The Gist of Genesutra

The physical world we live in and our ideas about it are in constant flux, and so is the 'flesh' of our thoughts – language.

Sutras 1- 4 view Language dialectically, as a complex whole – in all its complexity, interconnectedness, development and change. The wide-angle lens of dialectics enables us to see how the complementary facets of language, its psychological, physical and social nature necessarily shape its historical essence, resulting in linguistic change.

Here is a re-cap of the basic principles and conclusions of dialectical linguistics:

- Language is a complex whole of interrelated psychological, physical, social and historical phenomena.

- Word-meanings are the smallest units of the complex whole of language – they retain all of its psychological (meaning), physical (sound structures), social (communication), and historical (existing in time) properties.

- The whole is more than the sum of its parts. Language is more than the sum of its 'distinguishing features.'

- Language is the social *tool* we use for generalizing – the tool for constructing and communicating complex meanings (these are the intellectual and social functions of the language tool).

- The mechanism of every language tool consists of conventional word-meanings and rules for putting them together to form complex/ composite meanings (phrases and sentences, the 'flesh' of thoughts).

- A word is a union of thought and sound. The 'qualitative distinction between sensation and thought is the presence in the latter of a generalised reflection of reality, which is also the essence of word meaning: and consequently that meaning is an act of thought in the full sense of the term' (1).
- A word without meaning is an empty sound; meaning, therefore, is a criterion of 'word,' its indispensable component (1).

- The fusion of thought and sound in word meaning is the product of the historical development of human consciousness (individual, as well as collective).

- Word-meanings are fluid – they grow, change, and develop. In the historical evolution of language, the very structure of meaning and its psychological nature also change:

  'From primitive generalisations, verbal thought rises to the most abstract concepts. It is not merely the content of a word that changes, but the way in which reality is generalised and reflected in a word' (1)

- The process of grammaticalization illustrates the historical evolution of every language.

- Three principles of all human understanding (all generalization): association of ideas by resemblance, contiguity in space & time, and cause/ effect (2).

- Every word-meaning is a generalization in the collective mind of the speech community; the meaning of every sentence is a generalization in a speaker's individual mind.

- In order to form a concept (generalization), we must be able not only to connect, but also to abstract, to single out its characteristic elements, and to view them separately from the 'totality of the concrete experience in which they are embedded' (1).

- Speakers use the words, each with its own socially assigned meaning, to create sentences (thoughts), just as artists use tiles of different colors to create mosaics. The colors of the tiles, and how they relate to others in the pattern determine the overall image ('meaning' of the mosaic):

How words of different colours (conventional meanings) are put together in the sentence determines the overall meaning of the sentence, the 'image' it creates.

- Tiles acquire their meaning in the context of the other tiles in the mosaic (i.e., green tiles may form the leaves of a flower, or the leg/ back of a frog) – their true meaning is their *use* in the mosaic. **Words acquire their true meaning only in the nexus of the proposition** (i.e., 'That jerk gave me the *finger*!' : 'That was *finger*-licking good')

- The whole is more than the sum of its parts; meaning of the mosaic is more than the sum of its tiles (i.e., flower : frog); meaning of the sentence is more than the sum of its words – it also depends on how they have been put together ('Paul eats fish' : 'Fish eats Paul'), etc.. Sentences (thoughts) are mosaics of composite meaning.

- Thinking involves both synthesis and analysis of ideas, just as breathing involves both inhalation and exhalation.

- To make a mosaic, we must not only connect our tiles together into a meaningful pattern, but also describe, add enough detail to it. Similarly, when making a sentence, we must not only put words together into a basic meaningful structure (S/V/C), but also to add detail (description) to the major sentence constituents (Subject, Verb, and Compliment).

- We spin our verbal 'webs of significance' by putting word-meanings together into the nexus of the proposition (synthesis) and describing parts of the nexus by associating them with other ideas, based on some Resemblance, Contiguity, or Cause/ Effect relationship (analysis).

- In live communication, words and their meanings are relatively independent of each other (i.e., in this exchange: You rotten jerk! – I love you, too!). Word meanings in use are so fluid, because ideas exist only in our minds. We all perceive the world's mosaics with our own eyes and ears, and we 'make sense' of them only in our own heads. Each mind's eye views the world from its own perspective; its clarity of vision depends on many factors, such as the level of one's cognitive development, experience, emotional /physical state, the context and circumstances of the exchange, etc.

- Speakers use the common social 'currency of thought exchange' (words of their language) to create the 'mosaic images' of their own ideas.

- Generalization is the Rational Language Mechanism, the matrix of the universal grammar of verbal thought; it casts, constantly reshaping, the diverse forms and structures of all human languages.

Sutras 5-10 zoom in on the *physical forms* (structures) of Language, focusing on

- the smallest units of language (word-meanings), and how we use them to build our mosaics of complex meanings sentences);
- the bits and pieces of words, morphemes; and
- the smallest elements of the physical forms of language – sounds.

Sutra 5 (on Syntax) focuses on the *interface* between the psychological and physical aspects of Language. It views Language (i.e., abstract thought embodied in physical sound structures) as a process, as a living cycle of synthesis and analysis of its word-meanings. It claims that linguistic structures, the 'flesh' of human thought, necessarily reflect its logic. Sutra 5 uncovers the Rational Mechanism of Language – the process of generalization, which forms linguistic structures through the *Synthesis* of word-meanings into SVC patterns and *Analysis* of the major sentence constituents (irrespective of the order in which they come) through specification/ modification/ description.

The Gist of Sutra 5

1. **Syntax** – arrangement of words in the sentence
   a. The **Sentence** – saying something *about* something
   b. The **Subject** – what we speak about
   c. The **Predicate** – what we say about the Subject
   d. **Parts of Speech** – functions of words and groups of words in the sentence
   e. **Phrases** – groups of words that function together as 1 part of speech; no SVC pattern
   f. **Clauses** – groups of words with SVC structure that function as 1 part of speech (Noun, Adjective, or Adverb)
2. ***Synthesis*** & ***Analysis*** together are ***generalisation***; since the words and sentences of language are generalisations, languages structures embody ***Synthesis*** & ***Analysis***
3. ***Recursion*** – the potentially unlimited extension of language structures by embedding phrases and sentences into other sentences; it shows how ***generalisation*** can generate an infinity of ideas through the ***synthesis & analysis*** of word-meanings
4. ***Generalising*** Sentence Analysis (***G-nalysis***) aims to identify S/V/C patterns and determine how they relate to each other (how they function, or what they do in the main sentence).

The Gist of Sutra 6

1. Grammaticality measures the conformity of utterances to the rules of the language system.

2. Apart from enabling us to distinguish grammatical strings from ungrammatical ones, our knowledge of syntax allows us to know
   a. When a sentence is structurally ambiguous
   b. When two sentences of different structure mean the same thing, and
   c. What the *meaning relations* are in sentences; in other words, it allows us to see the *logical connections* between words, how words *relate* to each other in a sentence.

3. Grammaticality exists on different linguistic levels: lexical, syntactic, and semantic.
4. Utterances, which break the basic phrase structure rules, often become unintelligible.

5. Ambiguity results when different deep structures (meanings) overlap in the same surface structure.

6. Only grammatical and unambiguous forms (utterances) transmit meaning effectively

7. The interplay of 2 factors create 'chunks' of complex meaning:

   a. The blend of all the word-meanings we use in a phrase/sentence, and
   b. The order in which the word-meanings are joined together.

8. Syntactic forms/structures have a direct bearing on the logical relationships between word-meanings in a sentence, and on the thematic relations between the verbs and nouns (particularly in a fixed word order system):

   S   V   C$_{(DO)}$ S   V   C$_{(DO)}$
9. The **dog** bit the *man*   ≠   The **man** bit the *dog*
   a.   **agent** *DO*   **agent**   *DO*

10. We determine the 'truth' of sentences by assessing how the statement correlates to reality.

11. We determine the grammaticality of utterances by assessing their compliance with the syntactic, lexical and semantic rules of the language we share with others.

12. The rules of a language govern how elements and units of language (sounds, morphemes, word-meanings, phrases and sentences are put together; these rules determine the *forms* (structures) of language.

13. Some combinations of word-meanings become set expressions (collocations, idioms, etc.)

14. Grammaticalisation is the process of language change, driven by the way the human brains think (generalize, based on associating ideas by Resemblance, Contiguity, and Cause/Effect). It occurs because of *re-analysis* of word-meanings in the collective mind of language speakers: concrete word-meanings become more abstract, acquire grammatical functions and thus form the grammar of the language. Language structure is shaped by human brain, by the mechanism of human thought (generalisation).

The Gist of Sutra 7

1. ***Morphemes*** are the ***smallest meaningful units of language***:
   a. They cannot be subdivided
   b. They add meaning to a word
   c. They are 'recyclable'
   d. They can have any number of syllables
2. Our mental dictionaries contain ***morphemes and instructions for combining them***.
3. Morphological rules can create complex *three-dimensional* structures: this makes the number of possible combinations infinite.
4. Bloomfield's definition of ***word*** as ***a minimum free form*** is not always useful, because
   a. Words may be bound too tightly with their context (Cf. set phrases/idioms), or
   b. They can be homonyms/homophones – they can actually belong to different lexical items.
5. Word sound sequences are distinguished by ***uninterruptibility*** and ***mobility***.
6. Morphemes can be isolated through comparing sound sequences.
7. **Morphemes** can be ***free*** or ***bound***; *free morphemes* can be ***lexical*** or ***functional***, and *bound morphemes* can be ***inflectional*** or ***derivational***.
8. Two different *types* of morphemes act as building blocks that make up English words – ***Roots*** and ***Affixes***. Each of these classes can be further subdivided:
   a. ***Roots*** can be ***free*** or ***bound***
   b. ***Affixes*** can be divided into ***prefixes*** and ***suffixes***
      i. Infixes and circumfixes may be common in a language

The Gist of Sutra 8

1. **Morphemes have variant forms** (allomorphs)
2. **Morphemes change**, depending on
   a. their history (lexical conditioning) and
   b. the neighbouring speech sounds
3. **There are three major types of language morphology**:
   a. Isolating (free morphemes)
   b. Agglutinating (morphemes 'strung' together)
   c. Fusional /inflectional (morphemes fused together)

The Gist of Sutra 9

1. Vowel quality is determined by the shape of speaker's resonance chambers
2. Stress patterns, distinguished by the pitch, loudness, and length of vowel sounds, affect the quality of the sounds we hear.
3. Consonants are classed according to the force, place, and manner of articulation.
4. Vowels are classed according to the position of the tongue (front/back, high/mid/low), whether the lips are rounded or not when pronouncing them, whether they are long/short (tense/lax), and by whether they are monophthongs or diphthongs
5. In running speech, sounds interact and influence each other, because
   a. our articulators are not fast or flexible enough to keep up with the flow of speech
   b. our speech has stress patterns, which influence sound quality, etc.
6. The various phonological adaptations usually include:
   a. Assimilation of Place, Manner or Voice::
      i. progressive / regressive,
      ii. partial / total
   b. Neutralisation, often leading to elision, and
   c. Linking, or sound *insertion* for the sake of ease of articulation.
7. Sound change is one of the fundamental driving forces of language evolution
8. Despite the diversity of human languages, we can still talk of some **natural tendencies** in their development, based on the fact that certain types of sound change are very common, whereas others are unlikely.

The Gist of Sutra 10

1. Part of our knowledge of a language is knowledge of its sound system. We must be able to use the sounds of the language, and know the ways in which they combine into *patterns.* The number of possible sound combinations determines the number of *phonemes* in a language.

2. A few definitions of *'phoneme'*:
⇒ *Phoneme* is what the speaker and the hearer regard as the same *contrastive* sound. It is not any actual sound, but a *mental representation* of it.
⇒ *Phoneme* is the smallest phonetic unit in a language that is capable of conveying a distinction in meaning, as the *m* of a *mat* and a *b* of a *bat*.

3. Each *spoken* phone is perceived as 'belonging' to a particular phoneme, depending on whether it affects meaning (*p*ail vs. *b*ail, *p*ig vs. *b*ig, etc. – these are referred to as *minimal pairs*).
4. Each language has a set of phonemes that are combined to form all the words of the language. English has 46 phonemes (R.P. – 44).
Speech sounds (phones) that are *variants of the <u>same</u> phoneme* are called *allophones.*
5. Allophones do not affect meaning, unless they are very different, as in
[jə ˈɡəʊiŋ ˈhəʊm təˈdai]! ☺

Synthesis after Analysis: Rising to a New Level of Understanding
We have taken the dialectic approach to Language, trying to capture its essence in all its complexity, interconnectedness, development and change. You are now aware of its multi-faceted psycho-physical and socio-historical nature, and know that Language and Thought cannot be separated, that every word and sentence you utter is already a generalisation.

We examined the process of language acquisition in the course of our cognitive development (from vague complex but holophrastic ideas to more precise analytical expression), and compared this process to language origins and evolution in human society. We now know that Language, shaped by the human brain, reflects the **mechanism of human thought**, the way people think – by associating ideas based on

1. Resemblance (metaphoric extension),
2. Contiguity in space / time (metonymy), and
3. Cause/effect.

All these associations together constitute the process of Generalisation which is the 'Life Force' of Language.

In the second part of this course, we zoomed in on the physical forms of Language: its smallest units (word-meanings) and how we put them together to create complex meaning. We examined the smaller physical elements of language, the bits that word-meanings are made of – morphemes and sounds.

Our aim in this course was to discover how language creates meaning – the *mechanism* of Language. You have seen that the same principles that govern human thought (generalisation) have shaped, and are reflected in, the structures of all languages. These principles of human cognition are just two: Synthesis and Analysis. Dialectical reasoning is characterised by the never ending cycle of

Synthesis + Analysis → Synthesis on another level of understanding →
→ Synthesis + Analysis → Synthesis on another level of understanding →
→ Synthesis + Analysis → Synthesis on another level of understanding, and so forth…

The Rational Language Mechanism

Language is this living cycle of synthesis and analysis of human thought – it embodies it, and so works the same way, through Synthesis of word-meanings into SVC patterns and Analysis of the major sentence constituents (in whichever order they come) through specification/ modification/ description.
We have now risen to a new level in the spiral of our knowledge of Language, thanks to all the synthesis and analysis that have driven the development of linguistic thought up until now. New horizons beckon – more analysis will lead us to new synthesis, to new heights of Knowledge!

Dialectical Linguistics in Historical Context

At the beginning of this course, we took a quick look at the history of linguistics, and at the spiral of our understanding of Language in the past 2500 years. We also discussed the nature of human understanding generally and the two ways of reasoning (dialectical and metaphysical) that we use to acquire it.

Metaphysical way of reasoning (analysis) involves in-depth study of details of the whole; we need to 'freeze' them in time in order to examine them closely.

Dialectical reasoning looks at complex wholes, at the ***interrelationships*** of ever-changing parts within them (synthesis).
The laws of dialectics state that

> **1. Everything is a 'struggle of opposites'**
> **2. Quantity Changes the Quality,** and
> **3. Change moves in spirals, not circles.**

The Spiral of Linguistics

For most of the past two and a half thousand years, our speculations about language were part of wider philosophical thought; these observations were made mostly in the context of religious faith, logic and rhetoric. This was, according to Ferdinand de Saussure, the **First Phase** in the development of Western linguistics. It started in Ancient Greece about 500 B.C. and lasted up to the end of the 18th century A.D.

Phase Two in the history of linguistics (philology of the 19th century) was marked by detailed analysis and comparison of recorded linguistic forms over time (the diachronic approach).

Phase I   **Phase II**

http://art-burger.com/2011/05/fantasy-art-yin-yang-fabric-poster/

The original balance between 2 opposing ways of reasoning (dialectical & metaphysical), where the dialectical view was dominant, over time gradually evolved into a new synthesis/ balance between them, where the metaphysical view became more dominant.

Phase Three, which started with Saussure's structuralism, marked the birth of Modern Linguistics. Structuralism for the first time attempted to understand how the integrated system of language works as a *whole*, at any one point in time (we called it the *synchronic* approach to language study).

The Spiral of Our General Knowledge (and how it impacted linguistics)

Friedrich Engels vividly described the spiral development of our knowledge[1] from antiquity to the end of the 19th century:

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[1] Engels – Socialism: Utopian & Scientific;
http://www.marxists.org/archive/marx/works/1880/soc-utop/index.htm

"When we consider and reflect upon Nature at large, or the history of mankind, or our own intellectual activity, at first we see the picture of an endless entanglement of relations and reactions, permutations and combinations, in which nothing remains what, where and as it was, but everything moves, changes, comes into being and passes away. We see, therefore, at first the picture as a whole, with its individual parts still more or less kept in the background; we observe the movements, transitions, connections, rather than the things that move, combine, and are connected. This primitive, naive but intrinsically correct conception of the world is that of ancient Greek philosophy, and was first clearly formulated by Heraclitus: everything is and is not, for everything is fluid, is constantly changing, constantly coming into being and passing away.

But this conception, correctly as it expresses the general character of the picture of appearances as a whole, does not suffice to explain the details of which this picture is made up, and so long as we do not understand these, we have not a clear idea of the whole picture. In order to understand these details, we must detach them from their natural, special causes, effects, etc. This is, primarily, the task of natural science and historical research ... A certain amount of natural and historical material must be collected before there can be any critical analysis, comparison, and arrangement in classes, orders, and species. The foundations of the exact natural sciences were, therefore, first worked out by the Greeks and later on, in the Middle Ages, by the Arabs. Real natural science dates from the second half of the 15th century, and thence onward it had advanced with constantly increasing rapidity. The analysis of Nature into its individual parts, the grouping of the different natural processes and objects in definite classes, the study of the internal anatomy of organized bodies in their manifold forms — these were the fundamental conditions of the gigantic strides in our knowledge of Nature that have been made during the last 400 years. **But this method of work has also left us as legacy the habit of observing natural objects and processes in isolation, apart from their connection with the vast whole; of observing them in repose, not in motion; as constraints, not as essentially variables; in their death, not in their life**."

Engels wrote this in 1880, just before Ferdinand de Saussure for the first time in the Western tradition attempted to describe the *mechanism* of Language, viewing it as an interconnected, integrated *whole*. Saussure introduced a qualitative shift in focus – from a body of disconnected studies of bits and pieces of language, he shifted the focus of investigation to the workings of the system as a *whole*. This inherently correct view of Language as a complex integrated system was, however, influenced by the metaphysical way of reasoning which had predominated in the preceding few centuries. Let us now examine how the "habit of observing natural objects and processes in isolation, apart from their connection with the vast whole; of observing them in repose, not in motion; as

constraints, not as essentially variables; in their death, not in their life" (Ibid.) had impacted Saussure's theory.

Saussure's Language Mechanism

"It is the combination of the idea with a vocal sign which suffices to constitute the whole language," claimed de Saussure[2]. Language, he argued, is a complex, interconnected system of Linguistic Signs that works to create meaning because of (a) the **difference** (opposition) between linguistic forms, created by different sequences of linguistic units (he referred to these differences/ oppositions as 'syntagmatic interdependencies'), and (b) the **interplay** between the syntagmatic and the associative relations between linguistic signs in the creation of Sign Value[3].

Ferdinand de Saussure saw the 'language mechanism' in the simultaneous functioning of syntagmatic and associative relations between Linguistic Signs. 'Groups of both kinds are in large measure established by the language,' he told his students. 'This set of habitual relations is what constitutes linguistic structure and determines how the language functions. … Syntagmatic groups formed in this way are linked by interdependence, each contributing to all. Linear ordering in space helps to create associative connexions, and these, in turn, play an essential part in syntagmatic analysis' (Saussure: 2006, pp. 126–128). Contrast, he stressed, or *opposition*, between existing forms (inflexions, etc.) plays an important role in creating the intended meaning.

The existence of flexions (conjugations, declensions) and other linguistic paradigms forced de Saussure to caveat the fundamental principle of synchronic linguistics, that '***The Sign Is Arbitrary***.' Even though ultimately 'the link between signal and signification is arbitrary' within a language system, **'the sign may be motivated to a certain extent'** he conceded (Ibid., p. 67):

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[2] Saussure: 4 November 1910. Retrieved 29 September 2008 from
http://www.marxists.org/reference/subject/philosophy/works/fr/saussure.htm
[3] In a linguistic state … everything depends on relations. …The relations and differences between linguistic items fall into two quite distinct kinds, each giving rise to a separate order of values. The opposition between these two orders brings out the specific character of each. They correspond to two different forms of mental activity, both indispensable to the workings of a language. Words as used in discourse, strung together one after another, enter into relations based on the linear character of languages … Combinations based on sequentiality may be called *syntagmas.*
… Outside the context of discourse, words having something in common are associated together in the memory. In this way they form groups, the members of which may be related in various ways. This kind of connexion between words is of quite a different order. It is not based on linear sequence. It is a connexion in the brain. Such connexions are part of that accumulated store which is the form the language takes in an individual's brain. We shall call these *associative relations.*
Syntagmatic relations hold *in praesentia.* They hold between two or more terms co-present in a sequence. Associative relations, on the contrary, hold *in absentia.* They hold between terms constituting a mnemonic group Saussure: 2006, pp. 121–122.

> Relative motivation implies (i) the analysis of the term in question and, hence, a syntagmatic relation, and (ii) appeal to one or more other terms, and hence an associative relation. ...
>
> ...The entire linguistic system is founded upon the irrational principle that the sign is arbitrary. Applied without restriction, this principle would lead to utter chaos. But the mind succeeds in introducing a principle of order and regularity into certain areas of the mass of signs. That is the role of relative motivation. **If languages had a mechanism which were entirely rational, that mechanism could be studied in its own right**. ...
>
> There exists no language in which nothing at all is motivated. ... Between the two extremes – minimum of organization and minimum of arbitrariness – all possible varieties are found (Ibid).

Saussure believed, however, that many aspects of Language were beyond the scope of linguistics:

> ... However we approach the question, no one object of linguistic study emerges of its own accord. Whichever way we turn, the same dilemma confronts us. Either we tackle each problem on one front only, and risk failing to take into account the dualities ...; or else we seem committed to trying to study language in several ways simultaneously, in which case the object of study becomes a muddle of disparate, unconnected things. By proceeding thus, one opens the door to various sciences – psychology, anthropology, prescriptive grammar, philology, and so on – which are to be distinguished from linguistics. These sciences could lay claim to language as falling into their domain; but their methods are not the ones that are needed (Saussure: 1910).

As Saussure saw 'no discernible unity' in the Gordian knot of Language, he concluded that the only one way out of the 'circle of contradictions' was to cut off those pesky tangles altogether, and **focus solely on Language structure**. Only one approach to the contradictions and dualities of Language could, in his view, loosen their intractable knot: a singular focus on linguistic *structure* which he saw as the only thing that is '*independently definable*,' *concrete*, '*something our minds can satisfactorily grasp*':

> The linguist must take the study of linguistic structure as his primary concern and relate all other manifestations of language to it. ... A science which studies linguistic structure is not only able to dispense with other elements of language, but is possible only if those other elements are kept separate (Saussure: 1983).

Despite his brilliant insight into the essence of language being the indivisible union of form and idea, Ferdinand de Saussure focused solely on the **form**; he split his Linguistic Sign into the Signifier and the Signified and examined them separately, thus letting the "logical side of the language, involving invariables unaffected by time, race, culture or geography" [4] slip away.

In our study of language, we have tried to think out of the box of habitual metaphysical reasoning, for 'observing natural objects and processes in isolation, apart from their connection with the vast whole; observing them in repose, not in motion; as constraints, not as essentially variables; in their death, not in their life" cannot help us understand their nature and behaviour. Therefore, in order to see the complex whole of **Language as it is** – '*live*' – we must use dialectical reasoning to synthesize all that we have so far learned about language dualities and contradictions.

Dialectical linguistics views the complex whole of language in the unity of all its dualities and oppositions. It uses Vygotsky's *Analysis into Units* (Re: Notes I below) and David Hume's **universal principles of human understandin**g (Re: Notes II) to capture language live – to explain how humans create and communicate meaning, revealing the *Rational Mechanism* of Language – **Generalization**.

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[4] Saussure: 1910

Here are some fundamentals of the dialectical understanding of human language:

1. **Human Language is a complex natural/ human/ social phenomenon**; it has many dimensions/dualities (i.e., its psycho-physical, socio-historical, emotional-rational aspects, etc.; Re: SLT Lecture 1 for Semester I, 2010, and Appendices I & II at the end of these notes).

2. **Language should be studied as the complex whole**: The general principle of holism was concisely summarized by Aristotle in the *Metaphysics*: '**The whole is more than the sum of its parts'** (1045a10).

3. **Word-meanings are the smallest units of Language that retain all of its properties** (physical: sound or sign; psychological: meaning; socio-historical: being the product of society, they live in the society that creates/ *conceptualizes* them <u>in time</u>.

4. Our **meanings** (those individual, personal generalizations we make) **are defined by how we *use* words** ('words acquire their true meaning only in the nexus of the proposition' (S/V/C) and in the context of use).

5. **Every word is a generalization in the collective mind of the speech community; every proposition is generalization in the mind of the individual speaker / listener / reader.** Therefore, 'indeterminacy of meaning' results: we all make sense of things in our own heads.

6. **Meaning**, and *consciousness* **generally are possible only through the act of thought** (*generalization*):

   > True human communication presupposes a generalising attitude… Man's thought reflects conceptualised actuality. That is why certain thoughts cannot be communicated to children even if they are familiar with the necessary words. …Children often have difficulty in learning a new word – not because of its sound, but because of the concept to which the word refers. There is a word available nearly always when the concept has matured (Vygotsky: 1934).

7. **Grammar precedes Logic**, as evidenced by the stages of cognitive development we go through.

8. **Synthesis & Analysis are the universal principles of human thought**, underlying all generalization; we understand everything through the synthesis and analysis involved in every generalization. In order to form a concept, we need to see how things relate to each other (in terms of similarities/contrast between them, relation in time and space, all the causal and part-whole relationships, etc.). We must be able not only to

connect, but also to *abstract*, to *single out* characteristic elements, and to view them separately from the "totality of the concrete experience in which they are embedded" (Vygotsky: 1986, p. 135):

9. Therefore, **Generalization is the *Rational Mechanism* of language**, represented in all grammars:

    (1) *Synthesis*: connects word-meanings into the nexus of a proposition (complex generalization) and
    (2) *Analysis*: describes /specifies parts of the nexus (proposition), associating ideas by Resemblance, Contiguity, and/or Cause/ Effect.

    Generalization, in other words, is the matrix of universal grammar of human thought which finds expression in the diverse grammars of the world's languages, all shaped by it.

10. **The principles of Generalization /human understanding** (association of ideas by Resemblance, Contiguity in Space/Time, and Cause/Effect) **are universal**:

    > [Logic] shares something with grammar in that it provides rules for expressions, yet it differs in that grammar only provides rules specific to the expressions of a given community, whereas the science of logic provides common rules that are general for the expressions of every community (al Farabi: 1931; 17.5-7, 18.4-7).

11. **All grammars embody the universal principles of Human Thought (Generalization),** and this is how:

    a. **Parts of Speech**: the words of all languages perform the same basic functions (noun / pronoun, adjective, verb, adverb, conjunction, preposition, interjection);
    b. **Verb conjugations** (overt or implicit), without which the synthesis of the major sentence constituents is impossible;
    c. **Thematic roles** express the perceived *relationships* between things in space and time; inflectional languages express them largely through case declensions of nouns, while analytical languages use prepositions to show how things relate to each other in space and time. Despite the diversity of ways in which these relationships (thematic roles) may be expressed, all human languages reflect them.
    d. **The principles of Sentence Structure** in all grammars represent Synthesis and Analysis of Generalization:
        i. *Synthesis* of what we speak about (the Subject) with what we say about it (the Predicate) into the nexus of a proposition (complex generalization), and

      ii. ***Analysis*** or description /specification of the main sentence constituents (S/V/C) of the nexus, associating ideas by Resemblance, Contiguity, and/or Cause/ Effect:

          1. Adjectives associate ideas by Resemblance (Which? What kind?), and
          2. Adverbs associate ideas by Resemblance, Contiguity in space/time, and Cause/Effect (they specify how, when, where, why, on what condition, with what consequence, etc. actions are made).

12. **Generalizing syntactic analysis (G-nalysis)** uses the universal principles of human understanding (generalization, thought) to understand linguistic structure (form). By identifying the logical relationships between words, phrases and clauses within propositions, we get to understand sentence structure. G-nalysis uses logic / generalization to understand how words and groups of words function. Just as we make the generalization that what looks like a duck, quacks like a duck, and walks like a duck is, in fact, a duck, so also we make the conclusion that if words/ phrases or clauses (groups of words with S/V/C structure) answer the question ***Which? What kind?***, they are adjectives; if they answer questions ***What?*** or ***Who?***, they are nouns; and if they answer questions ***How? When? Where? Why? For what purpose? On what condition? With what consequence?***, etc., then they are adverbs of manner, time, place, reason, purpose, condition, consequence, etc., respectively. G-nalysis allows for flexibility of interpretation, it accommodates individual perception, which accounts for the inherent ambiguity of language.

Notes I: Vygotsky's *Analysis into Units*

The liberating leap out of the box of structuralism was first proposed by Lev Vygotsky (1896–1934) (who, not surprisingly, was a psychologist) as far back as 1934. His seminal work, ***Thinking & Speaking*** (1934),

1. proposed a new method of linguistic investigation (***Analysis into Units***);
2. provided experimental evidence that ***meanings of words undergo evolution*** during childhood, and defined the basic steps in that evolution;
3. uncovered the singular way in which the child's "*scientific*" (in contrast to *spontaneous*) concepts develop, and formulated the laws governing their development;
4. demonstrated the specific ***psychological nature and linguistic function of written speech in its relation to thinking***; and
5. clarified, by way of experiments, the ***nature of inner speech and its relation to thought***.

In *Thinking & Speaking*, Vygotsky criticized the common theories of consciousness and the relationship between thought and language:

All the theories, from antiquity to our time, have ranged between total '***identification***, or ***fusion***, of thought and speech on the one hand, and their equally absolute, almost metaphysical ***disjunction*** and ***segregation***, on the other (Vygotsky: 1934).

Psycholinguistics, he posited, traditionally treated thought as "*speech* minus *sound*" (i.e., basically, the *same*), while some theories of American psychologists considered thought to be a '*reflex* inhibited in its motor part' (Ibid.).

However, argued Vygotsky, if thought and speech are really ***the same***, how can we even conceive of a ***relationship*** between them? On the other hand, if we regard speech as the outward manifestation of thought, we make them ***independent*** of each other. This results in viewing the relationship between them as a ***mechanical connection*** between two distinct processes.

Vygotsky claimed that separating sound and meaning had harmed the 'study of both the phonetic and the semantic aspects of language' and pointed out that 'the most thorough study of speech sounds merely as sounds … has little bearing on their ***function*** as human speech' (Ibid.). In the same way, he claimed, 'meaning divorced from speech sounds can only be studied as a pure act of thought, changing and developing independently of its material vehicle' (Ibid.). "The analysis of ***verbal thinking*** into two separate, basically different elements," he argued, "precludes any study of the intrinsic relations between language and

thought" (Vygotsky: 1934). The 'separation of sound and meaning,' he claimed, was responsible for the 'barrenness of classical phonetics and semantics.'

Vygotstky proposed a new method of analyzing complex wholes – **Analysis into Units**, where a unit of the complex whole <u>preserves the properties of the whole</u>. **Word meaning**, he claimed, is the unit in which thought and speech unite into verbal thought; meaning, therefore, holds the 'answers to our questions about the relationship between thought and speech':

> A word does not refer to a single object but to a group or to a class of objects. Each word is therefore already a generalisation. Generalisation is a verbal act of thought and reflects reality in quite another way than sensation and perception reflect it. Such a qualitative difference is implied in the proposition that there is a dialectic leap not only between total absence of consciousness (in inanimate matter) and sensation but also between sensation and thought. There is every reason to suppose that the qualitative distinction between sensation and thought is the presence in the latter of a **generalised** reflection of reality, which is also the essence of word meaning: and consequently that meaning is an act of thought in the full sense of the term. But at the same time, meaning is an inalienable part of word as such, and thus it belongs in the realm of language as much as in the realm of thought. A word without meaning is an empty sound, no longer a part of human speech. Since word meaning is both thought and speech, we find in it the unit of verbal thought we are looking for. Clearly, then, the method to follow in our exploration of the nature of verbal thought is semantic analysis - the study of the development, the functioning, and the structure of this unit, which contains thought and speech interrelated (Vygotsky: 1934).

This method (Analysis into Units) combines, according to Vygotsky, the advantages of **analysis** and **synthesis**, for the complex whole of word-meaning represents the synthesis of all the dualities of language (its psycho-physical, social and historical aspects). To illustrate this, he pointed to the primary function of speech – communication, 'social intercourse':

> When language was studied through analysis into elements, this function, too, was dissociated from the intellectual function of speech. The two were treated as though they were separate, if parallel, functions, without attention to their structural and developmental interrelation (Ibid.).

We have already seen how the splitting of Saussure's Linguistic Sign into the Signifier and the Signified (as well as Chomsky's division of speech into Deep and Surface Structures) had misled linguists in the past. Word meaning, Vygotsky argued, represents a **synthesis** of both intellectual and social functions of speech:

That understanding between minds is impossible without some mediating expression is an axiom for scientific psychology. In the absence of a system of signs, linguistic or other, only the most primitive and limited type of communication is possible. Communication by means of expressive movements, observed mainly among animals, is not so much communication as spread of affect[5]. A frightened goose suddenly aware of danger and rousing the whole flock with its cries does not tell the others what it has seen but rather contaminates them with its fear.

Communication of experience (perception, feeling and thought) is impossible without the mediating system of human speech, 'born of the need of intercourse during work,' claimed Vygotsky.

However, still under the influence of our 'habitual metaphysical reasoning,' linguistics up until now has viewed the various aspects of language in isolation, 'observing them in repose, not in motion; … as constraints, not as essentially variables; in their death, not in their life.' This approach assumes that the means of communication is the sign (the word or sound) which, through co-occurrence, becomes associated with an idea, and thus conveys the same idea to other human minds.

Vygotsky studied the development of understanding and communication in children; this research led him to conclude that truly human 'communication requires meaning – i.e., *generalization* – as much as signs':

According to Edward Sapir's penetrating description, the world of experience must be greatly simplified and generalised before it can be translated into symbols. Only in this way does communication become possible, for the individual's experience resides only in his own consciousness and is, strictly speaking, not communicable. To become communicable, it must be included in a certain category which, by tacit convention, human society regards as a unit (Ibid.).

Thus, human communication presupposes a 'generalising attitude'; it is possible only because our thoughts reflect *conceptualized* reality (physical world):

That is why certain thoughts cannot be communicated to children even if they are familiar with the necessary words. The adequately generalised concept that alone ensures full understanding may still be lacking. Tolstoy, in his educational writings, says that children often have difficulty in learning a new word not because of its sound but because of the concept to

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[5] **affect**: n. (in psychology) feeling or emotion.

which the word refers. There is a word available nearly always when the concept has matured.

"The conception of word meaning as a unit of both generalising thought and social interchange is of incalculable value for the study of thought and language," wrote Vygotsky. "It permits true causal-genetic analysis, systematic study of the relations between the growth of the child's thinking ability and his social development" (Ibid.). The role of social interaction in language acquisition has been widely commented upon, and seems obvious to us now; however, Vygotsky looked beyond the general language acquisition, at the effect of socialization on the underlying ***thinking ability***.

The 'synthesizing power' of Analysis into Units is also useful in understanding consciousness as a whole, as well as its parts, according to Vygotsky. In particular, he referred to the juxtaposition of intellect and emotion in traditional psychology. Thought processes were viewed in isolation from the 'fullness of life, from the personal needs and interests, the inclinations and impulses, of the thinker.' Vygotsky wrote that

> Such segregated thought must be viewed either as a meaningless epiphenomenon incapable of changing anything in the life or conduct of a person or else as some kind of primeval force exerting an influence on personal life in an inexplicable, mysterious way. The door is closed on the issue of the causation and origin of our thoughts, since deterministic analysis would require clarification of the motive forces that direct thought into this or that channel. By the same token, the old approach precludes any fruitful study of the reverse process, the influence of thought on affect and volition. Unit analysis points the way to the solution of these vitally important problems. It demonstrates the existence of a dynamic system of meaning in which the affective and the intellectual unite. It shows that every idea contains a transmuted affective attitude toward the bit of reality to which it refers. It further permits us to trace the path from a person's needs and impulses to the specific direction taken by his thoughts, and the reverse path from his thoughts to his behaviour and activity (Vygotsky: 1934).

This method, therefore, is 'a promising tool for investigating the relation of verbal thought to consciousness as a whole and its other essential functions,' claimed Vygotsky.

Analysis into Units enabled Vygotsky to see yet another dimension of word-meaning – its 'fluid' psychological nature:

> Our experimental investigations ... not only proved that concrete study of the development of verbal thought is made possible by the use of word

meaning as the analytical unit but they also led to a further thesis, which we consider the major result of our study and which issues directly from the further thesis that word meanings develop. This insight must replace the postulate of the immutability of word meanings (Vygotsky: 1934).

This Vygotsky's assertion smashed the fossilized tenets of associationism and made Language come alive in the dialectical, dynamic unity of strings of word-meanings in the context of use. It replaced the notion of the 'fixed' socially conditioned associative bond between word form and meaning with never until then so clearly stated idea that word meanings are fluid, and subject to a multitude of psychological, linguistic and non-linguistic interdependences and influences. The implications of Vygotsky's analysis for our understanding of language and thought, their 'mechanism,' origins and evolution are still unfolding. Its impact on the study of human cognitive development, communication and, in particular, on the current theory of 'grammaticalization' is yet to be fully felt for his insights have not yet resonated sufficiently in linguistic research. In the paragraph below, for example, he shed brilliant light on the nature of the grammaticalization process (and thus, on language origins and change); however, broken by the polarizing lens of XXth century structuralism, its brilliance has gone largely unnoticed:

> … Having committed itself to the association theory, semantics persisted in treating word meaning as an association between a word's sound and its content. All words, from the most concrete to the most abstract, appeared to be formed in the same manner in regard to meaning, and to contain nothing peculiar to speech as such; a word made us think of its meaning just as any object might remind us of another. It is hardly surprising that semantics did not even pose the larger question of the *development* of word meanings. Development was reduced to changes in the associative connections between single words and single objects … Linguistics did not realize that in the historical evolution of language the very structure of meaning and its psychological nature also change. From primitive generalisations, verbal thought rises to the most abstract concepts. It is not merely the content of a word that changes, but the way in which reality is generalised and reflected in a word (Ibid., Ch. 7).

Never at rest, our collective mind spins its 'webs of significance' out of our shared experience and perception. Conceptualization is a process – from 'primitive generalisations,' verbal thought can rise to the most abstract concepts. In this process, 'It is not merely the content of a word that changes, but the way in which reality is generalised and reflected in a word.' Vygotsky's professional insight into the nature of the conceptualization process helped him to discover the 'fluidity' of meaning and explain *why* and *how* 'reanalysis' occurs in the collective psyche, driving the processes of grammatical change (grammaticalization).

Born into the 'webs of significance' around us, we internalize them with our mother tongue and become spinners and weavers, like everybody else around us, making sense of things in our individual heads, based on our subjective experience, perception, cognitive and physical ability, and motivation in every concrete situation. The society provides us with symbols in common use and with techniques of spinning larger webs of significance out of them, but we all see the patterns they make through our own two eyes – this, of course, is what accounts for the inherent ambiguity of Language.

Most significantly, however, at least for our purpose of discovering that universal 'thinking mechanism' society installs in our minds through language, Vygotsky describes the processes involved in thinking:

> ... Every thought creates a connection, fulfils a function, solves a problem. The flow of thought is not accompanied by a simultaneous unfolding of speech. The two processes are not identical, and there is no rigid correspondence between the units of thought and speech.
> Thought is not merely expressed in words; it comes into existence through them. Every thought tends to connect something with something else, to establish a relationship between things. Every thought moves, grows and develops, fulfils a function, solves a problem (Ibid.).

The notion that we think by connecting ideas is nothing new; in school, we learn that every sentence of language connects *what we speak about* (the Subject) with *what we say about it* (the Predicate, or the verb with all the words that go with it). However, *how* the human mind creates meaning, *how* it connects ideas has largely gone below the radar of linguistic enquiry.

Since every word (and sentence) of Language is a generalization and, therefore, an act of thought, linguistics must examine the mechanism of verbal thought in order to discover how the rich diversity of the world's languages has been shaped by the universal principles of human logic.

Notes II: David Hume's Enquiry Concerning Human Understanding

David Hume (1711–1776) was, by his own admission, perhaps the first philosopher to enquire into the mechanism of human understanding. His ideas about how humans think appear first in his *Treatise of Human Nature* (1740), followed by *Philosophical Essays Concerning Human Understanding* (1748); many later editions appeared as *An Enquiry Concerning Human Understanding*.

Having observed a remarkable similarity in the way people connect ideas when communicating – in all times and places, and in all languages – he sought to determine the nature of these connections, and concluded that they follow a universal pattern:

> Among different languages … it is found, that the words, expressive of ideas, the most compounded, do yet nearly correspond to each other: a certain proof that the simple ideas, comprehended in the compound ones, were bound together by some universal principle, which had an equal influence on all mankind.
>
> Though it be too obvious to escape observation, that different ideas are connected together; I do not find that any philosopher has attempted to enumerate or class all the principles of association; a subject, however, that seems worthy of curiosity. To me, there appear to be only three principles of connexion among ideas, namely, Resemblance, Contiguity in time or place, and Cause or Effect.
>
> That these principles serve to connect ideas will not, I believe, be much doubted. A picture naturally leads our thoughts to the original [1]; the mention of one apartment in a building naturally introduces an enquiry or discourse concerning the others [2]; and if we think of a wound, we can scarcely forbear reflecting on the pain which follows it [3] … The more instances we examine, and the more care we employ, the more assurance shall we acquire, that the enumeration, which we form from the whole, is complete and entire:

> [1] Resemblance.
> [2] Contiguity.
> [3] Cause and effect (Hume: 1748).

The *Treatise of Human Nature*, published earlier, explains how this simple universal mechanism of connecting ideas generates the infinity of human thoughts and opinions:

> As all simple ideas may be separated by the imagination, and may be united again in what form it pleases, nothing would be more unaccountable than the operations of that faculty, were it not guided by some universal principles, which render it, in some measure, uniform with itself in all times and places. Were ideas entirely loose and unconnected, chance alone

would join them; and it is impossible the same simple ideas should fall regularly into complex ones … without … some associating quality, by which one idea naturally introduces another. This uniting principle among ideas… is the cause why… languages so nearly correspond to each other; nature in a manner pointing out to everyone those simple ideas, which are most proper to be united in a complex one. The qualities, from which this association arises, and by which the mind is after this manner conveyed from one idea to another, are three, viz. Resemblance, Contiguity in time or place, and Cause/ Effect (Hume: 1740).

David Hume's principles of human understanding fit in perfectly with Vygotsky's Analysis into Units; moreover, they explain how concepts (word-meanings) had emerged and evolved in the course of time, rising from primitive generalizations to the heights of abstraction in the collective mind of every speech community:

A word does not refer to a single object but to a group or to a class of objects. Each word is therefore already a generalisation. Generalisation is a verbal act of thought and reflects reality in quite another way than sensation and perception reflect it (Vygotsky: 1934).

It is a pity that the *nature* of these connections, embodied in all grammars (as it is in logic) has not attracted due attention before and even after Hume… Is it because we tend to overlook that which is obvious?

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