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Part II

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Human Energy

Philosophical-Anthropological Presuppositions of Anthropogenic Energy, Movement, and Activity and Their Implication for Well-being

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ABSTRACT

In this paper I focus on rather neglected considerations regarding human energy, movement, and activity, instead of joining the well-developed discourse on sustainable electricity production and moderate energy consumption. Thereby the paper elucidates a more holistic understanding of energy, since it is usually assumed that when considering energy – in most cases – people engaging in this discourse, refer to electricity. The paper grounds the phenomena of human energy production and consumption on the anthropological fact that humans are active and moving – and essentially need to be moving, in one way or another and as long as they are alive – for the sake of their and others' well-being. Such a philosophical anthropology of energy, movement, and activity can, for example, be traced back to philosophic-anthropological claims in the oeuvre of Aristotle who regarded different kinds of activities or movement (both understood here in a broader sense) as essential for the well-being of both individuals and society because they foster and actualize human creativity and fulfillment. Relating the anthropological centrality of human movement to the current discourse on (alternative) energy production and consumption, the paper develops a more holistic ontology of energy. The objective of this paper is to promote this holistic understanding of energy as activity and movement in order to encourage a more wisely selected and limited substitution of fuel- and electricity-powered machines with human-driven movement. Such a broader understanding of the energy concept will not only save electricity and fossil fuels, but will also potentially increase the well-being of humans, society, and the natural environment.

Keywords: energy; philosophy of energy; energy ethics; anthropology of energy; energy humanities; sustainability; philosophical anthropology; well-being; aristotle; movement.

1. INTRODUCTION

In this paper, I focus on philosophic-anthropological considerations of human energy, movement and activity broadly construed. Movement and activity are understood here as social, bodily (physical or corporal), intellectual and spiritual activities. Philosophical anthropology is the study of human nature and the human condition in an effort to understand individuals and social entities in their environment and in their role as value creators (including ethical values). The paper will not cover ethical implications of energy understood as mere power or electricity production, distribution, consumption and waste since these considerations are widely covered in the discourse of energy politics, energy studies, and energy sustainability.

I claim that the substitution of human activities by electricity- or fuel-consuming devices, which implies a reduction of social, bodily (physical or corporal), intellectual and spiritual activities, is not always beneficial for the well-being of humans and often also detrimental to eco-environmental well-being. This is obvious and evident in the case of bicycle riding and walking – instead of using individual engine-powered vehicles for distances and routes that comfortably can be managed by foot or on the bicycle. Other examples concerning the restriction of human movement are the almost unlimited and consistent use of social media, escalators, elevators or calculators. On the other hand, meditation or practices such as yoga or tai chi can be activities that activate and enhance human movement in a holistic way.

In discourses on energy politics, energy studies, and energy sustainability, energy is usually understood as electricity, or kinetic energy, but in fact the word energy can refer to a multiplicity of forms, such as social (interpersonal), bodily (physical or corporal), intellectual and spiritual dimensions of human and non-human life. The Greek word *energeia* means “activity, action, operation” and is a combination of *en* “at, in on, into” and *ergon* “work, action, business” (etymonline 2018). The English word *work*, the German word *Werk* “opus, product of work”, as well as Greek word *ergon* stem from the proto-indo-european root **werg*, meaning “to do” (etymonline 2018). The Greek word *energeia* offers a variety of translations that are broader than the concepts of energy and power we use today following the influence of natural sciences and engineering. Such wider understanding of energy is employed, for instance, in a paper by the Filipino philosopher Agustin Martin G. Rodriguez (2016). He epitomizes cities not only as places of high energy consumption (especially electricity), but also as powerhouses of energy production, especially in

the sense of creative energy (which, by the way, most often consumes electricity too). Similarly, the writing of this paper is not only consuming electricity, for my laptop, internet, and air-conditioning or heating as well as physical human energy, but it is also releasing and channeling creative energy and engaging in thoughtful activity of the author and hopefully the reader, both of which are, in an Aristotelian sense, intellectual activities of the soul. Rodriguez' account of energy does not serve to justify the higher electricity consumption by city dwellers, compared to dwellers in rural areas. Rather, it broadens our understanding of energy, including the production of culture and technology with the help of human creativity. In a similar way, I propose a more holistic notion of energy that considers all human activities and movements as forms of energy.

2. ARISTOTLE'S ACCOUNTS ON MOVEMENT, ACTIVITY, AND ENERGY

Aristotle's theory of movement and activity – probably the first systemic account developed in the western context – permeate his ethics, politics, sociology, psychology, philosophical-anthropology, metaphysics, physics and aesthetics. Although one might find references to similar themes in Plato, investigating the less systematized accounts on movement, activity, and energy in his dialogues exceeds the purpose of this paper. However, in a few instances references to Plato will be given, especially in the case of striking similarities between the two or when it will be worth mentioning a significant Platonic concept related to activity, movement or energy.

This paper brings together four types of movement already addressed by Aristotle: social activity, bodily-kinetic energy, intellectual activity and spiritual engagement. Here, I do mean to apply to the energy discourse neither Aristotle's metaphysical concept of the unmoved mover nor that of causality. In fact, Aristotle's theory of causality is not essential for the explanation of the importance of the four categories of movement for holistic well-being. Moreover, addressing the implications of Aristotelian metaphysics for various energy discourses is worth a separate investigation, one that focuses especially on *energeia* (being-at-work) and *entelecheia* (having-a-target-in-itself). It suffices to say that Aristotle's notion of *eudaimonia* (not perfectly translated in English with “well-being”, or “happiness”) is an activity of the soul in which the realized soul is the *entelechia*, the actualizing dimension of the human being, meaning that some sort of energy is needed in this process of actualization.

The orientation of current energy politics, energy studies and energy sustainability is aimed to find the best possible options to effectively produce the same or more amounts of power (especially in the form of electric energy) from alternative or renewable sources. This should be accomplished with the least possible environmental impact while minimizing consumption or optimizing the efficiency of devices and systems. In the context of these energy discourses, the aspect of human activities and movements that produce and consume energy should not be neglected, especially if the impact on non-human environments, ecosystems, and human health is taken seriously. In fact, energy is produced and consumed in any kind of human practice. For example, the current legislation to ban older diesel cars in highly polluted areas of some German cities such as Berlin, Munich, and Stuttgart could lead to an intensified use of bicycles, especially if the diesel ban would go hand in hand with an optimization of bicycle lane infrastructure. The reduction of engine-produced energy and movement and the corresponding increase of human activity would benefit not only the health and well-being of the individuals who are directly riding the bikes, but also that of other city dwellers and the overall environment.

Four categories or domains of human energy, movement, and activity are of interest for my reasoning: social activity, bodily-physical, movement, intellectual and spiritual. The most evident category is bodily energy, movement, and activity. Specific human activities that are not in a similar fashion accomplished, neither by animals nor by machines (yet), are intellectual (e.g. thinking, academic discourse, poetic activity) and spiritual (e.g. contemplating, meditating, praying), both of which consume bodily energy and at the same time create intellectual or spiritual energy. By social energy, movement, or activity I do not mean (in the first place) “social movements” such as feminism or the green movement but inter-individual activities such as friendships, activities shared among individuals with dedication and a certain seriousness (e.g. a band of musicians or a seriously committed group of individuals constituting a start-up). In the following sections, the investigation of human energy, movement, and activity will start from the public sphere where human beings interact – the social realm – and then move the most personal, intimate dimension, or the spiritual realm, via the corporal-physical and the intellectual domain of human activity and movement.

3. ENERGY, MOVEMENT, AND ACTIVITY IN THE CONTEXT OF SOCIAL CONNECTEDNESS

The list of philosophers, sociologists, and psychologist who have emphasized the relevance of close and intensive social relationships is long. Plato and Aristotle dedicated entire books (Plato: *Politeia* and *Nomoi*; Aristotle: *Politics* and *Nikomachean Ethics*) which discussed the ideals, values, and goals of social entities. Plato even thought of a limitation of the size of city-states so that the quality of relationships is not hampered by its quantity. In his dialogue *Nomoi*, he limited the state to 5040 households (Plato 1997, 738a-b), a number that is mathematically expressed in the term 7 (factorial 7, calculated as $1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7$).

Empirical research on Alzheimer's disease and depression shows that intensive social relations among individuals, such as friendships, have preventive, alleviating, and possibly even limited healing effects. Real world social networks have protective influences on cognitive functions among the elderly (Crooks et al. 2008). High-quality social connections with family members and friends are associated with reduced symptoms of depression (Werner-Seidler et al. 2017) as well as across three age groups: younger adults (16-34 years and can mediate it; Cao et al. 2015). Moreover, meta-analytic research suggests that social relationships reduce morbidity (Holt-Lunstad, Smith, and Layton 2010; PLoS Medicine Editors 2010).

Although the overall activity in virtual or electronic so called "social networks" increases year by year, a simple thought experiment demonstrates that people prefer real live social contexts – at least for some cases. For example, if we asked the participants of an academic conference – that is, individuals who decided to attend a gathering in their own field of interest – if they prefer to meet and conference online or face to face, they will most likely favor the latter for the sake of more genuine and authentic interactions.

The Aristotelian understanding of movement and activity will be repeatedly revisited and cursorily elucidated here. In his *Politics*, Aristotle defined human beings as social by necessity (*zoon politikon*). That is, human beings are by nature social and therefore political animals (Aristotle 2009, 1253a2-3). This is an anthropological datum, part of the human condition. We are – for the most parts of our lives – not *solivagi*, not lone individuals roaming around the planet, but social beings who are necessarily socially networked. We naturally develop and flourish in the context of social assemblages. Energy expenditure in the social realm occurs, for example, for procreation (Aristotle 2009, 1252a24-b9), and

for the composition and management of social entities such as families, communities, and nations (Aristotle 2009, 1252b10-27). The creation of such social groups is not only anthropogenic, but biological in an Aristotelian sense. It occurs by “nature”, as much as being human animals means – from a modern standpoint – being fundamentally organic and evolutionary. For this growth, development, management and flourishing, energy expenditure is essential.

Aristotle devoted books VIII and IX of his *Nicomachean Ethics* to the phenomenon of friendship. Before delving into the highest type of friendship, Aristotle elaborates on friendship of utility and that of pleasure. However, only friendship of virtue, or excellence, is the only real and best type of friendship. Therefore, for Aristotle, friendship of virtue is the most important, and rare, form of social relationships: “No one would choose to live without friends, even if he had all the other goods” (Aristotle 2018, 1155a). Exceptions are hermits, like those still found in the Qadisha (Kadisha) Valley in Lebanon (a UNESCO world heritage site) or literary figures such as Joris-Karl Huysmans’ hero Des Esseintes in his book *Against Nature* (2011). Such individuals prefer to live their lives almost without human company¹. However, these cases seem to represent exceptions. For instance, from a radical traditional African social-philosophical perspective, an individual without deeper social relationships could be considered not a “person” in the sense of a fully realized human being (West 2014). Consider, then, the majority of so-called Facebook “friends” and the reason why they would not fall, generally speaking, into this exclusive category. The requirements become stricter in the virtual environment. We would need to update the Aristotelian theory of friendship in order to make sense of Facebook friends. We need to open up three additional categories plus hybrid forms, in which Facebook friends are also friends in the “real word”. Online friendship of utility, pleasure, and virtue are ontologically more remote than real world friendships and require less holistic interaction. As trivial as it may sound, it is impossible to hug an online friend. And yet, this observation is not unimportant to consider how energy may flow in friendly relationships. Research that differentiates between real word and online interaction is still at its inception, but some early findings show that in real world interactions the brain is more active than in online interactions (Camerer and Mobbs 2017). Again, in the real world friendships of virtue are rare and require energy in the form of quality time spent together as well as

¹ *Against Nature* is the “poisonous French novel” that leads to Dorian Gray’s demise in Oscar Wilde’s novel “The Picture of Dorian Gray” (Wilde 2015).

familiarity that is established by time spent together and shared activities (Aristotle 2018, 1156b). What is important in the context of energy consumption and production is the quality of activity or “movement” that takes place between “virtuous” friends (that is, movement in a broader sense). It is a mutually supportive and constructive relation in which one friend wishes the intellectual and ethical improvement of the other and himself. Energy expenditure is taking place for oneself as well as the other. Real friendship is a genuine, in-depth, holistic social interaction for the benefit of all friends involved. Due to this sincere and integrated nature in which a friend interacts with the other, several mutual benefit arise, and with them increases the energy expenditure. In turn, that has positive implications for well-being and creates a fruitful dynamic among friends, namely a form of energy in a wider sense.

4. HUMAN PHYSICAL ENERGY, MOVEMENT, AND ACTIVITY

In their descriptions of ideal city-states Plato and Aristotle also pointed out the benefits of physical activity; Plato in the *Politeia* (Plato 1997, 452a-d, 521e-522d) and *Nomoi* (Plato 1997, 660a-d, 832d-833d) and Aristotle in the *Politics* (Aristotle 2009, 1336a-1339a). From an Aristotelian point of view, movement in living beings originates from the soul. For plants movement means growth, for animals it means movement through space and procreation. The soul is the entity that moves the bodies of plants, animals and humans (Aristotle 2016, 407b). Bodily movement is just fulfilling one of the strivings of the soul. A body that is moved, motivated or animated by the soul, is alive and usually healthy, as long as it moves. At this point, it is also interesting to point out that Aristotle’s school was called *peripatos*, after a large public building where teachers and students walked around (gr. *peripateo*) while philosophizing. This took place in the middle of a polis, Athens, and not in some secluded or hidden place, unlike philosophizing in the Pythagorean or Epicurean schools. Interestingly the process of thinking and discussing with others, while walking can be traced back to Socrates (as described by Plato), for whom social, physical, intellectual and spiritual activity as well were essential components of a good human life.

Since industrialization, the shift from bodily movement to technologically-aided one has significantly intensified. This is the case, for example, in everyday routines that are supported, or have been entirely taken over, by machines, such as electric toothbrushes, escalators, elevators, cars and the like. We consume electric energy and different kinds

of fuel in order to save time and physical human energy. Paradoxically, the lack of movement in everyday life due to motorized transportation is often compensated by workout schedules, for example in gyms, where energy from human body workout is so far (in almost all gyms) not recovered. Conversely it could be imagined, that at least part of the electricity needed by a gym could be produced by energy resulting from human workout routine within the gym itself. So far, gyms, which are potential power plants, consume electricity rather than producing it.

Finally, medical research suggests that every additional minute of moderate activity such as walking, cycling or swimming successively increases long term health benefits and lifespan (Musich et al. 2017; Warburton and Bredin 2017). Interestingly, such health benefits are not only physical, but also psychological. For example, studies demonstrate that physical activity contributes to the decrease of symptoms of depression (Korczak, Madigan, and Colasanto 2017).

5. “MOVEMENT” AS INTELLECTUAL ENERGY CREATING ACTIVITY

The notions of movement, activity and energy are often used together with the word “intellectual”. “Intellectual movement” refers to a broader scope in thinking, such as the intellectual strive for critical thinking during the enlightenment period. The German proto-romantic poetic movement *Sturm und Drang* – promoted among others by Friedrich Schiller and Johann Wolfgang von Goethe – has in its title terms that connote movement, energy, and activity: “Sturm”: storm and “Drang”: stress, urge, drive, or thrust. The term “intellectual activity” is self-explanatory and widely used like in the sentence “playing chess is an intellectual activity”. Intellectual energy describes potentials or virtues of persons or groups. For example, a think tank is assumed to have a high potential of innovative and intellectual energy.

Bio-physically, metabolically, and ecotrophologically this activity of the brain consumes energy. In German culinary tradition a special mixture of different nuts and raisins, which is high in carbohydrates, fruit-sugar, poly-saturated and unsaturated fatty acids, used to be called *Studentenfutter*, translated “student food”, since it is assumed that nuts and raisins provide a balanced mixture of nutritional substances needed for studying involving an intense energy consuming activity of the brain.

There exists empirical evidence that intellectual activity mitigates Alzheimer’s symptoms (Park et al. 2013) and it may even have some

limited preventive benefits. One could at times get the impression that the movement (activity) of the mind drags along the body. In the intellectual milieu, elderly persons can be observed having difficulties moving their bodies, but their minds often are still sparkingly active. Examples of intellectually active centenarians were the German philosopher Hans-Georg Gadamer (aged 102) and the artist, photographer, and filmmaker Leni Riefenstahl (aged 101). Many forms of learning something new or additional have health benefits (Narushima 2008; Merriam and Kee 2014). In Plato's *Dialogues* and Aristotle's writings we find numerous accounts of the importance of intellectual activity, especially philosophical activity understood as essential for a virtuous human person. While physical movement in many instances means life (an exception Aristotle mentions is Thales' claim that magnetic stones move and thus must be alive), meaning the life of plants, animals and humans, intellectual movement or activity is signifying human life in particular, so Aristotle in *Peri Psyches* (404a-410a). The human being's signifying part – according to Aristotle – is the intellectual ability, and a lifestyle according to this specific human ability is the best possible form of life (1177a20-35).

6. SPIRITUAL “ACTIVITY”, “MOVEMENT” OR CONTEMPLATION

Spiritual energy may sound quite “esoteric”. However, praying, contemplating, or meditating consume human energy due to bodily or brain activity (Grossman et al. 2004; Ross and Thomas 2010). Conversely, spiritual activity can be seen as a form of energy production. The allusion to electric energy is quite obvious in activities such as meditation and guided imagery practice which are deemed useful to “recharge” a person's “battery”.

Today, spirituality is understood in a relatively inclusive sense and therefore does not apply to religious spirituality exclusively (Spohn 1995, 112). Intensive contemplation of artworks, meditation, or the contemplation of nature are examples that fall within a wider set of experiences and thus not necessarily religious spirituality. William C. Spohn distinguishes between “lived” and “reflective” spirituality. Lived spirituality refers to a state of mind or experience of inner well-being and/or positive transformation in relation to “reality's deepest meanings” (Spohn 1995, 112). Reflective spirituality is a second-order analysis, interpretation, and academic discourse of lived spirituality. Reflective spirituality “stands for the second-order interpretation and communication of this dimension of experience as experience. It employs theological, historical-contextual,

artistic, anthropological, and hermeneutical methods to analyze the lived experience” (Spohn 1995, 112). Reflective spirituality thus is an intellectual activity.

Aristotle’s understanding of the contemplative life as the highest form of *eudaimonia* in the *Nicomachean Ethics* could be interpreted as both these kinds of spirituality combined (lived and reflective). According to Aristotle’s *Peri Psyches* – it is the *nous*, the intellectual “part” of the soul, that becomes active. Then, in *Nicomachean Ethics*, he writes: “contemplation is the highest form of activity, since the intellect is the highest entity in us, and the objects that it apprehends are the highest things that can be known” (1177a20-35). Although this activity can be practiced in solitude by a self-sufficient person, “it is better with the help of fellow-workers” (1177a30-b). We find here the combination of two kinds of “movement” or activities as a sort of requirement, that is the involvement of two or more virtuous persons (friends) in contemplation. Aristotle also opined that the highest form of *eudaimonia* is based on a lower form of *eudaimonia* that can be practiced by everyone who lives a virtuous life as a *zoon politikon*, in a social virtuous context. Admittedly, even being simply a virtuous person requires energy expenditure.

7. CONCLUSION

The intention of this paper was to challenge the notion of energy as power/electricity and open up the concept through an investigation that elucidates how human movements and activities relate to a fulfilling life. Human movements and activities which consume, but also generate, energy in a broader sense can manifest in four anthropological dimensions. In the inter-individual realm or the social sphere, physically, which is the most evident form of human energy, but also intellectually and spiritually, which is *prima facie* not that obvious. The paper grounds its philosophic-anthropological account in some parts on the Aristotelian oeuvre, but an investigation in Socratic and Platonic understanding of energy, movement, and activity should be pursued elsewhere. The objective of this paper was to promote a holistic understanding of energy as activity and movement in order to encourage a more wisely selected and limited substitution of fuel- and electricity-powered machines with human-driven movement. This broader and more holistic understanding of the energy concept is going to save electricity and fossil fuels and it will potentially foster the well-being of individuals, societies and the natural environment.

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