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## LOOKING FOR A NEW ALCHEMY: FROM THE LEAD OF INFORMATION TO THE GOLD OF KNOWLEDGE

**Abstract:** There is a general agreement about the main characteristic of the contemporary ways of progress. The knowledge is unanimously recognized as its driving force. What is less unanimous is a comprehensive definition of knowledge itself. In many documents, analyzes, working papers, and so on, the term is considered as universally understood, but in fact there are many competing significations on the market. Too many of these definitions confound information and knowledge, reducing the realm of knowledge to an accumulation of technical skills.

The quantity of contemporary information is so huge that the risks of robotization of the men and women of our world has become obvious. In my view, bare information opens a royal way to massification, whereas knowledge stimulates the harmonious development of responsible individualities. There is no other antidote for de-humanization but an individual capacity of transmutation, as in the old alchemist's retorts, of the lead of information into the gold of knowledge.

My contention here is two-fold. I propose, first, that the significance of the term knowledge as a driving force of the contemporary world must be as deep as possible, in the most comprehensive, philosophical meaning of the term. Modern knowledge cannot and should not be reduced to a technical compilation and use of information, but has to be coextensive to the depth and breadth of the human wisdom, accumulated through millennia. The second theme steams from the first one, and envisages the realm of the modern knowledge as a territory of synergies, where each domain of research functions as a "bouillon de culture", a nourishing medium for the other domains of knowledge: history for the sciences of the Earth as well as geology for history, classics for physics, and ethics for biology – or vice-versa.

Knowledge is unanimously recognized as the driving force of contemporary societies. Be it in the rather stereotyped resolutions formally issued by the European Union, in science-fiction comics or serial films, the future is brighter only if it

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is more intelligent, better informed, more understanding of the world, or even the worlds, in which humanity evolves. The pursuit of knowledge is as essential for humanity as the pursuit of happiness, and may even be coextensive with that fundamental pursuit. And yet, we hardly may find a comprehensive definition of knowledge: many documents, analyzes, working papers, and so on, consider the term universally understood. In fact, there are many competing significations on the market. Too many of these definitions confound information and knowledge, reducing the realm of knowledge to an accumulation of technical skills and competences.

One of the great challenges of the contemporary world is the huge quantity of information that we find today in various media, be it traditional – as the books or the printed press seem to be – or modern, visual or electronic. The necessary skills in the contemporary post-industrial world are more complex than ever. Acquisition of both information and skills is time-consuming, and so, carry with it more than ever the risks of robotization. Here lies, I think, the main question of the difference between information and knowledge. Bare information opens a way to massification, whereas only knowledge stimulates the capacity of critic evaluation and generates the harmonious development of responsible individualities. There is no other antidote for de-humanization but an individual capacity of transmutation, as in the old alchemist's retorts, of the lead of information into the gold of knowledge.

My contention of today is two-fold. I propose, first, that, if we seek a truly better world both for ourselves and for tomorrow, we must bestow the concept of *knowledge* as a driving force of the contemporary world with as deep a sense and as complex a meaning as possible, in the philosophical meaning of the term. The second theme steams from the first one, and envisages the realm of the modern knowledge as a territory of synergies, where each domain of research functions as a *bouillon de culture*, a nourishing medium for other domains of knowledge: history for the sciences of the Earth, geology for history, classics for physics, and ethics for biology – or vice-versa.

Knowledge cannot and should not be reduced to a technical compilation of information. It has to be coextensive to the depth and breadth of the human wisdom, accumulated through millennia. The quest for a true understanding of knowledge must go back at least to Plato, who once told that an interlocutor of his master asked him: *And what, Socrates, is the food of the soul? Surely, Socrates answered, knowledge is the food of the soul.* Knowledge as the food of the soul must be our theme of reasoning. But we must confess that this is a great metaphor, but it is not a definition. In fact, no single definition of knowledge exists, and there are practically as many theories to explain it as philosophers or scientists who probe into its depth.

As Bertrand Russell wrote in his "Theory of Knowledge"[1]: *at first sight it might be thought that knowledge might be defined as belief which is in agreement with the facts. The trouble is that no one knows what a belief is, no one knows what a fact is, and no one knows what sort of agreement between them would make a belief true.* As Wittgenstein commented this proposition, so may we: he observed that one can say *He believes it, but it isn't so, but not He knows it, but it isn't so.*

Following this ideas, we may say that *knowledge* has to be understood as a *cluster concept* that is not adequately captured by any single definition. An interesting view in this respect is that of Karl Popper[2], who identifies three worlds of knowledge:

*World 1* which is the physical universe. It consists of the actual truth and reality that we try to represent. While we exist in this world, we do not always perceive it and then represent it correctly.

*World 2* which is the world of our subjective personal perceptions, experiences, and cognition. It is what we think about the world as we try to map, represent, probe in its past and anticipate or formulate hypotheses. Personal knowledge and memory form this world, based on self-regulation, cognition, consciousness, dispositions, and processes.

*World 3* which is the sum of the objective abstract products of the human mind. It consists of such artifacts as books, tools, theories, models, libraries, computers, and networks. While knowledge may be created and produced by *World 2* activities, its artifacts are stored in *World 3*, for example the Bible, Plato's *Dialogues*, Maslow's hierarchy of needs, and Godel's proof of the incompleteness of arithmetic, theories of history and of social structure of the world, and so on.

The main point of this Popperian hierarchy of knowledge consists in the postulate of interdependence, and in the idea that there is a permanent bi-univoc exchange between the three realms of knowledge. *World 1* enables *World 2* to exist, *World 2* tries to control *World 1* through intelligible models, and in this way it produces *World 3*, while *World 3* helps in the recall and the education, development, and learning of *World 2*. *World 3* *World 1* is the inferred logic of *World 3*, which describes and predicts *World 1*. As a consequence, we cannot survive in the physical, objective world either without the scientific knowledge that helps us in our daily life and progress – the sum of which we usually name *civilization* – or without the sum of our subjective perceptions about the world – which we define as *culture*.

Popper held that scientific theory, which is the foundation of any human knowledge, is generated by the creative imagination in order to solve problems that have arisen in specific historical and cultural settings. This means that, if we choose to amputate culture out of the realm of a hypothetical “objective knowledge”, we risk to lose the very essence of civilization. A common set of cultural facts and information matter not for their own sake, but because a shared intellectual landscape is essential in empowering us to strive to the essence of knowledge.

The modern world seldom recognizes that the first and foremost objective of knowledge should be the disinterested dedication to the broadening of human mind. In spite of any theory, and mostly because of the complexity of human knowledge, the social capital invested today in its different components, or, as Popper imagined them, the investment in the exploration of these three interrelated worlds, tends to be selective. In our society, the humanities have seemingly lost most of their traditional value as the core of the formation of the human person, and the balance of options inclines drastically towards the applied sciences and technologies. Or, it is obvious that the progress of the applied sciences and techniques depends almost entirely on the progress of the theoretic knowledge of the

fundamental sciences, which cannot be quantified but remains essential. On the other hand, it is my thesis here that the general progress of the theoretical knowledge cannot flow freely without the nourishing broth of the arts and humanities. One of the main errors in the decisions which shape the evolution of contemporary sciences and technologies is the marginalisation of the humanities in the general realm of the pursuit of knowledge.

The *profitability* of knowledge seems to be the dominant goal aimed by the modern quest of a new philosopher's stone. As a rather crude comment of reader in a public debate about the place of humanities in modern education put it once, *No poet creates a vaccine or a tangible good that can be produced by a Fortune 500 company*. This kind of misjudgment is flatly contradicted by Einstein, who praised above all *the supreme art of the teacher to awaken joy in creative expression and knowledge*. Or, earlier, by Nietzsche, who wrote once that *Our treasure lies in the beehive of our knowledge. We are perpetually... honey gatherers of the mind*.

Although none of these commentators uses the word, the issue they implicitly raise is *justification* for continuing to invest in the humanities, in spite of their apparent uselessness in terms of profit. If it is true, then, that the humanities are their own good, the modern manager of education and research asks more often than not why do we not let them live from their own products.

In happier times, the luxury of founding arts and humanities found its use either in the perpetual glory of the kings and tyrants, or in the moral education of souls. The Latin poet Horace promised Emperor Augustus to erect an immortal monument, more resistant than bronze, *exegi monumentum aere perennius*, and we must observe, sadly, that even today the dictators spend much more money than the free, democratic world does, for the founding of arts and humanities. Truly, they are, of course, crooked and biased by propaganda; but the fact remains, that poets were better paid in Communism than in liberal societies.

On the other hand, the moral education of the young generations has abandoned completely the old idea of the humanities as a repository of ethic models. In his *Defense of Poesy*, from 1595, Philip Sydney could write: *Who reads Aeneas carrying old Anchises on his back that wishes not it was his fortune to perform such an excellent act?* What happens to Faust should teach us not to sell our souls, and Kant's categorical imperative will forbid us to impose restrictions on others that we would resist if they were imposed on us. Alas, the tragic experiences of the last century teach us that a solid classical education does not guarantee anything, less than all a moral behavior of the human subject. On a more familiar ground, we may see for ourselves in the academic world that people who spend every waking hour with great books and great thoughts are seldom paragons of virtue themselves.

What can you say to the tax-payer who asks, *What good does for me a program in Italian poetry of the Trecento?* It is possible, but cannot bear proof, that the economy of a country will benefit by a new reading of "Hamlet". A great Romanian mathematician, Grigore Moisil, wrote once that, in his belief, the productivity of a qualified worker will be improved if he is familiar with Shakespeare's work. Hardly proven. We hesitate to argue that a well-versed graduate in the history of Florentine

art will be more attractive to employers than an IT specialist – and that, in spite of the fact that some of the most brilliant bankers I have met when in office started in their careers by graduating in Classics. If your criteria are productivity, efficiency, and consumer satisfaction, it seems that the only thing that makes sense is to withdraw all material support from the humanities, and support only programs that produce immediate results the man – or woman – in the street can understand and appreciate at once.

Of course, the criteria of any respectable scientific and academic community must not be reduced to aim only productivity, efficiency and consumer satisfaction, but the interrogation of the ordinary taxpayer cannot be avoided. There are two layers of answer to this interrogation. One may seem too abstract, but cannot be avoided. In the last decades, the scientific study of human intelligence and creativity have proven beyond any doubt that the performance of our brain depends on a complexity of factors: intelligence is but one of them, the necessary condition, as it were, but the sufficient condition resides in what the specialists call the *emotive intelligence*. More precisely, it has been proved that the performance of a person with an Intelligence Quotient – IQ – over 130–140 points depends not essentially on his/her IQ, but on the harmonization between her intelligence and her emotions. In this respect, it would be a scientific heresy to eliminate from the educative processes precisely the disciplines which foster and develop the emotive intelligence. The absence of a culture that privileges learning to improve oneself as a human being may be not only a simple error of judgement, as it carries with it the great risk of amputating the human person of one essential asset. That is why we must proclaim the value of liberal arts education as often as we can, and to help all the decision-makers concerned understand what is being lost when traditions of culture and art that have been vital for thousands of years disappear from the academic scene.

Why have the great creators of our time turned so regularly to classical myth, literature, art, philosophy for their inspiration, and what has been the impact on them of this bond to the classical past? In André Gide's *Thésée*, written in 1944, Daedalus meets Theseus, who is about to enter the Cretan Labyrinth, explains the deep sense of the thread of Ariadne: *This thread will be your link with the past. Go back to it. Go back to yourself. For nothing can begin from nothing, and it is from your past, and from what you are at this moment, that what you are going to be must spring*[3]. This thread to the past serves as catalyst rather than as inhibitor to our originality, and so leads us not only back but also forward. As the great stoic Seneca [4] wrote, *while we live, while we are among human beings, let us cultivate our humanity*.

Last, but not least, the main goal of the humanities is to create a long-term conception of citizenship for the future. In its recent past, democracy has based its institutions of learning on this ideal, striving, to a degree unparalleled in the history the world, towards the cultivation of the whole human being for the functions of citizenship and life. It is not for today, when democracy has a chance to spread more than ever, to abdicate this goal.

In her famous essay *On Not Knowing Greek*, Virginia Woolf writes that *what draws us back and back to the Greeks* is the fact that *the stable, the permanent, the*

*original human being is to be found there*[5]. Socrates, in Plato, *Apology* 38 A, says: *If I tell you ... that the unexamined life is not worth living for a human being, you will be even less likely to believe what I am saying. But that's the way it is, gentlemen of Athens, as I claim, though it's not easy to convince you of it.* The question of the relationship of a liberal education to citizenship has a very long history in the philosophical tradition. Since Socrates, it has examined the ideal of an education that liberates the mind from the bondage of habit and custom, producing people who can function with sensitivity and alertness as citizens of the whole world.

The capacity for critical examination of oneself and one's own traditions, the Socratic *examined life*, that questions all beliefs and accepts only those that survive reason's demand for consistency, requires the capacity to test what one reads or says for correctness of fact and for accuracy of judgment. Socrates compared himself to a gadfly that awakens democracy. A gadfly is not comfortable to live with, and testing the stereotypes of your fellow citizen can be risky, as Socrates learned too well. And yet, not only ancient democracies, but also modern ones are prone to hasty decisions, and to the substitution of invective for deliberation. That is why democracy needs citizens who can think for themselves rather than simply deferring to authority. Scientific education produces sophisticated scientists and technicians, but only the humanities, which may seem to be incapable to produce anything, are capable to produce gadflies.

Citizens who cultivate their humanity need, further, an ability to see themselves not simply as citizens of some local region or group but also, and above all, as human beings bound to all other human beings by ties of recognition and concern. The idea of the "citizen of the world", *kosmopolites*, has two converging roots, that of the ancient, Greco-Roman Stoic philosophy, and that of the universal religions, starting with the Christian one. This idea had a formative influence on Immanuel Kant in the Enlightenment philosophical tradition, as well as on the American Founding Fathers. In the present-day world, multicultural and multinational, many of our most pressing problems ask for a dialogue. Its basic pre-requisite is that, however we order our many loyalties, we should still be sure that we recognize the worth of human life wherever it occurs.

Humanities are the only way for understanding a human being different from oneself, for being an intelligent reader of that person's story, and to understand the emotions and wishes and desires of other human beings. When we identify with a poet's feeling, or with a character in a novel, we also judge that story in the light of our own goals and aspirations. This kind of ability can be called *the narrative imagination*. This means the ability to think what it might be, maybe not as opposed to, but certainly different from what is, now and here.

Almost all present issues, from business to agriculture, from human rights to the relief of famine, are global, and call us to trespass narrow loyalties and to consider the reality of distant lives. Cultivating our humanity in a complex world involves understanding the different ways in which different people met and surpass different circumstances. This requires a great deal of education in the humanities and in social sciences, which are the gate to the knowledge of distant cultures, of

minorities within our own society, of differences of gender – in short, which provide the instruments we can use to know and understand the Other. Maybe the best way to explain how the humanities earn their keep is to understand how many wars, at home or abroad, they may have helped to avoid.

We also need, in the modern world, the best of our capacity to use and to decipher the true meaning of words. We live almost all our lives, and to a degree unparalleled in the history the world, in the realm of words, we communicate most often through the use of language, but our communication skills depend heavily on our general knowledge and on our humanistic education. People high in general knowledge tend to be highly open to new experiences and to intellectual engagement. Conversely, people high in openness are motivated to engage in intellectual pursuits that increase their knowledge. Citizens cannot think well on the basis of factual knowledge alone, and they need more than a few hundred words to tactually understand themselves and the world. We may think about Orwell's *Animal Farm* to observe in a glimpse the disastrous effect of an impoverished vocabulary: yet another example of the social utility of literature, art, and the humanities in general. That is why I think that an alchemy able to transform the huge quantity of information in true knowledge is, indeed, an essential skill, ability, and even the mother of all science, in the modern world.

## REFERENCES

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