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The Rheomode of Language of David Bohm:
Is this an idea without a precedent in the history of thought?

Maxim I. Stamenov
Georg-August-Universität Göttingen
Göttingen, Germany
&
Institute of the Bulgarian Language
Bulgarian Academy of Sciences
Sofia, Bulgaria

1. Coda : The myth of ‘perfect’ language

It is an old myth of mankind that there can be developed or uncovered a type of language that is ‘perfect’ in the sense of completely fitting (being attuned) to the nature of thought as well as to the nature of reality mirroring both of them in a sort of perfect coincidence (perfect symmetry). If one reads the monograph of Umberto Eco (1995) *In Search of the Perfect Language* one cannot but be stricken by the permanent re-appearance of this idea in different garbs throughout the last 20 centuries of European history. This idea appears also to have a history of its own in each of the other main civilizations in the world.

Thus, Eco points out that the ‘speculative grammar’ of the Modistae asserted a relation of specular correspondence between language, thought and the nature of things. For them, it was a given that the *modi intelligendi* and, consequently the *modi significandi* reflected the *modi essendi* of things themselves (cf. Eco 1995: 44). The Modistae were, by all means not the only ones to come with ideas along these lines. For Agrippa von Nettesheim (*De occulta philosophia*, I, 74), the Hebrew writing must be considered as particularly sacred;

it exhibits perfect correspondence between letters, things and numbers (cf. Eco 1995: 120). One can continue along these lines in tracing different aspects of the belief of the perfect language that corresponded to the original one given to Adam by the God, and with which Adam gave the ‘true’ names to the things in the world, the names that correspond to their essences.

We are, however, children of a different world, from this point of view (among others). We do not believe in such superstitions. We know that language is conventional means for communication and nobody can expect to find in it high degree of correspondence to reality outside some quite restricted limits. Just to the opposite. We became accustomed to believe to the claims of many physicists and philosophers alike that language is rather a hindrance on the way to ‘proper’ representation of the physical reality, the true reality, the only reality, the final reality. It is a matter of common sense nowadays both in theoretical physics as well as in the cognitive sciences to maintain, for example, that the mental space does not actually correspond to a physical space. “It merely represents the information of a physical space.” Thus we have an essence that the two still share, the so called “information”; everything else is not necessarily the same. And we have a residual problem – how to define ‘information’. (For the development of an ontologically motivated concept of ‘active information’ at the quantum level of reality cf. Pylkkänen 1992.)

Vestiges of the myth of perfect and universal language, however, still remain in different garbs in the modern philosophies up to the XX century (here I will follow again the overview of Eco 1995). Thus Ludwig Wittgenstein had the ambition to create a language whose signs were univocal and whose propositions mirrored the logical structure of reality itself (*Tractatus logico-philosophicus*, 1921-2, 3.325ff. and 4.121). Rudolf Carnap proposed constructing a logical system of objects and concepts such that all concepts might be derived from a single nucleus of prime ideas via formal rules (*Der logische Aufbau der Welt*, 1922-5). Russell & Whitehead in their *Principia mathematica* developed a formal language, i.e., a language only with syntax, and pointed out that it could become a ‘perfect language’ with an addition of a vocabulary. Eco comments in his brief review of these new reminiscences of old ideas, that above mentioned philosophers all hoped to construct a scientific language, perfect within its chosen range of competence, a language that would be universal as well (cf. Eco 1995: 313). These philosophers and logicians did not claim that such a language would replace the natural language in its common use. Still, their attempt was based on

the belief that the natural language is deficient in different ways in representing reality, as it ‘really is’, while such a representation of “the logical structure of reality” is possible in making revisions in its structure (to certain extent and in certain directions, fighting, first of all, such features of natural language like vagueness, polysemy, and ambiguity and thus clarifying the reference potential of its expressions).

2. The rheomode of language – the basic idea

In his most popular book the theoretical physicist David Bohm (1980) proposed *inter alia* an experiment with language, and this experiment is strikingly different from those carried in linguistics, psycholinguistics, sociolinguistics, communication studies, cognitive psychology & cognitive science, philosophy, logic, etc. He proposes “to *experiment* with changes in the structure of the common language” (Bohm 1980: 27).

From linguistic, psychological and philosophical point of view, the proposal of Bohm for an ‘alternative’ language is an unprecedented one along the following lines. Nobody before him claimed that in order to comprehend how language contributes to the way thought is constituted it is not enough to follow it; it is necessary actively to interfere with its function in order to discern clearly ‘same’ and ‘different’ in its structures. The practice with no alternative in linguistics is to study language in manipulating the acceptability and grammaticality of its units with different sorts of permutations deletions and additions in their structure. To this *status quo* Bohm offers the following *Ausweg*:

[...] one of the best ways of learning how one is conditioned by habit (such as the common usage of language is, to a large extent) is to give careful and sustained attention to one’s overall reaction when one ‘makes the test’ of seeing what takes place when one is doing something significantly different from the automatic and accustomed function. (Bohm 1980: 28)

Bohm starts his argument with the point that subject-verb-object sentence structure is common to the syntax of *modern* languages and this structure powerfully builds in us the implicit and ever present presupposition that action arises in separate entity and this action, in the case it is described by a transitive

verb, crosses over the *space* between them (the subject and object) to another separate entity, the object (Bohm 1980: 29). In some ancient languages like Hebrew, however, the verb was given primary, i.e., basic, importance in the grammatical structure of language itself, i.e., *not in its description only*, as the roots of almost all words in Hebrew were certain verbal forms, while adverbs, adjectives, and nouns were obtained by modifying the verbal form with prefixes, suffixes, etc. In other words, the ‘inner form’ of these words was directly and explicitly pointing to some action, event, or ‘movement’ as the ‘pedestal’ (cf. Harweg 1992, for one of the possible uses of this metaphor in linguistics) of the sense of the word in question.

The aim of the new mode of language, the *rheomode* (from *rheo*, a Greek verb, meaning “to flow”) is to develop such structures of language “in which movement is to be taken as primary in our thinking and in which this notion will be incorporated into the language structure by allowing the verb rather than the noun to play a primary role” (Bohm 1980: 30). The aim is, *ergo*, to create a mode of language with a new structure that is not prone toward fragmentation as is the case with our native ones.

As a cue where to start re-building the bewildering complexity of natural language, the high prominence in contemporary usage of the word ‘relevant’ is pointed out (cf. Sperber & Wilson 1986, about an analysis of this concept in the context of linguistic pragmatics), but the latter is interpreted in mentalistic terms:

[...] to see the relevance or irrelevance of a statement is primarily an act of perception of a very high order similar to that involved in seeing its truth or falsity. In one sense the question of relevance comes before that of truth, because to ask whether a statement is true or false presupposes that it is relevant (so that to try to assert the truth or falsity of an irrelevant statement is a form of confusion), but in a deeper sense the seeing of relevance or irrelevance is evidently an aspect of the perception of truth in its overall meaning. (Bohm, 1980: 33)

One can further develop this idea by citing another passage from the book under discussion:

[...] it is not right, for example, to regard the division between relevance and irrelevance as a form of accumulated knowledge of properties belonging to statements (e.g., by saying that certain statements ‘possess’ relevance while others do not). Rather, in each case, the statement of relevance or irrelevance is communicating a perception taking place at the moment of expression, and is the individual context indicated in that moment. [...] when relevance or irrelevance is communicated, one has to understand that this is not a hard and fast division between opposing categories but, rather, an expression of an ever-changing perception, in which it is possible, for the moment, to see a fit or non-fit between the content lifted into attention and the context to which it refers. (Bohm, 1980: 34)

In order to make ‘relevance’ move appropriately we have to “make it fluid again”. The fast and strict formal divisions could be made again flexible and fluid by conceptualizing ‘relevance’ not as a state-bound noun, but to consider it as a movement, an action-bound verb. We are invited to re-build the ‘inner form’ of the verb ‘to re-levate’. It ultimately comes from the root ‘to levate’, “to lift”. The meaning of this verb is re-defined using as a ‘pedestal’ (cf. Harweg 1992) the general sense of “to lift” in the following way:

The spontaneous and unrestricted act of lifting into attention any content whatsoever, which includes the lifting into attention of the question of whether this content fits a broader context or not as well as that of lifting into attention the very function of *calling attention* which is initiated by the verb itself. (Bohm, 1980: 35)

One must mention at least three characteristics of this most basic ‘movement’ in the rheomode of language:

- (a) The *spontaneousness and unrestrictedness of the act of lifting into attention of any content whatsoever*, which means, psychologically, a realization of an intentionally controlled function (attention) that is at the very same time not restricted by the limited intentional potential of the control structure in charge of attention;

- (b) The ability *to judge the fit* between the spontaneously and unrestrictedly lifted content and the broader context in which it comes up (one ‘lifts the lifted by itself’ without losing sight of the ‘ground’);
- (c) The *self-recursiveness of the act of calling attention* in its ability to call attention not only to the content which is picked up, but to the very function of calling attention, i.e., being attentive to something, as well as being attentive of the function of this being attentive to.

The definition of ‘to levate’ may look strange; something more, it may look self-contradictory. Can a cognitive act be aware of itself at the very same time is aware of its object? That is something different from a recursive loop of several cognitive acts in succession, each following being capable to reflect on the structure of the previous one representing it as its own content. The requirement for a *self-recursive loop of (self-facing) attention* means to pay attention to the function of attention at the very moment it is activated. Bohm himself comments us that the aspects (a)-(c) of ‘to levate’ are not nouns, and, *ergo*, they can be ‘fluidized’ and ‘merged’ into a cognitive act in which you are aware of the object as well as of the subject of consciousness in one and the same time with direct immediacy! This seems logically impossible. But this is impossible iff the states are construed as noun-like cognitively impenetrable entities that are taken under the scope of the predicate as its subject and direct (immediate) object.

3. The way of the rheomode of language

Next I will represent the way Bohm develops the idea of the rheomode of language following him step by step. The only difference with the original is that here the paradigms will be given one after another (in the book they are scattered between other material) and in a more grammar-like way, compared with the original.

Acting in accordance with the logic envisaged in the section above, we can introduce the paradigm of the verb ‘to re-levate’ as the first derivative of the root form ‘to levate’:

To levate = the spontaneous and unrestricted act of lifting into attention any content whatsoever, which includes the lifting into attention of the question of whether this content fits a broader context or not as well as that of lifting

into attention the very function of calling attention which is initiated by the verb itself;

To re-levate = lifts certain content into attention again, for a particular context, as indicated by thought and language. The prefix *re-* signifies a new occasion of ‘to levate’, as well as similarity between the two occurrences — of levating some content and re-levating it. But the re-levated content should not be considered to be simply identical, because it implies time, another occasion which cannot only be similar to the first one, but is also different;

To re-levate is re-levant = to enact a perceptual act proving whether the content lifted again fits the observed content. When this perception reveals a fit we are entitled to say that ‘to re-levate is re-levant’ [please note that property ascription cannot stand alone but is derivative of the possibility to form a proposition with a verb to which it is ascribed];

To re-levate is irre-levant = when the act of perception discloses actual non-fit of the content lifted again to the context in question we say that ‘to re-levate is irre-levant’;

Re-levation = a continuing state of lifting again and again a given content into attention;

Irre-levation = to continue with a state of re-levation where it is irre-levant to do so or doing that from the very start. With other words, inappropriate could be either the first act of re-levating and next this state is continued because of an inability, c, and/or desirability of being in the state of irre-levation, or re-levation can turn into irre-levation because of a change of the internal and/or external context of use of the mental content while, being inattentive to the actual change, we continue to lift through the application of our attention a habitual pattern to match the stimuli;

Levation = a sort of generalized and unrestricted totality of acts of lifting into attention (Bohm 1980: 35).

This way of using the structure of language gives us the possibility “to discuss what is commonly meant by ‘relevance’ in a way free of fragmentation, for we are no longer being led, by the form of the language, to consider something called relevance as if it were a separate and fixed quality.” (Bohm 1980: 35-36). The basis of meaning construction here is grounded in some action or event in the mental continuum. This is the referent of the root verb form. Finding out the meaning of the other forms of rheomode presupposes tracing their sense to the

basic internal action implied plus the means for their “solidification” and becoming static objects or qualities in the mental continuum. All this is enacted ‘here-and-now’ on each occasion of the use of the verb and all its derivatives.

The crucial motivation for using language as the most appropriate means for “entering the realm of consciousness and reality” via the function of thinking is given in the following passage:

Even more important, we are not establishing a division between what the verb ‘to levate’ means and the actual function that takes place when we use this verb. That is to say, ‘to levate’ is not only to attend to the thought of lifting an unrestricted content into attention but it is also to engage in the very act of lifting such an unrestricted content into attention. The thought is thus not a mere abstraction, with no concrete perception to which it can refer. Rather, something is actually going on which fits the meaning of the word, and one can, at the very moment of using the word, perceive the fit between this meaning and what is going on. So the content of thought and its actual function are seen and felt as one, and then one understands what it can mean for fragmentation to cease, at its very origin. (Bohm, 1980: 36).

Bohm gives only seven more word-formation paradigms, all of the latter referring to mental activities in the perceptual cum cognitive mode of functioning. It is not clear exactly how many have to be included as the mini-max set of them; in order to decide on this question we need, according to Bohm, a ‘flash of very penetrating insight’ yet to be enacted.

For the formation of the second paradigm is taken not without good motivation the Latin verb *videre* meaning “to see”. The root verbal form in the rheomode for “seeing” will be ‘to vidade’:

To vidade = calls attention to a spontaneous and unrestricted act of perception of any sort whatsoever, including perception of whether what is seen fits or does not fit ‘what is’, as well as perception even of the very attention-calling function of the word itself;

To re-vidade = to perceive a given content again.

To re-vidate is re-vidant = if this content is seen to fit the context of use, we can to confirm that;

To re-vidate is irre-vidant = if this content is seen not to fit the context of use we are entitled to say: ‘to re-vidate is irre-vidant’;

Re-vidation = is a continuing state of perceiving a certain content;

Irre-vidation = is a continuing state of being caught in illusion or delusion, with regard to a certain content;

Vidation = is an unrestricted and generalized totality of acts of perception (Bohm 1980: 36-37).

One can point out on this occasion that in the rheomode perception- and attention-calling functions are not two different features but two complementary aspects of one and the same ‘stream of consciousness’:

In an act of vigation, it is necessary to levate a content into attention, and in an act of levation, it is necessary to vigate this content. So the two movements of levation and vigation merge and interpenetrate. Each of these words merely emphasizes (i.e., re-levates) a certain aspect of movement in general. It will become evident that this will be true of all verbal roots in the rheomode. They all imply each other, and pass into each other. (Bohm 1980: 37)

The verb next to consider is ‘to divide’. It is analysed as a combination of the verb *videre* “to see” and the prefix *dis* meaning “asunder”. ‘To divide’ could be re-etymologized as meaning “to see as separate”:

To di-vidate = calls attention to the spontaneous act of seeing things as separate, in any form whatsoever, including the act of seeing whether or not the perception fits ‘what is’, and even that of seeing how the attention-calling function of this word has a form of inherent division in it. The *form* of the word makes clear that it is different from ‘to vigate’ from which it is derived. ‘To di-vidate’ implies not only a *content* (or meaning, or operation) of division; the very word-formation structure of this word corresponds to the function for which the notion of division is seen to provide a description capable to fit the actual structure of inner action;

To re-dividate = through thought and language to perceive a given content again in terms of a particular kind of separation or division;

To re-dividate is re-dividant = to enact 're-dividating' again in terms of a particular kind of separation or division and to see that it fits the indicated content;

To re-dividate is irre-dividant = to do the afore mentioned action is seen not to fit to its context;

Re-dividation = a continuing state of seeing a certain content in the form of separation or division;

Irre-dividation = a continuing state of seeing separation where separation is irrelevant; it is considered synonymous to fragmentation. To go on indefinitely with it is possible only through a failure of attention;

Dividation = an unrestricted and generalized totality of acts of seeing things as separate (Bohm 1980: 37-38).

Of specific methodological purport becomes the relation between 'to vidate' and 'to di-vidate'. If we consider them different, we foster fragmentation, opening the Pandora's box with the decisive step leading 'from primordial oneness (or non-differentiation)' to 'duality (splitting-into-two in potentially endless recursive loops)'. Bohm points out in this respect, that the difference between them holds true only in some limited context and should not be taken as an actual break between the meanings and functions of these two words: "Ultimately, wholeness is primary, in the sense that these meanings and functions pass into each other to merge and interpenetrate." (Bohm 1980: 37).

The meaning and function of 'to di-vidate' is for the sake of developing more and more articulated and detailed descriptions of the whole. Surprisingly, Bohm (1980: 38) declares that the opposite movement, the movement from division to one-ness of perception is through the action of *ordering*. This seems from the first sight to run evidently wrong, as ordering is considered an analytic cognitive operation, through which we can only multiply objects available in the mental representation. But let's mention that Bohm here speaks not about ordering of objects (internal or external), or operations with them, but about *ordering aiming at one-ness of perception*, and the 'direct (intelligent) perception' in the rheomode is something very special (cf. below for further discussion re. the notion of 'intelligence').

Attention-movement itself is conceptualized as a very high, practically open-end hierarchy of potential orders (far exceeding simple sequential ones): “This movement has to have an order that fits the order in that which is to be observed, or else we will miss seeing what is to be seen” (Bohm, 1980: 39).

The next word-formation paradigm is introduced for the sake better to understand the nature of ordering in language and thought:

To ordinate = calls attention to a spontaneous and unrestricted act of ordering of any sort whatsoever, including the ordering involved in seeing whether any particular order fits or does not fit some observed content, and even the ordering which arises in the attention-calling function itself. It does not primarily mean ‘to think about an order’ but, rather, to engage in the very act of ordering attention, while attention is given also to one's thoughts about order;

To re-ordinate = to call attention again to a given order, by means of language and thought;

To re-ordinate is re-ordinant = this order is seen to fit that which is to be observed in the context under discussion;

To re-ordinate is irre-ordinant = this order is seen not to fit to the context under discussion;

Re-ordination = a continuing state of calling attention to a certain order;

Irre-ordination = a persistent state of re-ordination in an irre-ordinant context. It becomes possible only because of the failure of attention and comes to an end when attention is given to this failure of attention;

Ordination = an unrestricted and generalized totality of acts of ordering (Bohm, 1980: 39).

We can now see that *ordination* evidently implies *levation*, *vidation* and *dividation*, and vice versa. But in the relations between them a hierarchy seems to be implied, which Bohm did not discuss explicitly. For example, it is with ‘to ordinate’ that we face for the first time the problem of sequence and time and its way of representation in the rheomode; the previous three verbs represent spatial structure that can be visualized without stretching the boundaries of the immediate present.

With the re-patterning of the way of linguistic meaning and thinking comes a revision of the nature of ‘truth’ and ‘fact’ in them. In ordinary language truth is

taken as a noun, i.e., as a static representation which stands for something that can be grasped once and forever or to be approached, as the goals of science (at least in the contemporary mainstream paradigm) by approximation step by step (to an unfathomable future when, supposedly, all the facts collected to the date miraculously will self-constellate through some *objective* procedure into a representation of the object, including the representation of the world as a whole as it really is).

In the context of linguistic semantics and analytical philosophy of language, even worse, truth is considered to be a *property* of statements. But “truth and falsity *in content* of a statement is apprehended by observing whether or not this content fits a broader context which is indicated either in the statement itself or by some action or gesture (such as pointing) that goes together with the statement” (Bohm 1980: 42).

We face still greater problem when we come to statements formulating world views, i.e., which have to express the nature of ‘the totality of all that is’. With them we lose the possibility (how fundamental this is one can start to appreciate from occasions like this) to have a clearly definable context (= background or ground in the context of cognitive linguistics; cf. Talmy 1988a, 1988b, Langacker 1987a, 1987b) as a “horizon” for the concrete referent represented in consciousness.

What can we do under such circumstances? Bohm proposes the appropriacy of truth in function, i.e., “the possibility of free movement and change in our general notions of reality as a whole, so as to allow a continual fitting to new experience, going beyond the limits of fitting of older notions of this kind” (Bohm 1980: 42). The role of the “executive in charge” realizing it is ascribed to the ‘spontaneous and unrestricted’ attention-calling function. These characteristics of the latter guarantee it will work in a way making sure that there will be a resultant truth in function.

In the rheomode, the semantically driven derivation of ‘truth’ is built as follows:

To verrate [from Latin *verus* “true”] = calls attention to a spontaneous and unrestricted act of seeing truth in any form whatsoever, including the act of seeing whether this perception fits or does not fit that which is perceived actually to happen in the apprehension of truth, as well as seeing truth in the

attention-calling function of the word itself; i.e., ‘to verrate’ is in the act of perceiving truth, as well as in attending to what truth means;

To re-verrate = calls attention again, by means of thought and language, to a particular truth in a given context;

To re-verrate is re-verrant = an action of ‘re-verrating’ is seen to fit what is to be observed in this context;

To re-verrate is irre-verrant = an action of ‘re-verrating’ is seen not to fit to the context; this happens when particular truth is repeatedly used beyond its proper domain of application;

Re-verration = a state of holding to or confirming that some truth is appropriate to the context of its use;

Irre-verration = persistent holding to a truth beyond its proper limits;

Verration = a flowing movement, which merges and interpenetrates with levation, vidation, di-vidation, ordination, and, indeed, with all other movements that will be differentiated in the future developments of the rheomode of language (Bohm 1980: 42-43).

Next to the fore comes the question what is a ‘fact’. It is pointed out that its root meaning (diachronically) is “that which has been made”. In the rheomode the ‘factuality’ is established in the following way:

To factate = enacts spontaneous and unrestricted attention to consciously directed human activity in making or doing any sort of thing whatsoever, including the action of the attention-calling function of the word itself;

To re-factate = to call attention through thought and language again to such an activity of ‘making’ or ‘doing’ in a particular context;

To re-factate is re-factant = if this activity is seen to fit within the context we are entitled to qualify it as appropriate;

To re-factate is irre-factant = if this activity is seen not to fit we can qualify it as inappropriate to the context; here, however, immediately is pointed out that far more is involved in establishing the fact than merely to observe that our knowledge is re-factant, i.e., that it has generally led us successfully to achieve the goals that were originally projected in thought (Bohm 1980:43-44). [This paradigm is not complete. Here are absent the forms for ‘re-factation’ and ‘factation’.]

A basic constitutive characteristic of any fact is its capacity to remain *constantly* valid. Turning to the attribution of the adjective ‘constant’, Bohm once again uses as a point of departure the history of its meaning for the sake of constructing afterwards a paradigm in the rheomode:

To con-statate = to give spontaneous and unrestricted attention to how any sort of action or movement whatsoever is established in a relatively constant form that stands together relatively stable, including the action of establishing a body of facts that stands together in this way, and even the action of this very word in helping to establish the fact about the function of language itself;

To re-constatate = to call attention again, by means of word and thought, to a particular action or movement of this kind in a given context;

To re-constatate is re-constatant = if the action is seen to fit within the context in question we are entitled to confirm its appropriacy to the object of observation;

To re-constatate is irre-constatant = if the action is seen not to fit, and if the fact, as previously established, is found factually not to ‘stand up’ to further observation and experiences;

Re-constatation = a particular kind of continuing *state* of action or movement in a given context that ‘stands together’ in a relatively constant way, whether this be our own action in establishing a fact, or any other kind of movement that can be described as established or stable in form. Re-constatation, therefore, can refer: (i) to ‘an established fact’ (the propositional content of a thought), (ii) to ‘the actual state of movement of affairs that the fact is about (the process, or event constituting the object in reality)’, or (iii) to ‘the verbal statement of the fact (its expression in linguistic structure with corresponding content)’: “So we do not make a sharp distinction between the act of perception and experimentation, the action of that which we perceive and of which we experiment, and the activity of communicating verbally about what we have observed and done.” (Bohm 1980: 45). There is no implied inherent fragmentary division whatsoever between the ‘inward’ mental activities and their ‘outward’ function (Bohm 1980: 45-46). [Here the form for ‘constatation’ is missing in the original.]

Bohm systematically makes use in his book of linguistic etymologies of the basic concepts with which he works. The root meaning of ‘order’ is to be found in “giving attention to similar differences and different similarities” (Bohm 1980: 115-116). ‘Measure’ in ancient times meant “limit” or “boundary” (Bohm 1980: 118), i.e., ‘to measure’ means to delimit the scope of appropriacy of certain order. The appropriation of measure and order is done in a ‘flash of very penetrating insight’ which is ‘poetic’ in its nature. ‘Poetry’ is traced to the Greek *poiein* meaning “to make”, or “to create”, *ergo*, in its most creative aspects, science takes on the quality of poetic communication of creative perception of new order (Bohm 1980: 114).

Let’s in this context turn now to the notion of ‘structure’, which is a superordinate concept defined by its ‘measure’ and ‘order’. The essential meaning of the Latin root *struere* indicates “to build”, “to grow”, “to evolve”. The suffix forming in Latin the corresponding noun is *ura* which originally meant “the action of doing something”, i.e., the action of ‘structuring’ is not a finished product, ultimate result, but an open end development. In order to re-emphasize the ‘original’ idea found in the etymology of word elements in Latin, Here the following verb is introduced in the rheomode:

To structate = to create and dissolve structures;

Structation = a harmoniously organized totality of order and measures which are both *hierarchic* (i.e., multilevel) and *extensive* (i.e., spreading out on each level). Especially important is to acknowledge the dynamic nature of structation (Bohm 1980: 120). [In this case only the initial and the final form of the paradigm are given.]

Appropriate also is Bohm’s etymology-coining of ‘analysis’ which comes from the Greek root *lysis* meaning “to break up or dissolve”. This is rather surprising, as ‘to break up’ (i.e., ‘to analyse’, ‘to differentiate’) is considered today to be a cognitive operation incommensurable with ‘to dissolve’. For further discussion of the problems related to ‘analysis’ cf. below.

4. A structural and functional characterization of the first tetrad of rheoverbs

Let's now consider the problem why the first four verbs could be differentiated as a possible mini-max set at the deepest phenomenologically discernible level of thought formation. The specificity of each of them as an aspect of the 'movement' of consciousness is repeated here once again for the sake of their direct juxtaposition:

To levate = an act of *lifting* into attention;

To vivate = an act of *perception* (e.g. in the modality of vision or hearing);

To di-vivate = an act of seeing things as *separate*;

To ordinate = an act of *ordering* (putting together again in a sequence what was previously separated for analytical purposes).

The four verbs in question seem to implement complementary movements along two dimensions: of attention vs. perception of a mental content and dividing vs. merging into an evolving order certain mental content.

The definition of each of these four verbs is constituted of the following structurally isomorphic parts (if we compare the definition of each of them, as given above):

- (a) 'calls attention to';
- (b) 'a spontaneous and unrestricted act of X of any sort whatsoever';
- (c) 'including the X involved in seeing whether any particular X fits or does not fit some observed content';
- (d) 'and even the X which arises in the attention-calling function itself'.

Where the variable X can have the following values:

- (i) lifting into attention;
- (ii) perception of any sort whatsoever;
- (iii) seeing things as separate;
- (iv) ordering of any sort whatsoever.

The definition (a)-(d) is fourfold. Something more, it constitutes a cycle, or is rounding itself to a wholeness (circle) because (d) returns us to the execution of (a). During any circle one is supposed simultaneously to attune one's own inner movement along the two dimensions identified above (attending-seeing and dividing-ordering) spontaneously and unrestrictedly to the movement of the

observed internal ‘object’ via filling in of an appropriate value for X. One can visualize the exchange of the value of X along (i)-(iv) as a second ‘horizontal’ circling rotation. Thus the simultaneous satisfaction of the requirement leads eventually to a ‘squaring a circle’ operation simultaneously along a ‘vertical’ and a ‘horizontal’ axis. The co-movements of the subject (attention) and object (mental content) constitute and represent the whole (the totality of what is). It is impossible also to enact one of the verbs in separation from the others, they ‘flow’ into each other (i.e., the squaring of the circle is enacted in a seamless way); effectively the content of each of them mirrors the content of the other ones; each of them represents effectively the whole cycle.

With higher-order movements (as in the second tetrad) we get into exponentially more complex dynamics.

Bohm evidently gestated and developed the idea of an alternative to natural language mutual *Abbildung* of the expressions in a ‘language’ and reality for many years. Thus 19 years before the publication of *Wholeness and the Implicate Order* he wrote in a letter to Charles Biederman (December 22, 1961):

For since process [=reality as a total process of evolving words, thoughts and actuality; M.S.] is continuous, there must be a structural correspondence between its verbal and non-verbal aspects, such that in the verbal field, there can be a projection of the total process (i.e., a kind of shadow [= trace of the whole in the part, M.S.]). But in order that this may become possible, there is a still more fundamental requirement: viz., the total process must be projectable. Now, in the mathematical theory of groups, one finds a natural “language” for raising such questions. For there are groups which operating on themselves just turn into themselves, and these groups contain sub-groups, which also move into themselves. The interesting point is that certain kinds of sub-groups stand in such a relation to the full group that the movements within the latter can be projected into the former. This is just the kind of relationship we are looking for. That is, we want the non-verbal domain to be projectable into the verbal field. Of course, I do not want to say that the world is really just a bunch of these groups. Rather, I suggest that these groups provide a good way of mentally and symbolically tracing the total process (better than the arbitrary everyday language) because these groups are in themselves

totalities, and because they have in them sub-totalities, which trace the full totalities. Thus the language of groups stands in better correspondence to the total process than does our everyday use of language. (Pylkkänen 1999: 135)

One can see from this passage that Bohm was brooding the idea about the rheomode of language for at least 20 years, i.e., it is by all means not an *ad hoc* funny small game to amuse the reader. From the beginning there was the suggestion about the parallelism between words, thoughts and actuality as confluent processes, as well as the insight from the mathematical theory of groups about the part-whole relationships. From the very beginning the problem for Bohm was how language, thought and reality can be made to coincide in mirroring each others dynamics? Can we represent reality if reality is ‘all that is’, i.e., at totality that includes things, thoughts and words? Under what conditions a part (word, assertion, sentence, rule, equation, law) can represent the whole? It is in formulating and trying to face questions like these that he came with the idea of the rheomode of language as a reorganization of the way of performance of the mind in fitting to the way the totality-reality is. This line of thought eventually resulted into a *tour de force* without a precedent in the history of thought – an attempt to state under what conditions an expression of a language and/or a mental representation can stand for ‘all that is’, the totality of existence.

5. The ‘direct referents’ of the first tetrad of rheoverbs or what makes the rheomode of language so difficult to appreciate

What are the ‘referents’ of the first, the founding tetrad of rheoverbs? There are several psychological referents Bohm (1980) uses that definitely require further elucidation. These are first and foremost attention, perception, intelligence, and thought. It is this aspect of his proposal that makes the rheomode so difficult to comprehend for a linguist, theoretical physicist and philosopher alike. On the other hand, a psychologist with a sophisticated professional knowledge on the subject is not well oriented into the nature of natural language and the possibilities significantly to modify and observe the way of its functioning introspectively. We must, of course, add that for a linguist, cognitive psychologist and the vast majority of philosophers the specifically physical aspect of the proposal is no less a *terra incognita*. The mutual impenetrability of the psychological, philosophical,

linguistic and physical aspects of this proposal makes its appreciation exceptionally difficult.

5.1. *Attention*

Attention in the rheomode serves a double function. It functions as the ‘executive subject’, as the acting subject of awareness formation, as well as, recursively, its object, as if in the very same point-instant of consciousness. Logically, this certainly involves a paradox.

To pay attention to the function of attention at the time one is attentive to an object (an other) requires the enaction of the function performing the double action of the type *I see seeing myself*. For the implementation of such a paradoxical super-system we actually need two mutually juxtaposed systems which ‘mirror’ each other in the instant there occurs some change in any one of them due to the input from the ‘object behind the object-mirror’ (the undescribable flow) and the ‘subject-mirror’ (attention function).

Is this actually possible to achieve? Apparently ‘yes’ under the conditions stated below – blocking the cognitive functioning (blocking conceptual thinking), developing and maintaining a highly concentrated mode of an exclusively perceptual functioning and rheo-moving within it in a seamless way.

5.2. *‘Intelligent’ perception*

Another troublesome from psychological point of view concept of Bohm is that of ‘intelligent perception’. Apparently, attention function operates on/with perception-like mental representations. Normally, when we think, we do not operate with percepts directly, but with their ‘vaguer’ analogues in spatial cognition, i.e., cognitive schemata. The ‘intelligent’ perception is a mode of spatial thinking that is closer to, even identical with, perception from the point of view of the richness of the corresponding mental representation, as well as the spontaneity of its formation. It seems to center upon the flow of conscious visual experience on a lower level of mental processing but not to relatively high-level abstract mental schemata we tend to use when we fulfil the injunction: “And now imagine a typical bird!” (for further discussion of some of the features of this ‘direct’ mode of perception cf. Stamenov 1996).

5.3. *Blocking natural-language-specific recursion*

A third specific feature of the rheomode of language was already mentioned above in the passing. It consisted in the blocking of the self-alienating recursivity of the mental functioning where the result of the previous processing is taken as a nominal-like (ready) product for further processing, a difference epitomized in the natural language in the relationship between the transitive verb and its complement, e.g., between “eat” and “something eatable” — banana, toast, bread. It is this difference between nominalized pre-given vs. the actual ‘movement’ of constructing a mental representation that is supposed to be abolished in the rheomode. Here also come the many possibilities to embed recursively a sentence within a NP and a sentence within a sentence as the language-specific way of embedding of part/whole relationships.

5.4. *Thinking vs. intelligence*

Another special feature of the proposal of Bohm from psychological point of view is based upon the differentiation he makes between conventional thinking (with language) and the creative thinking he calls ‘intelligence’. In this respect, Bohm (1980: 51-52) looks a bit fuzzy, and even uncharacteristically so. He points out that regular thinking we are accustomed to is a mechanical (automatic) process with *no inherent reason in it* why the thoughts that arise should *be relevant* to the occasion to which they are actually associated. Language-specific representation, in other words, is associated with a specific mental model of the world, while the relationship of the mapping between language-specific thinking pattern and the model of the world (focus + context) remains indirect even at its best. This dissociation, definitely, served a distinct function in the phylogenesis of thinking and language in humans, but it has not only positive but also negative effects on the way of cognitive performance. Bohm makes us aware of the potential drawbacks of the automatically enacted (conventional) patterns of thinking as given in language structure. One must still be aware that ‘bad’ and ‘good’ are qualifications dependent on the orientation of the corresponding investigation. The natural language looks ‘bad’ from the point of view of a seeker of the rheomode of language, but a seeker of the rheomode of language would be an easy prey for a tiger or a couple of wolves if left in the natural habitat (where the natural language evolved for hundreds of thousands of years).

The perception whether or not some particular thought is relevant and fitting to the current context requires the operation of another type of energy, which is not automatic (unconsciously enacted) in its nature. This ‘energy’ Bohm

names, rather loosely, intelligence. The most specific characteristic features of it could be summarized as follows:

- (a) Intelligence operates in the medium of ‘direct’ perception, i.e., it is always concrete in its medium (visual or aural). The concrete medium of intelligence (unlike the abstract patterns of the language of thought) does not imply a relationship to a concrete object or class of objects, but a relationship to a medium, the medium of perception;
- (b) Intelligence is immediate not only in its medium, but also in the immediacy of its action and causal constitution-in-action; it is an action happening here-and-now in the perceptual present;
- (c) Intelligence is not only concrete and immediate, it is also experienced directly as illuminating the perceptual present of consciousness, of the experiential world, as it unfolds here-and-now (the *Lichtung* of Globus 2003). The operation of intelligence as a creative (spontaneous in its action) energy is experienced as a ‘flash of understanding’, in which we see the relevance or irrelevance of our thinking to the problem we are trying to solve.

The flash of understanding Bohm is talking about has the character of directly perceiving, but not a result of a chain of thoughts, i.e., it is not a matter of presuppositions, implications, entailments, inferences, deductive or inductive reasoning, etc.

In a sense, one can interpret ‘intelligence’ as an aspect of consciousness, the aspect of its ‘illuminatory’ effect upon certain set of mental contents. If this is the case, there is nothing curious in claiming the perception-like character of intelligence, as it operates on modality-specific mental contents. [This aspect of Bohm’s thinking was at least partly influenced by his long-term dialogue with Jiddu Krishnamurti (cf. e.g. Krishnamurti & Bohm 1985, 1999).]

It is also appropriate to point out that intelligence is not a process like thought, though more subtle in nature (Bohm 1980: 52), i.e., they are qualitatively different in the way of their implementation. The difference, apparently, boils down to the following: while thought forms and connects successive mental spaces with its mental operations, intelligence is functioning within a single mental space that embeds the dynamic concepts of the successive foci of the

intelligent (or direct) perception. The singleness and illuminatedness of this space makes it transparent to itself at any time.

Bohm (1980: 52-53) boldly points out that thought, when it functions on its own, reacts in a ‘non-intelligent’ manner, because it imposes its own “generally irrelevant and unsuitable order drawn from memory” on a sort of a mental dynamics which, when left on its own, would follow laws of a different order. What sort of order?

Here Bohm offers the metaphor of a radio receiver (= intelligence) which attuned to the signal coming from a radio station (= implicate order, the invisible and unknowable *per se* reality) in order to illustrate to whom intelligence stays tuned:

[It] serves to bring a meaningful order beyond the level of its own structure into movements on the level of its own structure. [...] in intelligent perception, the brain and nervous system respond directly to an order in the universal and unknown flux that cannot be reduced to nothing that could be defined in terms of knowable structures (Bohm, 1980: 53)

‘Intelligence’ is the mental factor that stays tuned to the basic level of physical reality named by Bohm ‘implicate order’:

One must then go on to a consideration of time as a projection of multidimensional reality into a sequence of movements.

Such a projection can be described as creative, rather than mechanical, for by creativity one means just the inception of new content, which unfolds into a sequence of moments that is not completely derivable from what came earlier in this sequence or set of such sequences. What we are saying is, then, that movement is basically such a creative inception of new content as projected from the multidimensional background. In contrast, what is mechanical is a relatively autonomous sub-totality that can be abstracted from that which is basically a creative movement of unfoldment. (Bohm 1980: 212)

The point of Bohm about ‘creativity’, ‘intelligence’, etc., may seem strange of unmotivated in a book dedicated to aspects of physical theory. The implications to this theory, however, become immediately apparent when one considers the point, is it possible to find out THE hypothetic ‘all-embracing’ physical description (theory) of reality? The answer of Bohm is an emphatic ‘no’ justified by the point that this all-embracing physical reality is much richer and embracing than any possibility of description by any set of laws and rules:

[...] that which ‘carries’ an implicate order is *the holomovement*, which is an unbroken and undivided totality. In certain cases, we can abstract particular aspects of the holomovement (e.g., light, electrons, sound, etc.), but more generally, all forms of holomovement merge and are inseparable. Thus in its totality, the holomovement is not limited in any specifiable way at all. It is not required to conform to any particular order, or to be bounded by any particular measure. Thus, the holomovement is undefinable and immeasurable. [...] To give primary significance to the undefinable and immeasurable holomovement implies that it has no meaning to talk of a fundamental theory, on which all of physics could find a permanent basis, or to which all the phenomena of physics could ultimately be reduced. Rather, each theory will abstract a certain aspect that is relevant only in some limited context, which is indicated by some appropriate measure (Bohm 1980: 151)

6. A functional and structural characterization of the second tetrad of rheoverbs

The second tetrad of rheoverbs could be differentiated from the first one on intuitive grounds because of the higher (meta-) level of the enacted ‘movements’ compared to the ones from the first tetrad. Their basic dynamics could be boiled down to the following:

To verrate = perceiving truth and attending to what truth means (apparently object-oriented));

To factate = the attention is oriented to consciously directed human activity (apparently subject-oriented));

To constatate = inquiring into how any sort of action or movement whatsoever is established in a relatively constant form that stands together relatively stable;

To structate = to create and dissolve structures.

The second tetrad, as far as I can see, is even more controversial and troublesome to interpret. Let's list the problems pertaining to the application of each of the rheoverbs in this same order as they appeared above:

- (i) I see no means to differentiate effectively in the rheomode the 'appropriacy of fit' from 'truth in function'; as a matter of fact, this seems to be a shortcoming pertaining to the method used itself — introspection;
- (ii) very interesting is the problem constellated by the verb 'to constatate': what guarantees in the dynamics of thought formation the structural and functional characteristics of the stability and self-identity of thought structures, once formed, if they are always to be formed on-line spontaneously?
- (iii) the most problematic remains the question how to dissolve structures in the rheomode via the application of the verb 'to structate'. It seems to perform two mutually contradictory functions – to create as well as dissolve structures, etc.

Still, one should not miss the importance of the second tetrad. Its aim is to serve as a procedure of verification that the orders such as the first tetrad and the utterances derived from the combination of the movements in it serve their function to fit the orders of emergence of reality as unfolded orders from the holomovement.

7. The hard to endure ambiguity of 'analysis' (dismembering vs. letting go)

On several occasions in discussing the rheomode the possibility is mentioned for enacting a 'merging' between different aspects of movement back into the primal matrix of the holomovement (which is the root concept of the theory of Bohm about the nature of reality and could be "described" as an 'undescribable flux'). It remains to be seen which aspects in what hierarchy have to be merged, as

coniunctio oppositorum in a dialectical process of ‘unfolding’ and ‘enfolding’, if we use the terminology of Bohm. He, however, did not discuss systematically the possibilities of generating and dissolving opposites in experience, cognition, and in the processes of reality as a whole, e.g., via the dynamics of unfoldment and enfoldment of the holomovement.

Bohm still provides some clues, in this respect, in pointing out that the etymology of ‘analysis’ comes from the Greek root *lysis* meaning “to break up or dissolve”. This is rather surprising, as ‘to break up’ is considered today to be a cognitive operation incommensurable with ‘to dissolve’. Accordingly, the two senses of the word mentioned should be accepted as opposite in meaning, i.e., as complementaries — the first meaning “analysis”, the second – “dispersal” and vanishing from the ‘mind’s eye’.

The ambiguity of ‘analysis’ in meaning both “to break up (= to differentiate)” and “to dissolve” points out to a single dialectical process behind the stage of thought representation. The specificity of this process has to be that of a symmetric ‘two-way road’, i.e., it must be possible to enact both the ‘movement’ from ‘undifferentiated whole’ to differentiated structure through, say, recursive use of ‘to dividate’ function, as well as to enact its opposite (let’s name it ‘dissolving’) would be to shorten successively the pattern of ordination of attention-function upon itself.

That a balance between ‘to dividate’ and ‘to dissolve’ is to be sought is provided as follows (in a different tradition, though):

Some of the early mahamudra meditators have asserted that *abiding* [= statating; M.S.] refers to remaining single-pointedly upon the held object [= ‘root mind’ = emptiness, *shunya*; M.S.] of meditation, *moving* to the arising of conceptual thoughts [= unfolding; M.S.] while still remaining on the object and *mixing* [= dissolving, enfolding; M.S.] to the dissolution of these conceptual thoughts back into the root mind which is the object of mahamudra meditation. These early mahamudra meditators state that it is very important and also very difficult to recognize these three states well and clearly. (Gyatso, 1982: 159-160)

The above citation from Gyatso (1982) seems to point out to the possibility of introspective participating-observation in the holomovement itself with the

emergence of explicate order from the implicate one, as well as the dissolution of the former into the latter before the mind's eye. This point goes beyond Bohm. It is supposed to mean that a state of consciousness without an intentional object participates directly in the holomovement. But the split and dynamics of the explicate and implicate order is described and evaluated in a radically different way by Bohm, compared with Gyatso and the tradition within which the latter author writes (cf. Hopkins 1982 for an overview).

8. Conclusion: The challenge of the rheomode of language

The aim of the rheomode of language is to make the mental representation transparent to itself and, in this way, to attune itself also to the 'totality of all that is', the holomovement. In order to serve its purpose it must fulfil three extraordinary requirements:

- (a) it must consist of performative (just do it) expressions only (cf. Searle 1969 for the concept of performative speech acts); in other words, the recursion must not block transparency;
- (b) all expressions must be self-transparent in their form and meaning (in a set of recursively embedded orders that would be the potential functional equivalents of phonetic, phonological, morphological, lexical, syntactic, semantic and pragmatic levels of the formation of structure in natural language), and
- (c) every structure must provide the possibility for a part faithfully to represent the whole, both in the relation between a whole expression and its components, as well between an expression and the reality part of which it is.

The development of the rheomode of language is an attempt aiming at making explicit what orders of observation by the cognising function can reach for the physical reality. It shows the very paradoxical metamorphoses an observation must undergo in re-structuring itself in order to attune to the very dynamics of reality as its double-in-coemergence in self-and-other transparency.

The rheomode of language is not an artificial language (like Esperanto) or a perfect language for scientific purposes the logical atomists dreamt of, but a way

to reshape in an enactive way the relationship between language, experience and reality.

The rheomode aims reaching at reality unlike the Husserlian ‘bracketing of the natural attitude’; it is not just a sort of blocking of the linguistic habits and the habits of thinking in order to **observe** in a nonbiased way ‘What’s there?’. The bracketing could be interpreted cognitively as cutting off the access of the working memory (WM) to the long-term memory. This appears to be a necessary prerequisite for the switch to the rheomode, but not more than that.

The rheomode aims reaching at reality also not through the **deconstruction** of the mental representation (cf. Derrida 1974 in the context of the European civilization; cf. also Nagarjuna (Hopkins 1982) in the context of the Indian civilization), but through its **reconstruction**. And what’s the difference between the two? The deconstruction aims, in psychological terms, at moving the WM to a way of performance in an exclusively perceptual mode, blocking thinking (cognitive mentation). This is also supposed to be done in the rheomode, but it is also not enough. The reconstruction (as envisaged above) starts after bracketing the natural attitude and deconstructing the cognitive dynamics to the level of pure perceptual processing.

In this way, the rheomode goes beyond all available paradigms in the history of science and philosophy that study and model the relationship between mind and reality. It does not try to re-present by some symbolic means the purported transcendental reality that is in principle inaccessible, but helps getting direct access to it up to the level of its implementation (reality from within is indistinguishable in its dynamics from reality from without). The rheomode is not an attempt to go ‘outside the visible’ and/or thinkable and/or knowable; it is a reconstruction aiming at attunement to reality.

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