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**The thought and its perspectives on reality  
Logic, dialogic, analogic and ethics**

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**Riassunto**

Il processo che, in primo luogo, è coinvolto nell'acquisizione e nella gestione del significato è il pensiero. Conoscere la fisionomia del pensiero è premessa imprescindibile per affrontare il problema dello sviluppo delle abilità e delle competenze conseguenti ad un suo efficace esercizio in ambito didattico, sia da parte del docente che da quella del discente.

**Abstract**

The process that, in the first place, is involved in the acquisition and management of meaning is thought. Knowing the appearance of thought is indispensable premise to take on the problem of development of skills and consequent duties to its effective operation in education, both by the teacher that from that of the learner

**1. Thought as multidimensional reality**

The process that, in the first place, is involved in the acquisition and management of meaning is thought. Knowing the appearance of thought is indispensable premise to take on the problem of development of skills and consequent duties to its effective operation in education, both by the teacher that from that of the learner. These processes, of course, do not exhaust the factors which are crucial for the management of teaching in the classroom context, for example think to the space occupied by the relational dimension, but they are crucial because they make efficient processes giving value to the broadcast content.

The thought, being multidimensional, qualifies itself as a complex reality, so the operations it implements are not only computational, that is they can not be traced back to a limited and rigid symbolic elaboration, but call into question a much more complex process (Morin, 2007), which is not always justified by the exclusive reference to the laws of logic. The logic describes only a part of its range, that is its way of framing reality.

The results which is reached through the exercise of thought does not concern an amount, simple and linear, of symbols and forms but the interaction, of reticular nature, between the meanings, that is a mutual influence between semantic elements of the system whose consequences they are limited predictable. Moreover, this interaction adjusts to certain criteria but, at the same time, helps to reformulate them, the thought is in effect a form of life.

Learn through thought means to perceive, represent, recognize, conceptualising, judging, reasoning (Morin, 2007). Such thoughtful acts, in their variety, stratify human thought making it as far removed there can be from a mechanical and deterministic process. Thought not passively returns the object of knowledge but is opens to new perspectives, never predetermined. Knowledge, in fact, does not rebuild the real but reflects it in a different reality, one in which the world and the subject, with his personal values, they meet, having mastered their intellectual capacity means being able to express themselves fully as person. Knowledge is always a phenomenon, as Kant said.

The thought does not act by following a single path but more paths in parallel. These parallel paths symbolize the four modes of thought, that is, the logic, the dialogic, analogic and ethics.

In this paper, therefore, will be identify, in a synthetic way, the characteristic aspects of logical, dialogical, analogical and ethical thinking, as well as the relationships between these, by referring to certain processes which explain them. These processes allow the subject to formulate a personal "world view" using effective procedural models.

Logical thinking acts resorts to the rules of formal logic, the dialogical enters into a relationship with the context and, finally, the analogical develops associations between semantic fields apparently far.

The dialogical and analogical dimensions, in fact, fill the gaps of logical dimension which, alone, can not account for the complexity of thought that relates to reality (Perelman, Olbrecht - Tyteca, 1982).

To move ahead with the argument, its possible puts an analogy between the three dimensions of language, traditionally found in the literature, that is, the syntax, the semantics and the pragmatics and problematic issues of formal logic and informal logic. These language's dimensions will be a useful reference for understanding the systems under which the considerations relating to issues affecting the thought, and its ways of being, will move.

Traditionally it was believed that the thought would operate according to a logic, that is it recourses to precise rules of inference quite similar to those encoded, at least starting from Aristotle's *Organon* (Johnson-Laird, 1990; Boniolo, Vidali, 2011). According to the theory of mental models of P. Johnson-Laird (1990), however, we reason by building models that are defined through the use of heuristic procedures, which putting aside the traditional inferential rules. These procedures are elaborations of the real data not strictly formal, related to the use of rules, but semantic and contextual, that is able to identify conclusions referring, respectively, to the meanings and to the situations, for this reason they are not easily generalizable.

If we look at reality in a hermeneutical key, that is if we are aware that a circumstantial use of thought always creates an interpretation able to change reality, knowledge is no longer aimed at the possession of truth, but to appropriation of the verisimilitude (or approximate truth ), that is of a representation that is close, as much as possible, to reality and that, for this, let us to live better. The truth, in absolute way, can not be the ultimate goal of the learning process, itself escapes too rigid representations and little articulated, always remaining at a distance from what they are talking about human representations, which often have to do with indeterminated semantic contents (Agazzi, 2012).

What we know directly are neither the words nor the concepts but the experiences that shape them and to which they refer.

The subject experiences established "gestalts", that is structured sets of experiences, related to each other according to specific criteria, where everything is conceived as excessive in relation to the sum of the individual parts (Lakoff, Johnson, 2004).

The concepts, and thus the things of the world, have no intrinsic properties but properties that the experienced, understood as a moment of reflection on the experiences of life, gives them, and who are forming in the experience, able to connote not only the essential definition but also cross-references, or elements of meaning, more peripheral.

The reality, moreover, must be understood as a system of relations between things, and not as an isolated entity agglomerate together. These reports constitute the truth conditions of all thoughts or statements that derive from our personal model of reality. For example, I could be the custom to "make recycling" because "I recognize the urban environment as an extension of my body" because, by virtue of my interpretation of states of things, I identify a link between "my health and that of the natural environment", so " my reality" gives value to this relationship.

The inherently subjective nature of the cognitive process, not hinder at the thought to fix the object according to valid representations also for others, and therefore able to be relevant even regardless of the context.

We must, therefore, consider the two aspects that form the physiognomy of reality. The first "regards the purely physical

properties, objectively discernible things (...) The second aspect is the allocation of meaning and value to these things" (Watzlawick, 1976, 129). It is in the latter case, however, that the problems related to the mental process modes assume a fundamental importance.

Analyze, then, the salient features of:

- formal logic or “logical” thinking that studies the reasoning, that is the shapes and structures in which it is expressed;
- informal logic or “dialogical” thinking, which studies the implications that emerge within the arguments developed in concrete contexts (and not abstract as in the first case), as well as their margins of deviation from the general rule;
- creative thinking or “analogical” thinking, establishing new meanings by relating the concepts and reformulating the interactions that take place between them
- caring thinking or “ethics”, which connects the meanings and the emotional dimension of the ethical person, interpreting the exercise of reflexivity in terms of its being embodied thought.

## **2. Logical thinking and dialogical thinking**

Let's start to discussion considering the classical formal logic (or axiomatic), that is the discipline that studies the forms of correct reasoning, translating them into a specific formal language, that is in an alphabet consisting of a finite set of symbols, whose meaning

is well established . The positive and, at the same time, the negative aspect of translation in formal linguistic notation is that this avoids any ambiguity reading and, therefore, of interpretation. Formal logic can be defined as "implicative", because it proceeds by implication, that is from logical consequence deduced in a strictly formal manner, considering exclusively the internal relations between the components of the argument. In this case to draw the consequences of an argument takes into account only its shape, or structure, regardless of content delivered through it. The form expresses an abstract model that relates the internal composition of an argument consists of premise and conclusion (Varzi, Nolt, Rohatyn, 2004).

The concept of "correct reasoning" appears closely linked to that of "logical consequence", which refers to the fundamental characteristic of the no-extensive, that is the fact that every inference never add anything that has not already implicitly expressed in the preamble (Benzi 2002), for which the value that the knowledge produces is only tautological, since it can not go beyond what is already contained in the premises.

The logical reasoning acts like a paraphrase, relocating syntactic structures, for the purpose of better understanding, but without producing semantic changes.

The only semantic rule concerning the allocation of true / false values to variables, which is to say that the meaning of

propositions can only be defined or as true or as false, not further specifications.

A valid argument can also be completely made up false statements like the following: “All the horses fly” (P1), “Socrates is a horse” (P2) “Socrates flies” (C). The syllogism that derives from the use of the above propositions, however, is correct (Berto, 2007) because the conclusion is absent in the medium term (horse) that is present in the premises.

The truth or, rather, the verisimilitude of reasoning is put into the background compared to the validity of the latter. The concept of validity concerns the logic effectiveness of the reflective process, that is the deductive argument as a system of propositions, and takes place regardless of the truth of the individual propositions that compose it.

Regardless of their semantic limit of formal logic, the inference rules are still useful to grasp the correctness of an argument, or to refute it, in case, establish as certain the truth of the premises, it should identify a conclusion without being able to relate to the context.

The laws of formal logic are important because they allow to evaluate, using the tools of reflection, those insights that, otherwise, would result in wasteful knowledges, firmly anchored to the sole figure of perception. It is the distance from the context to characterize, both positively and negatively, formal logic. It



identifies, in fact, the regularity of the existing, that is those principles that can be inferred by way of progressive abstraction. The main obstacle to a flexible use of formal logic, also in education, resides precisely in its formalism, that is the characteristic that ensures it scientific rigor. Only referring also to argumentative structures of an informal nature may appear the relational dimension directly involved in the exercise of reason and, therefore, the dialogical aspect of thought.

The term “informal logic” refers to all of the reasoning processes that are relevant the inferences from semantic and pragmatic origin, which deal respectively with the content and the context of utterance. That type of logic oversees the logical implications of the singularity of the real.

The informal logic can be also defined as “presuppositional” because the rules that it identifies act, in the reflective process, referring to aspects of reality that are prerequisites, and that, therefore, act implicitly directing argumentative dialectic.

In the syllogism exposed by SC Levinson (1993.19) “I am Greta Garbo, Greta Garbo is a woman, therefore I am a woman” will note that: a) the predicate "to be Greta Garbo" is extended to a set composed of one element, therefore, has a very specific meaning; b) the correctness of the argument depend on the identity of the speaker of the first premise and the conclusion, so paradoxically we should verify “in advance” the truth of the conclusion.

The singularity of the proposed example, which transcends the principles of generality of formal logic, depends on the fact that the term “Greta Garbo” references both to a subject to which a predicate because, at the same time, is a set and the only element forming part of the set.

These “singularity” would not have arisen if the syllogism in question had been expressed in formal language, because this does not allow them to emerge. On the contrary, it should be noted that the role played by the word "I" depends on the formulation of the syllogism in natural language.

When we speak of informal rules, that is pertaining to this specific form of thought, we refer to inferential habits and models frequently used for reasoning.

According to C. Perelman and L. Olbrecht-Tyteca (1982), these rules can give rise to two types of arguments, those “almost logical” and those “based on the structure of reality”. The arguments “almost logical” need the help of logical laws to increase their argumentative force, thus assuming the demonstrative value that individually would not.

The remaining arguments, defined as “based on the structure of reality”, however, reminiscent of the actual operating procedures, that is the semantic links that can be identified empirically referring to the world’s experience. If the first emulate the logical laws, as in the case of the arguments of transitivity, the seconds

refer to the mechanisms that regulate the reality, of which it forms part, for example, the principle of cause-effect.

To clarify what has just been report two examples. In the first case we apply a reasoning that assumes the principle of transitivity when, if we know that “Mario is a friend of Lucia” and “Lucia is a friend of Charles”, we believe that " Charles is a friend of Mario ", although this is only probable. Instead, in the second case, we recognize the cause-effect principle of value when, seeing the happiness in the face of a friend, we are convinced of the fact that it is caused by something that happened to him during the day, that this hypothetical fact can it is taken as a cause of mood that we ascribe to him.

Formal logic plays the cognitive process as an algorithm, divided into specific stages, making use of established rules and follow one another in a predetermined order, which gives rise to a demonstration. In contrast, the informal logic looks to the cognitive process intending it as a heuristic, a less restricted procedure, that is, as a search that continually reshapes, and that, rather, makes an argument, because it proceeds from premises only valid in precise contexts.

If the argument were a mechanical process governed exclusively by the laws of formal logic does not explain two facts: 1) the tendency not to draw trivial and not very relevant conclusions, preferring to assert that no conclusion does not follow from the premises; 2) the great influence of the content of the statements to

which they apply the deductions (Dalla Chiara, Giuntini, Paoli, 2004).

For example, the theory of mental models of P. Johnson-Laird (1990) born to reject a vision of reasoning as in simple, logical calculus. It states that there is not an isomorphism between the inferential rules and actually practiced reasoning strategies, which are, largely, heuristics, especially since the issue that is played on the semantic ground.

P. Johnson-Laird, then, is firmly convinced of the fact that one can make valid arguments without necessarily resorting to formal logic, and was able to test it in various ways. Among these arguments we can see a simple experiment in which he tested his students, who were confronted with the scenery expressed by the following statements: "The victim was stabbed to death in a cinema while attending an afternoon screening of the movie *Bambi*. When it was the crime the suspect was traveling in a train to Edinburgh "(Johnson-Laird, 1990, 107-108). When it was asked to them to speculate on who the murderess, P. Johnson-Laird was able to note that they made no use of inferential rules of a formal nature, to solve the problem, but rather sought to represent reality, expressed by the forward-looking statements, based on the meanings of the premises, trying to build a model that can simulate that.

This model can be supported not only by rationality in the strict sense, but also by emotions, inventiveness, from sensible

experience. It is from the concrete relationship with the things that we are motivated to use the thought.

### **3. The analogical thinking and caring thinking**

The exploration of the meaning of human life can not be achieved by resorting exclusively to empirical, logical or argumental verification, but it also needs to be nourished by sensitivity and imagination (Morin, 2001b).

Knowledge is not only a consequence of the deduction or induction, but also of intuition (or insight). According to J. Davidson and R. Sternberg (1984) intuition consists of three specific moments: 1) the selective coding, which distinguishes the relevant information from those irrelevant; 2) selective combination, combining into an organic whole seemingly isolated information; 3) selective comparison, comparing new information with data already acquired. This cognitive process, in fact, is very similar to others but is distinguished by its original nature, and we could say still mysterious, of the criteria that guide it.

It is precisely the intuitive problems, which require the use of creative thinking, to be “badly structured”, that is to be free of a procedure that clarifies the set of steps that can lead to a solution (Sternberg, Spear-Swerling, 1999). What solves these problems is precisely the ability to represent them in organically manner, that is to identify their structural.

In general, the brain's task is to organize information according to routine patterns, consolidated and codified, but when it is added a creative process of cognition the things change (De Bono, 2007). Among the characteristics of creative thinking, it will be considered especially analogical dimension, traditionally used by figures of speech such as simile and metaphor, which is valid especially for its ability to establish connections.

By “analogy” means a reflective process which identifies and establishes the links between two constructs that are not normally associated. Although never rejoined the ranks of logical procedures, it was still the subject of interest from the philosophical and scientific thinking then.

According to M. Johnson and G. Lakoff (2004) in particular the metaphorical procedure brings into being a creative process of formulation and is constitutive of reality not only of language but also of thought. Our behavior is often defined in analogy to the language that we use, it is structured through the metaphorical word reference. When we speak of a discussion as a war, using a structural metaphor, we mean that there is who attacks and who defends, who gaining ground, who coming to a yield, who dominates. Although there is no physical combat, we use the same images to refer to a verbal fight. Through the analogy drawn by the metaphor we only add to the literal meaning of a construct an additional significance, beyond those conventionally ascribed.

Creative thinking is serves to the metaphor because it is a tool to understand and to live something in terms of something else (Johnson, Lakoff 2004), allowing us to set up seemingly unusual comparisons.

The metaphorical statement, far from to express nonsense, approaches to define the truth, maybe not empirical in the strict sense but above "noumenical", following argumentative paths from those of critical thinking (Prandi, 1994).

The semantic distance, often, is not a fact of existing distance between the constructs, but is a direct consequence of the process of argumentation that is expressed in terms of an infinite negotiation and redefinition of the distances existing between the meanings, to establish new and possible implications.

Build metaphors it requires both the ability to reflect on both the possession of imaginative abilities, as such expertise is not limited to language skills, but also calls into question the manipulation of conceptual structures, both experientially that for intellectual way. Creative thinking has in fact its own logic, which is based on the analogy process, which we could interpret as an identity incomplete, that is only partial, between two things that, at first glance, it may seems a "category's error" (Lipman, 2005). What allows us to attribute the argument value to analogy is its ability to identify, and sometimes assert, structural similarities (Perelman similarities, Olbrechts-Tyteca, 1982), between two elements that can initially seem only juxtaposed.

The thinking processes that make use of analogical dimension are used frequently when the subjects, building hypotheses, try to predict the reality to better address the impact it will have on their lives. That is why, not only the reality, but also a likely possibility has the right to be the object of our thoughts.

In the end it will be referred to ethical thinking. For the purposes of discussion, for ethical thinking it means a subjective attitude reasonably guided by the values, both basic ones from those circumstantial.

Ethics, in this case, relates to the allocation process and recognition of the value to the various states of affairs, the conduct and the parties.

The dimension of values is, in fact, an important component for the formulation of the judgments, which means that the term "ethics" should not be interpreted as relating only objective knowledge of what is good.

As shown by H. Putnam (1985), taking into account a banal statement like "The cat is on the mat", we can see the intersection of facts and values in judicial decisions. Our ability to understand the statement in question, due to the fact that our culture has attributed a significant value not only to the dichotomy "animal / non-animal" but also to the particular way of being of the animal, having proceeded to the classification by species (which makes us to distinguish a cat from a dog, a cat, but also by a tiger). When we describe a fact, the resulting judgment assumes, always, the



presence and influence of certain values. The statement of the example, then, is the bearer of an implicit system of values.

We should note that it is difficult to distinguish the aspects that, in the judgment, are determined by the level axiological, if we consider the mutual influence between this and all other layers that make up the meaning of something.

The attribution of value to an object can still be conditioned by rational reasons, but often is simply justified by the existence of a personal connection with the object.

The thrill and the caring attitude are not simple epiphenomena of value judgment, but its integral part, because through them the person exercises specific mental acts as "sifting, filtering, measuring, weighing" (Lipman, 2005, 294). The system of criteria that guides ethical thinking, and based mental acts mentioned a moment ago, is configured as different from person to person, because it is strictly about both the personal experiences that the subjective value-convictions, compared to what it means to "live well". Emotional conflicts arise, in fact, lack of awareness and understanding of the criteria that guide this intelligence, which allows us to understand how to harmonize with each other the values (Nussbaum, 2004) to respect the ontological equality of things, ie their equal right to assert as an object of reflective judgments.

Judging in terms of the values allows us to use as a means of knowledge also the emotional experience of others and rational, is

coming to reinforce our conviction that to abandon them in favor of that to which the other attribute value, making it articulated our particular judgment .

Thanks to using the values thought that the reflexive skills can translate into responsible exercise of sociability and promotion of personality.

teaching objective of the action is to stabilize the use of a form of wider rationality that define "reasonable", to indicate that it not only includes the logical-formal criteria but accepts the influence operated by the context.

The reasonable judgment is, therefore, the product of the synthesis between the provision of formal and informal rules of logic, creative reformulation and the impact of the attitude values staff. The deepening of this concept is fundamental to the development of the reflections focused on its application in the training and educational field.

A reference that allows us to understand the formation of the exercise also thought of aesthetic education as a process, in which the beauty is all that can be taken as a tangible sign of the agreement between reason and sensibility (Pareyson, 2005), and allowing to overcome the dichotomy between feeling and thinking, considering them part of a single reality that is able to integrate in a balanced manner algorithmic and heuristic procedures.

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