Functionalism from Martinet to Dik, Croft and Danish Functional Linguistics

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Abstract. *To most observers, function and structure may come cross as opposites within linguistics. This article aims to show how (especially one strand of) functionalism can accommodate the valid insights of the structural tradition (without taking over its reliance on structure as the be-all and end-all of linguistic description). The argument takes its point of departure in an analysis of three aspects of the concept of structure: its association with (respectively) 'autonomy', the opposition to 'substance', and 'supra-individual' properties. Of these, the last aspect points to features of language where function and structure overlap: Both structural and functional properties of an object of description arise in relation to features outside the element in itself. This is central to the European linguistic tradition, including present-day Danish functional linguistics. This approach is compared to other linguistic perspectives on function and structure.*

1. Introduction

The idea of taking a broad glance at structuralisms (in the plural) is timely and opens for a number of important issues that have been the subject of underwhelming coverage. Like all yesterday's buzzwords, structuralism has widely been consigned to the dustbin of history for a variety of reasons that have not been kept sufficiently distinct from each other – or from the mere fact of going out of fashion. Few linguists, however, would suggest that we try to revert to a stage where structuralism had not occurred. The task is to look at the heritage in the light of what we have learned after its rise and subsequent fall.

Within this wider perspective, the present article has the more specific aim of showing how (one type of) functionalism can accommodate the basic insights of the structural tradition. This aim constrains the selection of topics, so that issues that would otherwise fit naturally into the following discussion have not been discussed. Among these are the places of Cognitive Linguistics and Systemic-Functional Linguistics in the overall picture. The focus is somewhat narrowly on the rivalries and the inherent connections between approaches to language description predicated on the core ideas of 'structure' and 'function' in a mainly European perspective.

Talking about functionalism in a book on structuralism calls for taking a stand on the two competing buzzwords. The position I am going to present as a representative of modern Danish linguistics entails that structural*ism* is untenable, while structural *description* is an essential aspect also of functional linguistics. By structuralism (in the untenable sense) I understand the belief that structure is the foundation on which everything else is based. In other words, it is not the case that structure lies at the bottom of everything, so that on top of structure we can optionally add elements to flesh it out. Instead, I suggest that basically the world contains various substances, and these can be structured in various ways that confer a number of essential additional qualities on these substances.

Two basic issues relate to the question of what exactly is subsumed by the two key terms for my contribution, i.e. *function* and *structure*. These words are 'ordinary language' or 'folk' terms and therefore do not tend to raise any flags. What is more, their ordinary language senses can also go quite far in guiding understanding of the linguistic issues involved: function is something to do with what language does, and structure is something to do with how languages are constructed.

After this level of analytic depth, however, things start to get hairy. Without wanting to get bogged down in a battle of contested concepts and definitions, I think some pervasive faultlines in the understanding of both structure and function need to be laid out before a coherent account of the relation between functionalism and linguistic structure can be established. The argument proceeds in the following main stages:

Section 2 is devoted to the notion(s) of structure, arguing the there are three core aspects which have separate relations with descriptive practices and with functional properties of language. The differences between these three aspects of what structure involves must be kept in mind in order to understand relations between structure and function.

On that basis, section 3 discusses the general ontological role of structural relations. The issue is the way structure contributes to the overall nature of things, rather than specifically to language. The key point is that structure is crucial also for an understanding of the substantive properties of things in the world.

Section 4 discusses 'function', the second key term, in relation to the understanding of structure provided by the first two sections, arguing that one of the three aspects of structure described in section 2 offer a perspective where functional and structural description are inherently related endeavors rather than constituting separate perspectives.

Section 5 is a brief historical overview. The aim is not to do justice to the approaches mentioned, but to illustrate how they stand in relation to the differentiated picture of structure and function given in the previous sections.

Section 6 gives an account of how structure and function collaborate in modern Danish Functional Linguistics. The discussion extends and deepens the outline of the two basic concepts, including the key role of the evolutionary perspective, and gives examples of the areas to which Danish linguists have applied this basic pattern of understanding.

Section 7 sums up the conclusions.

2. Structure: shades of meaning

The concept of structure is subject to variation that must be understood in relation to the contexts in which it occurs. Three oppositions have been significant, and their insidious similarities and differences continue to play a role.

(1) Structural properties are 'autonomous' as opposed to externally based properties: a structural description captures the internal organization of an object viewed as independent of its external relations.

Example: Categorization in terms of linguistic structure is viewed as autonomous of the ontological features of the language-external objects denoted. The fact that *furniture* is a non-count noun in English is a purely structural fact about the English language (cf. the countable noun *møbel* in Danish).

(2) Structural properties are 'skeletal' as opposed to 'substantial'.

Example: a chair with the same structure can be made out of different 'substances' (wood or plastic)

(3) Structural properties are 'supra-individual' as opposed to being inherent in individual parts: structural properties are due not to the smallest units, but to the larger wholes they enter into.

Example: In the sentence *Joe left*, *Joe* is the grammatical subject not by virtue of its properties as an individual term, but by virtue of its place in a larger whole.

Let us take these senses one at a time:

(1) The first sense is central to all structuralisms (cf. Saussure 1916 [1968]: 314): language is a system "qui ne connaît que son ordre propre". Autonomy is what made structuralism attractive to a number of disciplines in the humanities and social sciences. It amounted to a declaration of independence from intrusive neighbouring fields that would like to impose their categories. Its driving force is analogous to nationalism: let's declare our territory independent and have laws of our own!

(2) Potential producers need to make sure that chairs and buildings have certain structural properties before they go into production, and these criteria apply independently of what the chairs or buildings are made of. However, this does not entail that the ontological identity of a chair or building is determined purely by its structural

properties. The ontology of a chair clearly depends on other things than pure structure.

In linguistic structuralism these two subtly different nuances were intertwined. Traditional 'notional grammar' was rejected both because it located the source of explanation outside language itself (the autonomy aspect) and at the same time because the source of explanation was assumed to be a matter of substance properties (the skeleton aspect). For instance, notional grammar assumed that the meaning of the word *mouton* could be described by reference to the animal and its substance properties. The thrust of structuralism was to point out that linguistic items had properties that were not found in the language-external notions, and which at the same time had to do with structural relations rather than substance properties. Saussure famously pointed to the English contrast between *sheep* and *mutton* as absent in the French language, although the animal and its substance properties were the same. The assumption of identity between pre-linguistic notions and linguistic meanings (which was rightly abandoned) goes back to Aristotle (*De Interpretatione*).

A paradigmatic example of this structuralist point was Hjelmslev's interpretation (1937) of a proposal by Saussure that was taken up by the so-called laryngeal theory of Indo-European. Hjelmslev argued that Saussure's argument for assuming this phonological element in Proto-Indo-European was completely independent of phonetic substance. The whole point was that there was an element that had a crucial role in the phonological *structure* – how people might have pronounced it was irrelevant.

(3) The third perspective on structure is central to the argument in this article because it provides a vantage point from which the affinity between 'function' and 'structure' becomes apparent: both functional and structural properties have to do with the place of an item in a larger context. The function of a cog in a machine is not describable except by showing what difference it makes in relation to the workings of the machine as a whole, and a structural description of the machine cannot be given except by relating the cog to other parts. It also has another interesting feature, in that

it raises the issue of the inherent relation between structure and ontology: items acquire new properties due to being included in a larger whole.[95] This has largely gone unnoticed in linguistic structuralism – because it puts a question mark against the possibility of keeping structure 'clean'.

The 'supra-individual' sense of 'structural' is also central to one of the perennial discussions in social science, the issue of 'structure' versus 'agency'. Roughly speaking, the question is the causal importance of complex societal wholes as opposed to causal forces of the individuals that enter into those complex wholes. Structural racism illustrates this, being due to "the laws, rules, or official policies in a society", cf. https://dictionary.cambridge.org/dictionary/english/structural-racism.

A major historical development in social sciences was the transition from belief in the importance of complex wholes (= 'structures') as found in the theories of Durkheim (e.g. 1898) to a belief in finding the source of explanations in individuals, so that features of the aggregate whole could be explained as emergent from actions at the individual level (even if aggregate properties were sometimes in contrast to individual-level properties). The general principle was articulated in its most influential form as 'methodological individualism', cf. Weber (1922).

A staple example of the latter is the foundation stone in economic theory. The individual economic agents make decisions based on their personal perspective, aiming at maximum profit, which may motivate them to sell their goods at a price that is as high as possible; this, however motivates a drive towards efficiency that results in a lowering of the market price (at the aggregate level). More generally, the idea of understanding macro-phenomena as emergent from micro-level causes is the basis of formalizations in terms of so-called 'agent-based models' (going back to von Neumann), which also play a role in linguistics.

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95. A radically structuralist position would be to say that elements only *exist* as nodes in a network of relations. However, that would entail that the cog (referred to above) ceased to exist when detached from the machinery, which would be impractical if the purpose was (e.g.) to take it out for repair.

As we saw above with the first two perspectives on structure, all three may coincide. A description focusing on the properties of individual linguistic items (words, sounds or meanings) in isolation from all other aspects of language would be non-structural in all three senses: in the absence of relations, it would have to be based on substance; it would focus on a unit rather than a complex whole, and skeletal features would be outside its purview.

3. The ontological role of structures

To address the problem that not all supra-individual features are structural features in the skeletal sense, we need to look at the relation between structural complexity and ontology. The first observation that should be made is that complex entities have ontological properties that are not reducible to properties of the individuals of which they consist. A forest is more than the plural of trees – tigers live in forests, not in trees (plural).

At the most abstract level, the issue is involved in Russell's theory of types (cf. Russell 1908), which very roughly speaking entails that classes have different properties from the individuals that constitute them. More generally, when you move from individual items towards the more complex structures in which they enter, you get not only structure, but also new substantive properties. This is related to the concept of emergence and is crucial to the whole basic nature of reality. A simple example is the property of being 'liquid': it arises as we move from the atomic to the molecular level. At the atomic level we have H and O, neither of which is liquid – only when we move to the molecular level do we get H_2O, which is a liquid. There is nothing mysterious in this, and it can be explained by reference to properties of the constituent atoms as they respond to being combined. The point is that being liquid is also a substantive property, not *just* a skeletal property. For instance, it enters into the set of affordances for living organisms: animals and plants can use water for things that they cannot use oxygen or hydrogen as individual elements. A source of confusion in understanding the ontological role of structure is the ambiguity associated with the word *emergence* in linguistics, cf. Dahl (2004: 33f): it has been used

both to argue that structure is epiphenomenal and to argue that it has a key role in understanding complexity.

Crucial to my purposes, the pathway from individuals towards the larger wholes to which they belong also applies to language (but there is a difference, to which we shall return!). Word combinations have properties that single words do not have. One of the examples that go all the way back to Aristotle (*De Interpretatione*) is that a statement requires both a nominal item (*onoma*) and a verbal entity (*rhema*). You cannot make a claim about what is the case with only a nominal or a verbal element on their own. The conclusion is that also for language, when you describe a complex entity, structural properties (in the skeletal sense) are part of the descriptive task – but they are never sufficient on their own. You have, as a matter of principle, to ask: what are the substantive ontological consequences of this skeletal structural complexity?

A striking example of the lack of awareness of this point in linguistics is the traditional view according to which semantics was a discipline dealing with *words* only (cf. synonymy, hyponymy, antonomy as a property of words). When the path of description moved on from words to combinations of words, you went into a different discipline, namely syntax. And syntax was typically seen as purely structural, quite different from semantics – a view which was carried over to generative linguistics, with massive consequences for linguistics during the past half-century. Yet clearly, as we have seen, the semantic properties also acquire a new dimension when words are combined – the purely structural relations between words cannot be the whole story, as you move from individual items to combinations.

4. Structure and function: an overview

Against the background of these tensions in the understanding of structure, let us now look at what happens when structure is viewed in relation to *function*.

Function, like structure, is an everyday commonsensical term. Three elements are discernible in its meaning, cf. Harder (1996, 88): causal powers (a function is a type of effect); a normatively

privileged status (not all effects counts as functions); and a larger context within which this effect is seen as belonging. In a scientific context, the commonsensical understanding of 'function' has been analysed by Aristotle in relation to the organs of animals, cf. Givon (1995, 4).

The first impulse for most linguists would probably be to see 'structure' and 'function' as opposites. This is in harmony with sense (1) for 'structure' (the 'autonomous' sense of what 'structural' means), as well as sense (2), the 'skeletal' sense. Also, it fits into both the causal and the contextual dimensions of 'function', since function is associated with what an object *does,* in the context against which it is viewed, rather than what it *is.* But much depends on what exactly is understood by 'function' in relation to language.

If we take 'function' to refer to the function of a linguistic utterance in a concrete communicative situation, this is entirely unproblematic. To take a classic example from Austin, you can enter into marriage by saying *I do* (…take thee to be my wedded wife/husband) in the appropriate context, and this function is clearly not captured by structural analysis.

Newmeyer (1998) describes the relation between structure and function in terms of an analogy with anatomy: the liver has a structure which anatomists can describe, and in addition to that, it also has functions. These two sides co-exist, but can be described independently. Further, if you want a science specifically about the liver, you have to begin by describing the organ itself, i.e. its structure, before you go on to the functions – otherwise you would not know what precisely it is whose function you are trying to describe.

This natural separation, however, does not follow if we approach the issue from a different vantage point. As we have seen, in relation to perspective (3) on 'structure' (the supra-individual view) functional and structural properties come very close: both are defined as going beyond the individual element, being due to its place in relation to something outside itself.

This inherent affinity between the two key concepts is crucial to understanding the way the term 'function' has been used in European (as opposed to American) structuralism. In European linguistics, 'function' is typically used about the role of linguistic

units in relation to larger linguistic wholes. Hjelmslev, e.g. (1943, 31) defines 'function' in terms of the dependency relations on which glossematics is based (cf. Stjernfelt this volume). A broadly recognized term such as 'the subject function' also depends on this approach: there is a larger context in terms of which subjecthood is defined, but the presupposed larger context is purely linguistic.

At the same time, however, function is also used about the relation between the content side and the expression side. Since there is an obvious everyday sense in which the function of linguistic signs is to convey meaning, it is almost inevitable that this comes to be part of academic usage. This sense, too, is built into European structuralism, because it is inherent in the sign-based view of language that it is founded on, cf. the basic Saussurean distinction between *signifiant* and *signifié*.

On this point, there is a fundamental difference between European structuralism and the American tradition from Bloomfield to Chomsky. First of all, structural description in American linguistics is conceived as an analysis of what is called linguistic 'form', which is essentially understood in terms of the expression side only. Secondly, generative structure is based on a quasi-mathematical view of structure whose natural home is at the meta-level: structure is defined in terms of a formal model that is subsequently superimposed upon the object of description, in this case language. The inspiration comes from the way mathematical formulae are used to handle objects of description in physics. Just as mathematical formulae are not part of the physical universe, generative structures were not seen as part of the real world of language until Chomsky set up his innateness thesis. In this system, there is no inherent link between structure and function in language, because mathematical formulae are not born in a functional context. On these premises, Newmeyer's analogy with the liver is natural: if there is a quasi-mathematical engine inside the language organ, this must be assumed to work regardless of what language is used for.

Until recently functionalism has had a basic problem in terms of scientific methodology: the lack of a clearcut criterion for assigning a particular function to linguistic items (after the demise of Aristotelian pre-ordained functions). The informal persistence of

an Aristotelian view is at risk of letting function become a matter of the personal taste of the observer – as pointed out, e.g. by Searle (1995). For the same basic reason, an influential position in social science, cf. e.g. Elster (1983), argues that functional analyses have no proper scientific foundation.

It would take us beyond the scope of this article to go into the specifics of the argument here, but the basic rationale for a non-subjective assignment of function is the role of evolutionary dynamics (cf. Harder 1996, 2013). According to this explanatory paradigm, functional properties are those that contribute to the persistence[96] of an object in an evolutionary lineage, cf. Allen, Bekoff & Lauder (1998) on *Nature's purposes.* Wings persist because they allow birds to fly, thus contributing to the survival chances of birds, including wings – and hence this is their function. An argument for this is that in island populations birds may lose powers of flight because there are no predators to fly away from.

Already in Darwin (1871), this argument was applied to language, based on the idea of competition between words. A famous example of functional pressures driving out conventional content was pointed out by the German linguist Rudi Keller (1990), i.e. the extinction of one sense of the German word *englisch:* Until the middle of the 19C, it could mean 'angelic' as well as 'English' – but with the rise to world hegemony of England, the sense 'angelic' lost its selectional fitness and died out (being replaced by *engelhaft*).

This sets a basic functional paradigm for the description of linguistic phenomena: for each type of linguistic unit or pattern, we must ask what its contribution is to the persistence of utterances in which this element is found (and thus to the persistence of the element itself). There may not always be a functional explanation,

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96. As pointed out by an anonymous reviewer, it is debatable to what extent an evolutionary perspective is strictly necessary; one might also define functions (more synchronically) as features that contribute to the *operation* (rather than the persistence) of the system containing such features. The motivation for basing the argument on an underlying evolutionary dynamics is the unquestionable status of evolutionary dynamics as part of the way the world works (independently of observers).

as already pointed out – but the question has to be asked. As in biology, properties may hang around that no longer have any functional contribution, such as residual leg bones in whales or surviving genitive endings in Danish phrases such as *til søs* or *til måls*.

5. Functionalism in linguistics from Martinet to Dik/Hengeveld and Croft

We meet this basic sign-based approach to function also in André Martinet (1908–1999), who is perhaps the first to found a school of linguistics that explicitly put functionalism in its title. This was no doubt reinforced by his explicit rejection of generative grammar. At the same time, he is clearly well entrenched in the European sign-based version of structuralism. He emphasizes that it is 'function' in the sense of 'function in relation to the content side' that constitutes the key criterion for what elements to set up in one's language description; thus a linguist (cf. Martinet 1960, 55) should only be interested in phonetic features to the extent they have a function. This functional role is seen as directly tied to the choice of the speaker. In Martinet's terms, the speaker chooses phonological segments because they contribute to expressing the sign he wants to convey.

This approach simultaneously illustrates the way in which 'function in a structural context' blends seamlessly into 'function in relation to the content side' – phonemes have their function in relation to its fellow phonemes on the expression side (*signifiant*) because together they convey a particular conventional meaning (*signifié*). The same seamless blending is expressed in Hjelmslev's *commutation* function, which has a sophisticated structural definition which at the same time implies its role in distinguishing meanings. Martinet is also the father of one of the key concepts in describing what is structurally unique about human language, the concept of 'double articulation': human languages are divided not only into words but within words also into sound segments.

More generally, the property of 'distinctiveness' offers possibly the most salient illustration of the inherent relationship between

functional and structuralist aims in linguistic description.[97] Sauss-ure's *sheep/mutton*-example illustrates the foundational role of the basic distinction between sameness and difference for understanding linguistic structure. In accordance with this principle, a maximally 'skeletal' description of linguistic sounds dissolves them into bundles of 'distinctive features'. However, this rigorously structural analysis makes sense only against an implicitly functional understanding: a well-defined set of distinctive features can be postulated only on the assumption that these are the ones that *serve* to keep linguistic forms distinct from each other. Without such an assumption, the search for differences would be bottomless: no two actual sounds are *completely* identical.

In relation to Martinet, however, it should also be emphasized that in spite of the structuralist anchoring of his thinking, he was a pioneer in not limiting himself to the immanent, structural side of language, but included social variation in his account of language as a matter of course. He takes his point of departure in the structural anatomy of language, but does not stop when he moves into the external anchorings of language. When sociolinguistics started in America with the publication of Uriel Weinreich (1953), Weinreich pointed out the invaluable inspiration he had received from Martinet.

Simon Dik (1940–1995) is another father figure in European functional linguistics, cf. Dik (1989, 1997). Unlike Martinet, his roots are not in European structuralism. His basic framework is strongly inspired by formal generative grammar, which had become hegemonic between Martinet's heyday and the rise of Dik's model. His descriptive practice takes the form of a generative procedure, an 'assembly line', where basic concepts are inserted in one end and a structural description emerges at the other end. So what is so functionalist about that, one may ask?

Two things may be mentioned. In the beginning, functions referred to specific aspects of grammar which are clearly functional in nature, of which Dikian functionalism recognized three types: semantic, syntactic and pragmatic functions. The sentence grammar,

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97. I am indebted to an anonymous reviewer for this point.

which was in itself not noticeably different from many other models, was designed so as to insert especially nominal constituents into three different sets of functional roles: semantic functions such as agent and patient, syntactic functions such as subject and object, and pragmatic functions such as topic and focus. This entailed that the grammatical description was attuned to functions that elements were designed to serve.

In later phases of the model, worked out in collaboration with Kees Hengeveld (cf. Dik/Hengeveld 1997), the functional approach began to permeate also the basic grammatical description. This took the form of what became known as the 'layered' model of grammatical description. The basic idea is that elements in sentences are put together in a way that resembles the layers of an onion. At the centre we find the combination of the verb and core arguments – and these are then wrapped in layers that indicate place, time, modality and speech act functions. The two basic layers are the representational core (describing a state of affairs) and the interactional periphery (which inscribes the representational core in an interactive context). The layered model has also been adopted in Danish Functional Linguistics, cf. Engberg-Pedersen, Boye & Harder (2019).

In later years, the model has been revised and extended by Dik's inheritors, and developed into what is now called *Functional Discourse Grammar*, where the aim of integrating the description of grammar into a theory of linguistic interaction has become even more explicit, cf. Hengeveld & Mackenzie (2008).

Various strands of functionalism have also developed in America. They have been shaped by the intensive rivalry with Chomskyan generative grammar, which has been the mainstream approach since the 1960s. Non-generative grammarians in America have had to struggle to get recognition. The polarized atmosphere in American linguistics has produced a climate in which it was difficult to combine interest in function and structure. The so-called 'West Coast functionalist' school, with key figures including Paul Hopper (1942-) (e.g. 1987), Sandra Annear Thompson (1941-) (e.g. 2002), John W. Du Bois (e.g. 1987) took up a position where the aim was to derive as much linguistic structure as possible directly from patterns of usage. This produced a number of very interesting results, because

it turned out that rather than being purely arbitrary, linguistic structures could be related to pervasive facts about discourse patterns that were in themselves quite independent of structural categories. However, most linguists would agree that the basic claim of structuralism still holds: you cannot derive the structure of language directly from non-linguistic structures (cf. Harder 2013) – so there remains a gap to be filled.

One of the most influential American functionalists, William Croft (1956-), made important theoretical proposals for how this gap could be bridged (e.g. Croft 2000; 2001). It is impossible to do justice to his contribution in the context of an article such as this. I will focus on two features that can be profiled in relation to what I am going to say about our local brand of functionalism.

One is that Croft shares the orientation of West Coast functionalists towards a strong anchoring in actual usage – rather than towards conventional patterns understood as underlying actual usage and somehow being more basic than *parole*. The way in which such instances of actual usage translate into patterns and conventions (whose existence he obviously recognizes) is based on what he calls his *Radical Construction Grammar*. Its key feature is that each conventional pattern stands on its own. The description of language is essentially a list. It is like a lexicon, a dictionary, but extended with syntactic patterns – each of which has its own individuality and its own partly idiosyncratic set of syntactic, semantic and phonological properties. Each such pattern is viewed as derived directly from repeated patterns of usage – not as mediated by those grandiose systems that were the centrepiece of structuralist theories of language.

A feature also shared with Croft is the anchoring of human languages in an evolutionary framework. The process whereby constructions emerge and become established in languages is viewed as analogous to the process whereby new genetic features spread in a biological population. In accordance with the strong basis in usage, Croft views a language as a population of *utterances* – not as a population of *signs*. The analogy to genetic transmission in language is seen as transmission of structures as part of usage events – linguistic structural material being analogous to genetic mate-

rial. Communication is like biological reproduction in this respect: structures are passed on as an ongoing aspect of linguistic usage.[98]

Against this basis, I am now going to make a few observations about the place of contemporary Danish Functional Linguistics in the development of functional linguistics, while drawing at the same time on the attempts at conceptual clarification that I started out with.

6. Function and structure in Danish Functional Linguistics

Danish Functional Linguistics is not a 'school' with a set of inviolable doctrines, but rather (with a Croft-inspired biological metaphor) a population with a range of variational features. The population includes the authors represented in Engberg-Pedersen et al. (eds., 1996) and Engberg-Pedersen et al. (2005). Central in this context, the characteristic features include a heritage from European structuralism, relocated from its original position as predicated on immanent structure to being embedded in a functional context. For reasons discussed above, there is no sleight of hand involved in such a reconstruction; rather, it places structural properties in the context where they have always inherently belonged. As a salient example, arbitrariness, a centrepiece of Saussurean structuralism, is fundamentally a functionally motivated property (cf. Harder 2010, 236).

Unlike Croft, we see the set of linguistic conventions that are in force in a speech community as a prime target of description – rather than a population of utterances. Such a set of conventions is a social, institutional formation: the 'language system' has the same mode of existence as the 'education system'. Actual utterances like actual schools have other crucial properties than those of the social conventions – but unless they *also* presupposed social conventions, they would not count as instantiations of a human language. As an example of the difference it makes whether the focus is on conventions or on a population of utterances, one can mention the understanding of variation as opposed to shared understanding. Croft

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98. I have discussed this theory in detail in Ch. 6 of Harder (2010).

(2009, 418), describes language as "fundamentally heterogeneous [and] indeterminate (…)", which at one level is true enough – but in the Danish tradition the emphasis would be on the equally fundamental *constraints* on variation that are imposed by the language system as described above. Without an element of sharedness in the form of conventions, language could not serve as a medium of communication among members of the speech community. A description targeting *only* variation would not capture this inherent complexity in the ontology of human languages.

In harmony with Croft, however, we build on the observation that, as in all social and evolutionary systems, variation is the inherent background for selection and change also in language.

Like other forms of human behaviour, linguistic communication is function-driven. This basic functionality operates at several different levels, especially two (cf. also Verhagen fc):

– Populations (what selection pressures shape human populations, including their languages?)

– Individual life histories (what pressures shape the linguistic behaviour of an individual?).

As in biology, function does not explain everything – languages also take 'random walks' over historical periods. And as in all evolutionary systems, 'path dependence'[99] plays a role. This is reflected in the properties from earlier stages that have no necessary functional motivation.

Nevertheless, those facts about linguistic conventions that do have functional significance are the most interesting area of investigation – just as the functional features are central in evolutionary biology. Where the Danish brand of functional linguistics differs from some other approaches is in stressing the importance of *structure* in understanding how language *functions*.

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99. 'Path dependence' refers (across scientific disciplines) to the fact that not all properties of elements can be explained by reference to the system of which they currently form part: earlier stages of a developmental sequence continue to exert influence.

If we look at this position from the point of view of the watersheds of recent linguistic history, it may be viewed as an attempt to correct the exaggerations of two twentieth-century revolutions. The structuralist revolution had an important point in saying that linguistic structure exists and cannot be derived from anything outside language – but it went overboard in claiming that structure is *everything* and all other facts about language are irrelevant from a linguistic point of view.

When the debunking of structuralism began in the 1970s, and the non-immanent world returned in force to linguistics, the opposite exaggeration came to play a significant role. Now language was, by many of the pioneers, understood as totally embedded in context, with the essential properties of language being derivable from general properties of cognition or of social processes. This exaggeration, too, Danish functional linguists were concerned to try to correct.

In an even wider context, this development can also be placed in relation to the 'linguistic turn' and its sequels. The linguistic turn constituted a step away from substance, also in the general theory of science. Instead of getting its hands dirty by messing around with empirical details, science was about imposing a formally consistent model on whatever the substantive facts might be. How easy it is to confuse the perspective from the theory of science with the perspective from linguistic structuralism is apparent from Carnap's book title *Logische Syntax der Sprache* (1934), which is really about the structure of the scientific meta-language (cf. Collin, this volume).[100] It is this pattern of thinking that underlies generative grammar, whose view of structure is therefore quite different from that of European structuralism and also independent of assumptions about meaning. However, the tradition of cutting itself off from 'substance' properties – kicking away the ladder

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100. Hjelmslev regarded this development as identical to the one he pursued in linguistics, see Harder (1974) – but since his own system was built on dependency relations, i.e. relations defined in terms of co-occurrence, it was based on properties of concrete manifestations in a way that was different from properties associated with formal logic.

leading down to messy non-linguistic realities – is shared between the two traditions.

In understanding the role of structure within a functionalist approach to language, it is important to distinguish between two ontologically different types of structure: *component*-based structure and *function*-based structure. Component-based structure is what we find in the structure of matter. When we put carbon atoms together, they enter as components in a larger complex whole, and they may take on different structural properties, depending on how they are combined – one form being that of a diamond crystal. Above we followed the same pathway in relation to water, composed out of oxygen and hydrogen atoms, which may illustrate a different type of structure that may arise when smaller components are put together.

Component-based structure can be investigated without taking functional relations into consideration. This kind of structure is purely a matter of the internal composition of the object. When Newmeyer (1998) sets up his analogy between the structure of language and the structure of the liver, the assumption is that the same thing applies to language: it has an internal composition that has nothing to do with functional properties.

However, language has a type of structure that takes its point of departure in the way language functions, rather than in what it is made of. What this means can be illustrated with a key difference between pre-human and human 'language'. Animals have 'utterances' in the sense that they can convey whole messages – e.g. alarm calls meaning (e.g. in the case of vervet monkeys', cf. Cheney & Seyfarth 1992), *snake!* or *leopard!* What pre-human languages do not have are syntactically structured utterances, i.e. utterances with internal subcomponents. So in these cases the larger whole – the utterance – came first.

The smaller components, rather than being primitive constituents as in the structure of matter, therefore arose out of sub-differentiation. It was not a question of putting components together to build something bigger – it was a question of factoring out sub-functions as part of an intended overall whole function. If we tried to understand the rise of syntax from a component-based perspective, it would imply that scattered words including nouns and

verbs had been lying around for a while, until some bright hominid suddenly got the idea of combining them into a whole sentence.[101]

An illustrative example of function-based structure is the structure of a knife: handles and blades did not lie around until somebody had the idea of combining them into knives – it was rather a case of the sharp-edged stone (which had the cutting function all on its own without any sub-components) being replaced by a superior artefact that had two differentiated sub-functions: one of grasping, and the other of cutting. More generally, this is also the most important type of structure in complex social objects of description. A one-man start-up business company begins without internal structure, because the entrepreneur at first does everything himself. If he is successful, he then hires other people – and they then have to be assigned sub-functions within the company. The structure cannot be derived from the properties of the individuals – it has to be described top-down, based on what the company as a whole does.

The existence of function-based structure does not entail that functional properties are alone on the stage in languages. On the contrary, functions have to be served by items that also have ontological properties that are not inherently functional, i.e. sounds produced by the articulatory apparatus. As part of this complexity, there will also be component-based structure, in the sense of component-based relational properties between speech sounds. Phonological assimilation processes, for instance, are relations based on substance properties of components.

Similarly, in business companies, two people may form an alliance across departmental barriers because of shared interests and good 'chemistry' (after accidentally meeting in the coffee room, for instance), and relations of that kind may be a functionally important part of the way things work in the organization. The point is that such component-based relations are not the sole or even the most important basis of structural properties in complex social objects, including languages.

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101. As pointed out by an anonymous reviewer, the generative assumption that a random mutation could give rise to syntax is congenial with the idea of a purely component-based approach to syntactic structure.

This view of the role of structure in a function-based approach has a number of implications for linguistics (and potentially also for other social sciences – linguistics may still make a bid for serving as a model science!). In describing complex linguistic structures, the key endeavour must be to get at the functional division of labour between them. At the same time, it is built into the ontology described above that such a functional description can never be exhaustive: Looking for a functional explanation for everything would be a fallacy that may be dubbed 'unconstrained functionalism'.

The fact that there is not always a functional explanation for linguistic phenomena means that a functionalist may sometimes be barking up the wrong tree. It is not always easy to argue for precisely what the contribution to the persistence of the larger whole to which the element belongs can be (if there is one) – but nevertheless asking the question may guide thinking about function in valuable ways. As an example, the question of 'contribution to persistence' may be used to settle the argument of whether thinking is the canonical function of the phenomenon of language itself rather than communication, as claimed by Chomsky. Clearly this cannot be true in an evolutionary perspective – since the use of linguistic utterances could not persist from generation to generation merely by solitary thinking processes. Without communication, linguistic utterances would not be reproduced from one generation to the next.

This paradigm can use all the valid results of structural linguistics and anchor them in a wider functional framework. Unlike the way evolution is conceived by Croft, in the Danish context the focus is on conventional features, including structures, rather than acts of usage. Danish Functional Linguistics, very briefly speaking, can be seen as an approach that aims to carry on all the valid results of structuralism by placing them in the functional context in which they inherently belong – and reject those results that cannot stand the test of being relocated from the isolation chamber of pure immanence to the welter of functional pressures. One issue where the integrated approach to function and structure has been explored in Danish Functional Linguistics is grammaticalization, cf. Nørgaard-Sørensen et al. (2011) and Boye and Harder (2012).

To exemplify the various directions that linguistics on these premises have taken, I can mention some of my colleagues: Lars Heltoft, one of the authors of this generation's major Danish grammar (Hansen & Heltoft 2011), has continued the tradition from the Danish linguist Paul Diderichsen and shown how the sentence schema fits into functional properties of sentence organization (and how these have shifted historically) (Diderichsen 1946). Kasper Boye has studied typological phenomena based on the functional division of labour in the clause, including a function-based approach to the validation of cross-linguistic categories (e.g. Boye 2012), and has shown how this may be integrated with the study of grammaticalization and aphasia (Boye & Bastiaanse 2018). Elisabeth Engberg-Pedersen has applied functional-cognitive principles to the study of sign language (Engberg-Pedersen 1993) and the study of features of autistic language disorders (Engberg-Pedersen & Boeg Thomsen 2016). Ole Nedergaard Thomsen has formulated an integrated functional-pragmatic theory of structure and change (e.g. Thomsen 2006); Peter Juul Nielsen (2016) has studied functional structure in morphology, throwing light especially on the structuralist issue of zero forms.

7. Summary

First of all, the argument in this article has tried to show how functionalism can accommodate the key insights of the structuralist tradition. This is perhaps especially obvious in relation to the sign-based tradition of European structuralism. The essential correction of classic structuralist 'immanent' thinking is to see internal (structural-and-functional) differentiation as presupposing external functional embedding.

The foundation of this reinterpretation is the insight that linguistic structure takes functions as the input on which structure is imposed – instead of function being external to structure. Thus the subject function, a centrepiece of the argument in favour of language-internal structure, presupposes the external, communicative function of selecting a target of predication.

The classic argument against such an approach was the lack of a one-to-one fit between grammatical subjecthood and external function. But this argument presupposes that a functionalist approach would have to be based on the assumption that language-internal features could be directly derived from external functions. In reality, the fact is that languages are like all other complex function-based systems (business companies, education systems, etc.) in requiring internal structure in order to serve their external functional purposes. Such an internal structure must be *compatible* with external purposes – but cannot be directly *derived* from them. This is the structural analogue to Aristotle's insight that an axe, in order to be able to serve its function, must be sharp – but this does not tell us whether it is to be made of bronze or iron. That is a choice which is not dictated by functional considerations alone – and similarly many purposes in language can be served in many different ways. But this does not mean that you can understand them without taking the functional context into consideration.

The same point, expressed differently: the properties of language are partially arbitrary. What is more, arbitrariness is a functionally motivated property. As a Danish linguist in the structural-functional tradition used to say 'Thank God the order of the letters of the alphabet were fixed before linguists got their hand on the issue'. The crucial *functional* purpose of an alphabetic sequence requires that the order is fixed (any order!), regardless of the precise extent of its functional motivation. The integration of functional and structural description is not a tense, hard-won compromise but a reflection of the way these twin aspects are inherently interwoven in the ontology of language.

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