THE MEANING OF LIFE IN CRIMINAL LAW

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Abstract

Inflation and deflation change the value of money. Policymakers have used this rationale to amend legislation fixed to a monetary value. What is not acknowledged is that increase in life expectancy could also be a form of inflation, and, accordingly, could affect "the value" of nonmonetary sanctions—chiefly, imprisonment and capital punishment. Under a utilitarian approach to criminal law, with an increase in life expectancy, nonmonetary sanctions with confined-terms reduce their deterrent value, while nonmonetary sanctions with finite-terms, inter alia, life-imprisonment without parole and capital punishment, increase their deterrent value and severity. Under a retributive approach to criminal law, changes in life expectancy also affect the magnitude of nonmonetary criminal sanctions and change the proportionality between the criminal conduct and the punishment. Nevertheless, although life expectancy in the United States has increased substantially, legislators have not adjusted nonmonetary criminal sanctions accordingly. At the least, scholars and policymakers failed to recognize the role of life expectancy in the formation of criminal sanctions. Hence, current criminal punishments have not been recalibrated properly.

This Article revisits theories of criminal punishments while offering a new perspective on determining nonmonetary criminal sanctions that recognizes life expectancy considerations. It examines the current and desirable approach toward life expectancy considerations in criminal

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punishment theories while reviewing statistical data on the increase of life expectancy in the United States since independence. After discussing criminal punishment theories, and evaluating the role of life expectancy considerations under them, I conclude that criminal law theories, to a great extent, support life expectancy considerations. Under both utilitarian and retributive approaches, lack of practical considerations of life expectancy in criminal punishments could lead to a misconception of criminal law theories and erode the important role played by criminal sanctions. Accordingly, this Article examines consequences of failing to apply life expectancy considerations in practice and proposes modest solutions to overcome this perceived problem.

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I. INTRODUCTION

Inflation and deflation change the value of money. When money value changes, legislators or state officials adjust monetary damages and fines.[1] The purpose of this is obvious: as monetary-based damages or fines are tailored to incorporate purchasing power increases or decreases, inflation and deflation have the power to impact civil and criminal

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    1.   For example, in bankruptcy law, the dollar amounts are adjusted every three years to take inflation into account. 11 U.S.C. § 104 (2012); *see also* Federal Civil Penalties Inflation Adjustment Act of 1990, Pub. L. No. 101-410, 104 Stat. 890 (1990) (prescribing inflation-based adjustments in civil monetary penalties).

monetary damages and fines—either by weakening or strengthening their deterrent value.[2] A ten-dollar fine in 1789 is obviously not equal to a ten-dollar fine in the year 2016. Hence, policymakers adjust damages and fines in civil, administrative, and criminal laws. If this is true for monetary sanctions, what is the case for nonmonetary sanctions? Seemingly, there is no inflation of nonmonetary sanctions and thus, presumably, there is nothing to adjust.

But is this precise? Suppose that average life expectancy increases tenfold[3]: Every man or woman will live to about eight hundred years, while the aging process slows down.[4] Such a dramatic increase in life expectancy will affect many areas of our lives. Accordingly, many legal fields and national policies would also need to be adjusted to represent this new, increased longevity[5]: retirement age, social insurance payments,[6] pension laws, age limit for jury duty, age discrimination in employment,[7] and monetary allocation of various funds, to name a few. Should such a change in life expectancy affect criminal law, chiefly, nonmonetary criminal sanctions? The short answer is yes. The longer one is more complex.

The impact of an eight-hundred-year life expectancy on nonmonetary criminal sanctions could be vast. Statistically speaking, a ten-year imprisonment term for "A," whose life expectancy is one hundred years, is different than a ten-year imprisonment term for "B," whose life

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2. Federal Civil Penalties Inflation Adjustment Act of 1990 § 2(a) ("The Congress finds that . . . (2) the impact of many civil monetary penalties has been and is diminished due to the effect of inflation; (3) by reducing the impact of civil monetary penalties, inflation has weakened the deterrent effect of such penalties . . . .").

3. For more on current life expectancy in the United States, see *infra* Part II.

4. Although an eight-hundred-year lifespan is hypothetical, a further substantial increase in life expectancy is nonfictional, due mostly to medical developments, e.g., organ transplants, creation of artificial organs, and perhaps life suspension. *See generally* RODERIC GORNEY, THE HUMAN AGENDA 232–50 (1972) (examining different medical technologies capable of increasing life expectancy); Martin Lyon Levine, *Introduction: The Frame of Nature, Gerontology, and Law*, 56 S. CAL. L. REV. 261, 266–67 (1982) (discussing humankind's possible lifespan increase).

5. For more on the economics of life expectancy and mortality, see, for example, David D. Jones, *A Note on Life Expectancy and Mortality Adjustment*, 17 J. LEGAL ECON. 101 (2010).

6. *See The Future of Human Longevity: How Vital Are Markets and Innovation?: Hearing Before the S. Spec. Comm. on Aging*, 108th Cong. 65–81 (2003) (testimony of Stephen C. Goss, Chief Actuary, Social Security Administration) (arguing that social security costs are rising along with changes in demographic parameters like birth rates and mortality).

7. Age discrimination in employment, which is currently set to the age of forty, 29 U.S.C. §§ 621–634 (2012), will likely change with an increase in life expectancy and a slower aging process.

expectancy is eight hundred years. For the former, the criminal sanction is numerically a harsher punishment. Ten years in prison is "worth" ten percent of A's lifespan, while it is only worth 1.25% of B's lifespan. Thus, generally, A could "value" incarceration more than B, and the possible deterrent value of the criminal sanction would be higher. In contrast, when the criminal sanction is not confined to a number of years, but rather oriented to a span of indiscriminate time, i.e., life imprisonment without parole or capital punishment, A's sentence is statistically "lighter" than B's. B's sentence deprives her of more years outside of prison than does A's. Hence, the value of incarceration and the deterrent effect change accordingly.

A substantial increase in life expectancy of human beings under the hypothetical scenario, although exaggerated, is nonfictional. Changes in longevity throughout the years should have also impacted nonmonetary criminal sanctions. Over the years, life expectancy of human beings has substantially increased worldwide, as well as in the United States. At the end of the nineteenth century, males and females were expected to live approximately forty-seven years.[8] Over a century later, their life expectancy rose to approximately seventy-nine years.[9] While highly influencing the value of nonmonetary criminal sanctions, this statistical increase of sixty-eight percent has thus far been disregarded by policymakers when forming criminal statutes. Thus, much like policymakers' concern that inflation could negatively affect "the deterrent, punitive, and retributive purposes of . . . civil monetary penalties,"[10] "inflation" in life expectancy should raise similar concerns in nonmonetary criminal sanctions.

While monetary criminal sanctions usually change over time, many nonmonetary criminal sanctions have remained the same for over a

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8.   Elizabeth Arias, U.S. Dep't of Health & Human Servs., *United States Life Tables, 2002*, NAT'L VITAL STATS. REP., Nov. 2004, at 33–34 tbl.12 http://www.cdc.gov/nchs/data/nvsr/nvsr53/nvsr53_06.pdf (providing statistical data of life expectancy in the United States between 1900 and 2002).

9.   Jiaquan Xu, et al., U.S. Dep't of Health & Human Servs., *Deaths: Final Data for 2013*, NAT'L VITAL STATS. REP., Feb. 2016, at 31 tbl.8, http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_02.pdf (last visited Feb. 28, 2016) (providing statistical data of life expectancy in the United States for 2013). The statistical data on life expectancy in the United States is gathered from the National Center for Health Statistics, which publishes a "National Vital Statistics Report." Arias, *supra* note 8, at 33–34 tbl.12.

10.   JAMES MING CHEN, INFLATION-BASED ADJUSTMENTS IN FEDERAL CIVIL MONETARY PENALTIES 4 (2012), http://www.acus.gov/sites/default/files/Inflation-Adjustment-Federal-Civil-Penalties-_-Final-Report1.pdf (arguing in a report prepared for the Administrative Conference of the United States that "[t]he legislative history of the Inflation Adjustment Act reflects primary congressional concern over the deterrent, punitive, and retributive purposes of federal civil monetary penalties").

century. In Canada, for example, the scope of punishment in the criminal code has only slightly changed since its enactment in 1892.[11] Having said that, even if criminal sanctions rose dramatically during the last century, as in the United States, this increase was attributed to factors other than increased life expectancy.[12] Thus, a normative evaluation of the possible impact of life expectancy on nonmonetary criminal sanctions is required to properly shape criminal punishments.

The Article proceeds as follows: Part II examines life expectancy in general, focusing on the United States since the end of the nineteenth century. After providing general statistics on life expectancy, I examine whether life expectancy currently plays a role in various legal fields and, chiefly, in the formation of nonmonetary criminal sanctions. Part III examines theories that strive to determine the scope of criminal punishments—namely, crime control, desert, and reconciliation theories—while analyzing the role of life expectancy vis-à-vis these theories. Part IV evaluates and discusses three consequences of the rise in life expectancy. First, I examine the consequences on criminal theories and argue that life expectancy considerations could possibly play a role

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11. Ezzat A. Fattah, *Making the Punishment Fit the Crime: The Case of Imprisonment: The Problems Inherent in the Use of Imprisonment as a Retributive Sanction*, 24 CANADIAN J. CRIMINOLOGY 1, 4 (1982) (arguing that "[t]he sanctions provided by the Criminal Code have remained virtually unchanged since it was enacted in 1892").

12. When policymakers raise criminal sanctions, they usually attribute it to a need for deterrence, while life expectancy considerations were never directly characterized as a component of the decrease of such deterrence. For example, in copyright criminalization, Congress raised criminal sanctions for copyright infringements due to a perceived need for deterrence, while not discussing a rise in life expectancy as a component of the decrease in deterrence. *See, e.g.*, H.R. REP. NO. 93-1581, at 4 (1974), *reprinted in* 1974 U.S.C.C.A.N. 6849, 6852 ("[R]ecord piracy is so profitable that ordinary penalties fail to deter prospective offenders."); H.R. REP. NO. 102-997, at 2 (1992), *reprinted in* 1992 U.S.C.C.A.N. 3569, 3569–70 ("The purpose of S. 893 is to harmonize the current felony provisions for copyright infringement and to provide an effective deterrence to the piracy of motion pictures, sound recordings, computer programs, and other original works of authorship. Piracy of copyrighted works costs U.S. industries millions of dollars a year, resulting in losses of jobs and diminution in the number of works created. Effective criminal penalties will aid in preventing such losses."). For further information on copyright criminalization reasoning, see Steven Penney, *Crime, Copyright, and the Digital Age*, *in* WHAT IS A CRIME? DEFINING CRIMINAL CONDUCT IN CONTEMPORARY SOCIETY (Law Comm'n of Can. ed., 2004); Miriam Bitton, *Rethinking the Anti-Counterfeiting Trade Agreement's Criminal Copyright Enforcement Measures*, 102 J. CRIM. L. & CRIMINOLOGY 67 (2012); Lydia Pallas Loren, *Digitization, Commodification, Criminalization: The Evolution of Criminal Copyright Infringement and the Importance of the Willfulness Requirement*, 77 WASH. U. L.Q. 835 (1999); Irina D. Manta, *The Puzzle of Criminal Sanctions for Intellectual Property Infringement*, 24 HARV. J.L. & TECH. 469 (2011); and Grace Pyun, *The 2008 Pro-IP Act: The Inadequacy of the Property Paradigm in Criminal Intellectual Property Law and Its Effect on Prosecutorial Boundaries*, 19 DEPAUL J. ART TECH. & INTELL. PROP. L. 355 (2009).

under both deterrence and retributive theories. Second, I audit the practical consequences of non-compliance with the rise in life expectancy. I claim that failing to consider life expectancy under utilitarian considerations creates a *marginal deterrence gap* as it changes deterrent values of criminal sanctions for many offenses. Under a retributive approach, changes in life expectancy could cause a misalignment between the crime and the "deserved" punishment. In practical terms, criminal sanctions should not necessarily adapt to the increase in longevity, due to possible counterarguments, inter alia, the extended value placed on life and the presumption that criminal sanctions are currently too high and over-criminalized. Third, I examine the practical consequences of the increase in longevity on judicial decisions and sentencing. This Section argues that, although judges could use life expectancy as a criterion in sentencing, mostly due to sentencing guidelines regarding life imprisonment and a cognitive bias of *anchoring* and *adjustment*, life expectancy should not play a role in *ex-post* decisions, but rather in *ex-ante* legislation. Finally, Part V concludes the discussion and argues that current criminal punishments should, at the very least, be revisited to properly encompass life expectancy considerations. The current practice of disregarding life expectancy as a consideration in determining the scope of criminal punishments is inadequate and should be amended accordingly. Further, I advise careful implementation of these considerations.

II. LIFE EXPECTANCY

Human life expectancy is the average expected span of years to be lived, divided by a particular cohort, if mortality trends continue for the rest of that cohort's life.[13] Life expectancy is ever changing. In Roman times, the average human lived approximately twenty-five years.[14] When the United States earned independence in 1776, American citizens lived approximately thirty-five years.[15] In 1900, the life expectancy of males at birth in the United States was approximately forty-six years and for females, approximately forty-eight years.[16] In 2013, life expectancy in the United States, at birth for males, was approximately seventy-seven years

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13. LAURA B. SHRESTHA, CONG. RESEARCH SERV., RL32792, LIFE EXPECTANCY IN THE UNITED STATES 1 (2006).

14. CHRISTOPHER WANJEK, BAD MEDICINE: MISCONCEPTIONS AND MISUSES REVEALED, FROM DISTANCE HEALING TO VITAMIN O 70 (2003) (exploring life expectancy history).

15. *Id.*

16. *See* Arias, *supra* note 8, at 33–34 tbl.12; Jiaquan Xu, et al., *supra* note 9, at 13.

and for females, approximately eighty-one years.[17] Thus, in over a little more than a century, life expectancy of males (all races) increased from forty-six to seventy-seven years, i.e., an increase of more than sixty-seven percent.[18] Similarly, female life expectancy (all races) increased from forty-eight to eighty-one years, i.e., a gain of approximately sixty-nine percent.

Statistical data on life expectancy reveals astonishing results. Combining the data on both American males and females of all races since 1900 leads us to an approximate increase of sixty-eight percent in longevity. People today live longer than before. This is obvious even without turning to statistics. However, the fact that in a little more than a century life expectancy has increased approximately sixty-eight percent could, and should, have ramifications on many areas of our lives, including the legal system.

Before continuing to examine the possible ramifications of life expectancy on legal policies, a caveat is due: the underlying query of this Article is to normatively introduce a component in criminal punishments, which has thus far been disregarded by both academic scholars and policymakers. It examines possible consequences of the rise in life expectancy on legal fields, and, chiefly, on nonmonetary criminal sanctions. However, relying on such statistical data to shape legal policies could be problematic. Life expectancy is incoherent. It varies according to race, gender, and geographical areas,[19] for example, and is not always quantifiable. Hence, the measure can be inaccurate.[20] In addition, life expectancy statistics take into account various variables, e.g., infant mortality, suicides, and other deaths from unnatural causes. For instance, apart from poor medical conditions, one of the reasons that life expectancy was relatively low in Roman times was because a majority

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17. Jiaquan Xu, et al., *supra* note 9, at 31 tbl.8.

18. Note that current life expectancy statistics are much more reliable than life expectancy statistics in the early twentieth century. In 1900, when the federal civil registration system set up the Death Registration Area ("DRA"), merely ten states and the District of Columbia partook in DRA statistics. *See* SHRESTHA, *supra* note 13, at 3 (arguing that statistical data on life expectancy in the early twentieth century was less reliable than currently).

19. There are various differentials in life expectancy statistics, which are usually attributed to different factors: sex and race differentials; access to health care; genetic factors; behavioral risk factors; economic and societal factors; behavioral and social differences; and biological factors. *See id.* at 9–21 (examining differentials in life expectancy).

20. *Id.* at 3 (arguing that statistical data on life expectancy in the early twentieth century was less reliable than it is currently).

of the population participated in war.[21] Accordingly, when the United States was founded, life expectancy was decidedly influenced by high infant mortality rates: sadly, approximately eleven percent of infants did not live to celebrate their first birthday.[22] Scientific breakthroughs—which eradicated and controlled numerous infectious and parasitic diseases, mostly among infants and children—were the main cause of longevity throughout the twentieth and twenty-first centuries.[23] Although highly affected by young children's deaths,[24] life expectancy did not rise merely due to a decrease of such incidents.[25] Gains in longevity, especially since the mid-twentieth century, are mainly attributed to improvements in preventing and controlling chronic adult diseases.[26]

Thus, with this caveat in mind, life expectancy should be analyzed in relation to its increase mostly from adulthood since the possible influence of life expectancy on criminal law, as this Article further examines, should be limited to instances that apply to the criminal system, e.g., from the age of criminal responsibility. The rationale behind this is that if, for example, life expectancy has changed only as a direct result of young children's deaths, then criminal sanctions should not change if those children were below the age of criminal responsibility.[27] But this is not the case, as statistical data reveals.[28]

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21.   RICHARD A. POSNER, AGING AND OLD AGE 32 (1995) (examining the age profile of western populations prior to the nineteenth century, and suggesting that life expectancy was highly influenced by "a low birth rate or a high rate of death of young men in battle or young women in childbirth"); *see also* WANJEK, *supra* note 14, at 71 (exploring life expectancy history).

22.   WANJEK, *supra* note 14, at 71 (exploring life expectancy history).

23.   *See, e.g.*, Emily Jack, *Diseases: A Brief Guide to Causes, Symptoms, History, and Treatment*, LEARN NC, http://www.learnnc.org/lp/pages/4067 (last visited Feb. 5, 2016) ("The formulation of vaccines, the advent of effective mosquito control, and the introduction of modern sanitation to urban areas have rendered diseases like polio, yellow fever, and cholera all but unheard of in the United States. As a result, average life expectancy in the U.S. has risen from 47 years in 1900 to 77 years in 2008.").

24.   POSNER, *supra* note 21, at 32 (arguing that, "[h]istorically, falling birth rates have been more important than increased longevity in raising the average age of a nation's population").

25.   For more on infant and child mortality in the United States, see generally SAMUEL H. PRESTON & MICHAEL R. HAINES, FATAL YEARS: CHILD MORTALITY IN LATE NINETEENTH-CENTURY AMERICA (1991).

26.   SHRESTHA, *supra* note 13, at 4 (listing leading causes of American mortality in 2002). Chronic diseases of adulthood include, for example, diseases of the heart and cerebrovascular diseases. *Id.*

27.   In the United States, state law determines the age of criminal responsibility, but most states do not set a specific minimum age and, instead, rely on common law. However, several states set a minimum age of criminal responsibility. The lowest minimum age is set in Oklahoma, where the minimum age of criminal responsibility is seven, but between seven and fourteen, the state must prove that, at the time of the act, the youth was aware it

Before turning to a normative evaluation that implements life expectancy considerations, a descriptive analysis of the impact of life expectancy on the law, mostly criminal law, is due. Turning to the substantive question at stake: Does, and should, the increase in longevity affect the law? Specifically, how does the increase in longevity affect criminal law and nonmonetary criminal punishments?

A. *Life Expectancy in Law*

Life expectancy considerations play a role in various legal fields. For example, under tort law, the decrease in the expected lifespan of an injury victim could change the scope of damages.[29] Copyright law is another example of life expectancy considerations in a legal field, as the duration of copyright protection was extended to incorporate increase in life expectancy.[30] Thus, policymakers have already realized that

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was wrong. OKLA. STAT. ANN. tit. 21, § 152(1)–(2) (West 2002). The highest minimum age of criminal responsibility is set in California to the age of fourteen, but only "in the absence of clear proof that at the time of committing the act charged against them, they knew its wrongfulness." CAL. PENAL CODE § 26(1) (West 2014). For more information on the minimum age of criminal responsibility, see Martin A. Frey, *The Criminal Responsibility of the Juvenile Murderer*, 1970 WASH. U. L.Q. 113, 121–22 and Gerry Maher, *Age and Criminal Responsibility*, 2 OHIO ST. J. CRIM. L. 493, 495–96 (2005).

28. As further discussed *infra* Section IV.B. , eliminating infant and children mortality from life expectancy considerations indicates that life expectancy in the United States (for all races and sexes, from the age of ten) rose approximately thirty-five percent between 1900 and 2013.

29. *See, e.g.*, Downie v. U.S. Lines Co., 359 F.2d 344, 346 (3d Cir. 1966) (awarding the plaintiff damages in the amount of $25,000 for the estimated shortening of his lifespan); McNeill v. United States, 519 F. Supp. 283, 289 (D.S.C. 1981) (awarding damages of $90,000 for a child's life expectancy shortening and noting that "[t]he deprivation of a normal life expectancy is a necessary and proper element of damages," and may be viewed as a separate element of damages (citing Sox v. United States, 187 F. Supp. 465, 469 (E.D.S.C. 1960))). For more on life shortening as a separate element in tort damages, see LINDA L. EDWARDS, J. STANLEY EDWARDS & PATRICIA KIRTLEY WELLS, TORT LAW 169–70 (5th ed. 2012); Gloria Belgrad, Note, *Compensation for Negligently Shortened Life Expectancy*, 29 MD. L. REV. 24 (1969) (discussing life shortening in negligence cases); and Comment, *The Measure of Damages for a Shortened Life*, 22 U. CHI. L. REV. 505 (1955) (discussing the role of life expectancy in measuring damages).

30. One of the official explanations for copyright's term extension in the European Union was the perception that the original goal of the copyright limited term was to provide protection for two generations after the author's death, and as lifespan increased, there was a need for term extension. For examples of term extensions consider the European Union's extension of the Berne Convention, Berne Convention for the Protection of Literary and Artistic Works: Brussels Act, 1948 art. 7, June 26, 1948, and TRIPs, Agreement on Trade-Related Aspects of Intellectual Property Rights art. 3, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299, that enacted standards of the author's life plus fifty years. Council Directive 93/98/EEC of Oct. 29,

nonmonetary life aspects can be monetized,[31] and, in appropriate cases, possible considerations of life expectancy in civil law are recognized.

Criminal law is no stranger to life expectancy considerations, or more accurately, to age-based considerations.[32] The U.S. Federal Sentencing Guidelines refer to age-based sentencing considerations:

> Age (including youth) may be relevant in determining whether a departure [from U.S. Federal Sentencing Guidelines] is warranted, if considerations based on age, individually or in combination with other offender characteristics, are present to an unusual degree and distinguish the case from the typical cases covered by the guidelines. Age may be a reason to depart downward in a case in which the defendant is elderly and infirm and where a form of punishment such as home confinement might be equally efficient as and less costly than incarceration.[33]

1993, Harmonizing the Term of Protection of Copyright and Certain Related Rights O.J. (L 290) § 5. For criticism of the European Union's reasoning to expand copyright term protection, see Sue Ann Mota, Eldred v. Reno - *Is the Copyright Term Extension Act Constitutional?*, 12 ALB. L.J. SCI. & TECH. 167, 174 (2001). For criticism of the reliance on life expectancy to extend copyright term protection in the United States, see, for example, Christina N. Gifford, *The Sonny Bono Copyright Term Extension Act*, 30 U. MEM. L. REV. 363, 395 (2000) ("[L]ife expectancy is not a legitimate reason for term extension in light of the fact that there is no *right* to support two generations of heirs."); and Jane C. Ginsburg et al., *The Constitutionality of Copyright Term Extension: How Long Is Too Long?*, 18 CARDOZO ARTS & ENT. L.J. 651, 658, 665 (2000). For criticism on the use of lifespan as an economic factor to determine copyright protection, see Avishalom Tor & Dotan Oliar, *Incentives to Create Under a "Lifetime-Plus-Years" Copyright Duration: Lessons from a Behavioral Economic Analysis for* Eldred v. Ashcroft, 36 LOY. L.A. L. REV. 437, 439 (2002) (arguing that determining the duration of individual author's copyright based on lifespan "makes little economic sense").

  31. For more information on methods to monetize human lives, see generally FRANK ACKERMAN & LISA HEINZERLING, PRICELESS: ON KNOWING THE PRICE OF EVERYTHING AND THE VALUE OF NOTHING (2004) (examining the evaluation of intangible values and, inter alia, human lives) and Cass R. Sunstein, *Lives, Life-years, and Willingness to Pay*, 104 COLUM. L. REV. 205 (2004) (analyzing the proper method to monetize the shortening of human life).

  32. Life expectancy considerations were addressed by the U.S. Sentencing Commission when it defined a life sentence. U.S. SENTENCING COMM'N, U.S. SENTENCING COMMISSION FINAL QUARTERLY DATA REPORT (2011), http://www.ussc.gov/Data_and_Statistics/Federal_ Sentencing_Statistics/Quarterly_Sentencing_Updates/USSC_2011_Quarter_Report_Final.p df. Prior to 1993, the Sentencing Commission proscribed life sentence to be 360 months imprisonment. *Id.* at A-2. Since then, the Sentencing Commission has adjusted the length of life sentences to incorporate extended life expectancy and adjusted them to be 470 months imprisonment. *Id.* Thus, the Sentencing Commission clearly acknowledged the effect of life expectancy on nonmonetary criminal sanctions, but only for statistical purposes.

  33*.* U.S. SENTENCING GUIDELINES MANUAL § 5H1.1 (U.S. SENTENCING COMM'N 2015).

In federal courts, judges have the power to modify a term of imprisonment when, inter alia, the defendant is over seventy years of age and has served at least a thirty-year sentence in prison.[34] Age considerations in criminal law also relate to crimes committed before adulthood.[35] Thus, although usually not applied in practice,[36] age considerations, which are partially linked to life expectancy, could potentially reduce the sentences of some criminal offenders.[37]

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34. 18 U.S.C. § 3582(c) (2012) ("The court may not modify a term of imprisonment once it has been imposed except [where] . . . the defendant is at least 70 years of age, has served at least 30 years in prison, pursuant to a sentence imposed under section 3559(c), for the offense or offenses for which the defendant is currently imprisoned, and a determination has been made by the Director of the Bureau of Prisons that the defendant is not a danger to the safety of any other person or the community, as provided under section 3142(g).").

35. Legislators implemented age considerations in various criminal procedures and statutes, and a well-known example is the age of criminal responsibility that varies between states. For more on the relationship between age and criminal responsibility, see, for example, Maher, *supra* note 27. In addition, youthfulness, for example, can serve as a mitigating factor that can be applied when deciding whether to impose life without parole on an individual offender. *See* Miller v. Alabama, 132 S. Ct. 2455, 2467 (2012) ("We thought the mandatory scheme flawed because it gave no significance to 'the character and record of the individual offender or the circumstances' of the offense, and 'exclud[ed] from consideration . . . the possibility of compassionate or mitigating factors.'" (alterations in original) (quoting Woodson v. North Carolina, 428 U.S. 280, 304 (1976))). For more on youthfulness and criminal liability, see generally Barry C. Feld, *Adolescent Criminal Responsibility, Proportionality, and Sentencing Policy:* Roper*,* Graham*,* Miller⁄Jackson*, and the Youth Discount*, 31 LAW & INEQ. 263 (2013). However, beyond the distinction of youth and adult offenders, and limited considerations of elderly offenders, age is usually not a factor in sentencing. Katrin U. Mueller-Johnson & Mandeep K. Dhami, *Effects of Offenders' Age and Health on Sentencing Decisions*, 150 J. SOC. PSYCHOL. 77, 78 (2010).

36*. See, e.g.*, United States v. Angiulo, 852 F. Supp. 54, 60–62 (D. Mass. 1994) (denying the defendants' motions to have their sentences reduced based on their age). For an overview of life expectancy as a criteria in reducing criminal penalties, see generally Cristina J. Pertierra, Note, *Do the Crime, Do the Time: Should Elderly Criminals Receive Proportionate Sentences?*, 19 NOVA L. REV. 793 (1995).

37. Life expectancy is occasionally discussed by federal courts in sentencing. For example, some courts addressed the question of whether 18 U.S.C. § 34 (1988) (amended 1994) encompassed life expectancy considerations. Section 34 previously held that "[w]hoever is convicted of any crime prohibited by this chapter, which has resulted in the death of any person, shall be subject also to the death penalty or to imprisonment for life, if the jury shall in its discretion so direct, or, in the case of a plea of guilty, or a plea of not guilty where the defendant has waived a trial by jury, if the court in its discretion shall so order." *Id.* However, federal courts usually disregard life expectancy considerations in sentencing. *See, e.g.*, United States v. Tocco, 135 F.3d 116, 132 (2d Cir. 1998) ("A sentence that is close to a person's life expectancy based on actuarial tables is not the functional equivalent of a sentence for the actual life of the person."); *see also* United States v. Taveras, 436 F. Supp. 2d 493, 499–500 (E.D.N.Y. 2006) (discussing life expectancy considerations under some circumstances), *aff'd in part, vacated in part*, United States v. Pepin, 514 F.3d 193 (2d Cir. 2008).

Although life expectancy has a role in criminal sanctions, this role is very limited and is mostly linked to the young and the old, and does not refer to the formation of the sanction, but rather the reduction in imprisonment. In other words, life expectancy in criminal sanctions serves as an *ex-post* consideration, which can only be contemplated in sentencing, i.e., after the commission of a crime. With that, criminal law, both in theory and in practice, has thus far abstained from discussing or implementing *ex-ante* life expectancy considerations in criminal sentencing, i.e., life expectancy considerations in calibrating punishments. Although life expectancy has changed rapidly and extensively, most nonmonetary sanctions have not been adjusted accordingly. More importantly, *ex-ante* life expectancy considerations were never discussed as a possible consideration in setting limits on nonmonetary criminal sanctions.

Should nonmonetary criminal sanctions—for example, imprisonment and capital punishment—be adjusted to the statistical increase in life expectancy, much like monetary sanctions are adjusted due to inflation changes? If so, to what extent? To answer these substantial questions at stake, a normative evaluation is required first.

B. *Life Expectancy in Nonmonetary Criminal Sanctions*

The only notion of an *ex-ante* nonmonetary adjustment of criminal punishments found in academic literature refers to a possible change in the *value* of life (not in its *length*). Under this notion, few scholars argue that nonmonetary sanctions, chiefly imprisonment, have changed in "value" over time, much like monetary sanctions. Thus, as the value of life has increased, nonmonetary sanctions are currently harsher than before, and the legislature should adjust them accordingly.[38] This argument is based on the notion that as quality of life on the "outside" improves, life that holds a greater value is deprived while being on the inside.[39] Without deciding whether such considerations should play a role in shaping criminal sanctions,[40] I take the notion of nonmonetary

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38.   *See* Fattah, *supra* note 11, at 4–5; Nils Christie, *Changes in Penal Values*, *in* 2 SCANDINAVIAN STUDIES IN CRIMINOLOGY 161, 161–72 (Nils Christie ed., 1968).

39.   *See* Fattah, *supra* note 11, at 5.

40.   Although the conceptualization of "value of life" as a possible criterion for criminal punishments could be valid, it also possesses various drawbacks. Primarily, a change in value of life is practically nonmeasurable, and, much like under any evaluation of such a component, is prone to inaccuracies. In addition, there are other possible components that influence the value of life over time, including the improvement of imprisonment conditions, which affect the "value" of imprisonment. Thus, taking the value of life as a consideration for punishment should also be balanced against the improvement in imprisonment

adjustment a step forward, arguing that change in the *length* of life should play a dominant role in forming nonmonetary criminal sanctions, as it also affects the *value* of punishments.

In order to determine whether life expectancy should play a role in nonmonetary criminal sanctions, I first examine its effect on these sanctions. To do so, I return to the hypothetical example that life expectancy has increased to eight hundred years while aging has become slower. Now further assume that policymakers have not accounted for this massive increase in life expectancy, and, namely, left nonmonetary criminal sanctions unchanged. Confined imprisonment terms, life imprisonment, and capital punishments (where they exist) remain unchanged. The basic assumption is that the increase changes the perception of punishment. If you suddenly live longer, then your five-year imprisonment term could be perceived as "lighter" than before. But before we go further with this assumption, we must first understand its flaws. For example, some individuals who can live approximately seventy-seven years, as opposed to eight hundred years, will not likely value criminal sanctions similarly, whether the sanction is a twenty-year imprisonment term, life imprisonment with or without the possibility of parole, or the death penalty.

The reason for this is that imprisonment has a subjective value that varies between different people who receive similar sentences, regardless of their life expectancy, mainly based on the notion of pain and suffering.[41] An old woman, for example, will probably suffer more in prison than a young woman, or perhaps, in some circumstances, the opposite may be true. Arguably, ten years in prison with life expectancy X is equally aversive as ten years in prison with life expectancy Y. In both cases, the criminal will experience jail time equally as it is a harsh penalty—no matter how long the criminal might or might not live. Moreover, life expectancy in prison could change due to prison conditions. Life expectancy under imprisonment terms could be lower (or, arguably, even higher).[42] On the one hand, these subjective "value" evaluations

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conditions, an uneasy task to embark on, if at all possible. Part IV briefly discusses the evaluation of life's value and its potential drawbacks.

41. NORVAL MORRIS & MICHAEL TONRY, BETWEEN PRISON AND PROBATION: INTERMEDIATE PUNISHMENTS IN A RATIONAL SENTENCING SYSTEM 93–97 (1990) (arguing that in terms of pain and suffering, a year imprisonment term to one person may well not be equal to a year imprisonment term to another person).

42. *See, e.g.*, *Taveras*, 436 F. Supp. 2d at 500 ("Life expectancy within federal prison is considerably shortened."). For more on the potential causes that influence life expectancy in prison, see, for example, AM. CIVIL LIBERTIES UNION, A LIVING DEATH: LIFE WITHOUT PAROLE FOR NONVIOLENT OFFENSES 196 (2013) ("It is generally not disputed that the life expectancy of an incarcerated individual is lower than the life expectancy of a non-

cannot be easily measured and are determined based on a case-by-case analysis, which, as I suggest below, is neither practical nor desirable. On the other hand, life expectancy is a relatively objective mechanism, which relates to a specific and conclusive group of individuals—the entire population of a country, for example, is largely measurable, and possesses possible implications on criminal sanctions.

Consider the following scenario to demonstrate the effect of life expectancy on three different types of nonmonetary criminal sanctions[43]: confined terms of imprisonment, life imprisonment with or without the possibility of parole, and capital punishment. Assume that tax evasion is a criminal offense with a maximum sentence of ten years. John Longlife lives in an era with a life expectancy of one thousand years, while John Shortlife lives in an era with a life expectancy of seventy-seven years. Both Johns, who are rational utility-maximizers and risk-neutral,[44]

incarcerated individual in the general U.S. population. The brutal stress and anxiety of prison life, including separation from family, friends, and loved ones, severe physical confinement, limited access to proper healthcare, and the perpetual threat of victimization, in addition to the crushing reality that the remainder of one's life will be spent behind prison bars, serve to exacerbate the risk of physical and mental illness and dramatically accelerate the aging process." (footnote omitted)) and JOHN J. GIBBONS & NICHOLAS DE B. KATZENBACH, CONFRONTING CONFINEMENT: A REPORT OF THE COMMISSION ON SAFETY AND ABUSE IN AMERICA'S PRISONS 11–14 (2006), http://www.vera.org/sites/default/files/resources/downloads/Confronting_Confinement.pdf (noting that United States penitentiaries pose various persistent problems, such as "prisoner rape, gang violence, the use of excessive force by officers, contagious diseases, . . . and a host of other problems").

43*.* Nonmonetary criminal sanctions do not necessarily evolve around imprisonment terms or capital punishment. In some instances, other forms of nonmonetary sanctions exist, for example, house arrest, probation, residential or treatment conditions, community service, intensive supervision, forfeiture, and electronic monitoring. Although these types of punishments could possibly also be affected by life expectancy to some extent, I will focus on the two main punishments which are most effected, i.e., punishments which involve imprisonment and capital punishment. Moreover, this examination also excludes corporal punishment, as it no longer exists in the United States, and thus is excluded from the categorization of nonmonetary criminal sanctions (and it is highly doubtful the corporal punishments are linked to life expectancy considerations). For further information on corporal punishment, see generally James O. Midgley, *Corporal Punishment and Penal Policy: Notes on the Continued Use of Corporal Punishment with Reference to South Africa*, 73 J. CRIM. L. & CRIMINOLOGY 388 (1982).

44. Economic analysis usually differentiates between three main types of individuals: *risk-neutral* individuals, who are indifferent between two outcomes that have the same expected value; *risk-preferring* individuals, who with the same expected value, always prefer the maximum potential return of their choice; and *risk-averse* individuals, who with the same expected value, always prefer the choice with the least risk. *See* RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW 12–13 (8th ed. 2011); Gary S. Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169, 183–85 (1968); Robin Andrews, Note, *Copyright Infringement and the Internet: An Economic Analysis of Crime*, 11 B.U. J. SCI. & TECH. L. 256, 276–77 (2005) (discussing risk neutrality).

decide to commit a crime of tax evasion at the age of fifty. Accordingly, they are both apprehended, convicted, and receive a ten-year imprisonment term.

Life expectancy could affect the value of criminal punishments with *confined criminal sentences*.[45] Ten years in prison are statistically worth approximately one percent of John Longlife's expected remaining lifespan,[46] as opposed to thirty-seven percent of John Shortlife's expected remaining lifespan. Thus, the perceived incentive to commit the crime and the magnitude of the sanction are different for each. If John Longlife knows statistically that his life could last for an additional 940 years after his release, he will commit the crime with more assurance and less epoch consequence. John Shortlife, who only has approximately an additional seventeen years to live after incarceration, will commit the crime with much more trepidation.

A reverse effect will occur when life expectancy decreases below John Shortlife's life expectancy (for John Longlife as well). Under this scenario, if life expectancy decreases to sixty years for John Longlife, ten years in prison are statistically worth approximately 100% of his expected remaining lifespan, while for John Shortlife (whose lifespan is still seventy-seven), ten years in prison are statistically worth approximately thirty-seven percent of his expected remaining lifespan. Thus, under a pure economic analysis of crime, when life expectancy decreases, the incentive to commit the crime and the magnitude of the sanction change accordingly.

Life expectancy also affects the scope of *life imprisonment with parole* as a criminal punishment. Assume that, under this scenario, the maximum sentencing term for tax evasion is life imprisonment with parole after a defined period. Under this scenario, John Longlife possesses a higher probability of receiving parole in his remaining 950 years of imprisonment, while John Shortlife has only twenty-seven years to be paroled. Thus, under this scenario and much like confined imprisonment terms, it is more "worthwhile" for John Longlife to commit

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45. Confined criminal sentences are nonmonetary criminal sanctions, which are confined to a specific term of years, for example, a ten-year imprisonment term. Another form is finite criminal sentences, which are nonmonetary criminal sanctions in which the offender is bound to serve them entirely in prison and will ultimately deprive him of his life, for example, life imprisonment without parole and capital punishment.

46. Obviously, Longlife does not possess actual knowledge of his remaining lifespan, but only an estimate based on statistics. Moreover, it is important to note that life expectancy of prisoners is different from life expectancy of non-prisoners, and, therefore, these statistics are inaccurate as they apply differently based on the time of imprisonment. For more on life expectancy of prisoners, see *supra* note 42 and accompanying text.

an offense than for John Shortlife.[47] Accordingly, when life expectancy decreases, a similar, but reverse, effect occurs. Much like the criminal punishment with *confined imprisonment terms* example, the adjustment in life expectancy changes the incentives for *life imprisonment with parole*.

The final scenario is *life imprisonment without parole* and *capital punishment*.[48] Assume that, under the scenario, tax evasion is a criminal offense with a maximum sentence of life imprisonment without parole or the death penalty.[49] For John Longlife, this criminal sanction "deprives" him of 950 possible years to live, which are statistically ninety-five percent of his total lifespan. Accordingly, for John Shortlife, the criminal

47. Nevertheless, the evaluation of life expectancy under the scenario of *life imprisonment with parole* could be problematic, as it mostly depends on the notion of parole. On the one hand, receiving a parole shortly after imprisonment leads to similar outcomes as in confined criminal sentences. On the other hand, if parole was granted after nine hundred years in prison for John Longlife, while John Shortlife did not live to receive a parole (nine hundred years later), then arguably, John Longlife was punished more severely than John Shortlife, spending nine hundred years in prison, in comparison to twenty-seven years, or statistically, approximately thirty-three times more severely. Still, John Longlife will live fifty years outside prison, longer than John Shortlife.

48. I will not attempt to contribute to the lively discussion on whether the controversial death penalty is an appropriate punishment. On this matter, see John H. Pearson, Comment, *Mandatory Advisory Counsel for Pro Se Defendants: Maintaining Fairness in the Criminal Trial*, 72 CALIF. L. REV. 697, 710 (1984) ("The death penalty remains extremely controversial."). However, it is noted that the deterrent value of criminal punishments, and mainly the death penalty, is highly debatable, and often criticized in literature. Thus, change in life expectancy might not affect the deterrent value of a punishment, as it does not necessarily possess a deterrent value at all. For more on capital punishment's deterrent effect, see generally William J. Bowers & Glenn L. Pierce, *The Illusion of Deterrence in Isaac Ehrlich's Research on Capital Punishment*, 85 YALE L.J. 187 (1975) (criticizing Ehrlich's methodology and conclusions); Hashem Dezhbakhsh, Paul H. Rubin & Joanna M. Shepherd, *Does Capital Punishment Have a Deterrent Effect? New Evidence from Postmoratorium Panel Data*, 5 AM. L. & ECON. REV. 344 (2003); Isaac Ehrlich, *The Deterrent Effect of Capital Punishment: A Question of Life and Death*, 65 AM. ECON. REV. 397 (1975) (estimating data on executions and evaluating their deterrence on murderers); Richard O. Lempert, *Desert and Deterrence: An Assessment of the Moral Bases of the Case for Capital Punishment*, 79 MICH. L. REV. 1177 (1981) (discussing the deterrence of capital punishment); Robert Weisberg, *The Death Penalty Meets Social Science: Deterrence and Jury Behavior Under New Scrutiny*, 1 ANN. REV. L. & SOC. SCI. 151 (2005) (reviewing the discussion on whether the death penalty deters murder); Paul R. Zimmerman, *Estimates of the Deterrent Effect of Alternative Execution Methods in the United States: 1978–2000*, 65 AM. J. ECON. & SOC. 909 (2006); and Paul R. Zimmerman, *State Executions, Deterrence, and the Incidence of Murder*, 7 J. APPLIED ECON. 163 (2004).

49. Under the category of life imprisonment without parole, I refer to determinate life sentences, for example, to offenders who will actually serve the rest of their life in prison. However, note that "life sentences" could possess various meanings in various states, while not always referring to an imprisonment for the rest of the criminal's life, but rather to a set term of years.

sanction "deprives" him of twenty-seven possible years to live, which is approximately 35% of his total lifespan. Thus, under this scenario, it is more "worthwhile" for John Shortlife to commit the offense than it is for John Longlife, as criminal incentives are higher for John Shortlife.[50] Naturally, a reverse effect also occurs under this scenario. In other words, when examining *finite criminal sentences*, for example, *life imprisonment without parole and capital punishment*, the incentives should also adjust to change in life expectancy, but in an opposite manner than *confined criminal sanctions*.

Implementing economic analysis of crime on three main types of nonmonetary criminal sanctions emphasizes the different ramifications of life expectancy on various punishments.[51] An increase in life expectancy increases the perceived benefits of committing crimes with *confined criminal sentences* and possibly *life imprisonment with parole*, and it decreases the perceived benefits of committing crimes with *life imprisonment without parole and capital punishment*. A reverse effect occurs when life expectancy decreases.[52]

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50. However, arguably, life imprisonment without parole and capital punishment are not necessarily aligned in this matter. Life imprisonment without parole can be more easily monetized, in the sense that mathematical calculations of the length of life that is deprived are possible at least to a high extent during the individual's lifetime. In contrast, the death penalty could be perceived similarly to individuals, without regard to their potential life expectancy. In other words, for many people, death is death. The finality of death could have a similar deterrent value for individuals with different life expectancies.

51. Life expectancy could also affect various aspects of nonmonetary criminal sanctions. For example, life expectancy affects "good conduct time," a sentence reduction that could be given to prisoners who maintain good behavior while imprisoned. *See, e.g.*, 18 U.S.C. § 3624(b) (2012). As such reduction is linked with time or percentage of the criminal sentence, the "value" of such reduction will be affected by life expectancy. In addition, three strikes policies, which I do not necessarily advocate, could potentially decrease the effect of life expectancy on criminal law. These policies mandate imposing harsher sentences on habitual offenders that are convicted of criminal offenses, usually three times (hence their name). Under this notion, life expectancy does not play a crucial role in the forming of such criminal punishment, as the punishment is higher than its expected deterrent level. For more on three strikes laws, namely in the state of California, CAL. PENAL CODE § 667 (West 2015), see James A. Ardaiz, *California's Three Strikes Law: History, Expectations, Consequences*, 32 MCGEORGE L. REV. 1 (2000).

52. For example, when life expectancy was much shorter than today, capital punishment was not considered as serious a punishment as it is today. *See* Richard A. Posner, *An Economic Theory of the Criminal Law*, 85 COLUM. L. REV. 1193, 1211 (1985) ("It is a reasonable conjecture (if no more than that) that because more medieval than modern people believed in an afterlife, because life was more brutal and painful, and because life expectancy was short, capital punishment was not so serious a punishment in those days as it is today.").

I offer an additional method to illustrate longevity's influence on criminal sanctions.[53] As this example shows, although life expectancy clearly plays a role in nonmonetary criminal sanctions under economic analysis, it does not necessarily perfectly align with monetary inflation considerations.

Criminal sanctions are occasionally used as a response to insolvency. Presumably, the threat of civil damages or other financial sanctions do not deter these judgment-proof, impecunious individuals.[54] In comparison, most civil damages will not likely deter the affluent. A fifty dollar fine for an individual with one million dollars will not likely deter her. Now consider life expectancy in terms of wealth of longevity. If an individual can reach the age of one million years, then she is a "wealthy" person and is not likely deterred by relatively low criminal sanctions, i.e., fifty years in prison.[55] Or is she? The difference between the two examples is obvious. Nonmonetary criminal sanctions cannot be entirely monetized in that way. "Paying" with years for incarceration is not equal to monetary payment, as it possesses additional ramifications for the individual. A fifty-year term could be perceived as a long period, even if it is statistically only worth 0.005% of an individual's total lifespan.[56] Aside from the various characterizations of criminal law and its distinction from civil law,[57] criminal sanctions possess other ramifications. For

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53. I am extremely grateful to Tal Zarsky, who pointed out this important notion to me.

54. Judgment proof usually refers to cases in which an injuring party possesses no ability to pay and no assets whatsoever and is thus unable to pay any of the losses for which he is liable. For further information and criticism on the notion of judgment-proof injurers/offenders, see generally Stephen G. Gilles, *The Judgment-Proof Society*, 63 WASH. & LEE L. REV. 603 (2006) and Steven L. Schwarcz, *The Inherent Irrationality of Judgment Proofing*, 52 STAN. L. REV. 1 (1999). For an economic analysis of the judgment-proof "problem" (in the words of the scholar), see generally Steven Shavell, *The Judgment Proof Problem*, 6 INT'L REV. L. & ECON. 45 (1986).

55. This depends, inter alia, on the age of the individual at the time of incarceration. If, for example, the individual is 999,950 years old, then incarceration of fifty years statistically "deprives" her of 100% of her remaining lifespan and thus is evaluated in a different manner. Moreover, as previously mentioned, it also depends on a subjective evaluation of punishment. For that matter, she could value fifty years equally aversive, regardless of life expectancy.

56. In addition, imprisonment terms could potentially shorten an individual's lifespan, as prison conditions could be harsh. *See supra* note 42 and accompanying text.

57. Although Oliver W. Holmes argued "that the general principles of criminal and civil liability are the same," OLIVER W. HOLMES, THE COMMON LAW 44 (1881), most scholars reject an underlying unity of criminal law and torts. *See, e.g.*, Jerome Hall, *Interrelations of Criminal Law and Torts*, 43 COLUM. L. REV. 753 (1943) (arguing that criminal law encompasses a moral dimension in oppose to civil law and is therefore distinct). Another utilitarian suggested that there is no meaningful distinction between tort and crime. *See* JOHN AUSTIN, LECTURES ON JURISPRUDENCE 416–17, 517–18 (Robert Campbell ed., 4th ed.

example, offenders are often stigmatized,[58] it could negatively affect her chances of employment,[59] and more. Thus, paying a fifty dollar fine for an individual who owns one million dollars is not equal to fifty years in prison for an individual "possessing" one million years.

Moreover, when we examine nonmonetary criminal sanctions in a pure statistical analysis, we are subject to some inaccuracy. One year in jail for an individual who has ten years to live is not necessarily equal to ten years in jail for an individual who has one hundred years to live, although it is "worth" 10% for both. Nonetheless, aside from subjective evaluation of nonmonetary criminal sanctions, it is objectively evident that life expectancy has an impact on the value of nonmonetary criminal sanctions. In other words, the practice of criminalizing civil conduct of "judgment-proof" individuals also occurs inside the boundaries of nonmonetary sanctions,[60] suggesting that, under some circumstances, monetary sanctions could actually serve as a higher deterrent for some individuals, at least hypothetically.[61]

Thus far, I have established that life expectancy could influence the magnitude of criminal sanctions and the perceived incentive to commit crime. Whether criminal punishments should be adjusted to life expectancy, and the extent of such adjustment, is a different matter that I address in the following Section.

1879). For more on key distinctions between criminal and civil law, see generally Jason M. Solomon, *What is Civil Justice?*, 44 LOY. L.A. L. REV. 317 (2010).

58. Kenneth Mann, *Punitive Civil Sanctions: The Middleground Between Civil and Criminal Law*, 101 YALE L.J. 1795, 1809 (1992) (arguing that "imprisonment and the special stigma associated with convictions are the core remedies used to achieve the purposes of the criminal sanction").

59. Robert J. Lalonde & Rosa M. Cho, *The Impact of Incarceration in State Prison on the Employment Prospects of Women*, 24 J. QUANTITATIVE CRIMINOLOGY 243 (2008) (examining the linkage between incarceration and employment rates for former female state prisoners from Illinois); Bruce Western, *The Impact of Incarceration on Wage Mobility and Inequality*, 67 AM. SOC. REV. 526 (2002) (analyzing the effect of imprisonment in the job market).

60. This argument extends beyond the scope of this Article, and should be further examined in future research. Under this argument, some criminals could be "insolvent" to "pay" their debt to society, when they are aware that they have a short time left to live, such as when they are terminally ill or extremely old. Thus, an argument could be raised as to whether these "judgment-proof" offenders could be more deterred by monetary sanctions (whether by criminal, administrative, or civil law), and, mainly, whether they are capable of deterrence at all, due to their possible irrationality.

61. A hypothetical example is not necessarily required, as criminal sanctions are not necessarily more punitive than civil sanctions. In fact, in many cases, civil sanctions can be no less painful and punitive than criminal sanctions. A one million dollar fine for many people could be perceived as more punitive than a week in prison.

III. EVALUATING THE SCOPE OF CRIMINAL SANCTIONS

It is debatable whether nonmonetary criminal sanctions—for example, imprisonment—are socially desirable.[62] Criminal punishment is usually justified on grounds of incapacitation, desert/retribution, deterrence, rehabilitation, and/or restorative justice.[63] However, the questions as to which conduct constitutes crime and whether society should use criminal punishments[64] are valid and important questions that are beyond the scope of this Article.[65] Rather, this Article focuses on

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62. For more on whether nonmonetary criminal sanctions are socially desirable, see, for example, NATHANIEL HAWTHORNE, THE SCARLET LETTER 38 (1962).

63. *See* ANDREW ASHWORTH, SENTENCING AND CRIMINAL JUSTICE 77–91 (5th ed. 2010); GEORGE P. FLETCHER, RETHINKING CRIMINAL LAW 409 (2000); Paul H. Robinson, *Criminalization Tensions: Empirical Desert, Changing Norms, and Rape Reform*, *in* THE STRUCTURES OF THE CRIMINAL LAW 186, 187 (R.A. Duff et al. eds., 2011).

64. There are numerous views and critics on the question of why we (criminally) punish. Friedrich Nietzsche argued that we punish "as parents still punish their children, from anger at some harm or injury, vented on the one who caused it." FRIEDRICH NIETZSCHE, *Second Essay: "Guilt," "Bad Conscience," and the Like*, *in* ON THE GENEALOGY OF MORALS 57, 63 (Walter Kaufmann ed., Walter Kaufmann & R. J. Hollingdale trans., 1969) (1887). Nietzsche argued that

> this anger is held in check and modified by the idea that every injury has its equivalent and can actually be paid back, even if only through the pain of the culprit. And whence did this primeval, deeply rooted, perhaps by now ineradicable idea draw its power—this idea of an equivalence between injury and pain? . . . [I]n the contractual relationship between creditor and debtor, which is as old as the idea of "legal subjects" and in turn points back to the fundamental forms of buying, selling, barter, trade, and traffic.

Id. (emphasis omitted). Michel Foucault viewed punishment as a "political tactic," a practice based on the principle of the "technology of power." MICHEL FOUCAULT, DISCIPLINE & PUNISH: THE BIRTH OF THE PRISON 23–24 (Alan Sheridan trans., 2d vintage books ed. 1995) (1975). Karl Menninger offered a radical functionalist critique of punishment, arguing that legal punishment is based on the need for renouncing conduct. KARL MENNINGER, THE CRIME OF PUNISHMENT (1966). Menninger linked legal punishment with vengeance. *Id.* Karl Marx stated that "punishment is nothing but a means of society to defend itself against the infraction of its vital conditions, whatever may be their character." Karl Marx, *Capital Punishment*, N.Y. DAILY TRIB., Feb. 17, 1853, *reprinted in* DISPATCHES FOR THE NEW YORK TRIBUNE: SELECTED JOURNALISM OF KARL MARX 119, 122 (James Ledbetter ed., 2007). For a full review of the genealogy of punishment, see MARK TUNICK, PUNISHMENT: THEORY AND PRACTICE 17–66 (1992) (discussing approaches to punishment).

65. The question of when to impose criminal sanctions, or, stated differently, when to criminalize, is not easy to answer, as various theories on this matter exist. John Stuart Mill articulated that the main principle of the Anglo-American legal system to justify criminalization of a conduct (or limiting criminalization) is known as the *harm principle*, which justifies a restriction on individual liberty where the individual's conduct causes harm to other individuals in society. *See* JOHN STUART MILL, ON LIBERTY 13 (Penguin Classics 1982) (1859) (arguing that the only purpose for which power can be rightfully exercised over any member of a civilized community, against his will, is to prevent harm to others). Joel Feinberg further developed the harm principle, noting:

the method to measure nonmonetary criminal sanctions *after* they have gained criminal status.

Academic literature on the scope of criminal punishments mainly focuses on two theories that are based on utilitarian and retributive approaches. Yet, these two theories have been criticized by many scholars, mostly because they are vague and inadequately delineate the scope of criminal punishments properly (retributive theories),[66] or because their reliance on net deterrent benefits can lead to punishing innocent individuals or disproportionately punishing guilty ones

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It is always a good reason in support of penal legislation that it would probably be effective in preventing (eliminating, reducing) harm to persons other than the actor (the one prohibited from acting) *and* there is probably no other means that is equally effective at no greater cost to other values . . . [and that] [i]t is always a good reason in support of a proposed criminal prohibition that it is probably necessary to prevent serious offense to persons other than the actor . . . .

1 JOEL FEINBERG, THE MORAL LIMITS OF THE CRIMINAL LAW: HARM TO OTHERS 26 (1984). Feinberg's version of the *harm principle* was one element in what he categorized as four main "liberty-limiting principles" of criminalization, which also include the *offense principle* (targets all undesired mental states); *legal paternalism* (preventing harm to the actor, not to others), and *legal moralism* (the conduct is inherently immoral, even though it causes neither harm nor offense to the actor or to others). *Id.* at 26–27; *see also* 2 JOEL FEINBERG, THE MORAL LIMITS OF THE CRIMINAL LAW: OFFENSE TO OTHERS (1985); 3 JOEL FEINBERG, THE MORAL LIMITS OF THE CRIMINAL LAW: HARM TO SELF (1986); 4 JOEL FEINBERG, THE MORAL LIMITS OF THE CRIMINAL LAW: HARMLESS WRONGDOING (1988). The second approach to criminalization relies on legal moralism, which argues that criminalization is justified on grounds of the wrongfulness of the conduct. A. P. SIMESTER & ANDREAS VON HIRSCH, CRIMES, HARMS, AND WRONGS: ON THE PRINCIPLES OF CRIMINALISATION 19–32 (2011). Some scholars combined the notion of harm and wrongfulness as a duel-element theory of criminalization. *See, e.g.*, *id.* at 35–52. However, principled theories of criminalization only appeared in the late twentieth century. For such theories, see DOUGLAS HUSAK, OVERCRIMINALIZATION: THE LIMITS OF THE CRIMINAL LAW (2008); JONATHAN SCHONSHECK, ON CRIMINALIZATION: AN ESSAY IN THE PHILOSOPHY OF THE CRIMINAL LAW (1994); Asaf Harduf, *How Crimes Should Be Created: A Practical Theory of Criminalization*, 49 CRIM. L. BULL. 31 (2013).

66. *See, e.g.*, Leo Katz, *Criminal Law*, *in* A COMPANION TO PHILOSOPHY OF LAW AND LEGAL THEORY 90, 90–91 (Dennis Patterson ed., 2d ed. 2010) ("The most important challenge to retributivism has been its alleged vagueness: Everyone may agree that five years in prison is unjustly harsh desert for shoplifting, or that a five dollar fine is unjustly lenient desert for rape, but beyond such clear cases our intuitions seem to fail us. Is two years, five years, or ten years the proper sanction for a rape? How about a bank robbery? Or accepting a bribe? Our sense of just deserts here seems to desert us."); Ernest van den Haag, *Punishment: Desert and Crime Control*, 85 MICH. L. REV. 1250, 1251 (1987) (arguing that no one yet established a non-arbitrary relationship between crime, desert, and appropriate punishment). For more on the objection to desert as a distributive principle due to vagueness, see JOHN BRAITHWAITE & PHILIP PETTIT, NOT JUST DESERTS: A REPUBLICAN THEORY OF CRIMINAL JUSTICE 180–81 (1990); R. A. Duff, *Penal Communications: Recent Work in the Philosophy of Punishment*, 20 CRIME & JUST. 1, 7 (1996).

(utilitarian theories).[67] Thus, in an attempt to resolve the academic debate and provide a solution for the theories' shortcomings, a few scholars have offered reconciliation theories that combine utilitarian and retributive measures to examine the proper scope of criminal punishments.[68] In order to query whether life expectancy could be part of these theories, the next Section briefly outlines their main themes. Then, I will address the components that could take into account the notion of life expectancy.

A. A Tale of Two Theories: Crime Control and Desert

Academic literature advocates two main theories to determine the scope of criminal punishment and culpability: *crime control* and *desert*.[69] The two approaches, utilitarian and retributive, address two distinct questions: "why punish" and "what are the principles of punishment"?[70] Currently, although widely criticized, both approaches are accepted as the two dominant theories of punishment. With that, neither is more justified than the other.[71] There are various notions of both utilitarian and retributive approaches. Generally, the utilitarian notion purports that punishment augments social utility, and the retributive notion claims that the offender deserves to be punished because of the wrongfulness of the conduct.[72]

Under the *crime control theory*, based on a consequentialism utilitarian approach,[73] criminal liability and punishment are justified

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67. For this criticism and more, see, DAVID BOONIN, THE PROBLEM OF PUNISHMENT 41–52 (2008); BRAITHWAITE & PETTIT, *supra* note 66, at 46; DIEDRE GOLASH, THE CASE AGAINST PUNISHMENT: RETRIBUTION, CRIME PREVENTION, AND THE LAW 43 (2005); and H. J. McCloskey, *An Examination of Restricted Utilitarianism*, 66 PHIL. REV. 466, 468–69 (1957).

68. *See infra* Section III.A.

69. *See generally* Paul H. Robinson, *Desert, Crime Control, Disparity, and Units of Punishment*, *in* PENAL THEORY AND PRACTICE: TRADITION AND INNOVATION IN CRIMINAL JUSTICE 93, 93–94 (Antony Duff et al. eds., 1994) (describing the main criminal punishment theories).

70. TUNICK, *supra* note 64, at 67–68 (discussing utilitarian and retributive approaches to punishment).

71. In *Williams v. New York*, the Supreme Court noted that "[r]etribution is no longer the dominant objective of the criminal law." 337 U.S. 241, 248 (1949). While both the utilitarian and retributive approaches remain the dominant legal punishment theories, neither has yet prevailed over the other. *See* TUNICK, *supra* note 64, at 67 (arguing that neither utilitarian nor retributive theories have prevailed as the most dominant theory of punishment).

72. TUNICK, *supra* note 64, at 67–68.

73. The consequentialist theory of punishment is based largely on Jeremy Bentham's account of punishment. *See generally* JEREMY BENTHAM, AN INTRODUCTION TO THE PRINCIPLES OF MORALS AND LEGISLATION (Batoche Books 2000) (1781).

when they are the most effective method to deter future crimes.[74] Accordingly, the utilitarian approach also justifies punishment to incapacitate or reform dangerous criminals.[75] The crime control theory mainly uses deterrence and incapacitation as regulating mechanisms[76]: society should punish when it is the most effective method to deter crime.[77] Utilitarian considerations determine the extent of punishment.[78]

Under the *desert theory*, based on a retributive approach, criminal liability and punishment are justified on grounds of moral desert.[79] The scope of the sanction is based on the extent of harm and the wrongfulness of the conduct.[80] Mainly, the scope of punishment should be proportionate to the wrongdoer's culpability and should take into account the offense's gravity, the wrongdoer's blameworthiness, and the harm she has inflicted on the victim and society.[81] There are various retributive approaches to

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74. Paul H. Robinson, Commentary, *Criminal Justice in the Information Age: A Punishment Theory Paradox*, 1 OHIO ST. J. CRIM. L. 683, 684–86 (2004) (describing the two main approaches to criminal punishment).

75. TUNICK, *supra* note 64, at 14.

76. Incapacitation can also be supplementary to deterrence. *See* ANDREW VON HIRSCH, PAST OR FUTURE CRIMES: DESERVEDNESS AND DANGEROUSNESS IN THE SENTENCING OF CRIMINALS 7–9 (1985) (describing incapacitation in deterrence considerations).

77. *See* Robinson, *supra* note 74, at 684 (describing the crime control view of criminal punishment).

78. Lloyd L. Weinreb, *Desert, Punishment, and Criminal Responsibility*, 49 LAW & CONTEMP. PROBS. 47, 49 (1986) (discussing utilitarian considerations in the context of punishments).

79. There are various forms of approaches to retributivism. For example, Oliver Wendell Holmes defined retribution as "vengeance in disguise." HOLMES, *supra* note 57, at 45. Thus, under this approach of retributivism, punishment is a form of revenge or retaliation (*lex talionis*). Another approach to retributivism relies on condemnation. Under this approach, punishment is an expression of society's condemnation of the offensive act. Others offer a deontological retributivism approach, noting that society punishes because punishing is in itself just, regardless of any other consequences. MARY MARGARET MACKENZIE, PLATO ON PUNISHMENT 29 (1981) (arguing that retributivism is deontological while referring to Kant). Retribution could be seen as a necessary condition for legal punishment, albeit insufficient on its own. *See* ANDREW VON HIRSCH, DOING JUSTICE: THE CHOICE OF PUNISHMENTS 51 (1986). Vengeful desert focuses on the harm, and seeks to impose similar harm to the offender. Paul H. Robinson, *Competing Conceptions of Modern Desert: Vengeful, Deontological, and Empirical*, 67 CAMBRIDGE L.J. 145, 147–48 (2008). Deontological desert and empirical desert focus mainly on the moral blameworthiness of the offender. *Id.* at 148. For a general review of the approaches to retributivism and criminal punishment, see R. A. DUFF, PUNISHMENT, COMMUNICATION, AND COMMUNITY 19–30 (2001) (discussing the retributive approach to punishment); TUNICK, *supra* note 64, at 84–106; and Weinreb, *supra* note 78 (discussing the retributive approach to punishments).

80. Fattah, *supra* note 11, at 4 (discussing criminal sanctions as a form of retribution).

81. Christopher Slobogin & Lauren Brinkley-Rubinstein, *Putting Desert in Its Place*, 65 STAN. L. REV. 77, 81–87 (2013) (exemplifying the retributive approach to criminal punishment); *see also* Tison v. Arizona, 481 U.S. 137, 149 (1987) ("The heart of the retribution rationale is that a criminal sentence must be directly related to the personal

criminal punishment.[82] A strict retributive approach posits that the degree of punishment is proportionate to the atrocity of the criminal act, and, therefore, other characteristics of the criminal are irrelevant to the scope of punishment.[83] A more lenient retributive approach interprets desert of criminal punishments as playing a limited role in the sentencing process (figuring the level of culpability and magnitude of harm).[84] It examines, inter alia, the offender's criminal history and relevant circumstances.[85]

Academic literature has suggested various reconciliation theories that combine the two models.[86] For example, H. L. A. Hart combined utilitarian and retributive elements in his *thoroughgoing retributivism* theory and opined that retributive considerations should decide the maximum sanction, while utilitarian considerations (deterrence) should determine its minimum level.[87] Norval Morris advocated a *limiting retributivism approach*[88] that posits that the extent of a criminal

culpability of the criminal offender."); Kent Greenawalt, Commentary, *Punishment*, 74 J. CRIM. L. & CRIMINOLOGY 343, 347–48 (1983) (arguing that for retributivism, "the severity of punishment should be proportional to the degree of wrongdoing"). The expected harm is usually calculated by the probability that a conduct will cause harm multiplied by the magnitude of harm. *See* Steven Shavell, *Criminal Law and the Optimal Use of Nonmonetary Sanctions as a Deterrent*, 85 COLUM. L. REV. 1232, 1233 (1985). For an analysis of harm and culpability in criminal punishments, see Andrew von Hirsch & Nils Jareborg, *Gauging Criminal Harm: A Living-Standard Analysis*, 11 OXFORD J. LEGAL STUD. 1, 2–3 (1991).

82. Andrew von Hirsch suggests that criminal punishments "could be ranked according to the degree to which they typically affect the punished person's freedom of movement, earning ability, and so forth." ANDREW VON HIRSCH, CENSURE AND SANCTIONS 34 (1993). Thus, under this *living-standard* approach, life expectancy could be encompassed into punishments, as it affects the value of the offense. *See id.*

83. TUNICK, *supra* note 64, at 153 (describing the retributive approach to judicial discretion).

84. Paul H. Robinson, *Hybrid Principles for the Distribution of Criminal Sanctions*, 82 NW. U. L. REV. 19, 25 (1987) (discussing narrow versions of pure desert theory); Barry Pollack, Note, *Deserts and Death: Limits on Maximum Punishment*, 44 RUTGERS L. REV. 985, 990 (1992) (discussing the various versions of pure desert theory).

85. VON HIRSCH, *supra* note 76, at 77–91; Pollack, *supra* note 84, at 990 (discussing the various versions of pure desert theory).

86. *See, e.g.*, CESARE BECCARIA & M. D. VOLTAIRE, AN ESSAY ON CRIMES AND PUNISHMENTS 47 (Edward D. Ingraham trans., 2d American ed. 1819) (1764) (offering a mixed theory of punishment).

87. *See* H. L. A. HART, PUNISHMENT AND RESPONSIBILITY: ESSAYS IN THE PHILOSOPHY OF LAW 25, 79–80 (1968); Russell L. Christopher, *Time and Punishment*, 66 OHIO ST. L.J. 269, 290–91 (2005) (describing Hart's "mixed" theory); MORRIS & TONRY, *supra* note 41, at 84 (discussing Hart's approach).

88. *See generally* NORVAL MORRIS, THE FUTURE OF IMPRISONMENT 73–77 (1974); Richard S. Frase, *Sentencing Principles in Theory and Practice*, 22 CRIME & JUST. 363, 365–78 (1997); Slobogin & Brinkley-Rubinstein, *supra* note 81, at 82.

punishment should be based on relative desert while the precise sentence duration should be determined by utilitarian considerations.[89] Another approach is *asymmetrical desert/hybrid model of punishment*, which posits that a maximum criminal punishment should be based on desert, but utilitarian considerations could play down the punishment.[90] Lastly, the *empirical desert theory* suggested by Paul Robinson and John Darley,[91] argues that communities should be surveyed to determine the scope and magnitude of immorality for desert and crime control theories.[92]

B. *Life Expectancy in Punishment Theories*

Each theory—crime control, desert, and a combination of the two—provides important justifications for criminal punishment and could correctly determine the scope of punishment. Integrating the basic elements of the theories suggests that the scope of criminal punishment should rely on moral considerations (blameworthiness) and/or economic considerations, which will delineate the proper magnitude of criminal sanctions. This Section discusses further whether life expectancy plays a role under the theories.

1. Life Expectancy Under Utilitarian Considerations

Under a pure utilitarian approach, the scope of a criminal punishment should be delineated through maximizing the consequences of promoting the sanction.[93] The maximum criminal punishment should

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89. Norval Morris further developed the concept of *limiting retributivism* with Michael Tonry, proposing an establishment of "exchange rates" in order to achieve principles of interchangeability between prison and non-prison sentences, and between various non-prison sentences. MORRIS & TONRY, *supra* note 41, at 82–108. For further analysis of *limiting retributivism*, see VON HIRSCH, *supra* note 82, at 64–68.

90. Robinson, *supra* note 84, at 30; Slobogin & Brinkley-Rubinstein, *supra* note 81, at 82 (describing the *asymmetrical desert* theory).

91. *See generally* PAUL H. ROBINSON & JOHN M. DARLEY, JUSTICE, LIABILITY, AND BLAME: COMMUNITY VIEWS AND THE CRIMINAL LAW (1995).

92. Slobogin & Brinkley-Rubinstein, *supra* note 81, at 79. In later academic works, Robinson distinguished between deontological and empirical desert and further developed the empirical desert theory. *See* Robinson, *supra* note 79; Paul H. Robinson, *The Ongoing Revolution in Punishment Theory: Doing Justice as Controlling Crime*, 42 ARIZ. ST. L.J. 1089, 1104–11 (2011). For criticism of the *empirical desert theory*, see, for example, Christopher Slobogin, *Some Hypotheses About Empirical Desert*, 42 ARIZ. ST. L.J. 1189 (2011).

93. Christopher, *supra* note 87, at 284 (describing the different approaches of determining the degree of criminal punishment).

be capped at the amount of punishment "necessary" to sufficiently deter crime.[94] However, what is considered sufficient punishment to deter crime? To answer this question, I turn to a scrutiny of human behavior.

Assuming that people are rational utility maximizers and risk neutral,[95] a decision to commit crime is much like any other decision people make.[96] Decisions are mainly based on net benefits, which are calculated by a cost-benefit analysis—the benefits of an act weighed against the probability and magnitude of punishment.[97] Under this view, people only comply with the law when the benefits of compliance outweigh the costs.[98] In other words, deterrence occurs when expected costs are higher than expected benefits.[99] Hence, criminal sanctions should be set higher than the amount of damage caused.[100] Policymakers must prescribe criminal punishments with a value that is no less "*than what is sufficient to outweigh that of the profit of the offense.*"[101] Ceteris paribas, when a crime is more profitable, temptation rises and thus the amount of punishment should rise accordingly.[102]

Criminal literature points to two basic forms of deterrence: marginal and general.[103] The *marginal deterrence* theory encourages offenses with

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94. *See* BENTHAM, *supra* note 73, at 229; Christopher, *supra* note 87, at 291 (describing the different approaches of determining the degree of criminal punishment).

95. A caveat is in place regarding the usage of economic analysis of crime: economic analysis of criminal law is controversial and possesses two main drawbacks. First, economic analysis relies on human rationality, which is not always accurate. A cost-benefit analysis of crime does not take into account non-rational actors and thus does not apply to all possible players in the field. Second, the existence of an information gap of many criminals as to the scope and possible ramifications of their actions and the possible sanctions they might face if caught could influence the economic model. For further criticism on implementing economic analysis of law in criminal legislation, see, for example, GEORGE P. FLETCHER, THE GRAMMAR OF CRIMINAL LAW: AMERICAN, COMPARATIVE, AND INTERNATIONAL 59 n.140 (2007) (arguing that law and economics "ha[s] nothing to say about substantive criminal law").

96. Andrea Wechsler, *Criminal Enforcement of Intellectual Property Law—An Economic Approach*, *in* CRIMINAL ENFORCEMENT OF INTELLECTUAL PROPERTY: A HANDBOOK OF CONTEMPORARY RESEARCH 128, 142 (Christophe Geiger ed., 2012).

97. BENTHAM, *supra* note 73, at 178–88; Penney, *supra* note 12, at 74 (arguing that "[e]conomic analysis posits that potential wrongdoers weigh the benefits of crime against the probability and magnitude of punishment"); *see also* VON HIRSCH, *supra* note 76, at 8 (summarizing the deterrence theory).

98. *See* KATARINA SVATIKOVA, ECONOMIC CRITERIA FOR CRIMINALIZATION: OPTIMIZING ENFORCEMENT IN CASE OF ENVIRONMENTAL VIOLATIONS 76 (2012).

99. *Id.*; Becker, *supra* note 44, at 12–14.

100. Roger Bowles, Michael Faure & Nuno Garoupa, *The Scope of Criminal Law and Criminal Sanctions: An Economic View and Policy Implications*, 35 J.L. & SOC'Y. 389, 402 (2008).

101. BENTHAM, *supra* note 73, at 141.

102. *Id.*

103. Andrews, *supra* note 44, at 262.

minimal costs to society—it increases the gap of punishment between different crimes.[104] If, for example, robbery and armed robbery prescribe a similar punishment, then the incentive for rational utility maximizers and risk-neutral robbers to commit armed robbery will be relatively higher than robbery, which causes less danger to individuals, because it could potentially increase the robbery's chances of success.[105] I further explain the practical consequences of marginal deterrence in the next Section. Here, I strive to analyze whether life expectancy normatively changes marginal deterrence.

Normatively, life expectancy should not affect the *marginal deterrence* theory. The normative goal of encouraging potential criminals toward less costly crimes to society is reserved, as changes in life expectancy can only influence the *marginal deterrence gap*, i.e., the gap of punishment between different crimes. When life expectancy rises, criminal punishments with confined imprisonment terms (including life imprisonment with parole) decrease in value—while life imprisonment without parole and capital punishment increase in value. When life expectancy decreases, then the *marginal deterrence gap* decreases accordingly.

To illustrate, suppose that criminal law consists of five criminal offenses, scaled from I to V (offense I is the least serious while offense V is the most serious). Each offense proscribes a criminal punishment: offense I—one-year imprisonment term; offense II—five years; offense III—ten years; offense IV—life imprisonment without parole; and finally,

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104. *Id.* at 262–63. For example, if an offender will receive the same punishment for crimes which are different in scope—death penalty for a minor assault and for murder, then there is no marginal deterrence to murder, and it thus might be preferable. *See id.* The concept of marginal deterrence can be traced back to eighteenth century scholars, namely, Cesare Bonesaria Beccaria, Charles Montesquieu, and Jeremy Bentham. *See* BECCARIA & VOLTAIRE, *supra* note 86, at 32; MONTESQUIEU, THE SPIRIT OF LAWS 161–62 (David Wallace Carrithers ed., Univ. of Cal. Press 1977) (1748); BENTHAM, *supra* note 73, at 171. However, only in 1970 did George J. Stigler coin the term "marginal deterrence." *See* George J. Stigler, *The Optimum Enforcement of Laws*, 78 J. POL. ECON. 526, 527–28 (1970). For more on the origins of marginal deterrence, see generally Steven Shavell, *A Note on Marginal Deterrence*, 12 INT'L REV. L. & ECON. 345 (1992).

105. Another example, often used in literature, is if robbery and murder both subscribed life imprisonment without parole, then the robber will not be deterred from killing the victim of the robbery, as to eliminate the witness and reduce detectability, as life imprisonment is proscribed either way. However, these notions do not apply in every case. For example, killing an individual is not necessarily a rational decision, while robbery could be highly practical: if an individual is committing robbery to feed his starving family, he will not necessarily murder his victim merely because it proscribes a similar punishment. Thus, there are some moral considerations in different forms of criminal actions. Nevertheless, rational utility maximizers and risk neutrals generally will be encouraged toward less socially costly crimes.

offense V—the death penalty. Assume an increase of 100% in life expectancy. Under this new longevity scenario, the substantive effect of the criminal sanctions change: the relative values of offenses I–III are decreased in half, but the relative values of offenses IV and V increase twice as much. Thus, the marginal gap increases. Figure 1 best exemplifies this perceived gap of marginal deterrence:

Figure 1: The Marginal Deterrence Gap
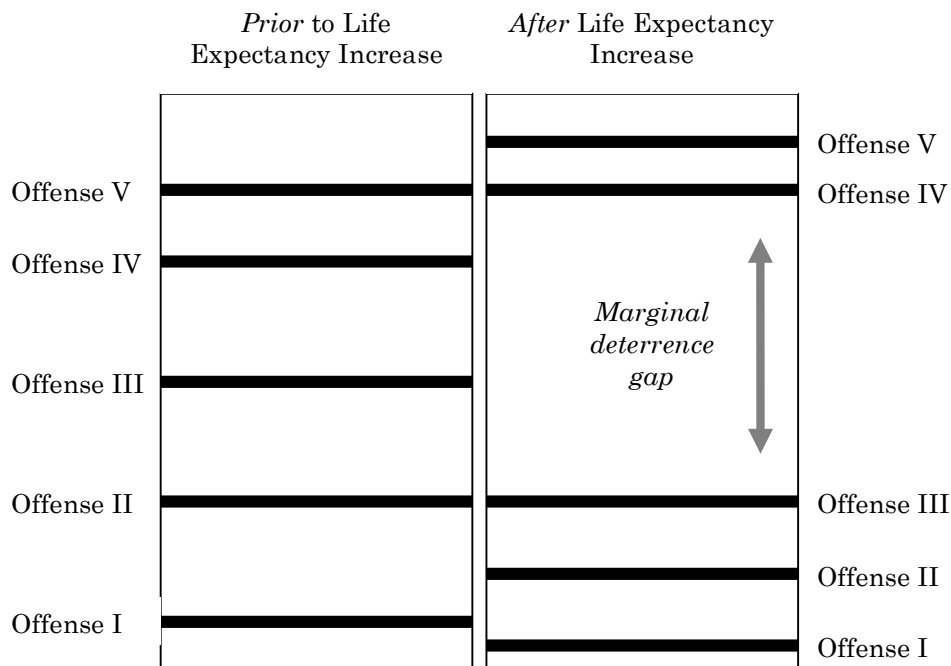
Thus, assuming that all criminals are rational utility maximizers and risk neutral, the notion of life expectancy can potentially influence the scope of the *marginal deterrence gap*.[106] However, it does not effectively

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106. Although I only exemplified the effect of an increase in life expectancy on the *marginal deterrence gap*, a reverse effect will also occur when life expectancy decreases. Hence, under the opposite scenario, the sanctions between offenses I–V will become closer, meaning that there is no potential "gap," but, nonetheless, proportionality between offenses is negatively affected. The practical outcome is that offenders will "prefer" to commit more serious crimes than lenient ones.

influence the normative conception of the marginal deterrence theory.[107] Punishments for offenses I–V are scaled in a similar manner, i.e., their order is preserved and only the proportionality between the punishment changes.

The second component is general deterrence. Under the *general deterrence* theory,[108] criminal law should not seek to punish *ex-post* crimes, but rather to prevent them, assuming that people will choose their course of action depending on the expected results.[109] Deterrence has multiple methods, which could involve different economic variables— increasing the probability of detection, apprehension, conviction, and/or punishment.[110] The expected sanction is determined by the probability of detection and conviction multiplied by the scale of the sanction.[111] In addition, under an economic analysis of crime, the sentence's length should "be decided by weighing the deterrent benefits of penalties against the 'costs' of punish[ment]."[112] Punishment is not costless: it inflicts harm on the offender and simultaneously on the government—financial losses for the justice system and on society in reduction of workforce.[113] Thus, under the main considerations of punishment in the utilitarian approach, the scope of a criminal punishment should mainly account for *probability* of detection, apprehension, conviction, and *scale of the sanction*. I examine each of the components in terms of life expectancy considerations.

Life expectancy does not influence the probability of detection, apprehension, or conviction. Whether the life expectancy of a human being is ten, seventy, or a thousand years, detection, apprehension, and conviction should not change. Thus, in evaluating the influence of life expectancy on deterrence, the probability of sanctions remains constant.

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107.   Part IV returns to practical aspects of the *marginal deterrence gap*.

108.   *General deterrence*, under this categorization, encompasses both deterrence to potential offenders from committing future crimes and to individuals that already committed a crime. However, some scholars differentiate between these two notions of deterrence. *See, e.g.*, CYNDI BANKS, CRIMINAL JUSTICE ETHICS: THEORY AND PRACTICE 140 (2d ed. 2009) (describing deterrence theories).

109.   *See* Andrews, *supra* note 44, at 261−62 (describing the economic model of crime); Kenneth G. Dau-Schmidt, *An Economic Analysis of the Criminal Law as a Preference-Shaping Policy*, 1990 DUKE L.J. 1, 2−3 (providing an economic analysis of criminal law as a preference-shaping policy).

110.   Wechsler, *supra* note 96, at 142–43.

111.   *See* SVATIKOVA, *supra* note 98, at 77–78; Becker, *supra* note 44, at 179–80; Wechsler, *supra* note 96, at 142.

112.   VON HIRSCH, *supra* note 76, at 8.

113.   *Id.* For more on costs of sanctions, see John Collins Coffee, Jr., *Corporate Crime and Punishment: A Non-Chicago View of the Economics of Criminal Sanctions*, 17 AM. CRIM. L. REV. 419, 439−46 (1980).

This leaves us with the scale of the sanction. The degree of the sanction could change accordingly with a shift in life expectancy. A dying person, knowing that she only has a few weeks to live, might not act similarly to a young healthy person knowing that statistically she has a relatively long life to live. However, this scheme is not similar to a general change in life expectancy. Under this scenario, an increase in the severity of the sanction would not likely modify the incentives of the dying prospective offender. This is because the scope of the sanction could be irrelevant to her decision once she knows she is dying and not likely to serve any prison time. Best stated in economic terms, this individual is not a rational utility maximizer or risk neutral. Thus, applying a cost-benefit analysis is irrelevant.

Examining the *scale of the sanction* for rational utility maximizers and risk-neutral individuals under life expectancy considerations could lead to a different outcome. Arguably, life expectancy does not change the scale of the sanction. Forty years in prison remains forty years in prison. The sanction did not change numerically. In some cases, it will be easy to prove that this assumption is false, at least to some extent. If life expectancy dramatically drops to twenty years, while the longest any individual could live is thirty-five years, then obviously the meaning of forty years is prison changes. It now equals life-imprisonment regardless of the criminal's age. But the aim of this Article is more modest: to introduce the notion, for the first time in academic literature, that the scale of a sanction does not solely refer to the incarceration time, but rather also to the time "deprived" outside of prison.

Therefore, when the average life expectancy increases, the perceived benefits of committing a crime for rational utility maximizers and risk-neutral individuals change, as the value of the crime changes. Indeed, life expectancy will not necessarily influence the decision of similar individuals, even if they are both rational utility maximizers and risk neutral, as different individuals value their possible longevity differently. The assumption that society's average lifespan is eighty years does not imply that every individual will live to be eighty years old, and, thus, life expectancy's uncertainty could influence the decisions of individuals differently. However, as a general matter, the value of the crime changes, even if this change could be valued differently by individuals. In other words, when determining the scope of criminal sanctions, policymakers should take into account life expectancy considerations in order to achieve *general deterrence*, as the "value" of offenses changes when longevity increases, while also considering its different effects on various types of punishments.

Thus, under pure economic analysis, life expectancy should influence the scale of nonmonetary sanctions. When life expectancy decreases, the

optimal magnitude of the sanction should be adjusted accordingly, as is true when life expectancy increases. These adjustments should be made at the practical level of implementing life expectancy considerations, as I demonstrate. Therefore, as a general argument, the *general deterrence* theory directly accounts for life expectancy—even if current literature on deterrence has never addressed this important component. Life expectancy, as a component of deterrence, could normatively play a role under a utilitarian approach to punishment.

2. Life Expectancy Under Retributivism Considerations

The *desert theory*, based on a retributive approach, justifies criminal punishment on grounds of moral desert[114]—determining that the sanction should be proportional and deserved by the offender.[115] When formulating the scope of a criminal punishment, the *desert theory* takes into account the gravity of the offense, the blameworthiness of the offender, and the harm inflicted on the victim and society.[116] In other words, retributive approaches to punishments emphasize the proportionality of the sanction in accordance with the specific, and other, offenses.[117]

Seemingly, under the notion of proportionality,[118] the desert theory mainly focuses on the criminal act itself and less on the criminal[119]—or

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114. DUFF, *supra* note 79, at 19–30 (discussing the retributive approach to punishments); Weinreb, *supra* note 78, at 47 (discussing the retributive approach to punishments).

115. MICHAEL S. MOORE, PLACING BLAME: A THEORY OF THE CRIMINAL LAW 88 (2010) (arguing that "[t]he distinctive aspect of retributivism is that the moral desert of an offender is a sufficient reason to punish him or her" (emphasis omitted)).

116. *See* Fattah, *supra* note 11, at 4 (discussing criminal sanctions as a form of retribution).

117. There are various sorts of punishment proportionality. For example, *ordinal proportionality* relates to comparative punishments: crimes with comparable gravity should be sanctioned similarly, while crimes with differing gravity should be sanctioned according to their degree of severity. Andrew von Hirsch, *Proportionality in the Philosophy of Punishment: From "Why Punish?" to "How Much?,"* 25 ISR. L. REV. 549, 572 (1991). *Cardinal proportionality* relates to the overall magnitude and anchoring points of a penalty scale: when setting an anchoring point of a certain crime, the state can compare other crimes to the anchoring point and adjust it relatively. *Id.* at 572–73. For more on these approaches, see VON HIRSCH, *supra* note 82, at 18–19; Christopher, *supra* note 87, at 284 (describing the different approaches of determining the degree of criminal punishment); van den Haag, *supra* note 66, at 1253 (arguing that "[a]ccording to just deserts theory, the seriousness of the crime alone should determine the punishment deserved"); von Hirsch, *supra*, at 572–73 (explaining ordinal and cardinal proportionality).

118. Scholars suggest two main principles of proportionality. The first views "the institution of punishment as rectifying [an] 'unfair advantage'" that the offenders obtain from the law. VON HIRSCH, *supra* note 82, at 6. The second views "punishment's role as expressing censure or reprobation." *Id.*

more precisely, on the blameworthiness of the offender's actions.[120] In determining the proper scope of punishment for a criminal offense, the desert theory could be relatively vague, as desert theorists will search for proportionality between the conduct and the punishment—"the punishment should fit the crime."[121] Thus, evaluating proportionality is highly difficult due to the vagueness of the concept.[122]

Thus, under a general notion of desert, which is mainly determined by the degree of wrongdoing and culpability,[123] life expectancy does not influence criminal punishments. Stated differently, life expectancy should not change the nature of the criminal act.[124] Theft remains theft; embezzlement remains embezzlement; and rape remains rape. The degree of wrongdoing and criminal culpability does not change because of the offender's and the victim's life expectancies. When examining the nature of the criminal act, the only criminal offenses that could be directly linked to life expectancy are either offenses that deprive life or offenses that shorten life. Thus, under limited circumstances, the harm inflicted on the victim may be linked to life expectancy.

Take murder as an example. When someone decides to commit murder, she deprives another human being of life. The fact that a person has approximately ten years or 950 years left to live changes the magnitude of the crime to some extent. Arguably, committing murder in the scenario of a thousand-year life expectancy causes a higher economic

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119.   VON HIRSCH, *supra* note 76, at 31 (arguing that under the desert rationale for sentencing, "[s]entences should be proportionate in their severity to the gravity of offenders' criminal conduct"); Pollack, *supra* note 84, at 990 (examining the desert theory); Dean J. Spader, *Megatrends in Criminal Justice Theory*, 13 AM. J. CRIM. L. 157, 167 (1986) (arguing that unlike the desert theory, the utilitarian theory argues that "the punishment should fit the offender").

120.   VON HIRSCH, *supra* note 76, at 31.

121.   Donald A. Dripps, *The Constitutional Status of the Reasonable Doubt Rule*, 75 CALIF. L. REV. 1665, 1699 (1987).

122.   *Id.*; Pollack, *supra* note 84, at 989–90 (arguing that the vague language of desert "provides little guidance for structuring criminal sanctions").

123.   MOORE, *supra* note 115, at 71 ("The meaning of desert: that the desert that triggers retributive punishment is itself a product of the moral wrong(s) done by an individual, and the moral culpability with which he did those wrongs."); Christopher, *supra* note 87, at 286 ("An offender's desert is determined by the degree of wrongdoing committed and the degree of culpability with which the wrongdoing was committed.").

124.   Life expectancy should not affect blameworthiness. Age considerations can only affect blameworthiness as a mitigating factor for sentencing when the offender is relatively young. *See* Mueller-Johnson & Dhami, *supra* note 35, at 78 ("Age may be considered a factor mitigating blameworthiness where the offender is a child or youth, but once mature adulthood is reached, age in itself should not constitute a factor affecting blameworthiness.").

harm than murder in the seventy-seven-year life expectancy scenario.[125] If this is true, then criminal law should be revisited entirely, as similar types of considerations are not currently part of criminal legislative and judicial policies. Does the age of a murder victim currently change the scope of punishment? Is murdering a senior citizen considered a less serious crime than murdering a middle-aged man or even a child? The nature of the criminal act does not change, and the expected life expectancy should not matter either.

However, normatively, the desert theory does address life expectancy. When life expectancy changes, the "deserved" punishment changes to some degree. This is due to the changes in the proportionality between the criminal act and punishment. Although the criminal act is not affected by life expectancy, the scope of punishment and proportionality is. In other words, much like the analysis of life expectancy under a deterrence approach, what changes here is the punishment itself, and likewise the proportionality between the conduct (which does not change) and the punishment (which, as I argue, does change). Indeed, ten years in prison remains ten years in prison. But, as I argue in this Article, criminal sanctions should not be confined to the notion of how many years are spent in prison, but also to the amount of time that may be spent out of it. And due to this hypothesis, proportionality changes. Thus, while to some extent life expectancy is not incorporated into the desert theory, life expectancy does play a role under a utilitarian approach.

3.   Life Expectancy Under Reconciliation Theories

Reconciliation theories integrate both utilitarian and retributive considerations. There are two categories of penal desert in reconciliation theories. Under a *determining* theory, desert alone guides the scope of punishments and only the crime's characteristics will determine the scope of punishment.[126] Under a *limiting* theory, a model that combines strict retributivism and pure penal utilitarianism, desert determines the limits of the criminal sanction—the lower and upper boundaries—but inside these boundaries, retributivism considerations should apply.[127]

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125.   Another example is robbery. If someone robs all the money of an individual when he only has one week left to live, as opposed to an individual who has another fifty years to live, these individuals would probably evaluate the loss of money differently. The earning potential of a person with a fifty-year life expectancy is likely higher than that of a person with only one week remaining to live. Nevertheless, this scheme encompasses different variables, such as the income of each individual, and is thus highly speculative.

126.   VON HIRSCH, *supra* note 76, at 38–46 (exploring the *determining* theory of desert).

127.   *Id.* (exploring the *limiting* theory of desert).

The combined utilitarian and retributive elements in H. L. A. Hart's model, Norval Morris's approach, and *asymmetrical desert* will result in similar outcomes. As under these models, retributive considerations, which account for life expectancy, determine the maximum sanction. Thus, it is evident that under these reconciliation theories life expectancy could also play a role.

Under Paul Robinson and John Darley's *empirical desert theory*,[128] life expectancy plays a more limited role, if it plays a role at all. As community sentiment creates the baseline for the scope and magnitude of immorality, life expectancy could be rooted in the community's notion of immorality and is a subjective, not an objective measure. There are two main difficulties that arise from this approach. First, community sentiment is conjectural and may not be based on empirical data and thus may be inexact. Imagine that community members determine the proper scope of criminal sanctions with limited data on life expectancy or that accessibility to this data is impractical. Thus, reliance on their knowledge of life expectancy and its accuracy could impede a proper evaluation of the scope of criminal sanctions.

Second, it is highly doubtful that life expectancy plays a role in morality at all. Committing murder is an immoral act, regardless of if the victim is thirty or seventy years old. Arguably, questions of morality or at least the heinous nature of the crime arise when a victim is very old or very young, who is usually frailer and unable to defend herself. This notion, for example, shaped a few criminal statutes regarding elderly citizens, mostly for offenses such as assault and battery.[129] However, the moral considerations of such act should be similar, at least to an *ex-ante* evaluation of life expectancy. The limits of the offense should be broad to encompass various crimes, including age-based considerations, while leaving judicial discretion to decide the punishment of a specific crime. Therefore, even if life expectancy rises substantially, it should not affect the moral wrongness of such acts, at least not as an *ex-ante* consideration of punishment.

IV. CONSEQUENCES OF LIFE EXPECTANCY

Academic literature habitually debates the scope and magnitude of criminal punishment, and various approaches exist. If policymakers

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128.   ROBINSON & DARLEY, *supra* note 91.

129*.   See, e.g.*, TEX. PENAL CODE ANN. § 22.01(c)(1) (West 2011) (proscribing penalties for various types of assault, while providing that harsher penalties may be imposed when the assault is against an elderly individual); POSNER, *supra* note 21, at 127 n.14 (arguing that a number of states make assault and battery a harsher offense when the victim is elderly).

ignore the theoretical framework, the scope of criminal sanctions could be inconsistent, or worse, arbitrary.[130] This is a different problem. The intention of this Article is to examine the practical consequences of ignoring the importance of life expectancy in designing criminal punishments *when* policymakers follow a utilitarian or a retributive approach. More precisely, this Part discusses the increase in life expectancy in the United States between 1900 and 2013,[131] scrutinizes and evaluates the statistical changes in life expectancy, and determines the manner in which criminal sanctions should be adjusted accordingly. This Part argues that, although policymakers should take into account life expectancy considerations when legislating or reevaluating criminal punishments, other factors, such as the rise in the value of life, an argument that criminal sanctions are set high from the beginning, and overcriminalization could promote leaving criminal sanctions unchanged, or even reduced.

A. Consequences to Punishment Theories

In shaping the scope of a criminal punishment, following either utilitarian, retributive, or reconciliation theories will not likely produce similar outcomes. The question as to which theory properly addresses the scope of criminal punishments is highly controversial and will not be resolved here, if ever. Nevertheless, examining the role of life expectancy under these theories will add to the lively discussion on their appropriateness to determine the scope of criminal punishments and, chiefly, their upper limits.

Life expectancy might produce different outcomes when examined under a retributive or utilitarian prism. But, such outcomes are obvious, as the two theories focus on different elements.[132] Generally, both approaches encompass life expectancy considerations. While utilitarian considerations encompass life expectancy under the notion of *general deterrence*, a retributive approach, which justifies criminal punishment on grounds of moral desert, encompasses life expectancy considerations

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130. Robinson, *supra* note 84, at 20 (arguing that "[i]n the absence of a guiding [punishment] principle, [legislators'] choices . . . are, at best, inconsistent" or foster arbitrariness or prejudice).

131. This Article only focuses on the rise in life expectancy since 1900, as reliable statistical data on life expectancy in the United States is only available from that time. *See* Arias, *supra* note 8.

132. Generally, utilitarian theories could take into account changes in society while retributive theories do not. BANKS, *supra* note 108, at 149 (noting that the strength of utilitarian justifications for punishment lies in its adjustability according to changes in society, while retributive theories fail to act accordingly).

as part of the magnitude of the sanction. In other words, this Article's hypothesis does not undermine either criminal law theory. On the contrary, it shows that both theories could support life expectancy considerations and, therefore, should not be ignored by scholars and legislators.

B. Legislative Consequences

Under most criminal law theories, criminal punishments are currently unjust because policymakers did not account for life expectancy considerations and have not adjusted them accordingly. This notion creates practical ramifications on a criminal's incentive to commit an offense and, therefore, negatively affects society. Besides the general ramification of excluding life expectancy considerations from various types of criminal sanctions, the *marginal deterrence gap* changes as well when life expectancy changes and criminal sanctions remain the same. Although presumably marginal deterrence is preserved, this potential gap is undesirable and has practical implications.

Marginal deterrence should not simply refer to a possible gap between sanctioning offenses, but rather preserve proportionality between sanctions.[133] For example, if all other crimes except murder have a maximum sanction that is between six to twelve months, and murder is sanctioned with life imprisonment without parole, then society can presumably benefit from this scheme, as criminals are less motivated to commit murder, as opposed to lesser, "cheaper" crimes. However, the social implications of such a determination are negative. Criminals lack the incentive not to commit more (previously) serious crimes as opposed to committing more (currently) lenient crimes, because both of these crimes will be sanctioned on a relatively similar scale. As in my earlier example, armed robbery, which is less socially desirable than robbery, will most likely be preferred by potential offenders over robbery since it increases the value of the crime to the offender. Thus, marginal deterrence is greatly affected from the actual rise in life expectancy. When policymakers refrain from taking into account life expectancy as an important factor in determining the scope of criminal sanctions, marginal deterrence is at risk.

Furthermore, in implementing the Article's normative claim, policymakers should adjust nonmonetary criminal sanctions according to an increase in expected longevity. When examining the increase in life expectancy during the last century, policymakers should first examine

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133*.   See id.* at 150.

statistical data, but not account for a rise of life expectancy that does not affect the imposition of nonmonetary criminal sanctions. Such data-analysis is important in properly adjusting for life expectancy in nonmonetary criminal sanctions, as the increase in life expectancy encompasses a decrease in infant and child mortality, two cohorts that are not criminally liable. Thus, when adjusting criminal sanctions in light of life expectancy, policymakers ought to examine the increase in life expectancy at the age of criminal responsibility or even adult life expectancy.[134]

Here is an example. I choose ten years as the mean age for criminal responsibility and as the baseline for comparing criminal punishment from the age of criminal responsibility.[135] In this manner, I effectively eliminate infant mortality. Accordingly, policymakers should differentiate between various offenses that are only imposed from a specific minimum age, such as eighteen (e.g., capital punishment and life imprisonment without parole for a crime that is not homicide).[136] In the year 1900, using the age of ten as a baseline for most offenses, the average remaining lifespan of a ten-year-old (for all races and sexes) in the United States was 51.14.[137] By 2013, the average remaining lifespan for a ten-year-old (for all races and sexes) in the United States increased to 69.4,[138] which represents approximately a thirty-five percent increase in life expectancy for the age of criminal responsibility.

Assuming that, in 1900, an armed robber commits an offense at the age of ten and is sentenced to twenty years in prison, she is deprived of approximately thirty-nine percent of her remaining lifespan. If that same ten-year-old commits the same offense in 2013, and is similarly incarcerated for twenty years, she is "merely" deprived of approximately twenty-nine percent of her remaining lifespan. Thus, to address this

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134. *See* Ginsburg et al., *supra* note 30, at 658 (arguing in a copyright-related article that the copyright term extension justification, which is partially based on the increase in life expectancy, is problematic, as "increases in adult life expectancy do not begin to match the extraordinary increases in copyright terms").

135. In the United States, the age of criminal responsibility varies between the ages of seven and fourteen. *See supra* note 27 and accompanying text. With that, life expectancy tables only provide statistics five years apart (i.e., for the age of five, ten, fifteen, et cetera). Obviously, at this stage of evaluation, each policymaker should create the relevant baseline according to the state's law for criminal responsibility.

136. *See* Roper v. Simmons, 543 U.S. 551, 573–74 (2005) (holding that it is unconstitutional for capital punishment to be imposed for crimes committed under the age of eighteen); Graham v. Florida, 560 U.S. 48, 82 (2010) (holding that the Eighth Amendment's cruel and unusual punishment clause does not permit a juvenile offender to be sentenced to life in prison without parole for a non-homicide crime).

137. *See* Arias, *supra* note 8, at 29 tbl.11.

138. *See* Jiaquan Xu, et al., *supra* note 9, at 29 tbl.6, 30 tbl.7.

problem, U.S. policymakers should raise nonmonetary criminal sanctions by approximately thirty-five percent (noting that each policymaker should take into account the state's age of criminal responsibility and life expectancy). Generally, if in 1900, the offense of armed robbery proscribed a maximum sentence of twenty years in prison, policymakers should adjust the maximum sentence of armed robbery with life expectancy considerations and raise it to twenty-seven years (an increase of thirty-five percent over the 1900 sentencing).

This practical solution of adjusting nonmonetary sanctions to the increase in life expectancy appears relatively simple. Provided that life expectancy tables in the United States exist, at least from the beginning of the twentieth century, while eliminating the statistical changes due mostly to infant and child mortality, policymakers can make relatively easy adjustments based on mathematical calculations. This would apply to criminal offenses with *confined criminal sentences*. Nonetheless, these calculations are not necessarily easy, as they could encompass various mitigating factors,[139] which might change the outcomes of such analysis.[140] Mainly, the difficulty of adjusting nonmonetary sanctions to the increase in life expectancy arises with the diversity of cohorts. For example, men and women are not expected to live similarly. This diversity also applies to race, gender, and geographical areas.[141] Thus, in order to prevent over-inclusiveness of the criminal sanction, when

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139. For example, life expectancy of an incarcerated individual is lower than the life expectancy of a non-incarcerated individual. *See* AM. CIVIL LIBERTIES UNION, *supra* note 42, at 196. Thus, under this argument, life expectancy considerations should also take into account the life expectancy after incarceration and combine their results. However, I would suggest that such integration is not needed, as they are done *ex-post* for sentencing, while I merely advocate *ex-ante* considerations of punishments.

140. Mathematical calculations of life expectancy when applied to criminal punishments could be highly problematic. First, as life expectancy differs between various cohorts, applying generalization to life expectancy of all cohorts might seem unjust, as punishment is inflicted on a specific individual from a specific cohort. Second, relying on mathematical calculations of the general life expectancy could result in mistreatment of different offenders' life expectancy according to their birth year. Consider the following example. Two individuals, John Young and John Old, each committed a murder in separate incidents in the year 2013. John Young was born in the year 1991, while John Old was born in the year 1940. Clearly, those two individuals possess a different life expectancy. In this case, if policymakers would implement life expectancy considerations into criminal law, John Young and John Old will be affected differently from such implementation. If policymakers adjust criminal punishments to life expectancy in 2013, both individuals' punishments will not align with their particular life expectancy—John Old's punishment will clearly possess a larger differentiated value than John Young. To overcome these important disparities between offenders, policymakers should refrain from evaluating life expectancy on a year-to-year basis, but rather rely on a general change throughout a decade or even a century.

141. *See supra* note 19.

implementing life-expectancy considerations, criminal punishments should be set at the lowest bar of expected lifespan for all cohorts. Although females are expected to live longer than males, they will be sanctioned as if they were males. A further difficulty arises when policymakers wish to adjust the rise in life expectancy to nonmonetary sanctions with *finite criminal sentences*—life imprisonment without parole and capital punishment.

Returning to Part III, an increase in life expectancy decreases the perceived benefits of committing crimes with a sentencing of life imprisonment without parole and capital punishment. Hence, offenses that proscribe *finite criminal sentences* are harsher in 2013 than in 1900. However, *finite criminal sentences* are specific to the age of criminal responsibility, as some offenses are only imposed at the age of eighteen— capital punishment and life imprisonment without parole for all crimes excluding homicide. Thus, policymakers should examine statistical data at that age which reveals even higher statistical differences.[142] In 1900, the average remaining lifespan of a twenty-year-old (for all races and sexes) in the United States was 42.79.[143] Accordingly, in 2013, the average remaining lifespan of a twenty-year-old (for all races and sexes) in the United States was 59.6.[144] Thus, the difference in life expectancy for punishments that can only be imposed at the age of eighteen is approximately thirty-nine percent. As *finite criminal sentences* are not always confined to the age of criminal responsibility, they are hence comprised of both variations of statistical analysis, and the average of the increase in life expectancy for this category could be roughly estimated at approximately thirty-seven percent.

The argument that offenses that proscribe *finite criminal sentences* are harsher in 2013 than in 1900 counters the argument for *confined criminal sentences*. Although this scheme sounds preferable as it further condemns and potentially deters the most heinous crimes, it also increases the *marginal deterrence gap* and, more importantly, it proscribes unjust penalties. In this case, policymakers should lower the maximum sentence of *finite criminal sentences* by approximately thirty-seven percent (although it should be measured separately for different offenses under this category). But how can life imprisonment without parole and the death penalty be lowered? Can you make a criminal almost die? There is no easy solution to this problem, as numerical changes are required for non-numerical sentencing. However, under the

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142.   Because life expectancy tables only provide statistics in five-year intervals, I use statistics from the age of twenty, which is closest to age eighteen.

143.   Arias, *supra* note 8, at 29 tbl.11.

144.   Jiaquan Xu, et al., *supra* note 9, at 30 tbl.7.

category of *finite criminal sentences*, policymakers should reexamine whether to change the nature of such offenses by lowering them to *confined criminal sentences*. For example, if a criminal offense proscribed life imprisonment without parole in 1900, policymakers could "reduce" the sentence to either life imprisonment with parole or a set term of, for example, twenty years imprisonment. Accordingly, the death penalty for some criminal offenses could be reduced to life imprisonment with or without parole, or even to a set term of imprisonment. The decision of how to adjust criminal punishments should take into account the change in life expectancy and translate it to a nonmonetary sanction. Although a difficult task to embark on, a general understanding on reducing *finite criminal sentences* in accordance with life expectancy is possible.

While adjusting criminal sanctions to the increase in longevity is important, there are a few reasons why making such adjustments is not necessarily required—or perhaps—even desirable. First, the increase in life expectancy could be matched to the rise in value of life.[145] Whereas the increase in the value of life has turned imprisonment into a harsher punishment, the increase of life expectancy that made imprisonment an "easier" punishment balances the equation.[146] Nevertheless, there are a few difficulties with this argument when examining the effect of life expectancy on criminal sanctions. If we accept the notion that life's value has increased, and, accordingly, imprisonment is a harsher punishment in 2013 than in 1900, then *confined criminal sentences*, which impose a more lenient punishment in 2013, have corrected themselves. On the other hand, *finite criminal sentences* are in both cases harsher in 2013 than in 1900. Thus, under this presumption, criminal sanctions should be lowered. However, both these notions presume that an increase in the *value* of life is equal to an increase in the *length* of life. Measuring the increase in value of life would be close to impossible and therefore invalidates this presumption. In addition, these notions fail to take into account the improvement of prison conditions, which affect the "value" of imprisonment.[147] Accordingly, many prisoners might have a higher quality of life inside prison as opposed to outside of it in terms of food, shelter, and educational and rehabilitation opportunities.[148] However,

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145. *See* sources cited *supra* note 38.

146. *See* sources cited *supra* note 38.

147. Ezzat Fattah, while agreeing that life in prison has substantially improved, is doubtful as to whether this improvement has kept pace with life outside of prison. *See* Fattah, *supra* note 11, at 5.

148. *See* MORRIS & TONRY, *supra* note 41, at 96 ("[M]any, though not all prisons, provide a safer and more comfortable environment than the environment from which many of our street criminals come. In prison, they are less likely to be assaulted or killed, they eat

imprisonment terms do not affect offenders who receive capital punishment, because death remains death—even if the death penalty is inflicted in a more humane manner today.

Second, the rise in life expectancy should not necessarily affect nonmonetary criminal sanctions, assuming that they were initially, and perhaps intentionally, set high from the beginning and granted courts the judicial discretion to determine specific sentences. This notion, even if true, will be problematic for mandatory sentencing statutes, which could potentially eliminate judicial discretion.[149] Furthermore, if criminal sanctions are currently higher than they should be, then they are non-proportional and should be reexamined, regardless of life expectancy considerations. In addition, this notion only refers to *confined criminal sentences*, while *finite criminal sentences* are not affected and life expectancy should be a consideration.

Third, as some scholars argue, human conduct has become overcriminalized.[150] Under this phenomenon, there had been a "dramatic expansion in the substantive criminal law and [an] extraordinary rise in the use of punishment."[151] There is "too much punishment and too many crimes in the United States."[152] *Overcriminalization*, which could be undesirable in society, might pose a counterargument for additional, increased criminal punishments. If there are currently too many criminal laws,[153] while the upper limits of criminal sanctions rose substantially

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better, they often begin educational efforts they had previously entirely neglected, they sometimes begin to take hold of their lives and give them shape.").

149. Mandatory sentencing limits judicial discretion where certain crimes must proscribe certain punishments as set by the statute. *See, e.g.*, TEX. PENAL CODE ANN. § 12.42(c)(2)(A)(i), (B)(ii) (West 2012) (proscribing mandatory life sentences for repeat and habitual felony offenders). For more on mandatory sentencing, see generally Leon Sheleff, *The Mandatory Life Sentence—A Comparative Study of the Law in Israel, Great Britain, the United States and West Germany*, 5 TEL AVIV U. STUD. L. 115 (1982).

150. HUSAK, *supra* note 65, at 4 (arguing "that we have too much punishment and too many crimes in the United States today"); *see generally* Donald A. Dripps, *The Liberal Critique of the Harm Principle*, 17 CRIM. JUST. ETHICS, Summer/Fall 1998, at 3; Sanford H. Kadish, *The Crisis of Overcriminalization*, 7 AM. CRIM. L.Q. 17 (1969); Ellen S. Podgor, *Overcriminalization: New Approaches to a Growing Problem*, 102 J. CRIM. L. & CRIMINOLOGY 529 (2012); Ellen S. Podgor, *Overcriminalization: The Politics of Crime*, 54 AM. U. L. REV. 541 (2005); Stephen F. Smith, *Overcoming Overcriminalization*, 102 J. CRIM. L. & CRIMINOLOGY 537 (2012).

151. HUSAK, *supra* note 65, at 3.

152. *Id.* at 4.

153. Smith, *supra* note 150, at 538 ("Federal criminal law has been growing at a breakneck pace for generations. According to a 1998 American Bar Association report, an incredible 40% of the thousands of federal criminal laws passed since the Civil War were enacted after 1970. The relentless pace at which new federal crimes are passed has continued despite significant recent declines in crime rates. On average, Congress created fifty-seven new crimes every year between 2000 and 2007, roughly the same rate of

during the twentieth century, then life expectancy considerations should not raise them further. However, policymakers should still lower *finite criminal sentences*, and thus even reduce the magnitude of the *overcriminalization* phenomenon by decriminalization.

C. Consequences on Sentencing

Judicial discretion exists under most criminal statutes. While policymakers define the "general rules" or boundaries of punishment, judges can take into account various factors in deciding the proper scope of punishment.[154] They can use sentencing guidelines, precedents, and parole board/specialists recommendations. When policymakers set minimum and maximum sentencing, judges decide which punishment to impose. In addition, judges can make exceptions in particular circumstances. Judges can consider the offender's criminal record, her danger to society, financial and personal circumstances, prospects of rehabilitation, and any other factors that are attributed to the individual.[155] Accordingly, judges can also base their considerations on age or even life expectancy, especially when elderly offenders are on trial.[156] Thus, judicial discretion grants the ability to take life expectancy considerations—vis-à-vis the offender as well as the victim—into account.

I argue that judges should not usually consider changes in life expectancy in deciding the offender's sentence. Implementing the general change in life expectancy in sentencing would require judges to make

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criminalization from the two prior decades, resulting today in some 4,500 federal laws that carry criminal penalties." (footnote omitted)).

154.   However, judicial discretion is often confined to sentencing guidelines. Although judges can depart from the guidelines, they are usually required to justify the departure. *See* TUNICK, *supra* note 64, at 153; ANDREW VON HIRSCH, KAY A. KNAPP & MICHAEL TONRY, THE SENTENCING COMMISSION AND ITS GUIDELINES (1987).

155.   *See* TUNICK, *supra* note 64, at 154 (describing various elements of sentencing).

156*.*   Few scholars found that age does sometimes affect criminal sentences. For example, William Wilbanks found that elderly criminals are treated more harshly at the front end of the criminal justice system (conviction) and more leniently at sentencing. William Wilbanks, *Are Elderly Felons Treated More Leniently by the Criminal Justice System?*, 26 INT'L J. AGING & HUM. DEV. 275, 281, 286 (1988). Gerri Turner and Dean Champion found a leniency effect for older offenders in Kentucky, Tennessee, and Virginia between 1970 and 1984. Gerri S. Turner & Dean J. Champion, *The Elderly Offender and Sentencing Leniency*, 13 J. OFFENDER COUNSELING SERVS. REHABILITATION 125, 127, 131–34 (1989). For further discussion, see generally Dean J. Champion, *Elderly Felons and Sentencing Severity: Interregional Variations in Leniency and Sentencing Trends*, 12 CRIM. JUST. REV., Fall 1987, at 7; C. Wayne Johnston & Nicholas O. Alozie, *The Effect of Age on Criminal Processing: Is There an Advantage in Being 'Older'?*, 34 J. GERONTOLOGICAL SOC. WORK 65 (2001); Mueller-Johnson & Dhami, *supra* note 35; and Darrell Steffensmeier, John Kramer & Jeffery Ulmer, *Age Differences in Sentencing*, 12 JUST. Q. 583 (1995).

additional considerations that are undesirable. For instance, judges would have to consider the life expectancy of each offender by examining medical proof that their life expectancy is lower than that of the general life expectancy. This is disadvantageous and causes unfair and biased sentencing since an offender who can prove that he has two years to live, for instance, will receive a shorter sentence than another offender, for the same offense, and with the same criminal background, who cannot. This notion emphasizes the need to use retributive considerations in reconciliation theories as a *limiting* theory and not a *determining* theory. The severity of punishment should be proportionate to the crime without specific life-expectancy considerations. Thus, implementing life expectancy in penal considerations should be reserved for setting the maximum criminal punishments, i.e., using general, non-specific statistics of life expectancy to determine *ex-ante* the scope of punishment by policymakers, and not *ex-post* by judges.

But what happens when the policymaker refrains from setting a maximum sanction? Due mostly to *anchoring and adjustment heuristic*, judges probably take life expectancy into account when deciding the scope of a punishment without limits.[157] Even without using statistical data, modern judges are most likely aware of the approximate general lifespan of human beings and, due to this cognitive bias, their knowledge on human lifespan could serve as an "anchor" to decide proper punishment. Assuming that a judge in 1900 knew that the approximate lifespan of Americans was forty-seven years old, she could use this age as an anchor to base her adjudications. Similarly, a judge in 2013, who is aware of the average lifespan, could sentence accordingly. In both cases, when knowledge of life expectancy exists, judges will most likely adjust penalties to life expectancy, even if they are unaware of this bias.

Thus, when judges have no statutory limits to punishments, nonmonetary sanctions could be adjusted automatically for life expectancy. Presumably, this is a solution to the perceived problem of life expectancy's influence on the value of nonmonetary criminal sanctions. However, this presumption is false. Granting judges limitless judicial

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157. Under the *adjustment and anchoring* bias, when people estimate, they have a starting value that is adjusted to the final answer. For more on *adjustment and anchoring* bias, see Daniel Kahneman & Amos Tversky, *Subjective Probability: A Judgment of Representativeness*, *in* JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES *32,* 32–33 (Daniel Kahneman, Paul Slovic & Amos Tversky eds., 1982); Colin Miller, *Anchors Away: Why the Anchoring Effect Suggests that Judges Should Be Able to Participate in Plea Discussions*, 54 B.C. L. REV. 1667 (2013); Paul Slovic & Sarah Lichtenstein, *Comparison of Bayesian and Regression Approaches to the Study of Information Processing in Judgment*, 6 ORGANIZATIONAL BEHAV. & HUM. PERFORMANCE 649 (1971); and Avishalom Tor, *The Methodology of the Behavioral Analysis of Law*, 4 HAIFA L. REV. 237, 251–54 (2008).

discretion in sentencing, while not providing them with a maximum sanction, is not a preferable practice.[158] Limitless judicial discretion could potentially result in arbitrary sentencing, and judges can vary widely in their sentencing.[159] Wide judicial discretion leaves a vast amount of power in the judges' hands. In those instances, the policymaker should account for *ex-ante* considerations and raise questions of legitimacy and desirability of such a power allocation.[160]

To conclude, life expectancy is an important element in the scope of nonmonetary criminal sanctions. Policymakers should revisit most nonmonetary criminal sanctions to determine if they should be adjusted. However, a glimpse into the future does not necessarily imply that such considerations will continue to play a dominant role in forming or adjusting nonmonetary criminal sanctions. Life expectancy will most likely continue to increase in the future.[161] However, further changes in life expectancy would not necessarily change the scope of criminal sanctions as long as the aging process remains the same. If life expectancy continues to increase, but the aging process remains the same, then we might expect offenders to be paroled or released at a greater rate based on physical incapacity in states which have physical incapacity release statutes.[162] Having said that, policymakers should

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158. *See, e.g.*, MARVIN E. FRANKEL, CRIMINAL SENTENCES: LAW WITHOUT ORDER 12 (1973) ("The absurdities of our sentencing laws would remain aesthetically repulsive, but might be otherwise tolerable, if our judges were uniformly brilliant, sensitive, and humane."); Posner, *supra* note 52, at 1206 ("There is a related but more important reason for putting a ceiling on criminal punishments such that not all crimes are deterred. If there is a risk either of accidental violation of the criminal law or of legal error, an expected penalty will induce innocent people to forgo socially desirable activities at the borderline of criminal activity.").

159. *See* MORRIS & TONRY, *supra* note 41, at 85 ("Research on sentencing disparities, and on exercises in which judges are asked to 'sentence' hypothetical cases, compel the conclusion that judges vary widely in their judgments about appropriate punishment . . . .").

160. *See, e.g.*, Anthony T. Kronman, *The Problem of Judicial Discretion*, 36 J. LEGAL EDUC. 481, 482 (1986) ("If judges are legislators and not adjudicators who are merely applying the rules they have been authorized to apply in the cases that come before them, what is it that gives their decisions legitimacy or authority?"). For more on judicial discretion, see RONALD DWORKIN, TAKING RIGHTS SERIOUSLY 48–57 (1977) (distinguishing between "weak" and "strong" discretion) and Patricia Loughlan, *No Right to the Remedy?: An Analysis of Judicial Discretion in the Imposition of Equitable Remedies*, 17 MELBOURNE U. L. REV. 132 (1989).

161. *See* Jones, *supra* note 5, at 106 ("Life expectancy . . . can be expected to increase in the future.").

162. For instance, in Michigan, a "parole board may grant a medical parole for a prisoner determined to be physically or mentally incapacitated." MICH. COMP. LAWS ANN. § 791.235(10) (West 2014). Compassionate release programs for the terminally ill prisoner exist throughout the country. *See, e.g.*, CONN. GEN. STAT. ANN. § 54-131 (West 2009); DEL. CODE ANN. tit. 11, § 4346(e) (2015); FLA. STAT. ANN. § 947.149 (West 2010); GA. CODE ANN.

reexamine the increase in life expectancy to determine whether criminal sanctions have been designed correctly.

V. CONCLUSION

The increase in life expectancy has affected many legal fields, and criminal law should not be different. However, examining current literature, theories, and criminal legislation reveals that nonmonetary criminal sanctions are not linked to changes in life expectancy. Thus, the rapid increase in life expectancy in the United States, mostly throughout the twentieth century, has not affected the scope of most criminal sanctions.

As this Article has shown, life expectancy affects nonmonetary criminal sanctions under both utilitarian and retributive theories. Accordingly, lack of life expectancy considerations affects the value of sanctions, and, thereby, the incentive to commit criminal offenses and/or the proportionality between the conduct and the sanction. A failure to adjust criminal sanctions to recognize the increase in longevity presents various ramifications. Mostly, such adjustment failure could increase incentives to commit less serious crimes and decrease incentives to commit the most serious crimes. Although this notion sounds relatively desirable as criminal conduct such as homicide could possess a higher deterrent value and thus be committed less, it also jeopardizes the *marginal deterrence gap* and increases chances of committing many other serious offenses other than homicide. If an expected sanction is determined by the probability of detection and conviction multiplied by the scale of the sanction, then life expectancy is rooted into deterrence theories, as the scale of the sanction could significantly change—perhaps not numerically, but in value. Similarly, if the magnitude of the sanction changes due to life expectancy, then the proportionality between the conduct (which does not change) and the sanction (which does) also changes. It seems strange, however, that while both main criminal law theories support life expectancy considerations, they are still absent from both academic literature and the legislative process.

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§ 42-9-42 (2014); IDAHO CODE § 20-223 (2014); LA. STAT. ANN. § 15:574.20 (2013); MD. CODE. ANN., CORR. SERVS. § 9-602 (West 2008); MINN. STAT. ANN. § 244.05(8) (West 2013); MO. ANN. STAT. § 217.250 (West 2013); MONT. CODE ANN. § 46-23-210 (2012); N.Y. EXEC. LAW § 259-r (McKinney 2012); OHIO REV. CODE ANN. § 2967.05 (LexisNexis 2014); OKLA. STAT. ANN. tit. 57, § 332.18 (West 2004); OR. REV. STAT. ANN. § 144.122 (West 2003). For more on compassionate release, see generally Marjorie P. Russell, *Too Little, Too Late, Too Slow: Compassionate Release of Terminally Ill Prisoners—Is the Cure Worse than the Disease?*, 3 WIDENER J. PUB. L. 799 (1994).

The purpose of this Article is modest. First, and perhaps foremost, it strives to introduce life expectancy as a possible *ex-ante* consideration in the formation of nonmonetary criminal sanctions. Second, it opens a doorway for a crucial discussion of the possible ramifications of changes in life expectancy in any legal field. While I only examined criminal law in this Article, there is much room for more scholarly debate on this matter in civil law. But a final note is required here. This Article does not, by any means, suggest an increase in current criminal penalties for some offenses (which proscribe sanctions with a confined period) or the reduction for others (which proscribe sanctions with a finite period). Rather, it merely suggests that policymakers should reexamine current criminal sanctions in light of the increase in life expectancy, while also taking into account various notions, e.g., an upsurge in the value of life, a presumption that criminal sanctions are currently too high, and overcriminalization. Only after these factors have been considered as well will criminal punishments be correctly justified.