

Mind and body versus Gymnastics and philosophy: from dualism to emergentism

Mente-cuerpo versus filosofía-gimnasia: del dualismo al emergentismo

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Abstract

The study of the connection between the mind and body has given rise to extremist, exclusive positions: mentalists and corporatists. A dualistic view has been installed in sport studies that both separates and complements the body and mind and, therefore, philosophy and gymnastics. Shifting this to broader terms (science and sport), we represent the conflict between that which is physical and that which is intellectual. We use two basic propositions to overcome this dualism: an understanding that "philosophy is an exercise for the mind" and that "gymnastics is a philosophy for the body".

Key words: paideia, intellectual performance, sport performance.

Resumen

El estudio de la conexión entre la mente y el cuerpo ha dado lugar a posturas extremas y excluyentes: mentalistas y corporalistas. En el deporte se han instalado posiciones dualistas, que separan, al tiempo que complementan, a mente y cuerpo, y, por tanto, a filosofía y gimnasia. Trasladamos esta cuestión a términos más amplios: la relación entre ciencia y deporte (facultades intelectuales versus facultades físicas). Este artículo contribuye a diluir la antítesis y el dualismo subyacentes, a través de dos proposiciones básicas: por un lado, entenderemos que *la filosofía es una gimnasia para la mente*; por otro, que *la gimnasia es una filosofía para el cuerpo*.

Palabras clave: paideia rendimiento intelectual, rendimiento deportivo.

Introduction

How mind and body are connected has been discussed throughout history. We inherit dualistic attitudes from philosophy (i.e., mentalists *versus* corporatists, materialists *versus* spiritualists) as well as monistic or integrationist attitudes. To avoid unnecessarily extending the discussion, we will suggest here how to funnel the possible link between mind and body by filling the gap between philosophy and gymnastics. We will also analyse why “body” activities, like gymnastics or sport, and “mind”¹ activities, like science and philosophy, are existentially closer together than they seem to be at first sight.

Setting apart naïve realism, we initially take a sensible stance: both hypertrophy of the mind or body can cause significant consequences for the human being, sometimes even leading to pride, sometimes to narcissism. Body and mind are obviously not the same, although they are shaped like an entity; philosophy and gymnastics, science and sport, are likewise not the same. However, it is essential for both sides to be in harmony to build up mankind, as well as other religious, aesthetic, or moral facets on different levels.

The mentalists² or corporatists’ (materialistic³) models stand for theoretical attitudes, and they correlate to vital attitudes that accompany life models orientated toward rejecting body or mind operations, respectively. Consequently, they build up models of men and women according to which mind activities (represented by the intellectual, the researcher, and the scholar) or body activities (represented by the sportsman, the athlete, the gymnast) are thought to be preferable – in social, cultural or simply pragmatic terms – as models for living.

Body development with carelessness of the intellectual capacities or mind development with a carelessness of the body functions result in reductionisms⁴.

1 Intellectual, moral, aesthetic, and religious activities should be included in the mind activities.

2 We define “mentalist models” as a philosophical doctrine that maintains the existence of a substantial mind reality, whose nature is different from the bodily reality and irreducible to it. Cartesian dualism is mentalist, since it considers the mind to be an ontologically body-independent substance (but connected to it through the pineal gland). Materialism in philosophy rejects mentalism, as it considers the mind to be an insignificant reality but a group of operations that stem from manual speech activities that are empirical in nature.

3 We define “materialism” as a philosophical doctrine which holds that reality consists of corpuscles that have mechanical properties (primary features) that act on each other by means of mechanical laws which are expressed mathematically.

4 Reductionism arose with biology as an explanatory model that was constructed from physics and chemistry: it brought the vital phenomena down from the upper to the lower level (physical and chemical phenome-

There is an underlying position of this outline that is inherited from biology and that yields man-machine⁵ models like the one held by the erudite La Mettrie in 1748. His thesis, in opposition to Cartesian dualism, was based on the convergence of psychic functions and body states. This mechanism automates everything, both that which is corporal and that which is intellectual. The serious matter in this process according to Armengol (2006, ¶ 6), is that man’s conscience, his psyche, becomes an epiphenomenon, which brings about a moral irresponsibility regarding human actions.

On the other hand, there are intellectual (philosophical or scientific) or physical (gymnastic or sport) activities that provide with still more outstanding examples of the harmful consequences of building up what is human from dualistic views, which implies the contempt of one of the roots of the human experience. Sport is a cultural activity that encourages us to develop our capacities to mature as human beings, which science also does from another point of view.

Thus, we think that the trend to associate sport with body and philosophy with mind (i.e., to consider sport and philosophy to be logical capacities of the body and of the mind, respectively) involves a conceptual error. Body and mind may be structural substrates of sport and philosophical strengths engaged within them, but they do not represent the whole of their reality. The sport activity is fulfilled both by the body and the mind, whereas the philosophical activity requires the interweaving of both realities in order to be executed. Sport exceeds care of the body; the latter does not come from former, but above and beyond the former. Science is equivalent to investigating, to becoming familiar with something, once we have gotten rid of the need to create strategies for hunting, running away, or simply surviving. Before man developed science (as well as the tools that make it possible) his mind was used to guarantee care of the body. Only the guarantee of the essential subsistence conditions (with the help of agriculture, domestication of animals, the invention of the wheel, and controlling fire, on man’s way from a nomadic to a sedentary nature)

na, suitable for the inorganic) which gave rise to a mechanistic explanation of living beings. It fits that the first modern analogue from this interpretation would be the machine, as it appears in Julien-Offray de La Mettrie’s key work.

5 According to La Mettrie there is only one unique substance, which is diversely modified. Therefore, he does not allow for anything except accidents in this matter. The difference between man and animal is based upon a degree, not upon an essence. Human language is a simple accident of matter and not an essential character. Based upon this materialistic monism, the French author holds that there is an essential homogeneity between that which is physical and that which is moral in man. The only principle that governs humans would be sensation, that is, the feeling body.

made cultural developments such as science, sport, philosophy, and gymnastics possible. At that time, the survival instinct was not differentiated between mind and body, just as it does not do today when, in order to save our lives, we mechanically and automatically respond by overshadowing thinking and breaking down the conscious and causal tie of an action. Those reminiscences of atavistic instincts may occur through the reflex neurons described by Damasio (2009).

The neurologist Rubia (2005, ¶ 59) suggests that dualistic⁶ thinking may stem from an innate predisposition toward antinomies located in the lower left parietal lobe of the brain. It is possible to control this dualistic view through meditation, via full consciousness, from which Eastern practices like yoga emerge and where practitioners are capable of overcoming the breakdown between body and mind through mystic paths. In the West, the ontological dualistic view has brought about sport practices where the aforementioned breakdown is socialized by introducing the division of the sport functions that separate, for instance, the trainer from the player.

Game and sport come from the body and through training they exceed the care of the body. They do it to get rid of it (of the body's immanence), of the ties which it represents. They do it in order to overcome it. Through this existential path, they make it a virtual instrument, to let man enter experiences quite far from the corporal one, to open up to the aesthetic, intellectual, artistic, and ascetic joy, in short transcendent. In the same way, science and philosophy, which start in the brain, separate from the substrate that allows them to exist to acquire reflexive self-consciousness. Reflexion overcomes action, both in philosophy and in sport. Since the moment that it stopped giving in to the here and now, to the simple determinism of its instincts, the human being was able to erect cathedrals like those of philosophy, sport, or religion, all of them as logical evolutions of the immanent necessities, and gave them a transcendent meaning. In this sense, myth is both the origin of philosophy as well as gymnastics; this fact was joyfully held in ancient Greece and its demonstration in the Olympic Games is still seen nowadays. The ancient Olympic Games were the backdrop where the change from myth to logos

was performed (and is still performed presently). Philosophy and gymnastics are the fruits of that transit that, with passing time, were the consequences of science and sport; however, they began when Heracles counted 600 feet to celebrate his father Zeus' victory on Kronos, thus creating the one-stade race: there, athletes, poets, and philosophers converged to sing and celebrate that great event and its heroic deeds.

Therefore, both activities yield equivalent and existentialist performances, even though they start from two different realities or substrates. We could say that sport and science are parallel paths that man undertakes in his process of development; they are human activities with a compensatory sense. The evolution of our race allowed us to develop some capacities that free us from the ties of our instincts, though based on them. Culture (whether scientific, sporting, religious or artistic) is the most relevant of these capacities. Thus, the distinctions drawn from bipolarity (body-sport/mind-science) create an illusion that illicitly splits the human being. Those ancient discourses that granted more importance to some activities instead of others and were based on the secessionist and separatist fallacy of considering body and mind – regarding their respective activities, gymnastics and philosophy – to be reciprocally independent and supreme, are non-sense. Both gymnastics and philosophy are inextricably joined to man. From the view of emergentism, he – man – is superior to the sum of his parts, and even more so when they have been divided by human knowledge and not by the reality of the experience. Let us justify why we think it so, by building a bridge between philosophy and sport.

Philosophy and sport

German philosopher Sloterdijk has recently posited that philosophy is gymnastics for the mind in his work *You Must Change Your Life* (2009). According to him, a gymnasium is a sacred place in order to exercise and to become more capable than one is. The brain activity induced by practising philosophy is real gymnastics, since it trains, teaches, and coaches the superior activity of thinking.

So, the complementary relationship is interesting as well: that gymnastics are a philosophy for the body. The keys to gymnastic exercises and the logic that underlies them (or the practice of some sports) contain a measure, a ratio, which seems to correspond to “the most general principles that organize and orientate the knowledge of reality, as well as the meaning of human action”; that is, it matches the

6 According to Cáceres and Cáceres (2010), dualism is a concept derived from mystic and religious origins, which is basic in ancient cultures' knowledge; it deals with an idea related to the Jungian archetype of the hermaphrodite ancestor, the origin of life in religions and beliefs of androgynous gods or holy couples found both in European and pre-Columbian mythologies. In the East, this dualistic view is represented by the Yin and the Yang (Yin is that which is soft, dark, female, and receptive. Yang is that which is hard, bright, male, and creative), giving rise to a balance from which the complementation emerges.

first definition from the RAE Dictionary (2001) for the word “philosophy”. From this view, the human body benefits from gymnastics: it becomes a *modus vivendi* and impregnates the body’s own structure and dynamics. Thus, it enters a virtuous circle with a beginning that is difficult to delimit, where the exercised body turns into a philosophy that is gymnastics for the mind. That way, sport, as a practical philosophy, erases dualistic postulates and encourages an integral view of man.

However, a dualistic view that separates and at the same time complements mind and body as well as philosophy and gymnastics still prevails. Let us move this matter to the relationship between sciences and sport (the representatives of intellectual versus physical capabilities, respectively). Here we suggest parallelism as an alternative to the dualistic view. It is a methodological parallelism, not an ontological one, and its purpose lies in objectifying the mind-body link through the philosophy-gymnastics or science-sport relationship, unveiling by means of a comparative analysis (through two basic ratios that we will later discuss) a unique origin, as well as the empirical existence of two essentially equivalent manifestations of the human being.

According to Cagigal (1972), science, art, and sport are useful in satisfactorily directing aggressive impulses. From our point of view, the link is a different one: it deals with ways of expression and knowledge. In the case of sport, the body is an immediate instrument of and for knowledge, and it extends through tools, which increase the possibilities of exploration. Sport shares with science the vocation of providing man with experiences as well as knowledge of the world and of himself, and it favours the historical and personal process of acquiring an identity. This search regards the Orphic-Pythagoric tradition of ancient Greece represented by Apollo’s Oracle at Delphi (*nosce te ipsum*), a maxim followed by Socrates that is one’s moral examination in front of god; according to Plato, it was the path to real wisdom.

We address two questions here: can sport help us to better understand man? Is sport practice, essentially, a way of knowledge?

With regard to the first question, it is possible to individualize the link that the different functions fulfilled by sport have with the development and cultivation of personal identity⁷. The origin of these

more or less sporting activities was religious or military in nature; however, it was always with a playful background, yet different from what we now understand as sport. What those activities have in common with current sport is the existence of rules. But in those times rules were basically used for keeping up the showiness of the game, by fostering the *alea* element. Today, as social demands evolve, sport is set up as a bastion of respect to rules and laws (which guarantee fair play) as a social behavioural model. Therefore, sporting activities, evaluated historically, make up a map of the social and cultural evolution of a civilizing process (Diem, 1966).

The second assumption - sport as a way of knowledge - offers great anthropological yield. Sport activities are established as a man’s way of life in the world, one of the most erudite ones, “a genuinely human phenomenon”, Ratzinger holds (n.d, ¶ 1). It is an appropriate path to asceticism by self-awareness through experience, a way to cut loose the ties imposed by physical laws and by searching for virtue. In this sense, it is likely that sport is an echo of primitive mentalities. According to Rubia (2005, ¶ 35), a primitive mentality is simply a way of apprehending the world, in a different manner from what we are accustomed to using in the western world. It would not deal so far with being aware of the world as with apprehending it emotionally, with joining it mystically, so that community experiences that bring religious feelings close to the sporting phenomenon will arise. According to Martínez (2007, ¶ 5), activities like meditation, yoga or praying have allowed people to be involved in spiritual experiences from very long ago. The brain would have developed patterns of electromagnetic behaviour that produce the same sensations as solenoids⁸.

Practising a sport undoubtedly allows man to recognize himself as he is, by playing a game. A particular existential game constitutes attempts, tests, and mistakes that make up a(n) (existential) method with its own rules (the rules of that sport), its hypotheses (how to win, how to reach goals, etc.), and its conclusions: victory or defeat). Furthermore, sports account for an original way of gaining knowledge (initial and of initiation) that somehow is reluctant to socially evolve, as are the mystic (religious) and artistic experiences. In sport, man is a tool for himself. Subject to and object of thought overlap until confusion which sometimes

7 Those functions involve a labour and war-like motivation (Eichel, 1973) or a fighting nature in such primitive activities as dancing (Popplow, 1959); also a religious origin (*munus*), a gift or a duty that was offered as a funeral rite among the Etruscans, which gave rise to the gladiatorial contests in Rome. In the middle ages, jousts and tournaments prepared for war; later,

Calcio was experienced as a popular event. In other cultures, religious activities that were distinguished as antecedents to current sports, like the *pok-ta-pok* (a Mayan ball game), finished when the loser’s head rolled on the ground.

8 A solenoid is any physical instrument which is capable of creating an area of uniform magnetic field.

gives rise to the loss of a part of self-consciousness or even its complete dissolution. An experience then arises that is aesthetically (and also ontologically, though not obvious) called mastery and is marked by the sublime, the ease, the grace, the smartness ... all of this seems to be fulfilled without any effort, although it contains praiseworthy exploits (in dancing, artistic gymnastics, synchronized swimming, marathon running, etc.). The athlete turns into one with himself, merged into an ecstasy in which things happen on their own and in the best way; that is, they flow. He (the athlete) reaches a state that Hyland described as *peak experience*, where the athlete acts *in the zone*, and does it *without thinking* (1990, p. 79). The “unconscious” athlete arises, described by sports commentators as one who is *out of his heat* (1990, p. 80). It deals here with close experiences, which are accessible to us in other daily tasks (driving, personal care, cooking, etc.) in which the mastery that is acquired encourages us to rise to another level of thinking, one of excellence, the fusion of body and mind, the dissolution of atavistic dualisms. Sánchez says: “body and mind are the same reality and they cannot be understood in isolation” (2006, p. 119). The distance between subjectivity and objectivity gets shorter, and man is immersed in the world “without thinking over” his own activity, which does not mean that he doesn’t have a consciousness but rather another type of consciousness. Also, along these lines, the disciplinary split between body and mind would be considered modern. Regarding the activity of the living body, the primitive man does not distinguish between them: both (body and mind) constitute an indistinct mystic unit⁹.

In this sense, Garfield and Zina hold that some individuals (referred to as *self-fulfilling*) “intuitively or through a rigid discipline know how to harden their willingness and thus approach, match or improve time and again their higher performances” (1987, p. 41). In this process, strengthening the willingness is very important, since (using a pro-dualistic language) “our bodies tend to do what they are ordered, provided that we know how to order them” (1987, p. 42). Only if the athlete fails in his performance – for instance,

when the tool that we are handling breaks (a hammer, a brush) or we cannot change gears in the car that we are driving – do dualism and consciousness return and the magic disappears. As Heidegger points out: “that which is useful is essentially something to ...” (1991, p. 81). It is as if in our vigil we could live two different ways: consciously and unconsciously, which in cognitive psychology is called selective, divided, and sustained attention. When an athlete is *out of his heat*, he gets into another dimension, beyond selective attention, in a sphere reflected by certain kinds of automatisms. These automatisms are not as such, since the athlete is able to comply with complex stimuli. As Rubia holds (2005, ¶ 7), the existence of two hemispherical lateralized kind of consciousness occurs.

In some sports, in which different trajectories of movable objects and people must be perceived, masters are able to respond brilliantly without being hardly aware of it. According to Heidegger, for a hammer or a racket, “the better it is held or used, the more original it becomes to rely on it, the more we unmask it and face up to it as it is, a tool” (1991, p. 82). Repetition is the key to reaching perfection of the movement, according to Sloterdijk (2009). Just when that perfection is completed, when efficiency accompanies it, the oblivion of the action appears. Taking care of things – the *cure* – is abolished. Whoever has reached mastery of movement has stopped worrying about its management. A new link arises in order to explain the movement: the thought-action scheme no longer prevails. Language or thinking is interrupted, perhaps bringing about a new kind of knowledge: being one with the thing through the action that breaks the causal, mechanic tie between man and the environment, the tool or the implement, the subject and the object – mind and body. As described by Heidegger: “In the way it is useful, it is evident from itself, we call it «being at hand»” (1991, p. 82). Both of them move at the same time, harmoniously, as if they were part of the same piece, as if they were suspended, stopped, outside of the concept of time, daydreaming of themselves. Thus, in following the explanation from Pierre Levy’s work *What is the virtual?* (1999), the sportsman recalls man’s first virtualization of a tool: “the smith, the skier (...) or the cyclist have modified their muscles and their nervous systems in order to integrate the tools in a kind of extended, modified, virtualized body” (1999, p. 70).

At this point, the physical and intellectual performances overlap. This is reflected in the case of the chess player. It is impossible to separate the good chess player’s decision making that leads him to move

9 We must remember that Huizinga placed sports within that which is sacred, precisely due to its festive character who is opposed to that which is profane: “the sacred show and the agonal feast are the two worldly ways in which culture arises from the game and as a game (1972: p. 66). According to Caillois (1986: p. 165) the fact that the game belongs to the sacred atmosphere emerges when pairing *agon-alea* and *mimicry-ilinx*, because they emerge without a rule; magic comes up as well as vertigo and panic. This alliance between fascination and horror belongs to the sacred atmosphere, as Rudolf Otto has paradigmatically highlighted (see *Das heilige. Über das irrationale in der idee des göttlichen und sein verhältnis zum rationalen*, 1917).

a piece from the act of movement: before carrying it out on the board, the piece has already been moved in the chess player's mind. The same occurs when the conscious volitive impulses almost disappear during the masterful development of dance steps. Thinking and action are mixed in a creative act that belongs to humans' supreme intelligence.

Descartes' mistake, as Damasio (2009) describes it, is, thus, obvious. The emotional act is interwoven with the rational one; this grafts in the precedence of the living body. Sport encourages man to automatize extremely difficult movements that let a sportsman respond immediately, reflectively, to countless situations. The sportsman does not think, but acts. He has incorporated some movement patterns; he has automatized them from previous arrangements inherited from the primitive man that has survived the course of evolution. It deals with some automatized gestures based upon certain synaptic markers. We can reach mastery in any routine activity in our life (such as driving a car or washing our teeth) but, what is the difference between these activities and sport mastery? Does it deal only with a quantitative matter (due to the amount of people that fulfil it) or, on the other hand, with a qualitative matter which distinguishes, segregates, and classifies us, by making us different according to our capacities ... and perhaps as people? Some has been written on movement aesthetics (even more on body aesthetics) but, what happens with ethics of movement? Garcia and Lemos (2005, p. 5) hold that *aesthetics is an ethical matter of sport*, which leads us to another question: is whoever performs best more perfect or better?

According to Plato, that which is good and that which is beautiful coincide. In sport, athletic beauty should agree with that which is well done. In his *In praise of athletic beauty*, Ulrich encourages us to admire, not only sportsmen, but also their deeds, which we must praise since they are beautiful. The aesthetic experience arises then through the observation and the pleasure that it conveys. It is an unselfish satisfaction, as "it will never be objectively useful in his daily life" (2005, p. 42). Following the formula "to be lost in the intensity of the concentration" (2005, p. 52), Ulrich combines the fascination of watching sport and the appeal of practising it. He encourages us to perceive sport from a Kantian perspective that can describe sport mastery providing that that "to be lost" connects to the unselfish character of the aesthetic judgement.

This experience testifies to the communion of the spectator and the actor through the sport contest, once again, as a means of overcoming unreconciled

dualisms that essentially separate the watching from the making. By imagining his idol's action before its completion, the spectator activates the same neuronal zones that he would do if, in fact, he were to execute it.

According to Rubia (2005), the dualism is not "real" but one more category of our mind. In fact, emotions are not second-class brain products, if we compare them to the highest mind functions. Antonio Damasio's (2009) and Joseph Leroux's works attest to this and point out that thinking is a "higher level" expression of the emotional brain. The origin of the dualism already appears in the Old Testament, in the Garden of Eden. The appearance of the dualistic consciousness, once man has eaten from the tree of knowledge, brings about the loss of the holistic, heavenly consciousness, in which man is one in and with the One God.

Hence, we propose two positions to contribute to shifting the exclusive and essentialist dualism through the discussion of the relationship between philosophy and gymnastics, following a methodological monism that will contribute to understanding how they complement each other and how impossible it is to reduce one to the other.

Let us imagine that the advances of neuroscience could allow us to thoroughly be familiar with how the network of synapses in the brain functions. Would we be able to explain the consciousness, ethics, aesthetics, freedom, or the sense of life as Nuñez de Castro (2009, ¶ 24) holds? Would physiology or sport biomechanics be explained? The necessary methodological reductionism need not involve an ontological reductionism.

In any system there are qualities that cannot be reduced to the structural or functional elements within it. The whole is bigger than the sum of the parts, from which something new arises or emerges. Despite the dualistic or reductionist attitudes, the theories of emergentism are trying to respond to the scientific evidence described by neuroscience. When in communion, body and mind (the psyche) produce consequent properties ("sprouts", as Zubiri and Lain Entralgo prefer to call them to better describe the appearance of something new; Zubiri also calls them "elevations"). The idea of 'emergence' helps us to set off on a non-materialistic and epistemological path that is closer to methodological monism and further from metaphysical dualism. Thus, according to Armengol (2006, ¶ 10), through human activities such as sport we can recognize both the ontological-evolutionary unity of the universe and its inner structural heterogeneity.

Philosophy is gymnastics for the mind

Peter Sloterdijk points out that correct performance improves “the aptitude for the following repetition” (2009), which keeps us fit. This idea aims to establish a correlation between how the mind and body work. If we are able to demonstrate that both realities function through the same mechanisms and that they are governed by the same and proportional patterns, rules, or even laws, we will have made a step forward (through the relationship between philosophy and gymnastics) in dissolving the ontological dualism between body and mind.

Intellectual performance versus sport performance

Regarding the theory (and the practice) of sport training (described by Matveiev (1983) as the necessary way to prepare a sportsman, based on systematic exercises that essentially represent a pedagogically-organized process that guides the evolution of the sportsman), loads, volume, intensity, density, rest, exercises, repetitions, session arrangement, etc., are perfectly determined, tested, and prescribed. On the other hand, intellectual or academic performance is far from being treated the same. A student’s learning is monitored formally, according to the official *curriculum*; it is standardized by the official educational laws; established through courses, cycles and degrees; with objectives collected in curricular projects. It follows student’s stages of physical and psychological maturing (cognitive and emotional), but nevertheless, this process is not orientated towards peak performance, but rather seeks excellence as a pre-requisite to support and justify the system¹⁰.

However, the model is successful, since it provides the social system with outstanding people for the labour-professional world (physicians, lawyers, philosophers, economists, etc.). But it is not very efficient and this violates one of the fundamentals of (sport) performance. The world of sports turns out to be more demanding; it decimates candidates, it segregates them, and it sifts through and classifies them according to their capacities and effort. The philosophy of sport training means that success determines the pattern of behaviour and the possibility of making a living from a sport professionally (an average lawyer may make a living at his profession; an average athlete may not, at least, not as a profes-

sional). Even though the difficulty may be similar in both fields, the way to reach peak-performance sport is more subject to protocols. However, as we want to demonstrate, both processes respond ontologically in the same way: not only are they not independent but, in fact, when someone tries to work on both of them, the results are very successful. The development of the complete, all-around man demands that he synthesize the task, which can be summed up by the search for a full life.

The scientific and dualistic arguments may indicate that physiological performance is more mechanical than intellectual performance, since the muscle contraction is subject to the sodium-potassium pump transport and the actin and myosin cross-bridge sliding. There are many texts that detail the body’s metabolic processes when faced with workloads or the effects that can be expected at each moment by always following a logical structure or sequence that is determined by the exercise, session, microcycle, mesocycle, macrocycle or the cycle that organizes each sport discipline; all of this is in regards to an inclusion relationship called periodization that determines an athlete’s sporting career. However, academic performance is intellectual; there is little scientific literature on how to be successful in a competitive examination, how to get a job, or how to win a literary contest. Interestingly, dualism has contributed to an uneven race in which body development seems to have overcome mind development regarding technical advances and development.

What reasons could there be? The difference lies basically in the concept of competition that is associated with sport, on the basis of whose calendar training has been established, planned, and programmed. In this sense, physical capacities and qualities are thought to be mechanical, which does not allow the possibility of committing a mistake from a causal perspective. According to one’s characteristics, each person will respond to the physical work that corresponds to the general principles or laws of sport training¹¹.

10 Nevertheless, someone that is preparing for a public examination can only plan on the basis of the subject matter which he has to master, not according to a fixed syllabus that brings into operation all of his capacities to achieve better performance. He will not be able to plan according to his response to the stimulus (studying), since physiological and psychological responses have not been studied as accurately as the athlete’s responses (increases in the muscle volume, improvement in reaction speeds, higher tolerance to lactate, etc.). The amount of topics to memorize daily or weekly and how to cope with an examination depends upon the person’s experience. The workload falls under the subject matter of understanding, not the process of the acquisition of knowledge or how this occurs. Therefore, the amount of repetitions (how many times I have to re-read a paragraph), the intensity (how I have to speak), the volume of workload (the number of pages per hour), its relationship with rest, that is, the den-

10 In European teaching systems, student progress is characterized by a low level of demand, promotion, and performance; often, academic excellence is not even achieved at the university.

Interestingly, gymnastics (just like combining different ingredients when cooking) were considered to be an art by Plato; nowadays, both activities are thought to be more of a science than an art, even though they have not lost their creative dimension. However, how the outstanding intellectual capacities improve is left to the judgement of collections of recipes or to expert trainers' discretion. It seems like a lack of professionalism. With some obvious differences, it is as if we would leave the responsibility of training talented sportsmen to successful retired athletes, so that they could transmit to them their own magic formulae, without supplying them with any scientific teaching except their experience. The situation seems to be reversed.

However, can we unreservedly accept the description that has just been made? We do not think so, due to two main reasons. The first deals with the structure of the matter at hand; the second deals with sociological observations.

The body's reaction to particular training dynamics has certainly complied with detailed analyses, with the help of experimental observation tools. Despite the parallel advances in the area of psychology (since the foundation of the first laboratory of experimental psychology by Wundt in Leipzig (1879)), we do not have detailed knowledge of the aspects that are linked, e.g., to intellectual learning. The subsequent question is whether this divergence responds to a different disciplinary performance (which could be improved through implemented methods and tools of observation) or is the result of structural differences in the respective research matters. The answer is to be found in a detailed analysis of the essential structures of both one matter and the other: that is, the living body and the psycho-intellectual dimension. Those characteristics affect, on one hand, the methodologies associated with the natural sciences that relate to the human body (biology, functional anatomy, etc.), and, on the other hand, the methodologies associated to the human sciences (that is, psychology, pedagogy, etc.)

The difference between the performance of some disciplines and others, Teruel holds, comes from the different structural features of the ontological regions which those disciplines are concerned with (2008). Regarding the natural sciences applied to the performance of the body which is subjected to sport training, there are processes that can be explained

with the help of laws subjected to the principle of nature's regularity (broadly speaking, physical isonomy). Regarding the human sciences applied to the intellectual performance in learning processes, there are dynamics in which the different aspects of the subjective dimension (from biographical memory and the field of one's interests to creativity and morals) take part, all of them sifted through basic phenomena like reflexive self-consciousness and freedom¹².

It might be pointed out that the different aspects of both the subjective dimension and of freedom have their role in setting and developing sport training (as obviously occurs). However, in sport training, it consists of utilising a number of practical strategies in order to internalise some dynamic guidelines. When training occurs with excellent results, reflexive effort is eventually substituted by habit and one's oblivion; the sportsman immerses in practice and feels the practical symbiosis with the training tool. All of this can be objectified to a large extent with the help of the structural features of sport dynamics: it is observable, quantifiable, and experimental. In the case of intellectual learning, however, *cultivating* consists of understanding the structure of objects or eidetic regions. This understanding brings about the broadening of the intellectual configuration itself, as happens in a parallel manner with the training-body relationship.

Of course, all of this occurs according to dynamics that can be objectified and, in fact, they have been: the effort to display such objectiveness holds up the history of psychology and pedagogy – but also the history of spirituality and the approach to the phenomenon of inner growth which all religious traditions have carried out. However, the “psycho-subjective” dynamics, which are analysed there, belong to a less-attainable field with regard to empiric observation and experimenting. This is the reason why they have not given rise to orientation models as accurate as exercise routines.

It could be argued that recent advances in neuroscience, with the help of the introduction of non-invasive observation techniques (computerized axial tomography, functional magnetic resonance imaging), could modify this trend. Thanks to these advances, the neurophysiological correlates of intellectual learning processes could be observed and, thus, strategies could be implemented to improve performance both through pharmacological and stimulating channels.

It is really like that. However, following Teruel (2009), this route will never bring about the empirical

sity (the time elapsed between topics) are not mentioned ... control tests (regarding rote and creative capacities) are not followed systematically, nor are the magnitudes that give rise during the performance of taking an examination, a public examination, a job interview, etc., measured.

12 We refer to the inner or “positive” freedom, according to the designation that Isaiah Berlin (1969) made popular from his 1958 conference.

and experimental visibility that is appropriate for the general physiological processes. The reason is related to the heterogeneity of the phenomena that constitute the problem: on one hand, the electrical physical-chemical processes that occur in a living body, particularly in the synaptic networks; on the other hand, there are the subjective processes (namely, the ones associated with self-consciousness and freedom) which Chalmers (1995) has called a *hard problem* of human consciousness. Such structural heterogeneity does not allow, as a last resort, for learning processes to ever possess the empirical-experimental accessibility that is characteristic of the physiological dynamics within the specific field of sport training.

The previous reflections own an efficient linguistic correlate. In Spanish, there is a distinction between *training* (*entrenar*) and *cultivating* (*cultivarse*). The first verb is transitive: I train my body. When I say this, I admit that, by subjecting my body to exercise guidelines, I consider it to be an object of a transitive action, which comes from my conscious and free will (I can also use this verb reflexively: I train myself, I am training myself). However, the second verb appears with a reflexive suffix that is unavoidable: without this suffix, there is a range in meaning, from anthropological to agricultural. *Cultivating* can relate to many activities, from reading to enjoying a concert or visiting a museum. When I say that I cultivate, I am aware that the kind of activity that I am carrying out deals with fostering my identity and is linked, in this case, to the subjective dimension (and, therefore, to reflective self-consciousness and freedom). It is also possible to use this reflective expression to allude to sport training; practised for all-round growth (according to the ideal of *kalokagatía*), sport is an excellent way to *cultivate* or culture oneself. However, in Spanish this use can only be understood when it refers to the first meaning (to cultivate intellectually). This morphological and semantic structure, which is common in other romance languages, is equivalent in Anglo-Saxon and Germanic languages. Thus, for instance, in German there is a distinction between *trainieren* (action verb, similar to walking or running, in Spanish “entrenar”) and *sich bilden* (a reflexive verb that embodies a nuance of shape, given that *bild* means image or figure and *bilden* stands for to shape or to configurate, exactly what the spiritual growth of the human being brings about).

Despite what a hastily dualistic interpretation may suggest, the aforementioned differences (methodological and structural) can and must be the setting of unification attempts. There is currently a lot of discussion on the convergence of the different cognitive

patterns from the perspective of what has come to be called *neuroculture* (Mora, 2008). Let us discuss the matter carefully, since it is possible that ultimately we will not find a role change or opposing positions represented by two distant models, but a bridge that links sport and science, philosophy and gymnastics.

Humanities as an integrating prospect

The humanities build this bridge, by getting us to understand that man, whether a philosopher or a gymnast, a scientist or a sportsman, does not have an explicit way to know or be familiar with the world, to fulfil himself, to ask and answer questions, but that he *is* through his actions, showing himself in his aptitudes, by means of an inexorable humanization that leads him to undertake all sorts of leisure, but vital, activities. Wishes and ambitions are shared by sport and science: it is just man who thinks things over, exercising his mind; who practises sport, exercising his body.

The human being uses different languages to become familiar with, to explore, and to fulfil the following areas: scientific, sport, artistic, and religious. The key to understanding the virtuous circle that embodies the serious or productive activities and the leisure or athletic ones (unproductive) was described in Ortega and Gasset's *El origen deportivo del estado* (1996). Although it is true that they included philosophy and sport within the congratulated occupations, they thought that the access to such activities was pointless due to its unproductiveness but that its significance is vital for the human being. What man learns from them is carried over to the serious matters of life, as the sporting origin of the State proves. At the same time, serious matters lead man to seek a counterpart in vital idleness that, being unproductive and luxurious, is also necessary and inexcusable.

Why does philosophy represent gymnastics for the mind? As we know about the effect of gymnastics for the mind, we carry it in parallel to the mind, where philosophy has proportional and appropriate effects. Philosophy is gymnastic exercise for training the mind, to prevent its atrophy and to improve its performance. Although this is true from a physiological point of view, we must not forget that the real parallel between philosophy and gymnastics occurs because both represent the attainment of a tradition that has incorporated knowledge of the optimization of the mental and biological functions. Both disciplines are governed by a sort of sustained similar logic supported by biological adaptation or general syndrome of adaptation (Seyle, 1956; Verjoshanski, 1990) and are applied both

in sport and philosophy. This logic links the underlying process to the development of mind and body. As Moreno and Orduño point out, “motor learning and sport training share a fundamental principle, the general syndrome of adaptation” (2009, p. 3).

However, not all physical exercise means gymnastics (sport) and not all mental activity means philosophy. The conditions of such actions are cultural and are established by tradition, with similar underlying logic, in that they identify the mechanisms, the routines and the protocols that effectively activate the metabolic processes of thinking and exercising for their true worth, reaching final situations that are quantitatively and qualitatively superior to the initial situation. The general syndrome of adaptation, as a principle of sport training, or cognitive discord, as a key of social psychology, lays the foundation for the fact that philosophy and gymnastics make man advance by bringing him closer to the limit of his capabilities. But they must not do it on their own.

There are more reasons to consider philosophy as gymnastics for the mind. *Orandum est ut sit mens sana in corpore sano* is the famous plea to the gods written by the renowned Latin poet Decimus Iunius Juvenal in his tenth satire. He warns us that rejecting the body will be to the detriment of personal development. This brings us closer to the platonic ideal of all-round education expressed as *paideia*, which included grammar, rhetoric, mathematics, philosophy, gymnastics and (setting aside Plato’s initial reluctance to include arts) poetry.

This prospect leads us to consider that neither gymnastics achieves its effects only on the body nor does philosophy achieve its effects only on the mind. Ideally, one would cultivate the different activities involved in the *paideia* in order to achieve a well-rounded education, which only survives today as a myth and with some academic substance with the help of humanities. The distinguishing emphasis within the all-around educational process (that concerns the human being as a whole as well as its numerous dimensions) only lies in the fact that the activities that it embodies are differentiated, since man is completely affected. Both playing football and reading Plato may contribute to the human being’s all-round education, in different fields and from complementary perspectives. How to educate, according to the Greeks, which consists of *paideia*, “is based upon the search for being”, (Gonzalez, 2009, p. 64), since spiritual life deals with a supreme plan that today we call education. Although this concept remained unchanged until the end of German idealism (2009, p. 14), since then it has partially lost its identity due to weak thinking

that divides the human being “into a double structure, body and spirit” (2009, p. 65).

The human being comes permanently into play through an unceasing vital search, during which it chooses different activities whenever they historically appear as ways that lead to the true aim: knowledge, achievement, and happiness. In ancient Greece, that process involved a continuous effort to go beyond searching for virtue. Thus, the human being, who inherits such traditions, uses different languages (artistic, philosophical or sporting) as a means to be fulfilled. They are paths with crossroads that have already been taken, but they still house mysteries (new trends, new practices). In this journey, no path (gymnastics or philosophy, science, art or religion) cancels the other ones out. Even though music, literature, art, dancing, cinema, sport or science are the most genuine and spontaneous displays of human creation, as Cagigal says, (1961), from our point of view, there is something that completely distinguishes them. That would be competition, since sport is essentially a contest; confrontation, *agón*.

According to the Ancient Greeks, searching for “cosmic harmony and logic is evident in their sculpture, architecture, writing, discourse, etc.”, as educator González insists (2009, p. 67). We will also defend that this is obvious in sport, since it fosters man’s harmonious integration in nature. The evolutionary process, which *paideia* belongs to, allows feeling and thinking, as well as language, to integrate into “reason’s insoluble unity” (2009, p. 68), in which logic orientates the process that culminates in the projection of knowledge through speech. In this sense, the execution is practical, as in the case of sport. Just as the step taken from thinking of something to putting it into action (from theory to practice) represents the materialization of language in speech, sport is the implementation of sporting thinking: it is a sort of speech, the expression of body language.

Modern society often disregards the creation of knowledge. We constantly use the repetition of exercises and formulae to teach, to lose weight, to increase body volume, etc., everything except for the necessary discovery that inspired *paideia*. Thus the Greek example, which did not impose strict formulae, is forgotten (González, 2009, p. 69). Despite this uniformity, that spirit remains alive in certain extreme sports. In these sports, some sportsmen that have been selected by their outstanding technical and conditional qualities have been able to resist the typical constraint and confinement of the regulations that modern sport imposes. They try to transgress not only rules (taking their capacities to the extreme)

but also the spatio-temporal limits inherited from modern English sport, so as to give rise to new and transgressing ways that are inspirational and a model to others; where limits are not marked by regulations, but by a mixture of the sportsman's own shrewdness and brazenness. However, they are sports after all.

Paideia stood and stands for the way to integrate the world and life in the same process (González, 2009, p. 70), a process that was symbolised by the artistic works that, with the perfect harmony of their parts, achieved beauty. Such a relationship between the world and existence is fundamental to understand sport. This personifies the world of life, helps to find one's place in it and, therefore, contributes to provide it with meaning. The harmony of all the parts is the essence of gymnastics, which, in turn, is a sign of logical-transcendental harmony.

Nowadays, the master that helps a person or a child to shape his natural being is represented by the coach that teaches others a *téchne* (such as scientific and rational knowledge), far removed from a mechanistic and repetitive method that seeks to manufacture useful objects. According to González, self-improvement is being sought "with a respectful responsibility that freely exercises liberties, shared by obligation as the fulfilment of a reflective and critical thinking that puts men and things in their place" (González, 2009, p. 67). This modern function of sport was already favoured by Ortega and Gasset (1996, p. 610) when they described it as a superfluous effort that is, however, the "highest, most serious, and most important activity in life". This activity was represented, as Ortega reminds us, by the Greek athlete and the *askesis* that was "the athlete's way of life, full of exercises and hardship" (1996, p. 617); its background comes from the sporting origin of the state. When Ortega considers sport to be a *vital luxury*, he puts it on the same level as philosophy within those luxurious activities that are not practical but essential due to the importance of the experiences achieved through them, activities that are later courageously transferred to life. In this sense, both philosophy and sport are hermeneutics that help to transmit and experience on its own matters previously considered obscure.

We must insist that, on account of this, it is not compulsory to stick to any kind of sport or philosophy. There good books and good exercises (or even better, good readings) that incite reflection, and good sport practices that make excellent experiences possible. Whoever practises them, plays them, or exercises them must judge how valuable they are, which is to say, their anthropological performance.

Gymnastics is a philosophy for the body

Sport undresses both the human being's body and soul; sport practice occasionally frees it from cultural artifices and helps it to become aware of its capabilities and limits. With this *nudism* (already practices in the Greek *gymnós*) physical or even moral balance can be achieved. In this sense, sport is bodily philosophy: it contains a sort of wisdom that brings it close to sciences, humanities, or arts. This higher knowledge is what can be achieved through the body, with the body, being a body, and becoming aware of it.

Sport and happiness

We must remember that sport and philosophy, according to Ortega and Gasset, is a congratulative occupation. Wisdom and happiness walk hand in hand through sport (Plato), since sport is a (congratulative, vital) type of leisure whose knowledge we valuably translate to the rest of life. The main reason why it is justified that gymnastics is a philosophy for the body is health, since it gives way to making the series of exercises and movements necessary to reach balance and beauty coherent. The World Health Organization describes health as overall physical, mental, and social wellbeing and not only as a lack of illness. This definition is very close to Boethius' suggestion of happiness (*beatitudo, felicitas*), to which he considers to be the perfect state since all goods gather in it: *beatitudo est status omnium bonorum congregatione perfectus* (1997, book III, prose 2, 3)

For Ortega, sport and philosophy are activities that man practises without being forced by an imposed necessity, which leads us to consider sport activity "as basic and creative" (1996, 610). Thus, sport sets itself up as the person's fulfilling enterprise, as a chance to reach something more than health itself, that is, as a way to reach perfection. Health would be one of the prerequisites of happiness and sport one of the congratulative occupations that man does for pleasure, in contrast to work activities, which would be unpleasant and necessary. Sport must aim to be a social enterprise and an existential activity for that luxurious, sporting, and happy man.

One could ask: why such determination, such effort, strength, resources, etc. to run, jump or throw, when we can run faster, reach higher and further, or throw almost without limits through other means such as cars, aircrafts, cannons, etc.? The athlete seems to be reminiscent, a survivor of that age in which man did not have other means, other devices, and other tools. This may happen because through these activities we

get close to our limits in order to achieve virtue – even though this deals with or only consists of persistence, perseverance, or discipline. Everybody knows that the biggest and the most powerful sensation of speed is provided by the movement of one's body when it is moved by itself. The sensation of flying is bigger in a vertical *détente* or in a high jump than in a journey across the ocean on board of a Boeing. We need to live these experiences or have others do them for us.

It is the apparent uselessness of sport which brings it close to philosophy. Diem (1966, p. 7) accurately described how valuable sport is for the human being and the stage in which it is different from animals playing:

Playing is used by nature for preparing living beings for their lives. Both man and animals play: animals stop playing when they have developed; in man, the impulse to play continues, but it changes (...) beginning at a certain age, it achieves a spiritual content.

At this point, Jurema and Garcia (2002) warn us about the abyss between the two: playing is “an experience of that which is sacred and sport an experience of that which is profane. It is common to connote playing to religious festivities (which bring back the past) and sport to the industrialization of society, thus causing a huge break with ancient thinking” (p. 224).

Nevertheless, and overcoming these discrepancies, we can conclude that man's higher longings lead him towards an unceasing and vital search, for which sport is a basic resource. In this sense, Carl Diem maintains that for man, “playing is the way of completing himself, that is to say, of perfecting himself bodily, spiritually, and humanely” (1966, p. 7).

Sport and ethics

As a bearer of joyful experiences (at least, due to its capacity to evoke paradise), sport has a eudemonic dimension that situates it very close to ethics: “because man's freedom is also fed by rules and self-discipline”, says Ratzinger (n.d., ¶ 6). The human being is a moral being that is governed by rules and customs (*mores*) passed on through the process of socialization¹³. It is unnecessary to mention that modern sport has a vocation for being respectful to rules, for teaching how to obeying them, and for appreciating their fulfilment. This function contains the change from heteronomy to moral autonomy, where the child that plays transfers the respect for rules that playing has imposed on – or proposed to – him throughout the

13 In its historical dimension, this process has been considered by Elias and Dunning (1992) to be a process of civilization-sportiveness.

rest of his life. Such incorporation of rules shapes a character that puts itself before the impulses and the interests that prevail in other activities. Sport is a school of values¹⁴. It deals with a magical process: a simple line drawn on the court acquires symbolic power that limits or allows our movements and that has the power to build up our thoughts in assimilating and fulfilling the agreed upon rules.

Furthermore, in sport practice, as an expression of the unceasing search for the *eudaimonia*, we find some essential elements of the human being: competition (*agón*), chance (*alea*), simulation (*mimicry*), or vertigo (*ilinx*), described by Caillois (1986); or the three categories that make up the foundation of sport according to Garcia (2005): playfulness, performance, and improvement. In sport, the fight for victory is lived as a game that also provides joy, pleasure, and wellbeing. It is a silent, implicit agreement that goes beyond that which is exalted by Machiavelli's *The Prince*, or Rousseau's concept of social contract. To the individual, this acceptance of rules is a process of internalizing reality that has been described by Berger and Luckman (1986, pp. 164-165). As an objective event, such rules “become subjectively significant to me”, due not to arrangement, inhibition, or delegation to a supra-individual entity, but as an evident necessity exhibited when meeting with others (as an expression of empathy).

Thus, when we comply with the gymnastic or sport practice, we are seen as naked, causing and feeling admiration. Then we understand that gymnastics fulfils the same function for the body as philosophy does for the mind: it feeds and arranges, as a prerequisite to embark on the path of perfection and excellence. Therefore, they are propaedeutics for essential reasons. Sport is a moral philosophy that disciplines body and mind, that is, man. Not in vain, polisemy allows the division of sports and sciences into disciplines.

Sport as a symbolic activity and the opening to transcendence

We defend that sport is not a science, but it is a subject for study. However, it is also a human activity;

14 Moreover, it helps to develop the moral consciousness, to decide between the good and the evil, not through the sport score (which links the winner to good and the loser to bad), but from the perspective of heroes and villains faced with the experience of victory and defeat, of showing off and of the way to reach it (to know how to win and to know how to lose). Regulations display rules that are an application of higher laws and principles (usually following them) and that we accept to fulfil through the implicit commitment and through an autonomous way, which is similar to the assumption of divine precepts.

thus, it can become (and, in fact, it becomes) a way of knowledge and, therefore, to some extent a science¹⁵. How can this paradox be resolved?

Sport offers a way of being; therefore, it unites and dissolves the distinction between theory and practice, melting it in an experience of oneself where subject and object are mingled. From our experience, some sports (called extreme) seem to seek certain transcendence and try to go beyond their own limits or fight unceasingly to find real horizons that make sense regarding existence. This occurs in the mountains, according to Pereira, where the mountaineer risks everything (even his life) to reach a peak, a summit, an goal (2005); to scan a new horizon, through a path that is undoubtedly inner and spiritual. It occurs when we seek sporting records. We put forth such effort to beat a record, to attribute a symbolic value to an objective arbitrary datum: metres, seconds, etc! In this regard, Ulrich (2005) affirms that “to celebrate an exception of a limit means to be eventually the affirmation of the limit itself” (p. 250). Even if only for this, the symbolic (perhaps metaphysical) value of sport would be justified.

These experiences do not constitute a unique patrimony of sport and sportsmen. Philosophy and philosophers experience something similar when they, beyond common sense, venture and surmise rational explanations that are linguistically unfathomable and impenetrable for the profane to understand, just as a gymnast executes incredible acrobatics to solve what would be impossible challenges for someone else. All in all, philosophers and sportsmen risk body and mind to find certainties and foundations while trying to respond to one of the essential questions: who am I?

This opening to transcendence indicates the finite character of the human being. Given that limits reveal us our finiteness, their acceptance and their being overcome open up a mystic or ascetic path, as evident in Eastern pseudo-sporting practices that pursue inner balance (for instance, yoga or taichi). In other cases, the confusion that brings about the foreseeing or the presence of death as a radical experience is apparent in some risk or adventure practices, which can put us on the verge of delirium or of going mad, which puts our existence at physical or mental risk (they make the foundations of conventionalisms to which we submit when thinking or acting tremble). Passion, the impetus that leads man to seek beyond the limit, to do what no one has ever done, or to think

what nobody ever thought, reveals a desire within the human being. Ratzinger (n.d., ¶ 4) interprets it as the searching for paradise, where “the game appears as a sort of returning to the first home (...); as a run-away from the daily routine, with its slavish tough reality”.

In this sense, sport allows the human being to try out life just as it was created by God in paradise, which helps him to be self-disciplined. For Ratzinger (n.d., ¶ 6), this return to Eden, caused by sports like football, teaches both the sportsman and the spectator “to cooperate with the others within a team, showing them how they can confront others nobly”.

This interpretation provides sport with a theological meaning. Sport shares with religion the feature of being an anthropological universal, already evident in many funeral games where the *homo deportivus-religiosus* appears. The opening to transcendence that game and sport foster occurs because sport constitutes “man’s metaphysical property” (1959, p. 33), according to the humanist Cagigal.

Afterword

The interweaving of mind and body becomes explicit, as well as evident, through the study of the relationship between philosophy and gymnastics. We have discussed two basic approaches to reach this conclusion. The former has stated why philosophy is gymnastics for the mind; the latter has allowed us to understand gymnastics as a philosophy for the body. By analysing the matter thoroughly, we do not find a role exchange or opposing opinions represented by two distant models, but a bridge that links sport and science as in the case of philosophy and gymnastics. Thus, theoretically, sport philosophy helps to overcome old, problematic dualisms that in fact have already been overcome (they have always been) in sport or art, as well as in other human displays.

Based upon the ontological-evolutionary unity of the universe (and of its structural heterogeneity) we can propose educational models that recast the value of *paideia*, inaugurated in classical Greece; models in which the human person is viewed as the product of a sum that contributes more together than its individual constituent elements, to which it cannot be reduced. According to McKusick (1989), chairman of the HUGO (Human Genome Organization), “the most common and no less tangible risk that can accompany achieving a complete map of the human genome is to think that we know all that we have to know about man”.

15 Nevertheless, to Cagigal (1968), physical education would be a (humanistic, among the education sciences) science, since it fulfils the conditions of Kantian scientific nature.

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