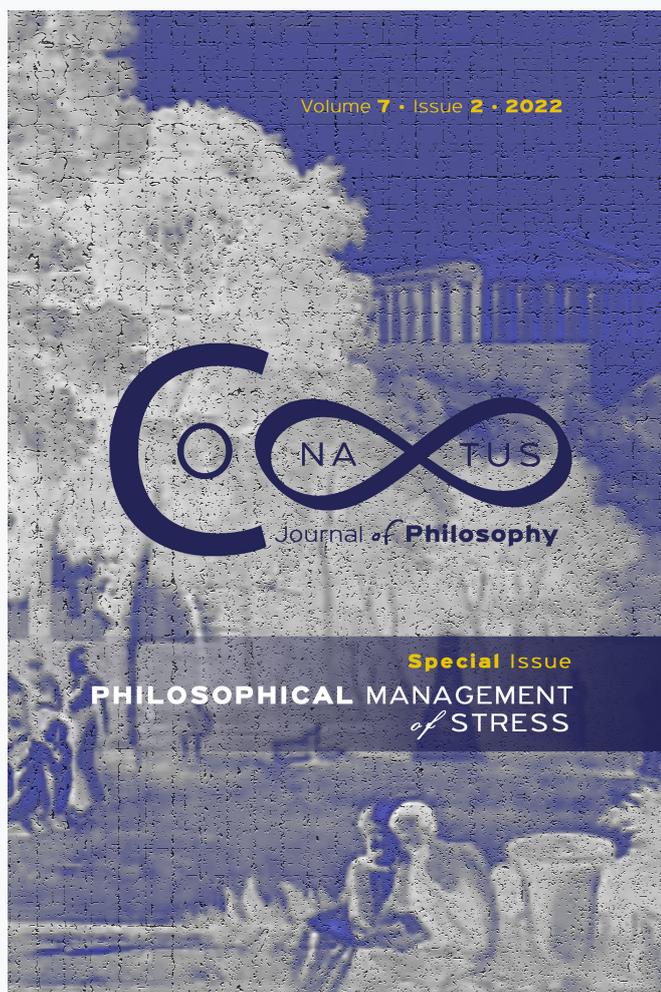


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# Epicurean Stability (eustatheia): A Philosophical Approach of Stress Management

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## Abstract

*Epicurus used an empirical and sensualistic approach to knowledge, creating a consistent, naturalistic, pragmatic and consequentialistic philosophy. The scientific observations of the last centuries have confirmed the basic principles of Epicurean physics, as well the psychotherapeutic approach of Epicurean ethics, which fits human nature. We know from the work “On Frank Criticism” of Epicurean philosopher Philodemus of Gadara, that the teaching methodology of Epicureans included psychoeducational counseling through therapeutic criticism based on friendly freedom of speech and aiming at τῆς ψυχῆς θεραπείαν (psychotherapy) and at knowledge of maintaining mental health and well-being. The Epicureans called εὐσταθεία (eustatheia, “stability”) the psychosomatic balance (τὸ τῆς σαρκοῦς καὶ ψυχῆς εὐσταθῆς κατάστημα), which today we call homeostasis (ὁμοιόστασις), and considered it the basis of true happiness. They recognized empirically the stress that disturbed psychosomatic homeostasis as an agitation of the psyche or a painful feeling of the body and used a number of mental and affective techniques (including the tetrapharmakos) to manage stress at its onset, so that it does not evolve into the particularly troublesome conditions of anxiety and/or depression, which may become chronic psychosomatic disorders with significant social consequences. The article discusses the relation of the main ethical teachings of Epicurus with the biological basis of human brain functions and with the management of stress by cognitive and behavioral psychotherapy.*

**Keywords:** *Epicurus; Epicurean philosophy; homeostasis; stress management; eustatheia; eudaimonia; pursuit of happiness; brain function; biological psychology; cognitive psychotherapy*

## I. Introduction

The teachings of ancient Greek philosophers contribute to the progress of the human civilization, as they are timeless sources of inspiration. In some cases, modern scientific research findings support philosophical views whose ancestral concepts were originally expressed more than two millennia ago. One such example of a major Greek philosopher, for whom there has been a renewed interest in recent decades, is Epicurus the Athenian (341-270 BCE), the founder of the Epicurean School *Κήπος* (Kēpos, Garden). Epicurus used an empirical and sensualistic approach to knowledge, creating a consistent, naturalistic, pragmatic and consequentialistic philosophy. The scientific observations of the last centuries have confirmed the basic principles of Epicurean physics, as well as the psychotherapeutic approach of Epicurean ethics which fits human nature and is effective in stress management. The well-known psychiatrist Irvin Yalom noticed that Epicurus practiced “medical philosophy” to alleviate the root cause of human misery, the omnipresent fear of death, and wrote: “The more I learn about this extraordinary Athenian thinker, the more strongly I recognize Epicurus as the proto-existential psychotherapist.”<sup>1</sup>

We know from the work *Περὶ παρρησίας* (*Peri parrhesias, On Frank Criticism*) of Epicurean philosopher Philodemus of Gadara, that the teaching methodology of Epicureans included psychoeducational counseling through therapeutical criticism based on friendly freedom of speech and aiming at *τῆς ψυχῆς θεραπείαν* (*tes psyches therapean, psychotherapy*) and at knowledge of maintaining mental health and well-being.<sup>2</sup> The Epicureans called *εὐστάθεια* (*eustatheia, “stability”*) the psychosomatic balance, which today we call homeostasis (*ὁμοιόστασις*) and considered it as the basis of happiness.<sup>3</sup> They recognized empirically the stress that disturbed psychosomatic homeostasis as an agitation of the psyche or a painful feeling of the body and used a number of mental and affective techniques to manage stress at its onset so that it does not evolve into the particularly troublesome conditions of anxiety or depression, which may become chronic psychosomatic disorders.<sup>4</sup>

The following text attempts to illustrate the fact that the main teachings of the ethical philosophy of Epicurus are grounded on the biological basis

<sup>1</sup> Irvin D. Yalom, *Staring at the Sun: Overcoming the Terror of Death* (San Francisco, CA: Jossey-Bass, 2008), 2-3.

<sup>2</sup> David Konstan, Diskin Clay, Clarence E. Glad, Johan C. Thom, and James Ware, eds., *Philodemus: On Frank Criticism* (Atlanta, GA: Scholars Press, 1998).

<sup>3</sup> “εὐστάθειαν ἄνω καὶ κάτω μετερῶντες ἐκ τοῦ σώματος εἰς τὴν ψυχὴν.” Plutarch, *Non posse suaviter vivi secundum Epicurum*, 5.

<sup>4</sup> George P. Chrousos, “Stress and Disorders of the Stress System,” *Nature Reviews Endocrinology* 5 (2009): 374-381.

of mental functions in humans and on the philosophical approach of stress management by cognitive and behavioral psychotherapy.

## II. A brief history of health concepts regarding stress

Although there have been attempts of treating diseases since prehistoric times, scientific medicine based on empirical observations and rational deductions was first established in the Greek world as a “byproduct” of natural philosophy, which was originally developed by the Ionian philosophers.<sup>5</sup> The most important concepts that relate to health and disease in scientific evidence-based medicine were first introduced and evolved from ancient Greek philosophy and medicine thinkers. The concepts of homeostasis, the state of steady internal physical and chemical condition of a living organism, and stress, the state of threatened or disturbed homeostatic stability, are of particular interest.

In the 6<sup>th</sup> century BCE, Pythagoras of Samos was the first philosopher to call the dynamic balance of the universe *harmonia* (ἁρμονία, harmony) teaching that this balance is threatened by forces with disruptive tendencies, while it is restored by adaptive forces.<sup>6</sup> Two Pythagorean physicians who lived in the 5<sup>th</sup> century BCE contributed thoughts on this line. Empedocles of Akragas wrote about two active forces, *neikos* (νεῖκος, strife) and *philotes* (φιλότης, friendship), which disrupt and restore balance, while Alcmaeon of Croton wrote that the human being, as a complex system, is also in harmonious balance, which he called *isonomia* (ἰσονομία, now meaning equality under the law). At the end of the 5<sup>th</sup> century BCE, also influenced by Pythagorean notions, the father of scientific medicine Hippocrates of Kos proposed that health is a balance of harmonious coexistence of four humors (εὐκρασία, eucrasia), while any disharmony or imbalance (δυσκρασία, dyscrasia) would be the cause of a disease.<sup>7</sup>

In the 4<sup>th</sup> century BCE, Aristotle of Stagira, son of physician Nicomachus, used the observation method of clinicians and spoke plainly about the unity of body and soul, grounding his ethical theory in human biology and becoming the first philosopher to speak extensively of *eudaimonia* (εὐδαιμονία, a blissful, prolonged, imperturbable state of happiness). Following the empirical observation method and the biological ethics of Aristotle, Epicurus the Athenian in the beginning of the 3<sup>rd</sup> century BCE

<sup>5</sup> Christos Yapijakis, “Hippocrates of Kos, the Father of Clinical Medicine, and Asclepiades of Bithynia, the Father of Molecular Medicine,” *In Vivo* 23, no. 4 (2009): 507-514.

<sup>6</sup> George P. Chrousos, “Systems Biology and the Stress Response: From Pythagoras and the Epicureans to Modern Medicine,” *European Journal of Clinical Investigation* 42, s. 1 (2012): 1-3.

<sup>7</sup> Yapijakis, “Hippocrates and Asclepiades,” 507-514.

considered philosophy as a means for a dynamic healing of the soul aiming at developing eudaimonia and dealt with the psychosomatic balance of human beings, which he called *eustatheia* (εὐστάθεια, stability) of the flesh and soul. While for Aristotle eudaimonia was the emotional action of a virtuous person, for Epicurus eudaimonia was a pleasurable condition in which there is no mental agitation (ἀταραξία, ataraxia) and no corporeal pain (ἀπονία, aponia). It is worth mentioning that Aristotle believed that the eudaimonic life is pleasant, because the virtuous person enjoys acting virtuously,<sup>8</sup> while Epicurus proposed that a happy life cannot be achieved without virtue.<sup>9</sup>

During the Hellenistic era of the three last centuries BCE, striking advances in the knowledge of human physiology and medicine were achieved, mainly in Alexandria, where famous experimental physicians, such as Herophilus and Erasistratus, laid the foundations for the scientific study of Anatomy and Physiology.<sup>10</sup> In the 1<sup>st</sup> century BCE, the physician Asclepiades of Bithynia, influenced by Epicurean philosophy, was the first to describe diseases as pathological conditions caused by “molecules’ shaping and flowing,” proposing a theory with apparent similarities to what is known today as molecular medicine.<sup>11</sup> The Roman Epicurean poet Lucretius described in a long poem the most important scientific work of Epicurus *Περὶ φύσεως* (*On Nature*). In his majestic poem of about 7400 verses entitled *De rerum natura* (*On the Nature of Things*), Lucretius included many important concepts, such as modes of inheritance and evolution of animals by natural selection, two millennia before Gregor Mendel and Charles Darwin described them.<sup>12</sup> In addition, based on Thucydides’ account, the Roman poet described the Plague of classical Athens and named the pathogenic *semina* (sperms) as the cause of the epidemic.<sup>13</sup>

The discovery of Lucretius’ lost poem in the 15<sup>th</sup> century influenced the Italian Gerolamo Fracastoro, who described the *semina* of infectious diseases, laying the foundations of modern scientific study in epidemiology

<sup>8</sup> Aristotle, *Nicomachean Ethics*, 1099a 13-21.

<sup>9</sup> Epicurus, *Letter to Menoeceus* (Diogenes Laertius, *Lives and opinions of eminent philosophers*, 10: 132).

<sup>10</sup> James M. S. Pearce, “Early Contribution of Alexandria Medical School to the Anatomy, Physiology and Pathology of the Nervous System,” *Revue Neurologique* 175, no. 3 (2019): 119-125.

<sup>11</sup> Yapijakis, “Hippocrates and Asclepiades,” 507-514.

<sup>12</sup> Christos Yapijakis, “Genetics and Ancient Greek Philosophers: From Myth to Science,” in *Hybrid and Extraordinary Beings: Deviations from “Normality” in Ancient Greek Mythology and Modern Medicine*, eds. Panagiotis N. Soucacos, Ariadne Gartzziou-Tatti, and Minas Paschopoulos, 269-279 (Athens: Konstadaras Medical Publications, 2017).

<sup>13</sup> Christos Yapijakis, “Ancestral Concepts of Human Genetics and Molecular Medicine in Epicurean Philosophy” in *History of Human Genetics*, eds. Heike I. Petermann, Peter S. Harper, and Susanne Doetz, 41-57 (Cham: Springer, 2017).

and microbiology. Another influence of Lucretius' book was the concept of the differing individual reactions to a disease,<sup>14</sup> that prompted the 17<sup>th</sup> century English physician Thomas Sydenham to write that the manifestations of a disease are not only due to the pathogenic factor itself, but also to the individual patients' reaction to the stress caused by the disease. This notion has been verified by modern science, as disorders caused by chronic stress, such as anxiety, depression, obesity, metabolic syndrome, etc., derive from the rise of stress mediators, including the hormones cortisol and the catecholamines norepinephrine and epinephrine.<sup>15</sup> In the 19<sup>th</sup> century, the French physiologist Claude Bernard spoke of the "stability of the internal environment" of the organism, while in the early 20<sup>th</sup> century the American physiologist Walter Cannon described stress that disrupts this internal balance, which he first named *homeostasis*, using a novel compound Greek word, although, in reality, he redescribed the preexisting terms *isonomia* and *eustatheia*, previously coined respectively by Alcmaeon and Epicurus.<sup>16</sup>

### III. A brief description of the Epicurean philosophy

The Athenian philosopher Epicurus was the first empiricist, humanist and "enlightener" philosopher. He was interested in the study and comprehensive understanding of physical reality with the distinct purpose of achieving peace of mind and happiness: "I constantly dedicate my activity to the scientific study of nature and thus, more than in any other way, I bring peace to my life."<sup>17</sup>

Epicurus had been taught the most important philosophies with conflicting beliefs of his time, including the Platonic idealism, the Aristotelian pragmatism, the Democritean atomism, and the Pyrrhonian skepticism.<sup>18</sup> To objectively evaluate the various philosophical opinions, the Athenian philosopher introduced the "Canon" (Κανὼν), an empirical gnoseological methodology based on observation using the senses and drawing conclusions about unknown phenomena, in analogy to the observed known.<sup>19</sup> Epicurus' physics was influenced

<sup>14</sup> "quod ali cibus est aliis fuat acre venenum." Lucretius, *De rerum natura*, 4: 637.

<sup>15</sup> Nicolas C. Nicolaides, Elli E. Kyratzi, Agaristi Lamprokostopoulou, George P. Chrousos, and Evangelia Charmandari, "Stress, the Stress System and the Role of Glucocorticoids," *Neuroimmunomodulation* 22, no. 1-2 (2015): 6-19.

<sup>16</sup> Chrousos, "Systems Biology and the Stress Response," 1-3.

<sup>17</sup> Epicurus, *Letter to Herodotus*: "παρεργυῶν τὸ συνεχὲς ἐνέργημα ἐν φυσιολογίᾳ καὶ τοιοῦτῳ μάλιστᾳ ἐγγαληνίζων τῷ βίῳ." Laertius, 10: 37.

<sup>18</sup> Laertius, 10: 13-14.

<sup>19</sup> Christos Yapijakis, ed., *Epicurean Philosophy. An Introduction from the "Garden of Athens"* (Athens: Stavrodromi Publications, 2022).

by the atomism of Democritus and his ethics was based on the biological ethics of Aristotle. Epicurus bridged the invisible world of Democritus' atoms with the colorful tangible world of Aristotle through chemistry.<sup>20</sup>

The Athenian philosopher realized that atoms have very few properties, but the way they bond together forming an aggregate (molecule) allows the emergence of new properties, producing the variety of composite bodies of the observable world based on the chemical laws of conservation of matter. The empirical approach Epicurus used made his philosophy naturalistic, comprehensible and extremely consistent, as shown by the fact that it is largely outlined by few authentic sources of Epicurus, which are also short (only three teaching letters and some phrases saved by his biographer Diogenes Laertius). The emerging essence of Epicurus' philosophy is confirmed by the other available sources, such as the texts of the Epicurean philosophers Lucretius, Philodemus and Diogenes of Oenoanda. The basic principles of Epicurean philosophy are extremely compatible with modern scientific findings, more than any other ancient philosophy.<sup>21</sup>

Epicurus observed that humans seek pleasure and avoid pain since childhood, because it is in their nature. As previously mentioned, he taught that eudaimonia is a pleasurable state in which there is no mental agitation (ἀταραξία, ataraxia) and no corporeal pain (ἀπονία, aponia). He maintained that people could exert prudently their free will to avoid useless beliefs and careless acts and to prefer useful opinions based on reality and virtuous acts to achieve a happy life.<sup>22</sup> The Athenian philosopher taught that “there is no pleasant life without prudence, goodness and justice, nor is a life with prudence, goodness and justice without pleasure.”<sup>23</sup>

According to Epicurus, “prudence is the beginning and the highest good from which all other virtues derive.”<sup>24</sup> Evaluative judgments can be made with prudence, aiming at achieving mental and physical health and a happy life:

- a) The knowledge resulting from the objective observation of nature (φυσιολογία, “study of nature,” science) that reassures intelligent people is to be preferred. The belief in unrealistic myths that cause fear and agitation in fools is to be avoided.
- (b) The reasoning based on empirical criteria of truth is preferred. The

<sup>20</sup> Yapijakis, “Ancestral Concepts,” 41-57.

<sup>21</sup> Ibid.

<sup>22</sup> Darrin M. McMahon, *The Pursuit of Happiness: A History from the Greeks to the Present* (New York: Penguin Books, 2007).

<sup>23</sup> Epicurus, *Principal Doctrines*, 5.

<sup>24</sup> Epicurus, *Letter to Menoeceus*: “πάντων ἀρχὴ καὶ τὸ μέγιστον ἀγαθὸν φρόνησις [...] ἐξ ἧς αἰλοῖται πᾶσαι πεφύκασιν ἀρεταί.” Laertius, 10: 132.

dialectic and rhetorical schemes are avoided as disorienting.

c) The virtues are preferred as means for a pleasant life. The wickedness that characterizes a troubled and unhappy life should be avoided.

d) It is preferable to fulfill the natural and necessary desires, otherwise there will be corporeal pain (e.g., thirst for water, when we are thirsty) and to avoid the satisfaction of unnatural and unnecessary desires (e.g., the vain desire for fame or riches), while natural and unnecessary desires (e.g., for a rare delicacy) are occasionally fulfilled, as long as no unnecessary suffering is created.

e) The pleasures that lead to eudaimonia are preferred and the pleasures that may cause pain and agitation are avoided.

f) It is preferable to deal with fears through the knowledge of nature and to avoid superstition, irrational fear of death and the fear of unfulfilled foolish desires.

g) An intellectually and emotionally fulfilling friendship is preferred to a lonely life, which is considered foolish and miserable.

It is obvious that according to Epicurus, the prudent persons will pursue their personal benefit through virtue, friendship and the promotion of social utility, not independently of society, nor to its detriment. Only with actions that benefit them, and their fellow people can they be calm and happy (Figure 1).

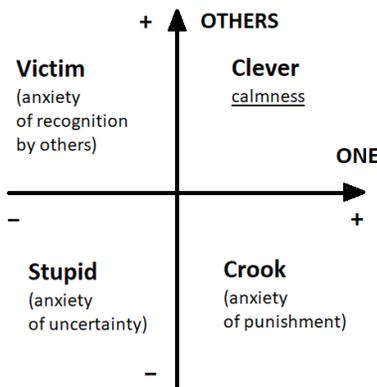


Figure 1. Win-lose diagram of one person’s actions versus others [modified from Carlo M. Cipolla, *The Basic Laws of Human Stupidity* (New York: Doubleday, 2021), and first presented by Christos Yapijakis in the live conversation “Epicurean Philosophy and Modern Science and Life” in 2018: <https://edge-growth-maturation.net.technion.ac.il/2018/10/29/epicurean-philosophy-and-modern-science-and-life/>]. The horizontal axis corresponds to the action of one person that acts in a positive way for him or her, or in a negative way for him or her, and what influence that action has on others; positive

or negative more or less. If one does an action that will cause one to gain but others to lose, that person is a crook. If one does an action that one will lose and others will gain that person is a victim, if does that all the time. If one does something that one will lose and others will lose, that person is stupid. But if one does something so that one and others will gain at the same time, that person is clever. To combine this way of thinking with the possibly corresponding anxiety or the lack of anxiety that Epicurus wants, the only person that remains calm is the clever person who is in the win-win situation. The victim has the anxiety of recognition of his/her “sacrifice.” The stupid has the anxiety of uncertainty. The crook has the anxiety of punishment, even if that person escapes a hundred times as Epicurus mentioned. Therefore, the only way to be happy is to always try to act cleverly in win-win situations. As Epicurus emphasized, virtue is the best strategy towards happiness.

#### IV. The Epicurean healing of the soul

For about thirty-five years, in his school *Κήπος* (Kepos, Garden), Epicurus taught men and women of all ages and classes how to live a happy life. The students learned to reason and evaluate opinions using the criteria of truth (Canon), to be aware of the basic facts of nature (physics), as well as to choose wisely their preferences and avoidances in theory and in practice (ethics).

According to Epicurus, the benefit of philosophy depends on the treatment of the diseases of the soul, just as the benefit of medicine depends on the treatment of the diseases of the body. The first four opinions of the Athenian philosopher from his book *Principal Doctrines* were a kind of powerful philosophical antidote to the widespread human fears, the famous *τετραφάρμακος* (tetrafarmakos, four-part remedy): “God is not fearful, death is not perceived, the good is easily acquired, the bad is easily endured.”<sup>25</sup> The Epicurean teachings had a clear orientation to practical psychotherapy as a derivative of basic notions, such as the material composition of the soul, happiness as the primary purpose of a prudent life, friendship as a cohesive social factor, objective observation of human behavior and character and knowledge of history as a means for the foresight of a behavior’s future consequences and evolution of personality, and free will and prudence as means of character improvement. According to Epicurus, people are free to choose their thoughts and behavior, but due to this freedom they are at the same time responsible for their actions.

The Epicureans continued for centuries providing psychotherapeutic counseling, as attested by the work *Περὶ παρρησίας* (*Peri parrhesias, On Frank Criticism*) of Epicurean philosopher Philodemus of Gadara, who lived two centuries after Epicurus and taught prominent Romans, such as the poets Horace and Virgil.<sup>26</sup> Philodemus affirms that the Epicurean teaching was based on frank expression of opinion and well-intentioned admonition within a friendly environment aiming at *τῆς ψυχῆς θεραπείαν* (*tes psyches therapean, psychotherapy*) and at knowledge of maintaining mental health and well-being.<sup>27</sup> The Kepos felt more like a family of friends than a school, and the teachers were the elder brothers, showing the way to happiness to their younger ones through the experiential improvement of one through

<sup>25</sup> “ἄφοβον ὁ θεὸς, ἀνύποπτον ὁ θάνατος, τ’ ἀγαθὸν μὲν εὐκτητον, τὸ δὲ δεινὸν εὐεκκατέρητον.” Philodemus, *Adversus Sophistas*, 1005, 5: 9-14.

<sup>26</sup> Marcello Gigante, *Philodemus in Italy: The Books from Herculaneum* (Ann Arbor, MI: University of Michigan Press, 1995).

<sup>27</sup> David Konstan, Diskin Clay, Clarence E. Glad, Johan C. Thom, and James Ware, eds., *Philodemus: On Frank Criticism* (Atlanta, GA: Scholars Press, 1998).

the others (“save one another”).<sup>28</sup> The psycho-pedagogical approach of the Epicurean community seems to have been effective, since admonition through frank criticism was really done with the understanding of a caring friend and “the philanthropic interest of a doctor towards a patient,” according to the description of Philodemus.

The Epicurean methodology is extremely reminiscent of modern approaches to cognitive and behavioral psychotherapy.<sup>29</sup> The correspondence with modern practice is obvious, in which the psychologists or psychiatrists undertake psychotherapy themselves by experienced colleagues before starting to help their patients. The Christian mystery of *exomologesis* (confession) also has its roots in Epicureanism.

## V. The Epicurean eustatheia

According to Epicurus, eudaimonia is a hedonistic steady state of being (καταστηματική ἡδονή, static hedone) free of agitation and pain. The happy life could be achieved only by prudent people, who on the one hand do not have irrational fears of gods and death, while on the other hand recognize their irrational, unnatural and unnecessary desires and avoid them. People who want to live happily should exercise their practical wisdom to understand the nature of their emotions as criteria of truth, to allow the expression of the useful ones and to control that of the disruptive ones. The Epicureans recognized that it was normal for every person to have some unpleasant emotions, the “δήγματα” (degmata, bites), when something stressful happened upsetting the soul. The bite was a normal unconscious mental reaction to a distressing event that disrupted inner eustatheia, causing a spontaneous primary emotion (anger, sadness, etc.), which Epicureans should then process wisely, so that it would not be allowed to expand excessively and become self- or hetero-catastrophic.

Therefore, the Epicureans aimed at eustatheia, the good psychosomatic balance, since they believed that “the consistently good condition of the flesh and the relating hope for its preservation offer the ultimate and surest joy to those who are able to contemplate it.”<sup>30</sup> Epicureans were taught to ascend the scale of pleasure by intensifying its continuity and to control its discontinuity. They became more interested in quality than in quantity by taking into account (συμμέτρῃσις, symmetrisis) useful and useless pleasures.

<sup>28</sup> “δι’ ἀλλήλων σώζεσθαι.” *Philodemus: On Frank Criticism*, 36.

<sup>29</sup> Carlo Strenger, “Mild Epicureanism: Notes toward the Definition of a Therapeutic Attitude,” *American Journal of Psychotherapy* 62, no. 2 (2008): 1-17.

<sup>30</sup> “τὸ γὰρ εὐσταθὲς σαρκὸς κατάστημα καὶ τὸ περὶ ταύτης πιστὸν ἔλπισμα τὴν ἀκροτάτην χαρὰν καὶ βεβαιωτάτην ἔχειν τοῖς ἐπιλογίζεσθαι δυναμένοις.” Plutarch, *Non posse suaviter vivi secundum Epicurum*, 4.

Equipped with a correct philosophical understanding of the hedone's nature and its lack as a criterion of truth, they pursued the aim of eustatheia, ataraxia and aponia with unshakable moral vigor.

Over the centuries, Epicurus and his disciples firmly supported that only with prudence (φρόνησις, phronesis) and friendly encouragement can people improve their character, behavior and actions to experience eudaimonia, a notion supported by modern research.<sup>31</sup> The Athenian philosopher realized that prudent people with inner eustatheia could contribute to the creation of a better society through a utilitarian approach and good deeds (ὀρθοπραξία, orthopraxia), while in contrast, a foolishly unstable and utterly selfish behavior would bring only misery to them and to their fellow human beings.

## VI. The brain and the Epicurean eustatheia

The human brain is a product of a long evolutionary process and is essentially made up of three different interconnected brains that evolved during evolution. The “reptile brain,” which appeared about 300 million years ago, corresponds mainly to the hypothalamus and brainstem and controls the instincts of survival, hunger, thirst etc. The “mammalian brain,” which appeared about 100 million years ago, corresponds mainly to the amygdala and the hippocampus and controls the emotions of pleasure, love, hate, anger, fear, etc. that are generated in the reward system of the brain. Finally, the “primate brain,” which appeared about 25 million years ago, corresponds mainly to the gray matter of the cerebral neocortex in the telencephalon, constitutes a large part of the total size of the human brain, and controls the higher mental functions, including speech, logical thinking, emotional autoregulation, imagination and autobiographic memory. It seems that human mental functions develop over a prolonged “childhood and adolescent” period amounting to 1/3 of human life, while in other primate mammals, such as the great apes, it is quite short and remains relatively stagnant.

The three “parts” of the human brain are interconnected and interact via synaptic neural networks. For example, the hippocampus in the “mammalian brain,” which manages the intermediate-term memory of an experience, interacts with its neighboring amygdala, which emotionally determines whether the experience is positive, neutral or negative. If the experience is strongly positive or strongly negative, then it is stored in the neocortex, i.e., the “brain of primates.” In fact, the more often an experience is recalled, and the more one feels the same emotions that she/he had experienced the first time, the more stable it becomes and remains long in storage.

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<sup>31</sup> Sasha S. Euler, “Psychological Universals in the Study of Happiness: From Social Psychology to Epicurean Philosophy,” *Science Religion and Culture* 6, no. 1 (2019).

This “three-dimensional” neurophysiological brain function, discovered in the 20<sup>th</sup> century, is very reminiscent of what Epicurus taught after objective observation of human behavior.<sup>32</sup> The Athenian philosopher emphasized that the basis of our nature is the fulfillment of natural needs, which concern our instincts and correspond to natural and necessary desires: “The voice of the flesh asks not to be hungry, not to be thirsty and not to be cold.”<sup>33</sup> In addition, Epicurus underlined the great importance of the positive emotion of pleasure, as if he described the selective role of the amygdala when he said: “We know pleasure as a primary good and relative of our nature and thanks to it we decide on every choice and avoidance.”<sup>34</sup> According to Epicurus the basis of a happy life rests on the pleasurable emotional state of mental ataraxia and physical aponia.<sup>35</sup>

Above all Epicurus considered the mental process of prudence as the “supervisor” of human behavior. Prudence can maintain psychosomatic balance (eustatheia) by consciously choosing what brings happiness, namely by wise satisfaction of natural and necessary desires – which concern our instincts –, and by wise selection of those pleasures that are useful and not harmful. The Athenian philosopher realized that the right reasoning should rule, because this is the supreme nature of humans as primates, without forgetting their emotions, which also play a most important role in their life, since they are also mammals.

A significant point is that the system of instinct desire (corresponding to the reward system of the “reptile brain” that uses dopamine) and emotional pleasure (corresponding to the “mammalian brain” that uses endorphin and other opioid peptides) have a complex and interconnected biological background, and, consequently, their separated function in humans is an important factor that may cause psychological problems. The average people are not able to predict how the fulfillment of their desires will affect their emotional state, but they imagine that unrealistically big changes will happen for the better, when they obtain what they eagerly want. This is because the average human confuses her/his desire for something with the belief that she/he will be happy by acquiring it.<sup>36</sup>

Epicurus not only separated desire from pleasure, but also turned his attention to the most important issue, to the stable pleasurable condition

<sup>32</sup> Christos Yapijakis, “Ethical Teachings of Epicurus Based on Human Nature in the Light of Biological Psychology,” *Proceedings of the XXIII World Congress of Philosophy* 2, no. 3 (2018): 83-88.

<sup>33</sup> “σαρκός φωνή τὸ μὴ πεινῆν, τὸ μὴ διψῆν, τὸ μὴ ῥιγοῦν.” *Epicurean Vatican Saying*, 33.

<sup>34</sup> Epicurus, *Letter to Menoeceus* (Laetius, 10: 129).

<sup>35</sup> Pascal Massie, “Ataraxia: Tranquility at the End,” in *A Companion to Ancient Philosophy*, eds. Sean D. Kirkland, and Eric Sanday, 383-408 (Evanston, IL: Northwestern University Press, 2018).

<sup>36</sup> Yapijakis, “Ethical Teachings of Epicurus,” 83-88.

of eustatheia and even eudaimonia. He emphasized the danger of becoming a foolish hunter of countless desires “like someone who drinks a lot but he is always thirsty.”<sup>37</sup> He recommended the use of prudence to control the instinctual desire system and to choose the fulfillment of the natural and necessary needs that result in pleasure also by eliminating psychic and somatic pain. Aiming at the psychosomatic eustatheia and the experiencing of eudaimonia, Epicurus advised the constant stimulation of the emotional pleasure system with the enjoyment of all goods one owns and the avoidance of the mental agitation about what one does not possess, “as fools usually do” (“because no fool is satisfied with what he has, but he has more pain for what he does not have”).<sup>38</sup> He reasoned that memory should cooperate with prudence, as “we should not destroy what we possess in the present because of our desire for those goods we do not have, but we should think that what we now possess were past desires.”<sup>39</sup> He maintained that by constantly recalling pleasant memories, which are deeply etched on our memory, we will not need the endless pursuit of unnecessary pleasures.

Another significant point is that while the instincts and the emotions provide information about a person’s inner and outer environment in the present, cognition not only perceives the present, but also can make a pictorial imaginative projection into the past or the future. The misuse of a person’s mental abilities based on false beliefs and erroneous assessment of environmental stimuli holds the danger of creating subjective stress experiences that disturb psychosomatic balance.<sup>40</sup> The biological system that controls our fears utilizes the quantitative action of serotonin, a neurotransmitter produced and released by an area in the “mammalian brain.” Serotonin is being diffused and binds to nerve cell receptors over a large area of the the “primate brain,” affecting mood, memory, mental processes and sleep. It appears that it is the quantity of serotonin that regulates the balance of the positive and negative emotions reflecting a pleasurable safe environment or a painful insecure environment, correspondingly.

Epicurus taught that through the scientific knowledge of nature and through prudence people can deal with irrational phobias about the unknown, with ideas and feelings of superstition, anxiety about their future death and the fear of not having their foolish desires fulfilled.<sup>41</sup> He focused on differentiating

<sup>37</sup> Diogenes of Oenoanda, *Great Inscription*, 131.

<sup>38</sup> “οὐδεὶς γὰρ τῶν ἀφρόνων οἷς ἔχει ἀρκεῖται, μᾶλλον δὲ οἷς οὐκ ἔχει ὀδυνᾶται.” Epicurus, in Porphyry, *Letter to Marcella*, 27; 30; 26.

<sup>39</sup> *Epicurean Vatican Saying*, 35.

<sup>40</sup> Carlo Strenger, “Paring down Life to the Essentials: An Epicurean Psychodynamics of Midlife Changes,” *Psychoanalytic Psychology* 26, no. 3 (2009): 246-258.

<sup>41</sup> Yapijakis, “Ancestral Concepts,” 41-57.

the natural fear of something real that causes pain, from something unfounded and imaginary, that we may never encounter, and suggested that it is helpful to be aware of it in order to avoid it. The Athenian philosopher attached special importance to the treatment of the constant anxiety of death (“the most horrible of evils”)<sup>42</sup> as a condition for psychosomatic eustatheia.

## VII. The Epicurean treatment of “the anxiety of death”

Epicurus’ reasoning for the psychotherapeutic treatment of the fear of death comes from atomic physics, which in his time was as it is today, the only compatible view with the observations of phenomena through our senses. The philosopher realized that death for humans is the destruction of the aggregates of the atoms structuring their integrated material body and soul. Because we perceive with our senses every good and bad, and granted that death is the abolition of the senses, then, according to Epicurus we will never perceive death due to the destruction of our sensory organs. As long as we exist, our death does not exist. When our death occurs, we do not exist. Therefore, it is absurd to be afraid of something that we will never experience.<sup>43</sup>

The Athenian philosopher taught that the certainty of the future coming of death makes life enjoyable, as it urges man not to waste a moment to foolish fears and “to prefer the happiest life instead of the longest, as we prefer the more tasteful food and not the more abundant food.”<sup>44</sup> He realized that only under the constant vigilance of prudence can we control the emotional agitation caused by the “irrational part of the soul” (the subconscious), or in other words, manage the subjective stress philosophically using our neocortical functions.

Epicurus believed that man dies as he lives, and each of us will face her/his upcoming death calmly and “with a beautiful song about how well she/he lived,” only if she/he has faced her/his fears during her/his lifetime and has achieved eustatheia. Otherwise, she/he will live a frightened and unhappy life until her/his last breath. In agreement with Epicurus, the renowned psychiatrist and psychotherapist Irvin Yalom had stated that people who have not consciously faced the fear of death, do not fully experience their lives and go through many phases of anxiety which derives from subconscious insecurities that are based on the constant fear of death.<sup>45</sup> It has been historically documented that the intrepidity of upcoming death characterized

<sup>42</sup> Epicurus, *Letter to Menoeceus* (Laertius, 10: 125).

<sup>43</sup> *Ibid.*

<sup>44</sup> “ὡσπερ δὲ τὸ σιτίον οὐ τὸ πλεῖον πάντως ἀλλὰ τὸ ἥδιστον αἰρεῖται, οὕτω καὶ χρόνον οὐ τὸν μῆχιστον ἀλλὰ τὸν ἥδιστον καρπίζεται.” *Ibid.*, 10: 126.

<sup>45</sup> Yalom, 3-5.

the ancient Epicureans, but also many modern materialist philosophers who were influenced by Epicurus, such as Hume, Diderot, Bentham, Mill and Santayana. On the contrary, the great fear of the upcoming death was noted down for many idealistic philosophers, such as Kant, Kierkegaard, Lacan, and Derrida, even though they believed in afterlife and divine providence.<sup>46</sup>

According to Yalom, to face fear of death people have developed subconscious defense mechanisms, including projecting themselves into the future through their children or through their works, developing protective rituals or a steadfast belief in protection from divine or metaphysical forces, avoiding to enjoy life because such an attitude may reduce the pain of the end, as if being “workaholic” or constantly busy would result in them having “no time to die,” or by being greedy for power and wealth, because they believe that prominent people may be excluded from the biological restrictions implemented to all other human beings. These subconscious defense mechanisms are not sufficient because the oppressed thoughts come to the surface frequently.<sup>47</sup> It seems that the best psychotherapeutic approach is the Epicurean, which allows the conscious confrontation of the anxiety of death by recognizing the finite biological nature of humans.<sup>48</sup> The message of this therapeutic approach can reach almost anybody because of the enhanced biological plasticity and learning potential of the human brain.

### VIII. The Epicurean management of stress

Like other mammals, humans have evolved to face an acute state of stress, that is, a pressing situation that occurs in their environment and disturbs their normal balance. The acute stress in nature is of limited duration, for example when a gazelle tries to escape a lion (flight reaction) or when a wolf faces another competing predator (fight reaction). In modern times, as a rule, humans do not face such life and death situations, but their reaction to stress, that it is usually psychosocial and chronic, is similar. The chronic stressful stimuli that affect people today include poor socio-economic situations and inequality (being poor or belonging to an oppressed minority in a society), loneliness and lack of friends, exploitation at work and unemployment.

In addition, the caregiving to sick relatives is very stressful due to empathic suffering. Empathy is an automatic and almost unconscious ability of normal people to understand the emotions and thinking of others, using their so-

<sup>46</sup> Simon Critchley, *The Book of Dead Philosophers* (New York: Vintage Publications, 2009).

<sup>47</sup> Daniel M. Wegner, “How to Think, Say, or Do Precisely the Worst Thing for Any Occasion,” *Science* 325, no. 5936 (2009): 48-50.

<sup>48</sup> Christos Yapijakis, Evangelos Protopapadakis, and George P. Chrousos, “Philosophical Management of Stress based on Science and Epicurean Pragmatism: A Pilot Study,” *Conatus – Journal of Philosophy* 7, no. 2 (2022): 229-242.

called mirror neurons and rest of their empathy neural network. The morality system a human develops is based precisely on the beginning of empathy in infancy and in early childhood, which is initially associated with the mother and is very important for the development of bonding between humans and for promoting sociability. The small percentage of social psychopaths in our societies with lack of emotional empathy and hence no moral inhibitions, may cause problems in the proper functioning of a social group.

In addition, in modern times there are stressful problems that people did not face in previous centuries. There is the stressful disconnection from our twenty-four-hour rhythm biological clock, granted that nowadays we sleep two hours less than our ancestors did, due of course to the artificial light and to the established work schedules. There is also the so-called “postmodern” stress, which is associated with information overload, while we have developed behavioral addictions in the form of compulsive connection with various devices, such as television, cell phone, computers, etc.

The chronic stress that modern people experience nowadays and the accompanying negative feelings of agitation, fear, anxiety, insecurity and shame are associated with low levels of serotonin. Modern cognitive and behavioral psychotherapy tries to reduce strong negative emotions, by focusing on the identification of specific fears and negative thoughts of a person and on revealing of their irrational nature, and by suggesting the systematic engagement with enjoyable activities. In other words, a similar approach to what Epicurus used twenty-three centuries ago for the psychological stress management and for the restoration of psychosomatic eustatheia (stability).

According to Epicurus, eustatheia is achieved by controlling stress and the quality of life by means of prudence and other virtues, goodwill and friendship. His philosophy was based on the awareness of the nature of humans and of the universe in general, aiming at eudaimonia, which he experienced along with many of his disciples, according to historical testimonies. Numerous modern studies have shown that people feel happy when they have covered their needs for living and have beloved relatives and friends around them, while their financial well-being or social status do not matter so much.<sup>49</sup>

Twenty-three centuries ago, the wise Epicurus perceived the biological basis of human psychology with extraordinary observation and insight. Based on an empirical way of learning and thinking, the Athenian philosopher taught that if people misuse their physical tendencies and their mental functions they could be led to foolish, impulsive and self-destructive behaviors, which may

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<sup>49</sup> Christopher Kullenberg, and Gustaf Nelhans, “The Happiness Turn? Mapping the Emergence of ‘Happiness Studies’ using cited References,” *Scientometrics* 103 (2015): 615-630.

end up in misery both for themselves and others (Figure 1).<sup>50</sup> Epicurus dealt with the simple phobias and anxieties of the average person using pertinent and simple reasoning and revealing they were unsubstantiated. The Epicurean psychotherapeutic teaching, as described by Philodemus, helped the students of the Kepos to deal with their personal character's defects, their phobias, and their everyday stress. Considering that philosophy is the cure for mental distress, Epicurus proposed specific philosophical "medicines" for achieving psychosomatic eustatheia and eudaimonia, which are timeless, as long as the biological nature of humans remains the same.

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<sup>50</sup> "ὁ ἀτάραχος ἑαυτῷ καὶ ἑτέρῳ ἀόχλητος" ("He who is not agitated, does not bother himself and others"). *Epicurean Vatican Saying*, 79.

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