

7 • The complementarity of the Pattern and Process perspectives on language

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7.1. Pattern and Process

The Saussurean distinction between *langue* (linguistic system) and *parole* (the deployment of that system in actual speech) and the related Chomskyan one of competence vs. performance appear to find a further counterpart in the distinction between ‘Pattern’ and ‘Process’ in Whitehead’s philosophy of process. However, this latter dichotomy is a far broader one, cutting across the cognitive and the social, the synchronic and the diachronic. It was specifically applied to language in Fortescue (2001) and is perfectly consonant with the spirit of Danish Functional Grammar. The Pattern and Process aspects of language can (unlike Saussure’s and Chomsky’s dichotomies) never really be isolated one from the other, but nor can they be integrated into a single monolithic ‘model’. There is a processual aspect to cognition as there is to the social usage of language, and both display repeatable patterning. The language system – or grammar – is only ‘real’ (as opposed to potential) in so far as it is realized in actual instances of speech, whether external or internal, and this is in turn anchored in impermanence and individual intentionality. Jakobson too saw language as a dynamic rather than a static reality and *langue* and *parole* as interdependent. The relationship between the two is functional: processes of communication and thought utilize the socially sanctioned patterns of grammar as a means to achieve specific ends. Sometimes the processes are directly reflected in the patterning, more often they are not. Any act of speech production or comprehension involves successive layers of context-specific intentionality that recede far back behind the ‘digitally’ coded surface of the ‘emic’ distinctions of the language. What the specifically Whiteheadian element adds here is a deeper grasp of what these mysterious processes might be in cognitive/ontological terms. Apart from mentioning the basic unit of the ‘prehension’ – the recognition or assimilation by a subject of some pattern or contrast (whether perceptual or conceptual) having relevance for his or her own aims – I shall not go into any further terminological distinctions in the present context. DFG itself is essentially concerned with the coded ‘emic’ patterning of individual languages, although it is quite capable of switching to investigate the ‘etics’ of context-determined variation and psycholinguistic cue recognition, for example. A detailed exemplification of the Process side of text production and comprehension can be found in Fortescue (2003).

The most general unit of Pattern as opposed to Process is what Hjelmslev called a ‘*figura*’ (corresponding to Whitehead’s ‘eternal object’). *Figurae* are, by virtue of being repeatable and communicable, relevant to all levels of analysis – to substance as well as to form, and to both the content and expression planes of language. Hjelmslev in fact proposed (but did not carry out) a ‘metasemiology’ with an (in principle) exhaustive description of the ultimate components of ‘substance’ *figurae* with which all languages must deal (Hjelmslev 1943). Today we can bring to bear on that barely sketched project

advances in our knowledge of the content side of language, in prototype semantics, discourse pragmatics, modern metaphor theory, image schemas, force dynamics and other cognitively orientated forms of linguistics that were unavailable to Hjelmslev. In order to isolate *figurae* of any kind, on both the expression and the content planes, Hjelmslev employed the notion of the ‘commutation test’ of paradigmatic alternation. *Figurae* are invariants, that is ‘correlates with mutual commutation’ (within a paradigm) – a change of an invariant on the expression plane results in a determinate change on the content plane, and *vice versa*. Those of the expression plane include the notion of the phoneme (and at a still deeper level the ultimate ‘glossemes’ defining them, like distinctive features). As is well known, it was especially his search for the *figurae* of the content plane – using the same methodology as for analysing the expression plane – that distinguished Hjelmslev from other structuralists.

One major problem with that endeavour was that the ‘paradigms’ which the commutation test presupposes when applied to content are ultimately anchored in cognitive categories independent of language (i.e. in ‘substance’). Thus the content elements ‘wood’ and ‘tree’ (or their French and German equivalents rather) Hjelmslev saw as invariants within the same content ‘paradigm’, whereas Danish *træ*, which is more broadly polysemous, he saw as containing two variants (mutually substitutable) covering the same semantic area divided into two by the other languages. But that area itself, the substance divided up differently by the content paradigms of individual languages, is not wholly amorphous, it can be defined (at least in this case) in terms of prototypes of perception and/or ‘natural kinds’. These are also invariants – invariants of substance. The kind of *figurae* DFG is principally concerned with are those of ‘content form’, i.e. the semantic distinctions made by specific forms (or structures) in individual languages.

The relationship between Pattern and Process is one of complementarity. As Niels Bohr surmised, complementarity pervades all levels of Nature. Viewing an animate being as alive is thus complementary to viewing it as a physical congeries of atoms – the ‘laws’ or ‘regularities’ involved in describing these two perspectives are far from the same. This is in part because there is usually more than one valid way of representing Pattern relations (depending on overall theory), and absolutely no guarantee that one particular way of describing a grammar, for example, directly reflects universal cognitive processes. There may be a descriptively most streamlined and elegant way of doing so, but that does not necessarily reflect the way the brain (known to be organized in a highly redundant fashion) is organized. Thus Dik’s variable-plus-restrictor (‘predicate calculus’) format is a perfectly reasonable and useful way of describing the content Pattern of grammar, but there is no evidence of it having any direct Process correlate. DFG remains typically eclectic on this question of optimal pattern representations and eschews over-reliance on formalizations of any kind (including the glossematic!). What is essential is that analyses of Pattern should not be confused with analyses of Process, or *vice versa*. Since Chomsky’s early days the terminology of modern linguistics has been repleat with expressions suggesting dynamic processes like ‘transformation’, ‘generation’, ‘fronting’, ‘raising’, ‘projection’ and the like, as if the Process perspective on language had triumphed over the static Pattern one of the structuralist era, but this merely covers over a misleading entanglement of the two perspectives. Most grammatical models today are in fact as tied

to the Pattern perspective as were the structuralist ones of yesteryear. The processes they reflect are largely unknown or taken for granted. Only psycholinguistic investigations – independent of any ‘autonomous’ linguistic theory – can begin to resolve this.

7.2. Linguistic ‘levels’

Most grammatical theories are based on some notion of interrelated ‘levels’ (if not of autonomous ‘modules’) and DFG is no exception here. Since it adheres to the cardinal structuralist concept of the linguistic sign – with its binary content and expression sides or ‘planes’ – but at the same time has close association with the more finely differentiated hierarchical organization of Dikian FG, there is the potential for some confusion here. In fact it would be preferable to distinguish consistently between ‘plane’ and ‘level’, where the latter term refers to an ‘outer’ vs. ‘inner’ dimension of successively expanded scope (Halliday’s ‘rank’) rather than a vertical ‘top’ vs. ‘bottom’ one. On diagram 1 this is expressed in a manner that should make the relationship to Pattern and Process clear. I have called it the ‘Double Filter’ model for fairly obvious reasons: the individual grammar acts as a template (Pattern) which shapes complex communicative intentions into determinate linear strings of phonemes, and every grammar has two planes, a content one matching communicative intentions with the emic categories of the language, and an expression one matching these categories with phonemic (and ultimately articulatory) realizations. The lexicon of course bridges the two planes (the broken vertical line in the innermost ring represents the individual linguistic sign linking a content with a lexical expression).

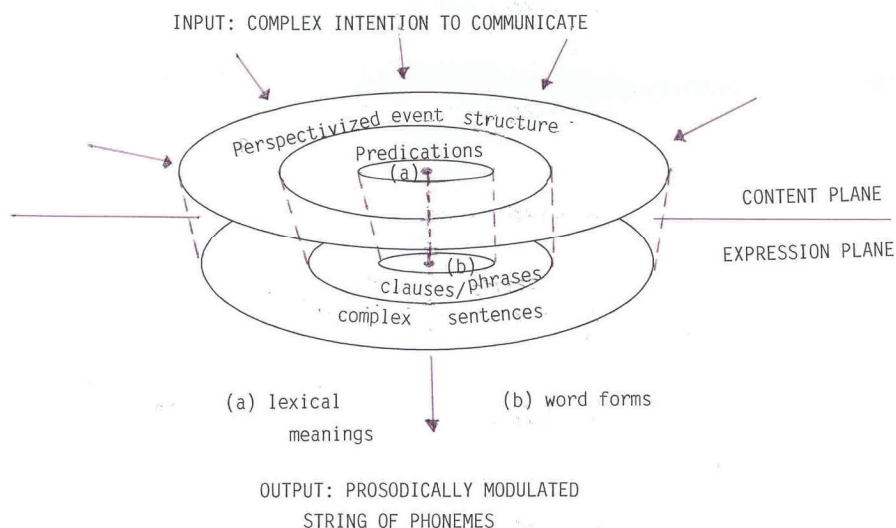


Diagram 1. Grammar as double filter (pattern)

Dynamic processes involving language run constantly through this ‘filter’ in the one or the other directions (or both simultaneously). In fact constant alternation between processes in the production and the comprehension mode in individual speakers is what causes linguistic expression categories to affect content (conceptual) categories and *vice versa* throughout both ontogenetic and philogenetic (diachronic) development. This is something a monoplanar model of grammar, such as that of recent generative theory, where universal grammar mediates directly between logical and phonological representations, cannot explain. DFG, by insisting on the separate treatment of the plane of ‘content form’, takes account of the way that the lexical and structural categories of a language tend to strive towards mutual accommodation with conceptual and functional categories – increasing iconicity (especially as regards combinatoriality) without, however, ever being able to obtain a perfect match, given the limits set by the essentially arbitrary nature of the linguistic sign and the perpetual accretion of fossilized historical ‘flotsam’.

I shall continue to talk of ‘levels’, although they should be understood in the ‘horizontal’ manner suggested above, which seems quite consistent with the spirit of DFG. Note that they match only roughly between the two planes, but that on either plane they are relevant for both the Pattern and Process perspectives. Thus at the phonemic level there are ‘on-line’ processes of assimilation, etc., but also phonotactic patterns of licit sequences of phonemes; at the level of morphology there are processes of derivation but also patterns of allomorphy, and syntax too can be seen either as patterns or as processes conforming to these patterns. Only at the highest content plane levels is there such freedom of choice of alternative means of expressing the same approximate communicative intentions that the association between Pattern and Process becomes looser and more difficult to pin down (and extra-linguistic inferencing may play a crucial role in comprehension). The fact that these levels all ‘leak’ presents no particular problem for practitioners of DFG (as opposed to the structuralists of earlier times). The whole grammar, on both its planes, is ultimately understood to be usage-based and so it is to be expected that there will be ‘lose ends’: solutions for resolving every conceivable aspect of complex communicative intentions are unlikely to be at hand in any given grammar, and clashes and questionable compromises will naturally arise now and then in the natural flow of speech (as in the ‘competition model’ of Bates & MacWhinney 1987).

On the expression plane, spoken words – or rather the individual morphemes of which they consist – may be regarded as ‘societies’ of phonemes. The latter are the product of discrete *figurae* of expression-form shaping continuous articulatory chains of motor activity. They are organized at a ‘higher’ (or wider) level into syllables. Phonemes are both abstract and psychologically real, which is what Sapir already claimed for his ‘general phonetic elements’ (Sapir 1921:54ff). Words (lexemes and bound morphemes) are organized into higher level ‘societies’ by the *figurae* of morphology and these in turn are organized by *figurae* of syntax into phrases or clauses, which in turn are prosodically packaged into utterances according to overall discourse intentions. Each level on the expression plane is defined in terms of its formal units, but has its own ‘usual’ associated kinds of content on the content plane in terms of the construal of events into predicates and arguments, etc. However, at the highest or widest level, that of ‘texts’ (the products of discourse in all its modalities, including the spoken), the identity of formal units is

tenuous, ranging from the conventionally expected 'turn' to indeterminate stretches of loosely associated material.

The number of discrete levels – or sub-levels – may vary from language to language – thus a level of 'morae' is relevant to some but not all languages, and the relevance of a distinct (sub-) level of morphology in which individual morphemes are organized into whole words depends on language type – obviously it is not particularly relevant for extreme isolating languages. Likewise at the juncture between the morphological and the phonological level there is a type of generalization that can be made in many but not all languages about relations between the two, namely morphophonological ones. These state the alternation in phonemic form of the morphemes ingredient in the word units of the higher level, according to phonological or lexical context. DFG, like FG, ultimately demands typological adequacy, as Dik demanded of FG, although typology as such is seen in this framework as a matter of second-order generalizations across the patterning of individual languages. The only difference is that Dik's model attempts to make all potential categories – including levels – explicit, whereas a practitioner of DFG typically only employs the categories relevant to the data at hand (albeit taken from a typologically adequate universal set).

The different 'societal levels' relevant for the Pattern of any specific language are not particularly controversial as such, but they should not be conceived of as watertight: higher level context is almost always going to affect lower levels and *vice versa*. Thus purely phonological rules may depend on lexical information from an entirely different level; for example, the stress-assignment rules for English distinguish between native Anglo-Saxon and borrowed 'Latinated' words. They may also be affected by discourse context (cf. 'allegro' style elisions of schwa in French, etc.). This is an area where Pattern often does reflect Process: the simultaneous intermeshing of top-down (conceptual) and bottom-up (physical) processes would seem to be characteristic of both speech production and comprehension. Processes leading to the recognition of chains of phonemes in a speech signal, for example, cannot be entirely isolated from processes leading to the recognition of the meaningful units – morphemes – behind such chains, or indeed from still higher level processing. Thus such higher level phenomena as the occurrence of a word boundary may affect the analysis of a particular phoneme, just as a polysemous word may be disambiguated by sentence-level context. This does not undermine the usefulness of maintaining the traditional 'levels' in a Pattern description, however – as long as they are not held to represent a rigid architecture to which cognitive processes must by necessity adhere.

In Process terms, there is plentiful psycholinguistic evidence not only of distributed, parallel processing, but also of higher level 'forward planning' in speech production, for example by the projection of an overall syntactic template around a verb (its predicate frame or 'lemma') which may be gradually filled in and/or modified as the chain of speech is elaborated at lower levels. All 'sub-routines' do not have to be completed before overall plans to produce an utterance can be specified: we typically start speaking before we have completely worked out what we are going to say. Continual monitoring must be assumed to ensure that what we say does indeed match our intentions. At the lowest expression levels, approaching the actual activation of the speech organs, smooth transitions must be

discourse-determined choice of initial predicate can be accommodated. Short of putting virtually all of the morphosyntax of Nootka within a ‘discourse module’ (which is hardly liable to be universal), the only obvious possibility would seem to be to allow discourse factors determining such choices to operate at the lowest level of clause structure, e.g. triggered by some content plane feature like ‘most newsworthy’ (as discussed by Mithun 198). This would obviously be a severe, and undesirable, disruption of the FG model, but it can be overcome, I would suggest, by clearly distinguishing between the Process and Pattern perspective. The question as to which element to treat as initial clausal predicate and which as secondary in serial verb constructions in Nootka is hardly relevant to the Pattern perspective at all – it would only be relevant if there were a more or less direct link between the State of Affairs (event type) to be expressed and a particular predicate frame corresponding to it in the lexicon. But this link is precisely what is extremely tenuous in Nootka, where the initial predicate could just as well be an adverbial or a quantifying expression, for example.

The nature of the link between clause/ predication structure and discourse articulation is also much less direct in Nootka than in English, where the clause can accommodate several arguments and satellites of single events. By contrast, a unitary transitive predication in Nootka may be – and usually is – broken into two clauses, each with one referent (and the second with a dummy verb), as for example in the focus construction in (5) or the ‘relational clause’ construction in (6). These sentences each contain according to Nakayama two (syntactic) argument structures but only one ‘participant structure’ reflecting the overall event being encoded. Nootka is a language where the ‘clause’ and the ‘phrase’ as structural domains impose themselves ‘from above’, with little involvement of syntactic ‘projection’ from individual lexical items. It is as if the distinct acts or processes of predicating and referring are expressed in this language by two distinct – but tightly bound – clauses

(5) *qaḥsa:p-’aʔ kwatya:t ?u:kwi/ qʷayac’i:k*
 kill-TEL Kwatyaat do.to wolf
 ‘Kwatyaat killed the wolf’

(6) *?ima:qak ?u?ukʷink kakain*
 play do.with killer.whale
 ‘He played with the killer whale’

The Nootka clause is structurally very simple and less flexible than in English when it comes to meeting more elaborate discourse needs than just indicating relative ‘salience’ or ‘newsworthiness’. It makes sense to describe the (Pattern) grammar of Nootka as being without syntactic – and indeed with very limited pragmatic – function assignment. (This is something the FG model already allows for.) ‘Focus’ in the general sense of ‘newsworthiness’ could in theory be left right out of the grammar as an etic, not an emic category. However, constituent focus at least is an integral part of the grammar, since it forces structures like (5) to be chosen. Observe also that in Nootka, with its flat ‘non-configurational’ syntax, the distinction between structurally superordinate (main) and

subordinate clauses is often indeterminate. Thus the ‘main’ predicate comes first in (6), though it could in theory have come last – this is again determined by contextually sensitive pragmatic factors. It is part of the Process whereby utterances are produced and understood in that language – all the Pattern description need say is that the pragmatically most significant predicate comes first in this kind of sentence; what particular predicate is chosen to fill that ‘slot’ is another matter. This is after all not so different from the fronting of topical constituents to ‘PI’ position in Danish (which is of course an emic matter) – the situation just looks more exotic in Nootka because of its ‘cliticization’ of rich predication-level affixes on the ‘fronted’ item (plus the extensive use of Ø-derivation/conversion blurring over word class distinctions).

In sentences like (6) a Pattern description might choose to define *ʔuʔukwink* as a preposition (which is precisely what Jacobsen 1993: 247f. does), and the clause type as a ‘prepositional clause’, whereas Nakayama – taking a Process perspective – describes the construction as a ‘relational clause’ (a type of complex predication) and avoids the term ‘preposition’ altogether, preferring to see the construction as a ‘behavioural regularity’ in a dynamic, discourse-regulated grammar. Both descriptions are valid – providing the units concerned are defined in terms of the given description framework in a fully operational manner – the Nootka ‘preposition’ thus has properties different from those of an English or Danish preposition (it may be both derived and inflected and represents an open rather than a closed class that includes many concrete relations such as ‘eating’ and ‘seeking’). What is essential for a complete description of such constituents is that their function is defined on the content plane (that of relating an argument – a potential referent – to a predicate or another argument), while on the expression plane their distribution and internal structure is specified.

The overall choice of utterance type and its articulation into distinct clauses in such sentences as those above is a matter of Process then, and depending on what is chosen as the initial predicate the rest of the utterance may be organized differently from the way it is in (5) and (6): the process ‘chooses’ from amongst the patterns available through the grammar to express it. From this perspective one can easily envisage higher-level pragmatic content choices ‘percolating’ down to the basic predicate level and affecting the choice of initial predicate on the expression plane. The trend within ‘mainstream’ FG has been towards more and more emphasis on ‘top-down’ implementations of the model, as reflected in much of the recent debate about the upward limit of layering of the theory. Hengeveld’s attempt to accommodate still further higher levels of discourse in a monolithic FG model cannot be said to meet with much sympathy in DFG, however (cf. Hengeveld 2004). One reason for this is that you cannot simply embed Pattern within Process (or *vice versa*). More congenial to at least some practitioners of DFG is the viewpoint that the model needs a distinct processual interpretation – where by ‘processual’ I refer to all procedurally interpretable levels of the model, from the choice of basic predicate (and its relationship to the lexicon) up to the highest level of illocutionary intention (and its relationship with still broader discourse contexts). From this point of view the upper limit of the model as Pattern (the actual ‘emic’ coding choices of the grammar) should lie no higher than the encoded illocution, just as Dik proposed. From the Process perspective, however, illocutions are simply an intermediate stage of

organization whereby complex intentions (perlocutions, discourse acts, etc.) find their way to expression via the available means provided by the linguistic code.

Now a cornerstone of FG is the notion that pragmatics contains semantics, which in turn contains morphosyntax (as in Dik 1989: 7). From the DFG perspective both pragmatics (the theory of discourse and texts) and grammar can be said to have their Pattern and their Process aspects, only pragmatics is of course far more heuristic, relying heavily on inference and background in ways that are not necessarily coded ‘emically’ in any grammar, and its patterns are across situations of use and means of achieving ends, not across coding categories. The consequence of taking the overarching nature of pragmatics seriously must, it can be argued, result in a Process interpretation of language that does not set discourse and grammar side by side on the same ontological level, but rather treats grammar as abstract pattern or template at the service of dynamic communicative purposes. It is a mistake to attempt formalizing the patterns of pragmatics as if they were merely an extension of the patterning of sentence grammar. Only the emically coded aspects of pragmatics/discourse should be drawn into the Pattern description of languages as socially validated code (though of course an emic category may be expressed by behavioural regularities rather than by grammatical marking as such). The rest is Process, for example inference, and the amount and type of inferencing required to comprehend individual languages can vary greatly – consider not only the discussion of Nootka above but also the relationship between the codification of politeness and the vagueness of reference to clausal arguments in Japanese, very different from the treatment of these matters in Danish or English. Strictly speaking, only the rule-like, fully conventionalized aspects of pragmatics belong within the language system, given the arbitrariness – or at least fluidity – of discerning formal units at the highest level of organization of language.

Nor is a ‘modularity’ solution (following the lead of mainstream generative grammar) going to solve this fundamental problem. Given the typological variability that exists between languages with a tighter or looser linkage of lexicon and grammar and between languages with greater or lesser reliance on contextual inference, one surely cannot expect there to be a universally valid division of labour between a grammar ‘module’ and a discourse ‘module’. The functional domain of pragmatics may well be universal, but the degree to which it is coded into individual languages varies. What we need, from the DFG point of view, is not so much a module or a grammar of discourse, but a set of (rational) principles allowing the practitioner to link specific communicational intentions to the means provided by the categories of grammar. Complementarity is very different from modularity. Positing a ‘discourse module’ alongside a (universal) ‘grammar module’, for instance, surely constitutes an ontological error since it would follow that the contents of both ‘modules’ are equally cognitive, i.e. instantiated in the brain, but at the same time the one (UG) is purely static (essentially a template for language acquisition) and the other is dynamic and interactional. But a still graver error is to interpret Universal Grammar as having cognitive reality in this sense at all (an error many younger generativists have fallen into even when spurning Chomsky’s latest Minimalist speculations), for this is to confound Pattern and Process. While practitioners of DFG are interested in psycholinguistic experiments and modelling, they are not tempted to analyse

linguistic behaviour as simply a projection of the principles and parameters of an abstract theory raised to the status of a ‘cognitive organ’. If it has any cognitive reality at all, Chomsky’s internalized ‘I-language’ (previously ‘competence’) must have its distinct Pattern and Process aspects, as does language seen as a social, usage-based phenomenon (externalized ‘E-language’), and the same applies to any viable model of language claiming cognitive adequacy.

References

- Bates, Elizabeth, and Brian MacWhinney. 1987. A functionalist approach to the acquisition of grammar. In R. Dirven & V. Fried (eds.) *Functionalism in Linguistics*, 209-264. Amsterdam/Philadelphia: John Benjamins.
- Dik, Simon. 1989. *The Theory of Functional Grammar, Part 1: The Structure of the Clause*. Dordrecht: Foris.
- Fortescue, Michael. 2001. *Pattern and Process: A Whiteheadian Perspective on Linguistics*. Amsterdam and Philadelphia PA: Benjamins.
- Fortescue, Michael. 2003. The pattern and process of language in use. In Johanna Seibt (ed.) *Process Theories, Cross-Disciplinary Studies in Dynamic Categories*, 177-218. Dordrecht: Kluwer Academic.
- Hengeveld, Kees. 2004. The architecture of a functional discourse grammar. In J. Lachlan Mackenzie & María de los Ángeles Gómez-González (eds.) *A New Architecture for Functional Grammar*, 1-21. Berlin/New York: Mouton de Gruyter.
- Hjelmslev, Louis. 1943. *Omkering sprogteoriens grundlæggelse*. København.
- Jacobsen, William H. Jr. 1993. Subordination and cosubordination in Nootka: Clause combining in a polysynthetic verb-initial language. In R. Van Valin (ed.) *Advances in Role and Reference Grammar*, 235-274. Amsterdam/Philadelphia: John Benjamins.
- Mithun, Marianne. 1987. Is basic word order universal? In: Russell Tomlin (ed.), *Coherence and Grounding in Discourse*, 281–328. Amsterdam and Philadelphia PA: Benjamins.
- Nakayama, Toshihide. 1994. Phrasal suffixation in Nootka. In: O. Miyaoka (ed.) *Languages of the North Pacific Rim*. Sapporo: Hokkaido University Publications in Linguistics No. 7, 263-272.
- Sapir, Edward. 1921. *Language*. New York: Harcourt, Brace and World.