On Meaning and Architecture of Language - a Subject-Oriented Approach.

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Abstract:
The Subject-Oriented Approach investigates human knowledge from the "insider's" point of view, which further develops the theoretical framework of cybernetics. The SOA claims the traditional scientific approach to be misleading because of the numerous feedback loops occurring on the perceptual path of the human brain. For the same reason reference must be treated as a relationship that obtains between a speaker’s personal experience and his construct of a private "external world" - a priverse, where these constructs (model entities) can be seen as the result of an interaction between incoming stimuli and the internal mean available to present it. Therefore languaging reflects human thinking on a personal plane and each statement primarily reflects personal experience contradicting the traditional view. Each statement thus in the tacit bears the sign of its utterer – and the formal framework of language can, according to this view be constructed on a strictly private basis. The fundamental elements of language are words randomly chosen that are connected to the private feelings experienced by its first constructor, say Adam. These words (adjectives and verbs) appoint activities in Adam's awareness and thus reflect personal experience. When the meanings of these words are later learned by others natural languages will emerge. In the construction of language Adam uses a primary set of names or words that appoint feels in order to construct other lexical categories. The SOA's success of explaining the creation of language consolidates its very ideas.

Background: The Subject-Oriented Approach and its challenge to Western thought.

There are two mutually exclusive methods of human knowledge building – the traditional Object-Oriented (OOA) and the Subject-Oriented Approach (SOA). Both assume human knowledge to come into existence by means of experience arising in human awareness and the dualist contention attached to the former, once launched a matter/mind distinction, in a form generally attributed to Descartes. This is not fair to him since the dualist contention is for sure is as old as man – but nevertheless risky for not to say unscientific.

The SOA is a development of cybernetics that carries on the ideas of von Foerster, Maturana, Glaserfeld, and Luhmann among others. The social perspective is evident in its extreme concentration on the "inside" perspective of knowing, to that extent it denies the usefulness of making a scientific inside/outside distinction. The strongest reasons for doing so is that the monist contention taken on by the SOA has shown (Kjellman, 2003) that the feed-back features of man’s brain prevents him from reconstructing a “reality” separated from his own awareness. For this reason Occam’s razor should cut away the need for an “outside domain” of experience in its traditional sense. We are bound to accept the situation that mankind cannot possibly reconstruct the eventual features of a reality “pre-given” and since the privacy of subjectivity prevents man from introspecting other minds he also must let go the idea of a possible access to a world common to each and every man. These insights, which – pace Kuhn – seems incredibly difficult to assimilate for scientists brought up in the prevailing paradigm, indicates that the SOA is the only remaining alternative to build a coherent science.

The modern cognitive sciences openly admit the incident stimuli hitting awareness are “theory-laden” and neuroscientists have also known for a long time that the brain is saturated with feedback connections (Hawkins, 2004). However, the possibility of perceptual feedback does not indicate that the "original" stimuli by necessity are “distorted,” but rather appoints the principal mistake in using the traditional object-oriented approach. Should it be the "original" stimuli are in some way modified
by feedback an observer has no means to find this out by observation, and for this reason we must simply consider the "original" to be hidden to observation. For this very reason man is unable to reconstruct a "given" reality, and in the case we, in scientific discourse, wish to refer to something "outside" human experience we are directed to construct a universe. Since such a universe, as a first step, by necessity is private we should rather call it a priverse. We claim the SOA her is the only useful methodology in this situation, since a human observer is perfectly unable to observe processes on its own perceptual path without first making crucial and conclusive assumptions about these very processes. In this situation there is just one path left building a coherent science – namely taking on the “insider’s view” using the SOA. We must conclude that every attempt to build an observer’s science is bound to fail – what we best can hope for is a knower’s science based on human consensus, i.e., social convention, as first suggested by Poincaré (1909). To our satisfaction we find this path passable – even if it involves a subjective approach, which by the natural sciences has been declared nugatory since the time of the scientific revolution. Anyhow we can put full confidence in the SOA since it houses a safety harness; Even in the case it finally should undeniably come out it is possible to show that processes of feedback involved in human perception are not decisive the SOA is still a viable and coherent methodology.

Knowers do not need to refer to “real” things.

The SOA shows a presumed “real” existence of a phenomenon A is not a sufficient condition for an observer B's being able to refer to it – since A must first have been an experience of B for such reference to occur. Nor is it a necessary condition since there are many entities to which speakers refer to for which we establish there are no appropriate real-world counterparts, such as the entities in mental images, dreams, and hallucinations. Since a percept in general are thought of as essentially a sensory impression of outside origin the SOA coins the term “allusion” to stand for “inner” experience regardless of it is caused by sensory or mental intervention … in fact the SOA here claims a distinction into real/mental is useless from a scientific point of view. The SOA’s bottom line, as it applies to meaning, is then that I have “things” to talk about only by virtue of having had an experience (a mental presentation) of them. In the same way other people, including scientists, also have “things” to talk about only by virtue of having had a personal experience of them. In this situation there is a point in developing a tool that allow us to exchange marks/tokens of personal experience, i.e., references to personal thinkings rather than worldly things. Etymologically, thinking (via thin-kin-g) might be the root of “thing”, and a ready understanding here is that thin/kin/g is another word for idea, i.e., an element of cognition. A coherent science cannot take for granted such presentations (thin/kin/g) are the sound basis neither for reconstructing an “outside” reality nor one that can be regarded inter-subjectively “similar” in some way or another, as mentioned before.

These remarks brings us to a Bohr-ian view of the intentionality of mental states, namely their being "experience" and as such strictly personal. Therefore it seems much more apt to treat reference as a relationship that obtains between a speaker’s personal experience and his construct of a private “external world”- a priverse, where these constructs (model entities) can be seen as the result of an interaction between incoming stimuli and the internal means available in a brain to conceive of it on a basis of subjectivity. This interaction called cognition is a process continually ongoing in my brain as the result of biological evolution. The early man had no intellectual means to capture this process – he could only feel it as a peculiar activity called thinking, as we do, and literally take the “pain” of it in heavy contemplation. However to feel “something” is very far from

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1 A private universe
2 This remark sets the keen activities of the modern cognitive sciences in a curious position
3 In case also this project should turn out to be impossible then also is the project of building a coherent consensual science.
4 The term re-presentation does not apply in the SOA – since the ‘mental’ presentation is a primary instance of presentation
5 In the SOA a mark is synonymous a token
6 I owe this insight to Bernard Scott
7 A view proposed by the Danish physicist Niels Bohr
8 We will avoid the term “perception” since it is part of the traditional representational mapping tradition
an intellectual grasping and even further from possible acts of description. Of course the early man was in need of tool to exchange his experience of feelings in social coexistence, but this need was probably not primary. First of all he felt the need to unburden his brain, and when he succeeded in inventing methods of description he was able to unburden his brain considerably simply by making notes of past experience.

To understand human thinking and modelling.

To understand the production of thin/kin/gs, however, I need a model of the processes that direct my brain’s acts of cognition and thinking. On this point we all have solid subjective evidence of our brains ability to grasp such feelings that on this very ground produce thin/kin/gs, even if this very process goes on in the tacit so to speak. For this reason there is a need for any thinker, to develop a model that mimics the grasping of feelings and their succeeding transformation into the "mental" constructs of thin/kin/g. One way of doing so is to produce a set of code words (names) that refer to these abstract constructs of thin/kin/g. Next arise the need to construct a grammar, which state the rules how to combine these code words to reflect more complex thin/kin/gs. He soon finds this model a useful tool in dealing with personal thin/kin/gs, and soon starts to use it as a natural personal language on a daily basis.

We have now come round to a different interpretation of the intentionality of linguistic expressions (i.e., the ability of language to refer to thin/kin/gs). We seize upon the basic elements of languaging – code words – and ask what they refer to and are in this deed deeply convinced most expressions of language aim at describing a personal state or situation. In this interpretation we find, as a first step, that language is a tool to handle entities of personal experience belonging to a knower’s priverse. These entities cannot and do not refer to “things” belonging to a shared reality but rather to my personal experience and the entities identified there. Such entities form the sound basis of prediction, and do so because they predict my coming personal experience – rather than some expected changes of world in common. In this situation it does not matter either whether such acts of prediction are “worked up” or “calculated” by the use of natural language or other models of more an academic character like logic, mathematics or tools of conceptual explication.

In this view each statement is a strictly personal expression and we establish this primary privacy of explication by the specification that each useful statement in the tacit carries the signature of its explicator. This is marked by preceding a statement by the prefix AMO(#), which is short for “According to My Opinion”, where the argument # within the parenthesis specifies its explicator (utterer). In the case the subjectivity of a particular statement is evident it can as well be is spelled out as AMO:: "The car is red", whereas AMO(Bob)::”The car is red” refers in particular to Bob’s act of explication. Most of the time there is no need to burden the rendering with such elucidations, but the privacy of explication must henceforth nevertheless be kept clear in mind.

The laws of thought.

Considering the fact that we all dress our thoughts in words – and sometimes we even claim we think by the use of words – we must suspect human thinking and languaging obey the same rules. Since language is an instrument (model) for the explication of thin/kin/gs it was Boole’s intention to device a system of signs and operations capable of imitating human thinking, thus allowing for its documentation and the succeeding investigation of the laws of human thought. This modelling technique is today known under the name of symbolic logic, a system that was further developed by Frege, Pierce and Russell among others. In order to develop a more efficient tool but languaging to express the structure of human thinking Boole tried, inspired by the calculus of mathematics, to develop a calculus of logic for the simple reason he considered the structure of languaging was a somewhat confused way to reflect human thinking. Boole called his logic the “laws of thought” even

9 Or simulates to use a more mathematical word
10 Because of the feed-back occurring on the perceptual path of the brain
11 The act of producing an expression its most general sense
12 The explication/expression can e.g. be a gesture
13 However this is a confusion caused by the situation that only words
14 To communicate by language or to express in language.
if the epithet the “common habits of human thinking” maybe had been more appropriate, and he thereby gave voice to the idea that there is simply no other way to explicate human thinking but modelling. We here argue, as elsewhere, that natural language also reflects human thinking in similar way that any other model do – might they be called logical, mathematical, conceptual or whatever.

In Tractatus\textsuperscript{15} also Wittgenstein later makes a similar attempt where he addresses the central problems of philosophy, which, according to him deals with the world, thought and language, and he there presents a "solution" of these problems which is grounded in logic and the nature of representation (modelling). He claims the world is represented by thought, which essentially is a proposition with sense, and furthermore, since they all – world, thought, and proposition – share the same logical form, they can all be seen as pictures of the facts (or state of affairs). According to him it is the totality of states of affairs – actual and possible – that makes up the conceivable world.

In Tractatus Wittgenstein then reiterates the opinion of the early logicians that it is possible and desirable to create a formalised ideal of language (logic) whose structure – in contrast to spoken language – make it possible to exactly express the structures of thought and thereby revealing the structure of the world. However of what kind of a world Wittgenstein speaks, is carefully hidden in an ambiguity that stirs imagination. He sometimes suggests it is a material world in the sense of physics (6.343) and sometimes he advocates a subjective world of experience – like Schopenhauer’s “Welt als Vorstellung” – giving the impression he is a solipsist (5.5 - 5.641). Of course it is possible to combine these two attitudes, but realism and idealism are for sure incomparable. Assuming the world of Tractatus to be a private world of experience it then also follows that the world pictured by Tractatus is described using a language constructed for the description of private experience – a private language – even if the idea of a “private language” is one of those that came under heavy attack by the late Wittgenstein (1953). Here he instead turned to show us that the "Look, this is an X and that is a Y" model of language is wrong, or woefully simplistic. He suggested we should instead contemplate the function of language. “What matters is not what words stand for but rather how they are used by a speech community.” The function of language is notwithstanding of essential importance but the suggestion to ignore the descriptive function of language in this functional analysis make one suspect the later Wittgenstein simply gave up his early attempts to explain how human thinking “pictures the world.” Nevertheless the idea that language or logics directly portrays the “furniture of the world” (representationalism), he held as young, is still embraced by the majority of Western thinkers. This view of human language is a reminiscent of a position that has been strongly discredited by philosophers like Hume (1739) and Berkeley (1710). Indeed the classical attempts to try to connect language directly to a common reality seems to be the root of most inconsistencies (Kjellman, 2003) met with in scientific modelling of today. In contrast, quantum physics, the investigations of cyberneticians and the SOA make utterly clear the present understanding of human perceptual processes is misguided and claim we cannot possibly uphold the idea that human perception is a representation of an “outside” world. The classical and seducing idea of language as “description of the world” led the early Wittgenstein astray, as well as many men of logical positivism. Still he was so close to reach a more useful\textsuperscript{16} interpretation in his way of seeing the “world” as consisting of facts (1.1), rather than making use of the traditional, atomistic world conception. To him facts are existent states of affairs and these states of affairs are combinations of “objects” – albeit not necessarily material. Thus, states of affairs, being comprised of "objects" in combination, are inherently complex. Nonetheless the early Wittgenstein "placed" these objects “outside” human consciousness and was then unable to knit the web together.

In the light of the failures of the classical attempts we find that contemporary science is stuck in a profound crisis (Kjellman, 2006) that seems to touch upon its very fundamentals, which is deeply entangled in common sense thinking/languaging. As indicated by Laudan (1977) all attempts to come to the rescue of the prevailing Newtonian paradigm has failed, and therefore we need a new way of approaching the problem. Even if we are, in the name of classical science, taught to believe that our impressions portray the world “as it is” and also have been led to believe we all experience this world in approximately the same way a careful epistemology cannot take such a loose assumption for

\textsuperscript{15} Tractatus Logico-Philosopicus ; see the references

\textsuperscript{16} There are even strong reasons to believe that Wittgenstein curtly criticized Russell in his early attempts of subject-oriented analysis
granted without involving in incoherence and inconsistencies. Neither can exact science. We will here instead use the SOA to knowing in an effort that repaints the picture considerably, and also to our surprise even find a point of reconciliation between the early and later Wittgenstein.

**Turning attention to human awareness and cognition.**

SOA’s point of departure is that all models, regardless whether they are called maps, models or languages, are the result of human action. Since the SOA does not recognize the usefulness of a real/imaginary distinction we also consider thoughts to be the obvious results of action – which in a dualist framework generally is called “mental action.” This is to say that the process of thinking produces thoughts as some vague entities that I am at least able to feel – even if not necessarily in the form of distinct phenomena. Otherwise I should not even be aware of my thinking and such an account of thinking every man is likely to deny. So the crucial question is if there is means to grasp thoughts and processes of thinking in a more ‘intellectual’ way beside the unattainable fleetingness of feeling. We ask in what way we could possible ”freeze” or grasp what is conceived in feelings to make them into the intent of human process of thinking. To suggest how we are able to ”grasp” feelings is essentially to suggest a model of human cognition, and how else could mankind and science carry out such a task but taking off from the personal plane? SOA insists on a pure personal approach to human experience, knowledge and its explication, which is, as persistently claimed, the only passable way to a coherent science. Now I myself – as being the only accessible ‘entity’ in such a strict personal endeavour – will now take on the task developing a model of personal cognition and thereafter ask other human beings whether they can agree this model also portrays their feelings and inner activities. In the case we are agreed we have created a consensual model of human cognition – otherwise my personal model is a strictly personal one, maybe of little interest to the rest of mankind.

Awareness is the ’centre’ that makes me aware of the present state of affairs, which as mentioned initially refers not to the “real” state of some local surroundings “outside” my skin but rather to the state of affairs of my awareness. In general we think awareness is sensitive to the state of the mind/body and its eventual environment, and in the case my awareness can tell me something about my environment this lucky circumstance that increases my chances of survival. In this situation it is important to note that awareness necessarily reports to consciousness in its own “language” - also in the case this report eventually has something to say about my environment. It is customary, but misleading, to consider such reports being composed of sensations since this term refers to a physicist’s “outside view” of this phenomenon. Instead we will call the basic elements of such reports for feelings that together form complexes of feeling called allusions (or impressions). The modelling elements called feelings belongs to an “insiders” epistemology and the task of a subject-oriented science is also to understand in which way these element make up the core of private human knowing and sets the limits of thereof – as well as the fund of knowledge called scientific. This approach echoes the one advocated by E. Mach (1906): ”Science is no more than a conceptual reflection upon facts whose elements are contents of consciousness given to us by sensation” – however the divergence of “feeling” turns this reflection into a personal endeavour that embraces into its discourse ”inner” feelings and emotions as well.

**Feelings versus sensations.**

In the mentioned terminology also sight impressions, in parallel with other sense impressions traditionally regarded, are called feelings. Notably the concept of feeling also considerably broadens the input spectrum of human thinking, at least on the personal plane, since the actual status of the whole human body is now included in the analysis and not only the states of its peripheral senses. The neural activity of awareness has very little to do with some eventual “outside” activity – the best we can hope for is that the changes of a hypothetical stimuli hitting the senses is reflected by changes of the activities of our neural tissues. However there is no way to decide whether an activity in awareness

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17 The word ‘centre’ models a conceived abstract phenomenon
18 We here use the term mind/body since the common mind-body distinction is uncertain
19 In concession to the realist’s way of speaking
20 The need of a new concept like allusion is motivated by the impression’s character of an inseparable “mixture” of real and imagination
is caused by a state change of a bodily sensor or some other inner change - maybe even a random spasm. The output from a bodily sensor – a sensation in its traditional sense – might propagate all the way up to awareness, but on its way it its mixed up with inner feelings, and feed-back contributions until the point of irrecognizability and to that extent it is no point to speaking of the “analysis of pure sensation.” We conclude that feelings are the phenomena conceived in awareness and that traditional “sensation” possibly contribute to the rise of feelings. This latter is, however, a conclusion that is reached at far a later stage of learning. Sensation is moreover traditionally regarded as the input to a hypothetical “final point of awareness,” and this point of view is unmistakably the “outsider’s view.” The “insider” is only aware of activities in the neural tissues of awareness and the crucial question here is whether some of these activities can be made useful, and therefore a subject of heightened interest. The character of this neural activity is totally inaccessibl to “outside” scrutinizing and accordingly indescribable. The best we can hope for is a method for describing of the changes ocurred (activity), which are collected under the name of feelings and only accessible to its feeler/knower on a personal basis. These feelings are the concern of human thinking – or rather the elements of feelings grasped on the basis of dedicated interest, as defined by the actual discourse and the very questions asked. This is to say that a percept (and its feeling elements) is mostly the subject of directed attention and this act of focal attention plays a crucial role in human cognition. We will show, however, there is no need to directly refer to something (some thin/kin/gs) “outside” awareness to build a useful science. This is why the SOA’s insistence on the non-reconstructibiltiy of a “reality in its common sense” does not pose a treat against science – just against dualism and the traditional object-oriented approach.

A model of human cognition.

According to the SOA’s model of cognition numerous feelings arise in awareness and they are there grasped (or captured) on the basis of recurrence. This process of grasping is called cognition and is essentially controlled by human attention, which can, as we know, be shut off at will. The leading cognitive hypothesis of man - the knower - is that these feeling in some way or another disclose at least some “features” that can be useful in predicting coming personal experience. These "features” that make up the core of feelings are the ”features” that are traditionally regarded as a representation of an “outside” situation, which SOA rejects instead attributing the “situation” to the domain of personal experience. Feelings are furthermore regarded as continually ongoing phenomena and as such in principle non-finite and for this reason neither graspable nor denotable. The human brain conceives of feelings by acts of grasping that in this way turn them into finite phenomena. The product of this act of grasping is a finite sample, which stands for the felt feeling. This sample is called a feel (or a thin/kin/g) and stands for (grasps) the feeling under the assumption it is fairly stable during the “time of its validity” regarded a piece of knowledge. Feelings that do not fulfil this criterion of stability are autonomously dismissed as the result of the brain’s functionality as developed during evolution and are, in this sense judged non-significant, i.e., non-feels.

It is worth to note that this way of thinking is a reminiscence of the OOA. Only significant feels (i.e., recognisable ones) qualify as feels in the SOA, and are the only phenomena worthy of further processing on the basis of usefulness. In this sense the human brain is evolutionary specialised on recognition, which is an efficient way of reducing the workload of the brain. Accordingly such a (recognisable) sample must fulfil some minimal requirements of recurrence and stability in order to qualify as a feel. In the SOA a feel is therefore always significant, and as such an s-token, which is a subjective ”mental” phenomenon in the dualist’s way of speaking. In the SOA’s apprehension the feeling is not the conceived “original” but rather the grasped feel. Needless to say feelings are very “real” inasmuch we can feel them, but intellectually they are constructions (models) based on the only

21 This is the essence of the privacy of subjectivity.
22 Even if they can be partially screened off
23 Unfinished or non-completed
24 A feeling is always a complex (actual or potential)
25 One might regard this as acts of thought economy – a idea keenly embraced in the works of Mach
26 Context dependent
27 The marker part of a sign
recognisable phenomena there are in my thoughts – the samples called feels. In consequence the significant feeling is both a part of allusion (perception) and an intellectual construction, as such regarded as a stable and recurrent phenomenon. To use some other words; Feelings are the phenomena populating my awareness, but after operated upon by cognition they are, on the intellectual plane, conceived as feels, i.e., a finite (graspable) version of feeling. Feelings – well – I feel them, but this is unfortunately very far from an unambiguous act of description.

Feels are the elements of thinking and is called thin/kin/gs, just to remind us of the suggested etymological basis of the word of “thing.” When entering the associative domain of human thinking, however, there is little need to refer to feelings, because human reasoning operates mainly with feels, which readily concatenate into greater complexes called thoughts (ideas or trains of thought) that are reflected in natural language. This paper suggests an architecture indicating how such feels/thoughts concatenate to model the “deep structures” of thinking (Chomsky, 1965) that become visible in the “surface structure” of languaging, and we will argue the syntax of language is the sheer reflection of the core semantics of human thinking – albeit initially at a personal plane. The elements of this construction are the feels of experience and that are kept up in the memory of my brain. Such feels are the elements of SOA’s construction of thought, and these feels are also used models feelings. We also repeat that feels are phenomena learned on the basis of re-cognition. In the guise of feels/thoughts/ideas they are now conceived/grasped by my intellect – but are unfortunately not yet describable.

**Using words to grasp feels and thereby provide meaning.**

A word is a unit of language that consists of one or more morphemes that are linked more or less tightly together. We say a typical word consists of a stem and zero or more affixes. Words, in turn concatenate to form larger units like phrases, clauses and sentences. Words are often thought of as the smallest unit of language that can stand by themselves and also provide a meaning. This leads us to the study of the meaning of words. By the usual convention to call a field of study by the name of its subject matter, this leads to the theoretical study of meaning, i.e., semantics – a field that is mainly devoted to the use of different sign systems.

We here first we note that the SOA considers all words to have a semantic function in, since they all appoint actions. The more grammatical role some words are regarded to play in the construction of sentences (e.g. concatenation) are however also operations permeated by action and are for that reason also considered meaningful. We will thus concentrate on words as being the minimal semantic units of language, which also reflects the idea it is possible to break down a sentence into its smallest meaningful units. The claim is that such words have an appointment or semantic character – and they are said to “carry meaning” in a way that hitherto has frustrated man’s efforts to provide a useful definition. Even the concept of a number is still an issue of considerable philosophical controversy. (Kauffmann, 1997) Since all words are names used to address diverse model phenomena an alternative denomination is ”name” and sometimes also the notion of “term” is used.

The SOA take words, considered as stems or morphological complexes, as pointers (addresses) to the fundamental semantic unit of human thinking – namely the feel. So each word is in that view, on a personal level of experience, associated with a feel. In this framework a feel is thus regarded as a grasped feeling and should maybe be called a conception. It furthermore models the conceived multiplicity of feelings by intellectually grouping feels into concepts (concept with grip). Since the notion of feel is introduced to cover both these aspects of capture it seems a better choice – at least in an effort to avoid confusion. We claim that feels are the target elements (intents) providing the

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28 The ‘span’ of a concept is varies depending on the question posed – and the conceptual span of a “dog” is operationally decided by the context.
29 Combine
30 On a basis of continual update
31 Some prefer to use the notion of "term" denoting a word, word pair, or word group, that is used in specific contexts for a specific meaning.
32 From Greek σῆμα i.e., sign
33 The term concept is traditionally used for a general abstract idea and conception sometimes used to refer to a particular instance or understanding of such a concept.
intellectual meaning of a word, and its corresponding feeling. A word is an argument appointing such a feel – a feel that in turn is used as an approximate model of the corresponding feeling experience. We already here note that depending on the context a feel can be used to model an individual instance or a summary of already experienced instances, i.e., a category. However such a category is not a structure fixed once and for all, but rather a set of possible (i.e., useful) schemata, highly dependent on the intent of discourse and the very questions asked therein.

Words are in that sense pointers to memories of such a feel – or thin/kin/g. Feels and thin/kin/gs are in fact synonyms, in that sense we can say human thinking in its etymological sense refers to thin/kin/gs. We now drop the denomination of "thin/kin/g" but continue to keep up the term "feel" to indicate its close and important association to personal feeling experience. However we note that "feel" at any point can be replaced by the notion of "thought." Accordingly a word is *not identical* to a feel it merely provides a path of association to the memory of it. A word is the argument of a function that targets a corresponding memory of feel. Accordingly a word is not a sign but rather a token as part of a sign function (Kjellman, 2003, p.56), and the argument used as the input to such a sign function. Any word thus provides a link to personal feeling experience, which provides the personal meaning of a word, and this is as a primary step the only meaning there is. We here note that we would rather say a knower admits the usefulness of a feel (and its corresponding feelings) by associating a word to it. In conclusion, I must first have had an experience in order to label it with a word – or more metaphorically: First there was experience, and then came the word. Whether this marker/token (i.e., the row of letters), is invented on the personal plane or given by inheritance makes very little difference in this situation. The function of words to appoint feels, which in turn lay out base to compile greater complexes of experience make a word a useful tool of language construction on the personal plane. The project of “understanding words” i.e., to learn to connect a word to a corresponding feel according to the coming social convention is quite a different task.

**The construction of language.**

We have now established that the meaning of words can be defined by reference to personal experience, and the next step is to unveil their function being part of structures, like phrases, clauses, sentences and greater verbal blocks as used in modelling and describing more complex situations. Entering upon this path we first note that the words of a language are used in at least three modes:

- **constructive**, i.e., for the construction of new words
- **prescriptive**, i.e., specifying the formation rules of composite phrases
- **descriptive**, i.e., explicating a conceived piece of personal experience (i.e., modelling)

The two former modes have to do with the construction of language, and the last one pertains to its normal mode that hitherto has caught the main interest of linguists, i.e., the empirical use of language and its syntax. The former modes, however, reveals the dance of personal feelings that underlies the syntax of language, and thus provide a sound basis for Chomsky’s idea (1965) of the universality of grammar. We will, furthermore, learn that the origin of words has no or very little influence on the explanatory power of a language. This power is determined by the choice of the axioms of a language, the dedicated words used to appoint base feelings, like e.g. green, red or big.

In order to construct (or interpret) more complex models of explication, like phrases, clauses, and whole sentences we do not only need an interpretation of the basic semantic elements of language but also knowledge of the stipulated formation rules to produce more complex expressions. Needless to say also these rules must reflect my thinking otherwise languaging will express something else but human thinking. The leading argument here is that languaging (like all other forms of modelling) reflects personal thinking, simply because its aims at explicating human experience. To the sceptic one might here raise the rhetorical question; If the way we speak does not model thinking what does it then reflect?

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34 Both in long and short terms of time
35 Aims at
36 The term “marker” might clarify the role of token in the SOA
The existence of models\textsuperscript{37} (and language) in fact defines the process of thinking – and is the only descriptive indication of thinking there is. In that respect experience and thinking is nothing more but a "dream" (or better allusion) – but the regularity of its expressions will separate it from the dreams of sleep. In the lack of thought there is certainly no need of words at all, and when contemplating this initial stage of language construction it is fairly easy to understand that thinking and cognition (both as habits of the individual human brain) was well evolved before the invention of language. The insistent claim of the SOA is: First there was a feeling experience, which brain in the course of evolution learnt to grasp and turn into a feel/thought. At a far later stage the first creative hominid invented the token – being part of a sign function – in a personal effort to unload his memory and contemplate this processes of thought. The question in what way language feeds back to influence our thinking is here of minor importance. The famous Whorf-ian (1956) claim that language is forceful factor affecting human thinking seems a bit farfetched considering the fact human the brain was very well developed considerably a long time before language evolved on the stage of man. In clinging to such a claim one actually argues the development of animal thinking has been less restrained than that of human beings, which seems to contradict the biological path of evolution - at least as we know it. Of course the habits formed by past thinking might influence the relative attention paid to entities of our thinking, and maybe this is the reason of the prevailing predilection for object orientation. In any case this is very far from claiming that language, regarded as a tool, sets the limits of human thinking.

\textbf{To find a useful point of departure}

To sort out the strands one has to consider how human feeling and thinking evolved in brain at a preverbal stage to become the very engine behind language creation and at the same time being prepared to find some variations. In doing so the striking similarities of different languages can be explained by the similarity of human brains and thought processes - and we here readily find the root of the universality of grammar. The logic and function of language will be explained when we go back and construct a model of how the first human being created a rudimentary language … and in this situation primarily to record and remember its own experience. Unfortunately it is as hopeless to trace a proto-language using the knowledge of today’s language as it is impossible to find the roots of the hominid’s thinking aided by our modern way of thinking, since this development is all history and carefully hidden by the passage of time. However we must not muddle our task, since what we need the most is not to understand the origin of language but rather to understand what is the origin of personal thinking and how it comes to the surface in acts of modelling. It seems unnecessary to give up this task just because we are unable to refer to a reconstruction of the history of human language.

Since the SOA insists on human knowing to be a strictly personal endeavour, when we instead take one the task of constructing a hypothetical model of the way a modern man could have constructed a language in case he had not inherited the words from his ancestors. This is the equivalent of constructing a brand new language from scratch, and in doing so the process of language construction come in the centre of discussion and shed a considerable light on human modelling efforts and conceptualisation in general. Such a model might say very little about how the hominids eventually once constructed a proto-language but will nevertheless reveal the conceptual foundation of modern thinking/languageing for the reason each and every man has to start his own personal process of conceptualisation from this very beginning. In this deed equipped with an evolved brain, of course, but totally devoid of knowledge of the basic elements of linguaging and conceptualisation. In this respect the newly born child’s memory might appear as a “tabula rasa,” but its brain is an evolved “machine of cognition” capable handling the feelings of experience according to the developed habits of brain – rules that are innate in this sense. From this point on thinking and language will co-evolve on the personal plane, and we notably avoid to involve in a hen-egg debate by establishing; The child’s brain was first and afterwards the thought come to its mind via feeling experience. It later found it convenient to construct (or accept) words\textsuperscript{38} to use as a tool to “mentally” appoint these thoughts. The first hominid, let us call him Adam and the newly born child faces almost the same situation, except for the fact the child can rely on the keen assistance of its parents in the process of learning. The very

\textsuperscript{37} We here observe that a percept is a biological model composed of feelings

\textsuperscript{38} More correctly sign function
point with simulating Adam’s acts of word creation is to investigate how modelling and languaging once begun at a personal level in the absence of language and in a situation that exclude the possibility of learning assistance.

So let us go back to the primary moment – albeit in imagination – and this always is the current recipe of constructivism. Adam constructs a set of basic code words (axioms) to use as pointers to personal thoughts, which in turn points to the traces of elementary feeling experience. This “silent” path of association between a word and a personal piece of feeling experience is what in the course of time will define the “meaning” of a word. In this situation a language constructor like Adam is, in principle, free to choose any word or other token to construct a viable association to a piece of experience. If he likes he could simply use a random “letter generator” to produce the words of the language, and as a suggestion deleting the “words” that are hard or impossible to pronounce. There is initially is no meaning whatsoever connected to the axiomatic code words of Adam’s choice - this is what SOA has to say about the “origin of words.” This is to say that the mark an word occurring in a language does not influence its grammar – hence universality. Here we must here not be lead astray by the probable suggestion that the first word was a “sound of emotion”, like for instance the utter reflex of “bea” at the sight of a bear. Such a word production procedure can of course be used as a complement to a “random word generator”, but we note that even such a sound of emotion has initially no meaning attached to it before the moment Adam gave voice to it. The SOA makes utterly clear: In principle a code word becomes meaningful during the course of its use, no matter how it is marked or what is the procedure of mark production is used. This is the reason the meaning of words gradually change in time – and also have different meanings in different cultures. So ‘meaning’ resides in the connective path between an argument and its target phenomenon, and cannot be intellectually specified in the case of an axiomatic argument. We are here obliged to resort to ostentation.

Accordingly Adam, in a possibly random manner, invents words to appoint elements of personal feels/thoughts, elements that are seen as a mean values of already experienced feelings. We recall that these feelings primarily are different activities in awareness that allow for a later discrimination in mind. Adam first learns to know/feel the “simple” activities rising in his awareness and in this deed he (via thinking) associates a word to each conceived recognisable activity. Many of these words are in linguistic terms classified as adjectives. They are words that appoints of feels we have no reasons to further resolve into sub-activities, and thus refers to simple feelings in the stipulated discourse. E.g. “green” and “red” stands for particular shades of colour and “tall” for a certain grade of extension in the discourse of physics.

To Adam the prospect of explicating thinking at first seems to be to assign an word to each familiar feel/thought of more a simple character by building a knowledge base (KB) of words that each is associated (stands for) the memory of some conceived experience. In such an act called attribution he produces an attribute associated to a feeling experience, which we often in normal parlance call a “property of a thing.” We recall the SOA’s claim this is a “property of a thin/kind/g” and not one of a worldly thing. For this very reason SOA claims that an attribute is a feature of thought and that each recognisable feel by definition will have at least one attribute – otherwise it is not recognisable. This observation also gives us reason to provide a definition of personal existence: A phenomenon exists in the case it has an entry-point in the table of words. Thus “green” exists because its name (the word) occurs in Adam’s table of experience, which is simply to say that the word of “green” is useful to him.

After constructing a rudimentary table of words featuring a set of elementary feels (in the sense of axiomatic) Adam is now able to walk around pointing at trees grunting “green-ing” and furthermore “tall-ing” when encountering a tall one. In this view we find that the attributive adjectives in principle stands for a particular activity that has occurred to Adam’s awareness, and since linguists

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39 The ‘physical’ rows of letter signifying it
40 A mean value is a concept of summarisation (integration) – not necessarily an arithmetic mean
41 We can follow their changes but their essence is unknowable
42 In his Treatise Hume speaks about simple and complex impressions
43 That models a corresponding feeling
44 As a memory
45 We attribute to Adam a rudimentary ability to speak for the sake of this thought experiment
claim that the meaning of most verbs can be reduced to a set of space-time primitives that all describe of activity we now also find the attributive adjectives to have a similar function.

The marks "green" and "tall," thus are pointers to the feels of thought that stands for the feelings of "greening" and "talling" respective. We here confirm this idea by noting that the name of a verb and attributive adjective both easily transforms into a feeling model simply by appending the suffix – ing, a form that most of all refers to the state of ongoing activity or action. Some of the so constructed words might sound awkward, like e.g. “is beautiful-ling”, but the point here is to highlight the basic function of a word – being a pointer to the memory of a specific experienced activity. We might say that the stem "green" is the intellectual construction used to appoint the feeling of "greening" and in general that a feel appoints a corresponding feeling. Partly the function of the IS-predicate is to somewhat lengthen this “state of activity in time.” Now Adam is able to merge most predicates and attributive adjectives of his KB into a single table of activity – a V-table – all terms appointing states of recognizable activity. We here note that, in general, an attributive adjective points to a simple activity (which is summarized by the concept of state), whereas a verb refers to a complex but nevertheless recurrent state succession. An attribute adjective can sometimes refer to a note of a one-shot happening, like in the “unmarried man,” but also in this case "to marry" refers to an activity.

We have now suggested a model how the primary feelings constituting the experience of Adam produce words in a way that make him identify the mean value of personal feeling experience with the meaning of an word. We have also discussed some possible methods for Adam to use to produce the marks of such words in his efforts to unload his memory in processes of auto-communication. By associating a word to a memory he provides the very grip of the feel – (con cept = with grip), at the same time defining the word to have a semantic meaning. These words are thereby, and in virtue of its future similar use, actually permeated by personal meaning, contributing to a steadily growing "toolbox of thought." Adam can use this “markers of thought” in games of simulation, for instance to examine possible combinations of feels and their behaviour in the space-time of experience and also produce patterns of expectation to appear in the future. However this thinking is just yet in a small scale, since for the moment most of these words are axioms of thought, i.e., pointers to simple feels. Nevertheless here is the place to connect to Tractatus’ famous, but nevertheless undefined, concept of fact. (1 – 1.13)

We apply the interpretation that an atomic fact is a feel – i.e., an unspeakable phenomenon of recurrence and stability as appointed by a word. Note that the feel (in itself) is still as indescribable as is the feeling, and its associated word now provides the only personal grip there is. When we translate Wittgenstein’s use of the term “world” to refer to a “world of personal experience” all the pieces fall on their places - at least when we in the end translate his odd use of “picture” into “explication”.

Furthermore since he feels are elements of human thinking and words functions as “markers” of these feels we can literally say words are the “pieces of the game of thinking” in an obvious close parallel with the game of chess. The point of reconciliation between the thinking of early and late Wittgenstein is now obvious.

The discovery of perceptual regularities.

Soon Adam begins to discover other forms of stability in his experience. Some feelings linger, like the “blue” of the sky and other feelings combine to form complexes that also seem to remain fairly stable in time. For instance he finds that the complex feeling of “greening” and “talling” come and go in the course of “time” and also occur at different “places” in experience. Such a feeling complexity is

46 Or continuous
47 A computer scientist would prefer the term “arrow”
48 Which should rather be called an ‘operator’
49 Produce and construct are synonyms in this framework
experienced as a unity, which in the domain of thoughts is called an entity and Adam learns, still on a basis of recurrence, to trace such entities in living experience. This gives him reason to construct another set of words, called nouns, and to place in another table. In this N-table each name entry stands for a traceable and stable feeling regularity experienced, albeit now more a complex one – so to speak. As e.g. “green” stands for a simple feeling the word of “tree” now refers to a composite and stable experiential entity. This complex feeling experience is modelled by a set of feels, like for instance ”green” and ”tall.” Now Adam intellectually constructs a production rule: IS(green&tall) that appoints the “feeling of/greening; talling/” under the collection name of “tree” The intellectual production rule now reads; AMO(Adam) :: /tree ← IS(green&tall)/.

Language in evidence portrays the underlying play of feels. Already at the preverbal stage the human brain learns to release the appropriate reaction to a complex feeling pattern, e.g. when it provokes the adequate flight reactions at the “sight feelings” of a tiger. The learning of useful reactions to complex feeling experience is thus prior to languaging, and probably even to mature thinking, as indicated by the primitive reflex action. ”Green”, ”tall” and ”tree” are words from the V-table generated in a possibly random way, so the language structure actually mediates that “is” ∇ and ∇” or conceptually that / ← IS(∇&∇)/ – simply a general rule of how pointers to simple feels concatenate to produce more complex feels. The AND-operation can be applied several times so the general rule actually reads:

AMO(#): / ← IS (∇ & ∇……….& ∇ ) /

and the priversality of language is now evident, since the structure of language structure is now almost independent of the actual choice of words. Each new word appointing an entity (of feel) is anchored in Adam’s preverbal feeling experience, and since all words ∇ on the right hand side of the production sign ← are feelings as noted in Adams activity table (V-table) we readily conclude the ”conceptual stability of entity” denoted by is nothing else but another activity. This is to say that all words contained in a language appoint activities and in consequence a language is a process-oriented framework of modelling. We can actually say that the traditional concept of “object” is nothing but a complex of stable feels in the domain of thought. These feels can be used to ”compute” the addresses of the memory of experienced feeling complexes in a way that is context dependent.

Adam now has a rule of how to construct another table – an N-table of noun names – derived from the axioms of the V-table. Furthermore Adam can now extend his comprehension of what phenomena exists in his priverse:

The personal existence of a thin/kin/g is ascertained by the occurrence of its name in the personal KB (the V- or N-table).

Statements like “a tree is” or “trees are” simply is Adam’s way to state that the both word ”tree” and its memory trace are present in his KB – as much as that and nothing more. The feeling entities appointed by nouns are in principle also actions, inasmuch they all via set of feels models the complexity of feeling experience, and so far all words of Adam’s KB appoints activities. Using a more modern line of thinking we can say that the simple feelings superimpose into feeling patterns that form more complex feelings that are fairly stable in time as well. The hypothesis is that the brain from the version of the superimposed feelings is able to resolve a complex feeling into its constituents. This hypothesis is confirmed by the syntax of languaging that presents obvious evidence by its very rules of concatenation. Adam says that particular thin/kin/g “is redding and beautifulling” stating that the words ”red” and ”beautiful” concatenate by the use of the AND-operator, which is the obvious reflection of the feels/thoughts ability superimpose to form complexes – otherwise the syntax of language would not allow for concatenation.

50 As another step of thought economising
51 Valid in the experience of Adam, which will soon be extended to universality in the sense of Chomsky
52 Short for “object of attention”
53 Fourier analysis
To modify words and extend the function of words to phrases

The range of human feeling experience cannot be very well captured by the sole use of nouns and verb/adjectives. For this reason the ingenious inventors of language has come up with numerous methods of modifying the pointing functions of words. For instance different affixes modifies the stem of an word to cover more facets of personal experience and other determiners/modifiers are used as elements to accomplish the same task by using nouns and verbs as the head of noun phrases (NP) and verb phrases (VP) respective. Such phrases are constructed (or resolved) according to the rules of generative grammar (5). In this way a phrase modifies the address of the word head to point at some experience kept elsewhere in memory, but we here take notice that the prime function of such a phrase is still to provide an address to personal experience.

On such step is the discovery that some of the experiential entities appointed by N-words or nouns, or more general, by NPs, that are involved in activities can be are characterised by patterns of action. These action patterns are appointed by V-words or verbs, or VPs, which in a step of thought economy summarises greater chunks of personal experience. As noun names like “dog” or “snake” are invented and come into the centre of Adam’s attention he can summarise a chain of experiential events by grunting: “Dogs run” or “snakes crawl.” This simple noun-verb structure of language clearly displays an underlying subject-predicate target structure of human thinking, for the reason it seems to him the chosen subject of attention regularly behaves in a certain manner. He learn to associate a class of N-words with another class of V-words. The NP targets on the subject of interest and the predicate on the pattern of action predicated (assigned) to it. Such a predicate is also part of the characteristics of an entity, since Adam learns to know that “snakes do not run.” The bond between the subject and a predicate is most often so strong that we find it helpful to say that the subject entity is the cause of the action experienced. However such acts of causation are nothing but a brain’s habit, as most famously pointed out by Hume. This is how Adam comes to pay attention to higher levels of activity54 and that are “exposed” to him in experience by stable entities on a regular basis. We claim a statement structure like “Bob runs” is the sheer reflection of Adam’s pre-verbal structure of feeling experience. This state of affairs provides a feeling distinction into agent and activity55 that has nothing to do with an eventual prior knowledge of language, for the reason there are strong reasons to believe even simple organisms are capable of such distinctions. The universally prevailing agent-action structure of living feeling experience is without doubt well reflected in the subject-predicate structure of statements and the compelling NP-VP structure of sentence in prevailing languages and logics. In a simple sentence like “Bob runs” we can readily identify the noun and verb names serving as ”pointers” in the structure of sentence.

Normally a sentence must also contain at least one noun (or pronoun) in order to qualify as a declarative statement in English, but sometimes a term with such with an appointing function is missing. E.g. the sentence “It rains” does not mention an agent but instead uses the word “it” to mark the “place of the agent” in its absence. Where is the rainer? Sometimes there is simply no justification in specifying an agent, but a predicate is obligatory of a useful statement. It is in fact possible to device a rudimentary language lacking of nouns, which is very helpful investigating the origins of human thinking. The next step of complexification is to identify the object of the agent’s action in the predicate. To this end we normally use another NP, and we can now at the sentence level recognise a typical NP-VP-NP structure that reflects a subject-predicate statement structure, where the object of action is now included in the predicate. Such a statement is capable of expressing several entities of thin/kin/g involved in a pattern of complex activity, but now the sentence reflecting this personal “dance of feelings” also begin to show signs of considerable complexity.

Now Adam has a useful tool for explicating (taking notes) of even more elaborate experience met with and thoughts carried out. He can grunt: "Sun rises. Feel warm. Go swim." to demonstrate the fact that also sentences are concatenated to express a more complex line of experience and/or thinking. He actually use these markers of word in his rudimentary language to stage a play of feels that easily could have be written down in a manuscript (or other form of record) if he have had the ability to write. This staged play of feels using the words as basic markers is nothing else but a game of ‘mental’

54 Human attention is very sensitive to action
55 The latter being typical of the agent in question
simultaneous and such a game is readily modelled by computer simulation. Here lies also the crucial point in understanding the communicative powers of language and modelling; In the same moment another living being is able to revive a personal play of feels outgoing from this very manuscript – this very being says the manuscript is understood – simply because the manuscript stages a personal play of feels in his/her brain. There is just one crucial step remaining, namely to set up learning procedures that make certain the personal play of feels respective coincides reasonably well.

However for Adam’s personal sake we here also contemplate his inherited preverbal powers of categorisation/classification. Here recognition and feeling stability is the crucial key when using the word markers of (mental) presentations as a tool of survival. The capacity of categorisation is a preverbal skill developed primarily for personal use. We can think of a category simply as pieces of personal experience in which the conceived entity that can be regarded as marker in the “play of life.” The ability of categorization is a selectively advantageous trait to a living being, since this allow for a reduction of the decision time upon perception. It is easily understood how an individual equipped with superior capacity of entity categorisation is continuously selected for – as to speak - throughout evolution.

A common language.

So far we have considered Adam’s efforts of language construction because it reflects my – or your own - development. The similarity is striking and almost parallel where it not for the fact Adam has to constructs his words, whether you and I learn them in living experience and close coexistence. The very point was to show that Adam’s preverbal capacity to handle and interpret feelings acquired by biological inheritance underlies the universality of languaging – and has very little to do with the origins of words. Adam’s language is, however, yet a strictly personal framework erected on the evolution of human feelings in its biological sense. However the step to establish a consensual language created in social coexistence is a very small one since we can easily create such a platform simply by accepting the language Adam by now has developed.

In developing Adam’s language we only required that a pattern of experience, which was given a specific name (word) during a process of personal learning, was stable and recurrent in time and thus able to provoke the memory of an earlier experience. The word is connected to an experience and stands as such for the complex of personal feels (or feelings). All that Eve has to do to join Adam in social consensus is to learn the words of Adam’s KB by having a “similar” experience, i.e., expose herself to her own personal feelings when facing the similar situation as Adam does, and make up a learned path of association between this set of personal feels and the word in question. The word now grasps their experience, on both hands, no matter what are the essences of their subjective feels. To achieve this goal in a wider social consensus it is required that each and every V-word has clear and crisp operational definition as once proposed by Bridgman( ). This is a state of affairs that is sadly today until the extent one suspects that natural language sometimes rather is used as a tool confusing the listener rather than clarifying the path of thought associations of its explicator.

In any case we find that words are the means to circumvent the privacy of subjectivity, and the prospect of learning a language is to learn the names of this set words, their paths of association and the rules to use to produce statements and greater units of explication. Needless to say both the words and the rules are established by the social convention of a language community, but for the ease of understanding we can as well accept Adam’s proposal56. No matter what is the choice the learning still turns out to be quite a time-consuming and sometimes tedious task.

Once a member of a language community has succeeded in building a rudimentary V- and N-table and assimilated the basic production rules of language rules such a knower laboriously discover he/she can establish a consensus when discussing the subjective entities of personal experience, as if these subjective entities of his or hers priverse belonged to a ‘common universe.’ What is common then is the instructed use of words that stands for the memories of experience that arose at the point of time of their instruction that has been further modified by later experiential reassessments. Quine (1960) held that the word "rabbit" in the statement: “Look, that is a rabbit" uttered while one is pointing to a rabbit is so hopelessly ambiguous that it could mean just about anything to anybody: rabbit parts, rabbit stages, unique instants, or whatever. In this frustrating situation S. Harnad (1996)

56 As we once did with the proposals of Plato and Aristole.
pinpoints: “There is simply no way of arriving at the fact of the matter -- or perhaps no fact of the matter to arrive at.” They are both mistaken since the word “rabbit” targets a subjective memory of collected experience of feels associated with a “rabbit” experience, the meaning of which is illuminated in a genuinely multi-faceted way under different lifetime conditions. A knower carefully learns to establish the traces of memory appointed by the word “rabbit” that indubitably reflects a “similar” experience of others – otherwise he has to not learned “rabbit” at all. The recurrent successes in using the word of “rabbit” confirms the path to this very feel and make this memory a useful personal fact of life – and this is sufficient.

Conclusions:
The Subject-Oriented Approach shows that human beings can communicate and exchange experience without recourse to a questionable common reality, instead using different languages, the words of which make subjective reference to a set of subjective activity tabulated in a personal V-list and N-list respective. The V-list makes up the chosen axioms of description and the N-list names a derived set of constructed stabilities (entities) of activity. By training and coexistence we individually learn to associate each word of language to a past and remembered experience of feel or thought and in this manner languaging reflects an underlying play of personal feels, which was developed long before language even come into existence, but nevertheless provide the meaning of words and more complex expressions of language. In this vein each and every statement of a language or model is a strictly personal explication. From these preliminary conclusions we are able to draw consequences that reaches that far we can speak of a radical change of knowledge paradigm – the implications of which cannot possible be dealt with any further here.

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