

# How did language emerge?

M. Pitkänen

Email: [matpitka6@gmail.com](mailto:matpitka6@gmail.com).

<http://tgdtheory.com/>.

June 20, 2019

## Abstract

Cultural evolution is what distinguishes us so sharply from our cousins. The evolution of social structures made possible by the emergence of language is certainly crucial for it. To me it is far from obvious whether this can be explained in terms of chemistry alone. My views are based on TGD inspired theory of consciousness and quantum biology and involve notions like magnetic body and hierarchy of Planck constants. In this article I will consider a scenario in which language as internal speech preceded ordinary spoken language. At gene level this language was based on the expression of DNA as “music of light with codons represented as allowed 3-chords in given harmony. It would have later found neural expression and via a mechanism analogous to a generation of sensory hallucinations led first to genuine hearing of internal voices. The mimicry of these internal voices would have served as the evolutionary pressure leading to the evolution of speech and speech organs.

## Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
<b>2</b>	<b>TGD view about the emergence of language</b>	<b>2</b>
2.1	The notion of magnetic body and the emergence of language and cultural evolution	2
2.2	What internal speech could be? . . . . .	2
2.3	How did spoken language emerge? . . . . .	3

## 1 Introduction

I encountered in FB a link to an article titled “*Unique mix of brain chemicals separates humans from other primates*” (see <http://tinyurl.com/y7vrjflv>). The article inspired the following comments as a reaction, which are not so much about the chemistry but about what to my view goes outside chemistry.

Cultural evolution is what distinguishes us so sharply from our cousins. The evolution of social structures made possible by the emergence of language is certainly crucial for it. To me it is far from obvious whether this can be explained in terms of chemistry alone. My views are based on TGD inspired theory of consciousness and quantum biology and involve notions like magnetic body and hierarchy of Planck constants.

In the sequel I will consider a scenario in which language as internal speech preceded ordinary spoken language. At gene level this language was based on the expression of DNA as “music of light with codons represented as allowed 3-chords in given harmony [L1]. It would have later found neural expression and via a mechanism analogous to a generation of sensory hallucinations led first to genuine hearing of internal voices. The mimicry of these internal voices would have served as the evolutionary pressure leading to the evolution of speech and speech organs.

## 2 TGD view about the emergence of language

### 2.1 The notion of magnetic body and the emergence of language and cultural evolution

1. The notion of magnetic body (MB) as intentional agent using biological body as motor instrument and sensory receptor is central in TGD based view about biology and neuroscience. Flux tubes serving as correlates of attention and making possible quantum entanglement and communications by dark photons give quite concretely rise to bonds between systems in various scales. In TGD Universe the notion of magnetic body is crucial for understanding life in general. The emergence of collective levels of consciousness involving large scale MBs would make possible cultural evolution and allow to understand the dramatic difference between humans and other animals.
2. The hierarchy of Planck constants  $h_{eff}/h = n$  would be crucial. The larger the value of  $n$ , the larger the scale of quantum coherence. Cultural evolution would involve increase of  $n$  leading to a formation of large MBs characterizing collective levels of consciousness. The MBs of DNAs consisting of flux sheets going through DNA would combine to bigger structures assignable to organs, organisms, and even populations. This could make possible cultural evolution as emergence of higher level conscious entities with collective genome and collective gene expression.
3. There might be also other deep differences at DNA level not visible at the level of chemistry. The braiding of magnetic flux tubes emanating from the intronic part of DNA could make possible topological quantum computations and a new kind of memory and this might lead to the quantum leap to real cultural evolution: the portion of introns is largest for humans.

### 2.2 What internal speech could be?

The emergence of language and speech organs is certainly a revolutionary step in evolution. What language is at quantum level? What thoughts as internal speech are at deeper level.

1. My own proposal is that internal speech has as neuronal correlates linear structures of activated neurons giving names for things and having linear flux tube sequences and corresponding quantum states as correlates at the level of MB. This does not however tell what internal speech is at deeper quantum level.
2. Did thinking as internal speech precede ordinary speech or vice versa? If internal speech came first, one avoids the problem of understanding why only certain sounds have meaning as words. Assume that this is the case.
3. Genes are fundamental in biology. Did internal speech evolve as one particular form of gene expression? TGD inspired model for music harmony based on 12-note scale realized as Hamilton's cycle at icosahedron [L1] (see <http://tinyurl.com/yad4tqw1>) leads to a model of genetic code predicting correctly the numbers of codons coding for given amino-acid and to the proposal that genes express themselves are controlled by signals consisting of sequences of 3-chords allowed by a particular bio-harmony with 64 3-chords (256 of bio-harmonies) [L4] (see <http://tinyurl.com/ydhxen4g>). Given harmony would define an emotional state, mood.  
Gene would be represented as a sequence of 3-chords - accompaniment for a song, melody. Melody would be a sequence of single notes of 12-note scale consistent with the bio-harmony. The sequence of 3-chords allowed by the harmony would define the emotional character of the "music piece". Harmony would be something which chemistry cannot explain.
4. How the accompaniment and song were represented at gene level? The most natural guess is that both the notes of 3-chords of the harmony defining the mood and the melody were represented as dark light. This would be music of light consisting of dark photons rather than phonons: notes would have been analogs of laser beams along flux tubes characterized by frequency and duration.

How singing was represented at neuronal level? My proposal is that it was represented as 2-D structure of activated neurons having connected magnetic flux tube network as correlate and representing the mental image. Perhaps the pitch and duration of the note served as 2 discrete coordinates in neuronal lattice [L2] (see <http://tinyurl.com/yczv2o5b>).

5. It is said that right brain sings and left brain talks. These two modes of expression relate like function and its Fourier transform. Did (internal) singing precede (internal) speech? At neuronal level this is suggested by the fact that Alzheimer patient who has lost understanding of language and ability to talk can still understand singing and also sing. Indeed, 1-D linear flux tube structures representing thoughts splits as amylose splits the neuronal connection so that speech is not possible. 2-D structures survive even if some connections are split [L3] (see <http://tinyurl.com/ybq6r3xu>). Note that these two modes relate to cognition and emotion. Emotion came first as indeed evolution of nervous system demonstrates.

### 2.3 How did spoken language emerge?

How do the words of spoken language transform to internal speech and vice versa? What distinguishes words from ordinary sounds?

1. The piezoelectric property of bio-matter makes possible the transformation of light to sound: now light would consist of dark photons with energies  $E = h_{eff}f$  in bio-photon range (visible and UV) and frequencies  $f$  in the range of audible sound frequencies. Did this transformation somehow give rise to genuine auditory experience of internal song/speech? Did internal singing/speech transform to heard singing/speech by virtual sensory input from brain to ears?

In TGD based model for sensory perception, hallucinations/psychedelic experiences, and imagination [L2] (see <http://tinyurl.com/yczv2o5b>) this kind of virtual sensory input is essential since sensory qualia are at the level sensory organs and the objects of perceptive field are standardized mental images, kind of artwork requiring resulting from pattern recognition involving a lot of forth-and-back signalling between brain and sensory organs by dark photons).

We would experience mere virtual sensory input in dreams (REM), hearing voices from head, etc... Pineal gland (“third eye”) receiving dark photons signals would receive internal speech and in presence of DMT would channel it to ears producing heard internal song/speech. Jaynes argues that what he calls bicameral consciousness preceded modern consciousness and was like that of schizophrenic and people heard their thoughts as voices in head and interpreted these voices as voices of Gods.

2. Did speech and speech organs evolve from the attempts to mimic this genuinely heard internal singing/speech. This would answer the question why only certain kind of sounds have meaning as words. Did this attempt provide evolutionary pressure leading to the emergence of genes coding for speech organs and speech as a motor activity?

**Remark:** An amusing analogy pops in mind: internal speech viz. internal song is like rap viz. ordinary singing dropping out much of the emotional content.

This cannot be the whole story. Language learning is a social phenomenon involving mimicry. Modern human cannot learn to speak by listening only voices in his head! One can however ask whether languages have some universal pattern. For instance, could very primitive languages depend only on species? What is the role of the collective consciousness: does it talk in the same manner to individuals of the group who then mimic this talk. Was the God of the bicamerals the collective consciousness of the group?

# REFERENCES

## Articles about TGD

- [L1] Pitkänen M. Geometric theory of harmony. Available at: [http://tgdtheory.fi/public\\_html/articles/harmonytheory.pdf](http://tgdtheory.fi/public_html/articles/harmonytheory.pdf), 2014.
- [L2] Pitkänen M. DMT, pineal gland, and the new view about sensory perception. Available at: [http://tgdtheory.fi/public\\_html/articles/dmtpineal.pdf](http://tgdtheory.fi/public_html/articles/dmtpineal.pdf), 2017.
- [L3] Pitkänen M. Is it possible to reverse Alzheimer's disease? Available at: [http://tgdtheory.fi/public\\_html/articles/Alzheimer.pdf](http://tgdtheory.fi/public_html/articles/Alzheimer.pdf), 2017.
- [L4] Pitkänen M. Emotions as sensory percepts about the state of magnetic body? Available at: [http://tgdtheory.fi/public\\_html/articles/emotions.pdf](http://tgdtheory.fi/public_html/articles/emotions.pdf), 2018.