The Evolution and Education of the Human Mind

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Introduction

We accept the fact that humans came into being as a result of the evolutionary process, and yet we think of human consciousness, human creativity or language as phenomena somehow miraculously springing into existence, as if by divine intervention. One reason may be that since we have discovered and accepted the biological evolution of our species, we attempt to reduce all other aspects of humanity to the biological level. Yet, the higher mental processes, which escape such reductionism, are then perceived as miraculous. Nevertheless, the proposals that account for the evolution of human mentality are vitally important from the educational point of view. Suppose we accept human consciousness, language or art as phenomena just appearing out of nowhere at a particular point in time. In that case, it is natural for us to perceive human mentality in a static manner, where the role of education is only to make people reach a particular, formally established level (marked by a certificate or a diploma), frequently with a pragmatic aim in mind, and accept as natural that people stop learning at that point.

However, if we look at the development of human mentality in all its aspects in an evolutionary way, it becomes clear that our present state of development is not a final state, after which there is nothing. A truly evolutionary understanding of humanity forces us to see ourselves as part of an ever-changing process. If we follow the gradual cognitive changes from the last common ancestors of humans, chimpanzees, and bonobos, through Homo heidelbergensis, compare what we know of Neanderthals and early palaeolithic Homo sapiens and proceed to contemporary humans, it can help us see the development of the human mind from infancy to adulthood in a different light.[1] Consequently, from

[1] This is a very rough description of the period, which is still being researched, even before Homo heidelbergensis (Kuleshova 2024). Throughout the book, we will

the educational point of view, we may be able to visualize what direction human development should take, something that in our previous book, *The Phenomenon of Consciousness* (Janczukowicz and Wenzel 2021) has been called 'raising the intensity of consciousness.'[2] Moreover, it is equally important to provide practical answers as to ways in which desirable educational aims could be reached, what needs to be done to bring them about, and to prevent a regression in the realm of consciousness.

Following the distinction made in our previous book, we set out to present these educational goals as an attempt to 'raise the intensity of consciousness' within three domains, those of *cognition*, *creation* and *coexistence*. The essence in each of these domains is something else, i.e. in the domain of cognition, it focuses on *critical thinking*, in the domain of creation, *creative thinking* and in the domain of coexistence, *conscience*.

The actual educational system seems to follow these principles, at least in the domain of cognition. It usually attempts to equip the learners with the right mental tools to understand various areas of the world surrounding us, e.g. in order to raise their awareness of the outer environment, i.e., the surface of the Earth or the mechanisms of life, we teach students geography or biology, in the case of physical laws of matter: physics, etc. However, there is a catch in such an organization of the subject matter to be taught; namely, our knowledge of the world changes constantly, but we teach the current state of this knowledge as if it were something final and permanent (Liebenberg 1990). As a result, the society may be well informed as to the current state of knowledge, but cannot move forward in it. What we need in the domain of cognition is not only a good understanding of the current state of knowledge,

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be using selected examples of what we do know to illustrate particular processes and issues concerning the evolution of the human mentality.

[2] To summarize the implications of this phrase, crucial for the contents of our previous book, the *intensity of consciousness* is the extent of our awareness of ourselves (autonoetic consciousness) and the world around us (noetic consciousness). The aim of education described by us in most general terms is to raise this intensity, which, it turn, results in taking two, seemingly opposite directions; on the one hand, expanding our knowledge of the physical reality; but on the other hand, attempting to transcend the observable, experimentally provable reality, what we called the *metaphysical inclination*. Without its religious implications, the direction described here bears analogy to Teilhard de Chardin's ascent in the degree of complexity from inanimate, through animate, towards conscious existence and beyond (1983 [1955]).

but also a certain acuity as to possible loopholes and inconsistencies in what is being taught to us, and an inner drive to find ways to resolve those gaps. In other words, what we really need to teach is not information but *knowledge*, understood as true understanding of the conceptual framework which led to it and the skill that is necessary to acquire such understanding is *critical thinking*.

The *domain of creation* poses different challenges, namely, how to make someone capable of experiencing art in an authentic way and also how to create such art, which means that we should not only equip the learners with intellectual tools (the knowledge of the theory of a given genre) to understand it, but provide it in the spirit of its true enjoyment: give grounds for an ever more profound *aesthetic experience*. Furthermore, the utmost goal of the domain of creation should move towards the productive form of aesthetic experience, i.e. not only an ability to experience it as a spectator when watching plays, reading books or listening to concerts, but also as a creator, by acting or playing an instrument, and most importantly, by creating one's own works of art. Consequently, the educational perspective should focus on the experience of art, where the knowledge of the theory of a given form of art is only a step in that direction, rather than an ultimate goal. In order to achieve it, students should be given a chance to vent their experiences and creative needs in some form of artistic expression. When it comes to the skills required to bring it about, we should focus on triggering learners' *creative thinking*.

The *domain of coexistence* is perhaps the hardest to tackle educationally and, in practice, most avoided. Schools frequently delegate it to the lessons on religion or ethics in the hope that learning about moral behavior will make the learners act morally. The difficulty of this approach lies in the paradox of wanting the students to be guided by inner moral principles by means of imposing external rules, forcing them to act in an ethical manner. The actual goal in the educational context should be in encouraging rather than repressing a sense of solidarity with other people, finding common goals with them, and bringing about an awareness of other people's perspectives as equal in importance to one's own. It also would mean not treating others like tools used for one's own gain, but as equals with whom one shares an emotional bond. In terms of skills that would be necessary to achieve it, we would have to focus on reinforcing or shaping *cognitive empathy*: an ability to shift perspectives

and see the world from somebody else's point of view, and *conscience*: an internalized system of principles, forcing us to act in an ethical way.

The problem is that all the crucial skills mentioned above are capacities that can only appear from within. If a teacher tries to "teach" them, they come from the outside, and such an attempt makes these efforts artificial and frequently futile. In the domain of cognition, it is much easier to teach and test a class of students on a list of geographical names, historical dates or chemical formulae than to make them understand the foundations on which the data rely, e.g. how we know the structure of the Earth or chemical bonding; and still harder to be able to notice inconsistencies in what others accept as a fact, e.g. question information from a course book or provide a coherent argumentation in support of one's own view, or in other words, to let the students exercise *critical thinking*.

Likewise in the domain of creation, it is much easier to force students to memorize and later test them on formal principles of creating art or artistic strategies used in it, such as the descriptions of nature in Cooper's *Pathfinder* or Mickiewicz's *Pan Tadeusz*,[3] than to have students read either of these books with authentic pleasure, or, better still, to express their own sense of aesthetic awe when in contact with nature in a chosen form of art, be it a poem, a painting or a song. That is why both critical thinking and creative thinking are at the same time the most important and the hardest aspects to teach; sadly, also the most neglected ones.

If it is so hard to bring about *critical thinking* or *creative thinking* as a result of the educational process, phenomena such as *social cognition* or *conscience* might seem impossible to tackle. Yet, knowing the nature of these concepts might help in avoiding downright mistakes in these realms, and understanding how the domains of cognition, creation and coexistence can synergize, can provide good conditions for both understanding other human beings and having a sense of emotional bond with them and respect for them.

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[3] These two are just examples taken from the canon of the literature of a particular nation; in this case, American and Polish literature respectively. Both of them are known for their masterful descriptions of nature, famously underappreciated by the school-students.

Nevertheless, an educator should keep in mind two things: firstly, that *social cognition* (understanding the points of view of other people) is a necessary but not a sufficient condition for the development of the capacity to peacefully coexist with other people. This capacity alone, if deprived of *conscience*, may result in a more efficient abuse of other people, since it is this ability that equips frauds and criminals with particular powers to cheat other people (Kurcz 2011: 124). While being able to adopt other people's perspectives usually helps to balance the perspective between different points of view and act less selfishly, people deprived of conscience can take advantage of other people's feelings. As a result, we come across people taking advantage of others' sense of empathy and solidarity with victims of wars or natural disasters, e.g., fake charity collections for the sake of war refugees or children with fatal diseases.

Secondly, the very notion of *conscience* is usually avoided within the field of education, as it is associated with the realm of religious beliefs, and as such seems a subjective and personal rather than a scientific or educational matter. However, considering the fact that it is an identifiable psychological phenomenon, defined, e.g., as "A reasonably coherent internalized set of moral principles that provides evaluations of right and wrong with regard to acts either performed or contemplated" (Reber 1985: 148) one must admit to its relevance in the realm of coexistence between people.[4]

Traditionally, the process of teaching is seen as either theory or practice, where we either pass on information about something or train in a physical or technical skill. Understood in this way, the desired change in the learner would be either in the amount of information he or she has or in what he or she can do. When we look at education from the point of view of the three domains, we can see that the change is supposed to happen mostly in the *cognitive structure* (in the domain of cognition), or in the depth of the potential *aesthetic experience* (in the domain of creation) or the sense of *solidarity* or *responsibility* for oneself or others (in the domain of coexistence). These are three different spheres of life that cannot be compared to each other, and yet should form a kind of synergy

[4] The question whether *conscience* is innate or socially acquired and later internalized is still a matter of dispute among psychologists, and indeed will also be discussed in this book.

with each other in each of the domains. While a change in the cognitive structure (domain of cognition) relates to thinking and understanding, the depth of aesthetic experience (domain of creation) involves emotions, and a sense of responsibility or solidarity (domain of coexistence) is bound up with personal maturity and integrity of character.

It is possible to tend to one of the domains without either of the two remaining ones. Indeed, we frequently come across people in whom only one or two of the three spheres are well developed, such as knowledgeable scholars whose ego makes them say naïve or harmful things in the context of politics, or renowned artists who do the same. The point of education in our understanding of the term is not only to develop any one of the three domains but also to achieve a balance between them. One way to do it is to be conscious of the three domains while accepting the fact that at times one may be developed at the expense of the other two. The strategy is analogous to that of the 'conflict of aims' in second language teaching, where we aim at balancing communicative and linguistic aims and at the same time teach one aspect at the expense of another (Janczukowicz 2015) or 'conflict of values' (Snyder 2024), where we accept that freedom of a human being at one level of experience involves a choice of the value most important in a given situation while accepting the worth of all of them in general.

In some way, keeping a balance between the three domains may even be easier than resolving the 'conflict of aims' or the 'conflict of values' as the spheres in which these domains function do not form a paradigm: they are not alternatives, only one of which could be present at one time. An example of an educational material that forms a synergy of all three domains might be James Michener's *Hawaii*, which can be a source of information and understanding of history, geology or social studies and in this way develops the domain of cognition, but it can also be a source of an aesthetic experience and in this way it can operate within the domain of creation. At the same time, it describes relationships between groups of people, different generationally, ethnically, nationally, or racially; and with each part it shifts perspective, telling the story from a different point of view, e.g., of Polynesian settlers, Chinese or Japanese immigrants, or those coming from the continental USA. As a result, the book can also contribute to a better understanding of the nature of coexistence between various groups in one community and become an educational factor in the domain of coexistence. Although not all

learning situations will relate to all three domains, an awareness of the need to keep an overall balance between them will help when teaching within any of them.

That is why the first part of the book, although discussing the three domains separately, will make constant cross-references to several aspects vital for each of them. The discussion of the evolution and development of cognition in Chapter 1 will include not only such aspects as the mental capacities, but also different types of thinking, such as associative vs. insight, or syntagmatic as opposed to paradigmatic associations, the last two being very important for the discussion of the domain of creation. Likewise, one of the two perspectives taken on the question of *cognitive dissonance* (its role in building *critical thinking* and *cognitive appeal*, discussed in Chapter 1) will be later taken up in Chapter 2 during the discussion of *flow* as an optimal aesthetic experience.

Similarly, the discussion of experience and aesthetic pleasure in Chapter 2 will make references back to the cognitive appeal from Chapter 1, while the *narrative* discussed in Chapter 2 in the artistic sense will also draw on the discussion of the *narrative* as a cognitive tool in Chapter 1. Moreover, Chapter 2 will discuss *creative thinking* in ways relevant for both artistic creation and cognition, i.e., in a more general sense, understanding it as any kind of thinking that makes human invention possible. The last aspect discussed in Chapter 2 is the notion of *flow*, the optimal experience, especially relevant for *aesthetic experience*, though also very important for other aspects of human activities.

Chapter 3 discusses our coexistence with other people in the context of our attitude to ourselves, firstly, whether a sense of unity with other people is innate, and where it comes from. Then the emotional aspect will be contrasted with the notion of *conscience* and with what Bloom (2018) describes as *rational compassion*. The remaining part of Chapter 3 will be devoted to the discussion of coexistence within a community, social cognition, and in contact with other social groups, with what Kapuściński (2018) calls *the other*. A separate section will be devoted to the *metaphysical inclination* as a natural result of the human drive to understand the world beyond the sensory experience. Indoctrination or propaganda are often seen as factors which obstruct or even reverse rationality, critical thinking (Siegel 2019), or general mental capacities and freedom (Snyder 2024), that is why the last part of the chapter will involve an overview of forces which subject people to contemporary

forces of indoctrination, and make them decline cognitively or coexistentially. The role of language and the concept of positive freedom will also be discussed in this context.

The second part of the book discusses the process of education from a double perspective; namely, that of the person who undergoes the educational change (the learner) and somebody who brings about that change (the teacher), both of whom are, or should be, subject to educational change. The ten chapters of this part show how to approach the educational process from both the theoretical and practical perspectives. However, the ideas presented there can be realized only if the teacher perceives the process from the point of view of constant development within any of the three domains. In the first half of Part II, certain complexities and ways in which they contribute to the process of education are presented, e.g., the complexities of the teaching procedures (Chapter 5), three levels of the learning motivation (Chapter 6), or the role of general and specialized education in the overall process (Chapter 7).

Chapter 8 discusses language education as the basis of all three domains, while Chapter 9 illustrates the main ideas outlined earlier in the book by providing concrete examples of ways in which a class could be conducted, showing how each of the three domains could become the teaching aim. Chapter 10 goes over the introduced notions and proposes how to balance or reconcile some of the seemingly conflicting ideas.

Part III of the book is an essay that recapitulates the ideas discussed in Part II and presents the process of educating someone in the metaphor of the garden, where the teacher's role is to notice and develop the learners' potential, a process as indefinite and unpredictable as an act of cultivating a garden. The purpose of this essay is also to show the unique position of the teacher as an artist who comes in contact with the minds of the learners and uses his or her talent to bring to the students' awareness of their own talents and motivations. The task is especially challenging because within all three domains, the educational goals focus on the things that need to be, as it were, drawn out or educed from the learners and not imposed on them. All three crucial educational effects, i.e., critical thinking, creative thinking, and conscience, can appear only out of the students' own potential and not as an automatic result of teaching procedures. That is why the concrete examples provided in Parts II and III should be treated as an illustration of the process and not as a set of techniques to be followed to the letter.

Part III also elaborates on the notion introduced in Part II, of *non-pragmatic education*, defining it not as something 'impractical' but rather 'more than just practical,' showing ways in which focusing entirely on the pragmatic educational gains can lead to the stagnation or even intellectual decline. While many sources attempt to justify the higher mental processes in terms of the survival benefits and utilitarian gains, the approach of Part III, and indeed the whole book, is to advocate a focus on such educational goals that go beyond the practical advantages, calling it a *non-pragmatic system of education* (Wenzel 2020). Far from disregarding the practical advantages, such an approach towards education assumes the more 'practical' or specialized skills to be incorporated into the more 'general-knowledge oriented' education, not eliminating it, but rather giving the 'pragmatic' knowledge a better understanding and thus making it into a more fulfilling part of one's life.

The overall aim of the book is to present the process of education as a natural but necessary continuation of the evolutionary processes that brought about the present state of human mentality and consciousness. In the discussion of most aspects (in Part I), it starts with basically biological phenomena (governed by the natural evolutionary forces) and moves on to describe crucial aspects of human mentality, which can be argued to have developed out of the biological ones, but which are also influenced by human consciousness. Parts II and III move on to describe ways in which education can trigger such development and the conditions under which this can happen.

Methodologically, such a description is challenging because it draws from many disciplines, each of which has its own methods of investigation, while similar concepts are described in different ways in different fields. However, most of these fields are themselves interdisciplinary in nature, the best example of which is the way that evolutionary processes are described. Studies of human evolution do not rely exclusively on archaeological discoveries, but involve a cooperation between, e.g., archaeology, anthropology, and primatology, and more recently also genetics, chemical analysis, etc. (Wragg Sykes 2020, Trubits 2015, Bahn 2017, Altares 2023, and others). If we move on to the study of the evolution of human language, human mentality or musical capacities, the necessity to cooperate with scholars of other specialties grows, as such studies involve among other disciplines: linguistics, acoustics, musicologists, psycholinguistics, or neurolinguistics (e.g., Żywiczyński 2018, Arbib et al. 2023,

Tomasello 2019, Bickerton 2009, Corballis 2002, or Trainor 2015), the last two of which are in themselves interdisciplinary fields.

Likewise, the discussion within the field of educational psychology, which in our case is grounded in the frameworks created by Vygotsky, Piaget, Bruner and Ausubel,[5] combines the disciplines of theory of education, cognitive and developmental psychology, to mention a few. However, the conceptual framework that binds all of them is that of the philosophy of education, in itself a discipline made up of two fields: the general philosophy and its practical reference to educational practice (Siegel 2019, Kostyło 2019b). The overall structure of the book relies on the Aristotelian three-tiered division into truth, goodness, and beauty relating to the three domains of consciousness: cognition, coexistence, and creation, which we distinguished in our earlier book and which we also use in this one. However, the philosophical basis of individual solutions rely more directly on the frameworks created by other philosophers; namely, the general approach to science and critical thinking relies on Karl Popper, the understanding of aesthetic experience on Władysław Tatarkiewicz, how a discussion with students can be conducted draws on both the Socratic method and general principles of *discovery learning* outlined by Jerome Bruner.[6]

These fields and these names do not complete the list of the disciplines that contributed to the final shape of the book. The times when philosophy was able to involve all human knowledge are long gone. It has since grown and branched out into so many fields, most of which have developed their specific 'bubbles' of methodologies and terminology, that the time has come, perhaps, for philosophy to equip humanity with ways in which these different disciplines could not only coexist, but also feed off one another; thus, contributing to the overall growth of knowledge and understanding. Since human mentality evolved into its present state through an ability to communicate and cooperate; hopefully, this book will contribute to the possibility of various disciplines communicating and cooperating and, in this way, will also increase our ability to move our educational skills forward.

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[5] We are referring to Vygotsky (1986 [1934]), Piaget (1977), Bruner (1986), and Ausubel (1968).

[6] We are referring here specifically to Popper (1972), Tatarkiewicz (1986), and Bruner (1997 [1962]).