I. INTERNAL vs. EXTERNAL THEORIES OF FUNCTIONAL GRAMMAR

I—1. Internal (structural) FGs

First I am going to evoke the so-called “internal”, (meaning ‘structural’) Functional Grammars. These theories were mostly developed in the realm of European structuralism.

Four periods or generations may be distinguished:

• The first period between circa 1925 and 1950 is that of the Cercle de Prague with its Foundational Theses in 1929 and the central work of Trubetzkoy about functional phonology in 1939.

• The second period between circa 1950 and 1975 is that of the Prague School around Mathesius, Jakobson (although emigrated in the states), Firbas, Danes and Šgall primarily interested in the functional sentence perspective, with such concepts as primary and secondary topicalization, focalization, etc., which is what is now labelled as “information structure”. It was characterized at the same time by the work of Martinet on functional phonology and syntax, of Coseriu on the adjunction of the concept of “norm” between “language” and “speech” and on diachronic functional grammar, of Halliday for the listing and classification of language functions and Halliday & Hasan for discourse grammar, and of Dik’s first formal-functional grammar in 1978.

• the third period between circa 1975 and 2000 is that of the later work of Coseriu about the various types of competence (1988), of the mature formulation of Systemic Functional Grammar (1985), of the second draft of the Dutch Functional Grammar (Dik & Hengeveld 1997) and the establishment in his research area of van Valin’s Role and Reference Grammar, another formal-functional grammar.

• the fourth period circa since 2000 is that of the second draft of Halliday’s theory of SFG in collaboration with Matthiesen (2004), of the development in Amsterdam of Functional Discourse Grammar by Hengeveld & Mackenzie (2008) and the new formulation of the RRG focussing in The Syntax-semantics interface (2006) by van Valin.
The foundational Theses of the Cercle de Prague were written down in French as its first working paper, entitled *Travaux du Cercle linguistique de Prague, I, 1929.*

Especially relevant is the third Thesis: “Problèmes des recherches sur les langues de diverses fonctions” (*Problems by investigating multifunctional natural languages*). Its first paragraph is entitled: “Problèmes de méthode découlant de la conception de la langue comme système et importance de ladite conception pour les langues slaves” ► *Methodological problems resulting form the view of natural language as a system and significance of that view for slavic languages* with three main topics:

- la méthode synchronique et ses rapports avec la méthode diachronique (*the relationships between synchronic and diachronic methods of investigation*)
- comparaison structurale et comparaison génétique (*structural vs. genealogical comparison*),
- caractère fortuit ou enchaînement régulier des faits d'évolution linguistique (*accidental character or regular succession of facts attesting language evolution*).

Henceforth a natural language is conceived of as a functional system. Some excerpts illustrate this view:

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**Produit de l’activité humaine, la langue partage avec cette activité le caractère de finalité.** (As a product of human activity, a natural language shares with this activity the property of purpose).

**Lorsqu’on analyse le langage comme expression ou comme communication, l’intention du sujet parlant est l’explication qui se présente le plus aisément et qui est la plus naturelle.** (When investigating language as expression or as communication, the intention of the utterer turns out to be the most easy and natural explanation).

**Aussi doit-on, dans l’analyse linguistique, prendre égard au point de vue de la fonction.** (Therefore, in linguistic analysis one has to take function into account).

**De ce point de vue, la langue est un système de moyens d’expression appropriés à un but.** (From this point of view, a natural language is a system of means of expression linked with a purpose).

**On ne peut comprendre aucun fait de langue sans avoir égard au système auquel il appartient.** (No linguistic fact is understandable without taking into account the system to which it belongs).

**La linguistique slave ne saurait elle non plus éluder cet ensemble actuel de problèmes.** (Slavic linguistics cannot ignore this present set of questions).
I—2. EXTERNAL (NON STRUCTURAL) THEORIES

So-called “external”, that means non-structural functional language theories were developed mostly in the States and marginally in Germany since the 1980s. Here one can distinguish two periods before and after the turn of the 21st century.

In the first period, so-called “West-Coast Functionalism” with its research centers in California, Oregon and New-Mexico emerged at the end of the seventies with Givón, *Understanding grammar* in 1979 and it was the breeding ground for four interconnected developments of daughter theories, namely *Usage-based Grammar* (illustrated by work of Bybee and MacWhinney), *Construction Grammar* (including Langacker’s *Cognitive Grammar*), the *Functional Typology of Languages* with Givón and Croft at his head and *Grammaticalization theory* conducted by Hopper and Traugott in the States and Lehmann and Heine in Germany.

The second period is that of maturation of *Usage-Based Grammar* specially by Bybee (2010), of *Construction Grammar* with the so-called “radical” version of Croft (2001), of *Functional Typology of Languages* with the publication of the *Word Atlas of Language Structures* in the linguistic section directed by Haspelmath and Comrie of Max-Plank Institute of Evolutionary Anthropology in Leipzig (2005 and online) and the significant investigations of Heine & Kuteva in 2007 and Givón in 2009 about the genesis of grammar (especially of “syntactic complexity” for Givon). See Figure 2.

![Figure 2: The establishment of external linguistic functionalism since ca. 1975](image)

I—3. MAIN DOMAINS OF INVESTIGATION IN INTERNAL AND EXTERNAL LINGUISTIC FUNCTIONALISM

Now it is time to enter these various theoretical frameworks for identifying the domains of investigation they favor and those they presently neglect. Butler (2003) is the main reference for that multilevel comparison. Figure 3 is intended to compare first SFL and Dutch FG with its recent development as FDG.
In SLF syntax, discourse or text and social background are overrepresented, and cognition, typology and diachrony underrepresented. In FG semantics and typology are overrepresented, and in FDG discourse organization, whereas syntax, diachrony and society are underrepresented. Thus the profile of both theories is quite different. For instance in SFL syntax appears to prevail against semantics whereas in FG semantics (including linguistic pragmatics) is pre-eminent, almost omnipotent. And the social background is neglected in FG while this is a significant factor of systemization in SFL.

According to Dirk Geeraerts (2010):

“Within the group of functionalist frameworks, Systemic Functional Linguistics is the one that most distinctly follows up on this SOCIAL CONCEPTION OF LANGUAGE. Thinking about language in social, interactional terms suggests that the systemic descriptive and theoretical framework might be particularly suited for socially oriented types of linguistic investigation (D. Geeraerts, 2010).

Figure 4 is designed to compare RRG and West Coast Functionalism (including Usage-based Grammar and Construction Grammars).

In RRG, syntax and semantics are investigated in mutual relation and typology is a primary concern, whereas discourse organisation, diachrony and social dimension are underrepresented. In the West Coast functionalism, cognition, discourse-text and diachrony are overrepresented, but the social background is underrepresented. Syntax and semantics are viewed as driven by cognition.
II. DIACHRONY IN EARLY INTERNAL FGs

II—1. André Martinet’s functional diachronic phonology

Our second section is devoted to the place of diachrony in early internal, i.e. structural Functional Grammars, first in André Martinet’s work (the so-called “école fonctionnaliste de Paris”) and second in that of Eugenio Coseriu (first center in Montevideo in the fifties and second center in Tübingen from the sixties on).


Trubetzkoy’s aim is to demonstrate that phonological systems tend to become harmonic. Martinet shares this teleological conception of sound changes “une force invisible attire les éléments d’un système linguistique et les pousse dans une structure “parfaite” ou “bien équilibrée” (An invisible force attracts the elements of a linguistic system and drives them toward an ‘accomplished’ or well ‘balanced’ structure, Peeters).

Peeters mentions a stance of the young André Martinet (1939a):

“Les phonologues estiment … que [l’]évolution n’est pas aveugle, mais qu’elle a directement pour but l’établissement d’un système harmonieux. Le jeu de cette tendance à l’harmonie a été décrit plusieurs fois et a reçu le nom de thérapeutique phonologique” (Phonologists consider that language evolution is not blind, and that it directly aims to establish a harmonic system. The mechanisms of this tendency for harmony were described many times and were named ‘phonological therapeutic’).

and in the same year (1939b):

“L’apport positif de la phonologie à la solution du problème de l’évolution phonologique se fonde sur ce qu’on a appelé une tendance à l’harmonie des systèmes phonologiques”. (The positive contribution of phonology to solving the problem of phonological evolution is based on the so-called harmonizing trend of phonological systems).

And this trend to the harmony of systems is effected by a tendency towards an economy of means: “Tout s’éclaire … si l’on fait intervenir la tendance à l’harmonie des systèmes qui n’est, à proprement parler, qu’une tendance à l’économie des moyens mis en œuvre” (Everything becomes clear if you account for the tendency...
for harmonization in systems which is, strictly speaking, only a tendency towards the economy of those means which are employed) (ibid.).

From the fifties on, the “trend to harmony” is replaced by the idea of an “unstable balance” produced by the communication needs on the one hand and human inertia on the other hand, for instance in that excerpt:

> “At every stage, the structure of language is nothing but the unstable balance between the needs of communication, which require more numerous and more specific units, each of them of comparatively rare occurrence, and man’s inertia, which favours less numerous, less specific, and more frequently occurring units” (Martinet 1962 cited by Peeters 1992 : 48).

Few years later Martinet adjoins/adds a second factor of non change, the pressure of tradition:

> “Pour comprendre la dynamique du langage, il faut ne jamais perdre de vue qu’à chaque point de la structure peuvent entrer en conflit trois forces dont la composante correspond à un équilibre sans cesse remis en cause : [In order to understand the dynamics of language, one must always keep in mind that at each place of the structure three forces may oppose one another in such a way that their resulting balance may break down at any time.]

> ces forces sont le désir de communiquer, l’inertie naturelle qui tend à réduire l’énergie dépensée, et la pression exercée par la tradition [These forces are the need for communication, the natural inertia that tends so limit the energy expended and the pressure exerted by tradition].

> Les deux premières, désir de communiquer et inertie, se combinent dans ce qu’on a appelé la loi du moindre effort et que je désignerai plus volontiers comme l’économie. La pression de la tradition s’oppose à l’économie.”

> The first two, need for communication and inertia, match in the so-called law of least effort which I rather refer to as ‘economy’. Tradition pressure applies against economy” (Martinet 1969 : 35, cited by Peeters 1992 : 50).

▶ see figure 5.

![Figure 5: The interplay of communication need, natural inertia and social inertia in language evolution](image)

Finally, Martinet introduces in the seventies a third notion between synchrony and diachrony, that of “DYNAMIC SYNCHRONY”:

> “Diachrony appears when an irreversible change takes place. As long as there are, in the community, people who use concurrent forms, the study of those forms belong [sic] to dynamic synchrony, as it is always possible to reverse the tendency to eliminate one in favor of some other” (Martinet 1981 : 304, cited by Peeters 1991 : 180)

▶ see Figure 6.

![Figure 6: Dynamic synchrony as the interface between synchrony and diachrony according to Martinet (1981)](image)

The second linguist in the functionalist fold who was intensely interested in diachrony was Eugenio Coseriu. One of his first books from the time as he was teaching in Montevideo is entitled *Syncronia, Diacronia y Historia* (1958). Its chapter V is devoted to “Language change as a historical problem” investigating especially the significance and limits of “genealogical” or genetic explanations.

One enlightening commentary concerns the replacement of the Latin synthetic future tense by periphrastic forms in Romance languages. Coseriu delivers two functional explanations. The first is a morphological one: since the morphological material was heterogenous with many inflectional paradigms and the loss of many endings, there was a need for distinguishing the forms from one another. The second explanation is a stylistical and semantic one: with the rise of Christianity, moral and affective values were favored with verbs like *volo*, *debeo*, *habeo cantare* instead of *cantabo*. Indeed, Coseriu observes that such periphrastic expressions of future prevail in the works of Christian authors of the late latinity.

Moreover, Coseriu, while introducing the concept of NORM as interface between LANGUAGE and SPEECH, distances himself in a second way from the Saussurean doxa by favoring a panchronic view of grammar. For him the opposition between synchrony and diachrony does not belong to the level of the investigated object, but to that of observation. The opposition is irrelevant for natural languages, it is relevant only for linguistics. According to Coseriu, Saussure himself had to cope with the reality of language in spite of his postulates and in contradiction with them and, as a result, elements are to be found in the *Cours de linguistique générale* in favor of transcending that antinomy. For Coseriu there is no contradiction between SYSTEM and HISTORICITY, because “historicity encompasses systematicity”. I understand this statement in the sense that language change does not yield a mess, but rather a set of pieces enabling a new structuration (even if this restructuration may need quite a long time of trial and error and transitory solutions).

III. DIACHRONY AND GENESIS OF GRAMMAR IN PRESENT EXTERNAL FUNCTIONALISM

III—1. Grammaticalization theory (from Lehmann 1985 on)

In our third section, we will now investigate how so-called external functionalism deals with diachrony and approaches the tricky question of the genesis of grammar. We begin with grammaticalization theory as initiated by Christian Lehmann and developed by Talmy Givón, Paul Hopper, Elisabeth Traugott, Joan Bybee and Bernd Heine *inter alia*.

After Antoine Meillet had coined the term “grammaticalisation” in *Linguistique historique et linguistique générale* (1921), the first modern linguist who revisited that notion was Christian Lehmann in *Grammaticalization: synchronic variation and diachronic change*. In this work Lehmann delivers a series of parameters that may be affected by grammaticalization and for each parameter he distinguishes between weak (or beginning) and strong (or advanced) grammaticalization, see. Figure 7.

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Grammaticalization may be paraphrased with “weak or strong limitation of free use”. For instance, the paradigmatic and the syntagmatic variability may be simultaneously restricted.

The first process is called “obligatorification”, which means that in a paradigm of free chosen items progressively only one item is entrenched and rules out all other items (for instance in the case of “lexical solidarities” in Coseriu’s terminology, e.g.: commettre un crime vs. ?faire / ?exécuter / ?accomplir un crime).

The second is called “fixation”, which means that a free word order makes way for a fixed order. As an illustration, in French some attributive adjectives may be preposed or postposed to a substantive but delivering two different senses:

- une femme pauvre (a poor woman) vs. une pauvre femme (a pityful woman);
- un sale type (a nasty guy) vs. un type sale (a dirty guy);
- un curieux enfant (a strange child) vs. un enfant curieux (an inquisitive child);
- un homme jeune (a young man) vs. un jeune homme (a youth).


The topic of the genesis of grammar out of the lexicon has been studied for decades and it has given significant results in the last years with Heine & Kuteva, 2007, The genesis of grammar, Talmy Givón, 2009, The genesis of syntactic complexity and Joan Bybee, 2010, with language, usage and cognition. The last mentioned linguist, specialist of morphology in cross-linguistic and historical perspective, sees a trend to so-called “grammaticalization paths” of the same kind in most natural languages and she declares (2010:201): “even the inferences that push the changes forward seem to be very similar across languages and cultures. However, the context for grammaticalization may be slightly different; the cultural context may differ as well. Thus no two paths of development will be exactly the same though very similar paths will occur over and over again in the languages of the world” and she gives her explanation some lines later:

> "the paths of development for grammar are similar in the same way that dunes of sand or waves on the ocean are similar: because the forces that create them are the same and these forces interact dynamically over time to produce emergent structures that are similar but never identical.”

That notion of multiple forces shaping language structures interactively is the hallmark of external (or non structural) linguistic functionalism. Heine & Kuteva (2007) deliver the result of their research on the typical ways of grammatical development in the form of “a scenario of evolution” (pp.110-114) illustrated by a diagram with six layers (or levels). At the first three levels there are only lexical items (nouns at level I, verbs at level II, adjectives and adverbs at level III).

![Figure 7: Parameters and processes of grammaticalization according to Lehmann 1982](image-url)
From the fourth to the sixth level there are only grammatical markers, either free markers like adpositions, demonstrative, negation, pronoun, complementizer or bound markers of aspect, definiteness, tense, agreement, passive, etc. According to their figure 8, the paths can be composed of maximally four arcs, for instance: Verb ➤ Adverb ➤ Adposition ➤ Complementizer ➤ Subordinator. The transcategorial progression is quite regular:

“These developments lead from concrete meanings to more abstract ones; from open-class to closed-class items; from fairly independent, referential meanings to less referential, schematic grammatical functions having to do with relations within or between clauses”. (Heine & Kuteva 2007: 113).

Figure 8: Heine & Kuteva (2007): The six layers of grammatical development

Defining a natural language as “a complex adaptive system”, Bybee (2010) is on the same line of argumentation as Heine & Kuteva (2007) and Givón (2009), but she emphasizes especially the significance of “cultural types” together with her collaborator Reveré Perkins (1992) who “hypothesizes that languages spoken in cultures where small groups share a limited physical and social background will have more inflectional or affixal markers of deixis than languages spoken in culture where large numbers of people of diverse background communicate with one another” (Bybee 2010: 210). This hypothesis was tested on 49 languages each corresponding to a different culture and “a significant correspondence was found between person affixes on nouns and verbs and cultural complexity such that languages spoken in the less complex cultures had more person affixes” (p.211).

A similar idea is supported by Givón (1995: 433-434) concerning the shift from manipulative to declarative communication. Giv Givón delivers a list of properties of a “society of intimates” typical of small groups of Homo Sapiens and he observes:

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2 Abbreviations: DEM(onstrative); ADP(osition); ASP(ect); PR(onoun); DEF(initeness); REL(ativizer); C(om)Pl(ementizer); CAS(e marker); T(e)NS(e); AGR(eement); PAS(sive); S(u)B(o)R(dinator)
“In this intimate socio-cultural context, there is not much background declarative information that is known to one speaker but not to the other. When one group member needs to solicit action by another, not much declarative justification is required. When the main parameters of the society of intimates begin to shift to a society of strangers, an increased need for explicitly-coded declarative information arises.”

And he adds:

“The adaptive advantage of declarative speech-acts is enormous, in facilitating crucial tasks in a more complex human society. Joint planning of future activities, cooperation and coordination of group tasks, learning from past experience of others, and instruction and transmission of cultural values and technical skills, all are enormously dependent on declarative information. These factors stand at the very core of a massive if gradual shift in the evolution of higher mammals – from reliance primarily on genetic transmission of adaptive traits, toward increased reliance on cultural transmission of acquired skills” (1995:434).

As for Bybee (2010), she concludes by evoking a hierarchy of three levels of universality:

I. The static-synchronic typological comparison of languages does not deliver language universals (the only universals or universal tendencies being implicative ones).

II. “The paths of change for constructions – such as voice, tense and aspect constructions – project stronger universals than the simple cross-linguistic comparisons of synchronic states”

III. “an even stronger level for the statement of universals resides in the mechanisms of change that produce the paths as these do not vary across languages or across time (…) While grammar itself is emergent and language specific, the properties of the units of grammar on these dimensions are quite comparable across languages”. (p.220).

And last but not least these universal trends result from three basic cognitive processes of:

a) CATEGORIZATION BY SIMILARITY ▶ “Categorization by similarity produces the categories of meaning of words and constructions, the grouping of bits of experience into the formal units of languages, the categories for slots in constructions and degrees of analysability”. Categorization by similarity is prevailing in the cognitive reinterpretation of generalized metaphors (see Lakoff & Johnson 1980)

b) CHUNKING OF REPEATED SEQUENCES ▶ “Chunking of repeated sequences of units cements the parts of constructions together, and gives up degrees of constituency or coherence among morphemes and words”.

c) and ASSOCIATION BY CONTIGUITY ▶ “Association by contiguity allows forms to take on meaning and allows meaning to change from association with context and with frequently made inferences”. In cognitive linguistics, association by contiguity appears as the concept of metonymy often combined with metaphor as the two main principles of linguistic categorization (see W. Croft, 1993).

III—3. TWELVE TOPICS CONCERNING THE PATHS OF GRAMMATICALIZATION AND USAGE-BASED LINGUISTICS ALLOWING THE COMPARISON BETWEEN THREE WORKS (Heine & Kuteva 2007, Givón 2009, Bybee 2010, see François 2010)

Let us now have a look at Table 1, which represents in a tabular way a series of twelve topics involved in grammaticalization according to one, two or the three main specialists of the genesis of grammar (Heine & Kuteva, Givon and Bybee). I distinguish five subsets of topics according to which authors support them. Subset I gathers three topics supported by all four: Repetition is a structuring factor of natural languages, the cycles of grammaticalization involve a cultural factor, and primary complexification proceeds by chunking.

Subset II gathers three other topics represented only in Givon’s and Heine & Kuteva’s works: their argumentation is based on language typology; pidgins are integrated as patterns of emergence; and they are radically critical of the Chomskyan distinction between Narrow and Extended Language Faculty as supported by Hauser, Chomsky & Fitch in their well-known paper of 2002 in Science.

In subset III one finds two topics supported by Bybee and Givon: they practise quantitative corpus analyses and they view natural languages as complex adaptive systems.
Subset IV brings three topics together that only Givón supports: he favors the theory of co-evolution of brain, mind and language initiated by Terrence Deacon in *The symbolic species* (1997), he assumes that language ontogenesis (in the infant) and phylogenesis (in the human species) proceed analogically, and he introduces agrammatic aphasia as another analogon of proto-language (supplementing the building of a pidgin).

Finally subset V is constituted by only one topic: the defence by Joan Bybee of Construction Grammar as initiated by Langacker and Lakoff and developed by Goldberg, Tomasello and Croft as a relevant model integrating grammaticalization theory.

### INVOLVED TOPICS

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- A | Repetition is viewed as structuring factor of natural languages
- B | Cycles of grammaticalization involve a cultural factor
- C | Primary complexification proceeds by chunking
- D | The argumentation is based on language typology
- E | Pidgins are integrated as patterns of emergence
- F | Radical critique of the Chomskyan distinction between *Narrow* and *Extended Language Faculty* (see Hauser, Chomsky & Fitch 2002)
- G | Practising quantitative corpus analyses
- H | Natural languages viewed as complex adaptive systems
- I | Theory of co-evolution between language, mind and brain
- J | Processing analogy between language ontogenesis and phylogenesis
- K | Accounting for agrammatic aphasia as another analogon of proto-language
- L | In favor of a Construction Grammar

*Table 1: Topics involved in grammaticalization according to Bybee (2010), Givón (2009) and or Heine & Kuteva (2007)*

### IV. CONCLUSION: WHAT SFL MAY GAIN BY INTEGRATING EXTERNAL FUNCTIONAL VIEWS OF LANGUAGE DYNAMICS

Language **ontogenesis** — that is the acquisition of the mother language by the infant — has always been a matter of strong interest for Michael Halliday. Volume 4 of his *Collected Works* gathers contributions between 1969 and 1998, a research topic perpetuated along almost 30 years, especially concerning the so-called “protolanguage” of Nigel, an infant extensively studied between 9 and 24 months. In the most recent paper of this volume 4, entitled “Representing the child as a semiotic being (one who means)” (1998), Halliday synthesizes all this work. One of his crucial ideas is that the infant is a being endowed on the one side with preverbal mental representations and on the other side of an inventory of items or units of speech, with a semiotic links between the formers and the latters, but without lexicogrammatical means enabling her to connect the units of speech available in order to refer to a propositional representation such as for instance “Nigel – hungry” or “Dad – away”. Therefore, learning to speak consists properly to recognize in her mother’s speech and to reproduce herself the combinations of items “making sense”. Such constructs build the “missing link” between items and representations.

Interestingly enough, Halliday uses the term “protolanguage” for referring to that stage of acquisition, while “protolanguage” is usually employed in relation to the genesis of language in the human species, that is in the phylogensis. Halliday is surely aware that by shifting the reference of the termin he implicitly endorses the
thesis initiated by the biologist Ernst Haeckel in the middle of the 19th century and taken up around 1860 by his colleague in Jena and friend, the first biolinguist August Schleicher, and modern biolinguists as Talmy Givón (see Bio-linguistics, 2001): for them LANGUAGE ONTOGENESIS REDUPLICATES LANGUAGE PHYLOGENESIS. That means that the infant is supposed to come through all the stages which the species homo sapiens came through in its evolutionary history.

And in the third edition of the Introduction to Functional Grammar by M.A.K. Halliday & Ch. Matthiesen in 2004, one finds an enlightening passage in the same vein (p.47, without various references):

“We can recognize grammaticalization as a process taking place in time – in fact in three distinct dimensions of time:

(i) We can see it in ONTOGENETIC time when we observe children’s early language development, which is built around the creation of protogrammatical and then grammatical systems;

(ii) We cannot observe it in PHYLOGENETIC time, the evolution of human language; but we can track examples of this history of particular languages (for example, secondary tenses and the passive voice in English);

(iii) We can see it in LOGOGENETIC time, the unfolding of discourse, when a passage of some extent – a clause or more – is recapitulated in a single word or group.

So when we talk of the ‘system’ of language, as the underlying potential that is instantiated in the form of text, we are in effect theorizing a language as the outcome of ongoing grammaticalization in all these three dimensions of time.”

This view matches precisely with that of the research group Dynamique du langage (CNRS, UMR 5596) in Lyon, which presents itself as follows:

“Created in 1994, the research team DYNAMIQUE DU LANGAGE explores the matching between the diversity of some thousands of languages spoken throughout the world and the universality of human language faculty. These researchs lie in the heart of crucial society stakes, as understanding the language development of the child and of language impairments, documenting (badly known) natural languages and their vitality or searching the origins of man and language.”

Therefore we can introduce language dynamics as an overarching concept encompassing ONTOGENESIS, PHYLOGENESIS (including more modest diachrony) and LOGENESIS.

By reading Halliday’s paper about the child as a semiotic being, I found three significant passages about his conception of the transition from the infant’s protolanguage to mother tongue. In these passages the crucial topic is the evolution of the brain as common feature involving the development of the infant (ONTOGENESIS) as well as that of the species (PHYLOGENESIS):

[1] Let me come back now to the transition from protolanguage to mother tongue – the move into “language” in its typical sens of post-infancy human speech. This is, in fact, the transition from primary to higher-order consciousness, using Edelman’s model of the evolution of the brain (Edelman 1992); and it involves what is in evolutionary terms a considerable leap forwards, so that there appears to be a massive discontinuity – in the popular view, the child is beginning to talk.(p.15)

[2] In stratal terms, what happens is that the child deconstructs, or rather deconstrues (using “construe”, as throughout, for constructing in the semiotic mode), the protolinguistic sign, and insinuates a grammar “in between” the meaning and the expression. By this move the primary semiotic system (that is, the semiotic system as construed by the infant’s primary consciousness – a level of consciousness shared with many other species) is transformed into a HIGHER-ORDER SEMIOTIC SYSTEM, A SEMIOTIC SYSTEM CONSTRUED BY HIGHER-ORDER CONSCIOUSNESS WHICH EVOLVED AS THE “SAPIENS” IN HOMO SAPIENS. (p.15, my emphasis)
The functional orientations of the mother tongue are very different from those of the protolanguage; in fact the entire concept of linguistic “function” has to be reconstrued. In language (here as opposed to protolanguage), while it is still possible to talk informally about the “function” of individual utterances in their contexts of situation, functionality has become intrinsic to the system: every instance is in fact multifunctional, because this feature is built in to the grammar – you cannot switch it off (...) This is the extraordinary semiotic leap that children take in the second year of their lives, from the point where their range of meanings is an inventory of simple signs to the point where they have constructed for themselves an effectively infinite resource for making sense of the world and interacting with the people in it. (p.19)

First let us emphasize the crucial idea that at the beginning of the so-called “acquisition window” the infant disposes upon a primary (lower-order) semiotic system with a protolanguage devoid of grammar and at the end of her phase of progressive ‘construal’ (as used by Ronald Langacker) she has managed to link units of speech and preverbal representations by assimilating the secondary (higher-order) semiotic system of her mother’s language. Halliday’s concept of a semiotic system is clearly related to that of Langacker in his Cognitive Grammar.

Halliday’s conception of the beginning of the acquisition window is strongly related to that of Michael Tomasello, specialist of primatology (and thus of evolutionary ethology) and child psychology at the Max-Planck-Institute of Evolutionary Anthropology in Leipzig. In The cultural origins of human cognition (1999:61), Tomasello evokes the “nine-month revolution” in the same way as Halliday. Let us compare two passages. In “On language and linguistics”, Collected Works 3, cited in The essential Halliday (2009:198) Halliday writes:

“We find various stages in a child’s semiotic development, associated with the development of bodily postures and movement. (i) Premeaning : exchanging ATTENTION. This takes place from birth : it goes with moving the head and body, flexing the limbs, “pre-reaching”. The two activities, material and pre-semiotic, are combined when the baby activates the whole body, including the organs of speech, accompanied by smiling and gurgling, in phase with the directed attention of its mother and other members of its ‘meaning group’.

And Tomasello (1999) replies:

“At nine months of age human infants begin engaging in a number of so-called joint attentional behaviors that seem to indicate an emerging understanding of other persons as intentional agents like the self whose relations to outside entities may be followed into, directed, or shared.”

And he illustrates his argumentation with an enlightening schema distinguishing between first “check attention”, then “follow attention” and finally “direct attention” as three stages enabling the emergence of “referential language” by “declarative pointing”:

The point is for Tomasello that this genetic ability of the infant to check, follow and direct the attention of adults fails in the other primates. That is for him the most important genetic disparity between human infants and apes. Another decisive observation of Tomasello agrees with Halliday’s view on the elaboration of the infant’s semiotic system from lower to higher order through grammaticalization:

In his article “First steps toward a usage based theory of language acquisition” (2000), Tomasello reports an exciting developmental experiment in which he has recorded about 10% of all the utterances of a two-year-old child in interaction with her mother during a period of six weeks. Each target utterance was then compared
with similar utterances produced by the child earlier in the recording. Tomasello qualifies the syntactic operations performed by the child in the last days as ‘usage-based’ since “the child put together her utterances from a motley assortment of different kinds of pre-existing psycholinguistic units”. This was done by cutting and pasting together her previously mastered linguistic constructions. The two most important conclusions of this experiment are

- first that the material stored, retrieved and reused by the child is highly diversified, “including everything from single words to abstract categories to partially abstract utterances or phrasal schemas” (p.77)
- and then that “children coordinate not just the linguistic forms involved but also the conventional communicative functions of these forms” as postulated in Langacker’s Cognitive Grammar (2008) or Goldberg’s Construction Grammar (1995)

I conclude that reading the works of Michael Tomasello may be of special interest for systemic functionalists.3

In the same direction, another useful reading would be T. Givon’s book of 2009, The genesis of syntactic complexity. Givon is one of the most prominent representants of external functionalism and in this book he investigates (amongst other related topics) the elaboration of complex verb phrases first in diachrony (chapter 4: Multiple routes to clause union: The diachrony of complex verb phrases) and in learning (Chapter 7: The ontogeny of complex verb phrases: How children learn to negotiate fact and desire).

In chapter 4 Givon explains that the unification of two clauses may present various degrees along a scale whose first level consists in directly quoted complements of speech verbs with an autonomous prosodic contour. At the highest level one finds morphological causatives with the strongest clausal unification and colexicization. The transition between these two extreme levels is semantically and syntactically gradual. The complex sentence integrating an embedded clause without autonomous prosodic contour lies in the middle of that scale. In chapter 7 Givon shows that the progressive acquisition by the infant of complex VPs with a deontic moral operator like must or want or an epistemic operator like may, believe or know is related to her growing awareness of her place in the “society of the intimates”.

The very interesting point is that Givon aims at exploring the factors modelling the elaboration of these complex structures in language dynamics as a whole, including language evolution at the species level and at the child’s level a well.

Finally I would like to come back to Halliday’s view of two successive semiotic systems, that of protolanguage and that of elaborated language, which are the two aspects of language dynamics. I regard the first awkward, incomplete semiotic system of early humans as well as present infants as the privileged application domain of external functionalism, because at that first level grammar is “EMERGENT” (see P. Hopper 1987, “Emergent grammar”) and the second well organized semiotic system of elaborated language as the privileged application domain of internal or structural functionalism, because at that second level, grammar is ESTABLISHED. From this viewpoint, I would gladly refer to the position of Frederick Newmeyer, a prominent and very open-minded generativist in the debate between functionalist and formalist linguists which took place in 1996 at the university of Indiana in Milwaukee and was published in 1999 unter the title “Functionalism and Formalism in Linguistics”, a very important publication for understanding the different positions of the formers and the latters about phonology and syntax.

In his paper entitled “Some remarks on the functionalist-formalist controversy in linguistics”, Newmeyer evokes the seminal paper of John DuBois (1985) “Competing motivations” in which the author assumes that linguistic structures are automatically selected as the result of the interplay of competing motivations without any “system” in between. Against that radically functional view, Newmeyer recognizes the reality of these “competing motivations”, but he considers that in elaborated language use, a structural system is unavoidable as a kind of nerve center, because linking expression, meaning and pragmatic relevance may not be computed anew in every speech act and therefore successful links must be automated. He delivers following schema as illustration of the thesis of DuBois (above) and of his own thesis (below). In the third

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column I add my own proposal, namely that at the level of protolanguage (either of the early humans in phylogenesis or of the infant in ontogenesis) the theses of external functionalism – or so-called “usage-based grammar” (see Bybee 2010) – are relevant and that at the level of elaborated language (that of human historical societies or of the infant at the end of the “acquisition window”) the theses of internal functionalism (those of Systemic Functional Linguistics, Functional Discourse Grammar or Role and Reference Grammar in Butler’s view) acquire their full relevance.

\[
\begin{array}{c}
\text{My proposal} \\
\text{application level of} \\
\text{EXTERNAL functionalism}
\end{array}
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\[
\begin{array}{c}
\text{application level of} \\
\text{INTERNAL functionalism}
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Figure 8 : Matching motivations and structures avoiding vs. involving a structural system

As APPENDIX I join my short description of William Croft’s theory of “evolutionary linguistics” (Explaining language change, 2000). Croft, one of the most influent followers of Joseph Greenberg, situates himself at the interface between

a) cognitive linguistics as elaborated by Ronald Langacker and other mostly Californian researchers, and

b) functional typology of languages, including the so-called “genetic typology”, that is the identification of language families not only with morphological means as August Schleicher did it in the middle of the 19th century with his so-called Stammbaum (genealogical tree of languages), but on the basis of phonological, syntactical and lexical relatedness.

Like Givon’s theory of the “co-evolution of brain, mind and language” (see. 1995, Functionalism in Grammar, chapter 9), Croft turns out to be occasionally a bio-linguist insofar as his argumentation in this work makes an extent use of the vocabulary of biology. That reminds us that Charles Darwin viewed the mostly historical linguistics of his time as faced to the same epistemological problems as evolutionary biology and I conclude with a clear-sighted excerpt form Darwin’s On the Origin of Species (1859).

“If we possessed a perfect pedigree of mankind, a genealogical arrangement of the races of man would afford the best classification of the various languages now spoken throughout the world : and if all extinct languages, and all intermediate and slowly changing dialects, had to be included, such an arrangement would, I think be the only possible one.” (Darwin 1859 : 422 cited by Richards 2012)
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APPENDIX

In my opinion W. Croft’s book “Explaining language change” (2000) with the exciting subtitle “an evolutionary approach” is likely to arouse the interest of many linguists.

Croft aims at an evolutionary theory of the selection of “linguemes”, i.e. “units of linguistic structure, as embodied in particular utterances, that can be inherited by replication” (2000:239). The utterance occupies the center of this theory. He fundamentally rejects the essentialist view of natural languages characteristic of American structuralism. In biology, species are no longer identified by means of essential structural properties and are now conceived of as populations which allow individual variations. The species is redefined as «a population of interbreeding individuals».

According to Croft, a natural language is to be defined on the basis of real communicational interaction and of the conviction of speakers that they are communicating ‘in the same language’. The conviction is the source of his distinction between so called ‘sibling’ languages — strictly related dialects deemed to be different languages by their speakers — and ‘polytypic’ languages — loosely related languages which their respective speakers regard as only one language.

The three main concepts of Croft’s ‘evolutionary’ linguistics, namely UTTERANCE, LANGUAGE and GRAMMAR, are introduced in relation with David Hull’s ‘generalized theory of selection’ (1988) and compared with their counterparts in evolutionary biology.

An utterance is «a particular, actual occurrence of the product of human behavior in communicative interaction (i.e. a string of sounds), as it is pronounced, grammatically structured, and semantically and pragmatically interpreted in its context» (2000:26). An utterance is a structured chain of ‘linguemes’. LINGUEMES are the linguistic counterpart of genes in biology and both linguemes and genes are paradigm instantiations of the concept of replicator in Hull’s generalization. Therefore utterances instantiate structured sets of replicators just like strings of DNA in biology.

A language is «the population of utterances in a speech community» (2000:26). It is viewed as a ‘lingueme pool’ comparable to a gene pool. Language variants are alternative replicators and as such are the counterparts of alleles in biology.

A grammar is «the cognitive structure in a speaker’s mind» that contains his/her knowledge about his/her language, and is «the structure that is used in producing and comprehending utterances» (2000:238). It is the instantiation paradigm in the linguistic communication of the interactor, i.e. the entity interacting with its environment «in such a way as to cause replication to be differential» (2000:238) and as such a sort of ‘language organism’.

The interacting speaker replicates his/her internal grammar when producing utterances. In the first stage, disrupting cognitive processes such as the reanalysis of the received message or interferences between codes in situations of bilingualism may cause the replications to vary. In the second stage the differential replication leads to the setting of variants diverging at phonological, lexical and/or syntactic levels, before social factors drive the selection and propagation of one variant out of the variants pool.

Croft’s purpose is accordingly twofold:

• Firstly he wants to point out the advantage for functional linguistics of setting up an explanatory model integrated within a general theory of adaptive selection.
• Then he suggests that two methods which consider natural languages as populations rather than as essences, namely functional typology of language and sociolinguistics, may, by merging, explain the two stages in language change: differentiation of variants resulting from individual replications and the selection of one variant by the social body.