The Phenomenon of Consciousness

Educational Perspective

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Contents

Introduction

It is our belief that all learning starts in the mind. Different aspects of learning will engage the mind in various ways[1] from the most basic, physical skill to the most sophisticated operation involved in a creative act. This is why it is of primary concern for anyone concerned with education to explore the many mental paths that can be followed. Such explorations can be conducted from the outside by studying the observable behavior of a learner and hypothesizing as to the exact mechanisms that led to it or by looking at the process from the point of view of the learner and ways in which changes occur to everything that concerns him or her. This is why the phenomenon of consciousness is so important to education, understood here, as all forms of external influence that lead to bringing about learning to its highest possible potential.

Education can take many shapes – from the institutionally organized form of public **schools**, through a much more direct influence of each individual **teacher**, to the most personal form of **self-education**. All these and many more forms of education will be addressed in the present book, at times directly, at other times, when our focus is on the change itself rather than the medium, by indirect assumptions.

Although the mind is crucial in our discussion here, it is not the mind itself that will be central, but the sense of awareness of itself or of the external environment in which it exists. This most general understanding of the phenomenon of consciousness will raise several questions, such as how it happens that I am aware of my own existence, that I not only perceive and experience the reality around me, but also can analyze and come to conclusions about what I perceive and experience. Secondly, do I need language to be able to do it? To what extent does

[1] Learning is understood here following Reber (1985) as any successful change in mental or physical behavior or state occurring as a result of a deliberate influence.

the language that I use enhance or perhaps limit my consciousness? Thirdly, the question arises of whether consciousness is a gradable concept, i.e., if one can have more of it than another human being. Furthermore, when compared to complex animals, do only human beings have a more developed sense of awareness? This again leads us to the crucial question of how to treat the phenomenon of consciousness within the theory of evolution. Most importantly, we need to raise the issue of the possible practical implications of our conclusions; namely, whether they should shape educational practice to some extent.

The aim of the first part of this work, rather than review all previous attempts to explain the phenomenon of consciousness, is to propose a more comprehensive paradigm, in relation to which we can organize what we already know about it. Apart from the reorganization of this notion from various perspectives, several additional discussions are offered regarding it: namely, whether consciousness is an exclusively individual phenomenon or a collective concept, whether we can speak about its intensity, i.e., different degrees of it within individual humans or even whole societies, and most importantly, whether it is possible to bring about any changes in its quality by external forces, such as education.

The aim of the second part of the book is to propose an idea for the direction in which education should go in order to bring about positive changes in human consciousness. These changes are analyzed within the three domains of cognition, creation, and coexistence. A general proposal is made regarding human consciousness that is necessary for humankind to make a new evolutionary leap forward analogous to evolutionary changes at the biological level. Moreover, suggestions are made regarding the practical implications of this proposal, which are useful from the point of view of the teacher faced with an insoluble directive to "make a student creative" or "make a student think." While critical thinking and creativity are complex processes impossible to learn through a set of hard and fast rules or a manual, the last section of this book provides examples of what can be done to improve the chance of its happening given favorable conditions and the learner's attitude and motivation.

On the whole, the book aims to discuss the phenomenon of consciousness in a way understandable regardless of the terminology that the reader has used so far. To use such general terms, a preliminary explanation is needed to clarify the meanings of the expressions used here. Firstly, the notion of *consciousness* can be interpreted as an ability

to adopt an outsider's perspective of my own person, in other words developing a sense of *self* with all its psychological and philosophical consequences; this, depending on the particular aspect discussed, is also addressed as *I*, *me*, or *autonoetic consciousness*.

Another even more important angle from the educational perspective is our awareness of the world at large, or the surrounding environment, where the processes of perception, cognition, and concept formation become crucial. Just as psychologists and philosophers use different terms with reference to the *self*, cognitivists, sociologists, educational psychologists, and semioticians also use different notions with reference to our consciousness of the surrounding environment as it is subjectively experienced and to our sum of knowledge about it. While such notions as *backstage cognition*, *vernacular culture*, *folk psychology*, or *World 2* refer to quite relatable concepts (each of which is addressed in due course) and are so close in meaning that, from the perspective of an educator's practical reference, they are almost synonymous, it is the notions of *noetic consciousness* and *Umwelt* that are used most often. *Noetic consciousness*, with its focus on knowledge as such, appears because of its importance from the educational perspective, for the coherence and complexity of the image of reality as opposed to merely accumulating or processing information. *Umwelt*, with its similarity or contrast with how other species perceive the external environment, is of primary importance since it is our aim here to show the development of human consciousness from an evolutionary perspective.

During the discussion two words are used in reference to being cognizant of something; namely, *consciousness* and *awareness*. These are disturbingly synonymous to the extent that *awareness* can be defined as "a state of being conscious of something" (Reber 1985: 76) and *consciousness* as "a state of awareness" (Reber 1985: 148). When discussing the phenomena connected with either of the terms, scholars usually distinguish between them by the area of problems they are associated with.[2] Likewise, in our discussion the word *awareness* is used mostly in

[2] For instance Carl James distinguishes between raising *language awareness* and *consciousness raising* (1997: 139–141), where *language awareness* refers to the sense of understanding the relationships in the language, bearing on shades or aspects of meaning, while *consciousness raising* refers to one's attention being focused on an exact linguistic issue that is problematic and needs to be learned.

reference to a particular field or area we center our attention on, while *consciousness* refers to the type or form of knowing rather than what this knowledge is about. That is why *awareness* appears in the context of *language awareness*, *historical awareness*, *cultural awareness*, and *accompanying self-awareness*, while *consciousness* is discussed as *anoetic*, *autonoetic*, *noetic*, *phenomenal*, etc.

Nowadays, a serious development has occurred within the field of basic mental processes, which are processes that enable us to function in the surrounding reality; we know increasingly more about sensory processing, or various aspects of attention. However, to a large extent we share these processes with other animals and, interesting as they are in themselves, they cannot account for the uniquely human ability to create art or make scientific discoveries. This is why in order to pursue the educational perspective on human consciousness, this book devotes much space to issues such as *higher mental processes*, *higher language functions*, and *higher motivational drives*.

While the book aims to formulate a coherent view of the phenomenon of consciousness irrespectively of the field of studies within which it has been researched so far, the particular fields are viewed from the perspective of certain individual scholars. That is why William James's influence is apparent in the field of psychology, Noam Chomsky's in linguistics, Endel Tulving's with regard to memory, while in philosophy we use Karl Popper's division of knowledge into Worlds 1, 2, and 3.The study of metaphor relies mostly on the work of the cognitive linguists George Lakoff and Mark Johnson, and for a coherent overview of the developments within the field of psycholinguistics we are mostly indebted to Ida Kurcz. However, Jerome Bruner, from the field of educational psychology, had the greatest influence on this book. It is his wish for "an educational environment that would focus on (1) what was uniquely human about human beings, (2) how humans got that way, and (3) how humans could become more so" (Palmer 2001) that we also set as our objective, and we hope this book is a step in this direction.

Part I: Consciousness and its aspects

Depending on which perspective on consciousness is considered, different mechanisms related to memory are involved (Wróbel 2012: 169). This involves not only storing the contents of our memory, but also the mechanisms of retrieval, forgetting, or selecting that happen in essentially different ways (Kurcz 1992: 23–27).[1] The most important thing, however, is the fact that different types of content involve consciousness in different ways, e.g., depending on whether we are talking about remembering how to do something, what we did in the past, or our sense of how the world around us is constructed, a different conscious process is involved (Tulving 1985b: 4). This is why it is the notion of memory that provides the perfect opportunity to organize and explain the complex, multi-layered notion of consciousness.

Furthermore, since the role of language is different depending on which aspect of consciousness is considered; whether we consider it as the *self* or as a complex mechanism of learning about the outer world, language is also discussed here. It can play a supporting role when we understand consciousness as the *self*. First of all, it provides a kind of scaffolding for our memory of events, as our first memories start from the time we use language to shape them (Conway 2005: 603), but it can also twist our memories of what happened in interesting ways, as is the case when inducing false memories through suggestion (Wróbel 2012: 195). However, when considering the consciousness of outside reality, language is vital to its discussion and understanding (Macphail 1998: 221–223). It shapes our conceptual world, and consequently our consciousness of it. While the exact nature of the relationship between

[1] An important example is the mechanisms of repressing the memories contradicting a positive self-image as contrasted with the mechanisms of the selection of information that either confirms or contradicts one's view on the world.

language and thinking is still being argued (Rączaszek-Leonardi 2011: 151–152), the link between human consciousness and both language and cognition is undoubtedly close.

This section presents the relationships between memory and consciousness and language and consciousness. The aim is to present a comprehensive view of different aspects of consciousness with respect to different types of memory. Although the starting point is Tulving's distinction into *anoetic*, *autonoetic*, and *noetic* consciousness, which are related to procedural, episodic, and semantic memory, respectively, each of these distinctions is developed with the hope of creating a broader picture. Furthermore, the relevance of each of these types with respect to educational implications is presented.

Chapter 1. Procedural memory

The most general distinction of types of memory are procedural, episodic, and semantic (Tulving 1985a, Kurcz 2011a: 99). Procedural memory involves knowledge of "how," and is mostly associated with motor control, while episodic and semantic memory relate to knowledge of "what," which can include past events and the conceptual sphere of knowledge. In other words, procedural memory is responsible for "procedures," i.e., skills or an ability to perform sequences of actions, while episodic and semantic memory (both referred to as declarative) involve the "factual content" that can be discussed and described.[2]

A command of any language is an example of the unique interplay between these types of memory, as it involves, among other things, remembering lexicon and grammar, i.e., signs representing certain meanings and rules for combining them (that are stored in semantic memory). However, it also requires communicative skills, i.e., the ability to use these signs and rules for the sake of speech production and comprehension, which mostly requires access to procedural memory. The constant use of these two types of memory is most apparent when learning a new language since new vocabulary, structures, and rules of phonology are stored in the *semantic memory*, while developing fluency of communicating messages involves very strict motor control, muscle coordination, actions, and decisions as to which action to perform, which are part of *procedural memory*. *Episodic memory*, with its affective and phenomenal aspect permits us to relate the knowledge to our

[2] Another distinction of types of memory into implicit and explicit – which by some authors (e.g. Moscowitch 2000) is treated almost synonymously with the distinction into procedural and declarative – is deliberately omitted at this stage of the book and will be discussed in section 1.3.1.

experiences and our sense of identity, which reinforces the process of language learning.

1.1. Three stages of procedural memory

In order to explain the type of consciousness involved in procedural memory, Tulving uses the term *anoetic consciousness* to point to the fact that it does not involve "knowing," understood as an awareness of the elements that make up the particular skill that requires and uses procedural memory. Although it includes perceptual registering, internal representation, and reacting to the present context (Tulving 1985b: 4), it is the kind of consciousness that involves only the "here and now," and, in this sense, it appears in very similar ways in humans and many animals.[3]

However, there is one important aspect in which procedural learning in humans is different from that of the animals; namely, the deliberate act of learning something after being taught. Whether teaching is performed by someone else or it happens through self-education, the fact that it is deliberate, and as a result, a conscious decision, forces us to look at *procedural memory* not from the point of view of the final state, but rather as a process starting from the phase when we do not know how to do something at all until the point we become proficient in it.

At the initial stage of learning a new activity, *procedural memory* usually involves deliberate application, i.e., consciously choosing what action should follow with full awareness of what is being done. Each time a particular sequence is repeated,[4] *procedural memory* helps to "attend a little less" to what is being done – each choice becomes easier, because it has already been made, there is less hesitation and, consequently, the

[3] Please note how close Tulving's understanding of anoetic consciousness is to Montemayor and Haladjian's explanation of attention, understood as a deliberate selection and coordination of certain cognitive processes over others.

[4] The process of acquiring fluency in certain responses requires more than repetition. For details see Kurcz (1992: 142–144).

person performing it becomes ever less conscious of what steps have been taken in order to arrive at a particular result.[5]

Anderson (1985) distinguishes three stages in the whole process of developing a new skill or learning a new procedure, which are: *cognitive*, *associative*, and *autonomous*. The initial, *cognitive stage* mostly involves the conscious study of a given problem and involves to a large extent not only procedural but also declarative memory (mostly semantic), which is discussed later. This stage, e.g., reading a manual before repairing a car or attending lengthy theory lessons during a driving course before the first attempt to drive a car, is a fully conscious phase that also involves noetic consciousness, which is discussed in detail when semantic memory is analyzed in section 1.2.2. At this point, suffice it to say that our conscious awareness of the action performed must coincide with conscious attention and conceptual consciousness (an understanding of what given action we are performing and why) is one of the greatest assets.

The second *associative* stage is the actual process of developing procedural knowledge[6] and applying procedural memory. It is also the most diversified from the point of view of various aspects of consciousness. It begins with deliberate application and conscious choices and relies on forming associations among separate aspects and making the whole procedure more accurate and fluent. It can be more extended in time depending on several factors, such as the person's age, cognitive abili-

[5] This shift from entirely conscious choices and full attention focusing on the activity performed toward fully automatic action does not concern motor skills requiring muscle coordination exclusively. An analogous process takes place in situations where someone must choose what to do or how to react in situations requiring volition. The first time, making a choice requires mental or emotional effort, one tends to ponder the reasons and outcomes. When faced with a similar choice again, the whole process of decision making becomes easier, until acting in a particular way under given circumstances becomes so obvious for a given person that he or she may not even realize why he or she has acted in a particular way under such conditions (Kępiński 2015: 85–103).

[6] Throughout this section three terms are used: *procedural memory*, *procedural learning*, and *procedural knowledge*. By procedural memory we mean the mental capacity to process relevant information, by procedural learning – changing it, and by procedural knowledge – the end result of our learning. However, since these distinctions are not crucial for the current discussion, all three will be used fairly interchangeably.

ties, the complexity of a given process, or the degree of how abstract it is. However, even complex processes, composed of a long sequence of steps, such as a sequence of actions we perform when preparing food, or getting ready to go out, can, in time, include a lesser presence of the conscious component and become "autonomous," i.e., move on to the third stage of the process of learning a procedure.

This third *autonomous* stage is the phase where the sequence of actions becomes fully automatic. In terms of acquiring a skill, it is its final and desirable outcome because it becomes independent of external circumstances. We do not have to focus conscious attention on the action or deliberately choose what to do next. As a result, it becomes smooth, effortless, and correct. We lose the ability to mentally verbalize what we are doing (Kurcz 1992: 142) to the point that we even lose our awareness that we are actually performing a given action.

Montemayor and Haladjian (2015: 197) use three different terms to describe the features that accompany the acquisition of procedural knowledge.[7] They speak of *effortless attention*, *unconscious attention*, and *flow*. Effortless attention is used in contrast to effortful attention since performing activities normally requires a deliberate effort of concentration, while in the final stage of procedural learning mental effort disappears and what is mostly required is obtaining information from the environment involuntarily. Although the complexity of a given activity requires many cognitive faculties to function with full precision, it requires far less energy. The term unconscious attention, on the other hand, is used in contrast with conscious attention, which means a deliberate focus and integration of different cognitive faculties in a way that makes a person aware of what he or she is doing.[8] Since this stage does not reach conscious awareness, the attention used here is defined as unconscious.

The last term Montemayor and Haladjian use is *flow*. This term describes a state in which a person fully experiences what is happening, and it is particularly relevant to the final stage of procedural learning

[7] Although they do not use Anderson's term a*utonomous stage*, the phase they describe relates to the final stage of procedural learning.

[8] While the main idea of Montemayor and Haladjian's book is to show that consciousness and attention are two distinct phenomena, they also claim that these two coincide when conscious attention is applied.

because it shows that achieving this state is strongly connected with performing something requiring very intricate skill and, in a way, of losing oneself in it. They use the term after Csíkszentmihályi (1997), who describes it as a state of disconnection from reality, an almost ecstatic experience, that does not require deliberate effort but is only possible to achieve when performing a difficult and often creative activity. It is of particular interest to us because it highlights the condition of the full disengagement of effort when performing a particular action (with effortless attention) combined with an opportunity to focus on something else, which, in this case, is enhanced perception of the external environment or of the actual performance.

1.2. Anoetic consciousness and procedural memory

The explanation of anoetic consciousness in the situations described above involves several aspects. We use attention, i.e., we focus our cognitive faculties knowingly and deliberately on an activity that is being performed, and we integrate these faculties for the sake of the successful execution of a given action. For activities that involve movement or a manual skill, the cognitive faculties include muscle coordination, spatial memory, or anticipating and visualizing a potential result. This cognitive integration combined with deliberate focus is referred to as *conscious attention* (Montemayor and Haladjian 2015), and it is a crucial factor in the occurrence of the aspects of consciousness that relate to accessing information from space.

Tulving's anoetic consciousness refers to this situation, but his description includes two additional factors; namely, the appropriate behavioral response and confinement to the present. Unlike the two other types of consciousness, anoetic consciousness relates to the awareness of the "here and now," and not beyond. Therefore, if we compare different stages of procedural learning to the degree and type of consciousness, the higher the level we reach, the greater the focus is on the present moment.

Moreover, procedural learning starts with the level of cognition for report and action (Montemayor and Haladjian 2015), which means that

the capacity to *verbalize* the performed sequence occurs at some point. This does not necessarily mean actual speech, rather this refers to a kind of conscious analysis of what is being done that occurs in the mind with the help of language. Vygotsky refers to this as *inner speech*, analyzes its syntax, compares it to spoken and written language, and he discusses the overall relationship between thought and language (1986: 84–87).[9] Although it is also relevant for other aspects of consciousness, the phenomenon of inner speech relates to our awareness of a newly performed action, and thanks to it we can observe that in the initial stages we are fully conscious of what we are doing, which manifests itself in our ability to verbalize the process that is being learned.

With a higher degree of the acquisition of a particular activity, the need for *conscious attention* decreases. The final stage of learning procedures is when there is no need to focus on the actual performance or aspects of it. *Conscious attention* as described by Montemayor and Haladjian together with its several aspects, e.g. conscious attention to intention, can disappear completely or become limited (2015: 167). The ability to describe a process verbally, either inwardly or aloud, decreases as well. At these stages, attempts to consciously attend to what one is doing or to describe how it is done can result in failing to actually perform a given action. This is why a basketball player, who otherwise faultlessly performs a double slam, needs to perform the procedure very slowly (and consciously) in order to describe how it is done, or a guitarist will start making mistakes when playing a particular piece the moment he or she starts thinking about what to do next. Therefore, these two aspects of consciousness; namely, *conscious attention* and *inner speech*, decrease as procedural memory improves with regard to a particular sequences of actions.[10]

There are several additional aspects of consciousness that can be involved when procedural memory is at work, one of which is quite relevant in the context described here; namely, *accompanying self-awareness* (Ziemińska 2012: 402–404). This is an aspect of self-awareness that is

[9] The notion of inner speech is also considered crucial in the development of a sense of self; however, this aspect will be analyzed later.

[10] Among other crucial factors, apart from repetitions, which influence our procedural memory, there is also, i.a., structuring the content, timing the repetitions, and verbalizing parts of it (e.g., describing it to someone) (Kurcz 1992: 13).

present during any activity or experience, which enables us to say at any given point what exactly is being done or experienced. Unless our attention becomes drawn to that activity, we would not be "conscious" of it, as our conscious attention is usually focused on other matters. However, if anything, be it our own thoughts or another person, interrupts our activity, we are able to say exactly what we are doing.

From the point of view of procedural memory, *accompanying self-awareness* does not change depending on how well a particular procedure is remembered at the initial stages, i.e., the *cognitive* and *associative stages* described in section 1.1.1. Nevertheless, at the beginning of the *associative stage*, when we are still acquiring the procedures of a new activity, *conscious attention* is so focused on the activity itself that it becomes much harder to switch it to the awareness of the fact that we are doing it. In other words, the more we focus our consciousness on the actual performance, the less we think about the fact that it is being performed.[11] Yet, in the final *autonomous stage*, when a sequence of actions or choices has been so frequently executed that it has become fully automatic, it is possible to disengage completely from it, which provides room for the presence of *accompanying self-awareness*, in which we can mentally register that we are actually performing a given action as we are doing it.

In this way, we can venture the claim that with the development of our procedural knowledge we involve ever less of the three aspects of the conscious component discussed previously – *conscious attention*, *inner speech*, and *accompanying self-awareness*.[12] The aspect of consciousness that remains available to us is *anoetic consciousness*, which requires perceptual awareness and particular aspects of attention. What can appear, though is not always present, is the sense of *flow*, an enhanced sense of experience, even ecstasy, that is possible when we are performing

[11] This reverse relationship of consciousness and the subject or the object of consciousness reappears in different contexts (Ziemińska 2012: 404–405) and is discussed later.

[12] The degree of complexity of a given action in which we disengage our consciousness almost entirely at the autonomous stage can be considerable. In his semi-autobiographical book *All Creatures Great and Small*, James Herriot describes situations in which he carried out complex veterinary procedures in the middle of the night not being fully conscious of what he was doing: "Many times over the past months I had got out of bed, driven into the country, done my job efficiently and returned to bed without ever having been fully awake" (Herriot 1975: 237).

a demanding skill at the peak of our abilities, thus forgetting other aspects of the surrounding reality and losing ourselves in it (Csíkszentmihályi 1997). This psychological state is the first important aspect of the *intensity of consciousness*, a crucial notion in our further discussions.

1.3. Procedural memory – educational implications

Before we delve deeper into the educational implications of procedural learning and its conscious aspects, we must address another distinction of types of memory, namely, into *implicit* and *explicit memory*. This distinction usually corresponds so closely to the notions of procedural and declarative memory, respectively, that it is sometimes used almost synonymously. However, the corresponding notions of *implicit* and *explicit* learning are very important to our discussion of educational implications.

1.3.1. Implicit and explicit learning

The basis for the notion of implicit memory is the phenomenon of learning without being consciously aware of it. Examples of behavioral learning found in animals and infants show that certain associations and behavioral patterns are developed without the presence of the cognitive aspect. We can see not only animals perfecting their skills without an awareness of learning anything but also infants learning vital skills and improving with new attempts. Since both cases require holding information necessary to improve mentally but not consciously, the phenomenon is called implicit learning.

In both animals and infants we cannot be certain of the extent of their awareness or its absence; we can only be certain that no verbalization or inner-speech is taking place. In comparison to procedural learning mentioned above, the cognitive phase of procedural learning is missing, and instead the whole process relies on intuitive associations.

Adults learning relatively complex patterns and systems implicitly, i.e., without being aware of them, is an interesting point of comparison, because, unlike animals and infants, adult humans can describe verbally

the state of their knowledge before and after an exercise. Reber (1993) proved experimentally that it is possible for adult subjects to make correct guesses in deciding which strings of seven elements were correct, even though they did not even realize that there was a rule governing their order. It even turned out that the awareness of the existence of a rule lowered their results or even made them come up with an incorrect, non-existent rule.

Reber (1993) argues that the implicit learning system is a phenomenon common to animals and humans and does not vary considerably among species (humans included). It is the ability to acquire knowledge explicitly that appears in humans only and seems to be an addition rather than a replacement of the older system. This finding has serious implications for our understanding of the evolution of consciousness since it shows it not from the perspective of one aspect replacing another, but rather as an addition to it that **makes the whole system grow in complexity**.

A perfect illustration of the way it happens is language development in children. The features of first language acquisition have been researched extensively and show that the emergence of grammar rules occurs in a fixed order and attempts at instructing a child how to speak through error correction or the explanation of rules has very little impact on actual learning. Furthermore, the trigger for acquisition is the exposure to adult conversation and caretaker's speech or "motherese."

All these features imply that first language acquisition is a clear-cut case of implicit learning, where both behavioral and structural patterns develop through intuitive associations, and as long as the "input" is correct and there is little interference from grown-ups trying to instruct the child, thus spoiling the natural process of implicit learning, no awareness of the rules or of the fact that one is learning them is happening. However, let us consider a case of a two-year-old child, i.e. around the age when the mental and linguistic boost appears, who says the following: "You say one man, two mans, but three people."[13] If the child had only used the form "mans," meaning "men" or "people" in a sentence, it would be a typical case of overgeneralization that is characteristic of the grammar rule acquisition phase. This child, however, is speaking

[13] The sentence uttered by this two-year-old was in Polish: "Mówi się jeden człowiek, dwa człowieki, ale trzy ludzie."

about the rules, which signals the first steps of explicit, or conscious, learning. It shows that even at very early stages implicit learning can coexist with explicit learning, and that with growing cognitive capacity implicit learning might not disappear, but it will become only a minor element in the whole process of development and learning. While the child might use them, he or she focuses his or her efforts on actively searching for answers concerning the language (Filipiak 2017: 92–93).

Having reached the point when explicit learning starts, cognition usually accompanies the initial stages of learning new procedures. This is why when it comes to developing new skills and going through the stages described earlier (cognitive, associative, and autonomous) it is best to describe them as procedural learning and to use the term implicit learning for the phenomenon of learning through the formation of intuitive, unconscious associations, which we share with our evolutionary predecessors and human infants.

1.3.2. The educational implications of procedural learning

The issue that remains to be discussed at this stage is what implications can be drawn concerning consciousness when analyzing it from the point of view of procedural memory. We could see one of its aspects, the one that very often first comes to mind when speaking about consciousness in its everyday use. In the popular understanding, when referring to consciousness we mean being aware of the present moment as it is passing, which involves integrating cognitive skills on what is being done (*conscious attention*), our ability to verbalize it (*inner speech*), and being sufficiently aware of it all that in the event of somebody interrupting at that moment we would be able to say without hesitation what we are doing (*accompanying self-awareness*). The question remains, to what extent is this relevant educationally.

Firstly, we have noted that anoetic consciousness is not one type of consciousness, but rather a collection of several factors, each in itself important, but from an educational perspective not important enough to be referred to as consciousness per se. Secondly, the degree to which these aspects are applied is in reverse proportion to the degree of procedural memory. With each stage of the acquisition of a particular sequence of actions, we apply less conscious attention, we are less

capable of verbalizing what we are doing, and, in the last stage, when a particular procedure becomes fully autonomous, it is even possible to disengage the accompanying self-awareness. In other words, we postulate that **consciousness understood as a sense of a given moment decreases as procedural memory improves**.

Secondly, we can see its practical relevance for any instance of procedural learning, i.e., the importance of devoting sufficient care to the initial cognitive phase. This care refers to both the learner and the teacher. The learner should obviously go through this phase patiently, making sure that all aspects of a given mechanical skill are executed correctly, and only later work on the fluency of performance, i.e., go through the associative stage so that the quality of performance at the autonomous stage does not include mechanical mistakes. Nevertheless, it is the teacher's duty to ensure that the learner goes through the cognitive phase in this way to avoid him or her making certain mistakes permanent in his or her performance. Correcting mistakes that have reached the autonomous stage of procedural learning is extremely hard to achieve, as can be seen by examples of fossilized grammar patterns or in the case of teaching English as a second language in eradicating certain habitual mispronunciations.[14]

Thirdly, when dealing with children whose learning in general relies mostly on implicit rather than explicit memory, it is impractical and useless to rely on the three stages of procedural learning. Consequently, it is much more efficient to use implicit learning, which, in practice, mostly entails exposure to information or observation of desired processes (as is the case with the natural method in second language acquisition) and counts on the child to implicitly (or intuitively) infer governing rules without being aware of them. Such typical instructional techniques as explanation or error correction become futile in these cases and are usually a waste of effort for the teacher and cause unnecessary confusion for the learner.

Lastly, in the case of adult learners, there remains one aspect of consciousness, earlier referred to as *flow*, which is an enhanced perception of the external environment. This can be achieved when we disengage fully from the surrounding reality and focus completely on the experience of

[14] Janczukowicz (2014) provides an example of this process when correcting learners' habitual mispronunciations of certain words.

the moment. The complexity of the action performed does not have to inhibit this experience. On the contrary, it can increase the chance of this state achieving artistic or almost metaphysical levels. For example, an expert pianist or ballet dancer can achieve this state in artistic performance to a much higher degree than can any recipient, i.e., member of the audience. Here we refer to decreasing consciousness of the procedure while enabling the achievement of an analogous experience at a much higher level, which is discussed later as an artistic experience.[15]

As to the educational implications of this phenomenon, it should be noted that genuine feelings cannot be evoked through technical means; therefore, there is no foolproof way of handling somebody's education in the direction of *flow*. However, each teacher, as long as he or she has idealistic convictions, should aim with students to no less than the peak of their abilities. Whether the student takes advantage of this remains the question of his or her motivation and is discussed in further sections of the book.[16]

The final conclusion to this section of our discussion should, therefore, be that one way of understanding consciousness is that the actual awareness of a given moment decreases as the procedural memory responsible for a given action develops. Educationally, this implies that particular care must be taken of the cognitive phase of any procedural learning. However, given the complexity and character of the particular procedure that is being performed, one might additionally achieve an enhanced experience of the moment. While this complexity is not

[15] Nevertheless, achieving this sense of disengagement from what one is doing does not necessitate an enhanced state of consciousness in metaphysical or artistic senses. One can think of a cook preparing a dish successfully and forgetting completely about what he or she is doing; however, he or she does not achieve any metaphysical experience of preparing the dish through this but instead is reminiscing about a conversation from the previous day. We can reverse the situation in which a pianist falls into such a routine that he or she gives a concert while thinking about what to cook for dinner. Consequently, the relation between the quality of an activity and experiencing flow is not automatic. Rather, it reveals contexts in which this experience is more likely to happen.

[16] Idealistic convictions (understood as the devotion to achieving the most with learners' possibilities) should be present in all educational situations that involve the teacher-learner relationship. For details of this in language teaching, see Wenzel (2001).

a necessary prerequisite, nor is this increased consciousness a necessary outcome, both these factors (relevant to our further discussion of the *intensity of consciousness*) only provide favorable conditions for a state that is experienced infrequently by few people.

Chapter 2: Episodic memory and semantic memory

The general term to describe the other two types of memory is *declarative memory*. The common way of describing the difference between these two types is to refer to procedural memory as the knowledge of "how" and to declarative memory as the knowledge of "what." While procedural memory enables us to perform actions in particular situations or contexts, declarative memory equips us with an awareness of what we know. Our memory of what happened is *episodic memory*, and our knowledge of the way the environment around us is shaped is *semantic memory*.

There are several differences between procedural and declarative memory. Firstly, we perceive procedural memory as something constantly changing, while both declarative types are something static (Kurcz 1992: 59). The reason for this is that procedural memory becomes most conspicuous when rules or procedures are being learned; as a result, the change in what we can do becomes the focus of attention. Declarative memory, on the other hand, which is relating to what can be talked about and discussed, is perceived as the state of our knowledge, a construct captured in this particular moment in time.

This perception is misleading and an oversimplification. Learning rules, skills, and procedures stops at the autonomous stage, frequently even earlier, but our knowledge of the world and ourselves keeps changing. Declarative memory requires huge reorganization each time a new notion becomes part of our cognitive structure (Neisser 1967, Piaget 1981), or, depending on our emotional state, when certain events are remembered or forgotten (Kępiński 1974a, Conway 2005). Procedural memory, on the other hand, changes mostly within the degree of speed and precision (Kurcz 1992).

Secondly, declarative memory is not an internally unified concept (Tulving 1983, 1985a) made up of episodic and semantic memory. *Episodic memory* registers personal experience in time and is mostly responsible for our sense of identity. It is built on our memories of sequences of events, which, in turn, form episodes. Both events and episodes are placed at a particular point in time and space in our memory (Neisser 1967). In turn, *semantic memory* relies on the conceptual system that we form to organize our knowledge of the world, and as such, it is impersonal and independent of time and space.

Most importantly, declarative memory engages consciousness differently than does procedural memory. While the role of consciousness in procedural memory is mostly in connecting and focusing cognitive faculties on the experience of the present moment, declarative memory equips us with an ability to adopt the point of view of an observer and to analyze ourselves and the environment around us. We can disconnect the experience from the actual moment of doing something and thanks to episodic memory look back and analyze past events or look to the future and formulate plans (Tulving 1985b, Kurcz 1992). It is this ability to disengage from the "here and now" that becomes a crucial factor in developing *autonoetic consciousness* and our sense of identity.

Alternatively, we can theorize about the world that surrounds us, form concepts, and organize them into the coherent structure of our knowledge using semantic memory. In this case, in order to understand the outside environment, we can hypothesize about it, formulate arguments, or form metaphors in an attempt to make sense of it. With the help of semantic memory, this is how we build our *noetic consciousness*, or our knowledge of the world through our own conceptual framework.

Consequently, we have two opposite directions that declarative memory allows us to take. Episodic memory directs us "inwardly" to whatever makes up a very complex sense of identity, generally referred to as the *self*. Impersonal semantic memory, on the other hand, is directed "outwardly" in an attempt to form a coherent image of the world or our outside environment, which is what philosophy and semiotics refer to as *Umwelt* (Deely 2001: 126, Wojtysiak 2007: 82). Therefore, it is not only the relation to time but also the direction (inwards or outwards) that is a distinguishing factor in our discussion on consciousness.

One last crucial difference remains between the two types of memory that is relevant to the type of consciousness to which they are related;

namely, the affective, phenomenal element that is present in episodic memory and which semantic memory lacks. The phenomenal experience refers to a crucial feature of consciousness, which is discussed further in section 2.4.3., and it distinguishes our theoretical knowledge of something (i.e., receiving new information) and the actual experience and awareness of the element of reality that is taken in. This aspect of awareness is illustrated by the difference between knowing that an object in front of you is red and actually experiencing the red color (Pinker 1997, Montemayor and Haladjian 2015).

The difference between knowing that something is present and fully experiencing it is related to the emotional aspect that accompanies episodic memory, and through this phenomenal experience we are able to relive the past and later to experience a similar emotional state as the one we experienced originally. Thanks to this, episodic memory also gives us the possibility to make plans for the future and to distinguish between actual experiences and imagining, dreaming, thinking, and perceiving.

Semantic memory, on the other hand, lacks this affective, phenomenal element. It is the result of our ability to form abstract concepts and link them into a meaningful or associative network of symbols (Ross et al. 2008). The very nature of this abstraction renders it devoid of the personal reference and emotional impact that it carries.[1]

Essentially different processes occur when either type of memory fails. The loss of episodic memory, or amnesia, involves forgetting events but not the meaning of words. Cognitive structure and an ability to verbalize one's thoughts remain. This indicates that it is more than the recollection of particular events that forms episodic memory. Aspects of memory such as that of other people, their faces, names, or handwriting are vital factors in episodic memory and can be crucial indicators that episodic memory is the most important aspect that shapes a sense of identity since through identifying other people it enables one to identify oneself.

[1] Tulving (1985b) in his description of S, a patient who suffered from a complete loss of episodic memory but had good semantic memory, showed how it was possible to "teach" the patient information about his past thanks to semantic memory. As a result, the patient knew his personal information, but he still had no memory of it.

The loss of semantic memory, on the other hand, creates problems with cognitive and linguistic skills. The fact that these two frequently coincide shows the importance of language in building our conceptual world. While the more basic forms of processing information occur without necessarily involving language, once we try to integrate this information into our cognitive structure and "make sense of it," i.e., see how it relates to our understanding of the world or its aspects, we do it through language.[2]

2.1. Episodic memory: Remembering and failing to remember

One of the main reasons for treating episodic memory as distinct from other types of memory is that it is governed by a set of separate rules for storing and retrieving recollections and memories. Firstly, episodic memory is not the passive process of recording events and episodes. On the contrary, it is the active process of constructing an image of what one has experienced that is influenced by the emotional impact of experiences (Neisser 1967). It deconstructs reality in order to reconstruct it into an image of the past based on actual recollections. This is why it is of an integrating character (Kępiński 1974b: 174, Rappaport 1961: 112–113). Whenever we compare the recollections of a person with the documented version of what actually happened, the resulting recollection is largely distorted by several factors (Kurcz 1992) pertaining to the event, which:

1) was not significant enough and the person failed to notice it;
2) was registered, but was lost for introspection as the person forgot it;
3) was sufficiently important to be registered and, under certain circumstances, could be retrieved, but it is currently unavailable for introspection, and the person needs a "retrieval cue" to recover it;
4) was sufficiently important to be integrated into the person's image of the past, and the person transformed it into his or her "life story;"

[2] We discuss the phenomenon of understanding, i.e., *experiencing meaning*, in greater detail in section 3.4.1.

5) was registered, but conflicts with the person's self-image, and he or she repressed it or transformed into a version more compatible with his or her self-image.

Not all events that we remember or fail to remember are equally important in forming our sense of identity. Firstly, the reasons why some events are registered while others are not, as is the case with category (1) above, are varied. The basic factors that determine our perception are important here. Depending on what our conscious attention is focused on currently, we might or might not register a particular event.[3] However, our attitude, current mood, or other emotional factors could cause us to fail to notice an event (1), or they could blur one type of memory while helping us to retrieve other types selectively (3). This happens in situations when under the pressure of negative thoughts we recollect only such events that show us or somebody else in a negative light, while influenced by a positive attitude we fail to recollect bad memories and remember only positive ones. The "negative" and "positive" recollections here refer to our own self-image or to our image of others, and both play important roles in the creation of our sense of *self*.

Secondly, our memory of events is in most cases contextual; we only remember them in a particular context, otherwise they do not "belong there." Hence we are able to recognize a particular person in one place, but not in another. Certain events seem to be easily retrievable in the company of some people, but in different situations we are surprised by our inability to retrieve them. Even a person's name or handwriting can be obvious in a certain context, while lost in a different one. Context provides us with a set of potential reminders or retrieval cues. This phenomenon bears some analogy to active and passive knowledge in semantic memory; we can remember the meaning of a word or the use of a structure when we are exposed to it, but cannot come up with it on our own. In both cases, it is the context that provides the necessary cue and helps us retrieve an item from our memory; the cue for episodic memory is frequently the physical circumstance, while for semantic memory, it is often the linguistic context.

[3] Two types of information processing are relevant here; namely, bottom-up, when certain aspects of reality draw our attention without deliberate effort, and the top-down, when we make predictions about what might be happening or what might be noticed and deliberately search for the information which verifies our expectations.

Thirdly, there are numerous reasons why a particular event is remembered at all. Most events, though successfully registered and processed at the time they occur, fail to leave a sufficient trace and seem to be lost as is the case with category (2). Even though a particular event or sensation, such as a smell, can bring it back occasionally, a vast majority of events are lost. This leaves us with the question of what factors cause certain events or episodes to be remembered permanently and stored in long-term memory or forgotten.

As mentioned previously, the most important factor in reinforcing episodic memory is its emotional impact. Its influence on episodic memory appears in its extreme form in the flashbulb effect, in which an emotional shock, such as receiving the news of a tragedy, triggers registering and remembering the tiniest details of the context in which a piece of information was received.[4] Nevertheless, there are many less extreme situations that, for no obvious reason, either remain vivid in our memory or become permanently lost. Apart from these factors that are common to and analogous for most types of memory, such as reinforcement through repetition or transfer (Kurcz 1992) and causes these traces to be better remembered and frequently brought back to our attention, there are many others that stay in our memory regardless of our attempts to remember or forget them.[5] One factor has a tendency to leave stronger traces; namely, we tend to remember events and their context better when they concern the formation of our self-image (Rosenzweig 1943) or our image of another person. This tendency, which is supported by experiments verifying the mechanisms of repressing memories from autobiographical memory,[6] indicate the vital role of episodic memory in forming our sense of *self*.

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[4] Nevertheless, as shown in further experiments, such as those Neisser and Harsch (1992) conducted, even then interesting distortions of actual facts occur.

[5] Conway (2005: 595) mentions the inner need to create a coherent view of self-knowledge and beliefs about oneself that also correspond with actual experience as the major reason why an event remains in long-term memory or not.

[6] Autobiographical memory is the memory of events as they relate to the formation of one's life story, while episodic memory refers to experienced events in general. However, according to Gardiner, only episodic memory has phenomenal and emotional flavor, while the creation of autobiographical knowledge relies mostly on impersonal semantic memory (2008: 286).

Conway (2005) analyzed this mechanism in the conceptual framework of the self-memory system in which the way events are remembered depends on the way we perceive ourselves, but it also becomes the main factor in creating our sense of self. One of the important claims it makes is that memory is motivated, and one of its goals is the need to preserve the coherence of our autobiographical knowledge according to similar principles that organize our cognitive structure in semantic memory.

2.2. Semantic memory and the cognitive structure

The other type of declarative memory is *semantic memory*, which incorporates our factual knowledge. Apart from impersonal and abstract qualities mentioned previously, it has other features that distinguish it from episodic memory; namely, it is structured and linked to the conceptual framework. *Concept* is understood here as an internal mental representation of the shared attributes of an object or a word (Vygotsky 1986), and the conceptual framework is the system of links and connections that are either meaningful or associative (Ross et al. 2008) and that connect the concept with the cognitive structure.

2.2.1. Early concept formation

In order to understand the complexities of human knowledge of the world, one can either look at the cognitive structure at a given point in time, examine how the conceptual framework develops within an individual, or determine how it has evolved in terms of a whole species. Regardless of which aspect is taken into consideration, the starting point in the discussion of semantic memory is the extent to which we discuss speech and thought as separate phenomena or as a large, complex phenomenon.

Without attempting to resolve the ongoing discussion about the exact relationship between language and thought, we can, according to Vygotsky (1986), safely assume that while it is possible to come across instances of thinking without language, the moment of its acquisition,

at least with regard to humans, is the turning point in mental development. At this stage language becomes a foothold for conceptual development, while learning about the world and developing a cognitive structure becomes the driving force for the development of language through the verbalization of ideas. This is why the notion of *higher mental processes* together with the notion of *higher language function*s are an important aspect of our discussion of consciousness.

Bruner, Goodnow, and Austin (1965) divide this process into three stages, in which new types of representation are added one by one. The first, most basic type is *enactive*, which refers to physical interaction with the environment, and we learn through doing something. The second phase is *iconic*, in which interaction with the environment is sensory, mostly visual, and we interact with the reality around us through mental images but not yet language. The third is *symbolic*, where *mental representations*, mostly in the form of language, allow for much more complex mental processes.[7] Thus, whichever way we look at human development, we see a **breakthrough that occurs thanks to the association between physical reality and words** that are linguistic symbols that represent it.

Another important issue is the process of acquiring new concepts whether this happens through experiences of reality or learning about it. Vygotsky mentions two main pathways – through interactions with the environment (concept formation) and through language and instruction (concept learning). Up to the point at which children start using language around the age of two (Deak and Holt 2008: 547), language is mostly the object of learning. However, the moment that the first associations between a word and its referent are made, cognitive development begins to develop at a new pace. What follows is that linguistic associations with concepts become strong, and language becomes a major tool in acquiring new knowledge.[8]

The strength of these associations does not mean that language and thought become one entity. There will always be instances of iconic

[7] An adult is capable of all three forms of mental representations; however, a child develops them in the order mentioned.

[8] Although it has not yet been established exactly when or how infants begin to make their first symbolic associations (Deak and Holt 2008: 564), once such an association has been made, it marks the turning point in not only linguistic but also conceptual development.

mental representations, i.e., thinking without language (like mentally going through sounds and images), and those of using language as a completely biological response (like swearing in pain) in adulthood. However, in the majority of instances, formulating new concepts is closely linked with language (Rice 1984: 142), and the possession of language is associated with uniquely human mental organization (Chomsky 2002: 61). In this way, one might say, even without committing oneself to an answer as to which gave rise to which, that, to use language, we need a specific mental set-up; however, in order to develop this mental organization for more complex thinking, we need language.

This does not mean, however, that language becomes the only source or organizer of knowledge. Contact with the environment creates much stronger associations thanks to the actual experiences it produces. This, because of its affective link to episodic memory, creates a situation in which the dividing line becomes blurred between a child's memory of an experience and conceptual new knowledge (Balota and Coane 2008: 521).[9] As a result, the child develops a sense of knowing "objectively" what up until this point could have only been an intuitive hypothesis about the surrounding reality.

2.2.2. Higher mental processes

Conceptual development relies on our ability to mentally process information and integrate it to a cognitive structure to form knowledge. Many of the processes involved, such as perception, memory, and attention, have already been discussed. Since they are the very foundation of any information processing and are common to both linguistic and non-linguistic operations, they can be referred to as basic mental processes.

With the development of the cognitive structure, other mental operations appear, many of which fall under the general category of *thinking*. Two types of thinking are most relevant here; namely, *associative thinking* and *insight*. Thinking through associations is the process whereby we notice, either intuitively or consciously, through interactions with

[9] We can observe the importance of sensory interaction with the environment even at the neurological level. When using words related to movement, the areas of the brain become active that relate to the type of action spoken about (Balota and Coane 2008: 521).

the environment the relationship between cause and effect and build on these observations to draw conclusions as to regularities appearing in the environment. We might say that consciously noticing these regularities is the first step in logical thinking, as we start making reasonable predictions about possible outcomes based on past experiences.[10]

As has already been noted, associative thinking is not limited to humans. Experiments conducted on animals show how expert most vertebrates can become at drawing intuitive conclusions from associations built in this way. Many of them show great speed in learning particular associations (implicit learning), so that they manage to make predictions after as few as two trials of a particular task (Macphail 1998: 111–120). This phenomenon indicates that the ability to make use of cause-and-effect relationships, which many people consider to be a typically human behavior, is not necessarily so. What is typically human is the development of this ability in a conscious way and moving it from implicit to explicit memory.

Thanks to this type of processing new information, we can not only predict effects from causes but also work out reasons for certain results and build a conceptual framework of the world based not only on what we see and hear but also what we can reason out. If we look at this problem from the point of view of the characteristic features of consciousness, we can see it as moving away from the immediate **to a much more distanced future** as we can reason out more and more complex chains of reaction. The ability to deduce possible reasons for observable results can be seen **as going back in time into the past**.

The other type of thinking is *insight*. Although it is far less common in animals than humans, the best way to illustrate the difference between associative thinking and insight is with an example of an animal. For instance, it was observed that Sultan, one of several chimpanzees participating in an experiment, after several failed attempts to obtain bananas that were placed out of his reach with any of a few sticks available, he sat motionless for some time and then joined together two sticks, with which he managed to reach the food. After this event, each time he faced a similar situation, he was able to repeat the procedure

[10] In Piaget's (1966) description of human cognitive development, this phase would be roughly analogous to the sensorimotor and preoperational stages, as opposed to the two later operational stages.

without hesitation and without mistakes (Kurcz 1992: 133). After several analogous cases with other animals, it has been concluded that the situation involved internally conceptualizing the problem and the ability to work out a solution mentally rather than by trial and error.

This form of thinking, which is rather uncommon in animals, is quite typical in humans. Piaget (1966) described it as one of the most characteristic features in the two developmental stages of concrete and formal operations in children. Through a multitude of mental processes that the phenomenon of *insight* evolves into, one is of particular interest from our point of view; namely, the ability to visualize a problem and mentally *hypothesize* about possible solutions. The actual physical action, successful or otherwise, becomes more like a solution to an experiment, for which we have a working hypothesis that we can *verify* experimentally or *falsify* based on logic or facts. From the point of view of consciousness, we can see that *insight* is a unique moment of mentally going beyond what is tangible right in front of our eyes. Performing an action that is a solution never witnessed before entails mentally moving **away from what is visible to what is possible**.

There are yet other forms of mental processes in addition to a*ssociative thinking* and *insight*. Let us consider our ability to verbalize or shape our thoughts. In situations that require understanding an unfamiliar complex problem, the human mind has developed an ability to map different relationships onto each other and express one with the help of the other. This mental process, known as *metaphorization*, gives us the unique ability to go beyond language in our thinking. Its role extends to the way we conceptualize the world in general. Its results can be fairly mundane when we say *This exam was a nightmare* and only bring to attention the similarity of the experience of an exam to that of a horrible dream. However, it can achieve far more in the form of poetry, where different figures of speech create new meanings and impressions in the recipients that go beyond anything that could be achieved using language directly. This ability to note connections between aspects of reality or experience in a novel creative way becomes an important **aspect of human artistic creativity in general**.[11]

[11] Metaphorization will be described in greater detail in section 3.2. in a discussion of the collective aspects of consciousness.

Consequently, human mind can be seen to have developed a number of mental operations that go beyond the "here and now" and that can be defined as *higher mental processes* in contrast with those that operate within immediate surroundings and at the present time. In contrast with basic mental processes, such as perception, attention, or memory, which are the preconditions of any activity in the animal kingdom, we also have higher mental processes, such as "metaphorization, logical reasoning, comparing and contrasting ideas, drawing conclusions from empirical data, constructing theoretical explanations, symbolizing, interpreting past events, speculating on the future etc." (Wenzel 2015: 11).

It is thanks to these processes that we can develop our knowledge of the surrounding reality since we can go beyond what we can experience with our senses to those things that are real but beyond them, long gone, likely to happen in the future, or may never even appear in reality. Discoveries such as electrical conduction or the subsequent invention of electricity are two examples of how mental ability to speculate on possible reasons for electrical discharges and a successful verification of the hypothesis concerning it resulted in an important invention.[12]

2.2.3. Higher language functions

Some of the mental processes mentioned above could not be performed without the use of language. While we can focus our attention or remember events without using language, formulating and verifying hypothesis can only be conducted at very simple levels, while metaphorization

[12] Bloom's *Taxonomy* (Bloom et al. 1956) provides a very helpful classification of "lower order" and "higher order" thinking skills in which "remembering," "understanding" and "applying" belong to the lower and "analyzing," "evaluating," and "creating" belong to the higher order. Educationally, it is a very important distinction. First, it divides these skills into active involvement in the actual mental activity, while second, it is hierarchically inclusive, i.e., it does not eliminate the lower at the expense of the higher processes. However, in our analysis from the point of view of consciousness we need to make a distinction between the mental processes and the role of language in these mental operations, so we need to keep these phenomena distinct up to a point. Bloom's taxonomy treats language skills and thinking skills synonymously; therefore, it is not useful for our discussion.

or symbolizing becomes almost impossible.[13] Consequently, we can see that language has more roles to play than just establishing contact with others.

Even if we look at animal communication, we can see that they communicate for many reasons; e.g., to greet, to warn, to frighten, to express anger or joy, or to attract a mate. We can set these reasons against Jacobson's communicative functions: such as referential – describing an aspect of extralinguistic reality; emotional or expressive – revealing the state of one's feelings; impressive – trying to evoke certain effect in someone else; conative – making an appeal to someone; phatic – establishing contact; poetic – using language figuratively; and lastly metalinguistic – referring to the language itself (Jacobson 1960).

Arguably, some functions of animal communication are also included in human communication. For instance the common rituals that members of the same species perform when they meet, like dogs' sniffing noses, can be seen as an attempt to greet each other, which is a phatic function analogous to human greetings such as *Hello, how do you do?* A gander's hissing at intruders with his neck stretched out threateningly toward the approaching human probably communicates something analogous to a human warning to not come any closer, which is an impressive function. Likewise, a dog jumping with joy at the sight of its owner returning from work is like a human saying *Great to see you*, which is an expressive function, while a cat meowing at the door insisting on being let out has a clear conative function, much like the human utterance *Please, open the door for me!*

However, as we have seen in previous sections, not all human communication can be included in these functions since much of it is enveloped in facilitating mental processes. We verbalize arguments to clear our thoughts, we write things down to be covered during a meeting to help ourselves remember, we can write (or at least read) a poem to formulate a state of mind or feelings that otherwise are hard to grasp. In this way, we can see that some of Jacobson's functions, such as referential, poetic, or metalinguistic do more than just establish a particular

[13] Although Lakoff and Johnson (1980) claim that metaphorization is a mental, non-verbal process that is verbalized as a mere reflection of what has happened in the mind, even in their analysis the links between verbal processing and metaphorization are inevitable.

form of contact with someone else. Moreover, it is possible to distinguish more language uses based on the higher mental processes mentioned in section 1.2.2.2., such as an argumentative function, the aim of which is to hypothesize, falsify, or confirm predictions about an aspect of extralinguistic reality.

All language is some form of communication; however, there is a difference as to the kind of things we want to communicate. Therefore, it is plausible to organize the functions of language into two groups, those that function mainly as a means of communication, and those that additionally facilitate higher mental processes. We can group language functions such as phatic, conative, expressive, or impressive, which were mentioned previously, into the *discipline of communication*, while the referential, poetic, and metalinguistic (and argumentative) language functions can be grouped as the *discipline of thought*. We can subcategorize each of these groups further; (1) *discipline of communication* into (a) expressive-symptomatic, and (b) impressive-signaling; (2) *discipline of thought* into (c) descriptive-semantic, (d) argumentative-poetic.[14] Since the communicative function is present in both categories and the discipline of thought only in category (2), we can say that the communicative function is more basic and the other one more complex. This is why category (2) is referred to as the *higher language functions*.

Given the evolutionary aspect of our discussion, one might wonder whether it is possible to perceive the "higher-lower" distinction in evolutionary terms, as did Karl Popper (1966) describing the "lower functions" as an expression of emotion and the "higher functions" as an evolutionary movement toward an "expression of thought." The "evolutionary" quality of this change was questioned by Chomsky (2002: 59), as there is no direct evidence that this change was subject to a gradual change. He preferred to use the term "emergence" to point to its drastic difference in quality and complexity of organization.

2.2.4. The role of higher mental processes in semantic memory

As has already been mentioned, semantic memory enables us to keep knowledge of the surrounding reality in a framework. Several

[14] For a detailed explanation of this particular distinction see Wenzel (2015: 12-18).

organizational principles of this framework have been proposed,[15] with Jacobson's distinction into the paradigmatic vs. syntagmatic organization of meanings being perhaps most useful from a didactic point of view. What can be observed in all of these is that the connections have some principle and the concepts are meaningfully linked. If we add a new concept, it will lead to the reorganization of the structure, and, depending on the quality of this reorganization, added meaning will **either be arbitrarily or meaningfully connected to the remaining framework**.[16]

This phenomenon has serious repercussions for the quality of semantic memory, because depending on the nature and the quality of these links, in other words depending on the sense that the new knowledge makes to us, we might remember it better, and it might contribute to the growth of overall knowledge represented in noetic consciousness. In other words, the more coherent and complex the cognitive structure is, the better the quality of our noetic consciousness.

These links serve two important purposes; first, they enable us to retain more information since there are more possible retrieval cues present in the overall structure (Ross et al. 2008: 547). Second, depth of understanding increases when a learner becomes actively involved in making sense of the world, hypothesizing, falsifying, or confirming predictions and creating his or her own personal view of the outside world (Smalara 2015: 37). It is largely through higher mental processes that our understanding of the outside world becomes a coherent entity rather than a collection of disconnected facts, which leaves space for self-contradictions or magical solutions.

2.3. Autonoetic consciousness and the *self*

As has already been mentioned, episodic memory is one of the strongest factors in building *autonoetic consciousness*, understood as the *self* – our sense of identity, our consciousness of who we are in contrast with

[15] For examples see Kurcz (1992: 67–68) or Balota and Coane (2008: 513–515).

[16] Ausubel (1968) divides learning into meaningful (with non-arbitrary connections) and rote learning (with arbitrary connections) to the cognitive structure, with the former standing a much better chance of being retained in long-term memory.

other people and in the context of our past, present, and future. The *self*, though discussed thoroughly within many disciplines connected with mental health or philosophy in general, has been less often of interest to educators and philosophers of education. However, there is one discussion of the *self* that is most relevant from the educational perspective presented here; namely, William James's distinction of the *self* into the *material*, *social*, and *spiritual* (James 2010a: 193). He claims that it is the *self* in all its complexities that is the driving force of our actions; and, as a result, it becomes a vital element in our discussion of the relationship between consciousness and the human motivation to learn.

2.3.1. The *self* and human motivation

James sees the *self* as present in several aspects: the *material self* is mostly visible in the physical or biological sphere of human life with human vanity and attention to dress and external appearance etc. being some of its characteristic symptoms. The next level is the *social self*, and here two important aspects are distinguished; namely, the different "selves" that we adopt in different social situations and the importance that we place on our presence in other people's minds. The *spiritual self* is described in several ways, as the presence of mental operations in our minds, and our ability to attend to the fact that we are making them. Furthermore, he writes about the *spiritual self* in terms of our true identity, regardless of the social status, social roles, or social masks that we impose on ourselves. Most importantly, it is the spiritual self that is responsible for sensing the presence of the metaphysical aspect of the world, which can be felt as the presence of an "ideal observer" or "superior judge" and is generally responsible for an inclination that there is more to the world than we can observe and verify with our senses—a metaphysical inclination.

In this distinction, the *material self* drives a person to do those things that concern the body, and physical convenience and comfort as well as avarice play crucial roles. One other important feature is that the *material self* has a tendency to divide the whole world into *ME* (referring to everything that I can identify as mine) and everything else. The *social self* guides those human actions that concern our relationships with other people, including how we perceive ourselves and our concern for how

others see us. It also determines whose opinion is valuable or worthless to us. The *spiritual self* functions analogously to the *social self*, only in this case the standard against which we set our actions is an idea of the highest possible order, an ideal standard in the mirror of which we gain or fail to gain an approving image. We can conclude, that it is this aspect of the *spiritual self* that is responsible for the emergence of the conscience.

The aspect of the *spiritual self* that focuses on thinking (described by James as "the Thinker") is what drives us to the intellectual sphere, with its vast complexity of mental processes that drive our thinking into the unified sense of identity, which he calls *I* in contrast with the material self *ME*. The *I* is the highest aspect of the self, capable of looking back at the *ME* "from the outside," as it were. It is this aspect that is closest to what we have already described as accompanying self-awareness, discussed in section 1.2.3.2.

2.3.2. Accompanying self-awareness

One additional feature of the *spiritual self* is very close to *stream of consciousness*, an aspect of consciousness that is most characteristic of James's theories. *Accompanying self-awareness*, discussed in section 1.1.2., is a phenomenon described as the ability to attend to what we are experiencing at a given moment and being able to divide our attention between the actual activity or experience and an awareness of the fact that we are thinking or doing it. This ability to divide our attention between the actual action that is being performed and our awareness that we are performing it is an important feature of most aspects of human consciousness. We can see it in our development of the *self* as not only acting according to who we think ourselves to be at a given point in time,[17] but also our awareness of this role or this identity, in performing a skill. It is present in our heightened awareness of the moment, but also of ourselves being in it, while in any instance of learning something new about the world (*noetic consciousness* discussed in the next section), we also build our awareness of the way the world is constructed.

It is this accompanying self-awareness that can become the driving force in maintaining a coherent image, either of the *self* in general or of the world around us. In the case of the *self*, it enables us to preserve

[17] This is Conway's working self (2005).

our integrity of character and to act on our convictions. If, under the pressure of the moment, or after a moment of reflection, part of our consciousness tells us that it is wrong or that we are not ourselves, we have an impulse to act according to what we think is right. Otherwise, we might find ourselves claiming that one thing is right and doing the opposite or constantly justifying such contradictions with ever more complex intellectual labyrinths.[18]

2.3.3. Higher motivational drives in learning

From an educational perspective, it is impossible to not see James's notion of the *self* in the context of the human motivation to learn. Learning, even in the broadest of senses, always involves change. The spheres in which human motivation can mobilize a person to change the inner inertia, to act, especially to learn, overlap those that James mentions as constituents of the *self*. First of all, the material self will drive us to ensure survival and living comfortably. This is seen in the human willingness to complete a particular school, earn a degree in a field of education that guarantees a profitable occupation, etc. This type of learning is known by all educators as the weakest force driving people to gain knowledge or acquire skills, and it is the *survival level* of motivation.

The social self will drive us to fulfil the needs that rely on the interplay between psychological and social factors, when social pressure, our ambition, or other emotional factors mobilize us to learn. This *psycho-social motivation* is very easily reinforced by the *survival* type, and **together they become a much stronger motivational force**.

The highest level of learning motivation is related to the aspects of the *self* that drive us beyond the material and survival aspect of our lives: to think, to search for the truth about the surrounding reality, and also to find means of artistic expression. We can link this *cognitive-creative*

[18] This kind of internal hypocrisy, clear to everyone but ourselves, can be checked if sufficient reflection is given to our action in the form of accompanying self-awareness. Questions like "Am I now being strict or cruel?" or "Do I really mean it when I say I do not have time or is it only an excuse for being lazy?" are characteristic of this type of consciousness and indicative of the presence of a conscience. How honestly we answer such questions and whether we choose to act on them is another matter.

motivation to James's *spiritual self*. This level does not exclude either the survival levels or the psycho-social levels; on the contrary, it frequently coincides with other ones, and, in this way, it **becomes the strongest force driving people to learn** (Wenzel 2017: 79–83). Since this level involves other learning motivations, and, in this way, become the most complex level, we can refer to it as comprising *the higher motivational drives*. These in turn, to put it in the most general terms, are the force involving the most complex aspects of the *autonoetic consciousness*, which leads to an increase in the *intensity of consciousness*.

2.4. Noetic consciousness and *Umwelt*

Just as the memory of past events shapes our self-identity, so does our semantic knowledge shape our awareness of the surrounding reality, i.e., everything that makes up our *noetic consciousness*. This consciousness is made up of elements of the reality we live in and our belief in how they function.

It is vital at this point to make a clear distinction between the terms we use when we refer to the state of this knowledge since earlier it was written that, unlike autonoetic consciousness that provides us with a subjective perspective of the world around us, noetic consciousness is an abstraction of the information, and, in this way, it constitutes our impersonal, objective knowledge. It is true that it is impersonal and objective compared to the personal individual perspectives of other people and against the emotions that are aroused by the personal memories of our contemporaries. However, if we compare it to the state of knowledge of our ancestors or the knowledge of future generations, or even to the amount of information that the sensory systems of other animals can gather, we see how limited and unobjective our present knowledge is. Looking from this perspective, it might be safer to say that this type of consciousness is our firm belief or our image of reality that we assume to be true.[19] This individual human knowledge, limited or interpreted

[19] For the distinction in the meaning of "knowledge" and "belief" in this respect see the discussion in James (2010a: 199–201).

by our senses, mental capacities, culture, or individual circumstances, is always in relation to actual reality as it is irrespective of whether someone is aware of its existence or not.[20]

The limitations of our noetic consciousness are best expressed through the term used in the field of semiotics: *Umwelt*. It was coined by the biologist Jakob Uexküll and was popularized in the field of semiotics by Thomas Sebeok and it refers to the surrounding environment and to the objective species-specific worlds that each species forms based on available sensory modalities (Deely 2001).[21] A familiar example is the blue tit's ability to see a wider spectrum of colors, ultraviolet light included, than humans can, or a dog smelling the world and gathering with this sense far more information than we can with the most sophisticated tools. Electroreceptive fishes "see" the world in ways unimaginable for humans, but the reality in which they function efficiently, their *Umwelt*, is as objective to them as ours is to us even though it is completely different from how we perceive the world.

All animal species have different functional images of reality that are shaped by their own sensory systems and yet all of these images are true, in the sense that all of them are, to some extent, representations of objective reality. We can compare this to a situation in which different persons see different parts of a room they live in, or better, to a situation in which in this room one person is blindfolded, one is wearing earmuffs, and another has bandaged hands and cannot feel much. Whatever they see, hear, or feel is true, and yet each experience is a limited version of the truth. Our actual sensory abilities, even at their best, are always more limited than those of other species, and, in this sense, our *Umwelt* is just another limited, species-specific image of reality.

The difference between the *Umwelt* of humans and of other species is that, thanks to higher mental processes, humans can conceive of the things beyond the senses. Human awareness (or at least the potential of such awareness) that sensory information does not provide a full image of the world is crucial to the formation of the human consciousness

[20] Popper referred to this reality that exists regardless of the minds that know about it as *objective knowledge* (1972).

[21] Pöppel (1989: 155) also discusses sensory systems of different animals as the characteristic species specific factors shaping the *Umwelt* although, he does not use this term.

of the complexities around humans. As a result, we have two notions: *noetic consciousness* – everything we know about reality around us with all the abstract and symbolic operations of the mind, and our *Umwelt* – the actual reality that we believe in and in which we function.[22]

To illustrate the difference between these two notions, one can use the example of human awareness of the spherical shape of the Earth over six hundred years ago. At the time, the fact that the Earth was not a flat disk but was roughly in the shape of a sphere was fairly common knowledge among educated Europeans. And yet it had never been put to the test before, so setting up a trip to reach the Indian Peninsula from its Eastern side required a different degree of awareness of the globe on which one lived. It required a belief so strong that one was willing to risk money, sailors' lives, and one's own life.

Now, if we compare the state of awareness of people at that time with our contemporary situation, we see the difference as to how real this sense of the round shape of the globe is. People knew then that the world was spherical, so it was part of their *noetic consciousness*, but not part of their *Umwelt* – the actual image of the reality that they experienced. Compared with the state of our contemporary awareness, with satellite transmission, GPS, and changing time zones, this knowledge is no longer a mere theory, but an actual part of the image of the world in which we live. This example shows two things: first, that human *noetic consciousness* can go beyond its natural *Umwelt*, i.e., beyond the proof of its senses and experience, but second, that knowing about an aspect of reality and making it an integral part of the image of the world are two different things, both of which make space for education.

2.4.1. The growth of noetic consciousness

This expansion of human *noetic consciousness*, i.e., what we know about the world, is possible thanks to higher mental processes such as abstract

[22] Bruner's term *folk psychology* (1990) is very close to our meaning of *Umwelt*, especially as it relates to the relationship between actions as they reveal the truth about our mental states. The influence of culture on the shape of our inner world also makes it similar. However, Bruner's term focuses on our mental life while *Umwelt* is the actual image that we gain through our experience of the world (as opposed to theoretical views that people claim to have).

and symbolic operations, and the possibility to speculate about invisible forces, possible reasons, and potential outcomes. The complexities of the levels on which these operations happen are so great that we actually talk of not one world that we live in and explore but several worlds. These are: (1) the world of physical reality – the world which exists objectively and about which we try to gain knowledge; (2) the world as we currently know and understand it that exists in our minds; (3) the world of constructs and products of human mental activity in the form of ideas, artistic or scientific creations, symbolic, concrete, and imaginary.

This distinction relies on Karl Popper's distinction into World 1, World 2, and World 3 (1972). From an educational perspective the importance of this lies in the fact that there are two types of objective worlds: World 1 – objective reality and World 3 – the objective existence of the products of the human mind. The individual, subjective World 2 is influenced (educated) by the two other worlds – reality and what the rest of humankind conceive of it, while at the same time its aim should be to shape World 3, which is conceptual reality in the form of the progress of knowledge and art.

A much earlier distinction by William James (2010b: 204–209) divides the reality "that is" into five worlds that constitute the objects of human thought and exploration: (1) the physical world as it actually is; (2) the physical world as it is understood by the current state of human knowledge; (3) the abstract world of ideas; (4) the collective imaginary constructs that we admit exist in other people's minds but which we ourselves reject (prejudices and false concepts concerning the world), (5) the metaphysical constructs that we hold to be true, even though they are impossible to prove experimentally.

While the relationship between James's worlds (1), (2), and (3) are roughly similar to Popper's Worlds 1, 2, and 3, there is an important difference with regard to education. In Popper's distinction the subjective human mind is connected to objective reality as it were "from both sides" in that what it explores and what it creates exist objectively. In James's distinction, these are more relative constructs since the actual content of (4) and (5) can change places, so that what for one person is an object of authentic belief (5) for another might be a phantasy or a superstition (4) and the other way around.

There are two important implications of realities (4) and (5); firstly, that their presence gives humans a sense of the presence of a metaphysical ideal, which is conceptualized in varied ways and is very often misconstrued, yet accounts for the metaphysical inclination that is present in every human being (or at least potentially present), which is an issue that will be further developed in Chapter 6. The fact that reality (4) can be (5) for other people and vice versa accounts for a number of ideological conflicts and misunderstandings, etc.

However, there is a second factor in this problem. Namely, that the addition of worlds (4) and (5) can also help people coexist with each other in spite of the fact that different minds have incompatible ideas, ideologies, and systems of beliefs. These might be the cause of difficulties in coexistence among individuals or whole groups of people. Yet these difficulties can be helped by the awareness that one's faith in the higher ordering of the world, the metaphysical constructs of one's world (5), for some people, (4), i.e., myth or magic, can help either to communicate ideas among people or to see where attempts at communication are futile. The same process also works in the opposite direction, as such realizations can help individuals accept that his or her own beliefs (world 5) can be superstitions for others.

From the perspective of this book the most important implication of the existence of these worlds is the fact that depending on the state of knowledge, culture, and, most importantly, education, the contents of human noetic consciousness varies among individuals. The way one learns can either promote a blind acceptance of dogmas or encourage the active search for concepts that build one's cognitive structure, and as a result, contribute to the coherence and extent of one's noetic consciousness.

To illustrate the problem we can go back to the example of several people in a room, each of whom has a different set of senses at their disposal. We can either inform these people about the contents of the room they are in and punish them if they attempt to check it for themselves, or we can teach them the most efficient ways to check their surroundings, including communicating their discoveries to each other. This example can be seen as an analogy for different educational systems in which learners are either expected to actively discover answers on their own, while at the other end of the spectrum is a system in which students are

given facts to memorize and are discouraged from asking questions or thinking on their own.

2.4.2. Shaping the *Umwelt*

From the point of view of education, the major difference between our *noetic consciousness* and *Umwelt* is that *Umwelt* is much harder to change by external forces or to verify its shape. What it really is can at times be guessed at by inconsistencies in the decisions that someone makes or in behavior. A person who professes everything that is rational and consistent with the current state of human knowledge can accept some self-contradictory information or allow emotions to decide whether something is accepted or not. We witness a person who speaks rationally but behaves as if he or she believed in magic. The person concerned may not be aware of the contradictions or inconsistencies, and when they are brought to his or her attention, we might immediately hear a plausible justification. Observing such symptoms of discrepancies between what someone says or even thinks to be true and what this person does can lead us to the conclusion that finding out the actual image of the world for a particular person is as hard to discover as in the case of some animal species where we can only verify it based on symptoms – observable behavior.

What we refer to as *Umwelt* comes very close to what Bruner described as *folk psychology*, *folk knowledge* or *cultural psychology* (1990: 14–15), especially with respect to the actual shape of reality as opposed to that imposed by "objective sources." It also bears resemblance to Popper's World 2, in that it focuses on the shape of reality as seen in each human mind. In both these instances, though, the focus of attention is the culture or the products of thought of other people that are vital for their understanding; therefore, we return to these ideas in section 3.2., where collective aspects of consciousness, such as history and culture, are discussed.

Nevertheless, even when the process of learning is analyzed from an individual perspective, it should aim to achieve an effective change in one's understanding of reality, not just theoretical awareness, which, at its best, provides one with the right set of test answers. Therefore, we should focus on aspects such as gaining new knowledge and changing

the cognitive structure that gives learners a better chance of integrating into the already existing image of reality. We can divide these elements into two crucial groups – the process of discovery and the *phenomenal experience*.

Discovery learning in its original form, as described by Bruner (1997) focuses on the active hypothetical manner of acquiring knowledge. First, it engages the learner in an exchange of information so the new knowledge becomes this person's own knowledge, and not something that is imposed externally. The learner is encouraged to formulate his or her own hypothesis and question information that is given until he or she integrates it into his or her own cognitive structure. This manner of learning, which happens spontaneously and naturally before any formal education (Filipiak 2017 can also be achieved in the school environment; however, it must be accompanied by appropriate didactic procedures ensuring that even complex problems become acquired in ways analogous to natural concept formation described by Vygotsky (1986). Some strategies on how to achieve this are described in Chapter 7.

2.4.3. Phenomenal consciousness and access consciousness

In order to discuss the importance of experience in shaping one's *Umwelt*, we must first explain the notions of phenomenal and access consciousness (Montemayor and Haladjian 2015, Pinker 1997). This distinction, which is very important in sensory processing, dissociates two types of awareness; namely, the consciousness of information – as a result we know something, and the experience of information – as a result we feel it consciously with all its affective and emotional consequences.[23] To use an extreme example, we can know and even study certain electroreceptive fishes, but we will never be able to experience what the world feels like from the point of view of the distribution of electric signals. An example from human experience can be the phenomenon of color perception; although it is generally known that different colors represent different wavelengths and red is at the opposite end of the spectrum from violet, the experience that people have is that of a circle in which red and violet almost meet in their perceptions. These two examples

[23] The essentials of this distinction were introduced in the discussion of the differences between episodic and semantic memory.

illustrate opposite sides of the same distinction; electroreceptive fishes show that we might know something but are incapable of experiencing it, while the perception of the color spectrum illustrates that we can have an experience that does not correspond to our knowledge.

The role that phenomenal consciousness has on the shape of our *Umwelt* goes beyond the sensory experience and is notable in our reception of works of art. The *aesthetic experience* that comes from noticing an unspoken but intended effect that an artist included in his or her work is an example of the *phenomenal consciousness* present in our reception of music, visual arts, literature, or other art forms. We might read about the complexities of a given work, we might even lecture about it, but the actual experience is a different phenomenon. **While it is within the capacity of education to equip us with tools to achieve this experience, the experience itself cannot be taught**.

The question remains, what can be done with regard to education in order to equip people with the tools to expand their own objective, functioning reality – their *Umwelt*. Going back to the comparison between the notions of noetic consciousness and *Umwelt*, we could say that one educational aim should be to extend one's knowledge, which is understood as the capacity of semantic memory together with the coherence of the cognitive structure. On the other hand, the more active and authentic the experience of gaining new knowledge is, the more likely it is that the noetic consciousness in fact approximates to a learner's actual image of reality that he or she holds. In other words, extending our knowledge, noetic consciousness, equips us with tools to experience the world in all its complexities, as a result of which it gives us a chance to extend *Umwelt* as well. It is then that we are provided with the potential to increase the *intensity of consciousness*.

Daszkiewicz (2015: 95–97) describes this experience of new knowledge in a personally meaningful way as a *personal educational event*. He postulates that the *personalness* – the personal, emotional, and meaningful involvement in the process of learning is the condition of successful change in learners. From the point of view of the relationship between noetic consciousness and *Umwelt*, we might say that this *personalness* is a major factor in facilitating an approximation between noetic consciousness and *Umwelt*.

Chapter 3: Language as a tool in creativity and cognition

Language is perhaps the most universally accepted factor in the emergence of consciousness. Its importance can be seen in developing procedural memory as *inner speech* at the cognitive stage and in reinforcing retrieval cues in episodic memory. The importance of the interplay between higher mental processes and higher language functions is discussed in sections 2.2.2. and 2.2.3. It remains to explore the nature of the bond between consciousness and language. Several features of language, such as the appearance of the subject-predicate relation, which gives human language the quality of being "about" something (Macphail 1998) and the ability to fantasize about non-existent constructs (Harari 2015) are considered crucial. However, in order to explain how the shift from animal to human communication was possible, the theory of mind needs to be explained. In addition to discussing the evolutionary link between language and consciousness, educational implications are presented here. These concern the question of treating consciousness at the individual level or as a collective concept.

Current theories of the evolution of language focus on several features of human language in contrast with animal communication systems; namely, the subject-predicate distinction, the emergence of syntax and categorial perception, the ability to group a continuum of sounds into distinct phonemes, the use of symbols, and the abstract use of language. Also included here are the crucial roles of narrative and metaphor as manners of organizing our thinking in shaping human consciousness.

3.1. Empathy and the theory of mind

The theory of mind accounts for empathy – the mental capacity that enables a person to adopt the perspective of another individual. Because of the interpretation of the direction in which someone is looking (allowing us to guess what he or she sees), body language (allowing us to read intentions), and shared attention (experiencing something more intensely when we share this experience with other people), this mechanism plays a crucial part in the development of language in the individual child (Trevarthen 2007: 118, Taylor 1996: 284–286). It is through the ability not only to copy somebody's actions, including speech, but also thanks to feeling together with someone what this person wants to do (reading intentions) and what he or she means, that the child is capable of making the mental leap of associating a symbolic verbal expression with the object it refers to.[1]

This capacity is also hypothesized to be a decisive factor in the evolution of language in humans as a species. While several animal communication systems share some of the features of human language, there is none that can combine the symbolic and creative aspects with a disconnection from the "here and now." It is hypothesized that the need to move more members of a group away from a favorable environment (ecological niche) once conditions worsened might have brought about a situation in which there was a need to inform other members about desirable conditions (food or place) that were not present at the place and time of speaking. Consequently, through the process of *recruitment*, natural selection allowed only those organisms to survive which were capable of grasping such information (Bickerton 2009).

At that time, human communication was quite likely to have possessed a basic symbolic capacity, as is the case with contemporary vervet monkeys, which use different symbols to warn against different predators (Seyfarth et al. 1980). The element that required an evolutionary leap was the ability to use a symbolic expression without seeing the

[1] The presence in Broca's area of mirror neurons (responsible for this ability to copy somebody's actions because they activate the brain in similar ways when doing something and when observing an action) provides additional confirmation of the role that the theory of mind mechanism plays in the development of language (Arbib 2006).

object it referred to. This mental and linguistic step forward could have been achieved thanks to the mental capacity accounted for by the theory of mind, which enabled members of a group to emotionally connect and mentally visualize the intention of another member who needed to inform them about something beyond the visible and the present (Kurcz and Tomaszewski 2011).

The two aspects of language development, the individual and the evolutionary, show the role that these mechanisms played in the development of language. The question remains as to the role that they might have played in the development of consciousness. Several features of the theory of mind have already been discussed (Macphail 1998) linking its importance to the growth of a sense of self. However, its crucial feature can be seen in the fact that it forced someone to move away from the "here and now." It is this ability to visualize (mentally or verbally) what is not present right now in front of your eyes that might have enabled the human mind not only to develop language but also consciousness.

Returning to the discussion of autonoetic consciousness, its crucial feature is "mental time travel" understood as the ability to relive a past event and to visualize a future outcome and through this to see oneself as a being that remains the same in spite of changing time. With the development of language a crucial step is made when a child mentally separates itself from the rest of the group and notices the difference between *we* and *I* (Kurcz 2011b: 114). The theory of mind equips us with the ability to make that mental leap. By realizing what others are feeling, it becomes possible to distinguish between the collective and the individual. In this way one can not only mentally read the minds of others, but also see one's own mind from an outsider's perspective developing a sense of *self* in this way.

We can return to another distinction that is presented here; namely, James's distinction into *me* and *I*, where *me* stands for everything as it relates to my own person, and treating people and objects as either an extension of *myself* so that "my children" become part of *me*, "my house," "my country," etc. The notion of *I*, on the other hand, stands for my image of myself independent of the viewer, where I can talk and think of myself adopting almost an outsider's perspective, with an understanding that every other person has his or her own *I* that is for them equivalent to my own.

These two types of distinctions overlap, because a child's inability to distinguish its *I* from *we* means that there are not two separate concepts in its mind; everything is both myself and others, to use James's expression, everything is *me*. Part of the process of the emergence of the self involves noticing the difference not only between *I* and *we* but also *me* and *I*. Kępiński (1974a: 156) speaks of two opposing forces that lie at the root of human behavior, the need to blend oneself with the surrounding environment (to become one entity) and to separate oneself (to have a sense of individuality). In this discussion we see these two opposing needs as our consciousness moving more in the direction of *we* or in the direction of *I*.

As far as noetic consciousness is concerned, the crucial contribution that the theory of mind mechanism gave humans might be the ability to visualize the invisible and also the non-existent. Once someone is capable of mentally seeing what is not there, it also becomes possible to see what could be. From this point on the development of *insight*, the ability to work out a solution to a problem mentally, rather than forming associations by trial and error, is likely to have evolved into the capability of *hypothesizing* and conceptualizing possible past causes and likely future outcomes. One other outcome of the ability to visualize the invisible is to *fantasize* about reality even though one would not consider it likely. The extent to which the creation of myths and legends is an attempt to account for physical reality and to what extent it was just a need to create a narrative is not as vital to our discussion as the fact that both elements were present and both contributed to our image of reality, and both relied on language.

The importance of this last element, the ability to interpret reality in terms of myths, contributed to one other feature of the world as we know it and in which we function. The products of our imagination have become part of the consciousness of particular societies in the same way that actual beings are. Romeo and Juliet are just as familiar characters to many as Queen Elizabeth, and so are the unicorn and the hobbit. This allows humankind to expand its *Umwelt* through artistic creativity in the direction of culture and art, a realm completely unknown in the animal kingdom, so that works of art have become as firm points of reference as trees, mountains, and seas. Looking at this problem from the point of view of Popper's distinction of reality into World 1, 2, and 3, we can see the role of World 3 (the products of human mind and

thought) as an equivalent factor to World 1 (elements of physical reality) in establishing World 2 (the image of reality as conceived of by individual human minds).

3.2. History as a collective aspect of consciousness

So far, it has been assumed that consciousness refers to an individual person and his or her own *self* or *Umwelt*. However, from the analysis so far it is clear that the emergence of *autonoetic consciousness* and the growth of *noetic consciousness* have only been possible in relation to other people. The *self* emerges from distinguishing *I* from the collective *we*, while *noetic consciousness* forms in relation to *World 1*, actual, objective reality, and the constructs of *World 3*, the result of the mental activity of other people. As a result, an individual *self* is not only formed in relation to itself, but also in relation to other people. We speak of somebody's national or ethnic identity, religious identity, sexual identity, all of which discuss an individual sense of *self* in relation to a particular group of people.

Each of these involves an awareness that different societies, communities, etc. exist, and identifying oneself with any of them requires not only a sense of belonging to one of them but also realizing the differences among one's own community and others. Alternatively, one may be aware of the existence of different groups and find it difficult to identify with this or that particular one (e.g., for fear of rejection). This, in turn, can be a frequent cause of conflicts in the domain of coexistence among people. This is why the collective aspect is a vital element of the discussion of the phenomenon of consciousness.

3.2.1. Collective memory

The collective aspect of consciousness can refer to several phenomena: (1) to the awareness of a community's past; (2) to its culture; (3) to shared, accepted knowledge of the world. These might in some of their forms be expressed in (1) human history, (2) art, and (3) science. The difficulty in analyzing these notions is that not only do they overlap,

but they also can refer to two things: either actual shared experiences and memories of a group or to individual consciousness that is related to and common for other members of the group (Wertsch 2008: 933). An additional difficulty lies in the fact that collective memory in its historical dimension, as a major force in building national or ethnical identity, is always subject to external attempts to modify it according to political or social needs. In its extreme version in oppressive societies, we can speak of indoctrination, but even in the most open, liberal societies the sense of a shared past is made use of for the sake of reasserting national identity (Wertsch 2008: 932).[2] However, for these very reasons, it is important to discuss it from an educational perspective.

The first question that needs to be answered is what exactly is meant by the word "collective" in relation to memory. Is it the effect of other people's memories on the individual mind or an actual shared experience of something? From the theory of mind perspective, the effect of experiencing something together with others reinforces the emotional impact of that event. Likewise, an event that is important for the whole community will affect an individual more strongly. Examples of experiences that where "shared" by a whole group of people can be a family crisis, or, on a larger scale, the death of a leader to which members of the community frequently respond with personal grief.

A unique instance of such an experience is described as a flashbulb memory, described in section 2.1., defined by Neisser as "a subjectively compelling recollection of an occasion when we heard an important piece of news" (1982: 43). These can relate to personal situations, but they are also interesting examples of a shared experience when people either hear a tragic piece of news together, or, because of the importance of the event for other members of the community, it becomes part of each of their life stories (Brown and Kulik 1977). However, more detailed analysis of the memories of different people and a comparison between an actual event and the memory of it show that these memories, though reinforced by the shared experience, at their core relate to the individual: what he or

[2] In his discussion, Wertsch (2008) distinguishes attempts to modify or shape the historical awareness as one of three major aspects of collective memory. In fact, many analysis of the notions of *collective memory* understood as the historical past include elements of propaganda or indoctrination as almost inevitable aspects (Limon 2015, Saryusz-Wolska and Traba 2014, Bruner 1990).

she was doing at the moment they heard the news, how they felt, etc. (Neisser 1982, Neisser and Harsch 1992).

Another way of understanding *collective memory* is the common idea of the past as narrated or related by others. Wertsch (2008: 932) points out that this should rather be called collec*ted* not collec*tive* memory since it is not made up of the actual shared experiences but rather a sum of knowledge about events collected by many people. Although the emotional impact of sharing an experience does not have direct educational implications, it is included in the discussion in further sections since it adds flavor and force to other aspects of consciousness analogously to *personalness* (described by Daszkiewicz 2015: 96). However, the analysis below involves mostly the "collected" aspect of the memory of past events.

To introduce the relevant notions, an actual event that took place in a Kashubian village in the vicinity of Gdańsk can be used. In 2015, villagers funded the renovation of an obelisk commemorating the victims of World War II. As part of the renovation, the inscription was modified into a version less indicative of the communist times in which it was originally set.[3] However, a group of protestors from a nearby town protested against the content of the inscription. The villagers, made up of both Kashubians rooted in the village for generations and relative newcomers from nearby Gdańsk, organized a meeting to discuss the issue. They invited the group of protestors (which failed to appear) and a university professor, who spoke about the subjectivity of historical consciousness and about the complexities of the experience of World War II in the Kashubian region. The discussion that followed showed two different types of attitude: while everyone wanted to achieve agreement as to the inscription, the native Kashubians were empowered by very strong emotions. Only some of them were old enough to have an actual childhood experience of World War II, but most of them knew the tragedies from family narratives and recollections. While the "city dwellers" spoke about the problem in a neutral way, the "natives" showed

[3] The original inscription from 1972 referred to Polish victims and Nazi oppressors, but Kashubians, whose nationality is Polish but ethnicity is Kashubian, suffered to comparable degrees at the hands of the German forces and the Red Army. The modified version referred to all those who lived in the area of the village and were killed during World War II.

authentic indignation, which was a natural response to their feeling that their national identity was being questioned.

3.2.2. Communicative memory and historical awareness

This scene illustrates several of the key issues of *collective memory*; namely, firstly, the difference between *individual memory*, *communicative memory*, and *historical knowledge* or *awareness*; secondly, the quality of *authenticity* of memory as coming from direct experience rather than being taught; and lastly, the role these factors play in building a sense of *self*. In this context, the *individual memory* is the personal experience of events much like episodic memory as described in section 2.1. *Communicative memory* is the awareness of events from the past as passed on from actual witnesses, e.g., previous generations, and *historical knowledge* is what we learned about the past and accepting the validity of the information (Saryusz-Wolska and Traba 2014: 81).

The difference between *communicative memory* and *historical knowledge* lies at the core of the authenticity of memory. Even if an event was not experienced directly but was told by a witness or someone involved in it personally, having heard a direct recollection, we become involved in it emotionally as if it was our own. Such events can shape identity in similar ways that direct experiences do but in a more complex manner because the shared experience makes them stronger. *Historical knowledge*, on the other hand, is more impersonal and is treated as a fact against which we build our conceptual system.

However, the objectivity of such learned knowledge can appear to be of different degrees from uncritical trust to verified, sound knowledge. On one end of the scale of our sense of knowing, we accept certain information without question or doubt. Wertsch (2008) describes such an attitude as fully *transparent*, which means that the interpretation of events can be given as facts without any attempt to distance oneself from it. He uses the term *transparency* to describe a situation in Soviet Russia in the 1970s when certain school children presented the crucial role of the Soviet Union in World War II without using phrases like *We were taught that …* or *I believe that …* etc. Such transparent attitudes relate the events presented from a subjective point of view as if they were tangible, observable objects, the existence of which no one can question.

At the other end of scale, we can be sure of historical information when we have been presented with the complexities of the problem, have been encouraged to come to our own conclusions, and have had an opportunity to verify these conclusions by investigating different perspectives. In this case, our *historical knowledge*, especially in discussions with people of a completely different point of view, usually appears in the form "less transparent," with an awareness of the subjectivity of one's point of view, which does not mean that we do not trust its truth. Our belief is much more certain because of the discovery process described in section 2.4.2. and our *historical knowledge* gains in quality.

From the point of view of the growth of the *intensity of consciousness*, the importance of the communicative collective memory lies in two things: the condition and the quality of self-identity, building a strong but not blind sense of belonging, roots, and personal links with other people, but even more importantly in the growth of **the ability to coexist with other people**. We can see this process as analogous to the relationship between *me* and *I* in the earlier discussion of the *self*. *Me* can involve everything that relates to my person; I may want to blindly defend *my* children, *my* city, *my* community or *my* country, because I see them as an extension of myself. The results are of two kinds; firstly, the loyalty to family, community, and country becomes just another form of egocentrism or selfishness; secondly, the image of the world that it shapes always divides reality into two opposing sides. Things can either be *me* in some sense or everything else, and unless I can see them as part of *me*, I will perceive them as rivals. Consequently, the main interest in the world then becomes confined to things that relate to *me*, how my own community is involved in this, whether it makes us more important or powerful, etc. If I do not see such interest, the aspect of reality under question becomes either irrelevant or a rival to our own interests.

However, the notion of *I* involves a deeper understanding of who I am in relation to other people, accepting their perspective of me and bearing in mind both points of view. Analogously, the sense of belonging to a community (at all possible levels: a town, a region or a country) can function at a more complex level, where one does not hold back from the way other communities or nations see one's own, and one tries to embrace and come to terms with both the good and the bad coming from it. The resulting sense of emotional attachment to the community

can coincide with broadening one's perspective on the world and enriching one's *Umwelt*.

At the individual level, this ability to move beyond *me* towards *I* can lead to a much sounder sense of self, and at a collective level it can contribute to the growth of communities and a fruitful *coexistence* among them. Obracht-Prondzyński (2019: 12–15) mentions several factors when building such *coexistence*, among which are such qualities as a sense of citizenship, openness, knowledge, auto-criticism, responsibility, and identity. Educationally, a way toward such sense of local or ethnic identity can be illustrated by American Independence Day parades (which paradoxically are supposed to celebrate national unity) and where different communities highlight their local or ethnic identities. There "competing accounts of the past engage in an ongoing dialogue" (Bodnar 1992, quoted in Wertsch 2008: 932) and thus establish a sounder sense of identity, in which their coexistence strengthens their sense of self and their sense of belonging.

3.2.3. Educational implications of historical awareness

Apart from the previously mentioned need to use discovery learning when learning about one's history, with a constant formulation of hypotheses to be verified or falsified, the importance of the growth of historical awareness lies in its potential for extending the time span or temporal awareness of individual people. In section 3.1. we spoke about the evolutionary leap that humankind took with the removal of communication from the present moment and the present place. Consequently, our consciousness gained the capacity for mental travel in time and space, which, in turn, allowed for the growth of *higher mental processes*. First, *communicative memory* allowed people to extend that ability beyond one life span, while the growth of *historical knowledge* made it possible to move even beyond that to many generations.

This emergence of a new level of awareness, moving beyond generations, allowed for the awakening of the consciousness at a new level. It became possible for humankind to draw associations in a time span of centuries or even millennia and learn from the events of the past. Post-World War II attempts to prevent "history from repeating itself" is a result of this human ability to draw conclusions from this knowledge.

However, the emotional force involved in *collective memory* and *historical awareness* has always tempted leaders of communities to utilize these forces to achieve a blinder, narrower, "less conscious" sense of *me* rather than *I*. In practical terms we see it in ubiquitous attempts by countries' leaders to influence the collective awareness of the past.

This ever present attempt to modify history can be seen as a collective extension of individual needs observed in developmental psychology. One of the functions of children creating narratives, apart from informing and reorganizing recollections as well as making sense of their own experiences, is to justify their actions in a way acceptable by the community – making it fit the canonical image of folk psychology (Bruner 1990: 85). The treatment of historical knowledge can be seen as an extension of these functions. On the one hand, it teaches us about the past and in this way it organizes and systematizes our knowledge beyond the individual or communicative memory. On the other hand, by the very act of creating a narrative, it adopts a certain point of view and presents facts with an ever present evaluative element of either justifying or judging certain events.

Although it does happen that a particular nation embraces its own past and attempts to come to terms with other nations' points of view, it is far more common to see the "official version" of history, justifying the "storyteller" and where the voices of minorities or suppressed nations are silenced (Bruner 1990). As a result, various communities repeatedly keep moving toward nationalism, fanaticism, etc. In evolutionary terms we can see it as a backward force toward a decline rather than the growth of consciousness. Instead of expanding our *Umwelt* wider spatially and temporally, we have a tendency to narrow it back down to a situation in which the only possible perspective is the egocentric one.

Each person has his or her own tendency to either expand or collapse his or her own horizons, but expansion is only possible through the "sensory system" of collective knowledge and collective memory, which provides the necessary conceptual framework to build it. As a result, even though education as such focuses on drawing on individual potential and consciousness, the necessary tools to achieve it rely on the collective knowledge and memory of groups of people. These tools can mostly be found in works of culture and in language, especially in the human capacity for thinking in terms of narratives and metaphors.

3.3. Culture and art as collective aspects of consciousness

As has already been mentioned, two mental capacities made it possible for consciousness to develop; namely, the linear perception of the past and the perception of alternatives. In most general terms, we could claim that the perception of the past enabled us to mentally "travel in time," and, thus, to develop a sense of self, including our collective awareness of history; while the perception of alternatives made it possible for us to hypothesize about the laws governing the world around us, thus expanding our image of the world and to fantasize about possible, non-existent realities, thus allowing us to create art. In all these instances the development of language was the major tool in achieving such results. Two intellectual strategies from the realms of both language and thought; namely, the shaping of ideas in the form of **narratives** (Bruner 1990) and in the form of **metaphors** (Lakoff and Johnson 1980) are the two crucial mental processes that organized human thought in these directions.

3.3.1. Narrative

An ability to create narratives and retelling past events in order to organize our memories is one of the earliest mental strategies we employ to make sense of our experiences. The two fundamental reasons for doing so is to create a structure for the experience and to come to terms with emotions accompanying it. Observations of children retelling events to others or to themselves showed that the earliest human narratives include analogous elements to those that are present in adult stories, such as chronological arrangement, distinguishing extraordinary from the expected, and personal perspectives and evaluations (Bruner 1990: 90).

The main functions of narratives, present in both early and adult narratives, are (1) expository (to inform about past events), (2) rhetorical (to mediate the interests of different people and to justify one's actions), and (3) cognitive (to give meaning to experience). The interesting thing about narration is that even in the earliest instances of narrating, it is frequently less important whether the story accurately represents the actual events, but rather that it is successful, i.e., that it achieves any of the three functions mentioned. If its aim is to inform, then its success

lies in its accuracy, but if it is to appease an angry parent or sibling or to account for some misdemeanor, then it is successful if it accomplishes this. If, on the other hand, someone tells a story to understand the nature of an experience, it has to help one understand a problem.

It is possible to view all narratives as extensions of these functions. Firstly, we have the basic division into history and story, where history aims at accurate information and structuring, while a story needs to be well told. We may expect it to organize our understanding of something, it may help us to cope with a personal problem, but on the whole, just being accurate never makes a story fully successful. Bruner (1990) provides an interesting example of a shift in functions of grown-up storytelling in the case of psychoanalytical sessions, which originally were perceived as an attempt to make the patient unearth forgotten experiences from the past. This function seems to have changed, and now the aim of the story is not so much to find out what really happened but rather arrive at such a version of the story that helps the patient come to terms with his or her troubles and conflicts.

There is one form that narration can take, and it is employed to serve all the functions mentioned earlier – the creative form. Narrative as an aim in itself or as a means to mediate emotional, interpersonal, or social tensions has evolved into many artistic forms, some of which rely on language exclusively, such as poetry or prose, some rely on a blend of language and music, as in operas or songs, while others rely on a blend of language and the visual arts, as in drama or film. There are even narratives that refrain from using language altogether, as in the case of some animated films or ballets. Be it as it may, **narrative as a mental strategy to mediate the *sense* that humans try to make of the world and the *emotions* that accompany it** seems to permeate much of human creativity and might even have been responsible for its development.

3.3.2. Metaphor

In section 2.4. we present the notion of *Umwelt* referring to the shape of the external environment as it presents itself to each species. This is subjective in the sense that it is shaped by the sensory system and the particular environment of a given species, but it is objective in the sense that it is formed through the experience of actual physical reality. As

a result, each animal species has its own different subjective fragment of the objective world it experiences. Given the fact that humans have a fairly limited sensory system, it may seem curious where the cognitive capacity lies that gave them such a complex and developed awareness of the surrounding environment, i.e. *noetic consciousness*.

The mental ability to understand one phenomenon in terms of another (Lakoff and Johnson 1980) is mentioned in section 2.2.2. on *higher mental processes*. This ability, known as *metaphorization*, relies on our most basic concepts (physical objects, food, etc.) or interactions with physical reality (spatial orientation, perception – especially seeing, traveling, fighting, etc.) and explains more complex or abstract ones (such as love, happiness, ideas, health, time, labor etc.) as if they belonged to the physical domain. This means that the most basic spatial orientation, e.g., up – down, gives us a way to talk about good and bad, happy and sad; front – back, about time, etc. Sensory information relates to more complex aspects of knowledge, e.g., expressions that relate to sight are used to express understanding, ones that relate to smell – our suspicion or doubt, and ones that relate to hearing – receiving information from other humans. Likewise, our relation to most basic objects expresses more abstract ones, e.g., we talk of ideas as if they were food, of love as a journey, etc.

If language were to be stripped of its metaphorical expressions, it would be reduced to the description of the most basic interactions with the environment, while our capacity for experiencing would be comparable to that of many animals. It is metaphor that equipped us with the ability to notice a particular feature of a new experience and link it to the more basic interaction with the environment, and, in this way, conceptualize more complex and abstract ideas. Since different environments provide different kinds of experience, some metaphors that shape our experience will vary depending on the culture in which they appear while others will be mostly universal. For instance, while in one culture "daily bread" reflects basic nutrition, and in another it is "fish," but in both cultures they relate to the staple food eaten there.

We can argue whether conventionalized metaphorical language reflects or actually shapes our perception of reality, but it is vital to our capability of creating culture based on the shared experience that it gives us. Thanks to the collective aspect of noticing certain features of reality, using a metaphor to express it and fixing it in our system of

both communicating and thinking about them, we create fixed culture-specific symbols. That is why **both language and our mental capacity for metaphorization are so crucial in creating culture**.

Language is filled with metaphorical expressions that we do not normally notice, because they have become conventionalized, i.e., they turned into fixed expressions, in which we cease to notice the origin. The previous sentence is an example of that. Normally, we do not notice that when saying "Language is filled with metaphorical expressions" we treat the concept of "language" as a container that we can fill or empty. We do not notice that such expressions are metaphorical, and yet they make us perceive reality in a slightly different way because the sense of "filling" language with something still remains.

Apart from using conventional metaphors, we create new ones, which usually rely on the same basic system as do conventional ones, but they make us notice something new about the phenomenon that we wish to conceptualize in the form of a metaphor. We can see it in the phrase "an incubator of ideas," which is seemingly modern, since human and animal incubators are fairly recent inventions, yet this relies on the much more basic metaphor KNOWLEDGE IS A LIVING ORGANISM. Metaphors can also be used creatively, e.g., when we joke (as in "life is like an infant's shirt – short and shitty") or in art (as in Shakespeare's "Life is a tale told by an idiot, full of sound and fury, signifying nothing").[4] Both rely on our understanding of the conventional metaphor LIFE IS A STORY, but they highlight certain features and hide others, and, in this way, they create new meaning.

Creative metaphors, just as conventional ones, appear in a system. One relationship that we draw attention to can be the source of other systematic, meaningful links. We can see the way in which such a creative metaphor adds to the meaning and creates new levels of understanding in Robert Frost's poem "November."

> We saw leaves go to glory,
> Then almost migratory
> Go part way down the lane,
> And then to end the story
> Get beaten down and pasted

[4] For a detailed interpretation of these lines from the point of view of revealing truth through the creative metaphor see Lakoff and Johnson (1980: 174–175).

In one wild day of rain.
We heard " 'Tis Over" roaring.
A year of leaves was wasted...
By denying and ignoring
The waste of nations warring.

The metaphors referring to leaves as people (or peoples) appear systematically in the poem from the first line to the last: "**go** to **glory**," "migratory," "**go** part way down the lane," "get beaten down," "the waste of **nations**." But the metaphor LEAVES ARE PEOPLE also goes in the opposite direction, because of the phrase "Get beaten down and pasted," where "beaten down" is more likely to refer to people, but "pasted" is probably associated with leaves. Furthermore, "waste" also refers to the leaves at first, and only with the last line of the poem comes the shocking reference to whole nations also wasted. In this way a new, opposite meaning is created, namely, PEOPLE ARE LEAVES. The double edged metaphor, which achieves this effect shows that, just like communities or nations, leaves can reach the peak of their potential ("glory"), they can migrate in large numbers, and be destroyed by forces they do not control ("rain" or "war"). The poem at first creates in our minds the image of the glory of nature, links it to the glory of humankind, and finishes with the dramatic collapse and decline of both – nature and civilization.[5]

The emergence of the mental capacity for metaphor equipped people with a whole new system of grasping meanings, which was added to the biologically inherent sensory system of processing information. Likewise, the use of creative metaphors gave us a chance to form a new conceptual structure and the potential of gaining a new way of understanding the world and even creating this world in our minds (Popper's *World 2*, Bruner's *cultural* or *folk psychology*, or Uexküll's *Umwelt*). Shaping the world at a basic level with the use of conventional metaphors

[5] One might try to draw more relationships within this metaphor because of the assumed rebirth of nature, often present in both conventional and creative metaphors, but metaphorization not only highlights the features that we want to draw attention to but also hides or masks those that are not needed (Lakoff and Johnson 1980: 139). It seems plausible to treat the line "We heard "Tis over' roaring…" as such an instance, and in this way perceive the overall intended meaning of the poem as a pessimistic one.

required experiencing it phenomenally, not only in a physical sense but also mentally. In this way, **a conventional metaphor can be understood as a human cognitive tool**.

Thanks to creative metaphors, on the other hand, we can structure our world in unique ways that are potentially available to everyone but accessible only through cultural tools like language, awareness of conventions, symbols, etc. However, having these tools and being exposed to a work of art that uses creative metaphors does not necessitate this higher level of understanding. In order to achieve it, we need aesthetic experience, which Lakoff and Johnson describe as "new experiential gestalts and new coherences" that, in turn, can lead to "creating new realities" (1980: 235). In this way, we can speak **of creative metaphor as a basic human tool of artistic creativity**.

3.3.3. Educational implications: individual vs. collective goals

The educational implications of these two spheres of human consciousness, the cognitive and creative, are multi-layered. From the point of view of the growth of noetic consciousness, it is important that the past is kept in human collective memory. Although individual memory is more authentic, charged with emotions, and less prone to external pressures – no one can make a person forget – it is, nevertheless, more ephemeral. Each person has his or her own individual world in the mind shaped by individual memories and knowledge. Such a world disappears with the death of this person unless it becomes part of a larger, collective memory store. It becomes less charged emotionally, less authentic, but can outlast individual lives.

However, such a collective form of memory becomes an ongoing battlefield for attention and for its presence in the minds of other people. In the past, one had to create an exceptional piece of art or perform a heroic deed to stand a chance of becoming part of the collective memory. Nowadays, with the growing reliance on the technological inventions designed to store information, on the one hand, and to try to focus people's minds on it, on the other, we face the danger of remembering less and losing the ability to remember.[6] We are faced with a paradox

[6] While the invention of writing was the first step to allow us to remember less, it also made it possible for us to gather, organize, and pass on knowledge far more

that with the ease of instantly becoming part of everybody's mental world, thanks to the information circulated via the Internet, the attention span of recipients of such information shortens, so the information does not stay in their minds long. In a way, as the amount of information grows, our abilities to keep it weaken. An urgent immediate educational implication seems to be that **we need to counteract this tendency, or else human mental capacity will keep diminishing toward a level of immediate responses comparable to those of some animal species**.

Another danger of relegating memories and knowledge to external forms of storage, or as Bruner calls it to *distributed memory* (1990), is that in the shared understanding of many people the very concept of *knowledge* becomes reduced to mean *information*. While it is possible to store information in this distributed fashion, knowledge requires understanding, and internalizing in cognitive structures, and is, in this way, the essence of the noetic consciousness. By treating the notion of *knowledge* on equal terms with *information* **we are reducing our noetic consciousness to a mere mechanism of processing information rather than conceptualizing the world around us**.

The third crucial danger has always been present, but now its impact seems even greater; namely, the struggle for the shape that collective memory takes in our minds. Leaders, especially dictators, have always tried to manipulate the shape of our historical awareness, but nowadays with an ongoing battle not only on a historical level, but also on commercial and political levels, people have less and less trust in external sources and find it much safer to rely on individual memories that no one can change (Limon 2015). However, in order to educate anyone, it is not enough to work toward an individual memory span or to rely on individual recollections. Our individual subjective worlds can only develop with the help of cultural tools and **one of education's aims is to achieve this by increasing cultural and linguistic awareness**.

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efficiently, thus contributing to the overall increase in noetic consciousness. The present changes caused by the introduction of the Internet seem, at present, to be creating more confusion and less reliance on sources of information in general, while decreasing the capacity of human semantic memory.

3.3.4. Cultural awareness

When talking of cultural awareness, we mean either the formal knowledge that is required to understand works of art and culture or we mean active participation in one's culture, i.e., becoming a creator rather than a participant. Not every person has an equal interest in all aspects of art, but, by virtue of living in a particular community, we are all engaged in its culture in some form. Assuming that the role of education is to reveal the potential of each individual, developing cultural awareness should be carried out at three levels, and, depending on the individual talent and motivation of each person, any of these could become the focus of attention. These would be to (1) equip an individual with the skills necessary to create works of art, (2) create an environment for active participation in the cultural life of a community, and (3) prepare the necessary mental toolkit for the reception of works of art. In other words, thanks to education, one should be able to **appreciate** a given work of art; however, an effective way to achieve true appreciation is to **perform** or **participate** in it, and the best possible way is to **create** it.

3.3.4.1. Cultural appreciation

Public education frequently focusses only on (3), which is teaching the elements necessary to understand a given aspect of art, e.g., teaching about literary genres, literary or music periods, or painting styles. Important as this aspect is, one should never forget that its ultimate goal should always be to provide someone with knowledge that makes full appreciation of art possible. Authentic aesthetic experiences[7] can occur even without intellectual preparation; sometimes too much knowledge about theory can spoil the authenticity of experiences. However, in the case of more complex works of art, without the right tools we may never be able to see what is there for us to see (Limon 2015). This absence of sufficient knowledge about "theory" can leave us as ill equipped in the presence of a true masterpiece as a dog is ill equipped to see a rainbow since it does not have the color receptors responsible for the perception of the color red.

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[7] The aesthetic experience, as described by Lakoff and Johnson (1980) or Bruner (1990, 1997), is discussed in section 2.4.3. where it is presented analogously to other phenomenal experiences but at an aesthetic level.

The first aspect necessary to enable a person to grasp elements that might otherwise be imperceptible (such as historical or cultural references in literature or visual arts, knowledge of the structure of musical pieces, etc.) should always be combined with chances to experience art at levels within students' receptive abilities and expanding these abilities to help students notice more and more in particular works of art. Most educational systems do attempt to introduce both these aspects, and it is mostly the talent of teachers that determines how successful these attempts are. The problematic elements that one needs to make sure about is that a balance is kept between knowledge about and the actual reception of a work of art.

Difficult though it may seem to adapt the choice of artistic pieces to the level of the perceptual abilities of students, it is possible. An example that can illustrate this is the inclusion of literary pieces or other works of culture, such as songs or films, during second language classes. When learning a second language, students might be equipped with sufficient knowledge of literature or other forms of art from their other subjects; however, their poorer command of the second language forces the teacher to be very careful as to the choice of text. If the text is too simple in terms of both language and artistic "content," students will gain nothing, either linguistically or in their artistic appreciation. If it is too difficult, the effort they would have to make when trying to understand it spoils the pleasure of discovering its meaning. However, with well-chosen material and a successful element of "discovery" when going through it, it is possible for them to have an authentic aesthetic experience.[8]

A similar combination of the relative simplicity and true attractiveness of other forms of art can have analogous results. Bruner (1997) presents four criteria for artistic experience: (1) a synergy of experiences through understanding a work of art; (2) the effort that we make to grasp it; (3) being emotionally "moved" by it; (4) the question of universal

[8] An article by Janczukowicz (2011) discuses several possible materials (poems by Robert Frost, Alan Seeger, and Edgar Alan Poe) from the point of view of their aesthetic attractiveness (cognitive appeal) and relative accessibility for students. The article's conclusion is that it is possible to achieve an authentic aesthetic experience in a classroom situation, in this case, a second language class; yet, the difficulty of the material can mar its potential if it is mismatched to students' capacity to grasp it.

understanding of what we might consider as beautiful. These can be a guideline in many classes, the aim of which is to prepare students for cultural appreciation, as to both the choice of works and the manner in which they should be introduced so as not to spoil the effect.

3.3.4.2. Active participation

Different cultures, even different communities, have their own traditions of participation in cultural events. This *vernacular culture* (Bodnar 1992) understood as authentic rooting in one's community is crucial for someone's actual sense of identity and is independent from attempts by officials, authorities, or school systems to impose something. This is the point where *folk psychology*, described by Bruner, combined with *communicative memory* and *historical awareness* form a person's cultural sense of identity – a sense of actual rooting in the society beyond one's family. Being so important for the development of the *self*, it is essential that the system of education does not destroy it or weaken it by either imposing officially "accepted" ideas of what someone's culture should be or by clumsily interfering in promoting *vernacular culture*.

Difficult as the task may be, the main educational goal in this sphere is to facilitate active participation in local culture rather than merely teach about it. Knowledge of one's local culture remains authentic if it is passed on through *communicative memory* not formal lessons in schools;[9] moreover, gaining a sense of true belonging can only happen through the participation in and acceptance of one's culture. This is why the role of education rather lies in cross-cultural awareness and a general sense of knowledge of various cultures one is in contact with. In these cases, there is no danger of interfering with cultural authenticity or a sense of belonging. On the contrary, such education creates a society that is more open minded, self-accepting, and accepting others as a result.

[9] An interesting example of the interplay between authentic cultural rooting and becoming a part of formal educational curriculum is traditional Mexican mariachi music, which was first part of vernacular Mexican culture, but later became popularized through films and formalized by becoming part of US university programs with subsequent objections on the part of some Mexican mariachi scholars that this popularization and institutionalization has led to the loss of its authenticity (Escalante 2006: 114).

Nevertheless, the issue of cultural education is complex and depends largely on the community in question. In monocultural societies, the element of teaching **about** one's community seems inevitable, just as it does in the case of the educational aspect of preserving any local awareness because of the contemporary globalization of culture. The contemporary emergence of "fandoms" located on the Internet rather than in any specific place creates a situation where young people's sense of cultural identity may well be placed in a culture originating on a different continent. While such interests or even passions have, in themselves, enormous educational potential; from the point of view of one's sense of identity, the sense of belonging to a place with the strongest of emotional, personal ties is also important.

Thus, from an educational point of view, the phenomenon of teenagers in the 1980s gathering in basements and forming rock bands was potentially as educational as the contemporary practice of writing fan fiction or exchanging Manga artworks via social media. As mentioned earlier, the social aspect of these two forms of exchanges (personal contact and virtual reality) differs considerably since meeting in groups promotes the formation of personal bonds and contributes to a sense of shared experience.

Nevertheless, one may wonder whether the authenticity of the aesthetic experience really depends solely on the authenticity of personal connections. Some amateur activities are collaborative efforts and some are, in principle, individual. In the case of individual art, like painting or writing poetry and prose, the actual creative act is individual in essence; therefore, social bonds should not matter so much, while collaborative artistic enterprises like performing in a band, theatre groups, etc., require cooperation, joint effort, and a sense of a shared experience in order to achieve both – a satisfying result and the sense of an aesthetic experience coming from it. Therefore, depending on the artistic area one choses to create in, the role of education might either focus students attention on direct contact or shift students' involvement from social interactions toward artistic creativity in the fields that such fascinations offer.

Although the phrases "an amateur performing group" or "amateur art" can have negative connotations for some people, because they indicate that they are non-professional, it is this form of artistic participation that holds the most potential for revealing talent at individual and

more general levels. Firstly, being an "amateur" means that someone participates for pure enjoyment or "love" of art; secondly, it creates a social convention where it is acceptable for people of varied degrees of skill to cooperate and contribute their talents. An expectation that only certified professionals are accepted as performers or creators leads to the paradox of not only fewer performers, but also fewer recipients of art in general. If, on the other hand, the general social norm is that most people perform or create some form of art, then also most people share in its reception for the sake of pure enjoyment rather than because of the demands of social status.

Examples of this phenomenon are seen in instances of vernacular culture, in which, as a norm, people sing at most social occasions, and, as a result, many more talented singers take singing up as a profession. The same happens with dancing and other performance traditions. The best classical guitarists are mostly recruited from areas where the majority of people play the guitar, just as the best footballers hail from areas where most people pass their leisure time playing football. Moreover, in some areas amateur performing groups are the accepted norm, and participation in their events becomes part of their communities' vernacular culture.

An alternative way to view the problem, which is just as valid, is to establish a norm within the family environment of the custom of participating in cultural events (going to the theatre, to concerts, etc.) or including creative skills in the set of abilities children are expected to have. The fact that the place of residence or financial situation limit these possibilities relegates this option more to social research than to the study of consciousness (Fontana 1988: 13). Be it as it may, such customary participation can create equally good potential for talents to unfold and does not conflict with participation in vernacular culture. Likewise, contemporary involvement in creative activities within "fandom" circles on the Internet does not contradict the existence of vernacular culture or more formal early artistic education. On the contrary, all these forms can create a synergy and contribute to the formation of a general attitude where active participation in one form of art or another is the norm and a habit, without which it would be hard to live.

The question that remains is the role of more formalized education in this area. While the very nature of an amateur activity requires the artistic act to be done voluntarily, it is possible, under certain conditions,

such as its extracurricular nature, to retain the potential for the authentic artistic experience within the school environment. Janczukowicz (2018) describes in detail the artistic and educational potential of school performances, which can foster a link between amateur performances and creative development. An important advantage of such activities, and indeed of all forms of art, is that they take place at an age when many educational paths are still open, and in this way such artistic school activities can turn into either an initial stage of artistic development at the professional level or a discovery of a fulfilling activity that complements other involvements in adult life, thus making life itself more fulfilling. Be it as it may, active participation in school activities of this kind can give students space for their own creative talents to unfold, which, in turn, can help them to think in a creative manner in all situations and not only in those relating to art in the strict sense.

3.3.4.2. Creativity

From an educational point of view, creativity can mean preparation in terms of skills and craftsmanship within a particular field of art, or a general education that supports creative talent or creative personality traits in students. In the first case, it can belong to the field of methodology of particular art schools and academies or it can mean the support of general artistic interests of particular students, mostly in the form of amateur performing groups. The technicalities of professional preparation itself are beyond the scope of this book; however, a certain regularity can be detected when comparing successful and unsuccessful attempts at amateur creativity. Those events where there has been the help of or contributions from professional sources usually have far better results than those where there was none. While it is possible for the non-professionals to come up with creative solutions and work out the technical side by themselves,[10] usually the quality of their work benefits considerably thanks to even minor aid from professionally trained people. However, apart from professional support and teachers' ability to identify creative talent, the area of creativity itself depends on two more crucial factors;, namely, *creative thinking* and a *creative personality.*

[10] Some of the most eminent electric guitarists, like Jimi Hendrix, Eric Clapton, David Gilmour, etc., were self-taught.

Contrary to what might be expected, the notion of *creative thinking* does not have to involve artistic creativity. It is rather an ability to come up with novel solutions to tasks when an established pattern of actions does not provide satisfactory results. In this sense, it can result in scientific discoveries or technological inventions as much as in works of art. Its most prominent aspect involves a distinction between two manners of thinking: *divergent* and *convergent* (Fontana 1988: 111). *Divergent* thinking involves engaging new, unexpected patterns; as it were, a tendency to step out of the established way, while *convergent* thinking involves recognizing the right path to follow out of a multitude of data.[11] In terms of *creativity*, both manners of thinking are important in that it is *divergent* thinking that enables someone to break out of what is established and expected to create a new idea or solution, but without *convergent* thinking, it would be difficult to discover the right path to follow out of the many possibilities that *divergent* thinking provides.

Interestingly enough, studies on students' creativity show important implications for the phenomenon of consciousness. Fontana (1988) cites Perkins's (1981) four stages of the *creative act* as (1) preparation, (2) incubation, (3) inspiration, and (4) verification. While (1) – the preparation stage – is a fully conscious process of noticing and focusing on a given problem, (2) – the incubation stage– is when someone ponders on it very often on a subconscious level only to reach (3) the inspiration stage – that is the moment when a possible solution reaches the conscious level, and the process ends with (4) the verification stage, which is when the idea is put into practice. While it is not certain exactly how the incubation stage works, it involves varied degrees of conscious thinking. Different fields of study account for it in a variety of ways, as a divergent stage that results in convergent inspiration, or lateral thinking that engages both hemispheres of the brain, but most of these explanations have one thing in common, which are the connection between two patterns of meanings – the sequential and the alternative.

[11] Needless to say, it is *convergent* thinking that helps the most during traditional intelligence tests, where an established procedure is to verify how efficiently someone can recognize a hidden pattern leading to the right solution. Nevertheless, efficient though it may be in recognizing what is expected and established, it does not help in tasks where traditional solutions do not work.

The most basic pattern of meanings can be seen in terms of syntagmatic and paradigmatic connections, that is in terms of (a) stringing together elements that follow each other, and (b) alternatives – possibilities among which we must chose only one. Many of the patterns of thinking discussed so far, like divergent and convergent thinking, thinking in terms of narratives (described in section 3.3.1.) or metaphors (from section 3.3.2.), and scripts and frames (Danilewicz 2011), all reveal the common relation between this most basic arrangement of meanings in the human mind in terms of either (a) sequences or (b) alternatives. It seems plausible to argue that regardless of the name that we give to these relations, creativity relies on balancing and co-operation between the two, at times below the conscious level, and bringing it to consciousness in the form of the best solution through creative illumination.

However, for the *creative act* to be carried out it takes more than just a moment of inspiration. The stage described by Perkins (1981) as verification, i.e., the process of carrying out an inspired idea, requires skills, overcoming obstacles, and a particular type of perseverance. In short, apart from skills and knowledge, it takes particular character traits and the right motivation to materialize or carry out what comes as inspiration at the moment of enlightenment. Żuk (1986)[12] claims that this character trait is the *creative personality* and describes it as a learner's general attitude toward tasks that education, especially school, places in front of him or her. This attitude can be quite revealing as to a more general attitude to life and goals that one sets for oneself, to rules, to social surroundings, and especially to one's own aims in life. Most importantly, it can reflect on the type of motivation that one has and the resulting achievements.

Firstly, a person characterized by Żuk with a *creative personality* does not have a need to conform to the society in which he or she lives. In the school environment this results in difficulty complying with norms and rules. Instead, this type of student has in his or her mind an ideal image of whatever task is to be fulfilled and strives toward what, in his or her opinion, this image is. While a typical student might search for hints or signals as to what the desired outcome is or what the teacher expects him or her to do, a creative student might feel free to break the rules, or

[12] The following description of the creative personality was the result of a longitudinal study carried out among high school students by the author.

he or she simply fails to notice them, being so focused on the outcome. Apart from a disregard for norms, such a student is likely to persevere in attempts to reach the goal, even if it means changing strategies several times to achieve it. On the whole, the most marked feature of such a personality is **the focus on the ideal rather than the norm**.

From the point of view of the motivational drives discussed in section 2.3., one might describe such a person as characterized by cognitive-creative motivation without much of a social factor. In popular language, such a personality is usually referred to as a "driven" person, i.e., someone whose goals and passions are the highest priority in life. Since a personality is a mixture of factors, we need not go too far in our generalizations; however, it is worth discussing how to approach such a person in terms of education.

One of the first challenges is either finding potential or a particular talent or helping such students discover which talent to choose and develop. The next challenge is allowing them to develop within the system since often enough it is the fate of such students to pursue their passions in spite of, rather than with the help of, formal education. The fact that such students are less likely to follow directions, comply with arrangements the rest of the group is supposed to follow, makes dealing with gifted students a much harder and delicate matter (Fontana 1988: 120–121). Furthermore, trying to make them conform to school norms can create conflict, while allowing them to pursue passions within the school system might not only benefit them more than the rest of the group, but they themselves might make contributions to lessons.

Nevertheless, it is important to remember, that the duty of education is to support rather than suppress creative individuals. A disregard for social norms or perseverance in pursuing one's goals do not guarantee in themselves the presence of a creative talent. The role of the teacher, and of education in general, is to notice what drives such a person to disregard the set path and persevere in looking for the best possible way to find a solution; namely, whether such a person is driven by pure obstinacy and egocentrism or a vision. If the latter is the case, then the

teacher might have found a true talent, and his or her role would then be to give this student space, direction, and some additional help.[13]

On a more practical level, in the school environment one does not necessarily deal with either pure genius or its opposite. Artistic talent or a creative personality can appear to varying degrees in different students, and it is advisable, as a general principle, to carry out any teaching process in a manner that is open for creativity, i.e., in a way that offers opportunities for alternative solutions within reasonable limits. Since students often see teacher's guidelines as the "right answer," one must pay particular attention as to the manner in which directions are given and not to direct students too much or offer actual examples, but to keep tasks as open as possible to allow for the potential discovery of alternative solutions.

3.3.5. The growth of consciousness through art

Lastly, we need to look at the question of creativity from the point of view of consciousness, both in its collective and individual aspects. When consciousness is viewed from the collective angle, we can see its presence in all aspects of culture, since culture, just as language, is, in principle, a collective construct built on a system of shared meanings and symbolic representations. Furthermore, we can see its collective aspect in forms of art that rely on collaborative effort and shared experience, as is the case with theatre productions or musical performances. In both these senses we can see the potential growth of consciousness of a particular community or a culture with each new work of art added to the system of shared meanings. Each culture relies on works of art as if they were basic meaningful units or points of reference, on which other works of art can be built. In this way, cultural awareness can grow in intensity as new elements are added to its system. Likewise, the collective memory of the shared experience creates emotional links within a community adding to its collective memory an aesthetic experience that can create bonds at the aesthetic level.

[13] What such people usually do not need is excessive attention and pampering, which at times leaves them with a sense of confinement and lack of freedom, even if otherwise they enjoy the recognizability and relative fame in the school environment.

A sense of identity with one's community can be created and reinforced in a number of ways; the easiest, often observed during crises like wars or epidemics (or even at times of peace when taken advantage of by authoritarian leaders), is to create a sense of isolation and a threat from the outside. A common fear or common hatred leads to the sense of a bond within a group; however, it limits people's consciousness. People function at the survival level of their consciousness while under the impression that their very existence is threatened. It is difficult to reflect on one's actions, apply critical thinking, and expand one's horizons to see the broader picture. Then the perspective becomes one sided, and the perception of the world, our *Umwelt*, is limited and people's activity reduced to mere responses to external or internal stimuli. It is in such situations that we can best observe the decline of human consciousness in both its collective and individual aspects.

However, **a sense of identity with a community, which is built through shared experience, collective memory, and common culture** (Saryusz-Wolska and Traba 2014), can grow through the synergy of these factors.[14] Participation in the same cultural events can create this synergy since the shared experience of the event stays in the communicative memory much longer, and is sometimes recalled for years and, most importantly, it contributes to the culture in which one is immersed. As a result, people not only experience stronger bonds within the community but also growth in the *intensity of consciousness*.

The individual aspect of consciousness can also grow in the sense that the individual understanding of the world and an individual sense of identity can become more complex. However, the individual aspect can gain in intensity in an additional way, mentioned in section 1.2.; namely in the experience of *flow* (Csíkszentmihályi 1997). This state of consciousness is described as a psychological state in which someone becomes so engrossed in the act of performing something that he or she disengages from his or her surroundings. Though the activity does not

[14] We can easily observe such synergy in the sphere of pop-culture with the phenomenon of "iconic movies," when members of particular communities make references to, quote, and, in a way, create a whole code built around a particular film. Rather than referential, such behavior seems to have a phatic function, to use Jacobson's terminology, since the purpose is to establish bonds, confirm a sense of belonging to the group, and gain pleasure from reminding each other of the film that the community members like.

have to be a work of art, it must be something demanding that involves the application of one's skills to the highest degree. If it is an artistic production, then the aesthetic experience gains a new quality, which is much more intense, than that ever experienced when passively appreciating something someone else has created or performed (Csíkszentmihályi 1997).

At the beginning of section 3.3.4., we mentioned that there are several degrees of aesthetic experience; namely, appreciation, participation, performance, and creation. All of them require knowledge, effort, emotional involvement, and a sense of beauty. Additionally, if we engage our skills to the utmost degree, to the point that we forget about effort, our surroundings, or ourselves, we become capable of experiencing art to the highest degree. Needless to say, this highest point, which Csíkszentmihályi (1997) calls *flow*, can only be achieved if we are highly skilled and creating or performing a demanding work of art. As a result, by combining knowledge (our noetic consciousness) with a sense of personal involvement and experience (our autonoetic consciousness) while practicing a skill at the highest possible level (our anoetic consciousness), we can speak of **raising the intensity of our consciousness within the domain of creation**.

3.4. Language and knowledge

When discussing knowledge and the mental processes that are involved, we already spoke about the interdependence between language and thought. The mutual reliance between higher mental processes and higher language functions was presented in section 2.2., where it was argued that language was an indispensable tool in raising the intensity of noetic consciousness. When discussing cognition in terms of narratives and metaphors, we could see the extent to which our conceptualization of the world depends on how we verbalize our ideas. Alternatively, it can be argued, that language not only expresses our conceptualization of the world, but shapes it (Lakoff and Johnson 1980). Regardless of whether arranging our experience in the form of narratives and metaphors can

shape or merely reflect the mental activity, it is important to understand this medium, i.e. language, better (Danilewicz 2011: 24–25).

Looking at the question of language awareness from the point of view of shaping our noetic consciousness, one can see it as an extension of the perceptual system, in the sense that we shape our Umwelt, not through the direct experience of the world with our senses, but rather by the perceptual experience as it becomes translated into the categories provided by the language. That is why, understanding the nature of language, as it helps or hinders our experience of reality becomes as vital as the study of the sensory system, or even more so, since it is thanks to language that we can conceptualize it to a much higher degree. Consequently, what remains to be discussed now, is the need to increase our awareness of language itself, and the question of ways in which we could achieve it.

3.4.1. Language awareness

Becoming aware of one's language for the first time might be compared to noticing the air that one breathes, and just as with the air that we notice only at the point that we have some difficulty breathing, so it is with language – we notice it the moment we struggle to verbalize our thoughts. The awareness of the medium can be observed by a poet struggling to phrase an idea in a way that catches the particular aspect of meaning or in any other situation where conventional language and frequently used language chunks are insufficient to express meaning.

Our *language awareness* can, at times, be narrowed down to the use of metalinguistic expressions; in other words, our knowledge about the language.[15] Although we use metalanguage in order to conceptualize language as such, real *language awareness* goes beyond it. The essence of the difference lies in the type of consciousness that is engaged, that is, the difference between *phenomenal* and *access* consciousness (described in section 2.4.3). Phenomenal consciousness is related to the actual experience with its affective connotations, while access consciousness

[15] Carl James (1996: 138) refers to metalinguistic knowledge as one of three components of our linguistic knowledge together with language competence and metacognition. In short, he perceives language awareness as the things we can verbalize about language. We follow this understanding but add the phenomenal aspect of actual experience to it.

is related to information about an aspect of reality, so that even though we might access information about say, ultraviolet rays, and even use sophisticated instruments to examine its properties, we will never experience it phenomenologically.

Likewise, metalinguistic knowledge can provide us with a conceptual framework to learn about language, but real *language awareness* requires the phenomenological *experience of meaning*. Just as gaining information about a work of art can be a preliminary step to an *aesthetic experience*, it is not that experience itself. Thus, metalinguistic knowledge can help our language awareness, but it is not identical to it. The phenomenal *experience of meaning* can take place in a number of ways, e.g., in the act of communication, in which case we are speaking about *sharing meaning* (Danilewicz 2016: 243), or as part of learning something, in which case it becomes a *personal educational event* (Daszkiewicz 2015: 107). While an aesthetic experience involves the knowledge of a convention, and possibly the skill of performing or producing a work of art, the effort of discovering intended meaning and relating it to one's own inner sense of beauty (Bruner 1997), the experience of meaning also involves connecting a new message, the sense of a word, etc., to one's cognitive structure and receiving from it a sense of coherence with the rest of one's system of understanding. The emotionally positive experience of something "making sense" can be described as the cognitive equivalent of the sensory experience of sight, which, symptomatically, is also called "seeing" something. It is under this condition of *experiencing meaning* (which involves a sense of coherence in cognitive structure and phenomenal awareness) that we speak of raising language awareness (Danilewicz 2011).

Nevertheless, the majority of meanings become so conventionalized and so obvious that their presence does not create any conscious experience. Just as we perceive many things but experience those that we notice and that go past short term memory, so it is with the experience of meaning. More conventional forms, which are processed effortlessly, are not consciously experienced. However, the effort to discover meaning forces us to become more aware of it and leads to our experience of meaning. An example of this is the moment we understand a joke. The listener is presented with a non-obvious connection, and the instance of noticing what the connection is, i.e., grasping the joke, is the moment of experiencing its meaning. Obviously, the experience of meaning takes

place in other situations, not only jokes, but they must be somehow significant, i.e., "meaningful." This is why, when speaking of raising language awareness, we are also speaking about raising the complexity of the language that one is capable of producing or understanding as well as one's general understanding of the world.[16]

From an educational perspective, the primary aim of teaching the first language as a school subject (English in the UK, Polish in Poland, Spanish in Mexico, etc.) is apparently to raise awareness of the language. Children are taught metalinguistic expressions and the rules of their native language, but it is not always clear whether the primary goal is to raise awareness of language, teach the standard form of the first language, or develop an ability to efficiently use the medium of language, and, as a result, develop both thinking and language skills. Although in most cases it is a mixture of the three goals in varying proportions, frequently the need to eradicate common mistakes (focus on the standard) overshadows the remaining goals while the introduction of metalinguistic concepts becomes an aim in itself that burden the minds of learners with information *about* the language without adding to the coherence of cognitive structure.

The reason why metalinguistic knowledge seems useless to children is because it does not lead directly to any clear benefits in terms of meaning; they can communicate just as easily with the knowledge of what the "subject" of a sentence is as without it. It is the introduction of the second language that usually marks the moment that children begin to be truly aware of not only the meaning of the metalinguistic terminology but the structure of their native language as well. Then metalinguistic expressions become truly useful and meaningful, because they help to understand the structure of both the new system that is being acquired and the native one, which is already functioning in their minds (James 1996: 144). As a result, the same metalinguistic concepts that used to be so difficult to understand all of a sudden become clear and helpful in *experiencing meaning*.

[16] This is why proposals such as those from Rychło (2008) or Daszkiewicz et al. (2017), which show teaching languages by means of general education and vice versa, can be seen as vital to the overall aim of increasing somebody's noetic consciousness as well as raising his or her language awareness.

In section 1.3.1. we speak about *implicit* and *explicit learning*, where the former refers to the processes of inferring rules without being aware of them in ways that are common with animals and very young children. This ability is still present in adults as shown in experiments conducted by Reber (1993); however, higher mental processes also become involved though not always at a conscious level. Thus, a user of language might implicitly infer certain rules, while unconsciously using metaphors, metonymy, etc. The cognition that is taking place without our awareness, whether it involves a more basic, implicit inference of rules or a more complex conceptualization, can be referred to as *backstage cognition* (Danilewicz 2011: 181–182).

Language awareness involves brining attention back to these processes. It can refer either to realizing the intricacies of the language one uses, typically one's first language, or consciously acquiring new knowledge, which is frequently connected with a second language (Danilewicz 2011: 19). Since, as has already been mentioned, it is very often the case that the process of second language acquisition leads to a greater awareness of one's first language, both aspects, i.e., consciously knowing and consciously learning a language be it first or second, are integral parts of the same phenomenon.[17] As regards the question of whether the language reflects or rather shapes our image of the world, one might venture the claim that the first aspect is the moment when we realize the limitations that language can place on our expression of ideas, while the second aspect allows us to break these bonds.

3.4.2. Conscious bilingualism

In order to illustrate a way in which increasing language awareness can allow us to step outside the limitations that our own language places on our conceptualization of the world, we can look at the way we conceptualize time and verbalize time references. It is traditionally assumed that we perceive time in terms of past, present, and future (Reber 1985:

[17] Danilewicz (2011: 19) and James (1996: 139) point to a distinction between prototypical language awareness (referring to the consciousness of a language you know) and consciousness raising (referring to the process of learning new things, mostly in the second language), but they also admit that the two notions are sufficiently related to be treated as near synonyms.

830), so that past time reference is expressed through a past tense, present time reference through a present tense, and future time reference requires a future tense. However, when we look closer at the tense system in English we can see that this is not the case. If we were to match English tenses with time reference (our earlier "intuitive" division) we would have much greater difficulty and would not be able to account for expressions like *When I have read this paper*, in which present perfect refers to the future, *This train leaves in 3 minutes*, in which present simple also refers to the future, while the sentence *She will talk and annoy me every single Friday evening* refers, in part, to a past experience. Polish grammar, on the other hand, does not have aspect, but the tenses have much stricter reference to the past, present, and future. A sentence in the past tense mostly refers to what used to be, the future mostly to what is going to happen. Although there are exceptions, e.g., sentences like *Autobus odjeżdża za 3 minuty* ("The bus leaves in 3 minutes" refers to the future), they are less frequent in Polish than in English.

However, Pöppel (1989: 55–58) described our experience of time differently by distinguishing four different elements, namely: (1) a *simultaneous experience vs. time lapse* (which means that we see the difference between a situation where two things are happening at the same time or one after another); (2) experiencing *sequentiality* (consecutive or repetitive events); (3) a sense of *now*; (4) a sense of *duration*.

If we look at the English tense system, this division has a much stronger correspondence to its aspect (simple, continuous, perfect or perfect continuous) than to the time (past, present, future). While the time only roughly corresponds to our sense of what used to be, what is now, and what is going to happen, the division into aspects corresponds very closely to (1) – the continuous aspect for a simultaneous experience (*I was watering the garden as the children were playing in the sandbox*) or a perfect aspect for a sense of time lapse (*I had written the essay before my teacher sent the message*). (2) The simple aspect most commonly expresses repetitive events (*My children will argue, no matter what I do* or *She often waters the garden at 8 p.m.*). The sense of *now* (3) clearly corresponds to present continuous tense (*I am drinking coffee right now*), while (4), a sense of *duration*, corresponds to the tenses in the perfect continuous aspect (*We will have been reading this text for two hours by the time we are done with it*).

This description so far could easily illustrate the same phenomenon of the experience of time that is usually given (but with other languages as a point of reference) to show the confinements of the experience of reality because of a language. Alternatively, it could be used as an illustration of how the structure of the language reveals the *background cognition* inherent in our perception of time. However, if we now take speakers of a language (like Polish) with a much closer correspondence between tense and time reference, we will have to make him or her realize not only the time reference of the tense that we aim to teach, but also necessary elements of continuity, repetitiveness, sequentiality, and duration. In this way, we raise awareness of not just one but two languages, because in order to understand the new concepts, the learner will also have to become more conscious of the structure of his or her native language.[18]

The experience of time is responsible for many aspects of cognition (Tarkowska 2010), like arranging meanings in linear rather than alternative patterns, which is reflected in spatial metaphorization and our mental arrangement of meanings in terms of narratives. Studies of linguistic aspects of shaping reality frequently focus on the role that languages play in our perception of time (Rączaszek-Leonardi 2011, Danilewicz 2011). Learning another language gives us a chance to broaden our cognition and our consciousness similarly to how climbing a mountain and seeing the land one traveled through gives one a new perspective and heightens perceptual capacity.

Broadening horizons happens in a multitude of ways, and the experience of time is only a minor example. The meaning of each word in one language will be expressed in a number of ways in another given context, situation, etc. Moreover, in order to efficiently communicate any cultural reference, one needs to have the background knowledge of the target culture or cultures. That is why when learning a new thing in a second language we are constantly increasing our language awareness of both the target and our native languages and cultural awareness within both languages, and, thanks to this, we increase our cognitive

[18] Carl James (1996: 144) also draws attention to certain mental skills that a bilingual mind has, such as language awareness of both languages, mental mechanisms of keeping the two languages separate, and metacognition. He calls it cross-linguistic awareness, which is very close to our understanding of conscious bilingualism.

abilities to gain knowledge of the surrounding reality, our *Umwelt*. This *conscious bilingualism*, the phenomenon of knowing more than one language in a conscious way, is one of the best tools for building our noetic consciousness, and, in general, **increasing the intensity of consciousness within the domain of cognition**.

Conclusions

Part I of the book presents the phenomenon of consciousness along two dimensions; firstly, with regard to the mental factors that make it possible for consciousness to develop, such as memory, language, or empathy; and secondly, with regard to the relation between the individual development of consciousness dependent or independent of its collective aspects, such as art, culture, history, or science. Each of these aspects is analyzed from an educational perspective, at times in more general terms, as is the case with higher motivational drives and their influence on education, or in more practical terms like didactic implications as in the case of the relationship between conscious and behavioral components at different stages of procedural learning.

Looking at the phenomenon of consciousness from the perspective of memory, we can conclude that the most important educational implication in the case of anoetic consciousness is balancing mental and procedural learning at different stages and noticing other crucial factors such as the quality of attention or the degree of implicit learning that might be involved. Additionally, an important educational element is the need to discover the unique talent of individuals and to develop certain skills or abilities in this respect. If these skills coincide with higher motivational drives and a talent, we can equip learners with the tools to achieve a sense of fulfillment that can potentially be accompanied with a sense of *flow*.

In the case of autonoetic consciousness, apart from the already mentioned motivational drives, the educational implication concerns the distinction between *me* (representing a more egocentric sense of self that leads to the perception of the world as divided into elements that are an extension of myself and everything else that is perceived as rivals) and *I* (raising the sense of self to an awareness of other points of view that permits taking an outsider's perspective of oneself, but also being able to adopt a different point of view on other issues). While it is educationally vital to enable this shift from the selfish and egocentric *me* to a more conscious *I*, it is impractical and futile to attempt to fight the egocentric quality. Only by the inclusion of a broader perspective can someone truly learn how to see the "broader picture" in a variety of educational

situations. Otherwise, the educational role remains to broaden the scope of *me*, so that it includes not only my own person or my own children or even my own community or country, but all people. That is how we can also achieve the shift from *me* to *I* in this alternative way.

The phenomenon of noetic consciousness seems even more important from the point of view of education, and it can best be summarized by the two directions it should take – broadening and intensifying its contents. Both directions require treating the contents of semantic memory as knowledge rather than information, so that the result of learning should always be a true change in cognitive structure and in conceptualizing various elements into a coherent view of the world. Intensifying noetic consciousness implies connecting the contents of knowledge with one's *Umwelt*, which is the actual experiential image of reality one has.

Chapter 3 aims to follow the growth of consciousness from the suggested co-evolution with language thanks to the ability to perceive the world from the perspective of another human being. This mechanism attributed to the theory of mind enabled humans to develop a variety of cognitive mechanisms that allowed human consciousness to keep developing and growing. Language is thought to be the crucial factor in the development of consciousness, and since its very nature relies on collective growth, the collective aspect of consciousness is also discussed.

The development of consciousness is discussed within several domains as regards autonoetic consciousness and a sense of self, its collective aspect concerned a sense of identity with one's community and the awareness of other cultures and the different perspectives they necessitated. The ability to grow a sense of self into a sense of identity with a larger community beyond the closest family circle involved collective memory that grew from individual episodic memory through communicative memory into historical awareness. This broader sense of self, depending on its quality, could contribute to a greater awareness of various perspectives on history and, as a result, build the intensity of consciousness within the domain of coexistence. Alternatively, the narrowing of the perspective and a refusal to acknowledge the perspective of other communities can lead to wars, social conflicts, and an overall decrease of consciousness within the domain of coexistence.

Another collective aspect of consciousness, cultural awareness, involves a new typically human domain of cognition built up of symbols

and human activity, especially within its creative aspect. Out of the typically collective cultural awareness there evolves artistic creativity, which has been made possible thanks to the higher mental processes, such as metaphorization or shaping the image of reality in a linear fashion in the form of narratives. Artistic creativity in both, its individual and collective aspect, led to the increase of the intensity of consciousness mostly in the domain of creation.

Cognition, as it is enveloped in language, can be further aided by increasing language awareness, which, in turn, is made possible by the conscious acquisition of another language. Increasing the conscious acquisition of a second language, not only improves the awareness of language as such, but can help broaden the scope of consciousness beyond the confinement of one language and one culture. It is thanks to this broadening of perspective, which is possible thanks to raising the awareness of more than one language, that it is postulated that conscious bilingualism can become an optimal way to raise the intensity of consciousness within the domain of cognition.

Lastly, it should be stressed that none of the domains discussed so far exist in isolation. Cultural awareness creates potential not only in the domain of creation but also in those of coexistence and cognition. The same holds true for historical awareness and language awareness. Instead, they form a synergy in which raising the intensity of consciousness in one domain can increase the potential of growing within the other. However, it should also be noted that consciousness in both its individual and collective aspects can decline instead of increase in intensity. **The need to prevent this from happening and finding ways of increasing the intensity of consciousness are the main challenges of education.**

Part II: Evolutionary predictions

Chapter 4: Phases of emergence

These speculations concern the first tentative signals of the appearance of self-consciousness in the world. In particular, this discussion focuses on the characteristics that suggest that the phenomenon of consciousness requires an adequate educational system that safeguards its further development. The main concern of the discussion is the relation of the self-consciousness of individuals with learning processes and the principles of education, the place of these relations throughout the period of its emergence on the broader plane of communities, and its role in the hypothetical evolutionary development of the phenomenon of consciousness itself.

The key issue of this educational concept is the fact that the acquisition of consciousness opens the way for the appearance of processes that transcend typical characteristics of animate matter, which are, first of all, survival drives and the psychosocial needs of more complex living organisms. Phenomena such as *higher mental processes* and the *metaphysical inclination* of individuals generate a new feature of individual self-consciousness, which is referred to as the *intensity of consciousness*. This feature makes further development of consciousness possible under the condition that the educational system also transcends the pragmatic level of its targets. The observations cover the span of time between the emergence of a species gifted with self-consciousness in a biological sense,[1] i.e., as the result of the evolutionary changes from natural selection, and the appearance of a powerful, new agent of change in the

[1] The word "emergence" is used in the context of both biological changes and the appearance of consciousness. We follow Chomsky (2002: 61–62) here to refer to "the

mentality of individuals, namely, radically changed principles of general education on a massive scale. The resulting intellectual momentum gained thanks to the rapid development of higher mental processes should have opened the way to qualitative changes of the phenomenon of consciousness and most likely initiated a new stage of its development.

In light of the accepted convention, the subsequent history of the emergence of consciousness can be divided into a number of phases that are characterized either by approaching a new stage or receding from it to the previous state, even back to the state of animalism. The particular phases differ from one another with respect to the scientific, philosophical, educational, and artistic achievements of individuals, and the quality of their coexistence according to universal moral principles. It is important to note that the phases of the emergence of consciousness do not follow one another according to chronological, environmental, or geographical criteria within communities that are typical of natural selection and that are decisive in the formation of new species in the sphere of animate matter. As it is, the phases are noted in a multitude of various cultures that manifest different phases of the emergence of consciousness while living not very far apart. Frequently, all the phases occur at the same time and in the same place. Accordingly, we can distinguish the following phases of the whole period of the emergence of consciousness: introductory, awakening, stagnation, and revival. The decisive step forward in the advancement of the development of the intensity of consciousness on the plane of communities occurs between the introductory and awakening phases. The stagnation phase signals a crisis in the awakening phase, whereas revival indicates its further development.

The phases of the emergence of consciousness on the plane of communities depend on the growth of the intensity of consciousness of individuals. It should be noted that unlike the evolutionary changes that result from natural selection and are fixed in the genetic material, changes in the intensity of consciousness of individuals are not fixed, and they depend solely on the kind of education. However, an adequate system of education is in a position for a more advanced phase to achieve stability in progress, i.e., it becomes able to maintain constant

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appearance of a qualitatively different phenomenon at a specific stage of complexity of organisation."

development in the awakening phase and prevent it from receding to the introductory phase or safeguard it against stagnation and decline.

4.1. The appearance of self-consciousness: Introductory phase

Knowledge about the appearance of consciousness is highly speculative and has no serious foundation because of the lack of reliable documents. It is based on an oral tradition in which mythology is inseparably bound up with descriptions of events which may or may not have happened. What we have at our disposal are objects of personal use with definite practical, military or domestic purposes, tools, dwellings, etc. The evidence available does not show any traces of deliberate efforts of individuals to understand their existence in the world or to understand the existence of the world as such.[2] It is safe to assume that in this phase of self-consciousness, individuals functioned mostly as agents of the survival of the species. It proved effective in dealing with matters of life and definitely consolidated the existence of the species.

4.2. The awakening of the spirit

The turning point of the evolution of ancient consciousness was the acquisition of the art of writing.[3] The individuals who can write can preserve their knowledge so as to give shape to their thoughts. More importantly, they can transmit this knowledge to future generations.

[2] An insight into a potential turning point in the emergence of consciousness is a comparison between artefacts and tools produced by early Homo sapiens and late Neanderthals (Wragg Sykes 2020: 338–342).

[3] While the speculations presented in section 3.1. pointed to the role that the theory of mind and the emergence of language may have had as the point of departure, it is impossible to predict with the current state of our knowledge, at which point the features that we mention here emerged.

Individuals became capable of systematic inquiry into their beliefs and conjectures. Once they could write their thoughts down, the introductory phase came to an end to open the way to the awakening phase. This phase is characterized by remarkable cultural, scientific, philosophical, artistic, educational, and moral achievements. This situation is visible in many aspects of people's lives such as in lyric and epic poetry, drama, music, painting, sculpture, discoveries of the fundamental laws of nature, public life in the domain of coexistence, tampering with the gods and thus developing metaphysical inclinations and, above all, in the appearance of philosophers, scientists, artists, and teachers who begin to inquire into the nature of the universe and into the nature of self-consciousness.

It is in the phase of awakening when we encounter the first traces of the motivation to act beyond the usual, biological level determined by survival drives and psychosocial needs. Individuals became capable of transcending their basic instincts and manifested a search for truth in the knowledge of the world, thus providing a foundation for the domain of cognition, and the search for beauty in artistic production that initiated the domain of creation. As far as the social organization of their lives is concerned, there are documents that can be interpreted as the search for universal moral principles so as to establish laws for the peaceful coexistence of all individuals.

4.3. Stagnation and decline

The first symptoms of a crisis in the development of consciousness takes place when the higher mental processes cease to lead people beyond the physical or purely social level of existence. An example of this can be observed when the drive for technological inventions replaces science, philosophy, and art as the main factors of the motivation to act. For instance, the search for truth and beauty, which determines this motivation in the awakening phase, can be supplanted by the overwhelming craving for comfort, entertainment, the improvement of living conditions, health, dwellings, etc. Since these targets are effectively attained by the simplification of the forms of communication, the mental life of

individuals gradually deteriorates. The subsequent events are marked by a decline in science, art, philosophy, and education. Because of the invention of electronic devices that are capable of storing and processing great amounts of information that is useful for all possible practical purposes, the motivational drives to act become limited to such targets with a harmful effect upon the mental life of individuals.[4]

The deterioration of mental life influences the social organization of the coexistence of individuals. The history of coexistence of individuals in the stagnation phase is characterized by violating basic principles of harmony at the social level, marked by wars, revolutions, political murder, and treachery. Individuals indulge in consumption limited to physiological and psychosocial needs. The functions of language can be dominated by the signaling-impressive ways of communication limited to exclamations and references to physiological processes concerned with procreation, eating, drinking, etc. Writing becomes reduced to pictographic signs and abbreviations. Because of the disappearance of higher language functions such as argumentative and poetic functions, individuals become unable to express any idea that exceeds direct, immediate communication connected with instantaneous practical needs. Additionally, if the stagnation phase coincides with an education system that is mostly concerned with specialized professional training, general education deteriorates simultaneously.[5]

4.4. The revival of thinking skills

The stagnation phase can end abruptly at a critical point in history when people realize the futility and civilizational risks in following the direction they are taking. This awareness might coincide with the

[4] The regression to the times before the age of writing, described by Ong as *secondary orality* (1982), are evident in changes in the current style of writing influenced and reinforced by the Internet, such as an acceptance of performance slips, the frequent use of acronyms and neologisms, etc. and the use of limited coding, which is impossible to understand without knowledge of the context. All of these are symptoms of oral, rather than written forms, without the possibility of clarifying meaning, which the oral form provides (Bobryk 2011: 178). These are likely symptoms of mankind's turning to visual and iconic forms of representations and giving up written forms altogether, as presented in McLuhan's *The Gutenberg Galaxy* (1962).

[5] For a more detailed analysis see Wenzel (2020).

discovery that instead of excessively struggling with matters of life, it is much more attractive to become preoccupied with the development of the mind. This realization restores the position of all factors that are engaged in the development of consciousness, namely, science, art, philosophy, and morality. Consequently, the motivational drives to act for the sake of pragmatic targets give way to more complex drives to search for truth in the knowledge of the world and for beauty in artistic creation. Once these motivational drives are restored, it becomes clear to the members of society that the key to the development of consciousness is to be found in a radically changed system of education.

To begin with, the ultimate targets of education have to be elevated from the practically centered to those that stimulate a willingness to learn the truth about the world and to create works of art that inspire the search for beauty in the world. Radical principles of education are introduced to focus on thought organization, which restores the higher functions of language, i.e., the argumentative and poetic functions. The targets have to be shifted from those that promote self-assertion to those that inspire self-transcending, which opens new perspectives, for example to see the world as if the observer were outside it. This phenomenon can be referred to as the "revival of the spirit."

The new principles of education, in contrast with the system characteristic of the stagnation phase, range widely and encompass coherently science, art, philosophy, and morality. Such a system should be based on the development of critical thinking in the growth of knowledge and on approaching the standard of artistic creation, which, up to now, has only rarely been manifested by masterpieces, as an exception rather than the rule. Most importantly, the focus on the development of critical thinking makes the system an effective tool against all kinds of dogmatic approaches to science, philosophy, art, and morality and prepares individuals for the rapid development of their self-consciousness. Its scope exceeds the function of being a mere agent for the effective survival of the species. A tentative conjecture can be issued here that, in the long run, education understood in this way can possibly become another of the agents of further evolutionary changes.

The key factor of the development of critical thinking is the approach to the essence of the learning processes. The idea that learning is nothing but a change of the probability of response to predictable stimuli is supplanted by the idea that learning is a dynamic and continuous

change of the cognitive structure of individuals.[6] If the educational principles become adequate to this idea of the nature of learning, the way to the evolution of self-consciousness opens, and the whole system extends its scope beyond vocational training and instruction and initiates a search for the ways of inquiry about the nature of the world and for the ways of exploring the creative talents of individuals. The application of such a system on a massive scale is likely to initiate the direction of the development of self-consciousness of individuals toward the growth of its intensity.

[6] In practical terms, this can be described as moving away from the behavioral, rote, reception learning to mental, meaningful, discovery learning in which the focus is on effective change in cognitive structure (Ausubel 1968, Bruner (1962).

Chapter 5: The intensity of consciousness

From a biological point of view the phenomenon of consciousness is not very impressive. The genetic code of individuals who acquired it is not remarkably different from the code of other species of the same biological rank, i.e., other primates. In terms of the physiological and psychosocial processes of animate matter, self-consciousness is but a product of the neurological functions of the cerebrum, probably made possible by the presence of the mirror neurons in the brain.[1] It can be seen as a flow of projections of the world, which are the result of the integration of the work of the perceptive skills of the brain. These projections last in time for more or less three seconds. Their flow is quick enough to establish the impression of unbroken continuity.[2] As a result, individuals acquire self-awareness of their existence in the world, which is seen, as it were, from the outside. This opens the way to a remarkable capacity to scan and review mentally everything one is aware of. In this way, the scope of consciousness broadens from simple projections of the world to the active and creative work of the mind, which, thanks to the processes of metaphorization, symbolizing, mental speculation, and other higher mental processes, can transcend the limitations of sensual perception.

The new quality in the development of self-consciousness results from the cooperation of higher mental processes, namely, the thinking skills that it generates and the natural motivational drives of individuals to act. We can assume that this cooperation created entirely new processes that manifested as complex motivational networks that pushed

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[1] Thanks to the discovery of the localization of the mirror neurons in Broca's area, a strong link has been argued to exist between them and the development of language (Arbib 2006).

[2] As argued by Pöppel (1989) on the three second duration of the human sense of "the present."

individuals to actions exceeding the survival requirements of the habitat. For instance, the motivation to gain knowledge about physical, chemical, biological, and social phenomena could exceed the motivation to take advantage of this knowledge by its practical application in life, e.g., for the territorial expansion of the habitat. Similarly, the motivation to create artistic and technological artefacts could exceed the drives to produce such objects for practical purposes, e.g., transportation, communication, gaining access to sources of energy, aesthetic pleasure, relief of tension, moments of excitement, entertainment, etc. Also, the motivation to behave in a morally correct way could exceed the functions of the regulations of law in maintaining social order and stability.

The effects of these new processes are staggering. Since the cooperation of the higher mental processes with complex motivational drives made it possible to transcend the biological and social levels of animate matter, the focus of evolutionary changes can be shifted to the development of the mind. This might result in limiting the biological and psychosocial factors to the necessary and obvious essentials. Education might now become a factor in showing the new direction since its characteristic learning processes are some of the major forces triggering these changes.

In the introductory phase of the emergence of consciousness on the plane of communities, there is intense interaction between newly acquired thinking skills, organic motivational drives, mental states, and emotions of particular individuals. This interaction has a double effect; it could lead to the awakening phase of spiritual forces or it could degenerate into the pathological abuse of thinking skills. This is why throughout the whole span of the emergence of consciousness we have dealt with the frequent interchange of approaching the awakening phase and receding from it back to the state of survival instincts or social interactions at an animal level.

Individuals develop their consciousness gradually. First, they see themselves as the central point of the surrounding environment. This process leads to the formation of the notion of *me*, which is associated with the conviction of the uniqueness of their position in the world. The breakthrough occurs when they realize that all other individuals are equally convinced about their uniqueness in the world and that every one of them has a similar notion of *me*. This discovery means that

they have to reshuffle the notion of their position in the world from one in which everything orbits around them to a position in which they, together with all other individuals, orbit around something which they cannot perceive. To use James's term to describe this notion (2010a), the *me* then turns into *I*. Probably at that point individuals begin to educe their innate inkling of belonging to a higher ordering of the world thus giving birth to the conception of the presence of an entity beyond the physical and the observable. In some individuals this sense becomes conceptualized as a sense of the presence of God in their lives and in the world. In this way, the innate inkling of a higher ordering of the world provides the basis for the *metaphysical inclination* of every individual.

This inclination is present in the conceptualization of the world regardless of one's conscious beliefs and is reflected in the language that we use. As argued by Krzeszowski (1997), part of all human conceptualization is the value that we place on objects or concepts somewhere on the scale of good vs. bad. This "axiological charge" of language reveals itself in two dimensions, vertical and horizontal. While the vertical dimension makes us intuitively place a higher value on objects or ideas characterized by greater complexity, the horizontal dimension increases value with the greater intensity of the object in question. Thus, long before Darwin's theory of evolution, human language as reflected in the metaphor of the Great Chain of Being (Lakoff and Turner 1989: 168) showed the more complex entities to be of greater value. Thus, inanimate matter is less charged axiologically than living organisms, the organisms that are alive and animate (animals) are attributed higher value over those that are only "alive" (plants), while living organisms endowed with reason, language, soul, and consciousness[3] (humans) are placed the highest in the hierarchy. Furthermore, one can look at the "extended" version of the metaphor, in which there is still a being superior in all possible axiologically charged qualities that can be referred to as "absolute" and in many cultures, systems of belief, or thoughts is conceptualized as "God" (Krzeszowski 1997: 64–76).

[3] The particular human quality that distinguishes humans from other animals is culturally dependent as is the remaining part of the metaphor of the Great Chain of Being (Krzeszowski 1997: 72). However, the same metaphor recurs through different cultures in unrelated languages, thus gaining universal, or, at least, cross-cultural value.

The horizontal dimension, on the other hand, implies that axiologically charged qualities or entities are gradable; thus, they can be described or even measured in terms of their intensity. Thus the expression of the highest possible value, as revealed through language, places entities that are the most complex and highest in intensity as the most positively charged. This is how linguistic expressions themselves reveal intuitive human conceptualization of the higher ordering of the world, referred to here as the *metaphysical inclination* and a sense that inner, typically human features can differ among individuals in quality and intensity.

Consequently, some people can develop their consciousness further, a process which can be specified as "the growth of the intensity of consciousness." This comes out of a sense of *empathy* not only at an intellectual level but also an emotional one,[4] i.e., the adoption of another person's perspective and the acquisition of warm, affectionate feelings toward other individuals and toward the world. Individuals who do not change their conception of their position in the world and still believe themselves to be the central point of everything are characterized by various degrees of selfishness. The process of the growth of the intensity of consciousness is in reverse proportion to the degree of selfishness: the greater the intensity of consciousness, the lower the degree of selfishness.

The growth of the intensity of consciousness generates processes that appear in the domains of cognition, creation, and coexistence as complex motivational networks. In the domain of cognition, they exceed the motivational drives fostering the exploration and expansion of the habitat. In the domain of creation, they exceed psychosocial drives for pleasure and entertainment. In the domain of the coexistence of individuals in communities, they first lead communities to impose restraints on their own behavior in the form of legal regulations of social customs and traditions. However, next they lead people to exceed such rules of non-destructive behavior superimposed by law and custom and help individuals to see what is right or wrong without any need to resort to such regulations. The essence of the new motivational network in

[4] Empathy, which lies at the core of the theory of mind assumes in principle not only the ability to "read" somebody's mind but also to adopt an emotional bond with a person from whose perspective we see the world (Kurcz 2011b).

the domain of cognition is to approach the truth about the world and about themselves; therefore, for the sake of brevity, we can refer to it as the motivational force of *truth*. The essence of the new motivational network in the domain of creation is to approach beauty and perfection in created objects and compositions; therefore, this can be referred to as the motivational force of *beauty*. The essence of the new motivational network in the domain of coexistence is the intuition that enables individuals to distinguish between "right" and "wrong." This intuition can be referred to as the motivational force of *conscience*.

The simultaneous engagement of thinking skills in the growth of the intensity of consciousness and in life matters connected with the survival of the species leads to a great variety of conflicting relations. The source of these conflicts is found in the historical sequence of changes in the sphere of animate matter in the course of its evolution. Generally, species cumulate the characteristic features and processes of their evolutionary predecessors that proved successful in their struggle to survive. The most remarkable of them, which are present in species gifted with consciousness, are natural motivational drives, i.e., drives that push and prod them to action. When these drives are supported by thinking skills, individuals become vulnerable to various conflicting relations. For instance, the natural drive to gain a dominant position in a social structure, which is an efficient tool in maintaining social order, turns into excessive greed for power, while the natural drive to mark one's territory twists into excessive greed for possessions, etc. This kind of pathological abuse of thinking skills stands in conflict with the engagement of these skills with motivational forces resulting from the growth of the intensity of consciousness. Consequently, individuals represent a vast range of different combinations of these relations. There are individuals who are dominated by the pathological boost of natural motivational drives and individuals who are able to prevent the pathological abuse of their thinking skills. Frequently, individuals are not dominated by any of these characteristics, but they demonstrate a willingness to educe the potential of new motivational forces. Sometimes they seem to be deprived of such willingness. Generally, individual people seem to be flexible as regards these conflicting relations, and, **depending on particular systems of education, can become either of such types**.

The growth of the intensity of consciousness is an indispensable condition for the development of the motivational forces of truth, beauty,

and conscience, i.e., complex motivational networks that make it possible for individuals to undertake tasks that transcend survival and psychosocial needs. On the other hand, this growth itself is conditioned by people's ability to change their view of themselves as being the central point of the world, which practically means becoming less and less selfish. From the vantage point of the evolution of animate matter, selfishness can be regarded as part of the survival equipment necessary for the ability to compete with others to be successful. In the perspective of the intensity of consciousness, selfishness turns out to be a feature of the evolutionary past; it is a phenomenon that resembles the existence of the coccyx in the anatomical structure of the species that no longer need tails in their lives. Thus, selfishness turns out to be a serious limitation of individuals' capacity of educing from themselves the potential forces of the spiritual aspect of their nature. Individuals become unable to transcend their practical, survival, and psychosocial needs and thus fix the position of the species in the animal kingdom in spite of their intelligence.

Even cursory observation reveals the fact that individuals who possess a high degree of selfishness believe themselves to be better than others, act for the sake of themselves, their families, tribes, clans, or nations at the expense of other individuals, families, clans, tribes, or nations, and, as a rule, provoke conflicts, wars, revolutions and social confusions, disorder, and anarchy. Going back to James's description of the *self*, one might see the source of the problem of such selfishness in an inability to move the consciousness from the phase of *me* to *I*; as a result, conceptualizing the world around as either an extension of oneself or as a rival to whatever is *mine*. The highest degree of selfishness, which is tantamount to the lowest degree of the intensity of consciousness, occurs when the satisfaction of immediate personal wants becomes the mainspring of actions. Such individuals are characterized by monstrous vanity and colossal pride while believing themselves to be better than others. They provide a breeding ground for such pathologies in the domain of coexistence as terrorism, homicide, theft, hypocrisy, etc., which, in the long run, can negatively influence any chance of initiating the direction of the change toward the growth of the intensity of consciousness.

On the scale of communities, the growth of the intensity of consciousness of particular individuals is reflected by the phases of its emergence. Accordingly, in the introductory phase it generates thinking skills that

function solely as agents of the survival of the species. On the one hand, they effectively support the motivational drives necessary to cope with matters of life such as gaining access to sources of energy, territorial expansion, procreation, stability of the community, etc. On the other hand, they do not exceed these functions, which means in practice that individuals can be defined as "rational animals." People acquire self-consciousness of their existence but do not yet reflect on this existence. Whether or not individuals initiate the process of the growth of the intensity of consciousness depends on the kind of education to which they are exposed in the community and that is carried out by parents, teachers, friends, members of the community, etc. If the education is effectively focused on educing the potential motivational networks of truth, beauty, and conscience, individuals are in a position to begin their development of the intensity of consciousness. In this case, the community might enter the awakening phase with prospects for the rapid development of science, philosophy, art, the system of education, and the search for the universal moral principles.

The growth of the intensity of consciousness depends on the motivational drives in the domains of cognition, creation, and coexistence. In each of these domains there is great diversification among people. In the domain of cognition diversification is marked with respect to somebody's knowledge of the world, while in the domain of creation it is marked with respect to the type of talent, and in the domain of coexistence within the community it is marked with respect to the effectiveness of the functions of conscience. Consequently, people represent a vast range of different shades of their intensity of consciousness. In fact, being biologically members of the same species they frequently give the impression of belonging to different species. This impression is maintained in spite of the fact that their intelligence and the capacity of their brains are in no significant way different from one another. Notwithstanding the particular differences among individual people, what they have in common is the potential of the non-utilitarian motivational drives that are generated by consciousness. This feature is crucial for the possibility of further evolutionary changes. For the first time in the history of animate matter, motivational drives transcend the biological, i.e., the physiological and psychosocial needs of individual beings.

5.1. Domain of cognition

The domain of cognition involves all motivational drives that push and prod individuals to pursue knowledge. As long as this pursuit serves only practical needs, they are characterized as part of the animal kingdom, i.e., "rational animals." When, thanks to the educed force of the motivational drive of truth, individuals are motivated to approach knowledge of the world and of themselves so as to have a better understanding of the sense of their existence, the motivational network signals the possibility of the initiation of the direction toward the growth of the intensity of consciousness. This crosses the borderline of the sphere of animate matter in which motivational drives of individuals function as part of the survival equipment useful in the search for new habitats, new sources of energy, new procreation opportunities, and new forms of entertainment.

Transcending all such practical functions means that these drives appear simultaneously in both the sphere of animate matter and in the awakening phase of the emergence of consciousness on a community plane. For example, the motivational drive of curiosity manifests itself in the sphere of animate matter in the spectacular expansion of communities, their constant search for new habitats, new sources of energy, new ways of prolonging life and improving health, and new ways of improving living conditions; in short, these are all the possible discoveries and inventions that are triggered by practical needs. However, it is possible that in some cases the drive of mere curiosity can turn into an urge to transcend practical advantages and to gain knowledge of all these phenomena for the sake of discovering the forces governing the shape or the existence of the world. On such occasions, individuals educe the innate force of truth. Then this new motivational network can be seen as an instance of crossing the borderline of the sphere of animate matter.

Transcending practical needs begins with the desire to attain a broader perspective of the laws and regularities of inanimate and animate matter. The usual drives triggered by the survival and psychosocial needs might possibly broaden their scope so as to establish a scientific context for discoveries and inventions. For example, the motivational drive caused by the need for security pushes some people to acquire knowledge about the nature of dangers lurking in the environment so as

to be able to protect themselves against them. Such is the case with the danger of thunder and lightning, which pushes some people to acquire knowledge of electricity. This knowledge helps them to protect themselves against the consequences of discharges of lightning. At the same time, knowledge of electricity helps them to broaden the perspective of the natural laws within which electricity functions, and, in this way, helps people to have a better understanding of the nature of electromagnetic waves, which, in turn, contributes to a better understanding of the general laws of inanimate matter. Whenever people consider the knowledge of electricity only in terms of security, a source of energy, or something that contributes to the comfort of life, they remain fixed in the animal kingdom as one of its numerous species. If, apart from it, they regard it as a step forward in their urge to have a better understanding of the world, they become able, at least potentially, to cross the hidden demarcation line between the sphere of animate matter and the initiation of taking the direction toward the growth of the intensity of consciousness.

The domain of cognition is in many ways connected with technological inventions, which actually belong to the domain of creation, but which help in the practical application of acquired knowledge, e.g., in communication, transportation, information, exploration of energy sources, entertainment, shelter, etc. The motivational drives that spur people to invent technological devices accompany drives to acquire knowledge. For example, the invention of radar is of practical use because it improves transportation. As long as it is regarded in such practical terms, the motivational drives that made someone invent it are considered as survival equipment. However, such an invention usually follows someone's discovery of certain natural laws, in the case of radar, it is the discovery of microwaves. Apart from the obvious practical cause, this discovery could mean that the discoverer was motivated by an urge to approach the truth about the physical constitution of the world. The chronological order of these two types of motivational drives, i.e., the motivation to invent an artefact in order to apply it practically and the motivation to discover a law of nature is of no significance here. Whether the practical drive precedes the discovery or follows it, the relation is the same. If both types are present, we are dealing with individuals who might have crossed the spherical demarcation line, while if

only the practical type is present, they remain in the sphere of animate matter as "rational animals."

The relation of these two types of motivational drives in the domain of cognition is an example of the inclusive growth of complexity characteristic of the stages of transition from one state of form to another. The new phenomena retain the characteristics of the previous stage and at the same time manifest the processes and structural features of the new stage. The new processes and structural features are not possible without the features of the previous stage. To conclude briefly, the processes and forces characteristic of the growth of the intensity of consciousness are not possible without the processes and forces of the sphere of animate matter, whereas the phenomena of the sphere of animate matter can exist without the conscious ones.

There are remarkable differences between people with respect to their knowledge of the world and how coherent this image is, i.e., how well various aspects of this image fit the rest. Their sense of the surrounding reality, their *Umwelt*, might be limited to the recognition of the immediate environment with hardly any understanding of the connections between the environment and the rest of the universe. Such individuals are concerned only with these cause-effect relations that are of some practical value for coping with the hardships of life. For instance, one might be able to distinguish edible from poisonous mushrooms but have no interest in the very fact of the reasons for their being edible or poisonous. One might be able to navigate correctly thanks to knowledge of the configuration of the stars and still believe the stars to be lamps hanging in the sky. One knows that night is followed by day and have no idea about the rotation of the Earth and believe it to be flat, etc. On the other side of the spectrum, someone else might be able to speculate and debate on the origins of time and space. Someone might be able to examine the chemical reactions of the stars, discover the intricacies of the genetic code, and study the nature of particles and waves. This kind of knowledge or the lack of it is the most flexible factor of the domain of cognition. Thanks to explorations based on reliable evidence and statistics, the mind is easily changed. For instance, the conviction that one lives on a flat surface carried by a number of elephants can change to a recognition of the position and distance of the stars in the galaxy during the life span of one generation.

Being so flexible, the quality of knowledge is apt to improve constantly. The surrounding environment is full of mysteries that at first seem to lie beyond the sensory apparatus and intelligence, and, therefore, they tend to be regarded as phenomena of supernatural origin. Then, with the improvement in the quality of knowledge, these mysteries lose their supernatural status and are placed among the familiar phenomena of inanimate and animate matter. This change has occurred with the knowledge of thunder and lightning, which lost their supernatural status after the discovery of electricity, or with knowledge of various plagues that had been believed to be supernatural punishments until the discovery of bacilli and viruses responsible for them. In this way such mysteries are gradually solved, only to give way to new mysteries that pose new problems waiting for their solutions in the domain of cognition. This dynamic way of the growth of knowledge requires the mind to activate the higher mental processes. When these processes cooperate with the motivational network of the force of truth, then there is a chance of crossing the hidden demarcation line between the sphere of animate matter and the awakening phase, which is the first step in the direction toward the further development of the intensity of consciousness.

5.2. Domain of creation

The domain of creation involves all motivational drives that push and prod individuals to construct various artefacts, compositions, machines, utensils, buildings, gadgets, artistic products, etc. They range from simple devices useful in coping with mundane matters of life, e.g. tables, knives, computers, telephones, etc. to such complex constructions as literary or music dramas, symphonies, epic poems, films, cathedrals, paintings, sculptures, etc. If these artefacts have been constructed to function for practical purposes only, e.g. transportation, shelter, health, communication, information, or entertainment, the motivational drives that lead to these constructions manifest belonging to the sphere of animate matter. If the compositions, buildings, works, etc. transcend the criterion of practicality and realize the individual's longing for perfection

and beauty, it is possible that we are dealing with instances of the activation of the motivational force of beauty and its cooperation with higher mental processes.

The diversification of individuals with respect to the motivational force of beauty depends on their inborn creative capacity. Every individual is born with some creative predisposition. There are individuals who are born with a predisposition to create musical compositions, others who are born with a predisposition for painting or sculpture, individuals who are born with a predisposition for literature, etc.[5] These predispositions, as argued in section 3.3.5, can be discovered and cultivated by adequate education, can be discovered and wasted by inadequate education, or can remain undiscovered, again, due to inadequate general education.

Because of differences in the quality of education, there are considerable differences as regards individuals' creative capacity. On the one hand, individuals produce works that attain a metaphysical standard and manifest visions of the higher ordering of the world. On the opposite end of the spectrum, some activities in the domain of creation can be limited to a passive reception of simple works concerned with matters of life, entertainment, for instance songs expressing procreative instincts and desires. Such forms of expressions do not include any generalizations, metaphors, or messages exceeding direct interaction and the presence of which in the domain of creation is only confined to their self-assertion that determines a limited perception of the world.

It could be tentatively stated that individuals with a well-developed creative capacity generally demonstrate higher degrees of the intensity of consciousness than do individuals whose activities in the domain of creation are limited to the expression of personal, private needs and emotions and desires. This observation concerns above all artists, whose responsibility is to focus on the universality of their message and feelings of empathy with the receivers of their creative production.

Those engaged in the domain of creation who are characterized by a high degree of the intensity of consciousness happen to experience glimpses of the nature of their spiritual side and attempt to reflect it in their creative production. Such momentary insight can occur with the

[5] For insight into how various intelligence dispositions can result in different aptitudes or talents, see Gardner (1983).

creation and appreciation of great masterpieces of art. What artists seem to experience at such moments is the intuitive realization that the world extends beyond their experiential grounding. They have a feeling that their creative production might have a receiver of supernatural capacity, and, therefore, the work of art should approach such a standard.[6] Such momentary glimpses of the nature of the spiritual side take place when the motivational force of beauty transcends survival drives and psychosocial needs. On such occasions, the phenomenon of an undulating intensity of consciousness can be observed. This means that it is in continual flux, characterized by the repeated approaching of the awakening phase and falling back to the state of animalism in the introductory phase. It resembles arrhythmic pulsation in the irregular troughs and peaks of an individual's intensity of consciousness.

5.3. Domain of coexistence

The domain of coexistence involves all motivational drives that prevent individuals from engaging in destructive behavior in families, clans, tribes, nations, or any other socially structured communities. These individuals are part and parcel of the introductory phase of the emergence of consciousness if the drives that regulate peaceful coexistence are thanks to: fears of punishment, remorse, and regret; respect; the needs for sympathy, admiration, and approval; the prospects of material advantages, fame, and power; the need for security; and a great number of other social and psychosocial factors. Essentially, such drives prevent people from engaging in destructive behavior because of the consequences of such behavior for the survival capacity of communities. For instance, feelings of remorse after cheating, stealing, killing, or any other destructive act might prevent individuals who have committed these acts from repeating them. This could help to maintain the peaceful coexistence of community members, and, in this way, it contributes to the stability of the social group provided that legal regulations function

[6] James (2010a: 207–208) described the spiritual self as an awareness of a "supreme judge" or an "ideal spectator," whose potential approval one seeks to gain.

properly and effectively. However, the problem with all social and psychosocial factors of peaceful coexistence is that the motivational drives of proper behavior that are natural for the sake of survival can become twisted from the pathological abuse of intelligence.

A typical example of this phenomenon is the pathological twist of the natural instinct of aggression. As part of the sphere of animate matter, aggression is a useful instinct that functions in behavioral patterns and habits of the processes of procreation, territorial expansion, defense, gaining access to sources of energy, competitive drives, etc. When the instinct of aggression meets intelligence that is not controlled by the conscience, it can generate very influential, dangerous psychosocial needs for revenge or vindictiveness and provoke states of mind that are characterized by violent negative inclinations, even cruelty, toward other individuals, species, and, generally, the world. In short, it can generate hatred in the most general sense of this word.

The ability to perceive and consciously monitor the benefits of aggressive behavior with the effective support of intelligence and without having educed the motivational force of conscience results in feelings of power, contempt, and superiority that can have harmful effects upon peaceful coexistence in communities. Individuals afflicted with hatred frequently achieve success in their actions and consider this success to be the ultimate sense of their existence. The remarkable point is that hatred does not affect the functions of higher mental processes. An intelligent and successful individual can be afflicted with hatred and still be regarded as normal. History shows that such individuals can cause great damage in the domain of coexistence. In spite of this, they are regarded as outstanding individuals, admired, and even idolized. Accepting hatred as a normal character feature can predictably impede the possibility of taking the direction toward the spiritual side of the nature of individuals.

The negative influence of hatred in the domain of coexistence can be counterbalanced and eventually liquidated by a mental state that is generated by growth in the intensity of consciousness. This state is manifested in practice by feelings such as warm affection, good will, benevolence, empathy, and devotion. All these feelings are collectively denoted as “love.” As a feature of community life, “love” is a vital constituent of the social structure. It plays a prominent role in the interpersonal bonds of individuals that consists of forming families and maintaining

their stability for the sake of the protection and education of offspring. In a broader view, it functions in tribes or nations by broadening its scope to individuals who belong to the same community, while an even broader scope of "love" is seen when it extends beyond a particular community and is directed toward every other individual, and finally being directed toward the whole world.

5.4. Intensity of consciousness and education

Learning begins at birth and continues throughout life. Education is supposed to develop intellectual capacity, manual skills, and social awareness and behavior. In general, education corresponds to the motivational drives to gain knowledge in the domain of cognition, to create artefacts in the domain of creation, and to behave morally in the domain of coexistence. The traditional agencies of education are explanation, instruction, and training, and the usual form of teaching techniques is a combination of these agencies.

A widely accepted conviction is that the basic function of education is to prepare offspring to cope with matters of existence so that they manage to "get through life successfully" and are able to cooperate with others. Alternatively, it is viewed as a preparation for becoming "a useful member of society" (Fontana 1988). In practice, this function is realized by teaching how to fulfil physiological, social, and psychosocial needs and requirements. As a result, education is frequently concerned with effective ways of teaching offspring how to realize the needs that improve the quality of life with regard to comfort, health, entertainment, social position, power, prestige, shelter, aesthetic pleasure, curiosity, satisfaction, relief of tension, excitement, security, etc., and the educational treatment of thinking skills is subordinated to these needs.

Psychosocial needs manifest various degrees of complexity. For instance, the needs of aesthetic pleasure and curiosity are more complex than the needs for security, comfort, and excitement. The degree of complexity is marked by the inclusion of the less complex needs within the more complex ones. For example, whenever the need for curiosity is present, we can expect the needs for security and satisfaction, whereas

the presence of the need for security or satisfaction does not imply the possible presence of the need for curiosity. There is a relation between the complexity of the psychosocial needs and the motivational drives that push the individuals to action. The less complex needs are easier to fulfill thanks to education than the more complex needs, but, at the same time, they are more resistant to engaging in cooperation with thinking skills. And, conversely, the more complex the needs are, the easier cooperation is with higher mental processes, but these are more difficult to achieve through education.[7] When the most complex needs cooperate with higher mental processes, they are able to achieve motivational drives that are in a position to transcend the survival struggles of animate matter. However, the education necessary to fulfill these needs becomes very difficult to achieve, because it can no longer be limited to teaching offspring how to cope with matters of life, but it must enable individuals to see beyond this aim.

From the point of view of the evolutionary changes of animate matter, education functions as one of the tools of the survival of both the individuals and communities of a species. It perpetuates skills and behavioral patterns that prove successful in this respect and changes them if they prove ineffective or harmful. This relation shifts when motivational drives transcend the requirements of survival struggles. The decisive factor of the new quality is the capacity of higher mental processes to become independent of the conditions imposed by the environment. For example, the communication of individuals becomes independent of time and space while sending and receiving messages. Also, messages conveyed by individuals can be free of the influence of the immediate circumstances of interaction, body language, degree of intimacy of the interlocutors, their intensions, expectations, age, and a great number of other factors that influence the meaning of the message. The most spectacular manifestations of this capacity of higher mental processes are the products of artistic creation and of cognition

[7] Maslow's hierarchy of needs (1970), though seemingly similar, operates from the opposite direction since his division into *growth needs* and *deficiency needs* assumes that satisfying the lower deficiency needs is the precondition of engaging the motivation to fulfil the higher growth needs. However, there is also an important similarity in the general division into more basic requirements of daily struggle and more complex human drives that are harder to observe or fulfill.

that are understood and interpreted by a number of successive generations irrespective of the time and space between the authors and the addressees of these products.

Higher mental processes include a great number of characteristics that enable motivational drives to transcend the practical needs of individuals and social groups. Among the other cognitive processes mentioned in section 2.2.2., these involve the creative reconstruction of familiar ideas and, most importantly, the reorganization of the mind by reshuffling cognitive structure while acquiring new notions. These features of higher mental processes make it possible for the mind to become independent of the agencies of natural selection while coping with matters of survival and adaptation to environmental conditions. What is more, they enable individuals to act subjectively in relation to these conditions while making use of their free will. Individuals become able to create abstract forms that have never existed before and to take decisions notwithstanding behavioral patterns. Since education with adequate learning processes is directly involved with the development of all these characteristics of higher mental processes, presumably **education is in a position to influence evolutionary changes in the phenomenon of consciousness if it meets the requirements of higher mental processes**.

Education is inseparable from learning processes. In other words, there is no education if individuals do not learn. Individuals learn when there is change either in the probability of responses to external stimuli or in the cognitive structure of the mind. Change in the probability of response characterizes behavioral patterns, whereas change in cognitive structure is characteristic of higher mental processes. Learning in the former case is part of the survival equipment of all living forms in the animal kingdom. The latter type of learning is characteristic only of the species that have acquired consciousness. This distinction is significant for decisions concerning education. The conclusions drawn from the study of the learning processes of the other species are only partly valid for species that have acquired consciousness and specifically with regard to changes of the behavioral patterns of individuals. The educational treatment of the learning processes that involve the cognitive structure of the mind requires principles and practical solutions that are appropriate for the characteristics of higher mental processes. In short, the study of learning processes in pigeons, rats, dogs, or monkeys is of no

use to the educational treatment of the characteristics of higher mental processes.

Any kind of learning, whether it is characterized by changes in behavioral patterns or by changes in cognitive structure occurs thanks to the motivational drives of learning. These drives push individuals to acquire the new behavioral patterns and to reshuffle their conceptual apparatus by acquiring new concepts. The motivational drives of learning are natural organic processes that do not depend on volition, rational calculation, speculation, or reasoning. The causes that can set these drives in motion might also activate them. For example, volition as a possible trigger of the motivation to learn the rules of a game for the sake of entertainment will fail unless this willingness is supported by some kind of organic drive, e.g. a competitive drive, a need to impress others, etc.[8] The same problem concerns other manifestations of higher mental processes. No persuasion, reasoning, explanation, or argumentation on logical grounds is in a position to activate learning motivation unless they cooperate with organic motivational drives.

From the educational perspective, the causes that can activate the learning motivation to change the cognitive structure of the mind are more complex than the causes that can activate changes in behavioral patterns. For example, curiosity, volition, and reasoning are more complex than hunger, fear, and sex drives. Because of their complexity, they are more difficult to be used educationally than organic causes such as hunger or fear. We are dealing here with a specific paradox. On the one hand, the more complex the causes are, the easier they cooperate with higher mental processes. On the other hand, this cooperation becomes more difficult to achieve through education. For example, the psychosocial need for aesthetic experience is very complex and easily cooperates with such higher mental processes as metaphorization, symbolizing, generalization, or striving for perfection; however, the usual agencies of education such as explanation, instruction, and training are not in a position to activate this cooperation. In other words, one cannot train or persuade the learner to gain aesthetic experience from a symphony or a poem. It follows that education at the level of higher mental processes

[8] Assuming that *motivation* is, in the most general of terms, "an intervening state or an inner state of an organism that compels or drives it to action" (Reber 1985: 454), all motivation is internal, and external forces work only if they trigger inner needs.

requires other, more complex agencies than the usual explanation, instruction, and training, which are effective at the level of behavioral patterns.

The search for such more complex educational agencies can be conducted based on some outstanding products of the mind: in the field of cognition – gaining knowledge; in the field of creation – producing artefacts; and in the field of coexistence characterized by moral social behavior – through appeals to conscience. All the evidenced instances of outstanding achievements in these fields deal with the growth of the intensity of consciousness thanks to the involvement of the motivational forces of truth, beauty, and conscience. The characteristic feature of these products of the mind is their approach to the problems of "being" or "existence" in a larger context of causality, determinism, and ultimately a sense of life than the context of direct cause-effect relations available for empirical observation, controlled experiment, and statistics. Such products of the mind illustrate practically its potential ability to transcend limitations determined by the natural laws of inanimate and animate matter.

What has been possible to achieve by some outstanding products of the mind could become a general norm. The condition is that the principles of education should be elevated to the standards delimited by the greatest masterpieces of science, philosophy, art, and the search for universal moral principles. Naturally, the feature that dominates in the introductory phase of the emergence of consciousness and in the stagnation phase, namely preparing offspring to cope with matters of life, should remain as obvious and indispensable parts of the new system of principles. However, the dominant feature should be its foundation on instances of the products of the mind that transcend these matters.

As it is, the general tendency at the time of the emergence of consciousness is directed toward learning processes that are determined by utilitarian targets. They are preoccupied with changes of behavioral responses and the formation of automatic behavioral patterns. This tendency is strongly reinforced by technological inventions in the field of electronics, due to which the majority of targets, including the very phenomenon of education itself, are based on programming techniques at the expense of individuals' own independent, critical, creative thinking. In this way adults and children are using all kinds of programs equally for communication, information, entertainment, and social

interaction. This tendency is especially harmful for adolescents and adults, who, because of this kind of educational system, stop developing their mental capacity at the time when it ought to be developed with the greatest intensity.[9] Predictably, this tendency in learning processes might result in the perpetuation of the stagnation phase and definitely could have a negative effect on individuals' intensity of consciousness. The solution to this problem rests in a system of education based on close cooperation between organic, motivational drives and the higher mental processes generated by consciousness. The agencies of education should deal with both these factors. The key issue in both of them is to trigger the learning processes that focus on changes of the cognitive structure of the mind.

[9] Though it may be argued that the children thanks to their natural vitality may be able to overcome this danger, while the adolescents and the adults become victims of these techniques, it seems even more likely, that the children are those who suffer the most. In their case the basic cognitive processes involved in thinking skills such as reading or writing become negatively influenced by virtue of being developed with the use of images and non-linear processing, rather than such that develop and extend the ability to develop attention span, reading, writing, etc. (Bobryk 2011: 177).

Chapter 6: Metaphysical inclination

The crucial question of the possible relation between the evolution of consciousness and education is to find out what makes it possible for organic motivational drives to overcome the barrier of survival drives and psychosocial needs. A tentative conjecture is that, apart from higher mental processes, consciousness generates an inkling in individuals that there is a higher ordering of the world in which the recognizable universe of time, space, matter, and energy is merely a functioning part. This is how this feature that is present in our language through the metaphor, described in Chapter 5 as the Great Chain of Being, is tantamount to the phenomenon known as *metaphysical inclination*. If this conjecture is right, this feature can be seen as a significant factor in the evolution of consciousness toward its greater intensity.

6.1. The presence of the absolute

Since this feature is generated by consciousness, and consciousness is an inborn characteristic of every individual, the inkling of a higher ordering of the world should also be seen as an innate feature. It has to be educed from potential, but once educed, it allows individuals to free themselves from the bounds of the limitations of their perceptive apparatus and the capacity of their intelligence. Individuals become able to transcend mentally this fragment of the world that they perceive and understand and acquire a sense of belonging to a larger, though inconceivable, unit. Their conceptualization of the world as revealed through the metaphor of the Great Chain of Being reflects their sense of increasing complexity in all aspects of surrounding reality from the inanimate, through living,

animate, conscious to the absolute (Krzeszowski 1997). As a result of this inkling, individuals are motivated to act, create, inquire, and coexist with others with the feeling of being a part of this higher ordering, and, accordingly, they attempt to meet the standards that are felt to be characteristic of it.[1]

A popular and influential conviction is to treat this phenomenon as a characteristic of the cultural heritage of a community, one which is passed on from generation to generation and perpetuated in the community by means of tradition, education, religious systems, behavioral codes, etc. As a result, the sense of an ideal, metaphysical sphere (beyond things that can be observed and experimentally verified) becomes so enveloped in its cultural expression that its metaphysical character becomes at times neglected, questioned, or even forgotten. Tight connections between the social life of communities and systems of religious rituals – frequent manifestations of the inkling of a higher ordering of the world – become integrating features of communities. Since social life is part of the animal kingdom with all its survival struggles, motivational drives, and psychosocial needs, an inkling of a higher ordering of the world is liable to lose its spiritual potential and consequently tends to disappear.

Notwithstanding these different views on the nature of this phenomenon, it is worth noting that the inkling of a higher ordering of the world becomes differently shaped and understood by every individual due to various systems of education. Education can either help to educe this feature or lead to its suppression and disappearance. The great variety of educational systems are either rational and open or dogmatic and mechanical based on thoughtless habit formation manifested in rituals, customs, and social conventions. Therefore, every individual has a different notion of the higher ordering, a different attitude to this feeling, and a different way of demonstrating these attitudes. What these systems have in common is that, essentially, they associate a metaphysical inclination with **the capacity to transcend survival drives so that the**

[1] James (2010a) described it as somebody's sense of presence of an *ideal observer* and made direct references to God; however, he made it clear that depending on culture and personal convictions, it can become conceptualized through various religions, or in the case of atheists, in an abstract ideal. When we use the word God in this book, it is, in principle, with such a view in mind.

individuals become able to activate the motivational forces of truth, beauty, and conscience.

6.2. Metaphysical vs. supernatural

The source of the activation of these forces comes from the fact that individuals feel that because they belong to a higher ordering of the world, they are obliged to meet its standards. In the domain of cognition, the standard is determined by approaching the truth about the knowledge of the world and its existence, while in the domain of creation, it is determined by the beauty and perfection of artistic creation, and in the domain of coexistence, it is determined by the universal moral principles generated by conscience. Once this inkling is suppressed, nothing protects individuals from the belief that the ultimate sense of their existence is existence itself, and this leads to all the resulting dead ends in the development of the intensity of consciousness.

The *metaphysical inclination* of individuals can be substantiated by a sense of the absolute and experienced as the presence of God in the world and in their lives. Because of the great variety of the educational and religious systems to which they are exposed, this feeling is expressed in many ways that are frequently contradictory. Attempts to express and define this feeling open the way to a great number of speculations that quite frequently contain serious fallacies. For instance, they can be influenced by tribal survival struggles and by the conviction that God takes their side in tribal conflicts and wars. There might be attempts to treat this feeling instrumentally, e.g., express appeals for strength so as to be able to destroy other individuals, tribes, or nations. Alternatively, they can interpret any inexplicable phenomena in terms of "miracles" and ascribe them to the presence of God. In such cases, the *metaphysical inclination* loses its spiritual character completely and gives way to a typical social function of consolidating and integrating communities and becoming part of the survival equipment of a species, reinforced by the acceptance of "supernatural phenomena" that are to be feared and obeyed rather than understood. Such destructive forms can turn out to be powerful weapons against other individuals, families, tribes, or

nations, and they become similar in their function to physical strength, claws, weapons, or military organizations. Then the spiritual origin of the innate inkling of the higher ordering of the world fades away.

The conceptualization of the nature of the higher ordering of the world changes and evolves according to changes in knowledge in the domain of cognition, according to the changes in artistic standards in the domain of creation, and according to changes in convictions about proper social behavior in the domain of coexistence. This shift is seen in the contrast between the *supernatural* (a phenomenon that breaks the known laws of physics) and the *metaphysical* (a construct beyond the physical, material world, which, as a result, is not bound by its laws). For example, the lack of knowledge of electricity can lead to the belief that thunder and lightning are of supernatural origin, the lack of knowledge of astronomy can result in regarding an eclipse of the sun as a punishment inflicted by a supernatural being, the lack of knowledge of biological processes can cause individuals to believe in omens sent by a supernatural being through the medium of the entrails of some species of animals, etc. Understanding these *supernatural* phenomena as manifestations of God leads to accepting an incoherent image of the world and limits the motivational force of truth; while separating these two notions into the "yet inexplicable" and the *metaphysical* can compel someone to search for the absolute without giving up what science has discovered about the world.

With the growth of the knowledge of the world, progress in the search for beauty and perfection in the changes of artistic standards and with the influence of the universal moral principles upon the rules of social behavior, the vision of the higher ordering of the world also becomes more complex. On the other hand, if changes lead to the deterioration of knowledge and artistic standards and to anarchy and destructive behavior, the conceptualization of the nature of the higher ordering of the world becomes less and less complex and is likely to disappear. Thus, in light of the relation between the intensity of consciousness and education, establishing a more and more complex vision of the higher ordering of the world should result in the growth of the intensity of consciousness. This process can become one of the factors necessary to overcome the decline and stagnation phase of consciousness and lead to its revival and rapid development.

The nature of the higher ordering of the world is typically regarded with reference to the notions of "faith" and "religion." Unfortunately, these notions are ambiguous. "Faith" can indicate both the belief in its transcendental character and the belief in rituals, exercises, or behavior prescribed as adequate responses to this feeling. In the former case, "faith" denotes intuition that is the source of motivational forces exceeding survival drives. In the latter case, this intuition is reduced to superficial demonstrations, and, therefore, it is vulnerable to being used instrumentally in social matters of communities. A similar ambiguity occurs with the notion of "religion." It can denote the innate inkling of the presence of God in the lives of individuals, or it can denote a specific set of beliefs and rituals prescribed to individuals who declare their willingness to manifest their faith. In the latter case, it typically acquires social functions, for instance, those of consolidating social structures of communities. "Religion" can then be abused. For instance, it can be taken advantage of in the conflicting interests of different communities and result in wars between nations with religious symbols on their banners and cruel behavior exhibited toward other individuals that is accompanied by performances utilizing these religious symbols.

Yet, the sense of a higher ordering of the world might not be conceptualized as God at all, under the principles taken from the domain of cognition. Firstly, the religious beliefs of a particular community might contradict the current state of knowledge about the world and the physical forces, that operate in it. Secondly, the organizational aspects of "church" and "religion" might be such that they contradict the values they are supposed to promote, and the inconsistencies observed make people reject both "church" and God. In such cases, the question is whether the underlying grounds for such rejection is a denial of anything beyond the observable and the material or the different shape this higher order takes in one's mind. In the latter case, their metaphysical inclination is just as complex and they still might have an intuitive feeling of the higher ordering of the world with evolutionary processes as a functioning part of it.

There is a remarkable correspondence between the conceptualization of the nature of the higher ordering of the world and the degree of the intensity of consciousness. The more complex its vision, the greater the degree of the intensity of consciousness. For example, the conviction that the nature of the higher ordering of the world represents perfect,

ideal love is characteristic of individuals whose growth of the intensity of consciousness has reached the point of acquiring the mental state of "love" or unselfish, warm affection toward every other individual. On the other end of the spectrum, there are individuals with a low degree of intensity of consciousness who manifest extreme selfishness when it comes to the concept of "love" and extending it to those people or ideas that are viewed as an extension of *me* or *myself* as discussed in section 2.3.1. These individuals can move fairly easily from what in their view is "love" to the mental state of "hatred." Another symptom can be the conceptualization of the higher ordering of the world as God; however, they perceive God as a cruel avenger who will liquidate all possible opponents, who will provide individuals with wealth, reward them with everlasting bliss and sensual pleasures, and who will punish every other individual whose vision of the nature of God is different and who observes religions with different sets of rituals.

Between these two extreme positions there are various shades of complexity of metaphysical inclination and corresponding intensity of consciousness. An assumption can be suggested that by educing the forces that contribute to the growth of the intensity of consciousness, i.e., the motivational networks of truth, beauty, and conscience, the individual's conceptualization of the higher ordering of the world becomes more and more complex. Since educing these motivational forces is the basic aim of an educational system that exceeds its scope beyond pragmatic targets, this growth of complexity can be regarded as one of the factors of the evolution of consciousness, provided the educational system is adequate for this aim.

Its adequacy lies in its ability to prepare people to deal with material matters rationally before they deal conceptually or emotionally with their understanding of the metaphysical. Otherwise, their fears, dreams, and imaginations, vivid as they are, can make them misinterpret these fears, and individuals might believe that performing some rituals of obedience to an imagined supernatural power will save their lives in catastrophic floods, fires, earthquakes, draughts, etc. Such rituals show extreme cases of human sacrifice in the hope that this will guarantee safe, prosperous lives or will appease the wrath of some being of supernatural origin. By the same token, individuals imagine animals to possess supernatural powers, they believe in river gods, star gods, forest gods, etc. In this way the *metaphysical*, i.e., that which is beyond the

material and the laws of physics, becomes confused with the *supernatural*, i.e., that which breaks the laws of physics, which, in turn, leads to irrational thinking and is basically characteristic of the introductory phase of the emergence of consciousness. Thus, the decline of thinking skills can cause a crisis in the awakening phase and bring it back to the previous state unless an adequate educational system prevents the crisis.

The phase of the emergence of consciousness shows moments of remarkable progress in the growth of complexity of the metaphysical inclination with simultaneous growth in the intensity of consciousness of individuals. Such moments occur when the individuals resort to the "supreme Judge" or "ideal spectator," to use James's terms, i.e., their personification of the higher ordering of the world to help in establishing universal moral principles for the sake of peaceful coexistence within communities. For instance, the rapid development of the intensity of consciousness occurred with the injunction of the idea that individuals should live according to the rule of righteousness. Particular prescriptions for right conduct that are given with reference to the higher ordering of the world are simple but effective in the domain of coexistence, e.g., *do not kill*, *do not steal*, *do not lie*, *honor your parents*, etc. Appeals to the feeling of the higher ordering of the world typically transcend survival drives and psychosocial needs that are characteristic of the state of animalism. For example, the appeal to the mental state of "love" transcends the feelings and emotions of the biological processes of procreation and of the protective functions of family life. It concerns every other individual regardless of particular community, culture, religion, or social status, and, in this way, becomes part and parcel of the evolution of consciousness.

Chapter 7: The educational basis

The point of departure of this educational proposal is the classical view that education, first of all, educes potential from individuals, which, in practical terms, means that education aims at ways of achieving the natural capacity of each individual learner. The focus on the individual and his or her potential implies the necessity to transcend the pragmatic level of education and to become more complex than the forms that deal with imparting knowledge, training in useful skills for trades or professions, and upbringing, instruction, and training concerned with preparation for life in society.

The education system, i.e., the curriculum, procedures, targets, and particular teaching points, should have a basis that enables learners to broaden their perspectives and horizons of consciousness so as to approach the truth about the world in the educational domain of cognition, and to search for beauty and perfection in the educational domain of creation. Generally, the system should help individuals in their search for wisdom, so that typical targets of education such as various practical trades, jobs, specializations, and professional skills are carried out by wise individuals. The ultimate target of this system is to elevate the level of education so as to match the requirements of the development of the intensity of consciousness and in this way contribute to its further evolution.

7.1. The underlying principles

The fundamental assumption for establishing such a system is that the quality of education can be effectively elevated when it is based on the

synergy of the three essential learning factors that make it possible for the system to transcend the utilitarian level, namely, higher mental processes, higher motivational drives, and higher language functions. In this synergy, language plays the role of the link between the activities of the mind represented by higher mental processes generated by consciousness and higher motivational drives that are biologically determined and uncontrollable, i.e., those that cannot be evoked deliberately by teaching procedures and techniques. Since these factors are incompatible, conflict between them is inevitable. The solution to this conflict rests in evoking in learners the urge to learn and create things beyond the immediate practical applicability, which is the first step in activating higher motivational drives. Higher language functions, which integrate with higher mental processes, provide opportunities to trigger this activation.

The mediating position of language between organic, uncontrollable, spontaneous motivational drives and higher mental processes that depend on reason suggests that language should be granted a central position in curricula and educational procedures. Language can become a dynamic force for acquiring knowledge in the domain of cognition and can serve as the substance of the production of artefacts and the development of a poetic attitude to life in the domain of creation. Broadening the scope of the position of language in education requires teaching procedures, techniques, and teaching materials that could make it possible for language to meet these new requirements.

Essentially, the motivating power of language required in the educational domains of cognition and creation is inherent in the content of texts that learners produce or comprehend. If the content stirs the imagination of the learners to such an extent that they become absorbed in it beyond pragmatic targets and evokes in them authentic aesthetic experiences, we can define this phenomenon as texts that have cognitive appeal,[1] i.e., texts that move the mind so as to make the learners willing to learn more about the subject matter of the text or to create texts in a similar vein than it is required by the program, examinations, tests, etc. Therefore, the principles of education must concentrate on the search for such procedures and teaching materials that promise to have cognitive appeal to particular learners through the content of the

[1] For more on cognitive appeal, see Rychło-Kok (2004) and Janczukowicz (2011).

texts. This characteristic applies to all subjects that are in the curriculum including language education itself.

The phenomenon of cognitive appeal can be compared to a popular epithet that refers to the physical aspect of life, namely, sex appeal. Both kinds of appeal cause excitement; however, while sex appeal excites the biological processes and the lower mental processes, e.g., particular emotions, cognitive appeal refers to the capacity of a text to excite the higher mental processes so as to stimulate the receivers to transcend the pragmatic sense of life. Language provides opportunities to evoke such an effect by means of the content of the texts used as teaching materials and from the teacher's procedures as well as from texts constructed by learners themselves. Texts such as these are found in all possible disciplines and at all levels of advancement of knowledge in the subject matter of these disciplines.

The search for the cognitive appeal of teaching materials depends to a great extent on the intuition of the teacher, who, thanks to personal knowledge of the learners, selects the teaching points and elicits from learners the degree of their mental engagement in the subject matter. The teacher's activities might not be at all spectacular, and they can frequently appear in the form of casual remarks concerning teaching points. However, the aim of activities should be to engage the learners in thinking and active discovery rather than provide them with clear guidelines or outright answers (Bruner 1962). In order to achieve this, the teacher should always be open to unexpected answers and conduct the class within the convention of the discussion rather than as a lecture. In a discussion, the expected goal is to find out answers, and as long as the teacher is ready to learn from discussions as much as lead students towards certain answers, the authenticity of the discovery of certain answers can achieve the quality of true discovery, and the material is cognitively appealing to the students.

For example, in a class on political history, cognitive appeal can be evoked by the suggestion that we live with stereotyped interpretations that are imposed by the propaganda of contemporary rulers. The teacher could mention Shakespeare's drama *Richard III*, in which the king murders his nephew, commits several other crimes, and tries to escape from the battle at Bosworth on a horse for which he promises his whole kingdom. During the discussion, the teacher could ask the learners who was the ruler England when Shakespeare wrote the play and elicit

from them the observation that the black picture of the king could have stemmed from Tudor propaganda aimed at depriving the York dynasty of power illegally. If the learners start searching for information about these events of their own accord so as to learn the truth about them, and, what is more, do it without the teacher assigning homework, it is likely that this is the result of the cognitive appeal of the subject matter of the discussion. To further develop the theme of political propaganda, the teacher could elicit from the learners their general knowledge about examples of political propaganda in other countries as well as in their native country, including from modern times. The ultimate aim of this procedure is to develop critical thinking in social studies with the help of the capacity of language.

The synergy of the three essential factors of learning, i.e., the higher mental processes discussed in section 2.2.2., the higher motivational drives discussed in section 2.2.3., and the higher language functions discussed in section 2.3.3., can be activated in all educational subjects. For example, the direct educational target in a physics class is the first law of thermodynamics. The law states that when energy in one form disappears, an equivalent amount of energy appears in some other form. This knowledge is useful in various branches of engineering, e.g., in the construction of heat engines, and, therefore, it is expected to activate the survival and psychosocial levels of learning motivation. The learners might feel that they will benefit from the knowledge of the ways heat engines work thanks to which they become able to repair their cars or find jobs as mechanics or engineers, etc. The usual texts and teaching techniques that address this point appeal to the pragmatic types of motivation by information, demonstrations, experiments, and practical tasks to solve that activate learners and give the impression that they evoke learning motivation.

However, the study of the relationships between heat and other forms of energy and the ways in which one form of energy can be converted into another and transformed into work activates higher mental processes beyond the practical advantages of learning. If the text which presents this problem is formulated in an argumentative way, i.e., with the suggestion that this is a hypothesis requiring verification that could be false, it appeals directly to these processes and is in a position to change the cognitive structure of the mind. The learner's imagination might be stirred by the recognition of the existence of various relationships

in the world. The idea might even occur that perhaps everything in the universe is related to everything else. Such decisive changes in the mind are possible only with the activation of the motivational drives that are more complex than those that are triggered by survival drives and psychosocial needs. A significant feature of this type is its complexity that consists of simultaneously retaining and transcending practical survival and psychosocial types. The learner whose imagination has been stirred by questions about the world is still eager to find a job or otherwise benefit from the knowledge acquired. The other way round is not always the case. The learner whose motivation is activated by practical reasons might or might not become motivated to learn things that exceed the practical advantages of the knowledge. The role of a text with cognitive appeal is to stir the learner's imagination beyond the expectation of practical advantages.

Language can serve as a working tool for all disciplines in the domains of cognition and creation thanks to its capacity to formulate messages that are independent of the immediate circumstances of interaction and of the limitations of time and space among interlocutors. The most complex level of this capacity is manifested when language functions as a vehicle for organizing explanations, hypotheses, theories, assumptions, logical reasoning, metaphorical generalizations, colorful and striking comparisons and contrasts, similes, allegories, etc, that are shaped into coherent texts. The distinguishing feature of a text constructed thanks to this function is that its parts, the details of content, and particular linguistic forms contribute to achieving a message that transcends literal meaning in its descriptive-semantic sense, i.e., is used in its argumentative-poetic function described in section 2.2.3. Thanks to this feature, the texts acquire the greatest level of complexity, and, apart from the usual communicative functions, they are capable of giving shape to critical thinking in its argumentative variety and of becoming the substance of artistic creation in its poetic variety.

From an educational perspective, the most significant advantage of the argumentative-poetic language function is the special position of its direct relation between language and higher mental processes. Language makes thinking possible and thinking is reflected by the structure of language. Through the capacity of metaphorization, language reflects ways of experiencing the world, and through the process of categorization it helps to organize concepts in the mind and then structure

them into more complex ideas and conceptions. We can conclude that by developing language sensitivity it is possible to effect progress in the learner's capacity to experience the world and to effect progress in his or her creative faculties in both the scientific and artistic senses.

Language is related to the higher mental processes in two distinct ways that are reflected in both its varieties. The argumentative variety results from the capacity of language to analyze, organize, reason, and argue critically. Thanks to this capacity, language becomes an effective tool for gaining knowledge about the world, building one's noetic consciousness, one's *Umwelt*. The poetic variety results from going beyond direct meaning and using, among other things, symbolism and a virtually unlimited capacity for metaphorical generalizations. Thanks to these features, language becomes the poet's tool of creation. The great variety of such direct connections between argumentative-poetic language function and higher mental processes suggests that the key to the quality of education rests in elevating education from a communicative, i.e., informative and descriptive-semantic, level to an argumentative-poetic level, which is how it becomes the necessary link between the higher mental processes generated by consciousness and biologically determined, spontaneous motivational drives.

In the educational domain of cognition, quality depends on granting language a prominent position in disciplines that develop knowledge through constantly challenging existing theories concerning the laws of the world. The power of its argumentative function is manifested by the precision of formulating theories, explanations, stating problems, formulating tentative solutions, and proving views false that are taken for granted but have vulnerable points. This is also reflected by its capability of distinguishing between meaningless slogans and meaningful texts, which is valid for all disciplines of the educational domain of cognition. Because of these characteristics, the texts that are constructed or received by learners acquire cognitive appeal so as to make it possible for education to transcend the pragmatic level of education.

7.2. The practice of discussion and discovery

The development of critical thinking in the educational domain of cognition is only possible with texts that present opinions, theories, speculations, hypotheses, etc., the assertions of which are can be challenged and are not presented as ultimate dogmas. Challenging these should make it possible to form tentative, new solutions that are subjected to critical evaluation and await more convincing explanations. For example, in a biology class the teacher informs the students that natural selection in an evolutionary sense acts on variations in genetic material. The teacher also adds that the recognized agencies of natural selection are hybridization, inbreeding, sexual selection, genetic mutation, community organization of plants and animals, climatic conditions, and migrations to new habitats that necessitate adapting to the new conditions. The information contains more and more details and examples that learners are likely to remember as facts that must be memorized for the requirements of biology class, tests, examinations, etc. There is no place for any debate because of the descriptive character of the information.

However, the teacher can provoke a discussion by mentioning that none of the recognized agencies of natural selection accounts for the fact that consecutive species manifest gradual growth in structural complexity while not necessarily being better equipped to survive. The teacher can also elicit from the learners the observation that new agencies might be discovered that could account for the new position of human beings in their relations with the environment and change the direction of the evolutionary process. Now the learners are challenged to construct tentative conjectures and search for possible errors in the reasoning. Thanks to the teacher's casual remarks, the teaching material might have acquired cognitive appeal.

The chain of conjectures constructed by the learners could become burdened with contradictions and run into a dead end. Activities in the class resemble acquiring knowledge, the growth of which is a result of the constant interplay of empirical research that provides information and logical speculation that, along with the use of the argumentative language function, attempts to solve a definite problem within a given discipline of knowledge. In the classroom, this interplay can occur between the descriptive-semantic language function thanks to which

learners are provided with essential facts from information and the argumentative function that makes it possible for the learners to organize this information into a coherent whole. The teacher cooperates with the learners by helping them to discover the problem and by explaining the significance of the information and how to deal with it.

For example, a teaching point in an astrophysics class could be the nature of theoretical astronomy. The teacher explains to the learners that through detailed observations of space using telescopes, spectroscopes, and other astronomical instruments, it is possible to discover the properties of matter. These properties can also be discovered through experiments performed on Earth. The question is whether the results of these discoveries can be applied to the universe as a whole. At this stage the learners are told to suggest a possible definition of theoretical astronomy with respect to the properties of matter discovered by empirical observations and by using astronomical instruments. As a possible outcome of this procedure the learners may be able to construct a text resembling the teacher's source material: "Theoretical astronomy consists in discovering the properties of matter, partly by experiments carried out on the Earth and partly through the detailed observation of nearby space and applying the results to the universe as a whole" (Hoyle 1963).

This text is of an argumentative character because it is open to debate and can be critically evaluated, proved false, and improved suggestions might be made. The learners constructed it based on information provided by the teacher that functioned as the initial material containing a problem to solve. It could also have initiated the creation of a chain of more complete definitions with the addition of other significant pieces of information. Whether the text has cognitive appeal for the learners or not is an open question. It is safe to assume that those learners who construct new definitions of their own accord and begin to take an interest in theoretical astronomy are effectively stirred by the content of the text.

It is worth noting that above it is the learner who makes use of the argumentative language function. The teacher introduces the problem and provides the essential information. This is followed by the usual pattern of discussions, stating problems, formulating tentative theories, critical evaluation, and new, improved suggestions. The teacher's role is to search for materials with content that can provide substance for similar deliberations. The materials can contain points suitable for

preparing the learners to use language as a working tool in debates such as these. Typically, such teaching points concern how thought is organized in a linguistic sense and in terms of the knowledge of a particular discipline that the learners are to acquire.

Since the quality of education depends on the student's ability to make use of the argumentative-poetic function, education in the domain of creation focuses on the development of the knowledge of the language itself and on a student's sensitivity to its connections with higher mental processes and its power to create argumentative and poetic texts. This includes such problems as syntactic structures, vocabulary, and discourse devices. Progress in the accumulation of knowledge about language is reflected here by the progress in the precision of thinking manifested by the learners' written and spoken texts. It also includes activities that indirectly develop a conscious attitude to language and lead to the learners' awareness of the need to make constant progress in acquiring knowledge about it. These activities can include ways of practicing metaphorization, playing language games, making syntactic and stylistic transformations, contrasting expressions, playing with words, rhyming, etc. All these activities are equally beneficial for the native language and also for any second language or dialect.

The powers of the argumentative-poetic language function in the domains of cognition and creation are explored most effectively when the texts that manifest this function are constructed by the learners themselves. From a psychological point of view, this is justified by the fact that higher mental processes are activated more effectively by the production of such texts than by their passive reception. For example, processes of logical reasoning occur both while comprehending a text and constructing one. However, constructing a text requires much greater engagement from higher mental processes. When striving to comprehend a text, the mental activity within the domain of cognition is limited to searching for logical fallacies in the text or accepting its logic, whereas during text construction the mind is forced to recall all relevant elements necessary for reasoning, e.g., facts, opinions, definitions, statistics, etc., and then to make an effort to shape the relevant information into a coherent unit with a definite structure that introduces the problem, arguments, and a conclusion with a hypothetical idea that is open for further debate. Similarly, comprehending a poetic text within the domain of creation requires engaging the mind in interpretations of the

symbols and metaphors produced by others, whereas the focus during the production of a poetic text is on the ways of the subjective subordination of those symbols and metaphors to the covert, deeper meaning of the whole text.

The procedures of activating learning processes through the construction of argumentative or poetic texts begin with the teacher's introduction of teaching points, which can be found in some kind of source material, e.g., in literature, a handbook, an article, available data, etc., usually in the form of a descriptive text of an informative character. It can also be an argumentative or poetic text that contains a point that is open for a debate or interpretation, empirical data of a controlled experiment, an excerpt of a short story or a novel, a poem, a written or spoken report, etc. The introduction of the teaching point can be carried out in the form of a discussion that consists of the teacher explaining things that are new to the learners and eliciting from them what they already know or are able to guess.[2] The learners must realize that the text they intend to present should present a problem, attempt to explain it and interpret it, or otherwise refer to points introduced by the teacher. The teacher must insist rigorously that all the learners' utterances are to the point but otherwise give them freedom with regard to the content of what they say.

The following example of a procedure in the domain of cognition illustrates the possible ways of teaching by having learners construct argumentative-poetic texts. The discipline of knowledge is social sciences, in particular, civics. The source material provides information about various forms of government that are organized within the framework of the opposition between autocracy and democracy and contains various definitions of typical examples of autocratic and democratic systems. The definitions listed in the teaching materials give the teacher the idea that the teaching point refers to the dangers lurking for democracies if elections involve irresponsible voters. The teacher might keep in mind issues such as voters' lack of the ability to understand that the expectations raised by political demagogues who crave power are

[2] The strategies presented in this section rely mostly on the principles outlined by Bruner (1962) and Wenzel (1991), which rely on the processes of discovery and creativity; however, the preliminary phase of discussion and eliciting are important elements of the *advance organizer* presented by Ausubel (1968).

unreasonable and the inability of these voters to predict that, if the declarations and promises come to fruition, irreversible social or economic crises are likely to occur.

The procedure starts with contrasting autocratic and democratic forms of government. After presenting the two opposing forms, the teacher tells the learners to define a government they are familiar with, either in the present time or from the past. Predictably, the resulting texts will be descriptive. For instance, the learners might say that in the USA the system is democratic because the president is elected by the people and that there are representatives of the people in Congress, who also have been elected democratically. The Russian government will be defined as autocratic because the president seems to have uncontrolled and undisputed power, and the elections are only a façade to serve as a propaganda tool. The government of the United Kingdom will be classified as democratic even though there is a queen because she seems to play a symbolic role, etc. The texts present common knowledge picked up from the news with sporadic attempts to apply the information received from the teacher.

This brief introduction will be followed by the teacher's questions directly connected with the teaching point, for example, questions about the reasons for social unrest and economic crisis in countries with autocratic systems, and the reasons why democracies often easily turn into autocracies. The texts that are constructed in response to these questions will naturally be argumentative in character, though not yet precise enough to present a clear hypothesis. It is likely that the learners will blame autocratic forms for typical corruption of power. They might also blame democracies for the weakness of multiparty systems that result in indecision and frequent parliamentary crises.

Such a turn in the discussion will make a convenient starting point for the teacher to introduce the notion of a constitution as the fundamental laws of a state and to explain what is meant by relations between the legislative, executive and judicial branches of government. This explanation opens the next step of the procedure in which the teacher elicits from the learners their ideas about the system of their own country and asks them to define it in reference to the information and explanations she or he has introduced. The aim of this stage of the procedure is to make political elections a personal matter for every learner, which is an essential factor in acquiring a sense of responsibility for the fate of

society. Now the teacher can approach the main teaching point, which is the danger of irresponsible voting. The learners are asked to make predictions about what would happen to a country if the majority of the population elects a president or a political party with an evidently destructive program.

At this point, a great variety of different texts will be constructed depending on the particular aspect of political life that appeals to the learners' imagination. Some of them might note that a democratically elected majority in parliament is in a position to make disastrous decisions. There will be learners who might formulate opinions that the result of elections gives the ruling party the right to realize any program, however unreasonable. These opinions will be contradicted by those who remember the necessity of abiding by the constitution. On this occasion, the teacher can introduce the notion of a dictatorship, which occurs when a ruler overrides the constitution. The teacher's task is to elicit from the learners as many intuitive convictions as possible, e.g., the observation that during elections political demagogues might be chosen who openly declare that if they win, they will override the constitution. The concluding texts of the discussion should focus on the direct connection between the election of representatives and the fate of voters.

All texts constructed by the learners in the discussion should contribute to the teaching point. The learners argue with opinions that contain fallacies and provide reasons for more convincing explanations. The texts might lack fluency of expression and might contain typical characteristics of the spoken language, i.e., frequent hesitations, intrusion of colloquial expressions, and a lack of cohesion, but as far as the main teaching point is concerned, they develop the knowledge of social and political relations effectively. The stage of constructing argumentative texts in the spoken form should be concluded by assigning the task to formulate the problem and tentative solutions in a written composition, which means that there will be as many different points of the compositions as there are learners in the group. It is worth noting that from the point of view of the knowledge of facts at an informative level, which in popular estimation is believed to be the target of education, the learners receive the same amount of information. The difference between these two approaches to education rests in the fact that at the descriptive level the information is absorbed for its own sake in order

to be used for any possible practical purpose, whereas at the argumentative-poetic level it is immediately activated and organized to formulate messages that transcend the informative level.

To be effective, the procedures of teaching through learners constructing argumentative texts imposes special demands on the role of the teacher, which is, in fact, to cooperate individually with each of the learners. The teacher poses problems, helps the learners to find all relevant aspects of the problems, and elicits assertions, conclusions, comparisons, and arguments. During the discussion, the teacher has to be in control of the nature of the constructed texts. The most frequent obstacle is presented by learners who make use of this occasion to express their ego, who try to impress their friends by being sarcastic, ironic, or ostentatiously indifferent about the point of the discussion. Alternatively, they might wait for the teacher to hint at the "right" solution to any of the questions. It is the teacher's role to prevent the discussion from digressing and to help the learners come up with the answers on their own and to achieve precision in formulations at an argumentative level of complexity.

The procedures in the domain of creation are essentially the same as in the domain of cognition, but they require different kinds of teaching materials and different kinds of teaching points. The learners are supposed to develop a detached attitude to language so as to see it, as it were, from outside, which is in fact the attitude of the poet. The procedures concentrate on developing awareness of the creative powers of language. The source material should provide teaching points that are useful for developing the skill of writing literary compositions.

The first step in this direction is to enable the learners to gain control over the organization or deliberate disorganization of texts. Constructed texts can range from completely disorganized speech that is characteristic of monologs of schizophrenics experiencing hallucinations to the most precise, lucid type of speech. Teaching points might include such tools as stylistic devices, rhetorical techniques, stream of consciousness, laconic style, controlled ambiguity, vague and strange assertions, the deliberate lack of a point, plays on words and phrases, the emotional use of language, the imposition of negative or positive values on words, techniques for organizing a plot around a pivotal character or event, etc. Source materials are found in great literary works and in popular

literature for mere entertainment. The teacher selects teaching points intuitively and predicts their possible cognitive appeal to the learners.

7.3. Examples

The following examples illustrate the possibilities of selecting teaching materials that serve as sources for teaching points. The examples are from the educational domains of cognition and creation. They deal with either of these domains or with both of them so as to illustrate a variety of possible procedures. The commentary addresses the reasons why they were selected with regard to their educational capacity, the potential of the content to have cognitive appeal, and how to elevate the educational capacity of language through the development of language sensitivity. The overall aim of these examples is to demonstrate in practice the possibilities of language becoming a link between higher mental processes and higher motivational drives in the synergy of the three essential elements of the whole educational system.[3]

> Example (1) source material:
>
> It is safe to assume that the first Cain, after having stricken a fellow member of his horde with a pebble tool, was deeply concerned about the consequences of this action. He may have struck with very little malice, just like a two-year-old child may hit another with a heavy and hard object without foreseeing the effect. He may have been most painfully surprised when his friend failed to get up again, he may even have tried to help him rise. In any case we are safe in assuming that the first killer fully realized the enormity of his deed (Lorenz 1966).

The point that might influence the choice of this text as source material is the underlying assumption that aggression is not essentially motivated by malice but is determined biologically and has definite functions in social life in general as a characteristic of animate matter. The

[3] For more examples of potentially achieving synergy within these three domains and ideas for the practical application of discovery learning, see Daszkiewicz, Wenzel, Kusiak-Pisowacka (2018: 146–162).

procedure begins with a discussion on the nature of aggression in social life in a biological sense and is compared with the aggression characteristic of human social groups. From the discussion, a tentative question is formulated, namely, whether the aggression that is a natural phenomenon in animal social groups is vital to human social life. Therefore, aggression can be regarded as a remnant of the evolutionary past, i.e., an atavistic feature resembling the coccyx in the anatomical structure of species that no longer need a tail. Whether this conjecture is reached or not, an additional question can be posed; namely, whether at times in human social groups aggression is provoked deliberately to gain definite, calculated advantages, for instance through wars, social conflicts, election campaigns, by gaining popularity in a community, etc. Further discussion may consider the universal character of the commandment that forbids people to kill, its significance for human civilization, and whether or not it can be explained in evolutionary terms. Based on the source material, the teacher attempts to elicit from the learners suggestions about how early they think the origins of conscience can be traced, whether they think it was related to their acquisition of consciousness, or whether it could indicate the innate character of human conscience. This direction of the chain of tentative conjectures and hypotheses might lead to questioning some popular convictions concerning morality.

> Example (2) source material:
>
> Today natural tribes and isolated communities have all but disappeared. The ease and speed of travel, the swift economic changes that send people in search of new kinds of work, the two wars that swept over all boundaries, have wiped out most of our traditions. The old family structure is tottering. Society tends to break up into new and smaller units, the human individuals that compose it (Langer 1958).

The teaching point in which the teacher expects to engage the argumentative-poetic language function is the future of the family structure. The teacher presents the reasons from the source material that, according to the author, have led to the crisis of the family structure and asks whether in light of these facts one can conclude that society is breaking up into its ultimate units of human individuals. The predictable reaction of the learners is that they agree with the author. The next step of the procedure is to draw attention to the statement "… the old family

structure is tottering …" and ask whether it is logically connected with facts such as the disappearance of isolated tribes, the ease and speed of travel, swift economic changes that prompt people to take on new kinds of work, and the two wars that swept over all boundaries. The learners might notice that all these facts might or might not influence traditional family structure and that actually they concern various aspects of social life that seem to constitute an open-ended list of social troubles. What is even more important, they are not logically connected with one another. The learners might also notice that the crisis of family life is rooted in psychological characteristics such as selfishness and the lack of the sense of responsibility when establishing a family. At the end of these elaborations, the learners might reconsider their first impulsive agreement with the ideas of the source material and observe that each of the social problems listed causes a different kind of crisis, whereas the family structure crisis is caused by a great variety of issues that are not mentioned in the text but that are evident in modern society. Essentially, the teaching point is expected to develop in learners a critical attitude to texts that sound convincing at an informative level but treat this information instrumentally, e.g., to evoke emotional reactions. The teacher's ultimate aim is to enable learners to distinguish argumentative-poetic texts from slogans, propaganda, and dogmatic statements, which is a step forward in attempts to search for truth and beauty.

Example (3) source material:

> We see that the geological evidence is that the earth's crust has, in the main, been formed in an orderly manner, and not by a succession of catastrophes. We have the same impression when we study the fossils contained in the layers. We have abundant evidence of a slow and orderly progression of animal forms. The highest animals, for instance the mammals, exist only in the newer rocks. Lower down there are reptiles and birds, which are preceded by amphibians, and preceding the amphibians there are fishes. Beneath the fishes the rock contains only invertebrate animals. There can be no doubt that the more complex animals appeared on the earth later than the simple ones and it suggests itself that a process of evolution has been at work, in which the simple creatures have gradually given rise to the more complex ones (Sullivan 1938).

The source material deals with geological and biological themes with implications for knowledge of evolutionary processes. The main

teaching point here is the idea that the evolutionary processes develop in an orderly manner so that consecutive species demonstrate a gradual growth in the complexity of living organisms. This point is broad enough to engage other sources of information, so the teacher might, first of all, start by eliciting from the learners their knowledge of the rudiments of disciplines such as zoology, inorganic and organic chemistry, biochemistry, and genetic mutation. Once the teacher makes sure the learners are familiar with the basic facts of the system of classification of the living forms, e.g., such as the fact that all organisms in this system are divided into two groups, those in which cells lack a nucleus, i.e., prokaryotic, and those in which cells possess a clearly defined nucleus. The teacher proceeds to the latter group that is divided into four kingdoms of increasing complexity up to the most complex organisms of this kingdom in the class of mammals. This informative stage of the procedure could be concluded with the learners matching the content of the source material with the classification system.

The next step is to introduce a new element of the evolutionary processes, namely, the past changes of non-living forms, e.g., atoms and chemical compounds. Again the teacher elicits knowledge that learners acquired in chemistry classes and makes sure that learners realize that these changes manifest in the formation and growth of the complexity of atoms, molecules, and compound structures such as carbohydrates, fats, and proteins of progressively increasing complexity. At this point, the learners are likely to conclude that from the point of view of the internal structure of the inanimate and animate matter, the history of the universe from the Big Bang to its present state is characterized by constant growth in internal complexity.

The interplay of eliciting from the learners what they already know and completing the knowledge with the basic facts that happen to be unknown takes place to a point at which the teacher realizes that the problem of evolutionary changes is becoming too complicated because of the need to introduce too many new notions for effective learning. For instance, learners might not yet be familiar with biochemical processes that determine the formation of chemical compounds that constitute the genetic material of living forms, knowledge of which is necessary to understand the role of genetic mutations in natural selection. However, the teaching point should not be left inconclusive. Learners should be encouraged to construct suggestions about possible future evolutionary

changes according to the principle of the growth of the internal complexity of inanimate and animate matter. For instance, the teacher could conduct a debate on the fundamental query as to whether evolutionary changes occur by chance or are in some ways predetermined.

Example (4) source material:

> "Agatha," Ian said, "there is a great deal in the Bible simply beyond our understanding." "Beyond yours, maybe," Agatha said. She told Daphne, "Or Noah's Ark: how about that? God kills off all the sinners in a mammoth rainstorm. 'Gotcha!' He says, and He's enjoying it, you know He is, or otherwise He'd have sent a few sample rains ahead of time so they could mend their ways."
>
> Picture how they must look from outside, Ian thought. A cleaned and pressed little family walking together to church, discussing matters of theology. Perfect.
>
> From outside.
>
> "Or Abraham and Isaac. That one *really* ticks me off. God asks Abraham to kill his own son. And Abraham says, 'Okay.' Can you believe it? And then at the very last minute God says, 'Only testing. Ha-ha.' Boy, I'd like to know what Isaac thought. All the rest of his life, any time his father so much as looked in his direction Isaac would think –" (Tyler 1992).

The specific advantage of this source material is its capability of dealing with the educational domain of creation as well as with the domain of cognition during the same class. From the position of the domain of creation it contains several stylistic features that belong to the workshop of creative writing. The most remarkable of them is the way the dialog is carried out. The flow of the ironic, sarcastic, and witty remarks of the heroine of the story gives the dialog a natural, vivid character. Dialogs in literary fiction easily turn into artificial conversations and require practice to become natural in texts. From the position of the domain of cognition the source material provides several opportunities to stimulate the usage of the argumentative function of language. The teacher might decide to base the formulation of the problem on the familiar episode from the Book of Genesis in which God demands that Abraham make a sacrifice of his son by killing him, and when Abraham consents to this demand, God revokes the order and tells Abraham to replace his son with a lamb. Giving consent to killing one's son is an unacceptable act of cruelty in modern social life. Education can be carried out with

this source material in the domain of creation thanks to the style of the dialog and in the domain of cognition since the teaching point concerns the ancient history of civilization.

However, in making use of such source material the teacher should avoid any theological implications of the text and directly focus on the subject matter, namely, on the fact that sacrificing human beings in all kinds of rituals plagued the world for quite a long time, and, at the time this episode is believed to have taken place, i.e. about 1800 BCE, it was an acceptable practice in most the rituals of most contemporary religions. Learners should become familiar with the history of ancient Babylonia and King Hammurabi and contemporary times in ancient Egypt and the Minoan civilization of Crete. The teacher might elicit from learners the observation that offering human sacrifices to gods in order to live safe and prosperous lives was a common practice. What the teacher needs in this case is the learners' awareness that in the historical context revoking the order to sacrifice a human being and ordering that the human being is replaced by animal could be seen as a milestone in the development of the sensitivity to the value of human life. A potential further discussion might concern the evident lack of such sensitivity in modern times, territorial and religious wars, the omnipresence of brutality in the mass media and popular culture, etc. As a result, learners should become able to assess historical events in their broad cultural, political, and social context.

Example (5) source material:

> "Illustrious President, Noble Gorillas, Learned Orang-outans, Wise Chimpanzees, Oh Monkeys! I, a man, beg leave to address you."
>
> The pompous humility of this opening had been suggested by Zira and Cornelius, who knew it was liable to touch the orang-outans. I went on in silence that was complete.
>
> "Listen to me, Oh Monkeys! For I can talk, and not, I assure you, like a mechanical toy or a parrot. I can think and I can understand what you say just as well as what I enunciate myself. Presently, if your Lordships deign to interrogate me, I shall deem it an honour to reply to the best of my ability to your questions." (Boulle 1964)

This source material provides opportunities for the teacher to deal with both educational domains of cognition and creation. The overt teaching point concerning the domain of creation is to practice the

various styles of public speaking at conferences, meetings, symposia, etc. The covert aim concerning both these educational domains is to trigger the urge to construct compositions in the vein of science fiction or fantasy that requires some scientific, psychological, and technological research. The kind of public speaking manifested in the example is concerned in particular with the necessity to use on such occasions pompous humility accompanied by flattering the audience, which requires the choice of the appropriate words and phrases. The ways of delivering pompous messages are specific and such a teaching point could become quite attractive for learners to express their sense of humor. The covert targets are introduced casually by way of digressions and passing remarks during a discussion on the nature of science fiction, popular productions in this genre, and its perspectives for the future. The intention of the teacher might be to stir the imagination of the learners so that they are willing to write genuine compositions and possibly express themselves artistically.

These procedures could become a point of departure for a discussion on the event described in the source material. The teacher should try to elicit from the learners the observation that it is actually a satire on the popular convictions of people. By reversing the position of apes and human beings, it is possible to depict some characteristics of mankind in a satirical vein. What is even more significant, this technique allows for a non-anthropocentric view of people and their preoccupations, as if the observer were outside mankind. If the learners grasp the significance of such a change of the point of observation, the teacher might simply mention that such a change opens the way to unpredictable possibilities when writing science fiction stories. In order to achieve genuine compositions, the teacher should avoid setting any tasks or assignments and leave it to the learners whether they decide to construct such compositions or promptly forget all about it. What is at stake here is the non-utilitarian level of learning motivation, which, together with the argumentative-poetic language function and the higher mental processes can elevate the level of education and become a factor in the further growth of the intensity of consciousness.

Conclusions: Predictions on the direction of education

Optimistically, we can state in the concluding remarks that, in spite of the frequent recurrence of the stagnation phase and decline, it is possible for the phenomenon of consciousness to develop in intensity in an evolutionary sense. In comparison with evolutionary processes that have been recognized so far, there is a striking novelty to be noted with the emergence of species gifted with consciousness, namely, they turn out to be partly responsible for their own evolutionary direction. This novelty requires an adequate education system, and this system must be in a position to transcend the demands of biologically, psychologically, and socially determined motivational drives. The principles of this system must enable individuals to educe the motivational force of truth in the domain of cognition, the motivational force of beauty in the domain of creation, and the motivational force of conscience that can initiate the functioning of universal moral principles in the domain of coexistence.

Serious obstacles impede taking this direction. First of all, the metaphysical inclination, which is a feature generated by consciousness, and, potentially, one of the decisive factors that makes it possible for individuals to overcome the influence of survival drives and psychosocial needs becomes the cause of various misinterpretations and confusions. They occur when individuals, because of their lack of adequate education, resort to faith for rescue and for solutions in physical, chemical, biological, and social matters. Futile attempts to understand any such matters by resorting to faith result in superstitions, magic, etc. and, in the long run, cause stagnation in the growth of the intensity of consciousness.

The development of consciousness is also hindered by individuals' self-image, perpetuated by dogmatic ideologies and the educational systems that accompany them. Because of total immersion in the matters

of life, they tend to see themselves as "social animals," "tool-using animals," "political animals," "rational animals," "game-playing animals," etc. Matters of life overwhelm the spiritual aspect of their nature because such matters are omnipresent in all their domains and fields of activity. Glimpses of the potential of the spiritual side of their nature that appear in some outstanding works in the domains of cognition and creation and in their search for universal moral principles in the domain of coexistence are lost because of the constant struggles with the matters of life. They are immersed in the problems of improving their living conditions and in the realization of their biological and psychosocial needs like ambition, social position, satisfaction, vengeance, shelter, etc. Frequently, great masterpieces of human creativity, which manifest signs of a spiritual side, are reduced to the function of mere entertainment. In this way, individuals perpetuate their convictions about their being only one of many species in the animal kingdom. Glimpses of the spiritual side of their nature are treated as exceptional instances of the creative work of some specially gifted individuals, not as signals of their hidden spiritual potential.

At this point, the phenomena of the development of consciousness and education meet. Only adequate education is in a position to deal with the obstacles hindering the growth of the intensity of consciousness. Essentially, an adequate education system should elevate the targets of the learning processes beyond the practical level of acquiring useful knowledge and training for useful skills. In terms of the phases of the emergence of consciousness, traces of such a system can be noted in the awakening phase, whereas the focus of education on the preoccupation with practical needs leads to stagnation and decline. The vicious circle between the requirements of the matters of life and the education system that perpetuates these requirements becomes a major obstacle in pursuing the growth of the intensity of consciousness.

Actually, establishing an education system that is adequate for the awakening phase should be a feasible, realistic task. The first step in the domain of cognition is to base the system on the principles of critical thinking, and argumentation, and constantly improving explanations and speculations concerning natural physical, chemical, biological, and social phenomena. The improvements ought to take advantage of the informative level of empirical observations, data collection, and statistics. Teaching procedures should include logical reasoning and the

verification of explanations and speculations or of proving them to be false. These procedures are dynamic and never final. Procedures in the educational domain of creation should take the greatest artistic achievements as the standard of educational targets and not as exceptional cases of certain uniquely talented individuals. The decisive role in such an educational system ought to be granted to the synergy of the higher mental processes, higher motivational drives, and higher language functions, which, thanks to the capacity of providing texts with cognitive appeal and the capacity of thought organization, makes this synergy realistic.

In a metaphorical sense, with the emergence of consciousness the world becomes "aware" of its existence. Every individual gifted with self-consciousness who has ever appeared in the world and who is to appear in the future contributes to this specific kind of "awareness." Thanks to the growth of the intensity of consciousness, individuals begin to inquire into the mystery of the existence of the world and of themselves. They do this in the educational domains of cognition and creation with the support of a continuous search for universal moral principles in the domain of coexistence. By this token, they signal the possibility of imposing the influence of an adequate education system upon the evolutionary growth of this phenomenon.

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Author Index

Subject Index