing any kind of form whatsoever.” KERN, *supra* note 55, at 303, citing ARTHUR MEYER, FORTY YEARS OF PARISIAN SOCIETY 111 (1912).

65. KERN, *supra* note 55, at 70.

66. *Id.* at 71.

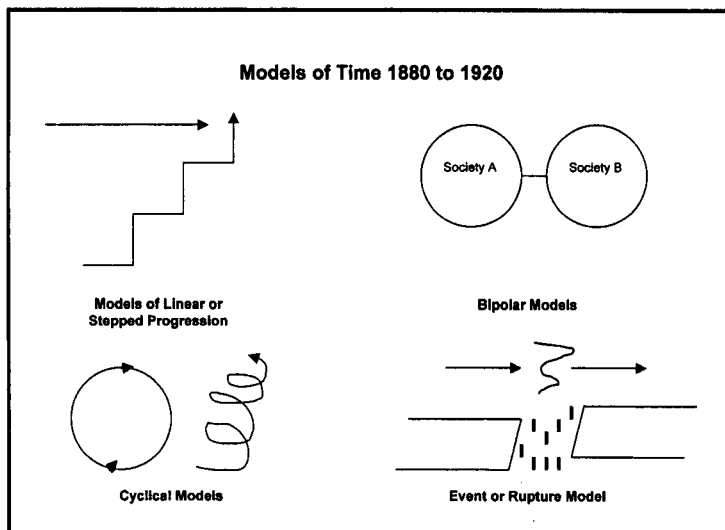
67. ROBERT HUGHES, THE SHOCK OF THE NEW 15 (1981). Hughes outlines several ideas about the changes that took place over the turn of the century, connecting art and technological innovations. He calls the number and type of changes, “the greatest alteration in man’s view of the universe since Isaac Newton.” *Id.*

### D. *Models of Time from 1880 to World War I*

In Europe and America, this period also saw dramatic changes in social theory that altered our modern conceptualizations of time. Several significant social theories, including those of Max Weber, Sigmund Freud, and Karl Marx, were advanced in this period. Rather than relying on the Greek consideration of the innate ideas of human nature, the goodness of humankind, or the nature of the Platonic Forms, philosophers and thinkers in the Victorian period turned to history, evolutionary theory, and anthropological studies of societies as sources for their ideas about the movement of societies through time.

The four basic models of time (see Chart A) conceived during this period, including the *linear* model, the *cyclical* model, the *bipolar* model, and the *event or rupture* model of time, are still commonly used in scholarly, popular, and legal presentations today.

**Chart A**



#### 1. Linear and Stepped Progression Models

The linear progression of time can be represented as a straight line that is flat or tilted upward to indicate progress at a slower or faster pace. It can also be represented as a series of steps.

The idea of progressive linear transformation reached its heyday during this period; time was a necessary linear sequence moving society ever upward, ever improving. A bit earlier, Hegel had proposed the dialectical process, a continuous movement forward and back and then forward again, from thesis to antithesis to synthesis, as a new way to look at the progression of history and ideas.<sup>68</sup> Darwin, after his extensive excursions on the *HMS Beagle*, presented his general theory of evolution, certainly one of the more enduring conceptualizations of change through time.<sup>69</sup> Karl Marx employed the idea of evolution in a stepped sequence to depict the progress of humankind through a series of political stages—from savagery and feudalism, to capitalism, and then ultimately communism.<sup>70</sup> The English scholar Herbert Spencer used evolution to describe organic social processes.<sup>71</sup> Each of

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68. Georg Wilhelm Friedrich Hegel used a style of exposition for his philosophical system that was termed "dialectical"—a pattern is laid down that is refuted and then a synthesis of the pattern and refutation results which then becomes the next, basic pattern. For Hegel, this dialectic represented the process of all human thought and he presented it in his work G.W.H. HEGEL, LOGIC: BEING, PART ONE OF THE ENCYCLOPAEDIA OF THE PHILOSOPHICAL SCIENCES (William Wallace trans., 1975) (1830).

69. Charles Robert Darwin presented his discoveries in his works. See CHARLES DARWIN, ON THE ORIGINS OF SPECIES BY MEANS OF NATURAL SELECTION (London, J. Murray 1859); CHARLES DARWIN, THE DESCENT OF MAN AND SELECTION IN RELATION TO SEX (London, J. Murray 1871).

70. Karl Marx and Fredrich Engels turned Hegel's dialectical process into dialectical materialism which affirmed that material reality and practical activity created the ideas that humans have of their world and use in the dialectic process. Historical materialism is the Marxist interpretation of the process of history which evolves because each stage contains within it the contradictions that give rise to the next stage. Engels, in particular, realized that they needed a further explanation of the stages of society in a historical materialist theory and looked to the work of a lawyer turned anthropologist Lewis Henry Morgan from Rochester, New York. Morgan had been studying the Seneca Tribes and developed a series of evolutionary stages of human history in his book. See LEWIS H. MORGAN, ANCIENT SOCIETY (1877). This was the first major scientific account of the origin and evolution of society through stages such as Savagery and Barbarism based on the principle of progressive forms of food production. His book had an enormous influence on Marx and Engels and became the basis for the stages in the Marxist theory of stepped social evolution. See FRIEDRICH ENGELS, THE ORIGIN OF THE FAMILY, PRIVATE PROPERTY AND THE STATE (Ernest Untermann trans., 1902).

71. Herbert Spencer (1820–1903), a synthetic sociologist and philosopher, was a very early advocate of evolutionary theory in its application to human history and the progress of society. He was very influential during this period and coined the phrase "survival of the fittest." See 1 HERBERT SPENCER, *The Principles of Biology*, in SYNTHETIC PHILOSOPHY 444 (1866).

these scholars saw improvement over time as a temporal, linear constant, the necessity of enhancement and transformation through specific chronological sequences.

## 2. Cyclical Models

Another model of time in society popular during this period was the cyclical model, which repeated the same sequence over and over. Cyclical models of time had been very common throughout literature as a way of explaining other cultural conceptions of time, the rise and fall of cultures, and the life-cycle of individuals.<sup>72</sup> Cyclical models were also commonly used as a metaphor for the representation of ancient and mystical cultures thought to exist in a time-out-of-time space, with the past, present, and future all linked into a single repetitive unchanging continuity. James Frazer, Edward Tylor, and many of the other Victorian anthropologists of this period wrote of the religious animism of primitive cultures that lived in a cyclical world.<sup>73</sup> The various representations of cyclical time also include a spiral pattern thought to combine cyclical and linear, returning one to the same context each part of the year but still moving through a new temporal sequence.

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Evolutionary stages of society were not new in the nineteenth century. For example, Giambattista Vico had described four stages of society in the mid-eighteenth century—the Bestial Condition, the Age of Gods, Heroes, and Man—which were determined by their stage of religious development. See GIAMBATTISTA VICO, *THE AUTOBIOGRAPHY OF GIAMBATTISTA VICO* (M.H. Fisch & T.G. Bergen trans., 1944) (1731).

72. The lifecycle is an organic view of individual and social development that is important in fields as diverse as zoology, reproduction, botany, religious studies, anthropology and sociology. A cyclical view of history is evidenced in the works of many authors as it provides a lifecycle view of empire and societies—they are born, they advance, decay and die. Perhaps one of the most famous of these was the controversial EDWARD GIBBON, *HISTORY OF THE DECLINE AND FALL OF THE ROMAN EMPIRE* (1776–88). See 1–8 EDWARD GIBBON, *THE HISTORY OF THE DECLINE AND FALL OF THE ROMAN EMPIRE* (Betty Radice ed., London, The Folio Society 1988) (1776–88).

73. It is important to remember that most “primitive cultures” thought by the Victorians to be existing only in a cyclical, mystical space actually had their own internal methods for computing time. In Part IV, *infra*, the mystical experience of time is called *transcendent time*. It is not presented as necessarily cyclical in form nor is it a continuous form or one that applies only to certain societies. Transcendent time can happen in all societies in every temporal period.

### 3. Bipolar Models

A third model common in the period from 1880 to 1918 was the bipolar model. Emile Durkheim, one of the founders of sociology, presented a dualistic set of social patterns with a primitive, face-to-face, less complex society on one side and a modern, more complex society with division of labor on the other side.<sup>74</sup> This dualism between traditional and post-traditional societies continues to be popular today and shows up in all sorts of forms. For instance, the Cambridge sociologist, Anthony Giddens, uses a distinction between traditional, face-to-face, stable, and timeless societies on one side, and modern, long distance, changing, and timed societies on the other as the foundation for his entire theory.<sup>75</sup> A recent movie, *Pleasantville*, contrasted small town life in the 1950s to present day society by presenting the former in black and white and the latter in Technicolor. Postmodern theorists are forever juxtaposing modernist society and current post-modern society. In each of these oppositions, life in the older traditional society is usually plainer, more stable, slower, community-based, religious, and tied to natural rhythms while more modern society is less cohesive, faster-paced, more secular, and less tied to nature.

Legal academics and jurists use this bipolar model repeatedly. For example, current arguments to originalism in constitutional law harken back to and compare a previous time when law was done correctly.<sup>76</sup> Another example in the area of

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74. Emile Durkheim refined the idea of a bipolar model of societies—a “mechanical society” versus an “organic society.” See DURKHEIM, *supra* note 1.

75. Time is essential to the work of Anthony Giddens, who has written extensively on modern social theory, time and identity. For a further discussion of his bipolar model, see *infra* Part IV.C. In terms of time theory, he divides time up into three categories: *durée*, which is repetitive daily life interactions; *longue durée*, which is generational, reversible, institutional history; and *dasein*, which is irreversible, directional, linear time. See also GIDDENS SOCIETY, *supra* note 1; GIDDENS MATERIALISM, *supra* note 1; ANTHONY GIDDENS, CENTRAL PROBLEMS IN SOCIAL THEORY (1979); ANTHONY GIDDENS, OUTLINE OF THE THEORY OF STRUCTURATION (1984); ANTHONY GIDDENS, MODERNITY AND SELF-IDENTITY: SELF AND SOCIETY IN THE LATE MODERN AGE (1991) [hereinafter GIDDENS SELF IDENTITY].

76. Originalism or original intent refers in jurisprudence to the position that the motivations, ideas and intentions of the actual persons who participated in the framing and enactment of the Constitution and its Amendments should be the basis of constitutional decision-making today. See ROBERT H. BORK, THE TEMPTING OF AMERICA: THE POLITICAL SEDUCTION OF THE LAW (1990); JACK N.

religion is the famous 1972 case, *Wisconsin v. Yoder*,<sup>77</sup> in which Chief Justice Burger extols the hardworking, intensely religious Amish, who are throwbacks to the "sturdy yeomen" of our Yankee heritage, at the expense of the diverse, scientific, materialistic, and competitive urban actors of current America.<sup>78</sup> In short, Durkheim's bipolar model of traditional versus detraditional society from the turn of the previous century remains a common tool in legal argument today.<sup>79</sup>

#### 4. Event or Rupture Models

Another way of thinking about time is to conceptualize it in terms of a single disruptive moment—a single occurrence that then becomes both a marker in chronological time and a separate focus for investigation and consideration in and of itself (such as when the great earthquake happened, or when the decision *Brown v. Board of Education*<sup>80</sup> was decided). These are disjunctive events, occurrences which rupture the social fabric and are viewed as pivotal to understanding a deep change in society. For individuals, it might be your wedding, the birth of your first child, the time you almost died in that accident, Christmas 1996 when all the relatives came, the day you earned tenure, or the day your father died. These events in subjective time have taken on a separateness and independence that removes them from the flow of events in one's life. They are marked as special ruptures in time, both above and out of time and yet in the flow of time simultaneously.<sup>81</sup>

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RAKOVE, INTERPRETING THE CONSTITUTION: THE DEBATE OVER ORIGINAL INTENT (1990); JACK N. RAKOVE, ORIGINAL MEANINGS: POLITICS AND IDEAS IN THE MAKING OF THE CONSTITUTION (1996).

77. 406 U.S. 205 (1972).

78. *See id.* at 225–26.

79. In a recent book, the legal scholar Lawrence Freidman presents his own bipolar duality: traditional hierarchical societies in which religion was more important and relationships were vertical versus modern, egalitarian societies in which identities have become horizontal. For Freidman, mass media and technology have been the driving forces in this change. *See* LAWRENCE M. FREIDMAN, THE HORIZONTAL SOCIETY (1999).

80. 347 U.S. 483 (1954).

81. The French sociologist, Georges Gurvitch, has stated that times of disruption are marked by the present and past being dissolved into a transcendent future (certainly a good explanation of the emotive state of many at their wed-

We currently speak of the Internet in this way—as an event out of time that is transformative, unstoppable, radical and, in a sense, a rupture. *Event or rupture* moments attract and reposition money, resources, energy, and human capital toward the events causing the changes. Think of how everyone drops everything and coordinates themselves and others to help with a wedding. Think, also, of the difference between asking for additional secretarial staff for faculty and asking for a complete networking computer team and special assistants to help with computer, Internet, and World Wide Web training. Actions operating in perceived event or rupture time, like the Internet, will always command the most significance, legitimacy, resources, and attention.

All of these models of time—the linear progression model in its various forms from tilted line to stepped model, the cyclical model, the bipolar or two contrasted societies model, and finally, the event or disruption model of time—were proposed in one form or another during this crucial intellectual period at the turn of the last century. And each of them is used in both popular and legal culture today.

## II. ATTRIBUTES OF TIME IN THE LAW

The technological innovations and theories at the opening of the twentieth century provide a backdrop for a consideration of the current relationship between time and the law. What are the basic attributes of time as it has operated in the practice of law? How can we go about conceptualizing time in the law during the twentieth century to provide a useful analysis?

Perhaps the most obvious aspect of time in the law is that the legal community views time as malleable. Judges, lawyers, and legal academics are constantly reworking timeframes, rethinking time-posts, reorganizing timelines to position their decision, their client, or their group in a more favorable light. The law has the power to “create, alter, distort, or even destroy time itself, not simply our experience of it.”<sup>82</sup> This section

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ding) or by a time of discontinuity in which the past and future were entirely complete in a total present. See GURVITCH, *supra* note 1.

82. See KRAMER, *supra* note 30. My comments are but a paraphrase of Kramer's:

attempts to define this malleable legal view of time and its basic attributes.

There are six basic attributes described in this section—social construction, context dependency, subjective/objective nature, multiple co-existing understandings, irreversibility/reversibility, and finally, the importance of the use of metaphors.<sup>83</sup> These attributes of time will be explained in turn with examples from the practice and literature of the law.

#### *A. Time in the Law is Socially Constructed*

Clifford Geertz has written on the social construction of identity and time in Bali, Indonesia. For Geertz, the Balinese notions of personal identity depict “virtually everyone— . . . even the dead and the unborn—as stereotyped contemporaries, abstract and anonymous fellowmen.”<sup>84</sup> Through this concept of stereotyped identity, Geertz argues, the Balinese are able to simultaneously depersonalize everyone in their lives including ancestors, future children, and present associates. What becomes culturally important is a person’s “social placement, their particular location within a persisting, indeed an eternal, metaphysical order.”<sup>85</sup> Similarly, time is detemporalized along with this depersonalization of the conception of personhood:

The Balinese calendrical notions . . . reflect this clearly; for they are largely used not to measure the elapse of time, nor yet to accent the uniqueness and irrecoverability of the passing moment, but to mark and classify the qualitative modalities in terms of which time manifests itself in human experience. The Balinese calendar . . . cuts time up into bounded units not in order to count and total them but to

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If we believe in the time that exists uniquely in music, then we begin to glimpse the power of music to create, alter, distort or even destroy time itself, not simply our experience of it. . . . Time is a relationship between people and the events they perceive. It is an ordering principle of experience.

*Id.* at 5.

83. See BENJAMIN N. CARDOZO, *THE NATURE OF THE JUDICIAL PROCESS* 38 (1921).

84. CLIFFORD GEERTZ, *THE INTERPRETATION OF CULTURES* 389 (1973).

85. *Id.* at 390.

describe and characterize them, to formulate their differential social, intellectual and religious significance.<sup>86</sup>

Social construction, then, is a term indicating that social concepts such as time are products of social formation. In the Balinese example, their social concept of identity creates a depersonalized stereotypical personhood, similar in many ways to the depersonalization process of rule formation in the law. Their concept of time becomes qualitative rather than quantitative, deriving meaning not from its position in measured units but from its significance for human experience.

In law, we as lawyers go about socially constructing time within the confines of our general understanding of time; that is, we form time concepts to our purposes. The beliefs and meanings that we have as lawyers have come to us from our training in the law and the ideologies of that socialization process. Embedded in that socialization process is the idea of the malleability of time through the law; lawyers construct laws that then act as tools of temporal coordination.<sup>87</sup> Take the mailbox rule in contracts, for example, which delineates at what point in time a document will be taken as effectively issued or responded to. While we learned this rule in contracts class as law students, we simultaneously learned that the same rule might be changed, that it could and might be remade, to a different sort of temporality in the future.

Time, therefore, is both a relationship between people and a mechanism for ordering experience. While we tend to take the concept of time for granted in the law and presume that it is simply equivalent to the chronological passage of time, this image robs us of seeing that we socially structure and construct the way we see time.<sup>88</sup>

### *B. Context Dependent Nature of Time*

Within a culture, different groups will perceive time in distinct ways—by age, social group, professional affiliation, and

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86. *Id.* at 391.

87. For an effective critique and explanation of the use of social construction theory in the law in general, see Elizabeth Mertz, *A New Social Constructionism for Sociological Studies*, 28 L. & SOC'Y REV. 1243 (1994).

88. For a current critique of the idea of social construction, see IAN HACKING, *THE SOCIAL CONSTRUCTION OF WHAT?* (1999).

even academic discipline. These perceptions will also vary by context. One of my favorite essays on the context dependent nature of time is by Robert Levine, a psychologist, who began his investigations into understandings of time after spending a summer as a visiting professor at a Brazilian university. He anticipated difficulties with language, privacy, cleanliness, and illness, but never worried about Brazilian ideas on punctuality. His first two-hour class meeting was schedule to begin at 10:00 A.M. That morning, he glanced at his watch, and afraid that he would be late, he raced to his classroom only to find the classroom clock reading "10:20." No one was there. He went outside and asked several students walking by what time they had, and each was off by ten or twenty minutes. He then rushed to the departmental office to find its clock reading 3:15 P.M. Finally, he went back to the classroom and just began to teach. Students arrived over the course of the next two hours, each one greeting him and none terribly concerned about being late. Most students stayed around after the lecture, some kicking off their shoes at 12:30, half an hour after the end of the designated class period, to begin a real discussion of the issues with him. At this point, he pleaded hunger and fled from the room. He concluded in his study that:

The reason Brazilians' rules of punctuality so confused me, it soon became apparent, was that they are inseparably intertwined with cultural values. Cultural beliefs are like the air we breathe, so taken for granted that they are rarely discussed or even articulated. . . . [And] no beliefs are more ingrained and subsequently hidden than those about time.<sup>89</sup>

For Levine, Brazilian ideas about time were incomprehensible for most of his first summer visit because they were different culturally. He then learned that in Brazil, there were different contexts in which different timeframes operated: one was more likely to be relaxed about time in the academic-lecture setting than in other forums. This is context dependence, the fact that understandings of time depend also upon the particular context in which they are operating. In law, this concept operates in a number of areas, as we will see

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89. ROBERT LEVINE, *A GEOGRAPHY OF TIME: THE TEMPORAL MISADVENTURES OF A SOCIAL PSYCHOLOGIST*, at xv (1997) [hereinafter LEVINE].

in a later section.<sup>90</sup> We do not expect, for example, the concepts of time used in the Fair Labor Standards Act to be the same as the concept of time in the Uniform Simultaneous Death Act.<sup>91</sup>

### C. *Subjective and Objective Nature of Time*

My third point is that there are *objective* and *subjective* reactions to clock time. Let's say you and two friends go to the same law school class, concert, or movie. One of you finds it the most boring experience of her life and is counting the interminable minutes, even seconds, until it is over. The other is totally engrossed and absorbed; he comes out feeling as if he has only been there for a moment and can't wait to go back again. These are different subjective experiences of time occurring during the same single hour of objective clock time.

Attorneys recognize these common sense differences in every case they take. There is the client who can't remember when anything actually happened and is off by hours in his guesses. There is the nodding-out junkie or the belligerent drunk who probably could not remember anyway. There is the person who appears to be able to tell you everything by the second hand, "I know that it happened at 12:37 exactly," but who has the order of the events or the individuals involved wrong.

Then, there is the honest person who simply can't remember exactly when something happened, but thinks that it must have been around 1:00 P.M. because that is when the garbage truck usually goes by. Lawyers going to trial are constantly checking on issues of time like this: when *did* the garbage truck go by that day? When does it usually go by? Could she have been outside for some other purpose?

In short, when employed in the law, even the most objective form of clock time is highly context dependent and subject to individual interpretation because it is being filtered through the actions and attitudes of humans, who have elaborate social constructions of the proper use of time. As members of a society, we understand all these aspects of time, and as

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90. See *infra* Part IV.D.

91. See Fair Labor Standards Act, 29 U.S.C. § 213 (1994) (maximum work hour requirements); UNIF. SIMULTANEOUS DEATH ACT (amended 1993), 8 B U.L.A. 253 (Supp. 2000).

lawyers, we also understand legal ideas of time, the “subjectivity of historical memory.”<sup>92</sup>

Some social theorists refer to *objective* versus *subjective* differences in time as the distinction between *macro* and *micro* understandings of time, for example, a national calendar of events versus your own individual calendar of occurrences. Another way to put it is the difference between *public* and *private* time, but for our purposes here, we will use the terms *subjective* and *objective*.

#### D. Multiple Understandings of Time Coexist

In his book *The Spectrum of Social Time*, Georges Gurvitch points out that in the English language, all temporal sequences are represented by one singular word, “time,” although it obviously has multiple meanings.<sup>93</sup> Different social attitudes, performances, social roles—each of these operates in its own distinct time. Just as spending the afternoon in a meadow with a small child may have one time scale, repeatedly clicking the button on a Nintendo stick to zap an enemy in the basement of a large house may have another. A fourth point about the nature of time in the law, then, is that we often have several perceptions, several clusters of time, available to us at the same moment.<sup>94</sup> And time concepts are not necessarily mutually exclusive—that is, an individual can experience several different time frames in a single day or even in a single moment.

For example, early in the morning, a law professor may go to church for an important service and become deeply involved in the ritual, losing all sense of time for several hours. This could be called an experience of *transcendent time*, a time-out-of-time, almost timeless experience of the religious. Then, he goes to his office at the university and is inundated with phone messages, forty-two e-mails, sixteen letters and brochures in his mailbox, and two visits from students—all while he is trying to prepare for class in an hour. This barrage is experienced by him as *multiphrenic time*, a time in which he is

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92. See Engel, *supra* note 1, at 611.

93. See GURVITCH, *supra* note 1.

94. See EDWARD T. HALL, *THE DANCE OF LIFE: THE OTHER DIMENSION OF TIME* 13 (1983).

split into a multiplicity of different self-identities, a concept I will discuss more in part IV.

From there the professor goes to teach his class—something he really loves to do—and he experiences a sense of flow and movement, a sense of focused and concentrated but orchestrated time. Afterwards, he has lunch with a colleague and becomes wrapped up in some dispiriting conversation on the academic politics of reduced monies to the university or problems in administration. We will leave him here at lunch time, but the point is that he has already experienced *subjectively* several different kinds of temporal modalities, all the while aware of the continuous flow of *clock time* throughout the morning which he has used as an ordering principle in the background.

What Robert Levine's Brazilian lecture also demonstrates is that there are multiple perceptions of time as it relates to a wide variety of issues—time as a resource or ordering principle, as a sequence, duration, clock time, and time-consciousness. The perception also varies depending on the age group, the community, the occupations of the group, the institutional setting, or some other context dependency. The Brazilian example reveals what is often referred to as the distinction between *heterogeneous* and *homogeneous* aspects of time, that is, the difference between multiple individual, local concepts of time, very common prior to the twentieth century, and one large unified concept of time. For Levine, his Brazilian notions of time and his United States notions were not mutually exclusive concepts. He kept his idea of standardized, rigid, objective time, and United States time patterns during his period in Brazil and simply adjusted to Brazilian notions.

A good restatement of this concept of the multiplicity of time by Myrtle Korenbaum is:

We are made aware of the error of treating time as a unity when in fact it is multiple. This is crucial to [one] . . . who is involved in the attempts to predict and explain. Social roles, attitudes, values, etc. move in their own characteristic time. They vary in their duration, in their rhythm, in the degree to which they are dominated by the past or projected into the future. . . .<sup>95</sup>

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95. Myrtle Korenbaum, *Introduction* to GURVITCH, *supra* note 1, at xxii.

### *E. Reversibility and Irreversibility*

A fifth attribute of time is the issue of *reversibility* and *irreversibility*. In the seventeenth century, Isaac Newton posited his theory that mechanical time was basically independent of the material world. He argued that nothing in this world could affect the passage of time and that everyone experienced time in the same continuous way. But Newton's idea of absolute motion and absolute time included the notion that mechanical time was basically *reversible*, that is, the planets could go in either direction, forward or backward, in time with the same motions.<sup>96</sup> This is called time-symmetry, or t-symmetry, and until some recent experiments with very small particles called quarks, time reversal symmetry had not been violated. This meant that the Newtonian world allowed for time to go backwards and forwards, repeating the same sequence indefinitely, with both the future and the past exactly determined. Philosophers liked this image because it turned the universe into a giant clock, and theologians added the idea that God had started the clock.

But this leaves time without a direction. One of the deepest questions of physics since Newton has been how to reconcile the lack of an irreversible arrow of time, something we all sense psychologically, with Newton's idea of reversibility.<sup>97</sup> The important point here is simply that while humans express a feeling of the directionality of time, they also experience and discuss time as *simultaneous*, *reversible*, *irreversible*, and even *repeatable*. Each of us has seen a movie run in reverse and watched the broken piece of china reconstruct itself and fly back up onto the table. While we experience this in chronological time, we know that we are also experiencing time reversal.

Reversing a decision at law bears little resemblance to this process. When a decision is reversed at each level on appeal, the court is rarely returning to the previous or original

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96. A simple explanation of these concepts for the layperson is contained in Tony Rothman, *The Seven Arrows of Time*, DISCOVER MAG., Feb. 1987, at 63.

97. All of the theories since Newton's [or "Newton's theory"], such as Maxwell's theory of electromagnetism, quantum mechanics, and even Einstein's theory of relativity, are based on Newton's mathematics and his time-reversible pre-suppositions. We will come back to this issue later in discussing Einstein. See *infra* Part V.

position. Instead, it is switching who won the case while mapping out a new terrain of reasons for the switch. Note that this is completely different from the idea of t-symmetry.

Closer to the experience of time reversal is the process of a trial. In a trial, the same piece of timed evidence—a car pulling up to a stop sign and making a correct stop, for example—will be repeated over and over again in testimony and comments by the judge, witnesses, and lawyers in the case. This reversal and repetition of a timed incident, much like running a film sequence backward and forward over and over again to see it from every angle, creates the sense that time is standing still and gives the courtroom an *out-of-time-and-place* quality. We will see in Part III that this feeling of reversibility is also often associated with *transcendent time*.

#### F. Metaphors about Time Matter

A final point that I would like to make is that metaphors about time matter; how one conceptualizes and presents time is important to the ways in which a group or individual then uses and understands the concept.<sup>98</sup> William James, the famous American psychologist and brother of Henry, attacked early on the idea that time could be reduced to encapsulated bits, to quantified units demonstrated on the face of a clock:

Consciousness does not appear to itself chopped into bits. Such words as “chain” or “train” do not describe it fitly. . . . It is nothing jointed; it flows. A “river” or a “stream” are the metaphors by which it is most naturally described. In

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98. For more on metaphor, see the work of George Lakoff, a scholar in cognitive and linguistic research at Berkeley. See, e.g., GEORGE LAKOFF & MARK JOHNSON, *METAPHORS WE LIVE BY* (1980); GEORGE LAKOFF, *WOMEN, FIRE AND DANGEROUS THINGS: WHAT CATEGORIES REVEAL ABOUT THE MIND* (1987); GEORGE LAKOFF & MARK TURNER, *MORE THAN COOL REASON: A FIELD GUIDE TO POETIC METAPHOR* (1998).

On the topic of legal metaphors, which are abundant in the law, see BERNARD J. HIBBITS, *MAKING SENSE OF METAPHORS: VISUALITY, AURALITY AND THE RECONFIGURATION OF AMERICAN LEGAL DISCOURSE* (1994). See also DAVID MELLINKOFF, *MELLINKOFF'S DICTIONARY OF AMERICAN LEGAL USAGE* 406–7 (1992) (“Metaphor is the core of legal fiction. . . . For lawyers more than for other writers, recognition of metaphor as metaphor is essential lest colorful expression be mistaken for precision.”); BRYAN A. GARNER, *A DICTIONARY OF MODERN LEGAL USAGE* (2d ed. 1995).

talking of it hereafter, let us call it the stream of thought, of consciousness.<sup>99</sup>

It now seems natural to speak of the flow of time as a metaphor, but James was one of the first to call our attention to it. Citing William James in his famous book, *The Nature of the Judicial Process*, Benjamin Cardozo used this metaphor several times. For example, he spoke of the “stream of tendency,” or “current” in each judge that determines his basic outlook on life and then goes on later to state, with respect to the development of the law:

Nothing is stable. Nothing absolute. All is fluid and changeable. There is an endless “becoming.” We are back with Heraclitus. . . . Yet even now there is change from decade to decade. The glacier still moves. . . . [i]n this perpetual flux . . . .<sup>100</sup>

It matters what metaphorical images we conjure up in the various areas of law, whether they be the image of tort events happening in a chain, minds meeting in a contract, or property rights standing in bundles.<sup>101</sup> It also matters how we typify time in the law, whether the metaphor employed is a mighty river, a fragile stream, a seasonal harvest, a railroad engine running along a track, an atomic clock ticking, a computer working silently, or a violent earthquake. These metaphors determine how the time being described will be recorded mentally, and each provides a distinctive image and context.<sup>102</sup>

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99. WILLIAM JAMES, *THE PRINCIPLES OF PSYCHOLOGY* 239 (1910).

100. See CARDOZO, *supra* note 83, at 12, 28. Cardozo was also well aware of the work of Emile Durkheim. See *id.* at 111. Cardozo also states:

The flaws are there as in every human institution. Because they are not only there but visible, we have faith that they will be corrected. . . . We ought not to expect more of it when embodied in the judgments of the courts. The tide rises and falls, but the sands of error crumble.

*Id.* at 177.

101. This idea is discussed in an article on obligations: “Every law student learns that in tort events occur in a chain, that in contract minds meet, that in property rights are gathered in bundles. It seems reasonable to suppose that on some level everyone who studies law knows these images for what they are—mere metaphors . . . .” F. Stephen Knippenberg, *Future Nonadvance Obligations: Preferences Lost in Metaphor*, 72 WASH. U. L.Q. 1537, 1537 (1994).

102. See CARDOZO, *supra* note 83.

In summary, time has six basic aspects in the law (see Table 1). It is socially constructed and context dependent. It can be perceived in both subjective and objective modalities. Multiple understandings of time co-exist simultaneously for both individual persons and between and among different social groups, communities, institutions, and national cultures. One should look for the simultaneous, reversible, and irreversible qualities of time; and finally, the metaphors that one chooses to use in describing time in the law are important.

**Table 1**

**Attributes of Time**

- Social Construction
- Context Dependency
- Subjective and Objective Nature
- Multiple Coexisting Understandings
- Irreversibility and Reversibility
- Importance of the Use of Metaphors

III. THE FORMS OF TIME IN THE LAW

Most philosophers, social scientists, and even most hard scientists, pick two or three types of time to describe reoccurring phenomena in their field. Henri Bergson had *durée*, the lived temporal duration of “becoming,” which he contrasted with *temps*, the abstract mathematical calculations of the clock.<sup>103</sup> Mircea Eliade, considered the founder of religious studies in the United States, contrasted his eternal myth of the return in archaic societies with chronological history time. He then fit every process, sequence, recurrence, and duration into one of those two categories.<sup>104</sup> Clifford

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103. See HENRI BERGSON, *TIME AND FREE WILL* (F.L. Pogson trans., 1960) [hereinafter BERGSON]. Since Bergson, there have been many other philosophical investigations of time, including McTaggart’s well-known contrasting A- and B-series of time. A-series time is tensed (past, present, future), context-dependent, and changeable while B-series time is tenseless, timeless, and successive. See 2 J.M.E. MCTAGGART, *THE NATURE OF EXISTENCE* (photo. reprint 1968) (1921). For a more recent discussion of the philosophical problem of time, see MICHAEL TOOLEY, *TIME, TENSE AND CAUSATION* (1997).

104. See MIRCEA ELIADE, *THE MYTH OF THE ETERNAL RETURN: OR, COSMOS AND HISTORY* 89 (1949) [hereinafter ELIADE] (“[T]he primitive, by conferring a cy-

Geertz, the anthropologist mentioned above, distinguished between permutational time and lunar-solar calendar time in his discussions of detemporalization in Bali.<sup>105</sup> In his book, *The Geography of Time*, the social psychologist Robert Levine sets up four initial categories of time to help us think about the different ways we encounter and use time: *tempo*, the rate or speed at which people experience the flow of time; *duration*, the time that events actually last; *clock time*, using the units of a clock to schedule and regulate your life; and *event time*, allowing activities to occur at their own natural pace.<sup>106</sup> In her book *Timewatch*, Barbara Adam, a social scientist, outlines a variety of kinds of time from *body time* and *clock time* to *cancer time*, *global time*, and *organic time*.<sup>107</sup> And Edward Hall divides the kinds of time up into eight different categories from *metaphysical time* and *sacred time* to *personal* and *profane time*.<sup>108</sup>

Each of these authors is struggling to create categories that are both illuminating and accurate with respect to his or her area of interest. In the law, we need to come up with the kinds of time appropriate to analyzing and formulating law. I would propose five provisional categories which I have found in legal cases, theory, practice, and literature: *industrial clock time*, *transcendent time*, *natural time*, *social formation time*, and *physicists' time*. Each of these is important to our understanding of the use of time in the law. Each of these displays the attributes described above in Part II.<sup>109</sup>

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clic direction upon time, annuls its irreversibility. Everything begins over again at its commencement every instant.”).

105. See GEERTZ, *supra* note 84, at 391–98. Geertz has at least two different categories of time: First, *permutational time*, which is punctual in nature, gives the location of a particular day according to its location within many different intersecting day cycles, such as the six-day cycle, the thirty-five day cycle, etc. Festivals fall on these intersecting cycle days spasmodically, causing “full” festival days in contrast with “empty” or “hole” days, each with its own emotional valence. Second, the Balinese *lunar-solar* calendar time, on the other hand, is a bit more anchored in twelve-numbered months, but is also fundamentally related to what kind of day it is rather than where it falls in the calendar. See *id.*

106. For the descriptions of these four terms, see LEVINE, *supra* note 89, at 3, 27, 82.

107. See ADAM TIMEWATCH, *supra* note 1.

108. See generally HALL, *supra* note 94.

109. While each evidences the attributes of time in the law outlined in Part III, such as context dependence and multiplicity, these kinds of time also work in conjunction with most of the various models proposed at the turn of the century given in Part II. Thus, one can have transcendent time in a cyclical model but

### A. *Industrial Clock Time*

Without question, *industrial clock time* is the most common view of time within the law and the one most self-consciously promoted by the legal profession. While the Roman period and the Middle Ages primarily used natural and transcendent time patterns, starting in the early part of last century, clocks began to regulate life and work. Theorists like E.P. Thompson identify industrial time with changes in a society such as paid employment, the division of labor, and a social stratification into roles. To have industrial clock time, it must be divided up into even units that are regimented, quantified, and then directly connected to monetary amounts for work value.<sup>110</sup> Through this process, time becomes a commodity and an integral part of our economic system.

In law reviews and legal digests, questions of clock time predominate. At the turn of the century, for example, almost every entry in the *American Law Digests* concerned questions of time computation.<sup>111</sup>

Moving to the last ten years, the 1990s, industrial clock time definitely predominates in the law reviews concerned with time. There are law review articles, for example, on determining time on appeal,<sup>112</sup> delay in the courts and the notion of mandatory uniform pretrial deadlines;<sup>113</sup> testing for excusable neglect in a case of failure to file a claim on time in bankruptcy court;<sup>114</sup> the difference between jurisdictional time

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also in a stepped linear model; industrial clock time can be one half of a bipolar model of time, but it can also be part of a linear time model.

110. See E.P. THOMPSON, *MAKING OF ENGLISH WORKING CLASS* (1966); E.P. Thompson, *Time, Work-Discipline, and Industrial Capitalism*, 36 *PAST AND PRESENT* 57-97 (1967).

111. See, e.g., 3 *AMERICAN DIGEST*, § 2736 (1898); *Bayzer v. McMillan Mill Co.*, 13 So. 144 (Ala. 1893); *Horton v. Dominguez*, 8 P. 273 (Cal. 1885); *Wadsworth v. Wadsworth*, 15 P. 447 (Cal. 1887).

112. Roger A. Hanson, *Resources: The Key to Determining Time on Appeal*, 35 *COURT REV.*, Fall 1998, at 34.

113. Patrick E. Longan, *The Shot Clock Comes to Trial: Time Limits for Federal Civil Trials*, 35 *ARIZ. L. REV.* 663 (1993); John Burrit McArthur, *The Strange Case of American Civil Procedure and the Missing Uniform Discovery Time Limits*, 24 *HOFSTRA L. REV.* 865 (1996).

114. Richard P. Tobin, *Bankruptcy—Excusable Neglect—Consideration of Equitable Factors Is Permitted for Late Chapter 11 Proof of Claim Filings Under Bankruptcy Rule 9006(b)(1) to Determine If Filer's Conduct Constituted Excusable Neglect—Pioneer Inv. Servs. v. Brunswick Assocs.*, 113 S. Ct. 1489 (1993), 24 *SETON HALL L. REV.* 1056 (1993).

limits and statutes of limitation which can be subject to waiver, estoppel, and equitable tolling;<sup>115</sup> specific time for performance when a contract is silent;<sup>116</sup> the Fair Labor Standards Act definitions of "call time," "waiting time," "overtime," and "coffee breaks;"<sup>117</sup> "jail time" and "street time" credit toward parole;<sup>118</sup> and the Sixth Amendment right to a speedy trial.<sup>119</sup>

In popular culture, clock time is understood as both an *objective* standard (the clock on the wall that we use to determine when an exam is over) and an acquired internal mechanism (waking up in the morning knowing that it is five minutes before your alarm).<sup>120</sup> It is *irreversible* and associated with *linear* progression models of time. In academic disciplines, scholars often use industrial clock time as one pole of their theoretical duality—natural or lived or static or mythical cyclical time *versus* linear industrial clock time.<sup>121</sup>

115. Matthew L. Weidner, *Webb of Confusion: Equitable Tolling in Tax Refund Suits*, 53 WASH. & LEE L. REV. 1571 (1996).

116. C.C. Marvel, Annotation, *Admissibility of Oral Agreement as to Specific Time for Performance where Written Contract Is Silent*, 85 A.L.R.2d 1269 (1962).

117. W.J. Dunn, Annotation, *Rest Period, "Coffee Break," or Similar Idle Time as Work Time or as Hours Worked, within Fair Labor Standards Act*, 61 A.L.R.2d 962 (1958); J.J. Director, Annotation, *Call or Waiting Time as Working Time within the Minimum Wage and Overtime Provisions of the Fair Labor Standards Act* (29 U.S.C.A. §§206, 207), 3 A.L.R. FED. 675 (1970).

118. See generally 2 NEIL P. COHEN, *THE LAW OF PROBATION AND PAROLE* (2d ed. 1999); Lee R. Russ, Annotation, *Defendant's Right to Credit for Time Spent in Halfway House, Rehabilitation Center, or Other Restrictive Environment as Condition of Probation*, 24 A.L.R.4th 789 (1983); Joel E. Smith, Annotation, *Right of Defendant Sentenced after Revocation of Probation to Credit for Jail Time Served as Condition of Probation*, 99 A.L.R.3d 781 (1980).

119. See Brooks, *supra* note 11.

120. But note that most authors would place this sense of an internal clock in the arena of seasonal and diurnal cycle models because it is part of our biorhythms. Our internal clock is also represented as natural time. See ADAM TIMEWATCH, *supra* note 1, at 72–76.

121. For example, Bergson has *durée*, which is the lived temporal duration of "becoming," and *temps*, the abstract mathematical calculations of the clock. See BERGSON, *supra* note 103. Young has cyclical and linear, or clock, time. See YOUNG, *supra* note 1. Giddens has daily reversible *durée* versus irreversible directional time. See GIDDENS SOCIETY, *supra* note 1. Eliade has the eternal myth of the return time versus chronological history. See ELIADE, *supra* note 1043. Even Jonathan Kramer has non-linear versus linear time. See KRAMER, *supra* note 30. Manuel Castells has these three:

*Clock time*, characteristic of industrialism, for both capitalism and statism, was/is characterized by the chronological sequencing of events, and by the discipline of human behavior to a predetermined schedule creating scarcity of experience out of institutionalized measurement. *Time-*

But notice that even while the use of clock time in the law appears to be a straightforward concept, legal clock time actually differs from regular clock time. As one author has put it, the law “takes the liberty of modifying time concepts to suit its needs,” and legal clock time “is several shades removed from everyday usage, all the more so as the legal system grows in complexity.”<sup>122</sup>

This socially constructed legal use of industrial clock time can erase, create, contract, expand, or even eliminate time. For example, in every first-year law school contracts tome, there is a case in which a sale is rescinded because of a latent defect in the object sold, and so the court deems the contract never to have existed.<sup>123</sup> This is absolutely not the case in terms of standardized linear time; the law here is purposely erasing a section of history, an historical contract that was presumed valid by both parties when it was written. In other contracts cases, a document suddenly appears in the past which was not there before, when the court “finds a contract” that did not exist for instance. Another example of this phenomenon is a court’s determination that a particular act was not done correctly, such as the timely filing of a petition with the IRS by a private postage meter instead of a U.S. Postal Service postmark. When a court holds that the private postage meter stamp was not valid, the timely filing disappears.<sup>124</sup>

Or courts expand and contract the actual unit of time. When an airplane crashes or a ship is wrecked at sea, the process of dissolution can take several days or hours, and yet under the Uniform Simultaneous Death Act, that occurrence is instantaneous for the purpose of the victim’s insurance claims and inheritance.<sup>125</sup> Here, a long period of time is being collapsed into an instant. On the other hand, statutes commonly redefine clock units with language such as, “For the purposes of this statute, a day shall mean . . .” to expand or

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*less time [and] . . . [t]here is still another form of time, as conceived and proposed in social practice: glacial time.*

CASTELLS VOL. 2, *supra* note 36, at 125.

122. Ejan Mackaay et al., *The Logic of Time in Law and Legal Expert Systems*, *RATIO JURIS*, July 1990, at 262.

123. *Sherwood v. Walker*, 33 N.W. 919 (1887), is just one example.

124. William L. Ruby & Burgess J.W. Raby, *The USPS Postmark Monopoly on “Timely Mailed, Timely Filed,”* 69 *TAX NOTES* 609 (1995).

125. For an example from Colorado, see requirement that heir survive decedent for one hundred twenty hours, *COLO. REV. STAT. § 15-11-104* (2000).

contract the legal unit of clock time to be larger or smaller than the actual unit. And these alterations vary by area of law—we do not expect, for example, that the correct unit for a day under the Fair Labor Standards Act is the same as the one under a state sentencing statute.<sup>126</sup>

Other statutes reverse time or change its chronological order. For example, take provisions that an insurance claimant who files late, but then later shows good cause, may have her claim “regarded as having been made on a day earlier than the day on which it was actually made.”<sup>127</sup> There are many examples of this. Even the apparently simple rule, “first in time, first in right,” becomes enormously complex—reversing time, changing the parties or even becoming ineffective—when issues of larceny, finding, adverse possession, prescription, recording, and security of title are involved.<sup>128</sup>

Thus, the law uses standardized clock time in some instances but also extensively alters its construction of clock time through statutes and decisions. It shortens and expands the units of time, it can erase an historical event entirely, or it can add new occurrences that never actually happened in clock time. The law can also change what a unit of clock time is and alter our understanding of a simple chronological rule such as “first in time, first in right.”

### B. *Transcendent Time*

In our discussion of the multiplicity aspect of time above, I gave the example of a law professor who went to church for an important service early in the morning and became deeply involved in the ritual, losing all sense of time for several hours. I called this an out-of-time experience of the religious, timeless, or *transcendent time*.

All theorists dealing with the social aspects of time refer at some point to a timeless time, a universal temporal modality, a transcendent aspect of time that seems to be present and inescapable in every society. This time-transcending timelessness is often described as part of how some perceive

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126. See, e.g., Inmate and Parole Time Computation, COLO. REV. STAT. § 17-22.5-303.3 (2000).

127. Mackaay, *supra* note 122, at 263.

128. Lawrence Berger, *An Analysis of the Doctrine that “First in Time is First in Right,”* 64 NEB. L. REV. 349, 357 (1985).

relationships with God, with questions of infinity and death, with the meaning of life after death, and with the near-death experience. There is little doubt that this sort of time experience—whether acquired from meditating at a zendo, listening to a Mozart sonata, or responding with hundreds of others to a Christian evangelical preacher—is perceived as high quality time.<sup>129</sup>

In terms of the models of time that we use from the 1880s, the *transcendent quality of time* is most often applied to the *cyclical model* and to the traditional end of the *bipolar model*, although it has been applied to the *event or rupture model* when it concerns extreme times of revolution and social or political transformation.

Transcendent time is most commonly depicted as an ultimate, static, eternal, unchanging, sacred entity, as pure “being” rather than “becoming,” or, in Susanne Langer’s terms, as “virtual” instead of “absolute.”<sup>130</sup> Within transcendent time, one can travel back and forth, reverse order, have simultaneous time experiences, repeat time, accelerate it, decelerate it, float out of it. Transcendent time is often described as non-linear, and not socially constructed but out-of-society.

The quality of transcendent time in the law can be seen in institutional structures such as the Delphic Oracle of Greece, an institution of immense mythic importance and legitimacy, or the United States equivalent, the Supreme Court of the United States. These are transcendent arenas, spaces which we hold in deep reverence, citadels of power and information. John Brigham states that the awe with which we approach this institution has created the “cult of the Court.”<sup>131</sup> The oracular pronouncements of the Supreme Court authorize enormous changes in American life, and large segments of the population are informed about, and pay attention to, what the Justices decide. But more than that, with its ability to reverse history,

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129. It is important to note that this sort of transcendent time quality can be applied to a wide variety of ideas, objects or events, such as values, institutions, rituals, music and meanings.

130. See SUSANNE K. LANGER, *PROBLEMS OF ART* 37 (Charles Scribner’s & Sons ed., 1957). See also SUSANNE K. LANGER, *PHILOSOPHY IN A NEW KEY: A STUDY IN THE SYMBOLISM OF REASON, RITE, AND ART* (3d ed. 12th prt. 1969); SUSANNE K. LANGER, *FEELING AND FORM: A THEORY OF ART* 104, 109, 125 (1953).

131. See JOHN BRIGHAM, *THE CULT OF THE COURT* (1987).

the institution itself is viewed as timeless and enduring; it transcends daily politics in Washington D.C. (or at least tries to) and much of its mythological magic comes from its perceived elevated and transcendent role in government.<sup>132</sup> In short then, though the Supreme Court of the United States exists in multiple time spaces, one of the most important is transcendent time.

Transcendent time also occurs on a more *subjective* level. Mihaly Csikszentmihalyi, a professor of education and psychology at the University of Chicago, has spent most of his career studying what he calls the "autotelic experience state." It consists of the time periods in which an individual experiences *flow*, that is, an intense concentration that leads to distorted time, an out-of-body experience with complete concentration. Golfers, divers, ballet dancers, and other athletes describe feeling as if they are in a transcendent flow state when they are performing their sport, as do pianists when playing and Buddhist monks when meditating. Csikszentmihalyi explains that subjectively, transcendent time as a flow state is a feeling of complete immersion, and can occur in any activity as long as the individual experience has certain qualities:

[A]ttention becomes ordered and fully invested. Because of the total demand on psychic energy, a person in flow is completely focused. There is no space in consciousness for distracting thoughts, irrelevant feelings. Self-consciousness disappears, yet one feels stronger than usual. The sense of time is distorted; hours seem to pass by in minutes. When a person's entire being is stretched in the full functioning of body and mind, whatever one does becomes worth doing for its own sake; living becomes its own justification. In the harmonious focusing of physical and psychic energy, life finally comes into its own.<sup>133</sup>

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132. Carol J. Greenhouse, a legal anthropologist, has described the transcendent nature of the law, especially in connection to the Supreme Court. See Greenhouse, *supra* note 1, at 1643.

133. MIHALY CSIKSZENTMIHALYI, FINDING FLOW: THE PSYCHOLOGY OF ENGAGEMENT IN EVERYDAY LIFE 31-32 (1997). His most famous work on this topic is MIHALY CSIKSZENTMIHALYI, FLOW: THE PSYCHOLOGY OF OPTIMAL EXPERIENCE (1990).

I would submit that the quality of transcendent time understood subjectively as autotelic time or flow, comes for many lawyers and judges when they are in an intense trial. Such a trial exists in time-out-of-time, in a timeless period of intense concentration during which the lawyer is hyper-aware of everything and everyone in the room, the movement of information, the emotive states of the jurors. Trials have many aspects of transcendent time because they are temporal periods in which a single event or series of events is reversed and refracted, in which one goes back and forth continuously over the same acts and the same responses countless times, accelerating, decelerating, or simultaneously presenting several chronologies. The concentration and focus create a flow experience. Each trial, then, is a repetitive ritual that consists of a number of people focusing on a previous series of events that has caused a rupture. Sometimes, not always, I would argue, such trials create *transcendent time* in the law.

### C. *Natural Time*

The cadence of *natural time* is the experience we all have of the seasons, the life-cycle of all living beings, and the biorhythms of different ecological habitats and environments. These environments exist in natural time, the time of the earth and its inhabitants. Natural time is always thought of, not as socially constructed, but as simply “out there in nature,” as simply “being” as opposed to the “becoming” of clocked time. It is subjectively experienced and objectively apparent. Calling this same phenomenon biological time, Barbara Adam has stated, “the biological processes of change fundamentally entail cyclicalities, such as the life-cycle, metabolic cycles and metamorphic processes, to name just a few. . . . [This natural biological time] entails all the past forms and those that are to follow.”<sup>134</sup>

In terms of the models of time that were developed in the 1880s, natural time is most often applied to the *cyclical model*, and also to the traditional end of the *bipolar model*, much like *transcendent time*.<sup>135</sup> In these models, natural time

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134. See ADAMS SOCIAL THEORY, *supra* note 1, at 83.

135. Indeed, the two are often bunched together in typologies as a sort of transcendent, rhythmic cyclical time.

encompasses the silence and movement of nature, the endlessly repeating spirals of development, seasonal changes, life cycles, and gradual biological evolution.<sup>136</sup>

Law is filled with these natural, seasonal cycles—consider the court docket of the United States Supreme Court, which sprinkles its opinions throughout the year, most heavily in the spring, when the term is nearing its end. There is the rhythm of the cyclical seasonal calendar of a law school. As lawyers, we speak of the life-cycles of the judges on the bench or the high court, of the early and late years of Justices like William O. Douglas.<sup>137</sup>

Cases involving natural and biological notions of time are often the hardest to fit into a legal framework and often evolve on their own as very separate branches of law. For example, how do we go about balancing arguments about the optimal rate of exploitation of a natural resource such as a local wood supply, with the arguments of environmentalists for permanent sustainable development into an indefinite future? While the two groups in this controversy are taking different approaches, they are also arguing from fundamentally different

136. Each of us also has his or her own internal clock, a natural clock which wakes you up before the alarm goes off or causes hormonal and other changes. Some authors speak of it as *linear*, that is, fundamentally dynamic and evolving, while others speak of it as *irreversible* and as *cyclically reversible*.

Another question concerns the duration of natural time. Is natural time somehow much longer in perspective than other forms of time? Scott Lash and John Urry have formulated the idea of *glacial time*, which implies that “the relation between humans and nature is very long-term and evolutionary. It moves back out of immediate human history and forwards into a wholly unspicifiable future.” LASH & URRY, *supra* note 1, at 243. John McPhee uses the term “deep time.” See JOHN MCPHEE, *BASIN AND RANGE* (1981) and *ANNALS OF THE FORMER WORLD* (1998). In STEPHEN JAY GOULD, *TIME’S ARROW, TIME’S CYCLE* (1987), Gould takes on the “discovery” of geological deep time.

Another way to approach this is through the idea that human, not just material, cultures are sitting in natural time and therefore very old:

To some extent, interest in the preservation of and respect for indigenous cultures extends backwards the concern for all forms of human existence coming from different times, and affirming that we are them, and they are us. It is this *unity of the species, then of matter as a whole, and of its spatio-temporal evolution*, that is called upon . . . by deep . . . ecologist and ecofeminist thinkers.

CASTELLS VOL. 2, *supra* note 36, at 126.

137. See, e.g., JAMES F. SIMON, *INDEPENDENT JOURNEY: THE LIFE OF WILLIAM O. DOUGLAS* (1950), with chapters divided into “Mr. Justice Douglas - The Early Years,” *id.* at 195; “The Middle Years,” *id.* at 289; and “The Last Years,” *id.* at 389.

positions with respect to time—one industrial clock time and the other natural rhythmic time. These are some of the issues that environmental lawyers deal with on a daily basis, and they present fundamental challenges to legal thinking.

Events and objects that exist in natural time are also some of the most difficult and uncomfortable arenas for lawyers. Do you remember the *Hecht v. Los Angeles Superior Court*<sup>138</sup> case from California in which the husband left his frozen sperm to his mistress as part of his estate? We are uncomfortable with this case, and it is more than just the legal issue of the rule of convenience if she later becomes impregnated. We are uncomfortable because it just seems unnatural for a dead man to reproduce and create new lives. Similarly, many justices are disturbed by a death penalty or an abortion case when it is construed as cutting off the time of a life, they are uneasy with religion cases when they involve Native American concepts of time and space,<sup>139</sup> and they are uncomfortable with the issues presented by Ronald Dworkin on life support under living wills and euthanasia.<sup>140</sup> It is hard to contemplate the proper length of a life, and hard to determine the right of someone to end another's life or their own. It is hard because these cases sit in

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138. 50 Cal. Rptr. 2d 1289 (Cal. Ct. App. 1996).

139. Vine Deloria, Jr. has stated in his book *GOD IS RED: A NATIVE VIEW OF RELIGION* (1994) that practitioners of Western religions view the world through a *temporal* perspective while Native Americans view the world through a religious *spatial* framework making sacred sites essential to their practice. By a temporal perspective, he means a linear progressive model: "A variant of manifest destiny is the propensity to judge a society or civilization by its technology and to see in society's effort to subdue and control nature [as] the fulfillment of divine intent." *Id.* at 69. This is why, for example, Justice O'Connor failed to understand the importance of a sacred Native American site in *Lyng v. Northwest Indian Cemetery Protection Ass'n*, 485 U.S. 439 (1988). See, e.g., DELORIA, *supra*, at 62–77.

Also, in anticipation of some later arguments in this article, I should quote Deloria here on concepts of time in current U.S. society:

A great segment of the American public has been rudely pushed beyond the traditional temporal Western doctrines by the influence of the modern communications media. . . . The meaninglessness and alienation discernible in our generation results partially from our allowing time to consume space. . . . Ecology, the new left politics, self-determination of goals by local communities, and citizenship participation all seem to be efforts to recapture a sense of place and a rejection of the traditional American dependence on progress—a temporal concept—as the measure of American identity.

DELORIA, *supra*, at 74.

140. See RONALD DWORIN, *LIFE'S DOMINION: AN ARGUMENT ABOUT ABORTION, EUTHANASIA AND INDIVIDUAL FREEDOM* (1993).

natural time, and we are loathe to alter its rhythmic sequences.<sup>141</sup>

#### D. Social Formation Time

Social formations also have their own time modalities that vary according to economic and other factors. For example, a rural farm couple in Colorado who grow peach trees might be operating in a different social time from their own children who are making deals on the stock exchange in Manhattan. We have seen above the peasants of France swinging their hoes in rhythmic cadences during the planting and then harvesting of the wheat, singing their work songs, laboring until sundown, and then returning home. While most authors lump these activities together with either the *transcendent* or *natural* form of time, these workers are part of the rural social formation of feudalism which in large part dictated their concepts of time by tying them to the land.

Georges Gurvitch, the French sociologist mentioned above, created a typology of time based on social formations.<sup>142</sup> He

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141. Another way to conceptualize natural time is to see the use of natural time by the legal environmental movement as a radical gesture toward a new temporality: "Alongside space, the control over time is at stake in the network society and the environmental movement is probably the most important actor in projecting a new, revolutionary temporality." CASTELLS VOL. 2, *supra* note 36, at 124.

142. See GURVITCH, *supra* note 1, at 31-33. Gurvitch has eight different forms of social time that he outlines, which are presented here in abbreviated form:

(1) *Enduring time (time of slowed down long duration)*. Here the past is projected in the present and in the future. . . . Among the social classes, it is the peasant class and among the global societies, the patriarchal structures appear to actualize this time.

(2) *Deceptive time*. Under the guise of long and slowed down duration, it masks the virtuality of sudden and unexpected crises. In this "surprising time" rupture between the past and present occurs, reinforcing discontinuity. . . . This is a time of paradox. . . . It is a time of long duration dissevered by abrupt crises and unforeseen explosions, interrupted by a flood of discontinuity . . . as Ancient China and especially Egypt give evidence.

(3) *Erratic time, time of irregular pulsation between the appearance and disappearance of rhythms*—an enigmatic series of intervals and moments placed without duration. This is a time of uncertainty par excellence where contingency is accentuated, while the qualitative element and discontinuity become prominent eventually. The present appears to prevail over the past and future with which it sometimes finds it difficult

classified social times first and then linked these social times with different societal organizations and formations. With each of these social formations, Gurvitch describes whether they are located in the past, present or future and gives their relationship to the other parts of the time spectrum. For example, while there might be several different temporal paces available to a person living on an agricultural plot in feudal France in the 1300s, Gurvitch points out that a central time scale for agricultural feudalism is *enduring time*, in which the past dominates the present and future. *Enduring time* societies emphasize sameness and repetition; they reiterate

to enter into relations. . . . This is the time of global societies in transition as our society of today so often is.

(4) *Cyclical time* in which as apparent precipitation masks a withdrawal into itself ("a dance on one spot"). The past, present and future are mutually projected into one another with an accentuation of continuity and a weakening of contingency, while the qualitative element is brought into sharp relief. . . .

(5) *Retarded time* is a delayed time whose unfolding is awaited so long that, although the future is actualized in the present, it is not efficient. In this delayed time, no equilibrium between continuity and discontinuity is attained. . . . The groupings that move in retarded time are closed groupings or those to which admission is difficult: for example, the nobles, the landed gentry, certain corporations whose members are selected, particularly the licensed professions such as academic faculties and more broadly public service professions.

(6) *Alternating time*, time alternating between delay and advance, where the realization of past and future compete in the present. . . . [T]his time had first place in global societies at the inception of capitalism and when absolute monarchs ruled.

(7) *Time in advance of itself or Time pushing forward* is a time where the discontinuity, contingency and the qualitative triumph together over their opposites. The future becomes the present. . . . This is also the time of the active masses and communions in revolt. . . . This time was predominant in competitive capitalism. . . .

(8) *Explosive time* where the present as well as the past are dissolved in the creation of the immediately transcended future. In this time, discontinuity, the contingent and the qualitative are maximized and their opposites reduced to a minimum. This is the time of acts of collective creation.

*Id.* at 31-33.

Charles Wilkinson has used this approach in his book, *AMERICAN INDIANS, TIME AND THE LAW* (1987), one of the very few law books with a stated temporal dimension. He gives a historical presentation of the important timeframes of Native American law, seeing each frame as a type of social formation. This is similar to Gurvitch's approach in the sense that he is looking at different social formations but Wilkinson's book is more historical than sociological in nature. See generally WILKINSON, *supra* note 1.

tradition in conjunction with the natural environment. In feudalism and other enduring time societies, the past is emphasized and projected into the present and future, creating continuity and de-emphasizing change.

David Engel, a law professor at SUNY Buffalo, in describing law in a small county in Illinois, points out how the "enduring" view of time created legal conflicts in the town he was studying. He uses the term iterative or repeatable to describe enduring organizational time:

Both iterative [enduring] and linear time are to some extent a fundamental part of human consciousness, but in their pure form these two models move toward conflict. Emphasis on the iterative [enduring] view would cause social changes over time to be interpreted as cultural disintegration, as a failure of basic values to reemerge in traditional patterns. [On the other hand,] emphasis on the linear view should cause sameness over time to be interpreted as cultural stagnation, as a failure of basic values to be acted upon and realized in social life.<sup>143</sup>

At the other end of the spectrum in Gurvitch's view are social groups in the midst of "explosive" time frames. *Explosive time* societies include revolutions, radical transformations, and rapid changes in social formations. In explosive social formations, there is only a transcendent future in which both the past and present are dissolved and the future becomes the present very rapidly.

Both of these social formations, *enduring* and *explosive time*, are pertinent to Engel's small town example. The farmers situated in *enduring time* fear losing influence, quality of life, and their livelihood to dramatically growing industrial and corporate sectors.<sup>144</sup> The new businesses, on the other hand, see the same acts of continuity and tradition as failure and cultural stagnation (not cultural disintegration). Many of the legal cases and disputes in the county related to this clash between tradition and movement.<sup>145</sup> Conflicts of this kind are

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143. Engel, *supra* note 1, at 611.

144. "The event most Sander County residents considered a turning point for their community was the establishment in the mid-1960s of a large manufacturing plant by the Cosmo Corporation, a very well-known multinational organization." *Id.* at 612.

145. *See id.* at 615.

also common in estate law, for example, when generations of families, situated in distinctly different social timeframes, disagree over the appropriate use of family resources.

Interestingly, Gurvitch, writing in *The Spectrum of Social Time*, typified the legal profession under the rubric of “retarded time,” a type of social time that retarded the future, that slowed down development. Social formations such as guilds, professions, and the landed gentry slow down time on purpose and allow the future to become the present so late that it is always “outmoded as soon as it is crystallized.”<sup>146</sup>

The debate over “unbundling” legal services is perhaps an example of “retarded time” thinking within the legal profession itself. Legal representation can be viewed as a unit, a package of services rendered by a lawyer, or as made up of discrete, separable services that can be offered individually. If legal services are unbundled, attorneys can provide one service to a client, such as advice on a pleading, without making an appearance in court. This issue has been fiercely debated. Proponents argue that legal services are too costly, that some advice is better than none,<sup>147</sup> and that the “detailed do-it-yourself” approaches to everything, from remodeling to becoming a business entrepreneur, lend credence to the idea of implementing unbundling in the law. Proponents also claim, in effect, that detractors are sitting in *retarded time*. Opponents such as Federal District Judge John Kane point to tradition and note that others, including other lawyers, will be injured by the unbundling. Without a massive reform of the legal system, unbundling just “shifts responsibility—the kind of responsibility that is the essence of a profession, onto other lawyers and consumers.”<sup>148</sup>

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146. DAVID HARVEY, *THE CONDITION OF POSTMODERNITY* 224 (1990) (hereinafter HARVEY). Harvey has interpreted this categorization to point out the possible role of the academic:

[A]cademics and other professionals [then, are] perpetually condemned (it seems) to ‘retarded time,’ perhaps with a mission to avert ‘explosive’ and ‘erratic’ times, and so restore to us some sense of ‘enduring time’ (a world also populated by ecologists and theologians).

*Id.* at 223.

147. See Raymond P. Micklewright, *Discrete Task Representation a/k/a Unbundled Legal Services*, COLO. LAWYER, Jan. 2000, at 5. I owe this insight to Michael Shea.

148. John L. Kane, Jr., *Debunking Unbundling*, COLO. LAWYER, Feb. 2000, at 15. He further states:

It is interesting to think of whether this characterization of us as law professors and lawyers is true. Do we in general stand and wait for society to create problems or present some new economic strategy? When confronted with a problem, do we foreground categories of the past? Are we training students in continuity and traditions of the past only and avoiding the present and the future? What sort of social formation time do we want to stand in and why?

**Table 2**

**Forms of Time in the Law**

- Transcendent Time
- Natural Time
- Social Formation Time
- Industrial Clock Time
- Physicists' Time

IV. SATURATED TIME: THE END OF THE 20TH CENTURY

Toward the end of the last century, another technological revolution began to take place. With the unprecedented investigations into the nature of atoms and the invention of the nuclear bomb, travel now possible at the speed of sound, orbiting satellites allowing communication with any part of the world, television creating the potential for almost every person in the United States to be looking at the same image at the same time, and the invention of high speed computers, fax, Internet, and the World Wide Web, the ways in which we travel, store information, and communicate have been revolutionized. Not unlike the changes that occurred from

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[i]t is ludicrous to suggest that in the present system, a layperson armed with a few discrete sticks from the advocate's bundle can emerge from the trial thicket unscathed or that others will not be put to unnecessary expense. Will those who have been damaged by the *pro se* litigant's conduct or malfeasance have a claim against the lawyer who put the proceeding in motion?

*Id.* at 16. See also Gerald D. Pratt, *Limited Representation in Criminal Defense Cases*, COLO. LAWYER, Oct. 2000, at 77; Marcus J. Lock, *Increasing Access to Justice: Expanding the Role of Nonlawyers in the Delivery of Legal Services to Low-Income Coloradans*, 72 U. COLO. L.R. 459 (2001).

1880 to 1920, these new technological inventions have taken place in the context of several different scientific and social theories. This part addresses how these new technologies and new theories have changed subjective understandings of time and how this change has affected the practice, production, and study of law.

Time now simply appears to be going *faster*.<sup>149</sup> People are in a *hurry* to get things done these days; they are in a *rush*. Images on the nightly news flash by at a rapid rate with twenty news stories packed into little more than ten minutes of actual news time. And people seem to be more efficient and productive; they are *multi-tasking* to increase the amount of activity that they can fit into each hour of every day.

Many lawyers, legal academics, and law students are leading what psychologist Kenneth Gergen calls a *multiphrenic* existence.<sup>150</sup> Taking four courses in law school while holding down a job working for a public interest office, cite checking for law review, grocery shopping at midnight after studying at the library, and trying to maintain a tumultuous love affair with an English graduate student or a waiter/snowboarder, is not an unusual list of activities for many over-worked law students.

This saturated, over-filled late modern identity is arguably based on a perception of time as increasingly elastic and malleable and filled with activities capable of taking place at anytime during the week or day (Kinko's is open twenty-four hours after all). Studies show that people are sleeping much less than they did a hundred years ago,<sup>151</sup> and productivity continues to rise in large part, according to some scholars, because we do more in less time.<sup>152</sup> We try to stuff hundreds of actions into a single hour now and spread out the number of hours over a longer period of time. Time and space have become compressed through technology, with airports offering flights around the clock, restaurants open until 2:00 A.M., and

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149. This is the title of a recent book on the acceleration of time. See GLEICK FASTER, *supra* note 35.

150. One of the most interesting books on this topic is KENNETH J. GERGEN, THE SATURATED SELF: DILEMMAS OF IDENTITY IN CONTEMPORARY LIFE (1991) [hereinafter GERGEN].

151. *There Is a Reason for All Those Yawns*, THE PATRIOT LEDGER, March 29, 2000, at 1.

152. *Information Technology Raises Productivity, Greenspan Says*, ST. LOUIS POST-DISPATCH, June 14, 2000, at C2.

instant access by pager and cell phone to a growing segment of the population in the urbanized United States.

But when did this acceleration start? When did time start rushing forward? Where did we get the idea that an hour was elastic and malleable? Section A below proposes that the influential theories of Einstein and other physicists concerning the malleability of time and space laid the foundation for this end-of-the-century, socio-cultural paradigm shift. The advent of orbiting satellites, computers, and other technologies in the late 1960s also allowed simultaneity in multiple sites to become possible. The rapid advances in television, video, computers, fax, and the Internet have created a “technology-driven Western world”<sup>153</sup> that accompanied several social transformations in the 1960s and ensuing decades.<sup>154</sup> Sociologists have shown that increased wealth, education, and technology bring an increased sense of time tension, a sense that *there is not enough time*.<sup>155</sup> Some authors have even suggested a connection between possessions and time compression, that is, more “stuff means [more] speed.”<sup>156</sup>

#### A. *Physicists' Time: The Fifth Form of Time in the Law*

Unlike the other four forms of time—*transcendent*, *natural*, *social formation*, and *industrial clock time*—the fifth form of time, *physicists' time*, was not part of the popular and scholarly milieu until after World War II in the 1950s. As a consequence, it belongs entirely to the recent period and is very rarely used with the models from the turn of the century such as the *linear* time model. It is called *physicists' time* because it is based almost entirely on the findings and theories in one field over the past several decades.

One of the most profound of these theories is Albert Einstein's theory of general relativity. As I explained previously, Einstein's theory was based on the ideas of

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153. *See id.*

154. The dissolution of the traditional patriarchal family in the West, a reformulation of colonies into nation-states in Africa, Asia and elsewhere, the increased importance and power of global institutions including the global spread of consumer capitalism and consumer television and the end of the Cold War have all been part of this shift. CASTELLS VOL. ONE, *supra* note 36, at 5–10.

155. *See* ADAM TIMEWATCH, *supra* note 1, at 53.

156. *See* GLEICK FASTER, *supra* note 35, at 10.

Newtonian mechanics, which accepted the reversibility and symmetry of time. Newton's theories are presented with metaphors of clocks ticking, precise mathematical quantification, and astronomical rotations such that the general popular impression is one of uniform scientific calculation, precision, and stability. It is Newton who allowed us to calculate exactly where the planet Mars will be one year from now.

The work of physicists, such as Albert Einstein, profoundly changed this image of science as precise and stable. Einstein alone was responsible for an earthquake-like paradigmatic shift in science theory. What Einstein's theory proposes is that time is elastic and relative to each individual point of view.<sup>157</sup> In the late 1950s and early 1960s, a corresponding social shift in perceptions of the relative nature of time and space occurred as his theories began to enter the popular consciousness. A simple way to describe this popular culture shift is to say that people came to understand that time is what you make of it because it is relative to where you are standing and what you are looking at. This is the popular cultural understanding of relativity and it has had enormous effects. Thus, it is not surprising that Einstein was named Man of the Century by *Time Magazine* and has become an iconic symbol of genius.

Professor George Gamow, a very influential Russian-born physicist who taught in the United States for over thirty-four years, is largely responsible for the general popularity of this enormously complex theory.<sup>158</sup> After working on a wide variety

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157. Barbara Adam points in particular to three aspects of Einstein's work which have been socially influential: *Eigenzeit* or the concept of local, particular time; curved space-time; and the finite speed of light. "Collectively, they affect not only our understanding of time but of reality, causality and the relation of observer and observed." ADAM TIMEWATCH, *supra* note 1, at 55-60.

158. Born in Odessa, Russia, Gamow received his Ph.D. from Leningrad in 1929 for research in the area of natural radioactivity and the induced transformation of light elements. After visiting at the University of Copenhagen, Gottingen, Cambridge, Paris and the University of London where he worked with various scholars including Niels Bohr and Lord Rutherford, he became a professor at George Washington University in 1934 and then the University of Colorado in 1956 until his death in 1968. He published widely, was a member of many scientific associations, wrote prolifically, and was responsible for the ideas of "nuclear fluid," the Gamow-Teller Selection Rule for Beta Emission, the internal structure of red giant stars, the Urca process, and a "genetic code." In 1956, he was awarded the Kalinga Prize by UNESCO for the popularization of science. See ALBERT BARLETT & JACK KRAUSHAAR, *THE DEPARTMENT OF PHYSICS OF THE UNIVERSITY OF COLORADO AT BOULDER 1876-1996* (1996).

of problems in physics and astrophysics, he wrote a series of books in the 1940s that popularized the ideas of Einstein for the general public. Half a generation read these books on relativity and they remain popular today, along with countless knock-offs.<sup>159</sup>

In *Mr. Tompkins in Wonderland* (1940) and *Mr. Tompkins Explores the Atom* (1944), Gamow explained relativity by creating a normal man, a bank clerk named Mr. Tompkins, who goes to a lecture at the local university instead of attending a movie. At this lecture, the professor explains Einstein's Theory of Relativity, but Mr. Tompkins finds it boring and falls asleep. He dreams that he is in a world in which the speed of light is normal and special relativity applies. From Mr. Tompkins' relative point of view, a bicyclist on the street becomes shortened in the direction of travel as he speeds up. Gamow writes: "Mr. Tompkins did not notice that he gained much in speed but, as the result of his effort, he shortened still more and went down the street looking exactly like a picture cut out of cardboard."<sup>160</sup>

On the other hand, when Mr. Tompkins himself goes to ride a bicycle, something different happens because his perception is still relative to him:

He expected that he would be immediately shortened and was very happy about it as his increasing figure had lately caused him some anxiety. To his great surprise, however, nothing happened to him or to his cycle. On the other hand, the picture around him completely changed. The streets grew shorter, the windows of the shops began to look like narrow slits and the policeman on the corner became the thinnest man he had ever seen.<sup>161</sup>

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159. See ALAN P. LIGHTMAN, *EINSTEIN'S DREAMS: A NOVEL* (1994). Other related books include BARRY R. PARKER, *EINSTEIN'S DREAM: THE SEARCH FOR A UNIFIED THEORY OF THE UNIVERSE* (1988); MICHAEL YORK, *EINSTEIN'S DREAM* (1992). Another very popular work on this subject which has spread the ideas of *physicists' time* is STEPHEN HAWKING, *A BRIEF HISTORY OF TIME: FROM THE BIG BANG TO BLACK HOLES* (1988). See also PAUL DAVIES, *ABOUT TIME: EINSTEIN'S UNFINISHED REVOLUTION* (1996); LEON LEDERMAN & DAVID SCHRAMM, *FROM QUARKS TO THE COSMOS: TOOLS OF DISCOVERY* (1989).

160. GEORGE GAMOW, *MR. TOMPKINS IN PAPERBACK 3* (Cambridge Univ. Press 1965) (1940).

161. *Id.* at 4.

With this story about Mr. Tompkins and his own illustrations, Gamow is able to explain in layperson's terms that there is "a maximum velocity, the velocity of light which can not be surpassed by any moving material body,"<sup>162</sup> and that at the speed of light, in this case a bicycle, moving bodies begin to contract. Through other stories in his books, Gamow explains that time and space are related, relative to the position of the individual observing them, elastic and malleable. And in the past several decades, through magazines such as *Discover*, *Science Times*, *Natural History*, and *Scientific American*, as well as the science channels on the television, these ideas have come to fill the popular consciousness.

This then is the fifth type of time, *physicists' time*. Einstein, with Gamow as translator, prioritized the scientific framework of observation and thereby relativized and connected the measurement of time and space. Time, therefore, is always multiple because more than one person is always observing it. And physicists' time is now a large part of the way in which we view the world. As Barbara Adam, calling it physical time, has put it:

Physical time forms a deeply sedimented aspect of our everyday working knowledge. Newtonian physics pervades our daily lives through both our technologies and the way physics is taught at school; not as a way of understanding but as *being* the fundamental reality. We live and practice thermodynamics each time we put the kettle on. . . Making a telephone call across vast distances or receiving television pictures via a satellite, we partake in a process that demonstrates the upper limit of the speed of light and with it any physical signal and causally connected events. At the quantum level, we are flowing oneness where everything affects everything else.<sup>163</sup>

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162. *Id.* at 2. The complete quote is: "But Mr. Tompkins got only as far as understanding that the whole point of Einstein's theory is that there is a maximum velocity, the velocity of light, which cannot be surpassed by any moving material body and that this fact leads to very strange and unusual consequences." *Id.*

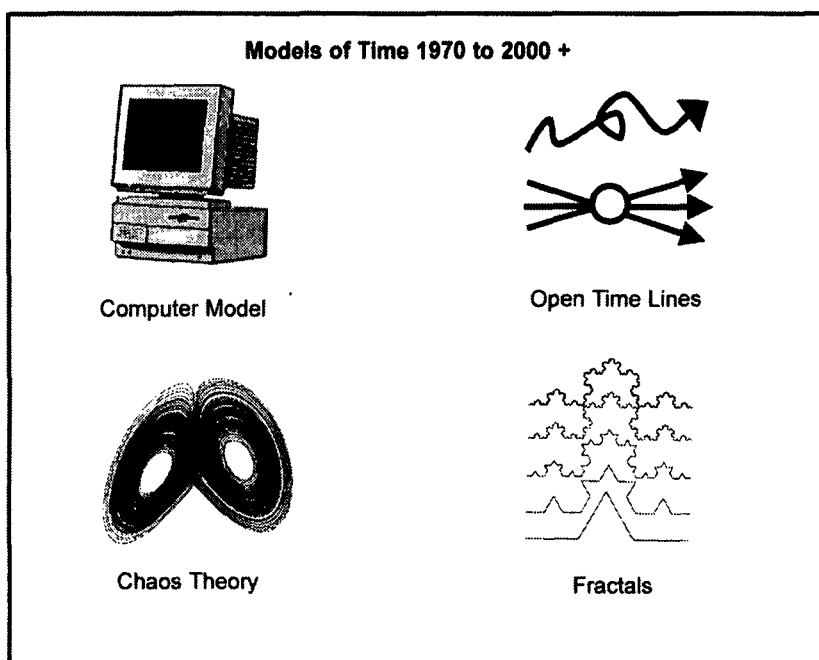
163. ADAM TIMEWATCH, *supra* note 1, at 68–69. She states elsewhere that she is in agreement with the central thesis of this section:

Most social scientists would argue that these reconceptualizations in physics and the physicists' focus on the nature of time have no bearing on the social sciences. I want to present a case to the contrary: that far

*B. Proposed Models of Time from 1970 to 2000 and Beyond*

The fifth form of time, *physicists' time*, has caused many new models of time to appear which are still not generally accepted outside of the science world, but are perhaps more appropriate for representing and explaining current phenomenon than linear and cyclical models from the Victorian era. Four examples are: *computer time*; multiple, non-linear, *open time lines*; *chaos theory*; and *fractals*.

**Chart B**<sup>164</sup>



from being irrelevant, natural time and the contemporary natural scientists' reappraisal of their base assumptions are of central significance to social science theory and practice. They matter because scientific conceptualizations of reality have deeply influenced not merely our common-sense understanding of the world but also our assumptions as social scientists . . . the social scientists' understanding of natural time is critical because it is intimately tied to the conceptualization of social time.

*Id.* at 48.

164. The Lorenz Attractor representing chaos theory reprinted by permission from PEITGEIN ET AL., *CHAOS AND FRACTALS: NEW FRONTIERS OF SCIENCE* 698 (Springer-Verlag Publishers 1992). The Koch's Island illustration representing fractal theory reprinted by permission from Professor William McWorter, illustrator.

## 1. Computer Model

Computer architecture has become a standard model of information storage and processing since the 1980s. Now, we commonly use terms from this new model in our daily speech: e-mail, hard copy, analog, graphics displays, digital, memory, recognition function, view screen, and processing. Although humanities and legal academics generally are not used to the computer as a model of time, there is little doubt that it pervades our consciousness both in the form of the mechanical *analog* computers (such as the watt-hour meters that register the electricity in your house) and in the many forms of the *digital* computer (from the supermarket register to the global positioning devices that give your position via the atomic clock and several orbiting satellites). Since the first electronic computer, the ENIAC, developed by John von Neumann, John Mauchly, and John Eckart in 1946 at Princeton, the computer has grown exponentially in significance. The social impact of this device for receiving, processing, and presenting information has been enormous, and it has led to growth in other areas such as office automation, the use of robots, and the international flow of goods and services.

The computer has also extended the human imagination in its ability to create and imagine *virtual images*, *space-times*, and *persons*. It is now possible to scan your face into a computer and then try out two hundred different hairstyles, to use the computer any time of night or day to tour homes that you are not allowed to enter, or to put on a virtual headset to act with others in a virtual reality space-time. This ability promotes *futurizing*, the capacity to think of possible futures, possible virtual worlds that could become real. And at the far end of such imaginings are the Artificial Intelligence and Artificial Life scholars, talking about the virtual lifeworld of digital beings that live on the global Net, the child's toy Poo-Chi, or robots—like complex versions of 1999's Christmas toy sensation, the Furby—that can learn from a human.<sup>165</sup>

In law, computers and computer time models are already being used. *Voir dire* consulting companies for trial lawyers base their decisions on immense data sets that are available

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165. See <[http://www.amazon.com/exec/obidos/ASIN/B00004TG4F/qid=983480118/sr=1-1/ref=sc\\_t\\_1/107-6300346-6679701](http://www.amazon.com/exec/obidos/ASIN/B00004TG4F/qid=983480118/sr=1-1/ref=sc_t_1/107-6300346-6679701)> (last visited March 1, 2001).

through computer analyses. Many law firms have networking capacity to off-site locations, and in law schools, course materials and chat rooms are available on-line, as well as entire courses with live and time-delayed instruction through video clip services. And, of course, Lexis-Nexis and Westlaw computerized data services, as well as the number of forms and legal aids now available on the World Wide Web, have radically altered the ways we conduct legal research. In the computer model of time, a person has access to vast amounts of coded information at all hours of the day.

The *computer model of time*, then, is both a particular systematic way of thinking developed through constant contact with computer processing, and a mental image of vast amounts of data constantly and simultaneously available but disembedded from their original sources in time and location. Manuel Castells, a sociologist from Berkeley, has described the *computer model of time* in the following way:

[D]ominant values and interests are constructed without reference to either past or future in the timeless landscape of computer networks and electronic media where all expressions are either instantaneous or without predictable sequencing. All expressions from all times and from all spaces are mixed in the same hypertext, constantly rearranged and communicated at any time, anywhere, depending on the interests of senders and the moods of receivers. This virtuality is our reality because it is within the framework of these timeless, placeless, symbolic systems that we construct the categories and evoke the images that shape behavior, induce politics, nurture dreams and trigger nightmares.<sup>166</sup>

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166. CASTELLS VOL. THREE, *supra* note 36, at 350. Castells and others think that this new sense of what I call *physicists' time* has created a new social formation that he terms "the culture of real virtuality," in "the network society." *Id.* More from Castells on the idea of virtuality:

Thus, spatio-temporal configurations were critical for the meaning of each culture, and for their differential evolution. Under the informational paradigm, a new culture has emerged from the superseding of places and the annihilation of time by the space of flows and by timeless time: *the culture of real virtuality*. . . . [B]y real virtuality I mean a system in which reality itself (that is, people's material/symbolic existence) is fully immersed in a virtual image setting, in the world of make believe, in which symbols are not just metaphors, but comprise the actual experience. This is not the consequence of electronic media, although they are the indispensable instruments of expression in the new culture.

## 2. Open Time Lines Model

A second model that has become very important is the *open time lines model*, a broad term for a wide variety of different models of time which have been developed over the past few decades. *Open time lines* can occur when a discipline becomes open to a possible range of “times.”<sup>167</sup> Hermann Minkowski was one of the progenitors of these ideas. His book, *Time and Space* (1907), was the first to mention the “fourth dimension,” a reference to time within Einstein’s General Theory of Relativity. He urged that a fused notion of space-time become the accepted view of the universe, and his ideas are the basis of much twentieth century science fiction.

Other time lines can be non-linear, looped, multiply occurring, wavy, or fractured. For example, many current novels and films, mimicking physics discoveries, now include backward time travel, parallel universes, and even backward causality. In the movie, *Back to the Future* (1985),<sup>168</sup> the key figure Marty travels back to the point at which his parents were about to meet in the 1950s. He is informed that he must be careful not to affect that world, as it will hurt his current world in the 1980s. The *Terminator* has the same motif, according to Catherine Gallagher, of “undoing the past”

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*Id.* See also CASTELLS VOL. ONE, *supra* note 36, at 372–75, 469–78.

For a discussion of these issues in terms of a “global present” society that has been created through instant access and the idea of a “time-compact globe” see an author of several books on time, J. T. FRASER, *TIME, CONFLICT, AND HUMAN VALUES* (1999).

167. For example, in geology, as theorists came to appreciate both the finiteness and the definite antiquity of the earth, they moved from a model of an earth that was everlasting and infinite to a finite one, albeit one of extreme antiquity. This is the positing of a beginning to something thought to have no origin and an almost unimaginably deep time past. As geologists now believe they can not predict the future of the earth, this is also the positing of an open time line future. In the 1960s, strips of sedimentation were uncovered in the sea bottom that showed periodic magnetic reversals indicating that the Earth’s magnetic fields had become stronger and weaker over time. This also changed geological thought to include times of magnetic reversal. See Matt Rosenberg, *Magnetic Reversal*, at <<http://geography.miningco.com/science/geography/library/weekly/aa032299.htm>> (last visited Feb. 19, 2001).

168. The very popular original *Back to the Future* with Michael J. Fox and Christopher Lloyd was followed by two sequels, the mediocre *Part II* (1989), and *Part III* (1990), which was quite good. The more recent films *Mindwalk* (1991) and *Frequency* (2000) have simultaneously occurring past and present time frames that also simultaneously influence one another and change history. There are many others, such as *Sliding Doors* (1998), the entire *Star Trek* series, etc.

through a kind of backward causation.<sup>169</sup> Note that linear and achronic time occur simultaneously in these movies, so, as Marty acts in the past, the photo he has of his family in the future keeps changing simultaneously. *Star Trek* and other science fiction mediums have taken the lead in projecting the possibilities for warping the time-space continuum and the length, speed, and reversion of chronological aging.<sup>170</sup>

Notice that law conducts its own version of the backward causation time loop when it alters a set of facts. Take the latent contract defect mentioned above. When the court intervenes and changes the document, it does not say that the case time line is being undone by the act, thereby changing the future retroactively. Instead, it is presumed to be a fiction in which all the parties hopefully understand that they are to act now *as if* something else had occurred previously. This is not a backward causation loop à la *Back to the Future* but a change in position in the present based on a new fiction about the past.

Also, the open time lines model affects the way lawyers operate in a legal world. A presumption about the appropriate amount of work than can be fit into an hour period, for example, is greatly amplified if some activity can be done faster, more intensively, more completely, or more thoroughly during that period. Multi-tasking, or doing two or more activities simultaneously (walking hand-in-hand with your child to her school while having a business conversation on a cell phone) can be understood as operating on two different time lines simultaneously. Law firms that require summer interns or associates to work fifty to one hundred hour work weeks are doing more than mixing work and leisure when they provide an all-hour work-out gym and import free gourmet dinners and ice cream to the firm for late night snacks. They are creating a total *social formation time* environment in which

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169. See Catherine Gallagher, Lecture at the "Rethinking Time" symposium at the University of Colorado titled "Undoing: Time, Travel, Counterfactuals, and Affirmative Action" (Mar. 3, 2000). She is currently writing on this topic. See also CATHERINE GALLAGHER, *NOBODY'S STORY: THE VANISHING ACTS OF WOMEN WRITERS IN THE MARKETPLACE 1670-1820* (1995); CATHERINE GALLAGHER & STEPHEN GREENBLATT, *PRACTICING NEW HISTORICISM* (2000).

170. A recent philosophical work deals with these issues of time travel, time circles, time cycles, and their presentation on *Star Trek* by relating them to the discussion between Godel and Einstein. See PALLE YOURGRAU, *GODEL MEETS EINSTEIN: TIME TRAVEL IN THE GODEL UNIVERSE* (1999).

productive capacity is dramatically increased through time line compression.<sup>171</sup>

### 3. Chaos Model

A third model, *chaos theory*, rejects the determinism and predictability of Newton's clock-time universe by studying phenomena that are entirely random such as weather patterns and erratic fluid turbulence. In 1927, with the presentation of Walter Heisenberg's uncertainty principle, the determinism of natural systems ended, although many scientists attempted to retain an "undiminished belief in a predictable world."<sup>172</sup> Heisenberg found that the velocity and the position of an object cannot be measured simultaneously, even in theory, because such a measurement has no meaning in nature. "Therefore," as Heisenberg put it, "all perception is a selection from an abundance of possibilities and a limitation of future possibilities . . . because all experiments are subject to the laws of . . . the uncertainty principle."<sup>173</sup> In 1960, with Ed Lorenz's discovery that a very small change can lead to enormous variation—the so-called butterfly effect—predictability, chaos, and order were redefined to allow the simultaneous observation of chaos and order side-by-side within the same system.<sup>174</sup> Chaotic and unpredictable effects are now understood to be part of even the simplest systems, such as feedback loops, as well as very complex systems like the weather.

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171. Note that, in the terms used in this article, this law firm environment eliminates *natural* and *transcendent time* as well even some aspects of *industrial clock time* as it is normally understood. For a collection of essays on the idea that social time-space has been reconstructed into commodity formation through new forms of capitalism, see *REMAPPING MEMORY: THE POLITICS OF TIMESPACE* (Jonathan Boyarin ed., 1994). See also HARVEY, *supra* note 146, at 211–39.

172. HEINZ-OTTO PEITGEN, HARMUT JURGENS, & DIETMAR SAUPE, *CHAOS AND FRACTALS: NEW FRONTIERS OF SCIENCE* 13 (1992) [hereinafter PEITGEN ET AL.].

173. *Id.* at 12.

174. The most iconic representations of chaos theory are the Lorenz Attractor, which looks a bit like a string butterfly, and the famous Feigenbaum diagram, which is closely connected to the ground-breaking work of Mitchell Feigenbaum. Interestingly, the Feigenbaum diagram is similar to an image of a branching tree that doubles at each terminal and it could only be computer generated because it is so complex. As one author has put it: "The success of modern chaos theory would be unimaginable without the computer." *Id.* at 587.

Chaos theorists attack messy problems without reducing them to simple models;<sup>175</sup> they look directly at the unpredictability of complex storm formations or the actual path of evolution as it proceeds erratically through random mutations, natural selection, ecological crises, and environmental niches. Using chaos theory, scientists are studying how the human body launches a random defense against a hostile bacterium until one mechanism works, and then, how the system starts a feedback loop to implement the best strategy.<sup>176</sup> As James Gleick has put it:

The contention of the new science of chaos—the motivating contention—is that such seeming irregularities can be contemplated, sorted, measured and understood. Traditionally scientists looked for a more conventional order in nature and treated the erratic as a side issue, an unpredictable and therefore unimportant kind of marginalia. Now scientists are more willing to look directly at the irregularity . . . to scrutinize, rather than dismiss, the apparent formless . . . to investigate the morphology of the amorphous.<sup>177</sup>

Chaos theory, then, is the study of randomness in an isolated system. Although it has not as yet been applied as a new model of time to law, the result would be very interesting. It would require accepting legal patterns as they are and looking at the actual patterns that law presents.

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175. Along with the ideas of strange attractors and Julia sets, chaos is a new area of mathematics that is concentrating on what are called “strongly’ non-linear systems.” *Id.* at 1. As Mitchell Feigenbaum has described it:

If chaos is not exactly the study of fluid turbulence, nevertheless, the image of turbulent, erratic motion serves as a powerful icon to remind a physicist of the sorts of problems he would ultimately like to comprehend.

*Id.*

From high energy physics to fluid physics and astrophysics our inherited ways of thinking mathematically simply fail to serve us. In a way, if perhaps modest, the questions tackled in the effort to comprehend what is now called chaos have faced these questions of methodology head on.

*Id.* at 3.

176. See JAMES GLEICK, CHAOS: MAKING A NEW SCIENCE 280, 314 (1988). Also, when chaos theory is applied to neural electroencephalographs, for example, “strange attractors” show up. The brain itself appears to be organized by chaos. See JOHN BRIGGS, FRACTALS: THE PATTERNS OF CHAOS 31 (1992).

177. ELIOT PORTER & JAMES GLEICK, NATURE’S CHAOS 25 (1990).

One example of this might be a new look at the “problem” of indeterminacy brought to the forefront by the Critical Legal Studies movement. Indeterminacy is the idea that legal doctrines are open-ended, “capable of yielding contradictory results,” and can “rotate around contradictory values or opposing polarities such as objective/subjective and public/private.”<sup>178</sup> While critics took a look at this problem from the viewpoint of philosophy, history, and sociology, it has never been looked at through a lens that prioritizes and valorizes the presence of chaos in every natural and social system. Using a chaos model would require looking at the results of legal doctrines not as problems or irregularities but as a way to create a “morphology of the amorphous.”

#### 4. Fractals Model

Related to chaos theory is the separate new field of *fractals*, the mathematics of natural forms. Fractals are derived from the observation that natural objects look like random versions of a mathematical formula that is then endlessly subdivided. Benoit Mandelbrot published a book called *The Fractal Geometry of Nature*,<sup>179</sup> in which he turned to the mathematical interpretations of naturally occurring objects that seemed to follow similar patterns: the flowerets of a cauliflower, the branching of river tributaries, and the system of blood vessels, nerves, and bronchioles in the human body. In the past, objects which were irregular or imperfect in shape, whether the coastline of Maine or the irregular shape of a cauliflower, were first reduced to an abstracted linear equivalent, approximated, and then measured. Mandelbrot wanted to decipher them without reducing their natural complexity. As he stated: “Clouds are not spheres, mountains are not cones, coastlines are not circles and bark is not smooth, nor does lightning travel in a straight line.”<sup>180</sup>

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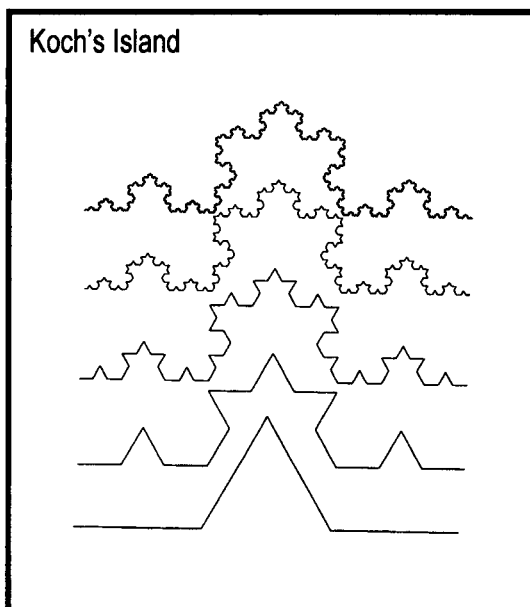
178. GARY MINDA, POSTMODERN LEGAL MOVEMENTS: LAW AND JURISPRUDENCE AT CENTURY'S END 108 (1995) (discussing the work of Duncan Kennedy on the topic of indeterminacy). See also Duncan Kennedy, *Form and Substance in Private Law Adjudication*, 89 HARV. L. REV. 1685 (1976); Duncan Kennedy, *The Structure of Blackstone's Commentaries*, 28 BUFF. L. REV. 209 (1979).

179. BENOIT B. MANDELBROT, *THE FRACTAL GEOMETRY OF NATURE* (1982).

180. This quote by Mandelbrot has become a famous statement on the origin

The famous diagram of the German Helge von Koch demonstrates this point. (See Diagram A.) Koch's Island begins with a line made up of four equal parts that has a triangular peak in the center. Each individual line segment is treated like the first and further divided in the same form to include a peak. Each remaining line segment is then divided again. The result is a classic fractal with each successive section similar to the whole. Mandelbrot realized that this problem posed by Koch approximated more closely the kind of detailed jaggedness typical of a real coastline. In fractal theory, geometrical calculations of objects and processes undergo a change in scale by either adding, as in the case of Koch's Island, or taking away, the same form.<sup>181</sup>

**Diagram A**<sup>182</sup>



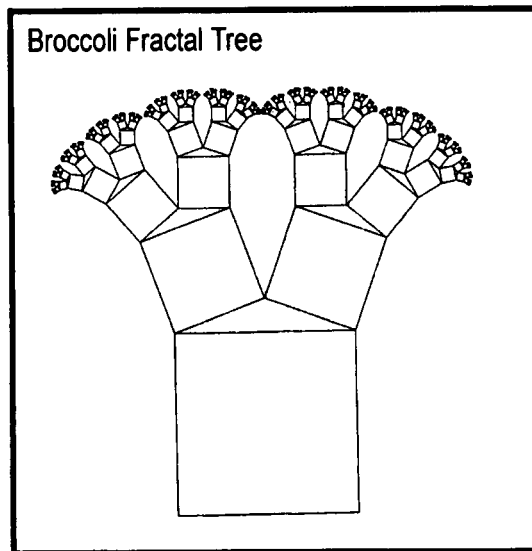
of fractals and is generally cited to demonstrate this point. For one example, see PORTER & GLEICK, *supra* note 176, at 25.

181. Thus, a coastline is a fractal pattern left behind from the sea's random subtraction process. "Cantor's dust," named for Georg Cantor, showed that classical fractal patterns can also be made by repeatedly taking the same pieces away. See generally PEITGEN ET AL., *supra* note 172.

182. The Koch's Island illustration reprinted by permission from Professor-William McWorter, illustrator.

Whether one is talking about Koch's Island, Cantor's Dust, the Sierpinski Gasket, or Menger's Sponge (three other classic fractal problems that involve subtracting from a whole), fractal theory provides a new time model for imagining the ways in which processes occur, whether the production of flowerettes on a broccoli stem from Pythagorean repetition (see Diagram B) or the processes of dissolution through continuous fighting in a social group. It is a model that has gained cogency in many other arenas, including other branches of science, philosophy, literature, and the social sciences.

**Diagram B**<sup>183</sup>



Fractal theory has been adopted because it provides a conceptual framework for thinking about a wide variety of temporal progressions, from the endless commodification of goods in the 1980s and 1990s (we have gone from one brand of jeans, Levi's™, to over 2000 labels of various jeans manufacturers), to specific industries that have been endlessly

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183. Broccoli Fractal Tree reprinted by permission from PEITGEIN ET AL., *CHAOS AND FRACTALS: NEW FRONTIERS OF SCIENCE* 698 (Springer-Verlag Publishers 1992).

subdivided into more and more specialized areas (there is now a specialty line of children's books on assessing time, for example). In Part IV, Section F, I will propose that the field of legal academia has been experiencing a fractal time effect since approximately 1965 and that legal decision-making is starting to show effects of this process as well.

In conclusion, the development of physicists' time and the associated paradigmatic shift, in which people perceive time as elastic and malleable, spurred on the development of these new technologies and methods—*computer time*, *open time lines*, *chaos time*, and *fractal time*. Like the theories of time that were developed between 1880 and 1918, each of these proposed models presents a view of time that might be of use to both academics and lawyers because they are mapped strongly on the technological and social processes that are presently occurring. In later sections, I will discuss more generally how they could be applied to current legal processes. In the next section, we return to the categories of the law and particularly the social formation of time in the law to discuss which of Gurvitch's social timeframes fits this current tempo and what that might tell us about the current situation of lawyers.

**Table 3**

**Models of Time 1880–1920**

- Linear and Stepped
- Progression
- Bipolar
- Cyclical
- Event or Rupture

**Models of Time 1970–2000+**

- Computer
- Open Time Lines
- Chaos Theory
- Fractal Theory

*C. Time Rushing Forward: A New Social Formation Time*

Social theories mirror the ideas of physicists and the social changes at the end of the twentieth century in the same way that Karl Marx's theories coincided with those of Darwin and the other social and technological developments in the last half of the nineteenth century. Think of some of the important social theorists in the 1960s, 1970s, and 1980s. Christopher Lasch, a psychologist from the University of Rochester, gained fame with his ideas about the "me generation," the idea that self identity had become the center of social theory and that Freudian narcissism was the result.<sup>184</sup> The relativism of social groups championed by anthropologists such as Clifford Geertz states that because each individual and each group has its own valid viewpoint, comparison to the position of others should be done carefully. Intellectual ideologies involving the breakup of American society into a series of smaller groups through gender distinctions, multiculturalism, plurality politics, and identity politics are very much an offshoot of this kind of theorizing.

Tony Giddens, one of the premier social theorists of the last half of the twentieth century, has written extensively on the turn to the self and all of its concomitants, including narrative expression, individual viewpoint, and a skepticism of social universal truths.<sup>185</sup> Instead of using a computer or fractal model from this time period, Giddens explained these effects by using a bipolar model of societies. Up until the 1960s, according to Giddens, social groups in the West understood themselves as smaller communities with kin relations close by, high presence, little time-space distantiation, an emphasis on tradition, and time designated by its relationship to activities (as in the "time for dinner," "playing bridge on Sunday," etc.). This traditional side of his bipolar model is similar to David Engel's rural community in Illinois, in which stability was viewed as culturally positive.

Giddens then points out that since approximately 1965, with the computer's increased storage capacity for information, the advent of the satellite, and the social changes from World

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184. See CHRISTOPHER LASCH, *THE CULTURE OF NARCISSISM: AMERICAN LIFE IN AN AGE OF DIMINISHING EXPECTATIONS* (1979).

185. See GIDDENS *SELF IDENTITY*, *supra* note 75.

War II, society has become more disembedded and urbanized, more attuned to clock time, and high absence relationships. At the end of the twentieth century, time has become separated from activities in a sort of continuous day-night<sup>186</sup> (grocery shopping available twenty-four hours a day, eating in the car, soccer during what used to be dinnertime). He identifies three aspects to this detraditional side of his model: 1) the separation of time and space, the possibility of relating through the telephone and television to people and institutions thousands of miles away; 2) the disembedding mechanisms that cause symbols to detach from the localities with which they were associated; and 3) reflexivity, the examination of how one's life and social formations are organized and constructed.<sup>187</sup>

Late modernity or postmodern theory, common fare in academic circles since the 1970s, evidences several of these claims to: a lack of meta-narrative and foundational principles;<sup>188</sup> loss of the unitary single subject;<sup>189</sup> an unusual concentration on the extremities—the very personal local and the very global;<sup>190</sup> a collection and repetition mentality described as patchwork, collage,<sup>191</sup> quiltings, and hybridity;<sup>192</sup>

186. A continuous day-night is aptly depicted in Magritte's horizontally divided painting of the sunny sky with clouds above, the night-time city street with glowing streetlight below. See René Magritte, *The Dominion of Light*, 1952.

187. The complete quote from which this is paraphrased is:

[First], separation of time and space; the condition for the articulation of social relations across wide spans of time-space, up to and including global systems. [Second,] disembedding mechanisms; consist of symbolic tokens and expert systems (these together = abstract systems). Disembedding mechanisms separate iteration from the particularities of the locales. [Third] Institutional reflexivity: the regularized use of knowledge about circumstances of social life as a constitutive element in its organization and transformation.

GIDDENS SELF IDENTITY, *supra* note 75 at 20.

188. For a legal example of this idea, see MINDA, *supra* note 178, at 190–95.

189. See, e.g., OTHER THAN IDENTITY: THE SUBJECT, POLITICS AND ART (Juliet Steyn ed., 1997).

190. See, e.g., CASTELLS VOL. ONE, *supra* note 36 at 3; GIDDENS SELF IDENTITY, *supra* note 75, at 1, 5, 187–88.

191. Some authors have posited argumentatively that time has actually stopped, or at least in their area of study. Arthur Danto, for example, has stated that art ended in the 1960s and now all we experience is collage, an endless repetition of recycled images, a loss of narrative and the possibility of anything. See ARTHUR C. DANTO, AFTER THE END OF ART: CONTEMPORARY ART AND THE PALE OF HISTORY (1997).

192. See TOBIN SIEBERS, THE SUBJECT AND OTHER SUBJECTS: ON ETHICAL, AESTHETIC AND POLITICAL IDENTITY, at ix, 3 (1998).

the mediatization of images; and social theory as a proliferating discourse with many voices.<sup>193</sup> Some decry the changes. Peter Berger, for example, finds the self in the center of this new world to be empty, without an identity or authority because it is not based in any moral or communal sensibilities.<sup>194</sup> Some give causal factors. David Harvey, for example, attributes many of these changes and the resulting time-space compression to changes in the structure of capitalism, from Fordist capitalism to flexible commodity capitalism.<sup>195</sup>

If we turn back to Gurvitch's typologies of social formation time from Part III, Section C above, we find that this type of late modern time does not fit with the *enduring time* societies of the feudal French peasants, the *explosive time* of revolutions or rapid transformations, or the *retarded time* in which the present and future are always emphasizing the past. Instead, this current period falls under his category of *time in advance of itself* or, as I have called it, *rushing forward time*.<sup>196</sup> Gurvitch thought that time in advance of itself resulted from new forms of highly competitive capitalism and speculation, which are certainly present in the United States in the last thirty years.<sup>197</sup> Thus, in the late twentieth century, the ideas of physicists and the new models of time have resulted in the American legal system operating in a rushing forward social formation.<sup>198</sup>

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193. See SOCIAL THEORY AND THE POLITICS OF IDENTITY (Craig Calhoun ed., 1994).

194. See PETER BERGER, THE HOMELESS MIND (1973).

195. See HARVEY, *supra* note 146. For a collection of essays on the idea that social time-space has been reconstructed into commodity formation through new forms of capitalism, see Boyarin, *supra* note 171.

196. See GURVITCH, *supra* note 1, at 47. To repeat his description here, Gurvitch states that:

*Time in advance of itself or Time pushing forward* is a time where the discontinuity, contingency and the qualitative triumph together over their opposites. The future becomes the present. . . . This is also the time of the active masses and communions in revolt. . . . This time was predominant in competitive capitalism.

*Id.* at 33.

197. Gurvitch also proposed that it could take different forms such as a period of high ideal aspirations and working toward a common goal or a period of active masses in revolt. *Id.*

198. See CASTELLS VOL. ONE, *supra* note 36, at 29-65, 376-428. There are different analyses and descriptions of time for this new era and some authors remind us that *social formation time* will vary by group (the attributes of *context dependency* and *multiple types of time*). For example, in a discussion of the

*D. Identity in the Saturated Era or Multiphrenia*

Kenneth Gergen, in a recent book called *The Saturated Self*,<sup>199</sup> speaks of the fragmentation of the current self in rushing forward time:

This fragmentation of self-conceptions corresponds to a multiplicity of incoherent and disconnected relationships. These relationships pull us in myriad directions, inviting us to play such a variety of roles that the very concept of an "authentic self" with knowable characteristics recedes from view. The fully saturated self becomes no self at all.<sup>200</sup>

Gergen calls this condition *multiphrenia*, a state which has three basic attributes. The first is that multiple demands keep increasing as opportunities present themselves. We can see this phenomenon in legal academia, as well as in the practice of law, as the number of things and relationships required of us

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breakdown of the traditional family and the position of some destitute children at the end of the millennium, Castells talks about the concept of time:

Among the children themselves there is the diffusion of what Pedrazzini and Sanchez, on the basis of their fieldwork in the streets of Caracas, have labeled "the culture of urgency." This is the idea that there is no future, and no roots, only the present. And the present is made up of instants, of each instant. So life has to be lived as if each instant were the last one, with no other reference than the explosive fulfillment of individualized hyper-consumerism. This constant fearless challenge to explore life beyond its present dereliction keeps destitute children going; for a little while, until facing utter destruction.

See CASTELLS VOL. THREE, *supra* note 36, at 160–61. See also CASTELLS VOL. TWO, *supra* note 36, at 64.

199. Although I discuss only one approach in this section, that of Gergen, there are many very good books on the topic of identity and the postmodern world including MADAN SARUP, *IDENTITY, CULTURE AND THE POSTMODERN WORLD* (1996); DAVID SIMPSON, *THE ACADEMIC POSTMODERN AND THE RULE OF LITERATURE: A REPORT ON HALF-KNOWLEDGE* (1995); TERRY EAGLETON, *THE ILLUSIONS OF POSTMODERNISM* (1996); ZEITGEIST IN BABEL: *THE POSTMODERNIST CONTROVERSY* (Ingeborg Hoesterev ed., 1991); ZYGMUNT BAUMAN, *INTIMATIONS OF POSTMODERNITY* (1992); SEYLA BENHABIB, *SITUATING THE SELF: GENDER, COMMUNITY AND POSTMODERNISM IN CONTEMPORARY ETHICS* (1992). See also Calhoun, *supra* note 193.

200. See GERGEN, *supra* note 150, at 7. For Gergen, basic beliefs in what he calls "the true and the good depend on a reliable and homogeneous group of supporters who define what is reliably 'there', a condition which is eliminated when multiple points of view are always available . . ." *Id.* at ix. Giddens explains this in terms of a single local community that can stand as a base for an individual. Both see this as the current condition in the United States.

expands. Only twenty years ago, the number of relationships necessary to be a legal academic consisted of the members of your department who lived down the hall. The number of papers that one had to produce or conferences one had to attend or opportunities one had to pursue was minimal. Today, academics are linked by e-mail, fax, and phone to a wide variety of groups and associations; they are expected to travel widely, to speak at other locales, to know academics at other institutions *well*, to publish one to two articles or books a year and to keep up with a wide array of campus activities. As Gergen puts it: "Daily life has become a sea of drowning demands and there is no shore in sight."<sup>201</sup>

Second, Gergen says that multiphrenia is typified by a general feeling of inadequacy because it is impossible to have so many demands, each related to its own value system, without feeling incompetent. For example, the barrage of different values and requirements from arenas in which the average law student is involved is overwhelming: computer competency, good legal writing skills, great soccer or basketball or rugby ability, volunteer experience at a local homeless shelter, high grade placement in classes, membership in law review, full personal life, contact with parents, good interviewing techniques for jobs, several externships or jobs, future clerkship lined up, and so on. Each of these areas of demand requires not only time commitment but personal reflection, preparation, transportation, and communication to keep it operating. And each also has a specific framework of values delineating what makes one a good daughter (calling home every week, sending cards, going home for holidays) or a bad interviewee (interrupting the interviewer), for example. Third, according to Gergen, decision-making and rational thinking can become very difficult in such an over-saturated environment. Localized rationalities compete with each other and, as he puts it, any truth is in trouble.<sup>202</sup>

In short then, an individual is now confronted with a temporality that has five basic characteristics:<sup>203</sup> (1) the availability of a wide range of activities at all hours of the day,

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201. *Id.* at 75.

202. *See id.* at 73–80.

203. This is not Gergen's but my own set of factors derived in part from the reading and the authors cited in this article and from my own reflection.

(2) the availability of multiple lifestyles and personal identities each with its own value system and roles (buying a motorcycle at seventy-five and riding to Sturgis, South Dakota), (3) the possibility of changing identities and roles and/or of having multiple identities at the same time, (4) packing more activities with different identities into the same amount of time,<sup>204</sup> and (5) increasing production demanded during the actual units of time available during the day.

**Table 4**

**Characteristics of the Multiphrenic Self**

- Wide range of activities at all hours of the day
- Multiple lifestyles and personal identities
- Changing identities and roles at the same time
- Packing more activities with different identities in same amount of time
- Increasing production per unit of time available

*E. The Legal Self at the New Millennium*

And what does all of this social theory have to do with the law? Let's look first at what it means in terms of *subjective time* for the life of the average lawyer. Many young lawyers seem to be doing more in the time allotted to them in any given day.

An average daily list for a female lawyer I know includes the following: First thing in the morning, she organizes the kids with their various bags and homework as she dresses hurriedly for work, dries her hair, and cleans up breakfast dishes. At work, she makes over twenty calls, responds to thirty e-mails,<sup>205</sup> completes two small research assignments,

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204. An example of how this would work with respect to the calendar would be if stores announced that there were going to be three Christmas seasons next year instead of one. While this seems ludicrous now, notice that this is the same sort of thinking that has eliminated the "dinner hour" by filling it with other available activities, such as soccer practice, extra math lessons or working out at the gym.

205. E-mails alone are a fast-growing area of information overload. A recent article on this in the eMarketer Web site points out that there were 3.4 trillion e-

composes six letters due to go out, talks to three clients in person, attends a weekly staff meeting involving some difficult personnel issues, and goes to a short court appearance. Having skipped lunch, she puts in an after-work gym session (did she remember to put shampoo in there to wash her hair? where are those extra socks anyway?), picks up the kids by 6:00 P.M. way across town at karate (the karate teacher approaches her and points out that her child is not taking the class seriously and they need to talk soon), attends a 6:30 P.M. birthday party for a friend of her child where she talks to other moms about how busy and overwhelmed she is. She returns home late trying to quiet one of her children who is upset about an incident at the party and gets the kids to bed. She arrives in her own bed around midnight after she has put in two loads of laundry, put the dishes in the dishwashing machine, mopped the floor, set out the trash, made a long list of what she needs to remember for the next day, and closed up the house for the night. As she falls asleep, she remembers that she needs to find a card and present for her mom's birthday and turns on the light briefly to make a note to mail it the next day so it will make it there in time.<sup>206</sup>

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mail messages compared to 107 billion pieces of First Class Mail delivered in 1998. "This equates to 9.4 billion [e-mail] messages exchanged every day of the year in America alone." See <[www.emarketer.com/estats/020199\\_email.html](http://www.emarketer.com/estats/020199_email.html)> (last visited Mar. 1, 2000). A single campus (the University of Colorado) on a single day last year (Thursday, May 20, 1999) sent 3.8 million e-mails and received over 5.1 million e-mails. See E-mail from Anush Shahakian, Information Technology Services, U.C. Boulder (Mar. 3, 2000.) (on file with author).

206. There is also evidence that these time pressures may differentially impact women. See ARLIE HOCHSHILD, *SECOND SHIFT: WORKING PARENTS AND THE REVOLUTION AT HOME* (1989). See also CYNTHIA FUCHS EPSTEIN, *WOMEN IN LAW* (2d ed. 1993); Cynthia Fuchs Epstein, *Glass Ceilings and Open Doors: Women's Advancement in the Legal Profession*, 64 *FORDHAM L. REV.* 291 (1995). Commenting on time pressure and value systems in law schools in a recent article in the *Journal of Legal Education*, she states:

Today some may regard as a low priority the enterprise of inserting compassion, service and values questions into law study and practice. It competes for time in school and certainly later on. . . . Globalization, business competition and decreased client loyalty have put pressures on lawyers to produce more and to produce faster. Firm practice has set a standard of dedication for "the true professional" that is operationalized by expectations that lawyers work unlimited hours. Those who seek to limit their hours in order to live more diverse lives are regarded as deficient in commitment and as lesser lawyers . . . what is at issue today is the relentlessness of this demand.

Time management has become one of the biggest issues in the practice of law; it relates directly to the requirement of increased production and the problems of the saturated self outlined above. Commenting that time is a "commodity, the supply of which is not inexhaustible," Chief Justice Rehnquist spoke recently about the problem of lawyers today simply working too hard. He mentioned several aspects of the *multiphrenic self* outlined above, such as the clash of value systems that leaves people feeling incompetent: a value system *at work* that exerts "subtle pressures to put more and more time in on the job" versus value systems *outside of work*, "... some very important things in life . . . that have nothing to do with the way you earn your living." He cautioned that there are many different arenas in which we operate and that those arenas, particularly spousal, parental, and amical, take "more time." He concluded that lawyers should not overprioritize one value system over another because it means sacrificing other kinds of opportunities—community organizations, fund-raising drives, political activities, church or synagogue affiliation, hobbies, and sports.<sup>207</sup>

The *ABA Journal*, local practice magazines such as the *Washington State Bar Journal*, and many other publications in law, regularly produce articles discussing how to use time management techniques in practice.<sup>208</sup> One popular book entitled, *Time Matters: In One Hour for Lawyers*, informs the reader that in four fifteen-minute lessons (note the emphasis on not expending much time learning):

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Cynthia Fuchs-Epstein, *Knowledge for What?* 49 J. LEGAL EDUC. 41, 43-44 (1999).

207. William H. Rehnquist, *Successful Lawyers Pay the Price; Many in the Profession Today Work More, Earn More But Enjoy it Less*, A.B.A. J., Feb. 1996, at 100. The cost of the psychological stress of trial law on self and family has been addressed also. For example, see Isaiah M. Zimmerman, *Stress and the Trial Lawyer*, 9 LITIGATION 37, 37-42 (1983); see also Cheryl R. Heisler & Arlene S. Hirsch, *A Life of Litigation: Identifying and Coping with the Stress*, 5 CBA RECORD 35, 35-38 (1991).

208. See Janet B. Fierman & Donna Evans, *Part Time Lawyering/Full Time Parenting*, 40 B.B.J. 10 (1996); James Wilson, *Beating Lawyer Stress*, NEVADA LAWYER (1995); Dianne R. Rynerson, *Managing Your Practice: Lawyers at Home: The Key Is to Be Intentional about Your Goals*, 58 OR. ST. B. BULL. 37 (1997); Carol Wilson, *Managing Your Practice: The New Math*, 58 OR. ST. B. BULL. 33 (April 1998); James E. Brill, *Making the Most of the Time We Have*, 78 ABA J. 98 (1992); Barbara Albert, *Time Sheets as an Effective Communication Tool*, 413 PLI/LIT 207 (1991); Jed S. Ringel, *Using Standardized Billing Formats to Analyze Legal Service Efficiency*, 432 PLI/LIT 703 (1992).

you will learn to use the basic functions of Time Matters to identify tasks to be performed, the deadlines for those tasks, and the persons responsible for performing them; to organize the names, addresses and other information to complete those tasks efficiently; and to determine what has been completed, the results and what remains to be done to accomplish the job. You need to be able to track critical dates, produce form documents related to the matter; track the status of the matter and enter and update information.<sup>209</sup>

#### F. *Legal Academia and the Law in the Saturated Era*

In *Postmodern Legal Movements*, Gary Minda outlined what the effects of this new *rushing forward time* modality have been on legal academia.<sup>210</sup> Starting in the 1960s and 1970s, modern legal jurisprudence studies began to decline, a fact that he attributes primarily to the social and cultural forces of the 1960s and internal changes in the discipline. It was replaced by a proliferation of new legal movements, first Law and Economics, then Critical Legal Studies and Feminist Legal Theory, then the Law and Literature Movement, Critical Race Theory, the Environmental Law Movement, Native American Law, and many other offshoots.<sup>211</sup> Each of these movements emphasizes a specific segment of the law and often its relationship to one discipline outside of law such as feminism or economics; each of these movements has spawned its own linguistic terms and discourse, its own journals, conferences, and celebrities. And in subsequent years, much like Koch *fractal* patterns, each of these movements has spawned several of its own internal divisions: Critical Legal Studies spawned Critical Race Theory, which has produced further subdivisions such as Critical Race Feminist Theory.

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209. STORM EVANS, *TIME MATTERS: IN ONE HOUR FOR LAWYERS*, at v-vi (1998). The book begins by pointing out that the ABA section of Law Practice Management published its first book on this topic in 1975, see ROBERTA COOPER RAMO, *HOW TO CREATE A SYSTEM FOR THE LAW OFFICE* (1975). On the practice and ethics of time-based billing systems, see WILLIAM G. ROSS, *THE HONEST HOUR: THE ETHICS OF TIME-BASED BILLING BY ATTORNEYS* (1996).

210. See MINDA, *supra* note 178.

211. It should be noted here that Minda does not cover the Environmental Law Movement or the Native American Law Movement. Also, Law and Literature, perhaps one of the most interesting areas in which to investigate the role of time in the law, is not discussed in depth in this article. *Id.*

With such multiplicity come the problems Gergen has outlined—problems of multiple demands, multiple positions for evaluation, perhaps feelings of inadequacy, and problems with decision-making. How does a faculty member who specializes in bankruptcy analyze papers on Law and Literature? How does a Critical Race Theorist read an extremely complex statistical paper in Law and Economics? Should a Feminist Legal Theorist accept an invitation to do a lecture series on International Law and Global Justice? This is just the sort of problem Gergen outlined and it is strongly evident in the legal academy.

The proliferation of schools of thought in the legal academy, following as it does an almost fractal time model of multiplication, also allows for a wide variety of rationales for any one legal case. For example, there can be a feminist analysis of a custody problem in family law, but there can also be a critical race theory analysis, or a law and economics analysis. While this multiplicity of possible positions, apparent from the current law reviews, provides welcome new ideas and new approaches for individuals formerly excluded from the legal arena, it also results in legal authors not talking to, but across, one another. In legal opinions, the same effect can take place; justices decide cases that do not relate back to previous cases or to other cases in the area because they are decided on completely different grounds. In several areas of law, what appears to be happening is that each new majority opinion, and sometimes each concurrence and dissent, is based on a different theory of law or a different school of thought.

Law in the saturated era, then, is filled with the possibility of increasing incoherence, a possibility that is now much in evidence in the subfield of Law and Religion, for example. Having avoided definitions of religion entirely, the Supreme Court is now writing opinions in the area of the First Amendment which legal academics find incoherent in both structure and language. There are deep contradictions in doctrinal analysis, such as rapid switches in reasoning from one case to another not matched to proposed tests, and there is very little adherence to precedent.<sup>212</sup>

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212. In *Employment Division v. Smith*, for example, Justice Scalia relied on the *Gobitis* case which had been overruled over forty-seven years earlier. See *Minersville Sch. Dist. v. Gobitis*, 310 U.S. 586 (1940); *Employment Div. v. Smith*,

And the language in religion cases has gotten surprising: Justice Scalia has taken to describing the well-known three-prong test of *Lemon v. Kurtzman* as "some ghoul in a late-night horror movie that repeatedly sits up in its grave and shuffles abroad, after being repeatedly killed and buried. . . ." <sup>213</sup> Douglas Laycock has stated that the religion clause now effectually means nothing. <sup>214</sup> Philip Johnson has put the problem in Religion and Law this way:

Many areas of constitutional law are unsettled, of course, but in most areas the uncertainty concerns how far the Constitution requires us to go in a particular direction. In the religion area, even the general direction is often difficult to ascertain. <sup>215</sup>

A polyphonic incoherence is typical of rushing forward time and the types of multiphrenic personalities it can produce at the end of the twentieth century.

#### V. CONCLUSION: MODELS, ATTRIBUTES, AND FORMS OF TIME

This article has set out a wide range of ways to approach time in the law. The next step perhaps is to take these ideas and begin to apply them to individual cases, legal theories in jurisprudence, issues in practice, ethical quandaries, and sub-areas of the law, such as family law and intellectual property, to see the ramification of a time-centric analysis. As the above text demonstrates, the results will be elucidating, interesting, and ultimately very useful. They will provide new insights into how we practice and assess law.

There have been four major themes in this article, each presented and explained in several different ways. First, ideas

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494 U.S. 872, 879 (1990). Much of this analysis comes from my article, Rebecca Redwood French, *From Yoder to Yoda: Models of Traditional, Modern and Post-modern Religion in U.S. Constitutional Law*, 41 ARIZ. L. REV. 49 (1999).

213. *Lamb's Chapel v. Center Moriches Union Free Sch. Dist.*, 508 U.S. 384, 398 (1993).

214. See Douglas Laycock, *A Survey of Religious Liberty in the United States*, 47 OHIO ST. L. J. 409, 450 (1986).

215. Philip Johnson, *Concepts and Compromise in First Amendment Religious Doctrine*, 72 CAL. L. REV. 817, 819 (1984). For interesting analyses of this area, see Harold Berman, *Religion and Law: The First Amendment in Historical Perspective*, 32 EMORY L.J. 777 (1986); Harold Berman, *Religious Freedom and the Challenge of the Modern State*, 39 EMORY L. J. 149 (1990).

about time are deeply embedded *within the law*. Not only are our legal notions of time widely varied and generally unstudied, they are much more complex than the simple units of staccato clock time rhythmically punctuating the present. Lawyers and legal academics need to take a closer, subtler look at these phenomena.

Second, there are three aspects of time in the law: *attributes*, *models*, and *forms* of time. Time in the law has six basic *attributes*—social construction, context dependence, subjectivity/objectivity, multiplicity, reversibility/irreversibility, and metaphors. Just as Geertz pointed out the depersonalization and detemporalization of Balinese calendrical notions of time, this article has worked at uncovering the ways in which legal socialization teaches temporality, and legal processes alter, bend, destroy, recreate, or rearrange time. Our legal ideas of temporality are multiple and often expressed metaphorically. Trial experiences demonstrate the concepts of subjectivity and objectivity, reversibility and irreversibility.

Periods of technological innovation are important to the story of time in the law because they have resulted in new *models* of time being advanced that are then absorbed into general social theory and ultimately popular culture. This article outlined some of the key technological changes from Greek, Roman, and Medieval European periods as well as the turn into the twentieth—and now the twenty-first—century. In each of these periods, the interaction of the new forms of technology with social factors resulted in the formulation of new *models* of time. In Medieval Europe, the mechanical clock allowed for the routinization and quantification of the day. In the pre-World War I period in Europe, several famous social theorists such as Karl Marx and Emile Durkheim developed four basic *models* of time that are still in use today—the linear/stepped model, the cyclical model, the bipolar model, and the event model.

Based on the current technological changes of the past thirty-five years, this article proposed a second set of more current models—computer time, open time lines, chaos time, and fractal time. The argument behind this proposal for a new set of models is twofold. First, these techno-social shifts have substantially changed the world we live in as lawyers into an Einsteinian-physicist world, a relative time-space mode. This change is disorienting, and to some extent, multiphrenic

because we do not have a good understanding of its operation. Second, because these new models map on current processes, we can use them to explain phenomena in the legal world, such as the fragmenting and proliferating growth in legal academic and practice literature. They help to explain higher production requirements, indeterminacy, and several other aspects of our current legal lives. But these new models are meant more as proposals to open a long, fruitful conversation on these topics.

The third major point in this article is connected to the *forms of time* appropriate to the law. Every discipline and subfield has available to it a set of categories or types of time (I use the term *forms*) which are pertinent to thinking about time in that discipline. Thus, philosophy has McTaggart's "tensed" and "tenseless time" and Langer's "virtual" and "absolute time"; social psychology has Levine's "tempo, duration, clock and event time" and Csikszentmihalyi's "flow" and "non-flow" periods; and the geologist John McPhee uses the term "deep time."

I have proposed five categories or forms of time pertinent to the practice of law—*industrial clock time*, *transcendent time*, *natural time*, *social formation time*, and *physicists' time*—each of which allows for more effective investigation of the role time should play in the law. As the law takes up regimes of time to organize and control social actions, it is important for us to understand both the historical context of time in the law and the *forms* which it manifests.

The final point summarizes and reiterates the other three: it is imperative that we, as academics and practitioners, critically reflect on our approach to legal time. This might involve consciously promoting new ideas over traditional ones and moving away from dualistic reasoning patterns, particularly the bipolar model currently employed by social and legal theorists.

I close with a few questions. Our culture has shifted from a conceptualization of time as a stable constant to a new perception of time as a rapidly evolving, erratic engine of change. But constant, evolving change is *not* the same as going *faster*. If law is located in a *rushing forward time* perspective in which the future becomes the present very rapidly and sources have made vast amounts of information simultaneously accessible, the world would appear to be constantly moving faster, time would seem *compressed*, and everyone else would

appear to be *doing more in less time*. In short, a *multiphrenic* legal identity would be a natural result.

But does the acceptance of ceaseless change, impermanence, and information increase require sitting in a *rushing forward time* perspective?<sup>216</sup> Does it necessarily mean increased speed, increased production, and more activities accomplished in a shorter period of time? Does the availability of information and commodities, as a result of flexible capitalism and new technologies, necessarily result in the increased access, use, and purchase of these items? Perhaps conceptualizing these processes in terms of new time frameworks will provide some different answers to these questions in the law. And perhaps, by conceptualizing these processes in terms of new frameworks, we could move from a reaction of *multiphrenia* and stress, to a new sort of conversation on the role of time in the law and the law in time.

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216. This is the reason that Buddhism has become, in my opinion, one of the most influential religions in the U.S. in the last twenty years even with its small number of followers. It is a religion that is based on constant change and impermanence and thus appears to provide answers to our current situation. See Rebecca R. French, *Lamas, Oracles, Channels and the Law: Reconsidering Religion and Social Theory*, 10 YALE J.L. & HUMAN. 505-36 (1998).