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ORIGINAL SCIENTIFIC ARTICLE

*Boris Begović**

THE ECONOMICS OF THE VALUE OF HUMAN LIFE: CONTRIBUTION TO THE EUTHANASIA DEBATE

> "As soon as the terrors of life reach the point at which they outweigh the terrors of death, a man will put an end to his life."
>
> Arthur Schopenhauer

Abstract: *The paper examines the economics of the value of human life, seeking a suitable input that would make a relevant contribution to the euthanasia debate, focusing on the legal status of euthanasia, specified in the paper as "voluntary assisted dying", especially in the key disputes in that debate. The paper looks at three economic models of the value of human life: the model of the value of statistical life, the model of the objective value of human life, and the model of the subjective value of human life. These models were evaluated for their suitability in providing inputs to the euthanasia debate, and only the subjective value model passed the evaluation. The most significant input from the economic model is the proposition that only "voluntary euthanasia" should be legalized as a last resort measure and that the decision-making process should be strictly regulated and specified in detail in legislation. Regulation guidelines are provided, as are guidelines for further research.*

Key words: Euthanasia, Economic Valuation of Human Life, Value of Statistical Life, Objective Value of Human Life, Subjective Value of Human Life, Legalization, Voluntary Assisted Dying, Legal Regulation.

1. Introduction

This paper examines the economics of the value of human life, seeking a suitable input that would make a relevant contribution to the euthanasia debate, emphasizing the legal status of euthanasia, especially in the

* Professor (retired), University of Belgrade Faculty of Law; e-mail: begovic@ius.bg.ac.rs ORCID ID: 0000-0001-7343-190X. I am grateful to Jovan Babić, Milica Begović, Violeta Beširević, Tomas Bremer, Nikola Ilić, Ivana Marković, Gordana Matković, Blagoje Pantelić, Marko Paunović, Danica Popović and Dejan Popović for their helpful comments and suggestions. Naturally, none of them is to be held accountable for possible remaining errors and value judgments in this paper. All of them are mine.

key disputes in that debate. Economics and academic economists have been, to a great extent, remarkably silent in the euthanasia debate.[1] This is somewhat puzzling, given the rather rich opus of the economics of suicide, and the remark – even the academic indictment – of "economics imperialism",[2] *i.e.*, the manner of applying a standard economic methodology to study various phenomena that other academic disciplines typically examine – sometimes wrongly referred to as "non-economic" phenomena, however they may be specified. Regardless of the reason for that silence, this paper is motivated by a desire to disrupt it, to produce such a sound, and to provide food for thought for those who have been heavily involved in the euthanasia debate: lawyers, physicians, philosophers, anthropologists, *etc*.

In this paper, the term euthanasia encompasses all forms of "voluntary assisted dying".[3] Accordingly, in this paper, there is no difference between euthanasia *stricto sensu* (when the physician acts or refuses to act with the aim of ending the life of the patient) and physician-assisted suicide (when the physician only provides the lethal substance to be administered by the patient): both procedures are referred to as euthanasia. Furthermore, in this paper, there is no distinction between active and passive euthanasia: both are considered together, regardless of the methods of either active or passive euthanasia.[4]

Furthermore, in this paper, only "voluntary euthanasia" (the situation in which there is an explicit and unambiguous request and consent, based on the free will of the patient for termination of his/her life) is

1 It is rather confounding that the only article with the title *Economics of Euthanasia* is written by lawyers and medical doctors, and has nothing to do with economics, but is rather a superficial review of definitions and well-established non-economic positions and dilemmas. Swathi, M. *et al*., 2012, The Economics of Euthanasia, *Asian Review of Social Sciences*, Vol. 1, No. 1, pp. 36–41.

2 The notion of "economics imperialism" (sometimes wrongly referred to as "economic imperialism") is primarily associated with Gary S. Becker (1992 Nobel Laureate in Economics) and his substantial lifetime contribution, although the term itself was in use, with the same meaning, even prior to Becker's contribution. Given the substantial research on the topic of the economics of suicide, it is evident that economists are no strangers to difficult and dismal topics.

3 Considering that it is quite appropriate for the considerations in this paper, this term is borrowed from the Terminally Ill Adults (End of Life) Bill, which was submitted to the Parliament of the United Kingdom on 16 October 2024. The House of Commons accepted the End of Life Bill and passed it to the House of Lords on 23 June 2025. At the time this paper was submitted to the journal, the decision of the UK Parliament's upper chamber was still pending, (https://bills.parliament.uk/bills/3774, 20. 2. 2026).

4 For more on the distinction between active and passive euthanasia, and which procedures belong to passive euthanasia, see Beširević, V., 2006, *Euthanasia: Legal Principles and Policy Choices*, Florence, European Press Academic Publishing, pp. 17–19.

considered. In that sense, euthanasia is considered "assisted suicide" in this paper (not to be confused with the legal term "physician-assisted suicide"), enabling the research to tap into the insights from the contributions in the area of the economics of suicide. The grey area of "nonvoluntary euthanasia" (the situation in which the patient is incapacitated, for whatever reason, providing an explicit and unambiguous request and consent regarding the termination of his/her life) is only mentioned in the later sections of the paper, regarding the economic inputs for legal regulation of euthanasia.[5] "Involuntary euthanasia" is the termination of life against the will of the patient; it is none other than murder and should not be confused with euthanasia. Accordingly, it is entirely disregarded in this paper, as it belongs to the history of crime – in some cases, well-organized and mass murders, including genocide.[6] Consequently, 'involuntary euthanasia' does not belong to the euthanasia debate of any kind. Furthermore, it is not only methodologically erroneous, but also morally wrong, and extremely unfair that, in the debate, opponents of the legalization of euthanasia sometimes use the crimes committed under the veil of "involuntary euthanasia" as an argument against the legalization of euthanasia.[7]

Economic theory departs from the view of an absolute and exogenous value of human life, *e.g.*, the view of Christian theology, which considers human life to be "sacred".[8] The economic approach is based on the assumption that the value of human life is endogenous, *i.e.*, it depends solely

5 The term "nonvoluntary euthanasia" is somewhat misleading, as it can imply, at least in a superficial reading, that such a termination of life is committed in violation of the free will of the patient. Although this is a well-entrenched *terminus technicus* that has been widely used in the euthanasia debate, perhaps it is time to consider reword it. A suggestion for renaming it appears in Beširević, V., 2006, p. 22.

6 A typical example is Nazi Germany's Aktion T4 program, which was none other than the extermination of mentally inferior persons. This program was the pinnacle of eugenic teaching on "life not worth living", a tradition that had a rather long and disgraceful history in Germany. For more about that program and its aftermath, see Herzog, D., 2024, *The Question of Unworthy Life: Eugenics and Germany's Twentieth Century*, Princeton & Oxford, Princeton University Press.

7 That line of pseudoargument is pursued, among others, by Smith, W. J., 1997, *Forced Exit: The Slippery Slope from Assisted Suicide to Legalized Murder*, New York, Times Books; Dowbiggin, I., 2005, *A Concise History of Euthanasia: Life, Death, God, and Medicine*, Lanham, MD, Rowman & Littlefield Publishing Group; Keown, I. J., 2018, *Euthanasia, Ethics and Public Policy: An Argument against Legalisation*, 2nd ed., Cambridge, Cambridge University Press.

8 For a detailed review of theological arguments for the absolute value of human life, in the debate about whether suicide is the unforgivable sin, see Potter, J., 2021, Is Suicide the Unforgivable Sin?: Understanding Suicide, Stigma, and Salvation through Two Christian Perspectives, *Religions*, Vol. 12, No. 11, pp. 987–1006.

on the substance of that life,[9] and because the substance varies from one person to another – and even varies for the same person over time – the value of life of all individuals is undoubtedly not the same.[10] Nonetheless, this insight does not imply that the right to life of any human being should be violated under any condition, whatever the substance may be. The author of this paper fully and unconditionally subscribes to the principle that "[e]veryone has the right to life, liberty and security of person".[11] The author also concurs with the provision that "[e]veryone's right to life shall be protected by law".[12] In short, the considerations in this paper are strictly within the framework of the inviolability of the universal, unconditional, and unrestricted human right to life.

Furthermore, this paper deals only with the issue of the economics of the value of human life as a positive analysis and as an input to the normative non-economic euthanasia debate. None of the findings in this paper dealing with the economics of the value of human life should be considered as normative statements.

The paper is structured to examine the economics of human life while seeking a suitable input that would make a relevant contribution to the euthanasia debate. The paper deals with three economic models of the value of human life: first, the model of the value of statistical life is examined; the model for the objective value of human life follows; the review of the models is concluded with the model of the subjective value of human life. The results of these models are then used as input for the ongoing debate about euthanasia, especially its legal status of euthanasia. The conclusion and guidelines for further research follow.

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9 There is an intriguing development in legal theory that moves from the position of "sanctity of life" towards "reverence for life", which can be compared to the endogenous value of life proposed by economic theory, especially taking into account that this development clears the ground for the situation "when the presumption in favor of life should be rebutted". Heywood, R., Mullock, A., 2016, The Value of Life in English Law: Revered but Not Sacred?, *Legal Studies*, Vol. 36, No. 4, p. 658.

10 The same argument is used in ethical debates, as it is pointed out that "[l]ife is finite, and of unequal length, its completeness and quality vary". Babić, J., 2026, Sanctity of Life and Deciding for Others, *Mortality*, Vol. 31, No. 1, p. 199. "Substance" stands for "completeness and quality" of life.

11 Article 3 of the United Nations Universal Declaration of Human Rights, UNGA Resolution 217 A(III), UN Doc. A/RES/217(III) (10 December 1948), (https://www.un-.org/en/about-us/universal-declaration-of-human-rights, 20. 2. 2026).

12 Article 2 of the European Convention on Human Rights (1950). The article also provides an exemption as "No one shall be deprived of his life intentionally save in the execution of a sentence of a court following his conviction of a crime for which this penalty is provided by law." European Convention on Human Rights, (https://www.echr.coe.int/european-convention-on-human-rights, 20. 2. 2026).

2. Value of Statistical Life: A Dead-End in Valuation of Human Life for the Euthanasia Debate

The value of statistical life (VSL) is a methodology used to evaluate and possibly reduce fatality risks in decision-making processes, regardless of the decision being made: regulatory policy, infrastructure investment, product design, research & development of new (life-saving) medication, *etc*. This methodology is not an attempt to provide an economic model of the value of human life, but rather to provide an input to the comprehensive calculation of the costs and benefits of a decision, in which reducing fatality risk is one of the benefits. Inadvertently, its byproduct is the monetization of the value of human life.

The mechanism for calculating the value of statistical life is rather straightforward. Suppose that the annual worker fatality risk is 1 in 10,000 (0.01 percent probability) per year; this implies one expected fatality per year among 10,000 workers. Suppose that, in return for bearing this risk, workers receive an annual wage premium of USD 300, where this amount was estimated statistically, controlling for other aspects of the job and worker characteristics. Given the probability, it is expected that one worker will be killed during the year, and the total risk premium paid to 10,000 workers is USD 3,000,000.[13] The sum of the risk premium paid to the workers, or, from the other viewpoint, demanded by the workers, is the value of statistical life. This does not mean that a single worker is prepared to be paid USD 3,000,000 to be killed, rather, it reflects the aggregate willingness of all the workers to accept a very small increase in fatality risk. This is exactly the reason why this figure is precisely defined as "value of statistical life" instead of the "value of human life". It is not about dying, but about reducing fatality risk.[14]

Methodologically, two pieces of information are required to calculate the VSL. The first piece of information concerns the fatality risk, *i.e.*, the probability of fatality if a given choice is accepted, relative to the other

13 This is the example of the VSL calculation provided in Viscusi, W. K., 2018, *Pricing Lives: Guideposts for a Safer Society*, Princeton & Oxford, Princeton University Press, p. 8.

14 It was Thomas Schelling (2005 Nobel Laureate in Economics) who introduced the idea of the value of statistical life as a mechanism for decision-making back in the 1960s. Schelling, T. C., 1966, The Life You Save May Be Your Own, *Problems in Public Expenditure Analysis*, Washington, D.C., September 15–16, pp. 25–33. A comprehensive legal treatment of the VSL methodology is provided in Fried, C., 1969, The Value of Life, *Harvard Law Review*, Vol. 82, No. 7, pp. 1415–1437.

option. For example, being employed in a high-hazard occupation, compared to a low-hazard occupation, increases the probability of job-related fatality. Furthermore, cars with different levels of safety equipment exhibit distinct probabilities of driver death for a given accident severity. All these probabilities are known ex post, based on the historical death data.[15]

The second piece of information is the risk premium. There are two main ways to obtain information on the risk premiums people require as compensation for exposure to risk.[16] One path is the revealed-preferences approach: the preferences regarding risk premiums are revealed in the market. For example, the magnitude of the risk premiums on the labor markets for jobs with a higher probability of fatality. The conditions for obtaining this information are very stringent and demanding. First, there must be detailed labor and wage statistics. Second, a critical condition: if there is a difference in wages between jobs with different fatality probabilities, this variable must be econometrically estimated, statistically controlling for other job and worker characteristics. This means that the econometric procedure for this estimation is not straightforward, and there are many pitfalls along the way.

The only country that has sufficient labor statistics for such econometric procedures is the United States. Nonetheless, it was demonstrated that, due to pitfalls in econometric procedures, among other things, there are different estimates of the wage risk premium, leading to varying magnitudes of the VSL.[17] Furthermore, US government agencies employ VSLs of significantly different magnitudes for evaluation purposes.

15 For policies that are only proposed (i.e., which will be implemented only in the future, if accepted), for the design of future products and infrastructure investments, the probability of fatality can only be forecasted, meaning the changes in the probability *pro futuro*, if the policy is implemented, product materialized and investments accomplished. Nonetheless, these probabilities are not used in the calculation of VSL; rather, VSL is multiplied by the estimated probability differences only to monetize the benefits of saving lives in the cost–benefit analysis.

16 Fatality risk is a typical example of pure risk: the expected value of the outcome is always negative, therefore it is insurable, and even risk-neutral people require to be paid a risk premium for exposure to risk. An individual's risk aversion increases the premium. Accordingly, the stronger the risk aversion, the higher the required risk premium. An alternative way to specify the risk premium is the amount people who are willing to pay to avoid exposure to risk. This is the basis for the insurance premium in the insurance industry. For more about pure risk and its distinction from the speculative risk, see Vaughan, E. J., Vaughan, T., 2007, *Fundamentals of Risk and Insurance*, 10th ed., New York, John Wiley & Sons, Inc., pp. 6–8.

17 Estimates of VSL, based on the US Census of Fatal Occupational Injuries (CFOI), the most comprehensive and detailed database, range from USD 4.3 to USD 27.7 million, with an average of USD 13.1 million (2015 dollars). Viscusi, W. K., 2018, p. 29. There

The revealed-preferences approach is also used in product markets, where safer products command a price premium over less safe ones. In addition to the same methodological issues, the additional problem concerns the interpretation of the results. Suppose that there are two products, *e.g.*, passenger cars, one of which is safer than the other, with a well-specified difference in fatality probability. Suppose that the safer one, with all other differences statistically controlled for, is sold for USD 500 more than the other. This is simply information that some people (those who buy more expensive cars) have reservation risk premiums above USD 500, whereas others (those who buy cheaper cars) have reservation risk premiums below USD 500 – nothing else. There is only this watershed value, which is hardly a risk premium, even if the percentage of buyers who purchase safer vehicles is known. Accordingly, this is a slippery slope towards estimating the VSL.

Furthermore, the example of safer versus less safe goods provides a basis for examining the income elasticity of safety. Undoubtedly, safety is a normal good, so it should be expected that more affluent people have, *ceteris paribus*, a higher required risk premium (*i.e.*, reservation risk premium) compared to the less affluent. Accordingly, the estimate of the VSL of rich people is bigger than the estimate of the VSL of poor people.

The other method for obtaining risk premium values is the stated-preferences approach: respondents state their preferences regarding risk premiums in a survey, typically regarding products. Hence, it is about answering a hypothetical question about hypothetical choices. The most significant disadvantage of the stated-preferences approach is that the hypothetical valuations derived from these surveys may not reflect the decisions people would make if actually confronted with a particular risk.[18] This is a standard shortcoming of the stated-preference approach to any price identification. Nonetheless, this is the only approach available in all situations where relevant statistical databases are unavailable, such as detailed labor statistics. As already pointed out, the USA is the only country in the world, for the time being, with

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are various methodological issues that undermine the accuracy of the estimated values that are mentions in Viscusi's book. One that is not mentioned in the book is that the wage risk premium is the reservation price, i.e., the price the worker requires to accept the fatality risk – only for the most risk averse worker who accepted the job. Since workers are heterogenous regarding the risk attitude, the reservation risk premium of all other workers is lower than the wage difference between non-risky and risky jobs. In short, the risk premium estimate is biased upward.

18 Viscusi, W. K., 2018, p. 32.

appropriate statistical databases for labor statistics, which are crucial to the revealed-preferences approach, since fundamental problems have been identified in its application to product safety and related risk premiums. Hence, most research in other countries is based on the stated-preference approach, though the two approaches are sometimes combined, like in the UK.

A survey of the international estimates reveals that the VSL ranges from USD 0.8 million (Taiwan) to USD 12.3 million (Pakistan).[19] The differences are attributable to variations in VSL estimation methods, sample characteristics (sample size and representativeness), errors and omissions, income levels (with Pakistan as an outlier), and population risk aversion across countries. Indirectly, these results demonstrate population heterogeneity across countries, at least regarding income levels and risk aversion (*i.e.*, distinctive attitudes towards risk). Population heterogeneity also exists within countries, at least regarding income levels and risk aversion, meaning that individuals' estimates of VSL, however obtained, differ from each other.

Nonetheless, the basic philosophy of the VSL is to use a single estimate of the VSL as the monetized value, thereby enabling its inclusion in the cost–benefit analysis of a policy change or project evaluation. In short, only an average estimate of VSL is required, and heterogeneity among individuals must be ignored. This one-size-fits-all approach makes VSL utterly unsuitable for economic valuation of human life as an input for the euthanasia debate.

Another reason for this insight is that the VSL methodology is designed to evaluate fatality risk and save human lives by incorporating the monetized value of life into its calculations. It is the very proponents of this methodology that label the results as the value of "statistical" life, not human life, which confirms that the VSL model is a dead end, concerning the euthanasia debate.

Nonetheless, before moving to another economic model of the value of human life, it is worth noting that the VSL is based on a subjective approach to valuing human life, *i.e.*, how individuals valuate their own lives. Although the VSL is discarded as input to the euthanasia debate, perhaps a subjective approach can be promising. With that hint in mind, attention turns to the notion of the objective value of human life.

19 Viscusi, W. K., Masterman, C. J., 2017, Anchoring Bias in International Estimates of the Value of Statistical Life, *Journal of Risk and Uncertainty*, Vol. 54, No. 2, pp. 103–128.

3. Production Theory and the Objective Value of Human Life

The concept of the objective value of human life is based on answering the following question: how much of the added value would society lose with the loss of a human life? Accordingly, the economic approach to the objective value of human life is inevitably grounded in production theory, a fundamental part of economic theory. Consequently, the first step in this section is to review the fundamentals of production theory. Then, a formal model of the objective value of human life is developed, and its outcomes are analyzed, especially in light of the ongoing euthanasia debate.

3.1. THE FUNDAMENTALS OF PRODUCTION THEORY

Production theory explains how value is created.[20] It focuses on the transformation of inputs (*i.e.*, production factors) into outputs (*i.e.*, added value). The primary analytical tool in production theory is the production function. It describes the relationship between the quantity of inputs and the (maximum) quantity of output. If it is assumed that there are only two production factors, capital (K) and labor (L), then the general formulation of the production function is:

$$Q = f\,(K,\, L)$$

where Q is the quantity of the output, *i.e.*, added value.

One of the most important features of the production function is that increasing the quantity of inputs, *i.e.*, the production factors employed, either capital or labor, increases output. Formally, this insight of economic theory is expressed as an assumption, almost like an axiom: the first partial derivative of output with respect to each production factor is always positive. In the case of labor as a production factor, this means:

$$\frac{\partial Q}{\partial L} > 0$$

hence, every increase in engaged labor inevitably increases output, and the amount of that increase is referred to as the marginal product of labor. This means that the engagement of each additional individual increases the overall added value of the economy, *i.e.*, the society's added value.[21]

20 What follows in this section is the basics of the economic theory of production disclosed in standard microeconomic textbooks. Perloff, J. M., 2009, *Microeconomics*, 5th ed., Boston, Pearson, pp. 152–181.

21 The notion of decreasing returns of labor refers to the decreasing value of the marginal product of labor with the increase in labor engagement. So, the marginal

The specific contribution of individual *i* to the output, *i.e.*, the society's added value, in general terms, is basically his/her marginal productivity:[22]

$$\frac{\partial Q}{\partial L_i} > 0$$

where L_i is the labor input of individual *i*. Because the first partial derivative of the output with respect to labor for individual *i* is positive, his/her removal from the labor force (*i.e.*, being without his/her labor engaged) inevitably decreases the output and, consequently, the society's added value. The more labor engaged, the bigger society's added value. Nonetheless, this insight is not specified in time, so it provides little information about the objective value of human life. For that, the time component should be included in the consideration. In short, the total contribution of individual *i* to the society's added value, *i.e.*, his/her marginal product over his/her lifespan, is nothing but the sum of annual marginal products of individual *i* within that time frame. This approach provides a basis for formulating an economic model of the objective value of human life.

3.2. ECONOMIC MODEL OF THE OBJECTIVE VALUE OF HUMAN LIFE

The time frame is incorporated into the model by introducing the individual's annual marginal product values. For the objective value of human life, only the future values of the individual's marginal product are relevant, *i.e.*, only his/her future contribution to society's added value. Hence, the added value is considered for each remaining year of the individual's life, each denoted by *j*, where:

$$j = 1,2,3,....T$$

with *T* being the last year of the expected remaining years of life of the individual. Inherently, the older the individual, *ceteris paribus*, the lower the value of *T*.[23]

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product is decreasing, but it is always positive. Formally, decreasing returns of any production factor are expressed with the second partial derivative of output to that production factor being negative.

22 "Marginal product of labor" and "labor's marginal productivity" are used interchangeably in this paper (as generally in economics).

23 An alternative to the age the individual is expected to live is the end of working age, i.e., retirement age. This proposal is rejected in this paper because many people continue to work and contribute to the society's added value after retirement age; hence, they still create added value, i.e., they still contribute to output. It is irrelevant whether they are

Accordingly, the model of the objective value of human life is:

$$V_i = \sum_{j=1}^{T} \frac{\frac{\partial Q_j}{\partial L_{ij}}}{(1+d)^j}$$

where V_i denotes the value of the life of individual *i*.

The value of the life of individual *i* in this model evidently is nothing else but the sum of all marginal products in each remaining year of the life of individual *i*, until the condition $j = T$ is met. $\partial Q_j / \partial L_{ij}$ is the marginal product of individual *i* in the year *j*. The value of the marginal product in future years is converted to its present value by discounting at the discount rate *d*.[24] Accordingly, the further into the future a given year occurs, the lower, *ceteris paribus*, the present value of the marginal product achieved in that year.

There are several results from this model. The first is that, with age, as *T* declines and the individual approaches the inevitable end of his/her life, the future total marginal product of the individual declines, thereby decreasing the objective value of life. This finding is intuitive: as individuals age, the marginal product of labor declines over the remainder of their life cycle. This result assumes that the individual's annual marginal product is constant over time, *i.e.*, it does not change with age.

Nonetheless, it is reasonable to assume that the annual marginal product of the individual varies over time. A very young, inexperienced laborer has rather low marginal productivity. With age and through learning by doing, experience accumulates; thus, perhaps with some additional training, marginal productivity increases. Perhaps the peak of marginal productivity, depending on the profession, is reached in mid– or late-midlife, when an optimal combination of experience and working capacity is attained. After that peak, accumulated experience is insufficient to offset the decline in basic working capabilities, resulting in a decrease in marginal productivity. It is reasonable to assume that an inverted U-curve approximates a relation between the age and marginal productivity of an individual.[25]

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paid for their work effort, as their marginal product exists even if they are not. For example, elderly people who temporarily take care of their grandchildren for free, rather than paid caregivers, still provide the same service and create added value.

24 Discounting of future values into their present value is necessary due to intertemporal preferences. For more on these preferences, discounting and discount rates, see Fabozzi, F. J., Modigliani, F., Jones, F. J., 2014, *Foundation of Financial Markets and Institutions*, Boston, Pearson, pp. 180–187. The topic of interpersonal preferences will be further revisited in the next section of the paper.

25 Age is displayed on the X-axis of the graph with the inverted U-curve, and the marginal product of the individual is on the Y-axis. The specific shape of the curve de-

This finding reinforces the previous finding that, for older people, the objective value of human life declines with age (after the peak marginal productivity). This is not only due to the lower total marginal product to be generated during the remaining life cycle due to age, *i.e.*, due to the declining number of years of life, but also due to the declining annual marginal productivity of the individual. For younger people, whose marginal productivity increases with age, the increase in annual marginal productivity can compensate for the decline in the individual's future total marginal product due to age. Nonetheless, this can occur only until the peak of marginal productivity is reached.

The second insight is that, due to labor heterogeneity, the marginal product of one individual differs from that of others. The consequence is that the objective value of human life differs from one individual to another. The source of differences in marginal products across individuals is differences in exogenous, natural, perhaps, at least up to a point, genetically transmitted gifts (predispositions for cognitive capabilities, for example) and investments in human capital (upbringing, education, healthcare, *etc.*), which increase an individual's marginal product. People are different. "All men are created equal" is a normative statement that addresses the universality of basic human rights – not a positive one. Some people are gifted (*e.g.*, those with a high IQ), whereas others are not. Some are talented at activities that create added value and income, whereas others are not. Some people, by their character and capacity to sustain discipline, are capable of acquiring high human capital; others are dropouts, regardless of the opportunities they have been given. Economic theory assumes that labor heterogeneity is absolute, therefore no two individuals have exactly the same marginal productivity.[26] Consequently, no two individuals have the same objective value of human life.[27]

The third result is that, according to the model, the objective value of human life is a nonnegative variable: it cannot be negative, because,

pends on the profession, i.e., job, and the individual's talents. For example, it is reasonable to assume that in the case of physical labor and repetitive jobs, the curve is shifted to the left.

26 The assumption of absolute heterogeneity seems reasonable. Even identical twins, with the same genetic material, develop into different persons, with different characters, education, and other features, because of different experiences – however tiny they may be. Even artificial intelligence androids in Ian McEwan's novel *Machines Like Me*, which are created identical, become different as they have experienced different social environments in their "life"; absolutely equal endowments of capital and labor are beyond even (science) fiction.

27 It can only be by coincidence that factors with countervailing effects produce the same outcome.

according to the production theory, the marginal product of labor is always positive – however small it may be. So, old people, however low their marginal productivity may be, can still contribute to the society's added value. Perhaps, for gravely ill people in the terminal stage of their illness, marginal productivity is close to zero, if not zero. Nonetheless, it is definitely not negative.

Given these results, especially the second, a relevant question arises: is there a way to measure the objective value of human life of an individual? The answer to this question is based on the economic theory insight that, in a general equilibrium in perfect markets, the incomes of production factors are equal to their marginal products. This means that, in a perfect, frictionless labor market, wages always are equal to the marginal product of the labor. In reality, labor markets are not frictionless; nevertheless, an individual's labor income (wage) is a reasonable approximation of his/her marginal product. In short, the stream of labor incomes over a lifetime is the other side of the coin of the stream of marginal products over a lifetime. It is simply two distinctive viewpoints on the production process: the creation of value and its consumption.

This insight is very important for addressing a methodological blunder that arises when comparing an individual's current marginal product to his/her current consumption at a specific moment in life, and/or to the expected stream of annual marginal products and annual consumption from that moment to the end of life. This blunder appears in the literature from time to time, especially regarding the old, ill people with small or negligible marginal productivity at that moment and a negligible stream of their future marginal product.[28] Accordingly, the objective value of their life is inevitably small, although not negative. Nonetheless, the future stream of their consumption, including the cost of care, medical and non-medical, may exceed the objective value of their life at that moment, based on their marginal product.

Does this mean that, in such a constellation, the objective value of the individual's life is effectively negative? Is there grounds for distinction

28 A typical example of this methodologically entirely wrong approach is the calculation of the economic cost of suicide, in which the indirect cost of suicide is "loss of earnings due to the premature death of those who commit suicide", but it, according the authors, the benefit of the suicide is saving "the society costs from health care, pensions, social security, and nursing home care, but also individuals who kill themselves are not the most productive members of society". Yang, B., Lester, D., 2007, Recalculating the Economic Cost of Suicide, *Death Studies*, Vol. 31, No. 4, p. 355. The very same methodological mistake is made in Palmer, C. S. *et al*., The Cost of Suicide and Suicide Attempts in the United States, *Clinical Neuropharmacology*, Vol. 18, Supp. 3, pp. S25–S33.

between the gross objective value of human life, equal only to the stream of an individual's marginal products in the future, and the net objective value of human life, equal to the stream of an individual's marginal products in the future, reduced by the stream of his/her consumption in the future?

The answer is straightforward: absolutely not! The point is that the sum of an individual's marginal product over his/her lifetime is, in effect, equal to his/her available income in the same period over the lifetime (due to the equality of marginal product and wage).[29] This identity holds, regardless of the relationship between future income and consumption at any given moment, *i.e.*, during only certain periods of the life cycle. The relationship between total income and total consumption over a lifetime is examined and explained by the life-cycle hypothesis (LCH), which presumes that an individual projects a pattern of his/her consumer expenditures based on expected earnings over his/her lifetime.[30] In essence, according to the hypothesis, an individual decides at every moment of life which part of his/her income to consume and which to save, since saving is a voluntary renunciation of consumption – the remaining income is saved. Accordingly, saving is the positive difference between disposable income and consumption in a given period.

According to the LCH, when an individual is very young, his/her consumption exceeds his/her disposable income (since there is no labor income at all), and the income of the parents or caretakers funds it. In midlife, with a well-established individual in the labor market and his/her marginal product substantial, the labor income is substantial, as is the share of the income saved and invested in various assets.[31] In the last seg-

29 The implicit assumption on which the insight is based is that capital income is disregarded. If the capital income is taken into account, especially that of inheritance (because capital income can also be appropriated due to the invested, i.e., saved labor income), then the total consumption in a lifetime can be higher than the total labor earnings over the same period.

30 The LCH, in its initial formulation, was introduced by Franco Modigliani (1985 Nobel Laureate in Economics), who suggested that consumption and saving decisions of individuals/households "reflect a more or less conscious attempt at achieving the preferred distribution of consumption over the life cycle". Modigliani, F., 1966, The Life Cycle Hypothesis of Saving, the Demand for Wealth and the Supply of Capital, *Social Research*, Vol. 33, No. 1, p. 162. There is empirical support for this hypothesis, although individuals' saving behavior is complex and depends on many variables. The debate about the economics of saving is beyond the scope of this paper, though an edited volume published at the very end of the 20th century provides a substantial review of the topic. Schmidt-Hebbel, K., Servén, L., (eds.), 1999, *The Economics of Saving and Growth: Theory, Evidence and Implications for Policy*, Cambridge, Cambridge University Press.

31 This saving and investment also includes compulsory contributions to the pension insurance fund, and mandatory contributions to the health insurance fund, as well

ment of life, after retirement, the labor income ceases, but there is income from pension funds, as well as income from returns from the financial and physical assets invested in through savings during the previous period.[32] Again, it is an inverted U-curve that explains the pattern, only this time, it outlines the saving rate: at the beginning of the life cycle, it is negative because consumption exceeds income, resulting in negative savings; in the middle of the life cycle, it is positive, as the saving rate is substantial, and consumption is significantly smaller than income; in the late stages of the life cycle, it is again negative, because consumption exceeds income. Nonetheless, the bottom line is that, over an individual's lifetime, consumption equals his/her income, and total savings are zero.[33]

Hence, the point that the (current and future) stream of consumption of older people becomes greater than their (current and future) stream of marginal product is entirely irrelevant, because they only consume their savings in various forms of income and non-paid services: pensions due to their previous payments to the pension fund, health services not paid due to their previous payments to the health insurance fund, income due to the returns on investments in various financial or physical assets, *etc*. This relation between marginal productivity and consumption of older people merely empirically confirms LCH, nothing else.

There are several insights from the economic model of the objective value of human life from the viewpoint of the euthanasia debate. The first is that the value of human life in this model is always positive, however small it may be, or at least nonnegative. Accordingly, the result of this model may not be the economic grounds for considering euthanasia: no economic justification for euthanasia can be based on the economic model of the objective value of human life.

The second insight is that this model of the value of human life is based on an objective approach. Hence, the person has no say in the eval-

as voluntary investments in the individual's private health funds, life insurance, and financial and physical assets, including bank time deposits.

32 It is irrelevant whether the pensions are provided by the "pay-as-you-go" treasury patterns of government-arranged pension insurance, meaning that the pensions are funded by the contributions of the current employees, or by private pension funds, in which pensions are funded by the returns of the assets the pensioners themself purchased from their savings.

33 This is the prediction of the LCH. Of course, this does not mean that the total lifetime savings are zero in every case and for every individual. Some people live long enough to make their total consumption bigger than their total labor income; some people die earlier, for example, immediately after retiring, so their total consumption is smaller than their total labor income. The LCH prediction for zero total saving is based on the assumption that individuals do not bequest any wealth to their successors. Including the bequest motive would make the total lifetime savings positive.

uation of his/her own life; there is no room for any subjective feeling. Everything depends on the individual's marginal productivity, which is, up to a point, exogenous to the individual. Accordingly, it seems immoral to propose that the result of this model should be the economic grounds for considering euthanasia.

The third insight is about the ignorance, folly, and immorality of the academic contributions whose authors do not comprehend that the individual's marginal productivity over a lifetime is equal to his/her consumption also over a lifetime, and that it is a methodological blunder to compare the two from a certain point in life, specifying ostensibly the net objective value of human life, demonstrating that there are savings for the society from the death of a human being, like in the case of suicide or euthanasia. Again, it is not only deeply immoral but methodologically wrong. Hence, the conclusion that "[s]uicide should be prevented based on humane considerations, not on the economic cost involved" demonstrates a lack of knowledge of basic economics.[34]

Considering the "potential cost savings" from legalizing euthanasia is methodologically correct from the point of view of economics, because it does not include the objective value of human life, but merely compares two situations: one is the expenses for a medical case with legalized euthanasia and one without it. This calculation is straightforward and can be easily modelled for given parameters.[35] The result is intuitive – that legalized euthanasia can decrease the total costs of medical services, as noted in the debate before the US Supreme Court in the *Washington v. Gluckberg* and *Vacco v. Quill* cases.[36] Nonetheless, this cost comparison approach can be perceived as a pretense that the cost-saving motive is not only focused on legalizing euthanasia, but also on encouraging euthanasia and even on violating the "voluntarily only" principle. This concern, however remote the possibility, is legitimate. The aim is not to say that cost-saving calculations of legalizing euthanasia should not be exercised, but to underline the

34 The conclusion is quoted from Yang, B., Lester, D., 2007, p. 355.

35 This is used for the simulation of the costs of health care differences in the US, if physician-assisted suicide is legalized and introduced, based on the Dutch historical data, since a series of landmark legal cases, starting with the 1973 *Postma* case, have enabled euthanasia in the country by removing criminal liability of the medical doctors, even before the 2002 legislation (Termination of Life on Request and Assisted Suicide Act). It turns out that the cost savings would be negligible: only 0.07 percent of total health care expenditure. Emanuel, E. J., Battin, M. P., 1998, What Are the Potential Cost Savings from Legalizing Physician-Assisted Suicide?, *New England Journal of Medicine*, Vol. 339, No. 3, p. 171.

36 As the International Anti-euthanasia Task Force specified in its Brief to the Supreme Court: Brief for Amicus Curiae, "the cost effectiveness of hastened death is as undeniable as gravity. The earlier a patient dies, the less costly is his or her care".

notion, already mentioned in the introduction of this paper, that "involuntary euthanasia" is not euthanasia – but murder.

With all these shortcomings of the economic model of objective value of human life as an input for the euthanasia debate, the stage is set for the model of the subjective value of human life.

4. Consumption Theory and the Subjective Value of Human Life

The economic approach to the subjective value of human life is grounded in the theory of consumption (particularly consumer choice theory), an integral part of economic theory. Accordingly, the first step is to review the fundamentals of consumption theory. Then, a formal model of the subjective value of human life is formulated, and its results are discussed. One stint in that discussion is the consideration of the economic theory of (assisted) suicide. The insights from these considerations constitute the economic input to the ongoing debate on euthanasia.

4.1. FUNDAMENTALS OF CONSUMPTION THEORY

The foundation of consumption lies in human needs – both material and spiritual – *i.e.*, in individual desires, which, generally speaking, are unlimited.[37] Individual needs drive consumption and, in essence, explain consumer behavior.

Consumption is nothing other than the process of satisfying human needs. It is consumption that generates utility – a subjective category by which consumers themselves evaluate the degree to which their needs are satisfied, *i.e.*, the level of their pleasure/happiness. Since utility is a subjective category, only consumers – *i.e.*, individuals – determine how much utility they derive from their consumption decisions. Since consumption generates utility, it brings satisfaction (albeit only to a certain extent) of their needs. This is the basis for the notion of "consumer sovereignty", *i.e.*, the inviolability of their decisions regarding consumption, since only the consumer, not only freely decides what and how much to consume, but also determines the level of utility they derive from consumption. No one else – no authority, secular or spiritual, state or church – can do this on their behalf.

37 What follows in this section is the basics of the economic theory of consumption, focused on the consumer choice mechanism, disclosed in standard microeconomic textbooks. Perloff, J. M., 2009, pp. 74–110.

Economics assumes consumer rationality, *i.e.*, rational behavior in making consumption decisions: in short, consumer choice is a rational choice. Rational behavior within the framework of economics, *i.e.*, its theory of consumption, exclusively means that the consumer makes decisions aimed at maximizing his/her total utility, nothing else.[38] Thus, consumer rationality, which enables rational choice, boils down to striving to maximize the satisfaction of his/her own needs.[39] In this way, the consumer seeks to maximize personal welfare.[40] From the standpoint of assessing consumer rationality, it is irrelevant whether the consumer succeeds in this – rationality boils down exclusively to striving for it.

Preferences describe the consumer's relation to multiple goods or, more broadly, to the different sources of utility.[41] They show the consumer's relation to the utility derived from the consumption of different goods, and thereby his/her distinctive relation to goods that can be consumed, *i.e.*, the relation to the desirability of their consumption.

Preferences are strictly individual: each individual has his/her own distinctive, unrepeatable preferences – just like fingerprints. Each individual chooses which goods to derive utility from, and economics does not consider the way in which such preferences are formulated. In other words, in economics, each individual's preferences are exogenous. Not only are they exogenous, but analytically they are accepted as given, not to be discussed, not to be evaluated, which is fully consistent with the subjective character of consumer utility, maximizing it through consumption decisions.[42] Thus, however strange or even bizarre someone's consump-

38 The notion of 'bounded rationality' does not violate the rationality concept; it just means that utility maximization is not achieved because of some exogenous factor impacting the consumer decision process, but the process itself is rational, i.e., sensible. "[W]e deem a person boundedly rational if she applies a decision process that is sensible given her cognitive limitations". Clippel, G. de, Rozen, K., 2024, Bounded Rationality in Choice Theory: A Survey, *Journal of Economic Literature*, Vol. 62, No. 3, p. 995.

39 A necessary condition for the fulfilment of the assumption of rationality is the individual's mental capacity to make a rational choice. That assumption, therefore, does not hold in cases of severe mental illness, since those who are referred to as "having lost their minds" can in no way be rational, given that their behavior is not consistent. Such behavior cannot be explained by economics, so it is excluded from economic consideration and is not taken into account in this model of the value of human life.

40 Utility and personal welfare are synonyms in economics. In consumption theory, utility is always the utility generated by consumption and the utility for the specific consumer, not the utility for someone else.

41 The term "goods" in this paper is used as a shorthand for "goods and services", aimed at economy of space.

42 For more about this feature of economics' consideration of preferences, see Stigler, G. J., Becker, G. S., 1977, De Gustibus Non Est Disputandum, *American Economic*

tion decisions may appear to an outsider, however "irrational" someone's choices may seem to others, this does not per se mean that the choice is irrational, but only that the given individual has specific preferences, *i.e.*, a specific utility function.[43] In short, the rational consumers choose for themselves what makes them happy – the kind of consumption, in terms of quantity and type of goods, that enables that.[44] Accordingly, there is no single answer to the question of where a human being seeks happiness.

Consumption and individual preferences are specified by the utility function, which, in general, in the case of material goods and their consumption, is formulated as:

$$U = u\ (x_1, x_2, x_3, \ldots x_n)$$

where n different material goods are available for consumption. The utility function expresses a functional, *i.e.*, causal relationship from a variation in the level of consumption to a variation in the level of utility, and not the other way around. Moreover, it is assumed that every increase in the consumption of any material good leads to an increase in utility, in accordance with the "more is better" principle.[45]

Review, Vol. 67, No. 2, pp. 76–90. There is a recent deviation from this attitude in a breakthrough contribution by Kreps, D. M., 2024, *Arguing About Tastes: Modelling How Context and Experience Change Economic Preferences*, New York, Columbia University Press.

43 This ostensible paradoxical consumer behavior was explained in detail by Becker, G. S., 1962, Irrational Behavior and Economic Theory, *Journal of Political Economy*, Vol. 70, No. 1, pp. 1–13. There is nothing irrational about it, since preferences are not examined for their rationality.

44 This view of the subjectivity of the utility function and the exogeneity of preferences is not a feature only of economics, but also of the works of Fyodor M. Dostoevsky. In the first chapter of *Notes from Underground*, a text almost programmatically written, Dostoevsky makes clear his position on the exogeneity of preferences, implicitly challenging Chernyshevsky's normative concept of rational preferences – what people's preferences ought to be. In the vocabulary of economics, it is clear that Dostoevsky defends the subjectivity of the utility function, allows individual preferences to be "irrational" (treats them as exogenous), and yet people rationally – consciously, in Dostoevsky's words – maximize utility for those (given) preferences. The straightforward interpretation of Chapter One of Dostoevsky's *Notes from Underground* is that preferences are beyond rationality. A somewhat dissenting view on Dostoevsky's attitude to rationality in this chapter is provided by Scanlan, J. P., 1999, The Case Against Rational Egoism in Dostoevsky's "Notes from Underground", *Journal of the History of Ideas*, Vol. 60, No. 3, pp. 550–554; Morson, G. S., Schapiro, M., 2017, *Cents and Sensibility: What Economics Can Learn from the Humanities*, Princeton & Oxford, Princeton University Press, p. 151.

45 Thus arises the question of how the equilibrium is established through consumption decisions, since every individual has an incentive to continually increase his/her consumption. Equilibrium is enabled by constrained income, and therefore, there

Since preferences are strictly individual, each person has his/her own utility function, with specific arguments and parameters. Thus, it is always a matter of a specific, concrete, unique and unrepeatable individual.

Given that the utility function is the main analytical tool of consumption theory, it should be used to formulate an economic model of the subjective value of human life.

4.2. ECONOMIC MODEL OF THE SUBJECTIVE VALUE OF HUMAN LIFE[46]

In order to examine the total utility of individuals, *i.e.*, the level of their personal welfare, besides material goods (X), it is necessary to include spiritual goods (Y) in the utility function, since their consumption significantly impacts the utility of many individuals, as well as suffering endured by the individual (Z), since suffering is an inseparable part of life and inevitably impacts utility, and the utility of other individuals (I), since that utility level may influence the utility of the given individual, as captured by the interpersonal utility function. Thus, the following utility function is formulated for individual i:

$$U_i = u\ (X_i, Y_{i,} - Z_i, I_i)$$

where U_i is the total utility enjoyed by individual i.

X_i is the consumption of a composite material good by individual i.[47] For the consumption of material goods, income is required, in principle, and consumption is subject to a hard budget constraint. The higher the level of material consumption, the higher the utility of the individual – the 'more is better' principle applies. The formal expression of this insight in economics is that the first partial derivative of utility with respect to

exists the hard budget constraint on individual consumption. Naturally, hard budget constraints differ across individuals – the wealthier consume more than the poorer.

46 This model has already been developed in Begović, B., Teologija i ekonomska nauka o vrednosti ljudskog života: nepomirljivi pogledi na svet?, in: Jeftić, A., Vilotić, M., Pantelić, B., (eds.), forthcoming, *Has it Ever Occurred to You That You Might Be Wrong: Festschrift in Honor of Fr Vladan Perišić On the Occasion of His 70th Birthday*, Belgrade and Alhambra: Biblios Press and St. Sebastian Orthodox Press. This paper does not modify the previously developed model of the subjective value of human life; the sole difference is that in the previous paper, this was the only model of the value of human life that was developed, and it was not used for producing input for the euthanasia debate.

47 A composite material good is a standard theoretical construct, i.e., a fictitious aggregate good that encompasses all available material goods. The use of such a theoretical construct in economics, instead of employing a vector of various distinctive material goods, simplifies the formal analysis without altering its results.

consumption of a material good is always positive. For biological survival (mere subsistence), the level of material consumption of an individual cannot fall below a certain minimum existential threshold.

Y_i is the consumption of a composite spiritual good by individual *i*. Spiritual goods are very heterogeneous and encompass all immaterial sources from which an individual derives utility. Consumption of spiritual goods generally requires some activity, a specific action by the individual through which such goods are obtained – whether participation in liturgy, reading a novel, attending a theatre performance, the satisfaction felt from respecting adopted moral norms, or abstaining from temptation. All of these actions increase the utility. Unlike material goods, consumption of spiritual goods usually does not require income, since they are not acquired through market purchase,[48] and thus there is no hard budget constraint.[49] However, there is another constraint: consuming spiritual goods requires personal engagement, which means time. A day has only 24 hours, and a human life has only a limited number of days.[50] Therefore, although there is no hard budget constraint for consumption of spiritual

48 Therefore, it is customary in economics that the consumption of spiritual goods, i.e., the utility derived from such consumption, is referred to as "psychic income", to distinguish it from monetary income, which is required for the consumption of material goods and the utility due to such consumption. For more on psychic income, see Becker, G. S., 1976, *The Economic Approach to Human Behavior*, Chicago & London, University of Chicago Press, pp. 172–173.

49 In some cases, the consumption of spiritual goods may, at least to some extent, be conditioned by available income and market transactions. For example, a prerequisite for reading a novel is having a copy. That copy is a material good, acquired through the purchase in a bookstore, which requires some income and is subject to hard budget constraints. The same applies to a library membership that allows the borrowing of a copy of the book. However, a copy of the book may also be borrowed from a friend without any payment. Yet the very deed of reading the novel, reflecting on what has been read, reconsidering the characters and their motives, contemplating oneself within the framework set by the author, is indisputably a spiritual good. For such consumption, no income is required.

50 This constraint demonstrates that time, like any other resource, has its own opportunity costs. A unit of time used in one way – for example, time spent at a liturgy – cannot be used in any other way, for any other form of spiritual, or indeed non-spiritual, consumption. In recent years, with a surge of free services on the Internet, the importance of time/attention for these services to be consumed has increased significantly in economic considerations. A comprehensive review of the economic analysis of attention is provided in Loewenstein, G., Wojtpwicz, Z., 2025, The Economics of Attention, *Journal of Economic Literature*, Vol. 63, No. 3, pp. 1038–1089. The proposal to include time/attention in the calculation of GDP is elaborated in Coyle, D., 2025, *The Measure of Progress: Counting What Really Matters*, Princeton & Oxford, Princeton University Press.

goods, there is a hard time constraint.[51] As with material goods, the higher the level of consumption of spiritual goods, the higher the utility enjoyed by the individual, so the first partial derivative of utility with respect to spiritual consumption is always positive.

Z_i is the "consumption" of suffering by individual *i*. Suffering, physical or mental, is defined as pain (physical or mental) that reduces an individual's utility. There are two channels through which suffering reduces utility. One is the direct impact on utility, whether physical pain (due to illness or injury, for example) or mental pain (due to the loss of a loved one, for example). The other is indirect: pain prevents consumption of material and spiritual goods, so consumption, hence utility, is lower than it would be without the suffering. This second, indirect channel corresponds to the medical notion of "reduced quality of life". Since all arguments of the utility function, by convention, are positive, a negative sign precedes Z_i, indicating that the higher the suffering, the lower the individual's utility. Thus, the first partial derivative of utility with respect to suffering is always negative. Rational consumer behavior, therefore, implies that the individual is ready to sacrifice some consumption of other goods (*e.g.*, material goods) to reduce or eliminate suffering. The insight that the individual would be willing to pay to avoid suffering means that, under a hard budget constraint, he/she would be willing to forgo part of his/her material consumption for that purpose.

51 In the cases of some spiritual goods, such as the satisfaction felt from respecting adopted moral norms or abstaining from temptation, there is no hard time constraint, but rather a soft one. In the case of other spiritual goods, it is precisely this temporal constraint that provides the basis for considering the consumption of material and spiritual goods as substitutes. In principle, the more time is allocated to the consumption of spiritual goods, the less time remains available to the individual for work aimed at earning the income necessary for acquiring and consuming material goods. Conversely, the more time is allocated to work aimed at earning income required to acquire material goods, the less time remains for spiritual consumption. The counterpart of such a choice is the substitution between work and leisure, which every individual faces in the labor market. The existence of unearned income, such as rent or dividends, weakens the foundation for this approach; yet, bearing in mind that the consumption of material goods also requires a certain amount of time, with its own opportunity costs, the consumption of material and spiritual goods still retains – even in the case of unearned income – at least to some extent, the character of substitutes. I am grateful to Dejan Popović, who pointed out the substitution between work and leisure as the counterpart of the substitution between material and spiritual goods. The simple truth that consumption requires time and that time constraint is harder than any other constraint has been considered in economic theory, as pointed out in Steedman, I., 2001, *Consumption Takes Time: Implications for Economic Theory*, London, Routledge.

I_i is the final argument of the utility function of individual *i*. It indicates an interdependent utility function, meaning that the utility of the given individual depends not only on his/her own consumption but also on the utility of others, more precisely, on the perception of that utility. If the utility of the given individual increases with the utility of the others (for example, though not necessarily, loved ones), this is an altruistic utility function. This can rationally explain benevolence and good deeds of any kind or scope. Symmetrically, the decline in others' utility (illness or suffering of loved ones, for example) reduces the utility of the given individual. By contrast, if the utility of the given individual increases as the others' utility declines, this is a psychopathic utility function, since the pain inflicted on another person increases his/her utility. Thus, depending on the specific shape of the utility function, the increase in utility, *i.e.*, the welfare of the others, may cause either an increase or a decrease in the utility of the given individual.

The utility function of individual *i* considered so far is not only a general formulation without specified parameters, but also not specified over time. To consider the total utility the that individual expects to appropriate during his/her remaining lifespan, *i.e.*, his/her forthcoming life cycle, the model must include a temporal dimension.

Three important notes apply to this procedure:

- First, utility is considered for each remaining year of the individual's life, each denoted by *j*, where:

  $$j = 1,2,3,....T$$

  with *T* being the last year of the expected remaining years of life. Naturally, the older the individual, *ceteris paribus*, the lower the value of *T*.
- Second, since this is about future utility, *i.e.*, about future consumption levels and thus the future values of the utility function's arguments, all of them are uncertain. This is an ex ante consideration of future values, so it is considered only the expected value of utility, *E(U)*, obtained by summing the value of the outcome multiplied by its probability.
- Third, according to standard economic procedure, already applied in the previous section of the paper, in the formulation of the model of objective value of the human life, annual levels of expected utility in the future must be converted into their present value, since expected utility in the current year cannot be straightforwardly compared to expected utility in the future, for example, 30 years hence. It concerns intertemporal preferences, and a

rational individual values present consumption more than future consumption.[52] Likewise, future suffering, say in 20–30 years, is a lesser evil than present suffering. Therefore, all future flows should be discounted to their present value.

Accordingly, the subjective value of human life, based on the findings of consumption theory, is modelled as follows:

$$V_i = \sum_{j=1}^{T} \frac{E\left[u\left(X_{i,j,}Y_{i,j,}-Z_{i,j,}\,I_{i,j,}\right)\right]}{(1+d)^j}$$

where V_i denotes the value of the life of individual i.[53]

The value of the life of individual i in this model evidently is nothing else but the sum of all expected utility values in each remaining year of the life of individual i, until the condition $j = T$ is met. Expected utility in future years is converted to present value by discounting at the discount rate d. Accordingly, the further into the future a given year occurs, the lower, *ceteris paribus*, the present value of the expected utility in that year. *E[u]* is the expected utility value, which in the model depends only on the consumption levels of all four sources of utility in this function.[54]

52 Intertemporal preferences are strictly individual and are embodied in the level of an individual's discount rate. For example, a high discount rate of an individual indicates his/her impatience and a short time horizon; for such a person, utility in the present moment has far greater value than utility in the future.

53 This approach to the use of the utility function for modelling the value of human life is based on the first contribution of its kind: Hamermesh, D. S., Soss, N. M., 1974, An Economic Theory of Suicide, *Journal of Political Economy*, Vol. 81, No. 1, pp. 83–98. The model of human life in this paper is merely an extension and modification of it, without contradicting it in any way. The differences between the approach in this paper and that in the pioneering academic undertaking of this type are that in this paper, the arguments of the utility function are made explicit, and that discrete changes (at the level of years of life) rather than continuous changes, with infinitesimal values of those changes, are employed. Further developments of the basic model of the value of human life, which includes the probability of failure of a suicide attempt, unnecessarily complicate the model, whose aim is to provide input for the euthanasia debate. These developments will be mentioned in the next section of the paper.

54 The implicit assumption of this model is the permanent stability of preferences, such that the specific parameters of an individual's utility function are identical for each year of his/her life. This assumption simplifies the model, but the question remains whether it corresponds to reality, since one would expect an individual's preferences to change over time, with age. Abandoning the assumption of stable preferences over time may challenge some of the model's results, which will be taken into account in the further discussion. I am grateful to Nikola Ilić for drawing my attention to the issue of (in)stability in preferences over time.

Using the utility function to value human life – and utility is a subjective category – makes this model a model of subjective value of human life. This approach accepts that the value of human life is a subjective category, and that the decision about that value belongs exclusively to the person whose life is in question. In this way, the model of subjective value of human life not only firmly stands on the positions of individualism, but also implicitly accepts the unconditional, unreserved, and inalienable right of every person to his/her own life.

Several conclusions follow from this theoretical model – some of its results are relevant to the euthanasia debate. First, the value of human life is based on expectations about the future, about future consumption and the utility derived from it. Thus, as an individual ages, *ceteris paribus* (especially regarding the stability of preferences), the value of his/her life diminishes, given that remaining consumption decreases. Future consumption decreases with the decline of T, as the individual approaches the inevitable end of his/her life, and therefore the present value of expected utility from consumption decreases – and with it the value of life. This finding is intuitive: with age, there remains less utility to be enjoyed in the future, during the remaining life cycle. Yet this conclusion rests on the key assumption of stable preferences, which may be questionable. If, for example, an individual's preferences change with age so that spiritual consumption is valued more than before, compared to consumption of material goods, and in old age more time is available for spiritual consumption, then it should be allowed that the value of human life, based on expectations of the future, may increase rather than decrease with age.[55]

In principle, if the assumption of stable preferences holds, the value of young people's lives is, for these reasons, significantly greater than that of older people. This finding is reinforced by the effect of discounting, which reduces the present value of future flows, especially those in the distant future, thereby reducing the present value of utility losses from suffering expected in advanced old age.[56] The higher the discount rate d – which, as already noted, is strictly individual, since it embodies the intertemporal

55 The same applies to the instability of preferences with regard to the significance of the interdependence of utility functions. One should allow for the possibility that, with age, people's preferences shift in favor of the personal wellbeing of others – those close to them – as arguments of the utility function. The welfare of grandchildren, their happy childhoods, and their optimism about the future are things young people cannot take delight in. Of course, the preferences with regard to the significance of the interdependence of utility functions can also change in the other direction. Age can cause older people to become more egocentric and selfish. There is empirical evidence of both directions of transformation.

56 This explains why young people, generally speaking, unlike the elderly, have greater expectations of the future. Events in the distant future have little present value, and

preferences of the person – the greater the degree of "impatience". This means that the individual pays less attention to events expected in the distant future, and the extent of this discounting depends on the specific value of the discount rate *d*.

Second, as suffering (both current and expected) increases, the value of human life decreases. This conclusion is intuitive, almost trivial, but it reinforces the first finding. Suffering is expected to increase with age – due to illness, reduced quality of life, more pronounced mental distress, and other factors – so in this way, age additionally reduces the value of human life. However, this conclusion holds unequivocally only if suffering is unrelated to spiritual consumption. Otherwise, the conclusion is not unambiguous. The point is that, for many people, enduring suffering is a virtue, so increased suffering gives each individual the opportunity to resist it, to demonstrate virtue, therefore spiritual consumption, nourishment of the soul, becomes precisely the act of resisting temptation, of enduring suffering. It should not be ruled out that the increase in utility of such enhanced spiritual consumption compensates for the decline in utility due to suffering and may even increase total utility. Surely every person has at least once in their life felt the satisfaction at having overcome suffering – an inseparable part of life.

Third, and building on the previous conclusion, assuming that suffering nevertheless reduces the total utility enjoyed, regardless of its type and independent of its cause, human life may, for the individual concerned, have negative value at a sufficiently high level of suffering. Simply put, the expected utility of human life under such conditions may be negative. The possibility that human life has negative subjective value creates the basis for formulating an economic theory of suicide.

4.3. ECONOMIC THEORY OF (ASSISTED) SUICIDE

The economic theory of suicide is, in essence, elementary. Its basic finding is that suicide is the consequence of a rational decision by an individual whose life has negative subjective value, *i.e.*, whose total expected utility over the remaining life cycle is less than zero.[57] Supporting the claim that this is a rational decision is the insight that, under such circum-

therefore the present value of suffering that may be expected in later years, in deep old age, is also small. For older people, there is no distant future, only the near one.

57 Since rational choice is involved, this finding does not apply to those who, due to mental illness, are incapable of making rational choices aimed at maximizing their (expected) utility. Accordingly, the suicide of those who have departed from rational thinking cannot be explained by economic theory.

stances, suicide is merely a special case of maximizing expected utility – in this case, minimization of expected harm, through elimination. The existence of negative expected utility depends on specific conditions: the level of suffering, the level of consumption of all goods that constitute the utility function, and the specific form of the utility function. These economic theory findings explain various cases in which individuals decide to take their own lives, provided that it is their rational choice.[58]

This insight is a positive, not a normative statement. It solely explains why and how individuals make a rational decision to terminate their own life, and in no way advocates that decision. Furthermore, suicide – assisted or not – is not a violation of the right to life, but rather an act by which the individual voluntarily renounces that right, without infringing upon the rights of others.

Formally considered within the economic theory, *i.e.*, the theory of consumption, death means the nullification of the utility function, *i.e.*, with suicide all its arguments vanish.[59] Thus, the argument Z vanishes – the individual is freed from suffering, regardless of its cause or nature.[60]

According to economic theory, a negative subjective value of human life, based on negative expected utility for the remaining life cycle, is a necessary condition for suicide – more precisely, for the rational choice to commit suicide.[61] From the other viewpoint, if the subjective value of

58 For example, the existence of what was once a strong naval tradition, a specific moral code that the captain goes down with his ship, as a sign of accepting responsibility for the loss of the vessel under his command, led many captains – especially in the navy – to remain aboard sinking ships. In this way, they eliminated the shame that would otherwise have followed them for the rest of their lives, as well as the knowledge that even after their death, the memory of their improper conduct would endure, since they had failed to respect the moral code, and did not choose (ritual) suicide. Accordingly, within this ancient moral code framework, "going down with the ship" was a rational choice.

59 Since even after a person's death, the memory of him/her and his/her conduct remains, does not mean that his/her utility function persists after death, but only that, in making decisions about how to act during life, the individual takes into account that his/her death would not prevent others from evaluating his/her life; it does not mean the end of remembrance of him/her. Simply, if the anticipated memory of this kind were favorable, and if that memory is an argument of the utility function, the level of utility of that individual during his/her lifetime would increase. Conversely, if unfavorable, the level of that utility would diminish.

60 The philosophical/ethical debate produced the same insight expressed in its distinctive terminology. It is "death as a sanctuary from suffering". Babić, J., Smrt kao utočište, in: Vacić, Z., (ed.), forthcoming, *Eutanazija pro et contra: zbornik radova saopštenih na naučnoj konferenciji*, Belgrade, Srpsko lekarsko društvo, p. 2.

61 This is the conclusion of the model formulated by Becker, G. S., Posner, R., 2004, *Suicide: An Economic Approach*, mimeo, University of Chicago. Their model is built

human life is positive, *i.e.*, if expected utility is positive, there is no room for a rational choice to terminate one's own life. Whether such negative expected utility is not only necessary but also sufficient for suicide, assisted or not, is a question to be revisited after considering the factors that may cause expected utility to remain positive even under conditions of great suffering.

These factors impact the arguments of the utility function, particularly those related to the consumption of spiritual goods and to the interdependence of utility functions. It is precisely the consumption of spiritual goods that creates a non-negligible possibility that, even under conditions of harsh suffering, the subjective value of human life remains positive. This concerns, for example, the Christian moral norm that the life of every human being is sacred – the meaning of life is life itself. Accordingly, preservation of life, regardless of the level of suffering, dictates a categorical imperative for a Christian.

Since such a firm Christian moral norm is incorporated into his/her utility function, adherence to it creates great satisfaction for the individual, significantly increases consumption of spiritual goods, and thereby increases his/her utility. This increase in utility may compensate for the decline in utility due to suffering, regardless of its cause or form. This is the basis of the rational, free, and inviolable decision of that (religious) individual to continue living even under conditions of great suffering. Rationality, *i.e.*, maximization of utility, is the foundation of such a decision. Accordingly, the greater the prevalence of Christian moral norms among the population, *i.e.*, the more deeply they are rooted, the lower, *ceteris paribus*, the probability of suicide.

The interdependence of the utility function of the suffering individual with that of his/her loved ones may increase the value of life and prevent suicide. The death of a loved one inevitably causes pain, *i.e.*, a decline in utility for all those close to the deceased, so continuation of life thereby increases both their utility and his/her own. Yet, if suffering is caused by

on the contribution of Hamermesh, D. S., Soss, N. M., 1974, pp. 83–98, and operates under the assumption that every suicide attempt is effective, i.e., that the probability of survival of a suicide attempt is zero. If that assumption is removed and a non-zero probability of survival is included in the model, then the negative value of human life is not a necessary condition for suicide anymore. This was formally demonstrated by Marcote, D. E., 2003, The Economics of Suicide, Revisited, *Southern Economic Journal*, Vol. 69, No. 3, pp. 630–633. If a non-zero probability of survival of a suicide attempt is included in the model, then game theory can be included in the suicide consideration, as was done by Rosenthal, R. W., 1993, Suicide Attempts and Signalling Games, *Mathematical Social Sciences*, Vol. 26, No. 1, pp. 25–33. Nonetheless, these theoretical developments are not relevant to the euthanasia debate.

the terminal phase of an incurable disease, then it is merely a postponement of the decline in the utility of loved ones due to the death of the suffering individual, raising the question to what extent the continuation of life, however temporary, can increase – or, more precisely, maintain – the utility level of loved ones. Moreover, in the case of terminal illness, continuation of life with suffering may reduce the utility of loved ones who "suffer with him/her", so death removes that reduction in their utility. Nonetheless, a stigma that suicide creates in many societies extends to the suicide's loved ones, which also enters into the utility function of the individual, creating incentives not to terminate his/her life.

In short, although it is clear that the interdependence of utility functions influences the decision of the suffering individual whether to end his/her life, no unambiguous conclusion regarding the direction of that influence – whether expected utility, and thus the value of life, will increase or decrease – can be made.

Since it has already been established that the negative subjective value of human life is a necessary condition for suicide – more precisely, for the rational decision to take one's own life – it is necessary to address the question of whether it is also a sufficient condition.[62]

To answer this question, it should be noted that the subjective value of human life is based on expectations under uncertainty and only expected future utility is available. Thus, ex ante, no one knows reliably and precisely what his/her utility will be in the future, and therefore does not know whether it will be positive or negative. Under such circumstances, decision-making entails risk, especially when the expected value of life is negative, but the possibility that it may be positive remains. Since risk is defined as variability of outcomes, and in this case concerns human life – in economic terms, the annulment of the utility function and all possible utilities that could be enjoyed – the level of risk in deciding on suicide is extremely high. And hope always exists.

Furthermore, the implementation of the decision to end one's life is irreversible. It is precisely this irreversibility that deters many individuals whose subjective life value is negative, *i.e.*, whose expected utility from the

62 From a technical standpoint, it is inevitable that the negative overall expected utility of life, as a necessary condition for suicide, will be supplemented by the requirement that it must also be negative in the first observed period (years). This technical condition is a consequence of using discrete values in the model of subjective value of human life, based on the expected utility function, and thus of the possibility that, for example, in the first observed year the expected utility of life may be positive, even though the overall expected utility of life is negative, thereby removing the incentive for suicide at that moment, i.e., during that year. I am grateful to Marko Paunović for pointing out this additional necessary condition.

remaining life cycle is negative, from committing suicide, even though the necessary condition for that deed is fulfilled. This demonstrates that the negative subjective value of an individual's life is not a sufficient condition for suicide. Formally speaking, investigation of the sufficient condition for suicide should be linked to the individual's attitude towards risk. If the individual is risk-neutral, the necessary condition for suicide becomes sufficient. However, most individuals are risk-averse, and thus the necessary condition (negative value of human life) is not a sufficient condition for suicide. The sufficient condition is based on the relative magnitude of the negative expected utility and risk aversion. If the negative expected utility is sufficiently large to offset the risk aversion, the sufficient condition is met. Whether this occurs or not is an empirical question.

After reviewing the three economic models of the value of human life, it is indisputable that the most suitable model is the model of subjective value of human life. It even produced a theoretical economic model of suicide, assisted or not, hence there is no doubt that this approach is relevant for producing economic inputs for the euthanasia debate, meaning that the remaining two models (VSL and the model of objective value of human life) will be neglected hereafter.

The economic input to the ongoing euthanasia debate will focus on the crucial legal issues, emphasizing the dilemmas, and providing economic food for thought for other disciplines.

5. Crucial Legal Issue From an Economics' Viewpoint

Of all the economic inputs, as already noted, the legal framework that regulates euthanasia should take into account only the model of subjective value of human life.[63]

The very first input from the economic model of the subjective value of human life is the proposition that euthanasia, specified in this paper as "voluntary assisted dying", should be legalized as the last resort measure and that the decision-making process should be strictly regulated and specified in detail by legislation. Accordingly, what should be legalized is

63 The essence of the economic input to the legal issues is inspired by the provisions of The Terminally Ill Adults (End of Life) Bill, which was submitted to the Parliament of the United Kingdom on 16 October 2024, since the End of Life Bill is very well-structured, the most developed and most contemporary piece of (proposed) legislation in the field. Consequently, the structuring of this section of the paper was a kind of "reverse engineering" of the End of Life Bill.

"voluntary euthanasia", irrespective of whether it is active or passive euthanasia, and irrespective of whether it is euthanasia *stricto sensu* (where the physician acts or refuses to act with the aim of ending the life of the patient) or physician-assisted suicide (where the physician only provides the lethal substance to be administered by the patient).

The argumentation in favor of this proposition is self-explanatory. In economics, the value of life is endogenous: it depends on the substance of that life, and it is specified by the expected value of the utility of the patient's remaining lifetime. It is only the individual who makes choices about his/her utility, both present and expected, since utility is a subjective category, a matter of an individual's rational choice.

Since the proposition is that euthanasia should be legalized, the legislation should provide a thorough and detailed legal framework to ensure that the decision-making process fully complies with the notion of "voluntary assisted dying" and to minimize the probability of error or abuse in the process of making and implementing the decision. The first step is to ensure that euthanasia is effectively the last resort measure and nothing beyond. Accordingly, euthanasia should be allowed only in the case of terminally ill patients who contracted an inevitably progressive disease or illness with death, with all available care and medicines, reasonably expected in the foreseeable future. The legislation should stipulate a time of expected death requirement for the euthanasia procedure to be initiated, for example, that the death is reasonably expected within X months. If X is too small, then the problem is that the time-consuming procedure of decision-making could lead to euthanasia being too late or ineffective. If X is too big, then there is a risk that euthanasia is not the measure of last resort, and it becomes vulnerable to abuse. One way or the other, the number of months until death can reasonably be expected must be unambiguously specified in the legislation, given these two countervailing effects of lengthening the period.[64]

The cornerstone objective of the euthanasia decision-making procedure should be to ensure that the eligible patient's decision is rational, *i.e.*, is a rational choice free of coercion and based on all available information. Accordingly, there are several elements regarding the patient's voluntary rational choice to terminate his/her own life that the legislation should regulate. The first element is that the patient who initiates the procedure for his/her euthanasia must be an autonomous person. Accordingly, the legislation should stipulate the age threshold for such a decision, *i.e.*, the

64 The End of Life Bill specifies that patients eligible for euthanasia have to be suffering from an illness with death reasonably expected within six months.

minimum age of the patient for requesting his/her euthanasia, say, although not necessarily, 18 years old.

The second element the legislation should stipulate is that the patient who initiates the procedure for his/her euthanasia must have the mental capacity to make the decision. The mental capacity criteria should be specified in legislation. This can be done through euthanasia legislation, a standalone legislation,[65] or the provisions of the Penal Code on prerequisites for the criminal liability of the individual. One way or another, the patient must meet these precisely specified criteria, as mental capacity is a crucial prerequisite for a patient's rational decision. This mental capacity consists of at least two components: one is cognitive capacity, which can be impaired by low IQ or by incapacitation due to illness and/or injury, and the other is mental health, *i.e.*, rationality, understood as the capability to make decisions that maximize one's own utility. These two conditions should be specified cumulatively to confirm the patient's mental capacity.

The third element is that the legislation should ensure that the patient's decision is voluntary, *i.e.*, based on free will and devoid of any coercion. Furthermore, the patient should be fully and unbiasedly informed about all the elements relevant to his/her illness and euthanasia request. All available information should be provided to him/her. Based on that, the patient should make a formal written declaration of both his/her eligibility for euthanasia and intent. The declaration should be submitted to the medical doctor in charge and an independent official, who would jointly confirm that the patient's wish is voluntary, informed, and devoid of any coercion.

The fourth element that the legislation should provide for is a reflection period for the patient after he/she expresses the euthanasia request by submitting the declaration, given that the enforcement of this decision, *i.e.*, ending of life as a consequence, is irreversible. If short, the euthanasia request must not be a knee-jerk reaction of the patient, which would be understandable in a surge of extreme suffering. It is not only that some reflection time is needed before proceeding to the following steps, say a week or two before the next steps in the procedure are to be taken, but it is also important that the legislation provides the patient the right to withdraw his/her request for euthanasia at any time after the request is submitted. This legal provision is critical because the euthanasia declaration is an "incomplete contract" as considered in economic theory, since contin-

65 For example, such a standalone legislation has been enacted in the UK: the 2005 Mental Capacity Act, (https://www.legislation.gov.uk/ukpga/2005/9/contents, 30. 3. 2026).

gencies can arise from the moment the declaration requesting euthanasia is signed and submitted to the moment of euthanasia is implemented.[66]

As to the fifth element, because the euthanasia implementation is irreversible, it cannot be undone, the euthanasia legislation should provide a well-developed, detailed specification of the due process of the decision-making process, which starts with the patient's request for euthanasia. This process must include the patient and their physician, as well as other officials, particularly those who have not had direct contact with the patient. The judiciary must also be included in the process, and the final decision in the process, approving or refusing the patient's request for euthanasia, should be made by a judge, to safeguard against inappropriate rush and/or abuse. Nonetheless, there should be a legal provision that euthanasia cases must have absolute priority in terms of timing; in the case of euthanasia, justice delayed is literally justice denied.

Finally, there is the issue of the legal obligation of a physician to participate in euthanasia when the decision is made in a process that complies with the legislation. It seems unreasonable to impose that obligation on an individual who has strong moral convictions against euthanasia, at least in taking active part in the process that ends human life. Accordingly, there should be no legal obligation for physicians to take active part in euthanasia. Nonetheless, for those physicians who refuse to take active part in euthanasia, there should be a legal obligation to inform the patient about other possibilities for enforcement of the decision and to direct them to physicians who are willing to go along and to transfer the patient's complete medical documentation, including the euthanasia documentation, to those physicians. This should safeguard the patient's rights.

On the fringes of the legal issues regarding euthanasia, there is the issue of life insurance and the possibility of insurance companies treating euthanasia as a suicide, which provides the legal ground for them to not pay out compensation to the next of kin in certain cases of life insurance policies. There should be a legal obligation on the part of the insurance companies not to treat euthanasia as a suicide if euthanasia is enforced in accordance with the law. Whether this obligation should be created by the euthanasia legislation or the legislation that deals with the financial industry is not an issue relevant to this paper.[67]

66 The notion of "incomplete contract", i.e., a contract that does not take into account all possible contingencies, was introduced in economic theory by Oliver Hart (2016 Nobel Laureate in Economics). Hart, O., 2017, Incomplete Contracts and Control, *American Economic Review*, Vol. 107, No. 7, pp. 1731–1752.

67 Another question on the fringes is whether Christian churches, which consider suicide a mortal sin that is unrepentable, hence refusing funeral service, would dis-

6. Conclusion and Guidelines for Further Research

The considerations of the three economic models of human life – the value of statistical life (VSL), the objective value of human life, and the subjective value of human life – demonstrated that only the last one, the model of the subjective value of human life, should provide inputs for the euthanasia debate.

The economic input to the legal debate, based on that model, is that euthanasia should be legalized, *i.e.*, "voluntary assisted dying" should be legalized as a last resort measure, and that the decision-making process should be strictly regulated and specified in detail by legislation. Accordingly, what should be legalized is "voluntary euthanasia", irrespective of whether it is active or passive euthanasia, and irrespective of whether it is euthanasia *stricto sensu* (when the physician acts or refuses to act to end the life of the patient) or physician-assisted suicide (when the physician only provides the lethal substance to be administered by the patient).

The crucial prerequisite for that kind of euthanasia is that it is voluntary. *i.e.*, a free rational choice by an informed patient who maximizes his/her expected utility, according to the model of subjective value of human life. In short, the patient must have the mental capacity for requesting euthanasia. This leaves aside all the patients who, for whatever reason, lack the mental capacity. In all these cases, no "voluntary euthanasia" – the only form of euthanasia that economic theory supports – can be implemented, because there is no free will, which is necessary for a rational choice.

Technically speaking, there are two options in such a situation. The first option is for close relatives, *i.e.*, next of kin (parents, children, siblings, *etc.*), to make the euthanasia decision for the patient. However practical this option may be, it does not fulfil the basic precondition: the patient's free will and rational choice. However well-meaning the close relatives of the patient may be, the asymmetry of information is substantial, and, effectively, they do not know the patient's preferences, which is the foundation for rational choice. The best close relatives can acknowledge is something like "we speculate what his/her wish is", which is very far from revealing the patient's preferences. At best, this close relatives' view is nothing but a speculation of the preferences through a Rawlsian "veil of ignorance". Accordingly, this option is not supported by economic theory.[68]

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tinguish euthanasia from suicide. Nonetheless, this issue is beyond the scope of the paper, as it falls within canon law and church tradition.

68 This is basically the case of paternalism. Babić, J., 2026, p. 194. Economic theory's attitude towards paternalism is, by and large, negative.

Moreover, despite the unfavorable position of economic theory toward this option, there may be a different assessment of the patient's preferences by equally close relatives (*e.g.*, the parents if the patient is their child, the siblings if the patient is their only living parent). There is no simple rule of thumb in such a situation, meaning that a shortcut that started as a practical solution ends up at an impasse. Furthermore, the assumption of a well-meaning close relatives should not be taken for granted, implying that there is room for abuse in applying this option in cases where the patient lacks mental capacity and when voluntary euthanasia is infeasible. Apart from economic theory's negative attitude, this option does not seem to be a very promising way forward.

The other option for euthanasia in the case of mental incapacitation of the patient is an "advance directive", sometimes referred to as a "living will", *i.e.*, a legal document in which a patient ex ante precisely specifies his/her wishes about medical treatment, to be followed by medical doctors if the patient becomes either mentally incapacitated or unable to communicate, or both. A specific form of advance directive can be an "advance euthanasia directive" – a legal document in which a patient ex ante precisely specifies his/her wishes that under conditions specified in the document, if he/she is either mentally incapacitated or unable to communicate, or both, his/her euthanasia should be implemented. Economic theory's position towards this way forward in the case of a mentally incapacitated patient is much more affirmative than in the previous case of close relatives deciding for the patient. There are two self-explanatory avenues for further research regarding an advance directive. The first avenue concerns the conditions under which an advance directive is issued. It is reasonable to assume that these conditions should be similar to those in which a declaration of a rational patient with full mental capacity is made. The problem, nonetheless, is that in the case of an advance directive, much information is missing because it can be obtained only ex post. Hence, it can hardly be an informed choice by the (future) patient. This insight should be taken into account when exploring the first research avenue regarding an advance directive.

The second avenue for further research regarding an advance directive focuses on the "incomplete contract", as considered in economic theory. The point is that an advance directive is far more an "incomplete contract" than the euthanasia declaration, with contingencies that can arise and draw a wedge between what has been written in the advance directive and the patient's actual conditions. Subsequently, since the patient is mentally incapacitated, a third party must examine and conclude to what extent the actual conditions comply with the prescribed conditions of the advance directive. Furthermore, the third party must decide

whether the compliance is sufficient to merit the implementation of euthanasia. Obviously, if this is the way forward in the event of the patient's mental incapacitation, it must be strictly regulated – not only who decides about the implementation of euthanasia, but also the procedure for the decision-making process and the safeguards. There are many, many people who wish to play God.

In short, both suggested avenues of research are tough and demanding. What a task it is for lawyers, medical doctors, philosophers, anthropologists, *et al.*! They should not seek the support of economists, as they can hardly do anything about it. Economic theory firmly stands on the position that euthanasia should be legalized, aiming to prevent further deterioration of the utility of rational patients. Accordingly, only "voluntary euthanasia" should be legalized.

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EKONOMSKA TEORIJA O VREDNOSTI LJUDSKOG ŽIVOTA: PRILOG DEBATI O EUTANAZIJI

Boris Begović

APSTRAKT

Rad ima za cilj da ispita odnos ekonomske teorije prema vrednosti ljudskog života, tražeći odgovarajući analitički okvir koji može dati relevantan doprinos debati o eutanaziji, usredsređeno na njen pravni status, u radu određen kao „dobrovoljno potpomognuto umiranje", naročito u pogledu ključnih spornih pitanja u toj debati. U radu se razmatraju tri ekonomska modela vrednosti ljudskog života: model vrednosti statističkog života, model objektivne vrednosti ljudskog života i model subjektivne vrednosti ljudskog života. Ovi modeli su ocenjivani prema svojoj pogodnosti da pruže relevantne ulazne podatke za debatu o eutanaziji, i samo je model subjektivne vrednosti prošao vrednovanje. Najznačajniji doprinos tog ekonomskog modela jeste preporuka da bi samo „dobrovoljna eutanazija" trebalo da bude legalizovana kao krajnja mera, uz strogo regulisan i zakonom detaljno propisan postupak odlučivanja i sprovođenja. U radu se nude smernice za odgovarajuću pravnu regulativu, kao i smernice za dalja istraživanja.

Ključne reči: eutanazija, ekonomska valorizacija ljudskog života, vrednost statističkog života, objektivna vrednost ljudskog života, subjektivna vrednost ljudskog života, legalizacija, dobrovoljno potpomognuto umiranje, pravna regulativa.

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