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Academic Review of Correlation Relations between Neurology, Physiology, Metabolism, Changes in Glucose Levels, and Human Energy Frequencies

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To cite this article: Prof. Dr. Caglar Sezis, Science, Volume 4, No. 8-5, 2022, p. 21 – 41. - 0099-0001-2209-0512.

ISSN: 2667-9515

Barcode: 977266795001

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Abstract

Bugelski's (1973, 1982) stance on reduction to hypothetical physiology has a long and glorious history. For example, some French and German materialists of the 18th and 19th centuries saw consciousness and thinking as secretions of the brain and thus linked psychology to hypothetical (or fictitious) physiologies. This view was common in Europe at that time (Kantor, 1969, pp. 203-204, 258-259). More recent examples include Hull's (1943) use of terms that sound physiological but not, such as afferent neural interaction; Hebb's (1949) conceptual invention of the nervous system with no reference to the real nervous system; adaptive network models, which are

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simulations of physiological processes with "loosely resembling neurons" units (Palmer & Donahoe, 1992, p. 1355); and other non-existent versions of modem connectivity (Hilgard, 1987, p. 190). Another example is that one of the criteria proposed by cognitive theorists to assess the adequacy of any information processing model is the consistency of the model with what is known about neural physiology (Klahr and Wallace, 1976, p. 5; Palmer and Donahoe, 1992). ; Simon, 1972), but even with this consistency the model is not physiological. Another example is one of the criteria proposed by cognitive theorists to evaluate the adequacy of any knowledge process. However, these theories and models may be scientifically useful for other purposes that will not be covered in this article. Another method known as the "mind over the brain" approach is used by some connectionists ; however, this method does not seem to have much relevance in the scientific community. This shift was opposed by Skinner (1974) as an attempt to escape from the then prevalent mind-body dichotomy rather than as an attempt to offer a physiological explanation. Cognitivists seem to use it not to avoid mentalism, but to make mentalism more palatable, although Ryle (1949) argues that this statement is less misleading and therefore preferred "in the mind." Another metaphor used by some cognitivists is "in the head" as a vague euphemistic way of saying "in mind" (e.g., Brown, 1975; Jenkins, 1971). However, the term is sometimes used simply to supply stylistic diversity (e.g., Craik, 1943, p. 51; Dewey, 1933, p. 111).

Keywords: *Neurology, Physiology, Metabolism Changes in Glucose Levels, Human Energy Frequencies*

1. Introduction

A pragmatic concept of reduction. Craik (1943), a British mechanic, made the following comparison to explain what reductionism all is about: The need for a physical explanation does not mean that it is pointless or inappropriate to offer clinical explanations for psychological phenomena. For example, it is not wrong to say that an unpleasant experience or shock can cause memory loss or suppression. However, it is more fundamental to say that the pressure of a person's finger causes current to flow in the windings of the starter, and it is even more fundamental to give an account of the current and torque flow applied by the motor. It is correct to say that the pressure

of a finger on the initiative-taker causes the engine to go, but it is more fundamental to say that current flows due to the pressure of one's finger. That is, explanations can be presented at several levels, and while some explanations are "more fundamental" than others, any level of explanation can be correct if it covers relevant information. A second issue not raised by Craik is that even if the number of levels will likely be limited, the success of prediction and control is likely to reach an acceptable threshold at a level far from any final level.

Given that the definition of "achievement" and the criteria of "acceptability" are based on the aims of the research under review, there is no science needed to go beyond the level at which success is acceptable. Would it help to reduce everything to physiology? Kantor (1947) devoted an entire chapter to criticizing the "dogma of the nervous system." This dogma states that "the nervous system is central to the mindset, or at least provides explanatory principles for psychology." Kantor was particularly critical of hypothetical neurology, describing it as "imaginary", animistic, and mental. Kantor also says that "the nervous system is the center of the mindset.

2. The Real Field of Neurology

But what about the real field of neurology? According to Weizenbaum (1976), our understanding of how the brain currently works is necessarily so close that we cannot even begin to formulate adequate working techniques. Like how an unskilled craftsman would stand in front of us, we would stand before the open mind with complex devices in our hands. exposed the circuits of a computer: perhaps terrified, but unquestionably powerless. Weizenbaum 's observation is still valid today, as demonstrated by Catania 's (1992) following observation on the physiology of learning:

If we can see a brain at work, we have no way of knowing whether what we're seeing is learning. It would be interesting to explore what kinds of physiological changes are associated with learning. Even if we agree on what learning is, we may have trouble deciding what to look for in the nervous system. In fact, without an adequate understanding of the behavioral aspects of learning, we cannot have an adequate understanding of the physiology of learning. Although Skinner's views on the

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relationship between psychology and physiology can be described as "somewhat contradictory" (Parrott , 1983, p. 182), he generally held the same views as Weizenbaum and Catania . According to B.F. Skinner, "No physiological fact has told us anything we don't know yet about behavior" and that "we are still far from knowing what is. Events that occur in the brain as behavior are shaped and sustained by contingencies of reinforcement". Thus, his typical stance was that reductionism, a view acceptable to most behavior analysts, was not helpful (e.g., Bijou , 1979; Day , 1969, 1976/ 1992; Morris, Higgins , & Bickel , 1982b). Based on a statement by Moore (1981), a comparable claim can be made as follows:

A reinforcer is a stimulus that has a specific effect on behavior, and in the field of behavior analysis, this effect is known as a reinforcer. The question of why a stimulus has a certain effect on behavior is a matter of physiology or genetics, not psychology. There are no exceptions when it comes to conditional reinforcers. Although it is called a conditional reinforcer because of its history, it is called a reinforcer not because of its past, but because of its effect on behavior. A conditional reinforcer is a stimulus that is not a reinforcer before a certain past and becomes a reinforcer after that date. Neither physiology nor genetics has at this point offered a definitive solution to the question of why stimuli have the role of reinforcing behavior.

3. Concerning the Consequence of Reductionism

Regarding the outcome of reductionism, Watson (1919) said, "It has been argued by some that behavioral psychology is really physiology." A brief glance at the regions covered by each of the two provinces makes it clear that this claim is untrue. The study of physiology can tell us nothing about the traits and personalities of various people, their lack of emotional stability or emotional control, or how much their current position in life depends on their upbringing. The human ability to create and keep habits and the complexity of the human brain's habit structure are mysteries of the field of physiology. A similar argument was made by Skinner (1974): We are still a long way from making changes in the nervous system that will cause a child to perform certain tasks such as learning.

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Although we know some processes that affect large blocks of behavior, such as sensory, motor, motivational and emotional processes, we are still far from knowing exactly what happens when, for example, a child learns to learn. In the context of Skinner's interpretation, it is not clear whether the processes discussed are behavioral or physiological; but in both scenarios the last statement makes the same argument as Watson's words . Why are you bringing up statements made so long ago? Because despite all the incredible advances made in technology like magnetic resonance imaging (MRI) and positron emission tomography, they are still true (PET). Indeed, the events checked by MRI and PET are not neuronal activity, but the products or correlations of these activities, and the results of these studies have shown (Ungerleider , 1995). As a result, MRI and PET can pinpoint locations of neuronal activity, but cannot find underlying brain processes. The way stimuli are "encoded" at the neuronal level, also known as sensory inputs, is not one hundred percent precise (D. Ferster & Spruston , 1995).

4. Additional Neuropeptides , Neurotransmitters, and Related Chemicals

Although incredibly important, the melanocortin system is not the only neuropeptide system involved in controlling a person's body weight . PVN neurons, which may be interneurons or neurons such as TRH neurons, may be the confluence of melanocortin and NPY signals. NPY works through multiple types of GPCR to control energy balance. NPY-deficiency attenuating obesity and other characteristics of ob / ob mice . indicates that it is important for the overall response to leptin deficiency. Although NPY/animals are properly fed and have normal body weights, NPY deficiency improves obesity and other symptoms of ob / ob mice (Erickson et al 1996a, Erickson et al 1996b). CART has a widespread expression pattern and has been shown to be co-expressed in significant numbers of leptin regulated arcuate POMC neurons. CART neurons regulated by leptin in the arcuate nucleus are projected into autonomic locations in the spinal cord. This offers a potential connection to autonomic pathways and is one of multiple projections made by these neurons (Elias et al. 1998). Many of the added neuropeptides reported to be involved in these regulatory pathways are beyond the focus of this analysis.

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5. Changes in Glucose Levels in the Hypothalamus

These neuropeptides include CRH, GHRH, and galanin , to name a few . Ghrelin is a peptide that is expressed in the stomach as well as the brain. It was first discovered because of the role it plays in the growth hormone axis. It is already common knowledge that ghrelin stimulates overeating and contributes to obesity within the brain, most likely by acting on NPY neurons (Tschop et al. 2000). There is a good chance that other peptides will be found. The activity of these circuits is influenced not only by the neuropeptides and transmitters present, but also by the metabolic fuels present there. It is possible that neurons in the hypothalamus that respond to changes in glucose levels (low brain glucose stimulates food) are the same or functionally linked to neurons that respond to leptin and produce the peptides mentioned earlier in this section. The new discovery that fatty acid synthase inhibitors strongly limit food intake through actions in the brain may mean that lipid mediators have a function in metabolic sensing. This involvement can be deduced from the fact that lipid mediators inhibit fatty acid synthase (Loftus et al. 2000).

Nuclear respiratory factor (NRF)-1 and -2 were found to be key operating elements after extensive research on mitochondrial biogenesis genes and leading to the discovery of the respiratory chain. Most mitochondrial genes encoded in the nuclear genome have functional binding sites for either NRF-1 or NRF-2 or both transcription factors (Virbasius and Scarpulla 1994, Gugneja et al. 1996). In contrast, NRFs control the activity of mitochondrial transcription factor A (mtTFA), which manages directing transcription and replication of the mitochondrial genome. Not much research has been done on how factors such as diet or the common cold affect the amount of NRF or activity levels in the body.

Recently, a transcriptional part known as PPAR coactivator (PGC)-1 has been described. This part can co-activate and coordinate the activity of multiple transcription factors involved in many aspects of adaptive thermogenesis (Puigsever et al., 1998).

6. Energy Flow

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Although PGC-1 is expressed in many tissues of rodents and humans, it can only be cold-induced in brown adipose tissue (BAT) and skeletal muscle. This tremor is caused by beta-3 adrenergic receptors of the sympathetic nervous system and cyclic It occurs by activating AMP (Boss et al. 1999). When PGC-1 is expressed in white fat cells or skeletal muscle cells, a comprehensive program of thermogenesis is started. This program includes stimulation of mitochondrial biogenesis , expression of a dissociating protein (UCP-1 or UCP-2 in fat cells or muscle, respectively), and an increase in total cellular respiration. Seen through the lens of the adipose lineage, expression of PGC-1 causes white fat cells to look more like brown cells (Puigserver et al 1998, Wu et al 1999).

The rate at which energy is transferred from one location to another is called energy flow. In recent years, researchers have begun to apply this idea to the rate at which energy is transferred throughout the body. It was thought that individuals with high energy flow in their bodies (i.e., high intake matched with high expenditure) were able to keep their energy levels in better control than those with low energy expenditure.

While conducting this research, the issues outlined were considered (2009). An excerpt from a documentary The final documentary sample of 35 research reports was selected using the inclusion criteria outlined below . Acceptance standards. "Emotion Regulation" or "Emotion Dysregulation" was linked to the Boolean operator "AND" with the keywords "Sleep Hygiene", "Sleep", "Eating Behavior" and "Physical Activity". These were defined search terms. Only the following types of studies were considered for this analysis:

a) *Experimental studies evaluating psychological treatments aimed at perfecting the ER to increase at least one of the BEB-related behaviors.*
b) *studies aiming to find significant associations between ER and at least one of the three BEB-related behaviors ; and*
c) *ER is measured with a validated tool to account for this psychological variable and not another such variable.*

ER intervention does not necessarily reduce pre-competition anxiety, but may have some effect on better sports performance, justifying the inclusion of ER training programs as part of athletes'

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regular training. For its part, Lane et al. (2015) found that while ER intervention does not necessarily reduce pre-competitive anxiety, it may have some effect on better sports performance. (“Emotion regulation and healthy behaviors of the body energy ... - SciELO”) Similarly, Giles et al. (2017), successful cognitive reassessment not only depends on regular physical activity but also on the ER. showed that it was also associated with greater oxygenation of the brain regions involved . This has been shown to be the case when participants engage in regular physical activity. This is Zhang et al. (2018), the recommendations of Strasser and Fuchs (2015), who consider PA as a crucial factor in improving skills for implicit ER , associating PA as a crucial factor of contention in the face of potential damage caused by psychological stress , because norepinephrine, dopamine and Increases the modulation of serotonin. These have an impact on the improvement of cognitive processes and on recovery, respectively. It is the amount of physical activity that negatively affects the way they regulate their emotions (Rofey , McMakin , Shaw, & Dahl , 2013). On the other hand, people who show higher levels of emotional expression and positive reappraisal, in turn, show greater control over their body mass index (BMI), higher rates of daily physical activity, and better sleep hygiene (Shimanoe et al ., 2015). ER and Maintaining a Healthy Diet Twenty were found in this category, of which only eight were experimental and the remaining twelve were correlational. All respond to the research question and hypothesis posed, describe the statistical procedures performed for the analysis of information, provide conceptual and operational descriptions of e, and give an account of the correspondence between reported results, with only one exception, detailed steps taken to obtain both the information. They supply a definition as well as indicators of validity and reliability of tests used to measure constructs. But the only exceptions they supply are reliability indicators.

However, although this condition (lack of sleep) can potentially affect future ER , it does not necessarily contradict an acceptable conflict resolution if positive reappraisal training has been completed in the past (Wilson et al., 2017). Sleep problems may herald a lack of emotional regulation due to insufficient capacity to repair the nervous and endocrine systems (Irish et al., 2014). (“Emotion regulation and healthy behaviors of the body energy ... - SciELO”) This is clear when other references are compared to each other.

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7. Sleep Problems

Sleep problems can be a harbinger of emotional deficiency (Palmer and Alfano , 2017). Therefore, emotional reactivity, impulse regulatory control, sensitivity to punishment, feeling of rewards, and motivational attention to the completion of specific goals can all be affected (Fairholme & Manber , 2015). It is also possible to result in ER methods that are not amazingly effective (Palmer & Alfano , 2017), which will have a significant impact on an increase in BMI (Rofey et al., 2013) and amount of allostatic load (Ellis et al., 2019). However, it has also been reported that emotions experienced during the day do not necessarily predict the quality of sleep experienced the next night (Simor , Krietsch , Koteles, & McCrae , 2015). In conclusion, further research on interactions between such factors is recommended.

There is little research that directly addresses this psychological process using observations and controlled measurements of discovered interactions. This is so even though the ER potential can be thought of as a collection of processes linked to BEB behavioral clusters. Even fewer studies explicitly refer to effect size; this makes it impossible to compare whether the ER shows homogeneous effects on families of the behaviors under consideration and to show possible heterogeneity of subsets of revised variants (Sánchez-Meca & Botella, 2010). As there are very few studies that explicitly refer to effect size, it is impossible to compare whether the ER exerts homogeneous effects on families of the behaviors under consideration . Given that 17 of the studies reviewed did not match research with experimental measures, it is recommended that further studies be developed (with observation, recording, and analysis of biomarkers) that allow to demonstrate the theoretically existing effective interdependence between RE and BEB behaviors in both controlled settings (population-based and longitudinal studies).

Unfortunately, there is no aim assessment of physical activity patterns at this age. The physiological system was already tuned for weight gain in the second half of the 20th century, when food prices fell on income and access, and availability and convenience increased simultaneously. Gaining weight serves to increase the resting metabolic rate (RMR) as well as the energy cost of physical activity, leading to an increase in energy efficiency that counters the higher energy intake level resulting from the sedentary lifestyle prevalent today. In this sense, getting fat

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is nothing but an adaptive response to the contemporary environment; however, being obese is also a trade-off for keeping a low level of physical activity. In fact, we assume that leading a sedentary lifestyle in a place with plenty of food may be the only choice for restoring energy balance. This leads to the development of obesity. It is important to emphasize that this does not mean that physical exercise is the only aspect of energy balance that should be prioritized in the fight against obesity . In fact, the physiological and environmental factors of food intake are so strong that we currently have a very weak ability to combat such forces and achieve significant and sustained reductions in energy intake. This is because the physiological and environmental factors of food intake are extraordinarily strong. This does not mean that we should not continue to fight against these factors; instead, we should support efforts to change the food environment with tactics to increase energy expenditure.

Promoting widespread food restriction as the main strategy to combat obesity is quite different from this one, which takes a quite different approach. A high degree of physical activity combined with a high energy intake will result in the maintenance of a healthy body weight. This will be the well-regulated region where both the amount of energy consumed, and the amount of energy spent are overly sensitive to changes in the other. At low levels of physical activity, significant food restriction is needed to keep a healthy body weight. This would be the unregulated region where energy intake and expenditure are only weakly sensitive to changes in each other. This appears to be an unsustainable position for most individuals, and the result is weight gain and obesity, which returns the system to a high energy efficiency.

It is sometimes suggested in the popular media that a strategy of making slight changes, rather than the intent to cut the primary weight gain, will be effective for significant weight loss. Studies have shown that damage to the language and speech areas of the brain leads to verbal disability. However, no research has shown that excellence in verbal ability has a basis in excellence in these brain areas. This is comparable to research showing that damage to the language and speech areas of the brain leads to verbal disability (Das , Kirby , & Jarman , 1975). Among the examples

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(a) *neuroelectric brain patterns predict accuracy of responses in a reaction time task (Gevins et al., 1987), but with still too much variance, the researchers said, and without finding the origins of the disease, the researchers said. neuroelectric models.*

(b) *Luria 's extensive research on brain activity (e.g., 1980); and*

(c) *general cognitive processes with evoked brain potentials. There are many examples of all these studies, a few examples include the use of the P300 delay as an index of stimulus processing in the Stroop task (Duncan -Johnson and Kopell , 1981), the use of the amplitude of a late potential.*

Therefore, the evidence does not refute Loeb 's (1912/1964) conclusion that the study of brain anatomy and the localization of a function in a neuron or a group of neurons "can yield data on the pathway of nerves in the central nervous system. This is because the evidence does not contradict Loeb 's conclusion" pp. 35-36. Another factor to consider is that Skinner's (1978) earlier observation, which says that this type of work does not produce new psychological principles, has been correct to date.

For example, Posner (1993) showed evidence that the focus of brain activity shifts from the cortex to lower brain centers with practice on a task. This is consistent with the psychological finding discussed in the earlier section (e.g., Hasher & Zacks , 1979; LaBerge & Samuels , 1974) that well-executed behavior requires little or no conscious effort. It also showed evidence that perception and visual imagery occur in the same areas of the brain; this is consistent with psychology's finding that perception and visual imagery involve the same mental processes.

While pleasing to the eye, this kind of convergent validation adds nothing new to our understanding of behavior. Terms that appear physiological but do not actually have any physiological reference, such as neural action current, afferent neural interaction, and conceptual nervous system, are called intervening variables or hypothetical constructs (MacCorquodale & Meehl , 1948). Physiological terms do not include such terms (Reese , 1982, 1993). Additionally, physiological approaches such as connectivism are not considered physiological as they do not refer to actual physiological processes. These ideas and methods do not appear to be significantly applicable to behavior analysis.

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8. Products of Physiological Processes

Despite the argument that preceded it, many phenomena have been recognized as products of physiological processes . These phenomena can be used in behavior analysis, regardless of whether they are products of physiological processes. Because they tend to serve as distinguishing or reinforcing stimuli (e.g., secondary gender characteristics and visible age-related symptoms) or predictive factors (e.g., puberty and menopause), they can be abused and are likely to have additive effects.

a comprehensive explanation that goes beyond the usefulness condition is about the origins of functions, i.e., why phenomena have the functions they do, these functions can still be studied without any consideration on those functions. This is because these functions can be run without any reference to the sources of the functions. For example, puberty is linked to changes in various secondary sex characteristics, and puberty often appears to play a role as a determining factor in altering the distinctive and reinforcing stimulus functions of many of these traits. This function of the setting factor may reflect "raging hormones", but also a reflection of the history of supplementation; In certain social groups, secondary sexual characteristics that exist before puberty have the same distinctive and reinforcing stimulant functions as secondary sexual characteristics that exist after puberty (e.g. , McCandless & Evans, 1973, p. 244-247). The learning history hypothesis is likely where most behavior analysts will begin their work: The concept of adolescence as a determining factor can be explored using a modification of the multiple base design in which different individuals are substituted for diverse types of behavior. Individuals can be selected to be the stages of puberty that come before, during, and after the onset of puberty. Using an inverted design, where conditions are associated with live, videotaped, or illustrated models at different maturity stages, perhaps modified according to a reinforcement schedule conjugated with proximity or clarity to the research participant, it would be possible to investigate.

This can be conducted by conducting research using a conjugate reinforcement program. If the findings of such a study do not supply support for the learning-history theory, perhaps the investigation of this topic should be entrusted to a researcher specializing in physiology,

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physiological psychology, psychophysiology, psychopharmacology , or the like. This type of researcher may also be a behavior analyst, or they may work with a behavior analyst or do their own work without the aid of a behavior analyst. The decade of the 1990s saw the development of a subfield of experimental psychology known as physiological psychology. The term "behavioral neuroscience" is gradually replacing "physiological psychology" and "biological psychology" as the most used terms to refer to this field of study . Despite this, the goals of psychologists working in this field have not changed: they still want to use basic research to explain behavior in physiological terms. They do this by working under the assumption that each behavioral event has a corresponding physical event or sequence of events. In addition, the physiological psychologist (also known as a behavioral neuroscientist) deals with the way the adrenal glands work, as well as the physical mechanisms involved in feeling.

Physiological psychology differs from other life sciences such as physiology and biology in that its main emphasis is on behavior, although it is concerned with physical living things. Researchers can explore questions such as how the brain controls physical movement or regulates eating.

violent behavior; effects of drugs on memory and personality; physiological basis of sleep and dreaming; and areas of the brain devoted to the functions of language.

There is overlap between the fields of neurobiology and physiological psychology. Neurobiology is the study of the nervous system and the functions it performs. The study of drugs and behavior is known as psychopharmacology , a related subject. Evaluation of physiological reactions in relation to behavior is the focus of psychophysiology, which is one of the subfields under the umbrella of physiological psychology. Lie detector tests, clinical tests of vision and hearing, examinations of brain activity in people with intellectual disabilities and neurological and behavioral abnormalities, and education using biofeedback are examples of practical use of this technology. Since the beginning of human history, the question of how the mind and brain are and are interrelated has been one of the most confusing and difficult to answer. It was widely accepted before Hippocrates that mental phenomena were intricately linked to the functioning of the brain.

However, Hippocrates changed this view and in the following centuries it was thought that the brain was the place of all mental activities. It will be argued that the distinction between the two

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formulations, which is often overlooked, is quite important. Hippocrates' theory has continued to be influential in the fields of physiology, psychiatry, and psychology over the past two millennia, despite tremendous advances in related research. The only possible exception to this rule is found in some psychotherapy approaches that view the mind as an epiphenomenon .

IM Sechenov and IP Pavlov, two new subfields were set up on the border between psychology and physiology. These subfields are known as the physiology of higher nervous activity and psychophysiology, respectively. It is important to note that the proponents of these two schools of thought have spent almost a century trying to explain mental activity based solely on stimulation and inhibition, reflexes and biochemical reactions. However, in recent years, apart from an exceedingly small number of authors, these individuals have shifted their focus as their primary interest to studying brain structures as the basis of mental activity. It should be emphasized that these structures are only the basis of mental activity. However, psychiatry and psychopharmacology still base their approach to psychopathology on the traditional theory of higher nervous activity. (“Problem of Relation Between Brain and Mind in Physiology, Medicine and ...”) This theory still finds the mind with the brain and emphasizes the anatomical structure of the nervous system as well as the location of functions, transmitters, biochemical reactions, and neuromediators in the cerebral cortex.

This definition serves as the basis for all traditional approaches to the treatment of mental illness. Conventional treatments for mental disorders often involve some sort of chemical or psychopharmacological action on the brain and synaptic transmission. This idea suggests that the brain is like the physical components of a computer, while the mind is like computer software, and the learning process can be thought of as a form of programming. Mental activity is seen as a version of information exchange and interaction , and physical and physiological symptoms are seen as embodied representations of soul life. These symptoms do not supply specific information about the individual's thoughts, ideas or experiences, nor do they generally provide information about psychic contents. From this perspective, earlier, generally accepted attempts to study mental activity via EEG are similar to the process of measuring the voltage and resistance of a television set to obtain information about channels broadcast on the screen. What is measured and quantified as mental processes is indeed the external work of the mind (such as operating memory ability and

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operating speed) that is the result of the mind's ability to process information (parallel to a computer's hardware). Making inferences about mental processes based on these data is like trying to understand the biochemical and physiological processes that occur in an individual's body tissues by seeing their external physical activities such as digging a trench. The only way mental activity could be grasped was through self-observation and reflection, both of which for a considerable time were seen by psychology as idealistic, subjective, and unscientific. However, this perspective on self-knowledge methods has changed in recent years. It is also important to note that the modern scientific community sees information as an intangible part and data carriers (living organisms, paper , electrical devices, etc.) are considered tangible. On the other hand, intangible information has various quantitative and qualitative characteristics. Only when there is a subject experiencing this knowledge will any of its characteristics become visible, for example, whether it is neutral, emotionally charged, frightening, true or false. There is no such thing as an information carrier without a perceptive subject. Only living things, especially humans, can be the information producer, information carrier and information confirmer, as well as being the subject perceiving information.

The widespread understanding of the brain as the site of all psychic functions has resulted in the creation of several false assumptions common in everyday conversation. Additionally, this concept has contributed to the well-known phenomenon of "theory overload" in the scientific community, which occurs when data is rejected when it contradicts a dominant theory. Well-known phrases include things like "there's something wrong with my nerves," although the nerves are merely mediators. Broadly speaking, both in the scientific community and in normal life, neurological and psychic phenomena are often seen indiscriminately. The author has been successful in finding important distinctions between the neurological system and the mind. One of the most important distinctions is that the mind can tell the difference between real and imaginary stimuli. The nervous system responds in almost the same way to both types of stimuli. It is the basis of such techniques as suggestion and autosuggestion: for example, if a person dreams of putting his hand in hot water, it will lead to a rise in temperature in his hand.

However, few professionals, other than psychotherapists, know psychosomatic illness goes ahead in the same way and is dependent on a particular symbolization scheme (internal psychic

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programming). What is "taken to the heart" can cause cardiac pathology; a "swallowed" crime may be a factor in bulimia or anorexia; breathing difficulties in response to shocking news can lead to asthma attacks ; and "weakness in the knees" can cause joint pain. All these conditions can be caused by things "from the heart". In general, an individual's unique way of symbolizing emotional trauma resembles repetitive suggestions, or rather autosuggestions. It is possible to agree or disagree with this, but even those without knowledge in the field of psychotherapy could find that someone's back is bent because it carries a disturbing psychological weight.

9. Conclusion

People, and especially children, can be provided with better tools to actively take part in the management of their own body weight if these skills are taught. At the same time, we must accelerate our efforts to change the physical environment to expand the availability and ease of access to options that are better for consumers' health, while increasing the importance consumers place on those choices. Energy balance is one of the most fundamental ideas in the context of health and wellness, as it plays a vital role in both human health and human performance. (“The Science of Energy Balance: How it Factors Into Metabolism - NASM”) As a result, it is one of the most important concepts to understand. (“Unity - Manual: Transforms”) It is a principle that can be used in almost any area of the health and fitness coaching industry , including but not limited to nutrition coaching, personal training, strength and conditioning , and even sports coaching. Having a solid understanding of energy balance is essential. On the other hand, leading a more sedentary lifestyle significantly reduces the amount of energy produced. The amount of energy a person needs is calculated by adding the amount of energy spent and the amount of energy needed for development, pregnancy and breastfeeding. These needs must be met to achieve and keep best health, physiological function and well-being, so recommendations for dietary energy consumption from food should meet these needs. The latter (i.e., well-being) depends not only on a person's state of health, but also on his ability to fulfill expectations imposed by society and the environment, in addition to all other activities that require a significant amount of energy. meet individual requirements. Energy balance is reached when an individual's input (in this case, dietary

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energy intake) equals output (in this case, total energy expenditure), plus the energy cost of development during infancy and pregnancy, or the energy cost to form milk while breastfeeding. A person is said to be in a steady state when they can keep their energy balance stable for an extended period of time . This may include short intervals in which there is no normal daily balance between buying and spending. A best steady state is reached when the total amount of energy consumed is equal to the total amount of energy spent and this balance allows adequate growth in children, during pregnancy and lactation, without any metabolic, physiological or behavioral stresses . Constraints that limit the full expression of a person's biological, social and economic potential. ("Human energy requirements - Food and Agriculture Organization") Humans can adapt to temporary or long-term changes in their caloric intake through a variety of physiological and behavioral reactions related to changes in their energy consumption and/or growth rate, but only within certain parameters. A new steady state is reached when the energy balance is kept constant throughout the process. However, adjustments for low or high energy intake can sometimes include biological and behavioral punishments such as decreased growth rate, loss of lean body mass, accumulation of excess body fat, increased risk of disease, mandatory rest periods, and physical or social restrictions. performing certain activities and tasks. These biological and behavioral punishments include Some of these changes are necessary and making some may even increase one's chances of surviving during times of scarce food supply. There are two components that make up the total amount of energy needed for growth:

1) *the amount of energy needed to synthesize growing tissues and*
2) *amount of energy that accumulates in these growing tissues.*

The energy cost of growth accounts for about 35 percent of an infant's total energy needs during the first three months of life, then rapidly declines to about 5 percent by 12 months and to about 3 percent by the second year, then still being between about 1 and 3 percent. 2 percent by mid-adolescence, then becomes insignificant in late adolescence.

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