Historyka. Studia Metodologiczne, XLIII, 2013, ss. 151–162

The Utility of Knowledge: Between Power Over the World and Part of the Emergent System

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Abstract

This article deals with the problem of the knowledge's utility. This issue is considered from three perspectives. The dualistic perspective is based on the two-component structure: knowledge–reality; the subject–the object. In this regard, the knowledge's utility is measured by the measure of the power that can be obtained over the world. From the monistic perspective knowledge is useful if it allows the internal improvement of the bearer of the knowledge. Knowledge in terms of the emergent system arises in the fluid cognitive relationship between components of changing system. Relations between the system (whole) and units (part of) are variable and undetermined by the specificity of the individual components which are also reciprocal and mutually forming.

Key words: knowledge, system, history, culture, emergency

Questioning the value of knowledge is never innocent. The mere fact of this evidence of thinking and the development of science and human knowledge was, for many centuries (or even millennia), seen as traitorous or at least unworthy. Scientific thinking constituted itself as a form of rebellion against a purely utilitarian use of knowledge.

Pythagoras, Socrates and Plato in fact coined the term philosophy — an (unselfish) love of wisdom — as opposition to the professional group which mastered and perfected the art of selling knowledge and skills, the Sophists. The Sophists called themselves "intelligent" and "wise" because they neither lacked knowledge or practical skills. Being the pioneers of knowledge, they commercially engaged in advising the political elites and the education of young men from wealthy families.[1]

For the Greeks of the 5th century this was a practical, natural approach which characterised the Sophists. However, they were suspicious of the intellectual activities that did not relate to earning and was related to the

1 W.K.C. Guthrie, *The Sophists*, Cambridge, London 1977, pp. 31–38.

reflection on the nature of society and morality.[2] Socrates, whose aversion to profit based on skills was widely known was accused for worshipping foreign divinities and therefore destroying the old, traditional belief, because for the ancients, that which was not useful (like the artistry of the Sophists) had to be religious. That which did not belong to the practical (*profane*) sphere had to belong to the mystical (*sacred*) sphere. Therefore, if Socrates so strongly deprecated the idea of earning based on knowledge and the eloquence of the Sophists, it meant, in the opinion of many, that he was a mystical preacher of some new gods (which obviously constituted an insult to the gods of old, angry with Athens and punishing them with pestilence and military defeat). The anger which Socrates excited largely resulted from a misunderstanding that one can search for knowledge which, not being practical, is neither mystical nor religious. Socrates, who subjected himself to punishment, appeared very determined to selflessly serve the truth even at the cost of his life.[3] His Sophist alter ego :Protagoras denied and did not believe in the existence of gods but his opinions were regarded rather as mental puzzles — paradoxes, with the help of which he educated (for profit) his students. Although Protagoras was not regarded as a grave threat towards the public order as Socrates had been, he was sentenced (once) to exile (his works were publically burned).

Socrates' life sacrifice, however, firmly established a new style of thinking accepted by his disciples Plato and Aristotle. Even though he received payment for their teaching, he already believed that knowledge was a value in itself.

Some time later, Euclid was asked by one of his students what the benefits of education were based on his own evidence. He ordered his servant to give the young pupil some spare coins because the student "had to have some profit from his education."[4] Archimedes, who was able to apply his knowledge practically (for example, regarding the gold content of a crown or in building cranes, pumps and war machines), was above all a scholar absorbed in the search for universal knowledge about the relationships between beyond earthly entities and ideals. It can be said that he did not live in our world but in an ideal 'other' earth. He found himself in such a state of

2 Jacquelline de Romilly, *The Great Sophists in Periclean Athens*, Oxford 2002, pp. 20–28.

3 Сергей Николаевич Трубецкой, *Метафизика в Древней Греции*, Moskwa 2001, pp. 412–426.

4 Bertrand Russell, *The History of Western Philosophy*, New York 1945, p. 211.

"beyond earth" during the storming of Syracuse when in the midst of murder and conflagration he calmly calculated the area of a parabola until a legionnaire's sword killed him.

The death of Archimedes from the hands of a soldier is a sublime illustration of the phenomenon of the scholar focusing on their work. Comic sights are so-called "rocking in the clouds", scientists cooking pocket's watches instead of eggs or parading around town with a kettle full of hot water in their hands. This focus, in which all realities apart from the reality of the problem under consideration are ignored (or negated), is comparable with the mystical ecstasy and concentration of Zen masterpieces focused on actions to such an extent that it undermines the utilitarian sense of that action.

The conviction that a thinker has to isolate themselves from the temporal aspects of the world in order to fully solve all possibilities was accompanied by the "Middle Age" scholar. Universities of the Middle Ages were so designed as to sustain the "entire world in themselves", they were an autonomous *universum* in which scholars and students would be able to hone their skills in search of universal truths, particularly those which do not relate only to the problems of the current moment.

Modern times rehabilitated the thought that was practically oriented and a pragmatic criterion of general knowledge. The effect of this change in attitude was a turning away from scholasticism (officially: "academic" knowledge based on purely intellectual speculation) and a turn towards magic — anathema knowledge, but that which brought with it the promise of usefulness. A common foundation of modern magic and science was the conviction that all phenomena in the world are linked together and that the man who understands the nature of these relationships will be able to manipulate reality according to his will. Relations had the character of a synchronized union between the macro- and micro-cosmoses which were the subjects of interest in astrology, studied by both Tycho Brahe and Kepler. Alchemists, among which Isaac Newton is included, researched the process of "maturation of metals in the "womb" of the earth and tried to reconstruct and speed up this process in their crucibles. Machiavelli and Hobbes studied the relationship between the nature of man and the nature of power in search of the best way of exercising it. To this end, the concept of "natural law", understood as inscribed in human nature as an operational algorithm was developed which guaranteed compliance with the maximum effectiveness of any measures taken in social and political relations.

The use of knowledge was based on perspicacity in which were visible, yet hidden from untrained eyes, the relationships between different phenomena present in the world. Because the perception of classified links between all sorts of seemingly separate phenomena guarantee the quality of knowledge, the quality of its utility potential follows the ideal of a thinker of modern times who was taught not only insightful and critical, but also extremely broad-minded horizons. Galileo Galilei, Francis Bacon, Descartes, Hobbes, Spinoza, Newton, Montiesquieu, Adam Smith, Hegel and Marks are thinkers who undertook research in a variety of areas, trying to put the entire universe and its empirical facts, both known and potential, into one logically coherent system of propositions. The pursuit of theory means that the most general-purpose cognitive perspective resulted from an understanding between the relationship of knowledge to reality and the relationship between the encrypted and the decrypted message. The world, nature and history are in this view news, the meaning of which is hidden from profanes but which can be read by a man skilled in the art of finding regular and solid relationships in a tangle of seemingly random phenomena.

The formation of knowledge is thus a struggle between the researcher and reality; the reward for this effort is not only knowledge itself but also the ability to influence the reality, which after being "decrypted" gives the researcher a "possession." The relationship of the study is in terms of obtaining the modern domination, it is a form of conquest, taking possession, subjugating and manipulating.

This way of thinking might be called "dualism" and is based on two-element structures:

- binary relationships of correspondence between knowledge and reality
- binary relations in opposition:
  - knower (active) — reality known (passive)
  - true knowledge (corresponding to reality) — incorrect knowledge (not corresponding)
  - useful knowledge (allowing mastery over reality) — useless knowledge (providing no such opportunity)

Such a concept of knowledge was already present in ancient times, especially with Aristotle. In the Middle Ages, it had an impact on the formulation of opposing pairs: the names and stuff, form and substance, maturing in modern times (largely due to the dualism of Descartes) to be fully educated in the Age of Enlightenment and the dominant learning going on until the modern day. Knowledge is expected to be true, that is,

consistent with reality so that it can be useful as measured by power, domination which we can get through the knowledge of the world.[5]

However, the dominant modern idea of a dual understanding of knowledge as well as its functions and its accompanied relations can be supplemented through varied methods of perception, but has long been present in the history of human thought. Alternatively to dualistic understanding, the monistic way of understanding knowledge in ancient times was associated with the cynics — exotic characters — but today is amazingly appreciated.

Diogenes answer of "reveal to me the sun" to Alexander the "conqueror of Asia's" question: "what can I do for you?" captures the provocative focus of oneself, ignoring the outside world and its values, hierarchies and rules. Such an attitude gained (according to legend) the recognition of the Macedonian king, who was to say "if I were not Alexander, I would like to be Diogenes". Perhaps they both represent a similar disdain for reality and both of them saw it as an illusion, which is a limitation only for small, half-human creatures.

Alexander challenged reality through the hijacking of seemingly impossible deeds while his ambition and conquests knew no bounds. Announcing himself as a god , he acknowledged that he understood what the world is and that he could shape it by the force of his will. In Diogenes, he recognised a "super-human-like" individual, who instead of conquering the world chose to break the constraints of reality discarding human needs, desires, fears and ambitions. The monistic approach to knowledge makes man the only measure of all things preached by Protagoras — another ancient practice of cognitive monism.

This concept has yet to receive a dominant position in European culture, although it has never been displaced. However, it has made a much stronger presence in the cultures of India and Japan where the concept that learning is a process of disposing of the illusion of realities that come from both the senses and thinking was formulated.[6] Purification of both experience and speculation is the goal of the yoga and the Zen master. Only in not-feeling and not-thinking can a state in which there will be divisions for getting to know me and getting to know the reality while not allowing to be "knitted up" is achieved.[7]

5 Max Horkheimer, Theodor W. Adorno, *Dialektik Der Aufklärung. Philosophische Fragmente*, Amsterdam 1947, pp. 36–42, 249–257.

6 Alan W. Watts, *The Way of Zen*, ed. cit., pp. 70–75.

7 Thomas Hoover, *Zen Culture*, New York 1977, p. 33; James H. Austin, *Selfless Insight: Zen and the Meditative Transformations of Consciousness*, Massachusetts 2009, pp. 82–121.

The above described characteristics resemble a completely unpractical form of mysticism as cognitive monism which often takes on a mystical form in European culture. However, Japanese culture, based on cognitive monism encoded in philosophy and religious Zen, provides a formula which has proved to be extremely useful. A characteristic of Japanese culture is the perfectionism which manifests itself in various traditional Zen arts: archery, fencing, laying flowers and breeding miniature plants, but is also present in the design and construction of automobiles, electronics and business management.[8]

A chief characteristic of perfectionism is its redundancy in terms dictated by the needs of usability. For example: the Japanese tea-brewing ritual is not (contrary to appearances) religious in nature. Rather, it presents the diligence with which you can celebrate the everyday chore of preparing a refreshing drink. Many nations have developed the art of fencing, which was dictated by necessity at first, and later to replace traditional sports, but only the Japanese, striving for perfection in the smallest elements, have identified it as a distinct, autonomous art: the art of extracting the sword from its sheath and the "aesthetic" art of shaking down the blood from the blade. In many parts of the world, martial arts were created which changed later according to the field of sport. In Japan however, parallel to the martial arts (bu-jitsu), the autonomus arts of battle shouting (kiai), safe incidence (Ukemi), gait (ashi) and form (kata) were established.

This striving for excellence, strongly present in construction, interior design and visual arts, is all the more significant and puzzling particularly since it developed in an area prevalent to natural disasters as earthquakes, hurricanes and tsunamis. A situation in which the material fruits of several years' labour can, in the course of a minute be washed away may encourage mediocrity and the makeshift. The love of perfection is not apparent in the relationship between the business operator and the outside world, but the ratio of the one-tier entity to itself is a sign of perseverance in following your absolute own way (Japanese: *To*, Chinese: *Tao*).[9] Similarly, knowledge seemingly only relates to external reality, and in fact all knowledge is enlightenment (*satori*) or transubstantiation of the ignorant into an enlightened human being, in effect addressed to the internal improvement process and not the exploratory activity directed outward.[10] Paradoxically, such

8 Eugen Herrigel, *Zen in der Kunst des Bogenschießens*, Bern, München 1987, pp. 30–43.
9 Paul Varley, *Japanese Culture*, Honolulu 2000, pp. 46–48.
10 Agnieszka Kozyra, *Filozofia zen*, Warszawa 2003, pp. 51–60.

an approach to knowledge does not preclude exploratory actions or even conquest, but also does not make them a goal in itself. Conquest, research and exploration may be methods to follow one's own path or forms striving for inner excellence, where being a scientist, explorer or conqueror is merely a pretext for improvement, similar to the desire for a pretext to the extremely complex ritual of tea brewing.

Until now, monism has not rooted itself in the culture of Europe, particularly because its consequence blurs the boundaries between important activities as permanently changing reality and being invalid because it does not actually change. However, apart from the dominating dualism, in which the knowledge enables lasting change, and is actually more valuable than that which applies only momentary understanding of this reality (which explains the low value of the humanities in a dualistic conception of knowledge), and monism, which currently operates in the sphere of philosophy, while solipsistic "provocation" is still a place for a third, approach to knowledge — something of a compromise.

This approach can genetically remove the sceptical ideas of British empiricism, the works of John Stuart Mill and Alfred Whitehead — thinkers who emphasised the importance of the subject in the cognitive process. However, this does not reduce to the entity of all reality.[11] Today, this trend is realised in the framework of the "new" disciplines: cybernetics, game theory, dynamical systems theory, chaos theory and complexity theory.[12]

This approach can be called 'emergent' since, instead of accenting bipolar relationships between contrasting components, or assuming illusory nature of all elements of the world entering into monadic relationships, the "I", it uses the idea of a dynamic structure in which it is one component of a complex system. The emergent system is a system which as the whole has different properties; than properties of its individual components.[13]

Knowledge in terms of emergent variables is created through a system of cognitive relations. The act of acquiring the new knowledge applies to all elements of cognitive relationships because the individual agents project

11 Brian P. McLaughlin, *The Rise and Fall of British Emergentism* , in: *Emergence: Contemporary Readings in Philosophy and Science*, Red. Mark A. Bedau, Paul Humphreys, Cambridge, Massachusetts 2008, pp. 19–60.

12 Michele Di Francesco, T*wo Varieties of Causal Emergentism*, in: *Emergence in Science and Philosophy*, ed. Antonella Corradini, Timothy O'Connor, New York 2010, pp. 64–77.

13 Andrew Assad, Norman H. Packard , *Emergence*, in: *Contemporary Readings in Philosophy and Science*, ed. cit., pp. 231–235.

character of its cognitive instruments on the , recognised world, giving it shape and form in accordance with its own constitution. The relationship between the system (whole) and the individual (part) are varied and an indeterminate specificity of the individual components. They are also reciprocal and mutually forming. Units have an impact on the world but are unable to determine this through their own actions. They themselves are also subject to unpredictable changes under the influence of the relationships in which they are located. Since all relations of both understanding and actings units with the world are relations of the feedback (both exert influence on the recognised/changed world and in the operating/understanding of the individual) therefore same distinction of the world and the unit is a false distinction because the world is a one system, particular element of which is the unit. Moreover, false dualism is a characteristic of the distinction between an entity (actor, knower) and the object or subject-conceived reality. There are no active side which cause a change and subjective side which is midified. The change affects whole system and is connected with its energetic balance. The system contains an energy which is unevenly distributed between its individual components and determines the transforming potential of individual subsystems and components forming the adaptive potential of the entire system that being the ability to survive or maintain cohesion and to develop means to increase energy levels.

Exploration and domination are forms of building relationships between components of the system that has energetic consequences both in terms of the energy distributed within the system and the overall potential energy of the system as a whole. The efficiency and usability of knowledge has its localised and temporary dimensions, particularly when it comes to obtaining certain advantages over other elements of the system or global and sustainable dimensions while increasing the adaptive capacity (the energy level and ability to survive) of the whole system. Within the energetic model, one cannot predict which knowledge will be useful because each piece can start the process of systemic change. Usability is more a property of the whole cognitive system or subsystems than of the particular elements, particularly since there are no isolated or independent elements that all knowledge is connected to; favouring certain disciplines at the expense of others does not strengthen the system as a whole.

Discussions on the topic of the usefulness of knowledge should not disregard the reflection of the presence of knowledge in the world or the question of how knowledge in general can be useful. If we accept the dualistic

assumption, which can change reality, then this knowledge is useful. Undoubtedly, dualistic thinking revalorises technological knowledge but from the same perspective one cannot neglect the importance of the knowledge that has an impact on human consciousness. The history of Europe from the end of the sixteenth century provides many examples of how ideology shapes the collective consciousness and the consciousness of the masses forming political, economic and military realities. Religious wars, witch hunts, revolutions, nationalism and racism were phenomena shaped by ideologies that emerged in the comfort of the monastery walls, libraries and offices which released the minds of intellectuals like demons flying out of an uncorked bottle that changed the world. Under the auspices of the dualistic conception of knowledge, history, economics, sociology and political science found their place in the elite group of university sciences in order to understand and control mechanisms for the formation of human consciousness and motives of human action. At the beginning of the twenty-first century, this need still exists. Although concepts such as state, nation, society and morality seem to be worn and are problems that bring people together so that they form one society, the state and the nation are still current. Ties that connect people do not have an objective or physiological nature but result from the state of consciousness and awareness that cooperation is needed. Liquidation or attempts to discredit research on the functioning of these concepts enhances the centrifugal tendencies and purely selfish behaviour of individuals who, for personal well-being and personal satisfaction, dissociate themselves from various forms of social cooperation such as paying taxes, obeying the law or even the speed limits on roads. Without this cooperation, there is no country, society or nation. Instead, there is the Hobbesian "war of each against all".

From the monistic perspective, knowledge is useful if one allows for its self-improvement. It is not possible to talk about knowledge apart from its quality from this perspective. It is the quality and commitment of one sequence in the acquisition of knowledge that affects its usability. Mastery and perfection are values in themselves, no matter what the subject matter.

The energetic concept forms an abstract and even unreal impression from the vocabulary through which it is expressed and the fact that it is being developed, to a large extent, by the representatives of science. However, this concept is a very important issue from the perspective of the everyday life of the ordinary individual. The variability and unpredictability affects more individuals than entire societies, so individuals feel emergent

through the nature of the systems in which they exist. An example of such a system is an emergent capitalist economy which experiences crises, instability, currency fluctuations, and rapid increases in the prices of products that we buy or declines in demand for products produced or sold. The emergence of new elements in the system such as automated furnaces for bread baking which must be handled by trained personnel drastically changed the location of other system components, bakers and owners of small bakeries who lost their position and were forced to redefine their business (by switching to baking more luxury breads, purchased on the basis of the quality).

The emergent knowledge system is a catalyst that shapes certain elements between relationships. Because emergent systems are those whose general behaviour is not the result of behaviour of particular components, the utility of knowledge depends on the transformation of the system as a whole and not the characteristics of the components, which shape relationship knowledge. The concept of usefulness and uselessness of knowledge are relative terms here. This same knowledge can be functional in the specific state of the system and dysfunctional in other. Because the behaviours of the system as a whole are unpredictable and uncontrolled, the arbitrary assignment of certain areas of general uselessness of knowledge and behaviour of others is risky because it can lead to a monoculture that, in the case of sudden changes in the economic situation, turns out to be inadaptable. That which is useful, therefore, is not this or that knowledge but that the knowledge makes it capable of responding to unpredictable situations.

Acceptance of the fundamental theorem of the unpredictability of the world around us can change our thinking about knowledge and our expectations with respect to education. The traditional dualistic perception of education emphasises that the knowledge passed on to pupils or students is something external, something that "produces", "passes" or "sells" to someone who may later benefit from this. What is overlooked is the aspect of knowledge which returns a monistic perspective and which also results from emergent assumptions. This is an aspect of dynamic and formative knowledge, not a thing but a process, an active interaction between the teacher/professor and the pupil/student. In this interaction, there is a comingling of all elements of the system. Discussions on the model of education should not disregard the quality of personal interaction, from the formative nature of knowledge that reveals not only "what to teach" but "how to learn" and "who teaches". Reflections of teachers and academic lecturers on "who they

are" and "how they would like to change" their students seems to be more justified than reflecting on what the topic of the lecture should be.

I do not intend, however, to suggest that the merits of knowledge do not matter. On the contrary, they are of huge significance, but as a dynamic process of forming human consciousness, personality and adaptability. Here, I would like to refer to Abraham Lincoln, who recalled that during his law studies that he realised he did not understand what it meant to "demonstrate". After checking the definition of the word in Webster's Dictionary, he was convinced that it meant "to prove beyond reasonable doubt", concluding that he hasn't this ability he interrupted his studies to obtain it. He returned to his family home and studied the first six books of Euclid's *Elements* until he mastered the ability to command the idea of "beyond reasonable doubt"[14]. This example best illustrates the conclusion I would like to draw from the above reflections on knowledge and academic education. When we understand knowledge as a "tool", we do not foresee the possibility of Euclid's law school lecture because the "top" predicates what is and what is not useful in this profession. In the field of education, knowledge is perceived as an element of the emergent, looking for such a method of education. Knowledge built living relationships, shaping and improving all the elements.

translated by Paweł Markiewicz

Summary

This article discusses issues of knowledge's utility. The utility of knowledge is considered from three perspectives. In each of these perspectives the relation of knowledge to reality is recognised in a different way.
The dualistic perspective is based on the two-component structure: knowledge–reality; the subject (active)–the object (passive). In this regard, the knowledge's utility is measured by the amount of power that can be obtained over the world.
The monistic approach to knowledge does not separate the object of the knowledge from the subject. From the monistic perspective, knowledge is useful if it allows for the improvement of the bearer said knowledge. From the monistic perspective, the relation to reality is unimportant.
Knowledge in terms of an emergent system arises in the fluid cognitive relationship between components of changing systems. Relations between the system (whole) and units (part) are variable and undetermined by the specificity

14 Lincoln, Don Edward Fehrenbacher, Virginia Fehrenbache, *Recollected Words of Abraham Lincoln*, Stanford 1996, p. 192.

of the individual components, which are also reciprocal and mutually forming. Knowledge in an emergent system is the catalyst for the change and the progressive evolution of the system. Because emergent systems are those whose behaviour is not the result of the behaviour of its components, the utility of knowledge depends on the transformations of the whole rather than on the characteristics of its components. The concept of usefulness and uselessness of knowledge is a relative term here. The same knowledge can be functional in a particular momentum of the system and non-functional in another momentum of the same system.