Epistemology of sciences about language.
Expansionism, anthropocentrism, a functionalism and explanatory of modern linguistics.

Epistemology (from Greek ἐπιστήμη - epistēmē, meaning "knowledge, understanding", and λόγος - logos, meaning "study of") is the branch of philosophy concerned with the nature and scope of knowledge and is also referred to as "theory of knowledge". It questions what knowledge is and how it can be acquired, and the extent to which knowledge pertinent to any given subject or entity can be acquired.

The short history of linguistics narrowly replicates the intellectual barriers that *evo-lutionary biology* and (cognitive) *psychology* have overcome in their historical 'childhood'. As for methodological issues, *introspection* was seen as the data highway for theory building in psychology in Wilhelm Wundt's days. Today, psychology is firmly experiment-based and im-poses rigid standards of data assessment. Grammar theory still relies to a large extent on intro-spectively gained data (self-observation), and still waives objective standards of data assess-ment.

A second parallel is the *basic epistemology*. Does 'intelligent design' presuppose an intelligent designer, as the functionalist conviction takes for granted? Darwin realized already in 1871 ('*The descent of man and selection in relation to sex', part I, p.59*) that evolution is not *sub-stance-bound* and that there is a parallel in the historical development of languages and the bio-logical evolution of species in terms of adaptation as a consequence of random variation and non-random but 'blind' selection. Human language grammars are undeniably adaptive, but this is neither a product of biological evolution nor of social engineering. It is the result of *evolution* on the level of *cognitive, self-replicating* systems. Human languages are neither 'merely' bio-logical nor artifacts. They are of a third kind, namely outcomes of cognitive evolution.

Linguistics has not arrived at firm scientific grounds yet. Strictly *Lamarckian* schools (function-alist; *form follows function*) compete with *structuralist* schools (nativists). The functionalist schools ignore the strong system boundaries, and the structuralist schools are diligently ignoring the adaptive properties in 'language design'. Neither of these two qualities must be ignored since they are undeniable properties of natural language grammar systems. The adaptive proper-ties are merely a consequence of cognitive evolution in the variation + selection game of a (sub-stance-neutral) Darwinian evolution.

Here is the central claim of this paper: The process of evolution is substance-independent, as Darwin (1871:59) indicated. Evolution is at work not only for biological organisms but also for cognitive 'organisms'. In today's diction this reads as follows: *Cognitive evolution* is evolution on the level of cognitive structures (rather than on the level of biological structures, like the ge-nome in biological evolution). Grammars are *self-replicating* systems (that replicate themselves in the course of grammar acquisition). This process is prone to generate *variants* ('mutations'). The variants *'compete'* for restricted resources (viz. the number of brains to be 'infected' by a given grammar variant, with 'ease' of processing as a major selection factor). *Adaptation* is the product of blind

selection. Biological and cognitive evolution are identical in terms of the processes (self-replication, variation+selection), but they differ in terms of the substance, of course. Previous accounts that invoked 'evolution' for explaining the 'descent' of languages will be shown inadequate or metaphorical at best.