

The “Verstehen” and the Meaning of Meaning: for a Sociology *between* the Cognitive Sciences

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Abstract: the topics I deal with concern the science of symbolism (on which I think it is useful to return to in terms of cognitive science), which studying the influences of language on thought (the meaning of meaning), and the question the issue of the hermeneutic circle (language/symbols; thought/mind/brain; mental, physical, chemical, biological, social, computer/telematic references) initially developed, in sociology (*Verstehen*), but in a very reductionist way, by Max Weber. Language (gestures/symbols), thought (brain-mind) and references (mental, physical, chemical, biological, social, computer/telematic) – see the «Ogden and Richards Triangle» – constitute three distinguishable and different levels. Is it possible to apply Marr’s «Three Level Model» to the «Ogden and Richards Triangle», triangle designed as a tool to formulate definitions for “automatic thinking machines”, king into consideration the way the mind and self of human beings are structured and function biologically and socially? It is to this question that I try to give a sociological answer, but in terms of cognitive sciences (or, if you prefer, cognitive science), proposing a new triangular model (the «Simulation Triangle»). In the next article (also in this Journal) I will address the issue of the «Mead Triangle», studying it and juxtaposing it with the «Ogden and Richards Triangle» and Marr’s «Three Level Model». The «Mead Triangle» is a conceptual representation (George Hebert Mead did not produce a graph of it) of the logical structure of the meaning of the social act. The «Ogden and Richards Triangle», on the other hand, is instead a graphical representation, by the authors, of the meaning of meaning. These are fundamental issues that are not always, indeed almost never, at least in Italy, taken into consideration, more or less seriously and with knowledge, by those who do sociology and, in particular, social science methodology.

Index Terms – Verstehen, Science of symbolism, Hermeneutic circle, Ogden and Richards Triangle, Marr’s three-level model, Simulation Triangle.

I. INTRODUCTION

Before starting, I would like to point out that the translations from Italian of the citations of the authors taken into consideration were done by me. The themes I address concern the issue of the hermeneutic circle (language/symbols - thought/mind/brain - mental, physical, chemical, biological, social, computer/telematic references) initially introduced, in sociology (*Verstehen*, *Verstehende Soziologie*, Sociology of the understanding of individual action with a meaning), but in a very reductionist way, by Max Weber (*see* Pinello, 2022; Pinello, 2021; Pinello, 2019), an author who introduced also the concept and notion of social action, distinguishing rational actions (rational action with respect to goal and rational action with respect to value) from emotional-affective and traditional actions (affective action and traditional action). Idealtypes of social action to which the idealtypes of authority are to be applied: idealtype of charismatic power, idealtype of traditional power, idealtype of legal power. The idealtype, in this way, becomes an abstract scheme, today we can even call it metaphysical (hence the recourse to the triangles mentioned in this article and the cognitive sciences), for historical understanding, *i.e.* for the scientific systematisation of empirical data.

As idealtypes, in addition to social action and authority, one can contrast *Verstehen* with *Erklären*, understand with explain. The *Erklären* is of nineteenth-century positivist vintage and is based on the biunivocal search for cause-effect connections. *Verstehen*, on the other hand, researches social dynamics as multi-causal and concausal processes. Not the *nomoi* in objects but the *idios*, starting with the subjects. Weber, because of his idealtypes, can be considered the initiator of constructivism in the social sciences (*see* Berger and Luckmann, 2019), as opposed to the 19th century positivism of Comte, Durkheim and Pareto. *Verstehen*, understood in the manner of Weber, does not only consist in researching why, for example, a ideal-typical group of ideal-typical individuals, exercising an idealtype of authority, pursues certain goals by means of certain rational actions, believes in certain values by trying to realise them through certain rational actions, is made up of subjects bound together by certain affections and traditions and, therefore, of

ideal-subjects who act accordingly (for cultural anthropology see Miceli, 2005). Indeed, it also implies an ethics of the social scientist (idealtypic of scientist or social ideal-scientist). The social scientist (social ideal-scientist) must observe and understand in an evaluative manner (*Wertfreiheit*, “freedom from values”). Evaluativeness is a (metaphysical) ought-to-be and not a being, because the social scientist attaches himself (attachment; see Pinello, 2022), as a secure basis, to their own value-driven assumptions, his own value-oriented knowledge, his own value-oriented skills and abilities, his own value-oriented lifestyle (cf. Berzano, 2017) and his own previous research, seeking confirmation of all this during his explorations of reality (on the problem of evaluativity, bias and cognitive heuristics, see Pinello, 2021). And values are not values in the abstract, but one’s own personal values, relative to the human being under consideration. On the human being and the genealogy of morality, law and science, see Pinello (2021). Not to mention the opportunities-limitations and orientations imposed on him by the “scientific research factory” and the need to obtain funding and return results (those expected at the funding stage) as quickly as possible. It thus happens that a considerable part of the scientific results obtained today not reproducible (the reproducibility crisis). As we shall see for Ogden and Richards, who make an important contribution to symbolic interactionism, unlike Weber it is instead a question of studying the meaning of meaning, taking into account and problematising not only ideas (the concepts, notions, mental schemes, idealtypes), but also the brain-mind and reality (the references). I now offer some insights, taken from Ogden and Richards (1966), on the hermeneutic circle, language and verbal social action (on social action, the social act, social interaction, attachment and the secure base, see Pinello, 2022).

If we consider other activities, such as eating or cycling, [they] are similar to language in that they are subject to a variable degree of control [see Pinello, 2019] [...] Besides symbolising a reference, words [and actions] are also signs of emotions, attitudes, moods, sentiments, interests or mental states in which the references occur. They thus constitute signs, in that they are united with these attitudes and interests in certain contexts [the symbolic and signic situations], more or less wide or restricted. Thus, in uttering a phrase or hearing it [or performing or observing an action], we give rise to, or respectively are faced with, at least two sign situations. One, by means of symbols, interprets the reference and thus the referent; the other, by means of verbal signs, interprets the attitude, mood, interest, goal, desire, and so on, of the speaker [or agent], and from there goes back to the situation, circumstances, and conditions under which the sentence was uttered [and the action performed] [...] [Example:] Suppose [...] that the speaker, in addition to reporting, takes a certain attitude towards the audience, e.g. a friendly attitude (Ogden and Richards, 1966, p. 242, 246 and 255; see Pinello, 2019).

As far as *Verstehen* is concerned, its original Weberian definition can be extended to encompass, in the terms of the science of symbolism by Ogden and Richards, meaning as practical consequences, meaning as theoretical consequences, the meaning of a verbal or non-verbal action, «what the speaker», in terms of meaning, «intends the listener to hear and do» and «what the speaker intends the listener to take as reference». One thinks, for example, of the cases of lying, fake news, faith news, disinformation, misinformation, and, in the opposite sense, of the case of the batter who, «in a baseball game, repels a ball well [by correctly interpreting] the “meaning” of the pitcher’s action, ignoring some of the [false or misinforming] signals shown to him» (Ogden and Richards, 1966, p. 219). But such an extension is still not enough. On meaning as practical consequences and as theoretical consequences, Ogden and Richards write:

«Is the meaning [intention] of a phrase what is in the mind of the speaker at the moment the phrase is spoken or is it what is in the mind of the listener at the moment the phrase is heard? Neither [...] It is certainly not what is in the mind of the listener, for he may completely misunderstand the speaker’s intention, but neither is it what is in the mind of the speaker, for he may intentionally obscure in his enunciate the thoughts that are in his brain, and evidently he could not do this if the meaning of his sentence were exactly what he had in his head [...] the following formulation [does] the case: *The meaning of a sentence is what the speaker intends to be understood by the listener*» [Gardiner, 1922, p. 361]. Here “to be understood” is an abbreviation. It stands for: (a) to be referred to + (b) to find correspondence in + (c) to be received with regard to the referent + (d) to be received with regard to the speaker + (e) to assume that the speaker is referring to + (f) that the speaker is wishing, etc. etc. These complications are cited to show how vague, for the most part, the terms commonly judged satisfactory are. A word such as «comprehend» [*Verstehen*], unless it undergoes special treatment [which is not the one Weber has put in place], is far too vague to be used except under certain conditions or at levels of speech where no real understanding of the subject matter [in the sense of reference and, I would add, of cerebro-mental processes] is possible [...] the expression of the speaker’s intention [as we shall see] is one of the five normal functions of language [...] as with the other functions, its importance varies immensely from person to person and from occasion to occasion. Grasping the multiplicity of the normal functions of language is of vital interest in seriously addressing the problem of meaning (Ogden and Richards, 1966, p. 217-218).

It is implicit that, in order to approach Weber, one must be clear about the distinction between “meaning as an act of will” (goal, value, etc.) and biological-teleological meaning, for which biology (which Weber excludes from his field of research), teleology, *i.e.* location within a system, that is also biological (cerebro-mental-body-environmental), and relations (not only social ones but also the electro-chemical ones of the connectome, in the singular and plural or interactionism at the connectomes level) count. To extend the approach beyond Weber, it is necessary to distinguish between symbols and signs or sign-sensations. Signs are «the non-verbal sensations and images that accompany references». On them «little reliance can be placed». Symbols are important precisely because signs «can be relied upon little». What exactly is being judged when making the most common judgements, such as «I am thinking», «this is a chair», «this is good»? When one attempts to make secondary judgements on these primary judgements, «one is very likely to make mistakes [...] for the obvious reason that verification is so difficult [...] In abstract thought [...] it is not the references that determine the symbols, but it is the links and interconnections between the symbols that determine the reference» (Ogden and Richards, 1966, pp. 226-227). And this is also the problem with the Weberian idealtypic.

For George H. Mead, which I will discuss in the next article (again in this Journal and in the context of these issues), the logical structure of meaning of social act (and here we move from social action to social act, see Pinello, 2022, and Pinello, 2019)

is to be found in the threefold relationship of the gesture to the response and to the result of a given social act. The response, on the part of the second organism, represents the interpretation and reveals the meaning of that gesture insofar as it is indicative of the result of the social act initiated by it and in which both organisms are thus involved. The threefold or triadic relationship between the gesture, the adaptive response, and the result of the social act initiated by the gesture is the basis of meaning (Mead, 2018, p. 127).

In the sense that it is the elementary, everyday, generally automatic linguistic social act. Mead's social act further expands the *Verstehen* notion from the theoretical positions of Weber and Ogden and Richards. Starting from this definition of Mead, I propose, in this introduction, the graph of "Mead's Triangle" - figure no. 2 - (or "Mead's Meaning Base Triangle"), which I reconstructed and drew from the Italian translation (Mead, 2018, p. 37) of the book published posthumously in Chicago in 1934 (University of Chicago Press), edited by Mead's student Charles William Morris, with the title «Mind, Self and Society. From the Standpoint of a Social Behaviorist», a graph that I explain in the next article (also in this Journal). I also provide the graph of the "Ogden and Richards Triangle" - figure no. 1 - (or "Ogden and Richards Semantic Triangle" or "Ogden and Richards Triangle of Reference"), proposed by the authors in the book published in London in 1923 (Routledge & Kegan Paul Ltd), with the title «A Study of the Influence of Language upon Thought and of Sciences of Symbolism», a graph I derived from the Italian translation of the 1966 work and which I explain in the second paragraph. Incidentally, I say that Ogden and Richards' (1966) book, for its physical-material references, is comparable in some respects to Wittgenstein's *Tractatus* (1984) and that, even further upstream, it can be traced back, as a critique of metaphysics, it is traceable to Kant's notions of phenomenon, noumenon, distinction between what is knowable and what is not knowable and what is residual, *a priori* forms of sensibility and intellect (Kant, 1983). In the third paragraph I also deal with the "Three Levels of Explanation of Complex Information Processing Systems" - figure no. 3 - model proposed by David C. Marr (1982; Tabossi, 1998).

Alberto Marradi (2007, p. 27-46), a rare case among Italian social science methodologists, also dealt with the problem of knowledge, *i.e.* the relationship between reality, thought and language (the relationship between reality and thought; the relationship between reality and language; the relationship between thought and language; data matrices and reality). Marradi taking into consideration both the symbol, thought, and reality external to thought – I say this using the "Ogden and Richards triangle" –, writes:

The fundamental problem of all kinds of knowledge - of scientific as well as ordinary knowledge - consists in the fact that our thought is not, nor can it in any way produce, a photographic copy of the reality it wants to know, and in the fact that language is not an exact reproduction of thought. Consequently, all our knowledge of reality can only be uncertain, fallible, revisable. Only a few scientists and philosophers have thematised this mismatch between reality, thought and language (Marradi, 2007, p. 27) [...] all attempts to give scientific knowledge a foundation of absolute certainty [...] have foundered against the observation, inevitable in gnoseology [epistemology], that there can be no rigid joints [connection joint] between the sphere of referents (reality), the sphere of thought and the sphere of language (Marradi, 2007, p. 24; *see also* Marradi, 1994).

It should not be assumed that the theories of all authors can be represented, as in Marradi's case, using the "Ogden and Richards Triangle" in its entirety. For many authors (Frege, Quine, first-Wittgenstein – for whom only the references of the physical and material world and logical propositions are to be taken into account – neo-Kantians, behaviourists – for whom the human mind is a "black box" –, extensional semiotics, some cognitivists etc.), in fact, the direct passage from the objects of external reality (physical referents) to symbols can be taken into account, to the exclusion of the human mind, thought, the brain. This is, as we shall see, the side of basic of the "Ogden and Richards Triangle" and not the Triangle in its entirety. Quine observes that, in the early stages of infants' education, language and the world are known simultaneously and jointly (*see* Quine, 1969, p. 919-920). The conception of sociology of Weber (*see* Pinello, 2019 and Pinello 2021), Parsons (*see* Pinello, 2022, *i.e.* the previous article published in this Journal) and many other sociologists, despite the reference to empirical experience, directly connects symbols (words and social actions) with ideas (the left-hand side of the «Ogden and Richards triangle»), deliberately ignoring biology, the brain-mind, heredity and, in other words, the human being in its real existence and consistency (*see* Pinello, 2021). As I have already written in the conclusions of my article «The Social Act, Social Action and Social Interactions: A Secure Basis for Social Bonding»:

I agree with the historian of mathematics Morris Kline (1985) that mathematics has played and continues to play, like physics, a fundamental and foundational mediating function between human beings and nature and, consequently, between the world "inside" human beings (the internal environments) and the world "outside" (the external environments). Mathematics and physics, in fact, form an exceptionally strong bridge (as Kline writes) between us and the outside world. This bridge, however, although exceptionally strong, is as if it were without a foundation on dry land, because it is «not yet firmly anchored either to reality or to the human mind» (Kline, 1985, p. 362; *see* Pinello, 2022).

Hence the need to address the issue of the «grounding on dry land» of the products of reflection and abstraction and their anchoring both to the human mind (cerebro-mental and electro-chemical processes, connectome) and to physical, chemical, biological, social, computer/telematic reality (*see* Pinello, 2022), on the premise that the junction between referents and linguistic terms is not rigid, but neither is it entirely arbitrary (*see* Marradi, 2007, p. 34; Saussure, 1974;

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Tabossi, 2002). First of all, one must consider how the correspondence between reality, thought and language, at a non-reflective, everyday, automatic level, is self-evident, obvious, immediate. This is a serious indication that biases and heuristics are at work. That is why my research interest is also cognitive biases and heuristics (*see* Pinello, 2021). From here (*i.e.* from the starting point that there can be no rigid joints between the sphere of referents - reality -, the sphere of thought and the sphere of language, but the joints is not entirely arbitrary either), on a reflexive level, the problems of representation, interpretation, understanding, explanation and simulation (analogue, digital, robotics) of human behaviour (*see* Datteri, 2012). The issue is clearly much more complicated than how Weber initially thought and explained it (*Verstehen*). Marradi, declaring his opposition to Bachelard's so-called *coupure épistemologique*, *i.e.* the need to clearly separate scientific language from ordinary language, states that he prefers Schutz's thesis according to which as far as it is possible for them, social scientists must use ordinary linguistic terms (natural-historical languages), illustrating them in order to make them comprehensible to their objects. Objects which, unlike the physical sciences, are also subjects (*see* Marradi, 2007, footnote 1 on p. 11). So: the objects of the social sciences are also subjects (as is a subject who studies them and researches and experiments on these objects/subjects, with them and for them); our thought is not a photographic copy of the reality it wants to understand and explain; language, which wants to communicate this understanding, is not an exact reproduction and representation of thought. This is a relevant issue for social science methodology. On the role of imagination, biases, heuristics, cognitive fallacies, value judgements and so-called *avalutativity*, *see* Pinello «L'essere umano. La donna-l'uomo e i profili sociali della spiritualità umana (Interrogativi sulle scienze sociali, per una genealogia della morale, del diritto e della scienza)» (Pinello, 2021) [The Human Being. The woman-man and the social profiles of human spirituality (Questions on the social sciences, for a genealogy of morality, law and science)]. As a criticism of Bachelard's theses, one can add Marcello Pera's "paradox of method": «science is characterised by its method, but a precise characterisation of method destroys science» (Marradi, 2007, p. 16).

Let us now see, in successive order, how Marradi addresses the question of 1) the relationship between reality and thought, 2) the relationship between reality and language, 3) the relationship between thought and language.

- 1) *The relationship between reality (physical and social) and thought* (thought and concepts, which, I would add, from my point of view, must be understood not as already linguistic mental objects but as electro-chemical cerebro-mental objects that have not yet taken linguistic form): there is no rigid junction between aspects of reality and the concepts that represent those aspects, already in linguistic form. That is, there is no biunivocal correspondence between them. A and B are in bi-univocal correspondence (rigid junction) when A corresponds only to B and B corresponds only to A. There is no bi-univocal correspondence because the same aspect of reality (the same object) can be conceptualised in linguistic form, by different persons in multiple different ways (*see* Marradi, 2007, p. 28), and because it can be conceptualised in multiple different ways by the same person, in different environments and in different conditioned and conditioning situations. However, it cannot be deduced from this that referents (especially, from my point of view, in the prelinguistic phase) are totally independent of conceptualisations (*see* Marradi, 2007, p. 29). It is clear that senses, perceptions, apperceptions and conceptualisations are involved here and, I would add, the connectome. The term "referent" «means anything to which the subject thinks at [a] given moment: not only physical objects, but events, other persons and their characteristics, actions and thoughts; not only objects that exist or have existed, but also those that are only imagined» (Marradi, 2007, footnote no. 5 on p. 29). Marradi, like Mead, also considers experience, and thus the physical (chemical etc.) and social act. For concepts to be formed in the mind of a human being, it is necessary for him to memorise the experiences, physical (chemical etc.) and social, related to them. And he must have them in the first person and not *de relato*. From this, however, it cannot be deduced that experience determines the mind's conceptualisation processes, *i.e.* how the mind conceptualises (*see* Marradi, 2007, p. 29; also Pinello, 2022), pre-linguistically and linguistically.
- 2) *The relationship between reality and language*: with regard to non-reflective, everyday activities, the correspondence between things and the words that designate them is natural and automatic (*see* Marradi, 2007, p. 30). Problems begin to arise, and hence the various hypotheses and theories, with reflexive activities and abstraction (*see* Kline cited above). Against extensional semiotics it can be argued that the relationship between sign/symbol (language) and referent (reality) is mediated by thought (better to specify, in my opinion: electro-chemical cerebro-mental objects). As in the «Ogden and Richards triangle», this relationship is not direct. The linguistic term, without the mediation of thought, of the mind, cannot have meaning (*see* Eco, 1973, p. 107). The sign/symbol and referent relationship, mediated by thought, concerns a concept in the sense that it concerns a cognitive container in which thousands of experiences are contained. This cognitive container is not closed, but is always open to new experiences (*see* Sapir, 1969, p. 13; Marradi, 2007, p. 34).
- 3) *The relationship between thought and language*: each linguistic term has several meanings, *i.e.* it designates, in a non-univocal manner, one or more concepts. Each of these concepts has an intension and an extension (*see* Marradi, footnote 7 on p. 49). I reiterate that, in my opinion, it must be made clear that, when we refer to concepts and thought, we are talking about the electro-chemical connectome, *i.e.* networked electro-chemical cerebro-mental objects. From my point of view, one must distinguish a pre-linguistic phase from a linguistic phase, which can be automatic or conscious. Meaning (which, from my point of view, is formed both in the pre-linguistic phase and in the linguistic phase, automatic or conscious), I would add, is expressed by language (it is not always

expressed by spoken and written natural-historical language), but is produced by the mind/thought (electro-chemical connectome), which has referents (the relationship between reality – physical, chemical etc. and social - and thought). The mind/thought is the nervous system, central and peripheral, that interacts with the internal and external environment. The external environment can be physical, chemical etc. and social, while the internal environment depends on attachments and secure bases (*see* Pinello, 2022). Paraphrasing Louis Hjelmslev (1968), we can say that meaning is the association (from my point of view, pre-linguistic and linguistic, automatic and conscious) of an expression with a content (not always conscious and rational: it follows that human beings are not always conscious and rational about the meaning of what they do). Disagreeing with the approach to the question proposed here by Marradi, but net of the clarifications that (from my point of view) I have added, some authors use, sometimes very reflexively, the words “concept” (content) and “linguistic term” (expression) indifferently, as if they were the same thing (*see* Marradi, 2007, p. 35). Furthermore, as in the case of the two-way correspondence (identity thesis) between words (expressions) and things, they theorise a two-way correspondence between words (expressions) and thoughts (contents). Thoughts and words, as well as things and words, however, are not the same thing, they are rather different, though related, things, in a way that is not bi-univocal, but also not entirely arbitrary. *See* Patrizia Tabossi (2002), who takes a cognitive psychology approach, and in particular psycholinguistics, as well as neurolinguistics, *i.e.* cognitive science. Tabossi’s thesis (which I quote because I do not share Ogden and Richards’ conception of language-as-a-tool-to extend our sensory organs, on a par with the telescope, the microscope, the microphone, etc. or an “amplifier of emotions”, *see* Ogden and Richards, 1966, p. 123) on spoken and written historic-natural languages, with the my addition at the end of one clarifications by Derek L. Phillips (1981) and one by Marradi (2007), which I supplement and clarify, is that:

The human species has several biologically determined capacities: motor, perceptual, memory and attention capacities. Among the cognitive capacities of the human species there is also language, which consists precisely in the faculty that each person has of acquiring in childhood, and then using, the language or languages to which he or she is exposed. We do not know how this faculty developed [...] We do know, however, that modern man has a linguistic capacity that is biologically determined and is common to all members of the species, while the various languages are socially and historically determined products of this faculty (Tabossi, 2002, p. 12) [*i.e.* they are not only historical and social products, but also natural, biological: historical-natural languages]. There is no a priori guarantee that two people educated in the same linguistic community [...] will use the same word with the same meaning under all circumstances (Phillips, 1981, p. 174). [Linguistic] terms constitute [...] anchors, [secure] bases from which to start to conceptualise [to explore (*see* Pinello, 2022)] the flow of experience – external as well as interior [...] this is essentially the reason for the proliferation of meanings (Marradi, 2007, p. 40). [Concepts are open containers of experiences and experience flows are conceptualised on the basis of cognitive biases and heuristics, *see* Pinello (2021)]. Explicit in language, thought becomes objectified (Marradi, 2007, p. 39). This does not mean, however, that language is a necessary condition of reasoning [*i.e.* of activated electro-chemical cerebro-mental connections] [...] As decades of ethological research have shown, it is by no means taken for granted that animal reasoning is so simple [...] in the many situations that – even in everyday life – require very quick decisions, man [is] capable of very complex reasoning without having the time to encode it in signs (Marradi, 2007, p. 41).

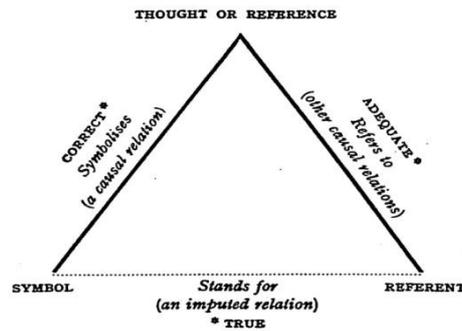
The latter is a very important point, which can be supplemented by drawing cues from Daniel Kahneman (2019), as well as from Mead (2018). Unlike natural-historical language, in which on one side of the joint (joining joint) is the mind (with all the problems of understanding the mind that this entails), the two joints (linguistic signs/symbols and cerebro-mental meanings) of artificial languages (primarily mathematics, logic, geometry and rational mechanics: use of univocal terms) are both reasonably rigid. As far as natural-historical scientific languages are concerned, it is generally thought, especially in academic communities, that their joints are less rigid than those of artificial languages and more rigid than those of ordinary natural-historical languages. This is actually not the case, because polyvocality is greater in natural-historical scientific languages than in ordinary natural-historical languages (*see* Marradi, p. 38).

Let us now look at the «Semantic Triangle» of Ogden and Richards (figure no. 1): the simplest case of symbolisation (basis of the Triangle):

This is the simplest and most fundamental way of defining. If we are asked what the colour “orange” refers to, we can take an orange object and say: “orange” is a symbol that represents “this”. The relation we use here to define is [...] the one that forms the basis of our triangle. It is [...] an attributed relation, reducible to a relation between symbol and act of reference and to a relation between act of reference and referent. The starting point is the word “orange”, the path of identification is this relation. The referent required is “this”. What we are doing on this occasion is directly *denominating*. But, it will be said, this only tells us that “orange” is applicable in *one* case; what we want to know is how it is applicable in general; we want the definition to extend to cover all the referents for which “orange” is a suitable symbol. This generalisation can be carried out in the same way for all types of definition through the use of similarity relations. We can say “Orange” applies to this thing and to all other things that are similar to it in colour». In practice, the discrimination of one similarity relation from others generally requires the use of parallel examples, of analogies, of the simplest kind [...] In any discussion or interpretation of symbols, we need a means of identifying the referents. The answer to the question of what a word or symbol refers to consists in substituting these with a symbol or symbols that can be more easily understood. This substitution is the definition. It involves choosing known referents as starting points, and identifying the *definiendum* through its links with these. (Ogden and Richards, 1966, p. 142-143 and 272).

«Semantic Triangle» by Ogden and Richards (figure no. 1): being the object of a state of mind (right-hand side of the Triangle):

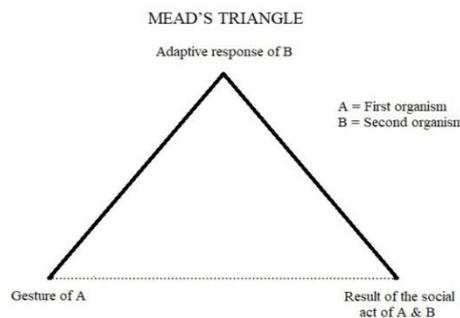
The right side of our triangle, make reference, is an example of this; such are wishing, wanting feeling, etc. Thus “pitiful things” can be defined as those we feel pity towards, and “good things” are those we approve of (Ogden and Richards, 1966, p. 145).



An example of the left side of the triangle (symbolising) could be mathematics, if one states that mathematical symbols have no physical, mental or social reference. It is in this sense that it is stated that mathematics is not a science, but a tool used by science.

- Base (triangle) = words - things (referents);
- right side (triangle) = ideas - things (referents);
- left side (triangle) = ideas - words (symbols).

«Meaning Base Triangle» of Mead: «Mead’s Triangle» (figure no. 2): I will argue about this triangle in my next article (also in this Journal).



«Three Levels of Explanation of Complex Information Processing Systems model» by Marr (Tabossi, 1998, p. 25) (figure no. 3):

Computational theory	Representation and process	Implementation in hardware
What is the goal of the computation, why is it appropriate, and what is the logic of the strategy with which it has been formulated?	How can this computational theory be realised? In particular, what is the representation for <i>input</i> and <i>output</i> and what is the process for transformation?	How can representations and processes be physically realised?

II. THE «OGDEN AND RICHARDS OF MEANING OF MEANING TRIANGLE»

A theory of thought [and action] that discards mystical relations [and metaphysical; there is also a mystical logic] between the knower and the known and treats knowledge as a causal fact [in Weberian manner] open to common scientific enquiry is a theory that exerts a strong attraction on good-sense researchers [...] Underlying all communication, and equally fundamental to any explanation of the scientific method, are the rules or conventions of symbolism [science of symbolism] [...] A symbol [...] symbolises an [social] act of reference; that is, among its causes [together with the speaker’s (or agent’s) desire to record and communicate, and together with the attitudes assumed by the speaker (and agent) towards the hearers (or observers)] there are [social] acts of reference. Thus, when uttered [or acted], a symbol becomes, being caused in this way, the sign of an [social] act of reference [to a referent] for the listener [or observer]. But this act [of reference to a referent], except when difficulties of understanding arise [as in the case of scientific research, or mystical logic, or metaphysics, etc.], is of little interest in itself [because it is part of the everyday, of immediacy, of spontaneity, of automaticity], and usually the symbol is taken as the sign of that in whose place it stands, that is, of that to which the reference it symbolises refers [the word chair is the object chair, the word horse is the object horse, etc.]. When this interpretation achieves its goal, it follows that the listener [or observer] makes a reference similar [chair, horse etc.], in all relevant respects, to that made by the speaker [or agent]. It is this that gives symbols their particularity as signs. Thus a speech transaction or communication can be defined as a use of symbols, such that acts of reference occur in the listener [or observer] that are similar in all aspects of relief to those that are symbolised by them in the speaker [or agent]. From this point of view, it is evident that for communication theory the problem consists in the delimitation and analysis of psychological contexts, an inductive problem that takes exactly the same form as the problems of the other sciences. However, due to the difficulty of observing psychological [mental] events and the superficial nature of [observable mental] uniformities, the methods used to check whether communication has or has not taken place are indirect. Since we do not have the possibility of observing [mental] references directly, we must study them by means of signs, or by means of the accompanying sensations, or by means of symbols. Sensations are clearly insufficient, whereas symbols provide a much more valid indication. But symbols also mislead and some method of control must be sought; hence the importance of the definition [...] A symbol is correct when it causes a [physical, chemical etc., mental, social] reference similar to what it symbolises in any reliable user agent. Thus, for

any given group of symbol users, something will be determined with a certain stability that can be called proper meaning or good use (Ogden and Richards, 1966, p. 270-271 and 229-230).

Today the situation is different, compared to the time when Ogden and Richards were writing. There are, for example, neuroimaging techniques and electronic profiling and identification techniques on the web. In the "Summary" of Ogden and Richards' book "The Meaning of Meaning" (Ogden and Richards, 1966, p. 5-10), to which the structure of Marradi's argumentative approach referred to in the previous paragraph can be traced, we read that a better understanding of language, in general, produces sociological and scientific consequences. I consider Ogden and Richards two pioneers of cognitive science, when computers had not yet been invented and at a time when cognitive science was already beginning to take shape: linguistics, literary criticism, neurology, psychology, biology and philosophy (of the mind). On the birth of cognitive science, see Tabossi (1998, p. 17-20). The two authors are the founders of a new science: the science of symbolism, or of representation and processes of representation, *i.e.* the study of the influence of language on thought, which takes into account not only words and thoughts (words symbolise thoughts) but also things and which poses the problem of what happens practically in discussions (the meaning of meaning). Symbolism is not only concerned with the role of language in the everyday lives of human beings, but also with the role played by all kinds of signs and symbols and, in particular, the influence of all kinds of signs and symbols on thought.

Symbolism as a science [is] an essential prerequisite for all other sciences. Together with the areas of grammar and logic that it does not make superfluous, this science covers what has hitherto been called metaphysics, integrating the work of scientists in every branch of their research. Every critical interpretation of symbols requires an understanding of sign situations [...] A new science, the science of symbolism [which I consider to be of great importance for cognitive science and sociology, if conducted within cognitive science], is about to be born, and with it a new educational technique will be born [...] It [symbolism] carries out a special investigation into the ways in which symbols help or hinder us in thinking about things» (Ogden and Richards, 1966, p. 275, 264 and 35) and is aware of the fact that every symbolic apparatus is exposed to imperfection and incompleteness.

Science of symbolism has as its main points: 1) language is a system of signs; 2) the analysis of interpretation must be done in causal terms; 3) the functions of language can be divided into two groups: the symbolic and the emotional; 4) the dissection and clarification of "meaning"; 5) the examination of "verbal problems" (*see* Ogden and Richards, 1966, p. 15-20). The desire to bring interpretation, as referred to in point 2), back into causal patterns (interpretation understood as a purely causal process) can be better understood if one points out that Ogden and Richards intend to distance themselves from esoteric doctrines of meaning, such as the dialectical devices of medieval theologians. These are doctrines that are closely related to religions. Instead, the two authors openly want to address

those who regard interpretation as a purely causal process and believe that when one interprets the meaning of something it can only be explained in causal terms (while at the same time admitting an entirely different meaning of meaning, whereby the "meaning" of a poem or a religion would be the feeling or attitude they evoke (Ogden and Richards, 1966, p. 201).

As referred to in point 3), for the two authors, it is from the confusion between the two functions of language that the controversies between vitalism and mechanism, between materialism and idealism, between religion and science arise. The science of meaning (or semantics) starts from the problem of correspondence between word and fact (thoughts, words and things).

F. de Saussure [...] begins by asking, «What is the integral and concrete object of linguistics?» [...] the discourse (*le langage*), while being sufficiently concrete, is not integral insofar as it consists of a series of events. Sounds imply the movements of speech and at the same time, as instruments of thought, they imply ideas. Ideas [...] have a social aspect and an individual aspect, and at every moment language contains within itself both an established system and an evolution. «Thus, whichever way we approach the problem, we never find the integral object of linguistics». De Saussure does not pause at this point to ask what he is looking for [...] instead [as Weber does with social action, authority and the individual] [...] he invents a suitable object «*la langue*», language as opposed to discourse. "What is *langue*? [...] it is only a determinate part [of discourse (*le langage*)] [...] It is both a social product of the faculty of speech, and a set of necessary conventions adopted by the social body to make possible the exercise of this faculty by individuals [...] The *langue* is also «the sum total of the verbal images accumulated in all individuals, a treasure trove deposited by the practice of speaking in the members of a given community; a grammatical system, virtually existing in each brain, or more precisely in the brains of a body of individuals; in fact, the *langue* is not complete in any of them, its existence is perfect only in the mass» [...] Unfortunately, this theory of signs, neglecting entirely the things for which signs exist [the referents], was cut off from all contact with scientific methods of verification from the outset [...] «All discourse» says [ethnologist] Boas, «is intended to serve the communication of ideas». Ideas, however, are only very indirectly accessible to outside observers, and we therefore need a theory that connects words to things through the ideas they symbolise, if any. We need, that is to say, separate analyses of the relations between words and ideas and between ideas and things [...] The analysis of the communication process has a psychological aspect, and today psychology has reached such a level that this aspect could be successfully addressed. Until this had been achieved, a science of symbolism remained necessarily latent [...] Words [...] do not «signify» anything in themselves [...] Only when the thinker makes use of words [*thought or reference*] do they [*symbol*] take the place of something [*referent*], *i.e.*, in a certain sense, they possess a «meaning» [*see figure no. 1*] [...] But in addition to this referential use, predominant for any reflexive, intellectual use of language, words fulfil other emotional [non-symbolic] functions. However, this can be better examined when the scheme of rigorous expression and intellectual communication has been set up [sign theory] [...] But for the analysis of the senses of «meaning» [...] it is preferable to start from the relations between thoughts, words and things [*see figure no. 1*], as they are posed in the case of reflexive discourse uncomplicated by sentimental, diplomatic or other interferences [other functions of language] (Ogden and Richards, 1966, p. 32-36). If we restrict the object of the search to «ideas» and words, *i.e.* to the left side of our triangle [*see figure no. 1*], and omit any frank recognition of the world outside ourselves [and, from my point of view, leave out human beings, taken as such and not as ideal types, *see* Pinello (2021)], we inevitably introduce confusing elements into such topics as perceptual knowledge, verification and meaning itself (Ogden and Richards, 1966, p. 45).

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This is the description/explanation of the «Ogden and Richards Triangle» (concerns affirmations):

This can be illustrated simply by means of a diagram, in which the three factors that come into play every time a statement is made or occurs are placed on the corners of the triangle, while the relations between them are represented by the sides [...] the base of the triangle is composed quite differently from each of the other sides [...] Causal relations exist between a thought and a symbol [*continued*].

On this point (causal relations, «an interpretation of thought in purely causal terms, without introducing unique relations discovered *ad hoc*», Ogden e Richards, 1966, p. 77), see Alberto Marradi's criticism in the previous paragraph, with the exception of mathematical, scientific and musical notations. Bear in mind, however, that Ogden and Richards write that they use causal language for convenience of exposition, being well aware that the more complex treatment avoids «any mention of causes, effects and dependencies» by dealing exclusively with «observable correlations» and «contextual uniformities between events». Moreover, they use the notion of context (physical and psychological as well as of intention towards the reference and of particular and general conviction), or field of forces, which they define, adding that the «rubbing [of a match] in America and a flame in China do not constitute a similar context», Ogden and Richards, 1966, p. 78; 83. Hence the importance of experience to establish which relationships occur or may occur, in terms of probability.

When we speak, the symbolism we employ is determined partly by the reference and partly by social and psychological factors: the goal for which we make the reference, the intended effects of our symbols on other people, and our own attitude. When we hear what is said, the symbols cause us to perform an act of reference and at the same time to assume an attitude that will be, depending on the circumstances, more or less similar to the act and attitude of the speaker. There is also a relationship between the thought and the referent: more or less direct (as when we think of or pay attention to a coloured surface), or indirect (as when we «think of» or «refer to» Napoleon), in which case there can be a very long chain of logical situations between the act and its referent [...] Between the symbol and the referent there is no important relationship, except the indirect one consisting in the fact that someone uses it instead of a referent. Symbol and referent, that is, are not directly connected (and when, for grammatical reasons, we assume such a relation, it will only be an attributed relation, and not a real one) but only indirectly along the other two sides of the triangle. It may seem pointless to insist that there is no direct connection between saying «dog», the word, and certain objects common in our streets, and that the only connection is that of using the word when we refer to the animal [on this point, see Patrizia Tabossi's critique, 2002, p. 18-22] (Ogden and Richards, 1966, p. 36-38). An exceptional case is when the symbol used is more or less directly similar to the referent in whose place it is used, as can happen for example when it is an onomatopoeic word or an image, or a gesture, or a drawing [or language of the «primitives» or classical Greece]. In this case the triangle is completed: the base is provided [...] Imitative and non-imitative languages are completely different in principle. «Being in the place of» and «representing» are different relations. However, it is sometimes convenient to express oneself as if there were some direct relationship between symbol and referent (Ogden and Richards, 1966, footnote no. 6 on p. 49-50). Whenever we «perceive» what we call «a chair», we interpret a certain set of data (changes in sensory objects) and treat them as signs of a referent. Similarly, even before the interpretation of a word, the almost automatic interpretation of a group of successive sounds or letters as *a word* occurs. In addition to the external world, we can also explore [...] the sign situations implicit in mental events, and the developments or processes of interpretation themselves. We need neither limit ourselves to arbitrary generalisations drawn from introspection [...] nor deny the existence of images and other «mental» happenings in the manner of behaviourists [...] Advanced behaviourism will have much to say (Ogden and Richards, 1996, p. 46-47).

Ogden and Richards, starting from the assumption that the «systematisation of symbols» corresponds to the «organisation of human thought» (I would add a reference to the problems relating to the connectome and epigenetics), consider the theory according to which mathematical symbols become «thinking machines» and the theory according to which, on the other hand, mathematics is not a «thinking machine» but a set of instructions for the use of the «human mental machine» (Ogden and Richards, 1966, p. 116). «Definitions [insofar as they express the meaning of symbols] are of great importance in the construction of scientific deductive systems: those automatic thinking machines for which logic and mathematics constitute, as it were, the rules or instructions» (Ogden and Richards, 1966, p. 147). But it is also important to ask the question of the meaning of definitions or, better still, the meaning of the meaning of definitions and the meaning of the meaning of mathematics and logic. The science of symbolism in fact also implies a theory of the definition, or interpretation of sign situations, both complex (*e.g.* «being a benevolent uncle to») and simple (*e.g.* «being an uncle», «being benevolent»). It deals with genres, species, differences, types, classifications, lists, connotations, denotations, intensive/connotative definitions, extensive definitions, symbolic metaphors, emotional metaphors, associations, abstraction, intuition, of examples/experiences, of descriptions, of the problem of grammatical (dictionaries can be used to search for the referents, of which words are symbols, and the meanings of words) and logical perimeters of language, of the problem of whether we «define things or words» (do we define «the horse» or the word «horse»? problem of real or symbolic definitions, of references, of *definiendum* and *definiens*), etc. All these issues depend on the search for the meaning of meaning (*i.e.* «how to manipulate symbols correctly, eliminating residual imperfections?»; on residues see Pinello, 2022) and sign theory. «It is not always new words that are needed, but a means of verifying them as symbols, a means of quickly discovering why they were used on a given occasion, *i.e.* what they referred to» (Ogden and Richards, 1966, p. 44).

Logic and grammar, according to the science of symbolism, must study the form and structure of complex references and the form and structure of their symbols. Grammar can be regarded as «the natural history of symbolic systems». But, and this is the crux of the matter, it is not possible to proceed to a normative, logical and grammatical examination of words without simultaneously proceeding to the normative examination of thought and the examination of references. I would add of the connectome and the electro-chemical cerebro-mental processes. Ogden and Richards

propose canons of symbolism: 1) the canon of univocity (“A is A”, *i.e.* every symbol has a referent); 2) the canon of definition, in cases of non-univocity in cases (there are traps more dangerous than ambiguity) but in the presence of the same connotation (different symbols having the same reference); 3) the canon of extension (*e.g.* classes and universals: they do not concern ontology but symbolic fiction, *i.e.* the meaning of meaning), in the case of uncertain symbols that can be clarified by extension (analysis and rationalisation: extension makes it possible to distinguish uncertain from false assertions); 4) the canon of actuality and experience (“cigarette lit now”); 5) the canon of compatibility: «concerns the construction of complex symbols from simple or less complex symbols» (Ogden and Richards, 1966, p. 129). These are the Aristotelian laws of identity, contradiction and the excluded third; 6) the canon of individuality: «All possible referents together form an order, such that each referent has a unique location (see the canon of compatibility) only in this order» (Ogden and Richards, 1966, p. 130).

Here is an example of the third canon (the canon of extension): «Hamlet was mad» is an enunciate that can be extended into «Hamlet was mad on stage»; in the reverse case we speak of contraction. There are also the pseudo-extensions, or “symbolic superfetations”, however, which further confuse rather than clarify uncertainties (*see* Ogden and Richards, 1966, p. 114-135). Previously, the researchers of the influence of language on thought (linguistic theory) had been philosophers, philologists and ethnologists. The latter, generally having a psychological background, dealt with “ideas” considered as “expressed” by words and not also with the grammars of the “primitive” peoples observed and their environment. Regarding the fourth canon (the canon of actuality and experience): «A symbol refers to what it actually refers to in its actual use; it does not necessarily refer to what it should refer to according to the best usage, or to what is understood by an interpreter, or to what the one who used it intended to refer to» (Ogden and Richards, 1966, p. 127).

For Ogden and Richards, these six canons are the fundamental axioms of the correct use of the words of reasoning and form part of a system that enables «the transformations and substitutions of symbols by which scientific language strives to reflect and record its distinctions and conclusions: operations to which [...] primitive man attributed something magical» (Ogden and Richards, 1966, p. 131-132). With regard to the canon of univocity, the two authors write that in aesthetics, politics, psychology, sociology, etc., «the stage of systematic symbolisation» has not been reached, by means of fixed and unalterable definitions, because «the most systematised sciences are those that deal with the simplest aspects of nature» while those that deal with difficult subjects are still at the stage where they are debating which symbolisation to adopt (*see* Ogden and Richards, 1966, p. 148).

In this regard, I connect to Talcott Parsons’ attempt to formulate a general theory of social action, building on the theories of Vilfredo Pareto, Émile Durkheim and Max Weber and addressing the issue of residuals (*see* Pinello, 2022). Parsons seems to have followed Ogden’s and Richards’ advice,

one must first of all avoid the hidden and covert conflict between rival systems [...] In discussions in which “faith”, “beautiful”, “freedom”, “good”, “conviction”, “energy”, “justice”, “state” recur again and again, many terms are used without precise reference [...] the curious instinctive tendency to believe that a word possesses a true and exact use [...] has its roots in magic [...] it is the instinctive attitude towards words as natural receptacles of power [...]. In practice [...] words are used for their persuasive and emotional effects almost as much as for their strictly symbolic value [...] The recognition that many of the most common topics of debate are steeped in words [...] symbolically empty but emotionally effective is preparatory to the extension of the scientific method to such matters [...] For those who stand before symbols without thinking [in everyday life, acting in an immediate and direct, automatic way], it is often difficult to believe that convenient words such as “beauty”, “meaning” or “truth” are in fact not single words at all, but series of superficially indistinguishable and however profoundly differentiated symbols [...] At the beginning of a serious examination of these topics we should therefore provide ourselves with as complete a list as possible of the different uses of the main words» (Ogden and Richards, 1966, p. 148-150 and 155-156; *see* Pinello, 2022, especially Parsons’ General Theory of Social Action, and Pinello 2021).

Also in the «Summary», we read that language (verbal and gestural) is the vehicle not only of ideas (verbal language), but also of elementary emotions (emotions) and imagination. Imagination implies the problem of generalisation, universalisation, abstraction and intuition. These problems concern the formation of Weberian ideatypes. I, starting from a critique of Max Weber, argued that social actions are language, with reference to the «Ogden and Richards Triangle» and cognitive science (*see* Pinello, 2019). Imagery can be dangerous and analyses based on imagination can be flawed. On imagination and gossip theory see Harari (2019) and Pinello (2021). Connected to the topic of imagination is the question of intuition. Ogden and Richards contrast intuition with analysis, arguing that both Bergson and the analysts are right and wrong at the same time. They are right because the former affirms the importance of the emotional function of language, the analysts the symbolic importance. Bergson and the analysts, however, err at the same time, because they do not «see clearly that language must have [together] these two functions. It is like arguing whether the mouth is for talking or for eating» (Ogden and Richards, 1966, p. 260). There is also the problem of slow thinking and fast thinking (*see* Kahneman, 2019, and Pinello, 2020a). The two founders of the science of symbolism, in addition to identifying the canons I mentioned earlier, as we shall see, indicate five functions of language, which can also be used to address the issue of slow thoughts and fast thoughts.

The Intuition has to do also with instinctive interpretations (*see* Kahneman, 2019, and Pinello, 2021). The relationship between the words of language and things (referents) is indirect, because it takes place through interpretation; through a thinking that has to do with perception, because the changes in our sensory organs are the initial signs that we interpret and because direct learning is an event that takes place in the nerves.

The perceptual processes provoked in a subject by the action of external objects upon him have been correctly called “perceptions” and so have the objects themselves, out of understandable confusion [...] [The] “utraqistic fallacy” [consists in confusing the referent: is “perception” what one perceives or the fact of perceiving it or the emotion of perceiving it? Is “knowledge” what one knows or the fact of knowing it or the emotion of knowing it?]. Other processes, more or less abstract references obviously provoked, have similarly been called “conceptions”» (Ogden and Richards, 1966, p. 124).

The term concept (conception or references more or less abstract) is very equivocal and lends itself to the creation of various entities, including through instinctive interpretations. An interpretation can be erroneous, also because of misinterpretations and lies.

In examining conscious and critical processes of interpretation [e.g. induction theory], we must realise that [these] activities [...] are based on “instinctive” interpretations [...] Indeed, the very functioning of a differential equation – this process of maximally rational interpretation – will fail unless many “instinctive” interpretations, to which no mathematical [or methodological] treatment is currently applicable, are successfully implemented (Ogden and Richards, 1966, p. 98).

It is in this sense that for creative, or instinctive interpretations, there is no method (*see* Pinello, 2021). On statistical intuition and “instinctive” interpretation see Daniel Kahneman (2019). The problem addressed by Kahneman and Amos Tversky, albeit in different terms, is also posed by Ogden and Richards: «mental processes are not determined in a purely psychological way, but also, for example, by blood pressure [...] whether an interpretation is true or false does not depend solely on psychological contexts, unless one is talking about psychology» (Ogden and Richards, 1966, p. 99).

But the science of symbolism, as Ogden and Richards conceive it, cannot proceed from intuition, “instinctive” (or intuitive, or automatic) interpretation and introspection, although it must seriously consider this aspect of the matter as well. In order to formulate a theory of interpretation one has to start from the observation of others (on this point see Mead’s Triangle, figure no. 2, which I will discuss in the next article in this Journal), the method of introspection being uncertain and a solipsistic explanation of communication being impossible. Sign theory must be developed from the observation of other human beings and can only accept the evidence provided by introspection when there are valid criteria for evaluating it. «There are [...] good reasons why what goes on in us remains partly hidden from us» (Ogden and Richards, 1966, p. 45). There are considerable differences between speakers with regard to symbolisation processes. The recognition of sounds as words is not necessarily a conscious operation. Ogden and Richards’ perspective involves several problems: how and to what extent do the emotional functions of language interfere with referential functions? How and up to what threshold can we reach references directly? How do we deal with the «orgy of verb-mania» and the «orgy of graph-mania»? (*see* Ogden and Richards, 1966, p. 65; 69). The two authors also use the term logomachy (*see* Ogden and Richards, 1966, p. 189).

There is also another problem: religions, which carry considerable weight in terms of faith news, together with fake news. Religions (churches) «have deliberately exploited the confusion of [symbolic and emotional] functions and depend on them to such an extent that they present unquestionably pathological developments» (Ogden and Richards, 1966, p. 182). It is therefore necessary to take into account the «infantile processes» from which attachments and secure foundations arise (*see* Bowlby, in Pinello 2022). Only through the analysis of sign-situations (which can also be implicit) and symbolic situations is it possible to escape from the influences of the conception of the name-soul, secret names, verbal superstition (word-related superstitions, which still today, as a millenary social legacy [and, in my view, biological], vitiate the most attentive thought processes and whose meaning of meaning must be analysed, which, like a continuum, has come down to us), verbal magic, verbal medicine (e.g. of the ancient Egyptian and the texts of the Pyramids), onomancy, incantations, the alleged Parmenidean, Platonic and Neo-Platonic world of being, the mysticism of the logicians, metaphysics.

The technique of the modern logician tends to conceal the verbal foundations of his structure, whereas in Greek philosophy these foundations are clearly revealed. Ancient writers are imbued with the relics of primitive word magic (Ogden and Richards, 1966, p. 58).

It is the question of the “magic words”, the “enchanted world”, the “disenchanted world” of Durkheim (1963) and Weber (2004) the scientific, non-scientific and ascientific theories – including pre-scientific speculation – and the problem of residuals and the general structure theory of social action of Talcott Parsons (1987; *see* Pinello, 2022). It is also the problem of the re-enchanted world (*see* Pinello, 2022a), of logical re-enchantment, or logical mysticism, and of metaphysical sociology. Parsons’ book on the general structure of social action, about which I argued in an article in this Journal (*see* Pinello, 2022), can be seen as a response to Ogden and Richards’ search for scientific meaning:

Most civilised persons are completely unaware of how these residues survive in them, and even less aware of how their behaviour is shaped by the invisible hand of the past [...] It may be that in the future the modern logician will be considered the true mystic, once the rational basis of the world he believes in has been scientifically examined [...] thanks to contributions [of some researchers], a science of symbolism [science that is also a theory of thought] has become possible, but it is necessary to be constantly aware of the particular forms in which the power of words can make itself felt in modern times [...] In logic, as we have seen, [words, with their power] lead to the creation of non-existent entities, universals, properties and so on (Ogden and Richards, 1966, p. 53; 64-65; 68-69; *see* Pinello, 2022a).

The tendency to build a world, instead of explaining and understanding the world, in the economic field is an expression of the most exaggerated neo-liberalism. Human beings act, mentally and socially, between cognitive constraints and institutional constraints (*see* Pinello, 2021). Among institutional constraints, language (actually, one should also consider economics, finance, religions and churches) is the most important. The concept of “institutional constraint” can be derived from Durkheim’s notion of social fact. These are modes of acting and feeling external to the individual, yet endowed with a power of coercion, by virtue of which power they impose themselves on the individual. With or without his consent. For Ogden and Richards, the language has five functions (five categories: contextual theory of interpretation), which we shall now see and which must be taken into account when studying symbols/signs. The symbolic function (affirmative use: recording, arranging, organising and communicating references, analysing) and the emotional function (expressing or arousing sentiments, attitudes, moods, intentions, intuition, etc.) are the two most important functions. It is likely that the emotional function (I would add, phylogenetically and ontogenetically) is more primitive than the symbolic one. There are trade-offs between these two functions. In fact, the phrase form is the result of a compromise between symbolisation and emotional factors. From my point of view, biological, genetic, epigenetic, environmental, computer and telematic factors must also be taken into account. The contexts required for the use of proper nouns are simpler than those of descriptive phrases. Grammar, which performs a normative task, is the natural history of symbolic systems. The theory of meaning (the semantics) depends on the theory of signs (the semiology or semiotics) and context is also important and, therefore, must be investigated in detail (contextual reference theory). However, one must not make the mistake of reducing the science of symbolism to semantics and semiotics and general linguistics. A discussion of the composition of references «is a discussion of the reciprocal relations between contexts [...] All true or false beliefs [“here in a moment there will be something green”] are theoretically analysable as compounds whose components are simple references, definite or indefinite, linked by the relations that give the reference its “logical form”» (Ogden e Richards, 1966, p. 92; 95). One could also cite Wittgenstein’s «Tractatus logico-philosophicus» (Wittgenstein, 1984), an author known to Ogden and Richards, pointing out that it only considers external physical and material references. The central problem of language is meaning (semantics).

In a certain sense [...] the question to be answered is, in short: «What happens when we judge, or believe, or think something: what kind of entity does this something consist of and how does it relate to the mental event represented by our judging, believing, thinking?». This question is traditionally» and unsatisfactorily «addressed by introspection and logical judgement analysis [...] Logic [...] can be considered the science of systematising symbols» (Ogden and Richards, 1966, p. 75 and p. 114; see also Tabossi, 2002; Kahneman, 2019).

Let us now look at the five functions of language (five categories: contextual theory of interpretation). The five functions of language are: «I) The symbolisation of the reference; II) The expression of the attitude towards the listener; III) The expression of the attitude towards the referent; IV) The elicitation of the intended effects; V) The stabilisation of the reference.

[...] whenever we want to deal with things that are not immediately present, that is, things that are not found in very simple contexts close to our present experience, we need particular supports and points of reference [of secure bases, *see* Pinello (2022)], and the same is true for all our more complicated and refined references; therefore, in all these cases the strictly symbolic function of words easily becomes more important than any other [...] the same distinction and diversity of functions exist in non-verbal languages. When we look at a painting or when we read a poem, we can assume one or two attitudes. We can accept the painting or poem as stimuli, letting their qualities of colour and form act emotionally on us. Or, with a different attitude, we can interpret shapes and colours (the words). The first of these attitudes is not necessarily preliminary to the second. To assume it would be to have misunderstood the distinction» (Ogden and Richards, 1966, p. 249, 254-255 and 258).

The study of the functions of language is important (*e.g.* poetic, aesthetic, religious evocative aspects, etc.) to distinguish non-scientific and ascientific discourses from scientific symbolic affirmations (*see* Pinello, 2022). Ogden and Richards, in addition to the six “canons of symbolism” and the five “functions of language”, identify eight “defining paths”, three orders of meaning ideas to approach the definition of meaning (the meaning of meaning) and sixteen definitions of beauty, each of which has its own field of referents (as far as symbolic function is concerned) and emotional uses (as far as the emotional function is concerned). «The inability to distinguish between emotional and symbolic uses is a source of much confusion in discussion and research» (Ogden and Richards, 1966, p. 273). One effect of the classification of meaning into three orders of ideas of meaning (linguistically generated phantasms, occasional and eccentric uses, sign and symbolic situations) is the replacement, by extension, of the term “meaning” with the terms “intention”, “value”, “referent”, “emotion”, sometimes used as synonyms.

To address the question of meaning of meaning, Ogden and Richards start with a classification consisting of sixteen main definitions, which they question and problematise. The definitions cover the following topics: 1) meaning as an intrinsic property of words; 2) language as a non-analysable relation; 3) the dictionary and the examination of its meaning; 4) connotation as a logical artifice; 5) denotation as a hypostatized connotation; 6) meaning as a projected activity; 7) metaphor and meaning as intention; 8) affective-volitional aspects and meaning as location in a system 9) meaning interpreted from the point of view of practical consequences; 10) the pragmatists, *i.e.* meaning as that which is implied; 11) meaning as emotional coincidences; 12) the doctrine of natural signs; 13) meaning as psychological context; the need to check the validity of introspection; the non-definitive value of immediate conviction; why we must rely on symbols in abstract thought; meaning as referent; definition of contexts. 14) meaning as what the speaker should refer to; 15 and 16) good use and complications in the field of meaning due to symbolic situations.

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But too many interesting advances have occurred in the sciences, thanks to the repudiation of current symbols and the effort to replace them with more accurate expressions, for any naive theory that “meaning” is only “meaning” to be acceptable today [...] [This is the] central problem of knowing or “meaning” [...] Each decisive step forward in physics came at the expense of some generally accepted metaphysical explanation, and condensed into a convenient, synthetic, universally applied symbol [...] The coarser forms of verbal confusion have long been identified; but less attention has been paid to the more subtle and more frequent forms [...] The root of all trouble [over meaning of meaning] can be traced to the superstition [magical, religious] that words are somehow parts of things or always imply things corresponding to them [on this point, however, see Tabossi, 2002, p. 18-22]. [As] a rule, when we listen to anything, we spontaneously jump to an immediate conclusion, namely that the speaker is referring [reference] to what we would be referring to if we were speaking those words ourselves [...] the vagueness existing in the conversation is continuously revealed (Ogden and Richards, 1966, p. 38-41).

Ogden and Richards, referring to the war and quoting Thucydides, also denounce the very current problem of disinformation (*see*, Pinello 2020a): «“The meaning of words no longer had the same relationship to things, but was changed by men as seemed best to them”» (Ogden and Richards, 1966, p. 43). The authors, however, state that in their book they dealt exclusively with bona fide communication (*i.e.* the use of symbols as such and not also with malicious intent and deception), except only with the issue of the derivative use of meaning, which originated from deception. Both intellectual and social forms of life are influenced by changes in our attitudes towards words and the way we use them.

III. THE «THREE LEVELS OF EXPLANATION OF COMPLEX INFORMATION PROCESSING SYSTEMS MODEL» BY MARR

Language (gestures/symbols), thought (brain-mind) and references (physical, chemical etc., social and mental) – see the «Ogden and Richards Triangle», figure no. 1 – constitute three distinguishable and different levels. This raises the question of whether it is possible to apply Marr’s «Three-level Model» to the «Ogden and Richards Triangle». See figures 3 and 1: «Thought or Reference» and «Referent» («Computational Theory»), «Symbol» («Representation and Process»). The difference between the «Ogden and Richards Triangle» and the «Marr Model» is that in the former, the hardware (Thought or Referent, *see* figure no. 1) is always and in any case the human being (human-thought) whereas in the latter («Realisation in hardware», *see* figure no. 3) it can be either the human being or the computer. In fact, Marr’s objective is to simulate in a computer what the brain/mind of a human being does (*see* Datteri, 2012, and the addition of the animal/human body simulated by a robot). But there are many problems and they mainly concern the meaning of meaning. Does what “something” means depend on “who” means it? Does it depend on intuition, because it is not fully present to the mind at a precise moment? What role does meaning play below the threshold of consciousness? Is personal meaning a trap? And the collective one? Can the problem of the meaning of linguistic symbols be reduced to the problem of the meaning of images, *i.e.* representations? Must images, or representations, or words that aim to become general and universal (such as “entity”) be cleansed of “mnemonic causality” (with respect to physical, material references, and with respect to human beings), of mnemonic effects relative to meaning? Should real meaning be overridden by verbal meaning? Does meaning depend on consequences? In short, what is the significance of meaning? Ogden and Richards write that there is the «dogma of the absolute singularity of the relationship between the mind and its objects», *i.e.* when we human beings think about something, with this something (or sometimes with something else) we have a relationship of an absolutely unique kind. The thinking of human beings is an event not comparable to anything else. The problem is the conscious «concept» (or «universal» or «property») of «liveness» or «being alive» that applies to human beings and not to computers: «from the awareness of a feeling of yellow “I can go directly to the knowledge of the enunciate: ‘I have a feeling of yellow’”» (Ogden and Richards, 1966, p. 76; *see also* De Palma e Pareti, 2015, Pinello, 2022). «I am self-aware that I have a sensation of yellow». This is certainly true, but it does not solve the problem of the meaning of meaning, indeed it complicates it considerably. It is in fact the problem of consciousness. The approach proposed by Ogden and Richards is certainly useful and full of consequences, which is why it should be taken into consideration, together with the theory of mind, self and society proposed by Mead, which I will discuss in my next article (also in this Journal).

I now quote Tabossi’s summary of the problem underlying Marr’s three-level model (*see* figure no. 3).

Suppose, for example, we investigate how intelligent systems interact with their environment by attempting to specify: a) the characteristics of the environment [*e.g.*, the group]; b) the information [*e.g.*, goals, values, affects, traditions] that guides the system [individual agent] in its interactions [social actions] with it; c) the way in which the system [individual agent] is structured [the idealtyp] so that it can participate in those interactions. Such an articulation [traceable to Weber’s *Verstehen*] would seem natural enough; were it not that its apparent reasonableness does not seem to be matched by real practicability, since the three points interact in such a way that any solution to one of them depends on the solution given to one of the others and vice versa. [...] Taking these difficulties into account, how has intelligent systems science attempted to solve the intricate problems associated with the study of its complex object? [...] Suppose [now] we want to study how a cash register works, when paying a bill in a shop [...] for computational theory [...] it would make no difference if there were a cashier instead of a cash register. What it must specify instead is *what* the cash register or the cashier does when they pay a bill, and since what they do are in fact sums, it follows that the first thing to be specified is a theory of arithmetic, within which properties of addition such as the commutative or associative property can be explained. However, this does not exhaust the task of computational theory, which must also clarify *why* a recorder or a cashier does addition. In this case, the reason, which is rather simple, could be that addition better than other calculations allows us to grasp some of the properties that a bill [to pay in a shop] intuitively should have [...] If computational theory allows us to understand what a certain cognitive function consists of and why it is performed, it says nothing about how that function can be realised [...] The clarification of this aspect of cognitive systems concerns the third of the explanatory levels proposed by Marr: that of representations

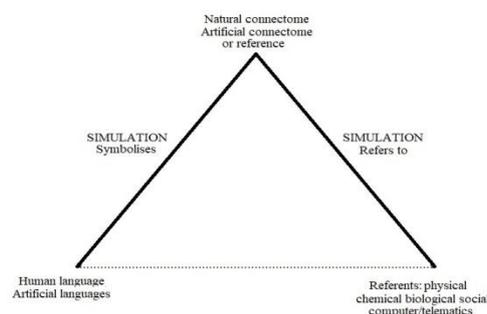
and processes. [...] If [...] the activities of intelligent systems are conceived, as cognitive science does, as information processing, *i.e.* the acquisition, memorisation and transformation of knowledge, it follows that explaining how those activities are carried out corresponds to asking how the various operations – processes – manipulate information [...] Of course, the way in which the former can be specified is not independent of how the latter are characterised: “five plus three” and “5 + 3” are two ways of conveying the same information, but it is highly improbable that the linguistic form allows the sum to be calculated by a process involving the placing of addends in columns, as can be done using numerical representation (p. 22-26).

There remains the big problem of realisation in hardware, which is also the problem of simulation (*see* Datteri, 2012, with the addition of the animal/human body, simulated by a robot), for which I am working on a monographic essay.

According to a tradition certainly influential in neuroscience, but also in psychology, the explanation of cognitive activities such as seeing or speaking must ultimately lie in the way the brain functions. Cognitive science does not, of course, deny the importance of discovering the mechanisms that form the material basis of cognitive activities in living systems, and indeed regards the identification of those mechanisms as one of its goals. This is, following Marr, the level of explanation called realisation in hardware, in which the way in which a structure can give rise to a cognitive capacity is investigated, and if the same activity can be performed by physically different systems, then the explanations required at this level will concern the functioning of each of the structures in which that capacity is realised [...] but precisely because physically different structures can produce the same functions, the understanding of complex systems cannot be exhausted only in the explanation of their material structure: «[...] If one hopes to achieve a full understanding of a complicated system such as a nervous system [...] then one must be prepared to contemplate different kinds of explanation at different levels of description that are linked, at least in principle, into a cohesive whole» (Tabossi, 1998, p. 23-24).

V. CONCLUSION

It is not only possible, but also useful to apply the Marr’s «Three Level Model» to «Ogden and Richards Triangle», in order to overcome the Weberian *Verstehen*, which has now become metaphysical. Today Marr’s model is stressed by the search for a simulation in machines (computers and robots), of animal and human cognitive capacities, that is ever more adherent to and corresponds to the reality of the brain, mind and body of animals and humans, as well as the reality of how animals and humans interact with each other, in an environment. A reality investigated in its meaning and in meaning of its meaning («Ogden and Richards Triangle») and not using metaphysical Weberian idealtypes. Simulation processes (*see* Datteri, 2012), however, can become increasingly adherent to reality to the extent that become increasingly adherent to reality the explanations provided by neuroscience and, in general, by cognitive science, including the new sociology, *i.e.* a sociology capable of making its own contribution to cognitive science. Indeed, an attempt is being made to artificially reproduce the human connectome and its functioning, as well as the interaction between human connectomes, with each other, in the environment inside the human body and with the environment outside (physical, chemical etc., mental and social) the human body. «But the symptomatology of behaviour in relation to language is a complicated matter, and little confidence can be placed in observations that cannot be verified by a thorough knowledge of the general behaviour of the subject» (Ogden and Richards, 1966, p. 241). A contribution of knowledge in this direction is already coming from Big Data, Artificial Intelligence (Machine Learning) and electronic profiling and identification techniques on the web. In relation to this new context (new since Marr theorised his three-level model), I propose the «Triangle of Simulation» in machine (computers and robots). This model assumes a realisation in the machine, of animal and human cognitive capacities, increasingly corresponding to animal and human reality. For the notions of hybridisation and replacement, see Pinello (2020).



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