

STRUCTURE, MEANING, AND FUNCTION

A Functional Analysis of Gender and Other Classificatory Techniques

0. Preliminary Remarks on the Concept of Function

In this first paper I intend to give a characterization of the concept of function, after which this new linguistic journal is named. This characterization is required, because the word "function" has been very variously used,¹ and in this journal it will have a sense connected with a whole research programme—a research programme that it is necessary to render transparent to our readers. Anyone who should want to go yet deeper both into the concept of function and into the research programme will have to consult the literature, of course; and, as this paper progresses, hints will be given as to relevant work, either theoretical or analytical, where some aspects are treated with greater detail.

One way to begin would be to compare our efforts with those of generativists. It cannot be denied that generative transformational grammar helped overcome some defects of older "taxonomic" structuralism; but it is also true that it couldn't go beyond a description of static structures and relations between structures, the so-called "transformations", which, even if one referred to them as "processes", were exactly as static as the original structures. Moreover, in many aspects the "generative enterprise" is more a regress than a progress, and its influence on the development of typology and universals research has been rather negative. One of the main defects of the generative model is its underestimation of semantic issues. This bore the idea of deriving from one and the same "deep" structure all sorts of not really synonymous "surface" structures, and at the same time ignoring other structures which were structurally very different but semantically related. Within the generativist field, generative semantics was certainly an advance in that its proponents reduced more and more "surface" structures to the same

"deep" structure, but the fundamental methodological error became thereby only more evident: to postulate the formal and semantic identity of structures is only to pass over differences that remain unexplained. *Seiler 1974 criticizes the concept of "deep structure" of Lakoff 1968 and makes an alternative proposal which would be able to encompass under one common denominator both the phenomena considered by Lakoff and many others, in fact the whole variety of constructions that express notions of company, instrument, means, etc.—but without need of identifying these constructions, either formally or semantically. Indeed, the common denominator of these constructions is neither formal nor semantical, but functional, namely a principle—called "the principle of concomitance"—which controls the variations on the formal level as related to the variations on the semantic level. All structures that can be thus ordered in a scale of formal-semantical co-variation are said to fulfill the same function. Therefore, function is an invariant—what remains constant in variation—and not simply a third "thing" besides and independently of form and meaning, and certainly not to be identified with any of them both.

Another relevant defect, that generativists share with classical structuralists, is their use of rigid categories, either formal or semantical (e.g. Fillmore's "semantic roles"). It is related to the above-mentioned defect, it is even a result from it, because to ignore co-variation, i.e. to keep variations in form separated from variations in meaning and vice versa, is all you need to feel you are authorized to establish semantical categories that are unaffected by formal differences and vice versa. The result is that you either identify absolutely or absolutely distinguish between structures whose differences are only gradual and which are moreover the successive steps of a programme that is intrinsically related to a grammaticality continuum where variation is not haphazard but ordered, namely scalarly and teleonomically ordered.

Yet another fundamental defect that a functionalist model of language has to overcome is the fact that people are not used to distinguish between semiotic levels. This leads inexorably to

difficulties in the description of grammatical elements and to a serious simplification of the semantic function of language. Whether morphemes have a "meaning", and what it would be, this is a question that cannot be asked in the same terms which we are used to from lexical semantics—not at least without falling into contradictions about the form/meaning dichotomy. Now, the contrary position, namely that grammatical morphemes (formatives) haven't any meaning (as represented e.g. by Chomsky 1957:§9), is equally unjustifiable and its consequences unfortunate: to erase them from "deep" structure or to represent them as features within complex symbols that only by "transformations" become separate markings—this is a cheap magician's trick; you first put the rabbit into the hat, fully trusting that it will keep still in there till required, then you give the ceremonial tap and pull the rabbit out; i.e. you make formatives disappear as signs wherever the question of their meaning is raised. On the other hand, if you deny them their status as signs—as correlations of content and expression—then to represent them as features is quite a paradox; for, what is the nature of such information as is coded by bracketings like [+ masculine] or [+ collective]? And again, if they are supposed to be signs, then they must have a meaning. But which meaning? And above all, how can we distinguish their meaning from the meaning of lexical units? There does not seem to be any way to do so without breaking new ground. We have got here a difficulty that can only be solved by distinguishing semiotic levels in the way I proposed for a general theory of grammatical form (cf. *Iturrioz 1987a). The general idea is that formatives are exponents of operations realized by language to fulfill certain fundamental tasks—of thinking and communication—like individuation, determination, etc., and that the information conveyed by formatives is metalinguistic in nature.

European structuralists appeal frequently to an essentially relational concept of function which ought to establish certain categorial oppositions, like that of "semantemes" and "morphemes" (Hjelmslev), or that of lexical vs. grammatical "monemes" (Martinet). For Hjelmslev, only "semantemes" have a function (functional categories = word-classes, cf. 1928:204f.), whereas gramma-

tical categories are purely "formal" (l.c., 169f.). For Martinet, function "designates the linguistic fact which corresponds to the relationship between an element of experience and the total experience" (1960:104, 1962:75). If the facts are seen so differently, it is no wonder that a contradiction between both authors appears before long: for Martinet, the difference between prepositions and case-marking cannot hide their "functional identity" (1962/69:75) whereas for Hjelmslev "function" is precisely what separates cases from prepositions (1939:154).

Now, the Prague School has always insisted on the need of paying attention to functional aspects:

The structural characteristics of language are interpreted in the light of the tasks which they fulfill in the various processes of communication. (Jakobson 1970:697; cf. also Jakobson 1963.)

In spite of such programmatic assertions, this sort of functionalism has been decisive and pervading only in phonological analysis. In the case of syntax, the concept of function is much vaguer and it seldom goes beyond talking of "the functions of language" as a whole (cognitive, communicative, etc.). A possible exception is functional sentence perspective.

It was Benveniste, however, who best understood functional issues. At the end of his brilliant article on language classification, he describes the "state of the art" on noun classes (gender and other classificatory techniques) as it has remained till UNITYP; his programme—that I am going to expound below—coincides widely with our own:

Une réflexion un peu attentive sur la manière dont une langue, dont toute langue se construit, enseigne que chaque langue a un certain nombre de problèmes à résoudre, qui se ramènent tous à la question centrale de la "signification". Les formes grammaticales traduisent, avec un symbolisme qui est la marque distinctive du langage, la réponse donnée à ces problèmes; en étudiant ces formes, leur sélection, leur groupement, leur organisation propres, nous pouvons induire la nature et la forme du problème intra-linguistique, auquel elles répondent. (Benveniste 1952-3/1966:117.)

Structures, functions, and operations—those are the three key concepts that are the foundation of UNITYP, an ambitious project that proposes to do linguistic research on as many and different languages as possible and trying to establish a set of "dimens-

ions" (operational plans) like INDIVIDUATION (apprehension, linguistic constitution of objects), POSSESSION, DETERMINATION, DESCRIPTIVITY, PARTICIPATION, etc. Each such "dimension" (or global programme) embraces all those structures that subserve a common purpose or function, but that differ gradually from each other according to grammaticality and to the specific manner in which two counteracting principles contribute to them (generalization vs. individualization, inherent vs. established, specification vs. characterization, predicativity vs. indicativity).

Although variability within a given "dimension" is not limited in principle, it is possible to establish a number of focal instances—the "techniques"—so that every language can be shown to have a certain propensity to generalize one technique rather than any other—a fact that permits interlanguage comparison in a markedly nontrivial way. Thus, only functions, i.e. problems to whose solution any technique contributes, and principles, i.e. forces that rule covariation of form and meaning, can be considered as universal. Linguistic categories, so widespread they may be, are not to be defined in an absolute way, but only relatively to such master-plans.

1. Towards a New View of Universals

Nouns have always been "functionally" defined in the same manner: they are said to "denote" or "designate" objects; and such definitions end all up in the same place: in a vicious circle. Indeed, they are based on a non-linguistical, preconceived notion of an object, but lead sooner or later to a "definition" of an "object" as anything that is denoted by a noun, which is understandable enough, because linguists must have at least some respect for linguistic facts, even if they show that not all nouns have to do with normal, daily "objects" like chairs and tables.

The members of UNITYP started from languages and tried to find out which were the techniques languages employ to fulfill the task of apprehending objects. From the very beginning, it was clear, and it became increasingly clearer that any linguistic description is simply not good enough if it is only based on categories and on properties of and relations between categories. The common

denominator of all observed techniques is no category (we find all sorts of things, from lexemes—numeral classifiers. classificatory verbs—through articles and even affixes with different degrees of cohesion and semantic motivation till—external or internal—agreement in number and gender—which, as is well known, seldom has an exponent in the noun), no "deep" structure either, but one function and two general principles that govern the realization of this function in the various structures.² Such principles, and the regularities in form/meaning covariation that spring from them, could show languages in a completely new light: as so many projects, as so many operational plans, in a word as creative activity—teleonomically directed to the realization of certain intrinsically determined, language-immanent functions.

Only functions and principles can be considered as universals. It would be a false and disastrous overstatement, should we consider any structure as capable of defining any other structure. Languages have nothing material in common, nothing you could consider in the nature of a "thing". All comparative concepts must be functional. Universals are not to be obtained by "deep" analysis of any particular language, as Chomsky believes (1976:65), if for the only reason that they do not constitute a catalogue of universal properties of grammars, but embrace differences, too; they are not even properties of grammars, but of language as activity (*Lehmann 1974:47, 1981:74). To describe universals, such criteria as can show complementary differences are as important as criteria of similarity—or even more so (*Seiler 1972/1974: 29f., 1974:50, 1975).³ Unity lies in principles: only they organize and constrain structural variability.

Keenan defends also the thesis that variation is no haphazard and defines universals as "variation principles":

A language universal determines a particular pattern of variation with respect to a linguistic property across the class of human languages. (Keenan 1978a:83; cf. also 1978b:§2.5.)

Keenan's principles, however, try to explain variation in terms of conservation of logical structures, posited as the foundation for the description of all languages:

Languages differ with respect to how much of the logical structure of relative clauses is presented in surface. (Keenan 1974:477.)

Against what Keenan thinks (1978a:85), his logical structures, like the "deep" structures of generative grammar, are more similar to the structures of some particular languages than to those of others; his "variation principles" are essentially equivalent to the derivational constraints of generative transformational grammar; his model's greater adequacy is purely observational and descriptive, in no case explanatory. The first step in the characterization of the class of possible human languages consists of defining the inventory of elements (possible lexical units, possible grammatical categories, possible rule types, possible interpretive functions, etc.) of universal grammar, out of which any particular language takes its own stock (1978a:84f.). This language conception differs from the traditional one only because it is more sophisticated; but it is totally at odds with the existence of gradual differences among languages. And if you are consequent enough, that conception will necessarily lead you to think that all categories, properties and relations which you need to describe a given language are enough to characterize language as such and are therefore universals (*Seiler 1973:7f.). To appeal to the logico-semantic nature of those elements serves only to conceal the empirical fact that they cannot be considered the same for all languages—nouns in Euzkera (Basque) are not the same as nouns in English, Japanese or Eskimo.

Structural properties are in the nature of variants, and invariants cannot be found at the structural level: the escape into supposedly constant semantic categories is an escape from the facts, which are essentially two-sided—there is no structured substance or content prior to languages, and linguistically relevant is only the correlations between variation at the level of expression (structure) and variation at the level of content (substance). We have to start again from this fundamental principle of structuralism, if we want to look for universals—not in form or meaning but—in a hierarchy of functional principles which govern those correlations and organize diversity. Differ-

ence in syntactic form produce always differences in meaning (Bolinger 1968:127), that's why Martinet (1967) was so skeptical about the empirical value of universals.

Such fundamental principles of structuralism must be incorporated into a dynamic model that wouldn't be just "anatomical" (giving us instructions as to how to cut a given language up into parts) but also "physiological" (explaining us functions and showing us how a given state of a language can be considered a realization of "le langage"). To that end, we need a theory about the production or derivation of particular systems from general schemata. It was Chomsky's merit to recognize that need, but his generative transformational grammar—in all its forms—is no adequate answer: it is not a theory of language, but (at least in intention) a theory of grammar; it is not dynamic, because it doesn't describe language-immanent operations but only static relations of projection between structures (*Lehmann 1980:3); it is not universal, because it starts from categories and it is an empirical fact that categories are not universal.

UNITYP can thus be said to start where classical structuralists left, but enriched by lots of data about non-Indoeuropean languages that have been gathered in the meantime by so many typological schools and scholars.

2. *Lexical Meaning and Formal Concepts (Operational Schemata)*

After a global exposition, it is always advisable to have some apt illustration of it. Therefore, I shall go into some of the details of one "dimension", namely INDIVIDUATION, taking as my starting point a paper by Hjelmslev (1956), where he deals with two phenomena that belong to that "dimension": gender and noun classes.

2.1 *Comparison as a way to arrive to universals*

In order to explain that "languages are a historical variation on the grand theme of language" (Delacroix 1924:126f.) and in order to account for Hjelmslev's distinction between "universal grammar" (a contradiction in terms) and "general grammar", we must first be able to show that two—or more—different struc-

tures can be realizations of one and the same operational schema (note: not of one and the same "deep" structure or of one and the same "meaning"):

In order for general grammar to be able to fulfill its task, it must become comparative grammar. It is comparison that permits us to establish the grammar of language... A language... is the realization of a realizable. The system of language is a system of general realizations, not of universal realizations [*réalisés universaux*]... General grammar is constituted by the recognition of the realizable facts and of the immanent conditions of their realization. (Hjelmslev 1939:171.)

This is, of course, only an intuitive and isolated observation by Hjelmslev, and similar observations could be found in yet older authors, but they have had no consequence for analytical practice. Hjelmslev himself feels that gender and noun classes have a common denominator which he misses in the structures and hence looks for in a concept or generic term, i.e. in the last instance in a semantical category ("consistence", "expansion vs. concentration", "massive vs. punctual"). However, such a category has even for him only an approximative value. And in many places, Hjelmslev falls into the psychologistic errors of pre-structural linguistics. His essay contains nonetheless remarkable insights which to a certain extent anticipate the results of UNITYP.

2.2 What is gender good for?

To this question there is only one answer from the structural(ist) point of view, and it is, of course, Hjelmslev's answer: grammatical gender is defined by "rection" (1956/72:374). The similarity of Indoeuropean gender with Bantu and Caucasian noun classes (in both cases there is agreement) leads Hjelmslev to identify (one more case of Chafe's Syndrom; cf. Chafe 1970:86f.) both phenomena and also to distinguish them radically from the numeral classifiers of Far East (Chinese, Viet, Thai, Khmer, Malaysian, etc.) and Mayan languages: the "semantic analogy" is evident for Hjelmslev here, too, but there is no agreement rection. However, we must note that numeral classifier languages have also agreement phenomena and that, from a semantical viewpoint, there exist relevant differences: a numeral classifier puts a noun into a semantic class, i.e. it indicates a higher concept under which

all objects denoted by the noun fall ('three flower tulip', 'three animal horse', 'three cylinder cigarette',...), but that is not the case with noun classes or gender.

For Hjelmslev, classes and gender are the same grammatical category, and he wants only to ask whether this category has a meaning or not. His working hypothesis is that every formal category has a semantic content (1928:171); and he fights against all those who believe that the raison d'être of gender has disappeared, that, where it does not respond to sex, it is "a *luxus*" (Gabelentz 1901:254, 360), "a survival that we cannot understand any more" (Meillet 1921:202, 223). He very rightly asks why should the category of gender have survived for thousands of years and also suggests the deep methodological reasons for the missing explanation:

By considering each language, or each state of a language, separately, it has so far been impossible to detect the meaning of gender, so that our present use of it would be explained. (Hjelmslev 1928:172.)

The discrepancies between languages that Meillet (1921:203) spoke of were not important to him, because they are present in all categories:⁵ both Greek and German have a nominative case, and they don't use it in exactly the same way, but this "doesn't hinder us in putting its meaning into a formula that should be valid for all languages considered" (1928:172f.). The only satisfactory procedure he knows is to establish by abstraction a "concept" or "generic term" that embraces all particular meanings we can ascertain as possible (1938:212; 1956:288), and that should be defined using "purely functional and formal criteria and paying no attention to the substance of content, i.e. to meanings" (1938:212), in other words: the definition should be based on paradigmatic and syntagmatic oppositions.

Gender is determined together with number by the notion of consistence within which he distinguishes three dimensions: (a) static: discrete state vs. compact state, (b) dynamic: expansion vs. concentration, (c) global vs. punctual.⁶ Everything he adds in order to make the nature of this common deno-

minator more precise only contributes to make its circularity more visible (thus, he never attains to a clarification of the supposed parallelism of grammatical meaning with lexical meaning);

The substance that we try to attribute to the form in question is a construction; but every definition is a construction... Semantic facts are, by definition, facts of estimation, of evaluation, and not "objective" facts that it would be possible to define outside an ethical, social, and often even psychological. Thus, "animate" and "personal" means "anything that is, or (under certain conditions) can be, conceived as animate or personal"... (Hjelmslev 1956:282f.)

The fact that classification through gender does not coincide with lexical-semantic classification is avoided by means of a false analysis that is not derived from the structuralist method, but rather from not applying that method; thirteen years after the publication of the *Prolegomena*, this strikes one as a return to traditional views.

The idea that the discrepancies between languages as to grammatical form respond to different evaluations within each community and that the changes produced along history reflect changes in/of estimation is not easily verifiable. It is hard to imagine how all possible variants can always be explained by deduction from that abstract common denominator. Anyway, it is evident that for any given language that has classes or gender there is a more or less severe lack of connexion between the estimations that go into the substance of the semantemes and those contained in the gender morphemes, and that a change in the former does not provoke automatically a change in the latter; "to mean" does not mean the same thing for lexemes (e.g. *animate*, *personal*, *consistent*, *massive*,...) than it does for grammatemes—the difference is not of degree, but of kind.⁷

2.3 Gender in Euzkera and other languages

In Euzkera (Basque) it is possible to speak of two genders, but not if agreement, except through solidarity with number. In the local cases of the transnumeral⁸, an infix *-ta-* is introduced between the noun radical and the case suffixes if we are dealing with inanimate beings (in the plural it follows an affix *-e*); but

in the case of animate beings that position is occupied by *-gan-* in all three numbers: *subi-ta-n* 'on/at bridges' vs. *saldi-(ren)-gan* 'on horse-s'. But there are "anomalies". Plants, even if animate, are handled like inanimate beings: *haritz(e)-a-n* 'on/at the oaktree', *haritz(e)-tik* 'from/off the oaktree' vs. *saldi-a-(ren)-gan* 'on/upon the horse', *saldi-a-(ren)-gan-dik* 'from the horse'.

Alvarez Enparantza comments on this:

Bi Kategoria horiek funtsatu zituen mitologia, jakina denez, aspaldi suntsitu zen Euzkal Herrian. Gaurko zientziak biziduntzat emango lukeen izensaila, beraz, eta euskararen azterketak ager erazten duena, ez dira berberak. [The mythology which these two categories come from has vanished a long time ago in Euzkalerria, as is well known. The group of nouns that present science would consider "animate" and that which would result from an analysis of Euzkera are not identical.] (Alvarez Enparantza 1978:19.)

That these categories have a mythological origin is—"as is well known"—an unverified and unverifiable hypothesis. It is anyway superfluous, because it doesn't explain anything, either what they are good for or why the Euzkaldunak, even knowing that plants and microbes are living beings, do not re-adjust the declension as required; to speak of beings that are animate for science, but inanimate for Euzkera, is to confuse lexical meaning with grammatical "meaning" and so to give way to old myths about language. Neither do the following facts have anything to do with mythology. Animate nouns⁹ can be treated as inanimate when one wishes to highlight that they are places where something over and above their active participation in the event is happening—you can say *saldiagandik erori da* '(he) is fallen from the horse' (animate) and *saldi gainetik erori da* '(he) is fallen from upon the horse' (periphrastic, with a post-position), but you can say simply *saldi-tik erori da* (purely local). Something similar is the case in the next sentence that has to be understood in the context "spoken Euzkera is not always the same":

- (1) *emakume-tik gizon(e)-ra diferentzia iza-te-n d-a*
 woman-ABL man-ALL difference AUX.1-NDR-LOC ABS-PRS
 'There is a difference between a man and a woman [between the way a man speaks and the way a woman speaks].'

This happens, too, when one wishes to emphasize the notion of

group or of place:

(2) *emakume-e-ta-ra joan d-a* 'he's gone to the women [where
woman-PL-GNR-ALL go ABS-PRS women are]'

(3) *etsai-e-ta-ra igaro d-a* 'he's passed over to the
enemy-PL-GND-ALL pass over ABS-PRS enemy [to the group of e.s]

They are not isolated examples: gender switch enjoys a certain productivity and it goes always together with a semantic effect that has much to do with the function of gender and very little to do with changes of "estimation" of features of individuals (but again, much to do with the nature of individuals, i.e. with individuation, as we shall see).

It is therefore useless to try to find a semantic common denominator for all nouns in a given gender or noun class of the same language—and even more useless to do so for interlanguage comparison. For, even if in one case we should find an optimum affinity between grammatical and lexical classification, we must not forget the fundamental difference between them: lexical structures classify objects, grammatical categories classify lexical elements—the fact that grammatical classification is partially based on lexical classification and thus shows certain affinities with it, i.e. a certain semanticity, should not lead us to look for a common formula at whatever cost and hiding from ourselves the other, equally undeniable, fact of their mutual divergence. Moreover, although gender switch (or noun class switch) is only possible because of a certain degree of semanticity, such a switch should not be interpreted in terms of lexical semantics: in the above examples the lexemes *sal-di*, *etsai*, *emakume*, do not acquire a new semantic feature (the objects denoted by them are not now "conceived" as inanimate). In contrast, we find a real semantic change, which is bound with the derivative function of gender, in the following Spanish pairs: *pozo/poza*, *saco/saca*, *charco/charca*, *mazo/maza*, *barco/barca*, *cesto/cesta*, *huevo/hueva*, *huerto/huerta*, *caldero/caldera*, *bolo/bola*, *cuadro/cuadra*, *hoyo/hoya*, *cinto/cinta*, *monte/monta*, *campo/campa*, *jarro/jarra*, *partido/partida*, *(el)frente/(la)frente*, ...; but even here it is difficult to speak of a perfect correlation with a semantic feat-

ure; sometimes it seems that the opposition has something to do with size, although the involved polarity switches from one case to the other; the semantic feature implied in *leño/leña*, *madero/madera*, is not the same, as it isn't either in the case of *(el) mañana/(la) mañana* and again in *maestro/maestra*, etc. In all cases a semantic change that is bound to gender switch can be perceived, but the invariant has to be looked for at another level. The difference between *leña* and *leño* cannot be reduced to a simple difference in meaning—it is also a grammatical difference, as it can be seen from a comparison of the same syntagmatic constructions with nouns that do not show any gender switch (so that one cannot talk of different "meanings"):

(4) *Ha traído muchas piedras* vs. *Ha traído mucha piedra*.
Ha traído muchos leños vs. *Ha traído mucha leña*.

Another argument to the same effect would be to compare with languages, such as German, where the very same opposition is expressed—constituted—by derivation (*Kies/Kiesel*, *Kork/Korken*), composition (*Holz/Holzstücke/Holzscheiter*) or even by different formal (here different pluralization) classes, as in *Orte - Worte - Mannen - Lande - Bande* vs. *Örter - Wörter - Männer - Länder - Bänder*; Gabelentz (1901:254) recognizes the essential difference: the former are "collective plurals", the latter "individualizing plurals"—this is the primary function, and not meaning differentiation, undeniable as this is, because it is also asystematic and, as a consequence of the loss of productivity of the grammatical procedure involved, lexicalized. The invariants have to be looked for in function, where function is something much deeper than the formal-syntactic fact of agreement. The question should not be, What do genders mean?—but, What has language got them for in the first place? What does it need them for? What does it do with them? Which tasks can it fulfill by their means? The difference between the left-side sentences and the right-side sentences in (4) should not be adjudicated to the nature of the objects involved, but to the two operations that language realizes: on the left it is counting, on the right it is measuring. The basic function of gender lies in its being an individuation technique.

Gender is thus associated to formal concepts such as "individual", "collective", "mass", etc. The fact that gender can occasionally subserve other functions (e.g. its derivative potential) and that there are other grammatical procedures which subserve this one is a further proof of our claim that categories cannot be the tertium comparationis.

2.4 Criteria for allocation to noun classes

The noun classes of African and Caucasian languages¹⁰ cannot be defined, either, through a semantic common denominator, made up of the appropriate semantic features of the nouns classified by them, i.e. through a formula like

$$\sigma(\text{CL}.N_n) = \sigma(N_{n1}) \cap \sigma(N_{n2}) \cap \dots \cap \sigma(N_{nm}),$$

where $N_{ni} \in \text{CL}.N_n$, or in words: the meaning σ of the noun class n is the intersection of all meanings (semantic features) of all m nouns contained in that noun class, i.e. it is the set of all the semantic features common to all those nouns. (Cf. Serzisko 1982a:104f.) In general, there is only a core within a given class that is formed by nouns which really have a relevant common semantic feature, all the rest being considered as "exceptions", "anomalies", etc. Moreover, other nouns which share such a relevant feature belong quite often to other noun classes. Thus in Swahili there are lots of nouns within the class 1 (or more precisely the class whose singular is marked by *m-* and whose plural is marked by *wa-*) that have the semantic feature [+human], but this class includes also *mdudu* 'insect' and *mnyama* 'animal'; and again, *ndugu* 'brother' belongs to class 9, *kipofu* 'blind man' to class 7, and *rafiki* 'friend' either to class 9 or to class 5. Heine has shown the absurdity of trying to find a "generic term", because the principles that are behind the allocation of nouns to noun classes are too heterogeneous, ranging from the properly semantic to the purely mechanical and conventional. We have got here another scale, a continuum where the predominance of one criterion over the other gives birth to various degrees of semanticity, so that any noun class can only be defined extensionally—by simple

enumeration:

$$\text{CL}.N_n = \{N_{n1}, N_{n2}, \dots, N_{nm}\}$$

Finally, there are three criteria for the allocation of foreign words: semantical, phonological (similarity of sound between a segment of the foreign word and the formal exponent of the noun class), and automatical (a foreign word is ipso facto allocated to a given class).

2.5 Provisional conclusions. Semiotic levels

Hjelmslev's working hypothesis must therefore be rejected, but not his purpose of finding an explanation (as a matter of fact, rejecting his hypothesis on the above grounds is the first step in the search of that explanation). Now, the rejection is not only factual, but also methodological.¹¹ We should certainly not forget (lexical) semantics—there are gradual affinities between semantic features and genders/classes, and these may be important for comparison—but it would be disastrous to confuse it with the function of genders and classes. So, let us not be obfuscated by a search for a "generic term"; instead, let us admit that the variable degrees in semanticity we can observe may bring us nearer to a solution: the discovery that variation at the level of structures is parallel to variation at the level of meanings. It is the co-variation principles that limit l'arbitraire du signe, and not, as Hjelmslev thinks, "a well-defined affinity between certain forms and certain sectors of the substance" (1956:282f.).

Such affinity is undeniable, but it is neither absolute nor constant—it is not the same semantic features that are involved. And we should not be lead on to distort or misrepresent the facts by appealing to (dubious) psychologicistic theories which talk of a "subjective evaluation" ("that which speakers conceive as...", etc.). The semantic features [+human], [+animal], [+animate], [+female], participate in a universal scale which has the following relation to gender: gender (together with number) is an individuation technique (I'm anticipating here), and, from a cognitive viewpoint, the most salient features required for individuat-

ion are those nearest to man (anthropocentrism), such as human nature, sex, life, etc.¹² The number of more and more specific features involved is correlated with the number of genders or classes in a given language; a (diachronic) reduction of the paradigm results in a reduction of the set of features and in a predictable displacement along the scale: the Scandinavian languages and Dutch have today only two genders and its semantic basis isn't sex any more, but the feature [\pm animate], i.e. neuter vs. non-neuter.¹³ Besides the degree of motivatedness, semantic complexity plays also an important role in variation (cf. *Lehmann 1978); in English, where genders have survived only within the personal pronoun system, the degree of transparency is much higher than in German, although both languages have three genders: masculine *he/er*, feminine *she/sie*, neuter *it/es*. In German, external agreement (agreement between two NPs) may be semantical, but internal agreement (agreement within a given NP) is always purely mechanical:¹⁴

- (5) *Das (neut.) Mädchen (neut.) ist verschwunden. Es (neut.)/sie (fem.) ist gestern zum letztenmal gesehen worden.*

In English, it is certainly not infrequent to refer to a machine as *she*, but we have to do here with the above-mentioned phenomenon of variability, that can be used as a further index of semanticity.

All these variation factors (comparison criteria) are important both for typology and for the discovery of function—in order to answer the question, What are they good for? As against this, to assert that grammatical science is only and necessarily based on the notion of category, that a category is always formal in nature, and then to ask, as a secondary question, whether it has a meaning content or not (Hjelmslev 1956:281), whether one should recognize the existence of purely syntactic operators, purely structural means with no meaning and therefore no substance (Martinet 1962:29)—this is to distort completely the relation between form and content. Paradoxically enough, structuralists make an absolute distinction between the semantic function of lexemes and the "purely grammatical" or formal of

morphemes (grammatemes), and at the same time they are forced to put the question about the "meaning" of morphemes in exactly the same terms as elsewhere in lexical semantics:

In our opinion, only one grammatical procedure is possible: to inquire into the relation between expression and meaning by starting from the expression in order to look for meaning. This is the only objective of scientific grammar. (Hjelmslev 1928:97.)

This formulation of the problem is in principle quite correct, but the danger of oversimplifying the semiotic function of languages lies behind it—the danger of putting all signs on the same level.

Heidolph and his co-workers have clearly seen one of the weakest points in structuralism, namely the unwitting identification of *Zeichensystem* 'sign system' and *System von Zeichen* 'system of signs':

Der zweite schwache Punkt besteht darin, dass die Charakterisierung der Sprache als Zeichensystem häufig mit einer Einengung der Betrachtung des Sprachsystems verbunden ist. Das ist dann der Fall, wenn der Begriff "Zeichensystem" unter der Hand durch den Begriff "System von Zeichen" ersetzt wird. (Heidolph et al. 1981:33.)

In the German translation of Hjelmslev's *Prolegomena* we can observe an undifferentiated use of both terms, which seems to confirm the above suspicion:

Diese Betrachtungen werden für uns von Bedeutung sein, wenn wir unser Interesse der Betrachtung der Sprache als Zeichensystem zuwenden... In welchem Umfang der Satz richtig sein kann, dass eine Sprache ein System von Zeichen ist... Wörter sind nicht die letzten, nichtreduzierbaren Zeichen... Wörter lassen sich in Teile analysieren... Es kann von Fall zu Fall nicht nur von verschiedener Bedeutung, sondern von verschiedener Art der Bedeutung die Rede sein, aber von Bedeutung kann in allen Fällen mit der gleichen relativen Berechtigung geredet werden. (Hjelmslev 1943:46f.)

The fact is that both terms are used in German linguistics without any discrimination, but more important than that is the fact that from this and from texts like the one quoted above it follows that such an identification comes from the method itself. The consequences:

In dieser Einengung beschränkt sich die Grammatik entweder auf die Beschreibung bestimmter Seiten des Wortbestandes (System der Wortklassen, Struktur des Wortes, System der Wortformen)...., oder sie

überträgt die Form der Zeichenbeziehung, wie sie sich im isolierten Wort, in der isolierten Wortform, realisiert, als Grundform auf die Untersuchung des gesamten Sprachsystems... (Heidolph et al. 1981:33; cf. also pp. 45, 111.)

According to these writers, one should carry about a "Staffelung der semiotischen Beziehungen", because it isn't the case that every relation between the signifiant and the signifié appearing in a given utterance is automatically of the type expressed in the definition of a sign ("a relation between a mental image of reality and a sound signal"); on the contrary, it happens quite often that certain elements have a "delegated" function: as "mediators" in the establishment of such basic relations and not actually as bearers of a meaning, i.e. as signs. There is much truth in these remarks, but the conclusion is false. They are all signs, but grammatical signs have to be located at a higher semiotic level, they are metalinguistic (cf. my paper on grammatical form in this volume). Anyway, the practical results reached by these writers by means of their distinction of various semiotic relations leaves a lot to be desired:

Eine Endung -en, z.B. in (*den Tag-*)en, (*den Becher-*)n, usw. bedeutet nicht in derselben Weise etwas, wie die Wörter *Tag*, *Becher*, usw. etwas in der Wirklichkeit Vorhandenes bedeuten. Die Endung signalisiert vielmehr, dass *Tag* und *Becher* usw. mit den Morphemen Plural und Dativ verbunden sind. Das Morphem Plural hat eine Bedeutung: Es besagt, dass es sich bei dem Gemeinten lediglich um etwas Vielzähliges handelt. Das Morphem Dativ jedoch identifiziert lediglich eine syntaktische Funktion des betreffenden Wortes. (Heidolph et al. 1981:35.)

To say of the morpheme, whose exponent is an ending, that it has a meaning, is to fall into the same paradoxical situation that had to be overcome. The distinction between "to mean", "to signalize", "to identify", etc. does not help anyone, nor does the distinction between different functions (syntactic, structural, logical, semantic,...), and even less the ever-present ontological talk—indeed a great deal of the theoretical discussions among structuralists are nothing but wasted efforts to establish various categories of denoted "entities" or, as a false alternative, various types of meaning relations.¹⁵

The view of signs as static relations between forms and contents is common to all schools. It is centered upon the figural

aspects and forgets the operational ones. We must break out of the whole logic of this conception, if we want to avoid vicious circles and obtain a dynamic answer of the relation between form and content. Quite apart from all affinities that might exist between the genders/classes and certain semantic notions, we must insist that the function of the former is not to signify the latter, but at most to "signify" that the latter are among the semantic features that make up the meaning of the lexemes involved. A semantic common denominator like Hjelmslev's "generic term" is not a lexical-semantic issue and in most cases obviously inadequate. However, even if such a common denominator should be adequate, the questions would remain: Why must language allude—in some cases more than once within the same NP—to a semantic feature of the head noun? What on earth is such a procedure good for? Let us suppose we know the task that language solves by this means—does it follow that it has to be a semantic feature? To say that the task is the establishment a syntactic relation between the satellites and the nucleus, between the "determiners" and the head (agreement) is not good enough: there is also agreement in case, number, tense, etc., moreover the syntactic relation could perfectly well be guaranteed by word order—in whose case we don't even ask for the meaning.

The meaning of gender, class affixes, and so on, is metalinguistic, circular in Jakobson's sense (1957), i.e. self-referential (they refer to language itself, i.e. to the code). This has to be our new starting-point: from it we can take up again the analysis of gender—but this time in a necessarily functional fashion. A given gender does not classify objects, but nouns. However, before going further, I have to make a digression about the linguistic relevance of the above-mentioned concepts.

3. The Operational Value of Gender

Martinet takes a very different view on gender from Hjelmslev's. For him, any observed correlation between gender and any semantic feature (e.g. sex) should not lead us to look for an overall formulation which, giving out to embrace all known facts, would obs-

cure and even disguise the most specific, stable and characteristic features of grammatical gender (1962:34). The generalization of marginal facts on the basis of formal identities would lead to a supposedly exhaustive division of all concepts into two classes and to the animation and sexualization of all objects. Martinet comes to the conclusion that Hjelmslev¹⁶ wanted precisely to avoid: gender is never in French "un nouveau choix", hence it must be admitted that gender in French is not a moneme (l.c. 30). To re-establish law and order in the thus disturbed relations of the two levels, he decrees that the feminine is a "formal accident", so that in *la grande montagne blanche* we have got a sole discontinuous signifiant of *montagne*:

/a...d mōtañ...f/.

This is a self-defeating solution and can only be understood as a reaction that witness the limits imposed by structuralism upon linguistic analysis: once you locate all signs on the same level, it becomes very difficult to explain adequately the dynamic relation between form and content, which is the subject of the following pages.¹⁷

In Hjelmslev's discharge, it must be said that he was not trying to generalize marginal facts, to extend a sporadic correlation between a gender and a semantic notion to all nouns. His "generic terms" are much more abstract than that; the point is rather that the relation that exists between the semantic categories "expansion and concentration" or "massive and punctual" and the concepts "masculine/feminine", "animate/inanimate" or "personal/impersonal" (which gender is associated to) is not at all clear. Hjelmslev senses also the close relation that exists between gender and number, but his remarks refer only to syncretism and do not go beyond postulating a yet more abstract common semantic category: "consistence" (1956:207f., 283). They are, of course, interesting remarks yet they must be re-interpreted in a functional light. In a sense he comes quite near to the idea of individuation: with a little benevolence, we can read his expressions "expanded" and "massive" as "non-individuated" or "non-individualized", and his "concentrated" and "punctual" as

"individuated" or "individualized", although Hjelmslev was very far from catching a glimpse of the real, i.e. operational value of gender. I would like to illustrate this point by means of a comparison with the Semitic suffix *-at* (and its variants *-t*, *-a*, *-e*), which works very much like a switching device or "inversor".

The Semitic languages have a special category of substantives, often called "gender collectives", which are, according to Greenberg (1972:24), "a transnumeral category which is neutral with respect to numbers, as opposed to the singulative which involves countability". For this reason, they cannot be put directly together with numerals, being similar in this respect to the general case of nouns in isolating languages (Viet *ba con trâu* '3 CLF [living being] buffalo' = 'three buffalos', as against **ba trâu* '3 buffalo') and to some nouns in the European languages (German **drei Vieh*, but *drei Stück Vieh*; English **three cattle*, but *three head of cattle*). Thus, it is impossible to say in Arabic something like **talāt hamām* '3 dove (coll.)'. In order for these nouns to become countable, it is necessary that a singulative (a so-called nomen unitatis) is formed out of them; then a proper plural can also be formed: *hamām-at-un* '(a) dove', *hamām-āt-un* 'doves'; *samak* 'fish', *samak-a* '(a) fish', *samak-āt* 'fishes'. Curiously enough, this affix is used also to form collectives, e.g. out of substantivized adjectives: *hammāl-un* 'porter' *hammāl-at-un* '(a group of) porters'; *muslim-un* '(a) Moslem', *muslim-āt-un* '(a group of) Moslems'. Besides, it is used to form abstractives: *uagah* 'shameless', *uagah-at* 'shamelessness'; *naṣ-rāniyyun* 'Christian', *naṣ-rāniyy-at-un* 'Christianity'. And again, it is used to form nomina vicis (instance nouns, "ism al-marra") out of a gerund or a verbal noun ("maṣdar") which is generally a transnumeral: *ḍarab* 'to hit', *ḍarb* 'hitting', *ḍarb-e* '(a) blow'; *bās* 'to kiss', *bōs* 'kissing', *bōs-e* '(a) kiss'. The primary function of *-at* may have been to derive feminines from masculines (cf. Aramaic *malik-at* 'queen', from *malik* 'king', like German *König-in* from *König*, or Latin *domin-a* from *dominus*). J. Schmidt's reconstruction of the function of Indoeuropean gender in general, and of that of the derivational suffix *-iH₂/-H₂* in particular, was already based on Arabic data.

Well then, it would be unjustifiable to say that *-at* has in all cases the semantic content "female sex". Its general function is rather something like category switching—it gives the derived term an opposite value to that of the original term, opposite in an operational sense, like in the oppositions element vs. set, individual vs. quality, etc. We can also say that *-at* is neutral, i.e. it is by itself neither the exponent of (the principle of) generalization nor the exponent of (the principle of) individualization. This is closely related with the fact that in other languages the feminine abstractives have also an intermediary position where both principles can freely interplay—they are thus the prototypes of the ABSTRACTION technique, as opposed to masculines which are inherently individualized (cf. *Iturrioz 1985b:54, 1986a:62-5). The real "content" of gender—and of grammatical exponents generally—is operational.¹⁹

3.1 The means of individuation and its scale

3.1.1 Unity in variation

Before the advent of UNITYP, the "state of the art" with respect to genders, noun classes, and all other classificatory techniques was correctly described by Benveniste at the end of his paper on language classification:

On peut se contenter d'en décrire l'agencement matériel, ou on peut en rechercher l'origine. Bien des études y ont été consacrées. Seule nous intéressera ici une question qui n'a pas encore été posée, celle de la fonction d'une pareille structure. Or, on peut montrer... que tous les systèmes variés de "classes nominales" sont fonctionnellement analogues aux divers modes d'expression du "nombre grammatical" dans d'autres types de langues, et que des procédés linguistiques matérialisés en formes très dissemblables sont à classer ensemble au point de vue de leur fonction. Encore faut-il commencer par voir au-delà de la forme matérielle et ne pas faire tenir toute la linguistique dans la description des formes linguistiques. (Benveniste 1952-3:117-8; my emphasis.)

This passage anticipates some key ideas that have been developed and operationalized in the framework of UNITYP. Benveniste talks before of functions as of intralinguistic problems or tasks that every language has to solve (see above). And afterwards he says that there may be different pieces of one and the same game be-

hind the diversity observed, so that those pieces and the game itself might be explained by a number of well-defined principles. It is at this point that we must part company with him:

Rien n'interdit de penser que les linguistes sauront alors retrouver dans les structures linguistiques des lois de transformation comme celles qui permettent, dans les schèmes opérationnels de la logique symbolique, de passer d'une structure à une structure dérivée et de définir des relations constantes... (Benveniste 1952-3:118.)

When these words were written, generative transformational grammar was not yet born. My purpose in the following pages will be to show that from a common function, i.e. from the fact that two structures are (different) solutions to the same problem, it does not follow that they are semantically equivalent or even that it is convenient to try and derive one from the other. Unity is not the negation of variety, and for typology and universals research differences should be as important as analogies, because a general linguistic theory must explain both of them.

3.1.2 Parameters of comparison: indices of grammaticality

In order to reconstruct empirically the common function, our starting-point cannot be other than the observation that variety is always such that the structures compared are only gradually different, which means that they can be put together into an ordered scale according to a number of parameters. One of these is the degree of semantic motivatedness. Hjelmslev's starting-point was quite correct:

And so it is that, across the many languages of the world where they are found, grammatical genders are gradually arranged from one extreme to the other: from a minimum to a maximum of semantic motivation... (Hjelmslev 1956:281.)

Already with respect to this one parameter, Hjelmslev was not justified in leaving the numeral classifiers out: they are, in fact, just a step higher in this motivation scale—higher, I mean, with respect to noun classes generally, but lower with respect to the classificatory verbs of so many American Indian languages; moreover, the differences are continuous, not absolute, and labels such as "gender" or "class" have only an orientation value, because in many cases it is difficult or even ab-

surd to try to decide whether a given structure is one "thing" or the other.

As a matter of fact, the above criterion should be subspecified. On the one hand, there is the degree of semanticity. Here we must again distinguish between semantic complexity—which is determined by the number of elements that go into each paradigm and therefore by the number of features required to specify the meaning—and semantic depth—or the degree of specificity attained by the semantic matrices in the conceptual hierarchy: the features "cylinder" or "object with a handle" (associated to some numeral classifiers) are very specific if we compare them with "animate" or "human" (associated to genders). The number of numeral classifiers can be extended as new needs (technical, literary, etc.) arise with a certain freedom, so that they can be considered as a relatively open class.

On the other hand, there is the degree of variability, i.e. the possibility of substituting a given classifier, noun class affix, etc., by another one for semantical, derivational, stylistic or other reasons. We have seen above that this is still possible to a good extent in the case of the Spanish gender, as long as there is no relation to sex (cf. also German *der Mensch* 'human being', *das Mensch* 'tart'), but the degree of transparency and productivity of this means is certainly not as great as that of noun classes or numeral classifiers.

Yet another property to be considered is dispensability, i.e. if a given structure can be suppressed with maybe a loss of information: in this respect there is a noteworthy difference between agreement in noun class or gender languages and agreement in numeral classifier languages, as we shall see below.

All the above-mentioned properties have to do with the paradigmatic axis (with the operation of selection). So we must now come to properties related to the operation of combination (syntagmatic axis). In the first place, I would like to mention obligatoriness. If we consider numeral classifiers, it is clear that, although they do not automatically accompany the noun, they are nevertheless obligatory when one of the components of the NP is a numeral, and in some cases even in presence of deic-

tic elements, which is a proof of a certain degree of grammaticality. Especially interesting are in this respect the so-called "repeater-constructions", where the noun does not belong to any generic class and therefore classifies itself, so to speak:

(6) *Prathâet sâam prathâet* 'three countries'
THAI country three CLF [country]

Obligatoriness is related to the level in the constituent hierarchy where the construction is located: in the case of numeral classifiers, we have an NP composed by at least a noun and a numeral (or, in some cases, an adjective or a pronoun); in the case of the gender and noun class affixes, it is the lexematical level; in the case of classificatory verbs, it is the sentence level.

Another property to be considered is the degree of cohesion or bondedness ("Fügungsenge"), i.e. the morphosyntactic status of the structural exponent: from an (independent?) lexeme through a derivative affix (part of a lexeme) till zero (inherent feature). This property can be measured by mobility (separability, permutability), autonomous use, anaphoric use, etc.

Finally, I would like to mention syntagmatic variability, i.e. the capacity that a given exponent has to be expanded on its own, to have its own attributes.

Every one of the above mentioned properties run across a gradual scale, from more to less, beginning always with the classificatory verbs and ending with gender.

We must thus relativize Hjelmslev's assertion that "the numeral classifiers do not function as morphemes, but they are semantemes, i.e. ordinary nouns which go together with the classified noun, either in composition or in juxtaposition to it" (1956:280). In the case of (6), we cannot simply say, then, that a lexeme has been repeated, but we have to ask further why and what for; to talk of the meaning of the numeral classifier does not bring us very far, because it is the same as that of the classified noun. The whole point is that the degree of predicativity (which is a gradual property of a construction that consists of its being the bearer of a meaning that is not present in any other element

of the construction) of the numeral classifier is nil: it does not mean anything that is not already expressed by the nucleus or head, so that the function must be kept apart from the meaning. Moreover, in that language (Thai), the numeral classifier can appear several times within the NP, a possibility that reminds us of the iterativeness of noun class or gender affixes in Bantu or Indo-European languages (agreement)—the difference being that in the latter case it is obligatory, whereas in the former case it is optional and has a contrastive-emphatic effect (cf. *Kölver 1982a:172), e.g.

(7) *rəm khan khiaw saam khan* 'the three green umbrellas'
 THAI umbrella CLF green three CLF

(8) *rəm khan khiaw khan yày khan nīi*
 THAI umbrella CLF green CLF big CLF this
 'this big green umbrella'

On the one hand, the information contributed by the numeral classifier is objective (objective semanticity) in that the object is apprehended through attribution of a quality: *khan* = 'object with a handle'. On the other hand, its metalinguistic character is evident, because it does nothing but indicate a semantic feature that is already present in the head, i.e. it does nothing but refer to the code.

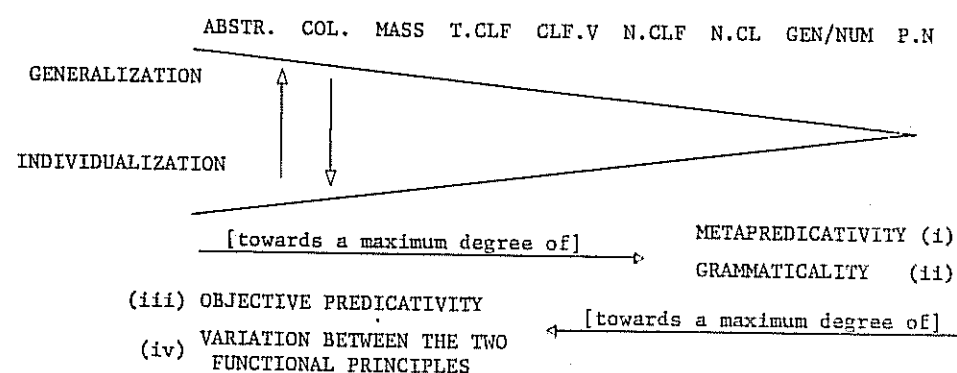
The interplay of all these indices results in a grammaticality scale. Grammaticality is the degree of freedom in the realization of linguistic operations: the smaller its degree of freedom, the more restricted is a given structure by grammatical rules. Every grammaticality scale is strictly speaking a programme, a set of techniques charged with the realization of a function—in our particular case, the apprehension of objects. The fact that variation is thus ordered reveals the teleonomy of the grammatical scales and shows that language is a project, a set of programmes or operational plans (cf. *Seiler 1978a).

On the basis of the said criteria it is possible to establish order within variation. Each type of languages manifests gradual differences, and the transition from one type to another is also continuous. This has been shown by the work of *Barron on classi-

ficatory verbs (1982:54), of *Barron/Serzisko on classificatory verbs and classificatory articles in Siouan languages (1982), of *Kölver on numeral classifiers (1982), of *Serzisko on the transition from numeral classifiers through class nouns to gender (1981a, 1982a), of *Walter on noun classes and gender (1982), of *Iturrioz on coordination, subordination, abstraction, as well as on the whole scale of techniques, from abstraction to gender/number as shown by the functional analysis of the Euzkara suffix *-ta-* (1982b), of *Iturrioz on the scale of nominalization (1987b) and on the scale of verb descriptivity (1987a), of *Lehmann on agreement (1982b), etc.²⁰ All phenomena we have inquired into have revealed to us the same gradual character of structural differences. Our linguistic theory bows to the evidence that this graduality is of the essence of language, is a reality that underlies all synchronic relations among structures as well as all diachronic processes. Every one of these operational scales is founded on a functional common denominator that shows itself in the scalarity and order of all variation that occurs with respect to the above-mentioned properties; these are thus considered as properties of linguistic operations and, in the last instance, as properties of language—which is in itself activity.

Hjelmslev's words "[the numeral classifiers] do not function as morphemes, but they are semantemes" betray a conception of grammar that is strongly bound to the structure of Indo-European languages, a conception that implies a categorial distinction between morphemes and semantemes on the presupposition that it is possible to determine with absolute precision the difference between both categories. This cannot be done, because we have in fact a continuum that goes from the free syntagmatic combination at the service of text constitution all the way through to full lexicalization;²¹ we have here a dynamic process of grammaticalization that begins with the use of lexical elements as exponents of grammatical operations and ends with their sheer indication by means of word order. This process passes through countless stages, but we can all the same establish a certain limited number of focal instances or prototypes. The semantical

continuum and the structural continuum are not independent of each other; on the contrary, they are mutually determined, they co-vary in a parallel manner and in the same sense of a progressive grammaticalization: this means, on the one hand, a progressive emptying of lexical meaning and development of metalinguistic information at a second-order semiotic level; and on the other—formal—hand, a progressive loss of syntactic autonomy which shows itself also in a progressive wearing out in the second (phonological) articulation. The scale cannot be understood as just a gradient of semanticity. The more strictly grammatical resources include another kind of information: information about the code and therefore metalinguistic information about the operations realized in a second-order semiotic level. In a smaller degree, this can be said also of the less grammaticalized means. Both types of information are present at every point of the scale, albeit in complementary doses:



3.13 The functional invariant

Generalization and individualization are the two principles that constitute the functional constant of this dimension and one of the possible correlates of the two general principles of the biological function according to Piaget, namely accommodation and assimilation, whose relative predominance is causally related to the linguistic, cognitive or any other form's progressive withdrawal from specific situational contents.²² Variation between the two principles is minimal in the case of the fundamentally extensional proper nouns (far right side of the scale), but not

impossible, as their predicative uses show. Quine (1960:§§19-20) used to characterize mass nouns as an archaic category, because they don't distinguish the general from the particular (individual). In fact, mass nouns represent, within the technique of MASS/MEASURE, the principle of generalization, whereas the principle of individualization is realized by means of syntactically complex structures such as *a liter of milk*, *a glass of wine*, etc. Collective nouns and abstract nouns are yet more outstanding representatives of the principle of generalization, so that the separation (and consequently the variation) between both principles is greater within the techniques they participate in, namely ABSTRACTION and COLLECTION. On the other hand, from the Noun Classes on to the right it becomes increasingly more difficult to keep both principles apart; and the count nouns are inherently individuated, not to speak of the Proper Nouns, which are even inherently singular and definite. This does not mean that it would be impossible to generalize starting from count nouns or even with proper nouns; but, on the one hand, there are no specific morphosyntactic means available in order to do so (you must in general make use of another technique), and, on the other hand, there exist very strong restrictions, even pragmatical ones (e.g. you can readily say *I met a real Einstein*, but what about *I met a real John?*).

3.2 The role of gender in reification of propositional contents

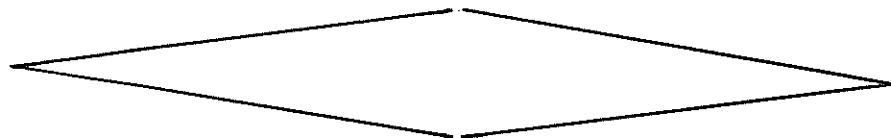
Many of the following claims would be equally valid in the case of other European languages, but I have preferred to abstain from comparisons for brevity's sake. I shall also abstain from discussing the related ideas of Hopper/Thompson (1980, 1982) on the connections between aspect, individuation, transitivity and so on—there is much in them that I heartily agree with, but the differences are also great. I would like to leave a comparison for another occasion.²³

3.21 Correlation between gender and other indices

I have elsewhere presented a detailed exposition of the function of the ABSTRACTION technique that I call "reification of propositional contents" (after Porzig 1930/1, 1942). This technique

is the meeting-place of the two dimensions of INDIVIDUATION and NOMINALIZATION:

F.V GER INF ABSTR COLL MASS P.N



Being equidistant from the more specifically verbal structures (the Finite Verbs) and the more specifically nominal ones (the Proper Nouns), the prototypical abstractives share also equally in the properties of both. Now, the point is that they do not constitute a homogeneous group, they do not behave all in the same way, they cannot even be said to be derived from verbs (or other predicative elements) in the same degree. So, instead of considering them globally, it is necessary to distinguish several degrees of reification, beginning with nominalized infinitives and ending with masculine nouns without any derivative suffix, like German *Schuss*, *Schritt*, *Laut*, *Schluck*, *Regen*, *Wind*,... Spanish *paso*, *tiro*, *ruido*, *trago*, *viento*,..., which are preceded in this scale by some feminines like those ending in *-e* in German (*Hilfe*, *Reue*, *Anleihe*,...) or in *-da* in Spanish (*trafda*, *bajada*, *llamada*,...). I am mentioning here only non-prototypical abstractives.

Brinkmann (1962:16f.) observes rightly that the question, What does gender contribute to the abstract nouns?, should not be approached from the standpoint of isolated words, but that attention must rather be paid to the behaviour of each derivative group with respect to gender. The derivative group is what determines the gender. The question is here, whether different derivative suffixes share any functional property by the fact of their belonging to the same gender, also whether there might be a functional differentiation of words within a given "Wort-stand" (e.g. deverbal nouns) which would correlate with the gender of the suffixes involved: productivity, semantic transparency, rection, relationality (valency), formal concepts like "state", "process", etc. I anticipate that this is not a matter of assigning genders a constant value, but of finding out whether

gender has any correlation with the said features. Thus, it is a fact that, in the pairs *das Verfilmen/die Verfilmung*, *das Gerede/die Rede*, *das Laufen/der Lauf*, *das Seufzen/der Seufzer*,... the masculines and feminines mentioned in the last paragraph are most frequently "concretized" and lose totally their verbal properties: *der Gang* 'corridor', *der Ertrag* 'yield', *die Gabe* 'gift'. This phenomenon is practically unknown among nominalized infinitives, where productivity is almost unbound and semantic transparency total: they are still quite near the verbal infinitive constructions, though there are exceptional cases like *Treffen* 'meeting', *Wissen* 'knowledge', *Rennen* 'course, race', *Leben* 'life', *Verbrechen* 'crime', *Essen* 'meal', *Anliegen* 'wish'. In between these two extremes (and I mean this both formally and semantically) we find the formations in *-ung*, *-tion* (cf. French *-tion*, Spanish *-ción*). Their productivity is subjected to restrictions; thus in German you cannot form them out of deictical movement verbs or out of verbs whose meaning is very general: **Tragung*, **Bringung*, **Machung*, **Holung*, **Nehmung*, **Gehung*, **Kommung*, **Gebung*, **Tuung*.²⁴ In any case, these feminine formations are the most productive ones, with the only exception of the nominalized infinitives, which are neuter.

Brinkmann makes interesting associations of properties to genders. Let us take them one by one.

MASCULINE ("Vorgangsbegriffe"):

- (a) The action denoted is limited in time.
- (b) The abstractive refers to one case, even if the underlying verb is durative: *Schritt* 'step', *Lauf* '(a) run', *Schrei* 'scream', *Schuss* 'shot!.
- (c) For this reason they are pluralizable and may be accompanied by numerals: *drei Würfe*, *ein paar Schritte*...

These three properties are intimately related with perfective aspect and hence with a high degree of individualization and objectivation. Property (a) confers them individual contours, which results in their belonging to the subcategory of individuatives (count nouns, inherently individualized), i.e. in the fact that they participate primarily in the GEN/NUM technique. When Brink-

mann remarks that we have here to do with phenomena considered in themselves, independently of man ("sprachlich von ihm gelöst", l.c. 27), he is just catching a glimpse of the truth; those nouns are almost completely de-relationalized, they have no place for the distinction between action and agent, because valency is almost eliminated from them (cf. *Knall* 'bang', *Schall*, *Klang* 'sound', *Zwang* 'compulsion', *Regen* 'rain', *Donner* 'thunder', *Schnee* 'snow', *Staub* 'dust', *Rauch* 'smoke', etc.); but it is not a quality of phenomena or "things", but of the nouns themselves. This objective-impersonal character is especially marked in the zero grade formations: nouns like *Schnitt* are formally related to the relevant passive participles (here *geschnitten*), which shows the syntacto-semantic connection between what Brinkmann calls "Vorgangsbegriffe" ("event concepts") and the passive voice, namely the loss or at least reduction of valency, from which, again, their marked perfective-resultative character follows (cf. also *Riss*, *Biss*, *Schritt*, *Sprung*).

FEMININE:

"Die Feminina haben ihren Eigenwert behauptet, wo sie sich als Zustandsbegriffe einer Vergegenständlichung entzogen; als imperfektive Begriffe stellen sie Dauer und Wiederholung dar" (l.c. 27), cf. *Lage* 'situation', *Pflege* 'care', *Reue* 'regret', *Lehre* 'teaching', *Ruhe* 'peace, quiet', *Dauer* 'duration', *Trauer* 'grief, mourning, sorrow'. In other words:

- (a) No temporal limitation.
- (b) Lack of individualization.
- (c) Pluralizability impossible or infrequent.

They are clearly opposed properties to those of the masculine abstractives and which bring them near to the mass nouns.

NEUTER:

They are characterized by a capability, "eine Mehrheit zur Einheit zusammenzufassen" (l.c. 29). They are "Objektbegriffe" and collective in nature: *Geschrei* 'shouting', *Gefrage*, *Geflüche* (cf. *Gebirge*, *Gemäuer*, etc.)

As a matter of fact, all these differences are not categorial. Masculine abstractives such as *Neid* 'envy', *Fleiss* 'diligence'

Ärger 'annoyance, nuisance', *Hass* 'hatred', etc. share the properties acknowledged above to the feminine ones; and vice versa: the feminine abstractives *Frage* 'question', *Bitte* 'request', *Anzeige* 'ad, reporting', *Zusage*, *Anleihe*, share the "masculine" properties. As to the neuter, the nominalized infinitives do not behave at all like collective nouns with *Ge-* or *-nis*: the former as well as the latter are certainly the best representatives of the principle of generalization, but each within their own technique, the former within ABSTRaction, the latter within COLLECTion—and this fact of their allocation to different techniques is as important as the other fact or even more so, because only by considering the technical (operational) aspects shall we be in a position to understand the function of gender. The criterium for allocation to the grammatical category of collective nouns is the opposition "collective vs. singulative" (*Gebirge* vs. *Berg*, *Geschrei* vs. *Schrei*, Spanish *griterío* vs. *grito*, English *shouting* vs. *shout*); the criterium for allocation to the grammatical category of abstract nouns is relationality (valency). The only possible generalizations are on the operational side of the fence.

Within the technique ABSTR, the scale from higher to lower productivity and motivatedness leads from neuter through feminine to masculine. As to affinity with the generalization principle, neuter abstractives are also winners, whereas masculines are in general individuatives. The degree of relationality decreases and the processes of topicalization (reduction, concretization) increase in the same order. There are very few neuter individuatives, feminines seldom go beyond collectives, and masculines end up regularly as count nouns. Considering the whole dimension, it is easy to observe that operationality decreases from left to right (from ABSTR to P.N); and the same thing happens within one and the same technique.

All the formations considered above are highly de-relationalized, so that functional differences are here minimal and on the whole survivals of what might have been a system in ancient times. As opposed to infinitives (still strongly verbal), on the one hand, and to the "Vorgangsbegriffe" (very much thing-like and without any sentential value), Brinkmann (l.c. 32) calls the ab-

stract nouns in the strict sense of the word "Prädikatsbegriffe, die eine Aussage vom Prädikat aus als Substantiv festhalten". On the contrary,

Reine Vorgangsbegriffe nehmen das Geschehen für sich, losgelöst von seinen Bedingungen (wenn sie natürlich auch wie jedes echte Substantiv mit einem anderen Substantiv verbunden werden können: *der Übertritt zum Gegner*. (Brinkmann 1962:33.)

These "predicative concepts" (Jespersen's "nexus-substantives", cf. 1929; Porzig's "Namen für Satzinhalte", cf. 1930/1, 1942) do not isolate the event, "sie übernehmen nicht nur den Inhaltswert des Verbums, sondern z.T. auch seinen Satzwert" (l.c. 33). Now, the point is that they are prototypically feminine. There is no exact and constant correspondence between the formations and the degrees of reification, not only because of the normal displacements of individual lexemes, but because a contrast is not always available. The interesting thing is that, if a given root has several formations, these spread out always in the same expected order. The least degree of reification and hence the greatest degree of relationality is always the share of infinitives. In the opposition "process vs. result", infinitives are associated with processes:

(a) NEUTER - NEUTER	<i>Verstehen - Verständnis</i>
NEUTER - FEMININE	<i>Bestellen - Bestellung</i>
	<i>Erscheinen - Erscheinung</i>
	<i>Wirken - Wirkung</i>
NEUTER - MASCULINE	<i>Auftreten - Auftritt</i>
	<i>Springen - Sprung</i>

Other neuter formations, different from nominalized infinitives, are scarcely productive and quite reified:

(b) NEUTER - FEMININE	<i>Verständnis - Verständigung</i>
	<i>Hindernis - Verhinderung</i>
	<i>Begräbnis - Beerdigung</i>
	<i>Verzeichnis - Verzeichnung</i>

The feminine formations in *-ung* seem to be more closely associated with the active concept of "process" compared with other productive feminine formations, which have rather to do with states

and results:

(c) FEMININE - FEMININE	<i>Legitimation - Legitimierung</i>
	<i>Restauration - Restaurierung</i>
	<i>Konzentration - Konzentrierung</i>
	<i>Stimulation - Stimulierung</i>
	<i>Konsultation - Konsultierung</i>
	<i>Profanation - Profanierung</i>

The contrast with less productive feminine and with masculine formations is yet clearer:

(d) FEMININE - FEMININE	<i>Umkehr - Umkehrung</i>
	<i>Lehre - Belehrung</i>
	<i>Frage - Befragung</i>
(e) MASCULINE - FEMININE	<i>Ruf - Berufung</i>
	<i>Urlaub - Beurlaubung</i>
	<i>Verstoss - Verstoßung</i>
	<i>Rückzug - Zurückziehung</i>
	<i>Eingang - Eingehung</i>
	<i>Einzug - Einziehung</i>
	<i>Gruss - Begrüssung</i>
	<i>Rat - Beratung</i>
	<i>Schuss - Beschiessung</i>
	<i>Übergang - Übergehung</i>
	<i>Umgang - Umgehung</i>
	<i>Abtritt - Abtretung</i>
	<i>Durchbruch - Durchbrechung</i>
	<i>Übertritt - Übertretung</i>

We find ourselves before a scale, where the nominalized infinitives are at the one end and the *cero* suffix masculines at the other, with the feminine abstract prototypes in between, filling a Janus position which is distinguished by the free interplay of both principles. Their degree of inherent individualization (or of predisposition to such) is enough to allow for topicalizations like *Leitung* 'leadership, board of directors', *Führung* 'management', *Vertretung* 'group of representatives, representation', *Ablösung* 'relief', *Vereinigung* 'association', *Regierung* 'government', *Begleitung* 'company, accompaniment', etc. But you will

have observed the collective character of all these agentive formations as opposed to the markedly individuating nature of masc. *Besuch*:

- (9) *Wir wollen unserem Besuch die Stadt zeigen.* 'We want to show the city to our visitor.'

- (10) *Die Begleitung des Zuges besteht aus zehn Polizisten.*
'The train's escort is made up of ten policemen.'

On the other hand, the topicalizations of the *-ung* formations are not very lexicalized, they are more productive, variegated and transparent than it is the case for other formations. If the plural comes in, you can even talk of free agreement with an argument:

- (11) *Das Buch beschreibt acht Vermisstenchicksale von Regimekritikern.*

- (12) *Die Beratung der Verbraucher durch die Zentrale kostet nichts vs. Alle Beratungen sind kostenlos.*

Note that constructions like *ton basilēōn hoi thānatoi* 'the deaths of the kings' (Herodotus 6.58), *hai ton tōpōn trakhētētes* 'the ruggedness(es) of the places' (Polybius), *asperitates viarum* (Livius 28.1.6), *ipsorum deorum saepe praesentiae* (Cicero; observe the adverb of frequency), are quite frequent in Greek and Latin:

- (13) *Makhontai hēgemōnos kakōtēti methēmosynēsi te laōn* (Homer GRE N 108). 'They fight against the chief's wickedness and the soldiers' negligence(s).'

- (14) *Improbiorum prosperitates redarguunt vim deorum* (Cicero, LAT Nat. d. 3.36.88). 'The successes of the wicked are a proof against the power of the gods.'

The degree of freedom of such a procedure shows also the balanced position these feminine nouns occupy—equidistant from both extremes (vertices) of the verbo-nominal double scale. The feminine abstractives allow for a free alternance of the two principles that sustain INDIVIDUATION and become polarized in the neuter and masculine abstractives:²⁷

- (15) *Erst wer auf die kurzen Beissdrohungen der Pferde achtet, entdeckt die Freundschaften und Rivalitäten, die zwischen den einzelnen Tieren bestehen... Nur langsam nahm ihr Widerstand ab, ihr Beissdrohen wurde schwächer...*

We have in this example a contrast between a neuter, which is necessarily non-individualized, and a feminine, which in this case is individualized, as the plural form shows. (The first sentence illustrates also some of the points discussed above.)

Let us now return to relationality, which is the property that underlies all the rest: the capability of having complements that correspond to the argument of the original verb. We can also observe here a functional correlation with gender that agrees perfectly well with the other properties. The *-ung* formations are almost always derived from transitive verbs²⁸ and tend to keep that verbal property; some of them cannot even be used alone but must needs be accompanied of an objective genitive, e.g. *Schaffung*, *Bereithaltung*, *Berücksichtigung*, *Verwirklichung*,... (this is a clearly verbal feature and hence even more markedly present in the infinitives). The cases of *-ung* nouns that originally denoted an action and now denote a state (i.e. whose valency has been reduced as a consequence of the object position's disappearance) do not abound. We have *Hoffnung* 'hope', *Empfindung* 'feeling', *Bildung* 'culture, formation', *Stimmung* 'mood, spirits', *Verwirrung* 'confusion, perplexity', *Verzweiflung* 'desperation', *Auflösung* 'dissolution, breaking-up', *Prägung* 'stamp, style, character', *Haltung* 'attitude', *Ordnung* 'order', *Bindung* 'attachment', *Einstellung* 'posture, disposition', *Erbauung* 'edification (fig.)', *Erregung* 'excitement', *Färbung* 'nuance', *Spannung* 'tension', *Stellung* 'position, posture', *Veranlagung* 'talent, disposition'; but not many others:

- (16) *Er wird in seiner Abschliessung sterben.*
'He will die in (his) isolation.'

- (17) *Ich empfinde Achtung vor dieser Frau vs. *Meine Empfindung von Achtung vor dieser Frau...*

They are in general transitives, although their empty places must

not necessarily be occupied or explicitly bound. What Brinkmann formulates ontologically as a property of things should rather be understood as a property of language:

Ein *Gruss* kann erwidert werden (dabei brauchen wir nicht zu erfahren, wer gegrüsst hat und wer gegrüsst wurde); eine *Begrüssung* aber ist nicht denkbar, ohne dass hinzugefügt werden muss, an wen sie gerichtet wird. Man kann eine *Frage* stellen, ohne dass hinzugefügt werden muss, an wen sie gerichtet wird; eine *Befragung* aber wird nur sinnvoll, wenn mitgeteilt wird, wen sie betrifft... *Lehre* meint nur den Vorgang der Wissensvermittlung, ohne dabei an Lehrer und Schüler zu denken. *Belehrung* dagegen versteht den Vorgang als Handlung eines Subjektes an einem anderen. (Brinkmann 1962:33; note the author's italics: is he talking of language or of reality?)

The following pairs illustrate further this feature:

- (18) a. *Die Verständigung der Polizei durch einen Zeugen...*
b. **Das Verständnis des Problems durch den Schüler...*
- (19) a. *Die Beerdigung/Bestattung des Toten fand gestern statt.*
b. **Das Begräbnis des Toten fand gestern statt.*

When a given verb can be used both intransitively and transitively, the masculine noun (or the feminine noun if it belongs to a non-productive formation) responds to the intransitive use, the *-ung* feminine to the transitive use; this is true of all the pairs mentioned above under (d) and (e):

- (20) a. *Der Rückzug der Truppen (*durch den General)...*
b. *Die Zurückziehung dieser Forderung... (objective genitive).*

The formation of *-ung* feminine nouns is fully productive in the case of verbs that have an "inseparable" prefix (they are in general transitive and perfective), whereas most abstract nouns formally related to intransitive (and imperfective) verbs that have a "separable" prefix are old masculine nouns. Ullmer-Ehrich's observation that *-ung* nouns derived from perfective verbs are imperfective and vice versa (cf. 1977), is in a sense correct. The explanation lies in the fact of their being prototypical abstractives, in their being a point where the aspectual opposition (perfective vs. imperfective), and with it the closely related nominal principles of individualization vs. generalization, is neutralized or has come to an equilibrium. Now this affinity of both op-

positions is not categorial, but operational; that is why gender can, in fact, produce a shift from perfective to imperfective: aspectual categories must not necessarily be conserved at the end of a derivation. And that is why the masculine nouns have such a high degree of independence with respect to the homophonous verbs (and also from the standpoint of lexical semantics).

The high individualization of masculine nouns makes generalizations especially difficult—in contrast to infinitives (or gerunds):²⁹

- (21) a. *Der Arzt hat mir das Laufen verboten.*
b. **Der Arzt hat mir den Lauf verboten.*
- (22) a. *Man müsste endlich mit dem Schiessen aufhören.*
b. **Man müsste endlich mit dem Schuss aufhören.*

Rewsin (1955) mentions a curious diachronic fact that bears witness to this correlation. In the period known as "Mittelhochdeutsch" ("middle high German"), speakers said still *Ausdrückung* and *Nachrichtung*, but the semantic change from processual to resultative went hand in hand with a shift to another formal class: *Ausdruck* and *Nachricht*. De-relationalized nouns are not easily distinguished from "concretizations"; the difference may very well lie in a globally measured relationality, i. e. the measure should embrace other complements than the object. On the other hand, non-functional linguistics would try and classify alternatives; thus, Remy (1970) saw that two groups would not do justice to the phenomena, so he proposed three groups; but, why three, and not four? or five? where is the limit? I think there is no limit, but careful testing would show that there is a continuum here as elsewhere in language. Two examples that may illustrate the problems involved would be the following:

- (23) a. *Die Fertigkeit des Jungen im Klavierspielen...*
b. **Die Fertigkeit des Jungen mit der Arbeit...*
- (24) a. *Er tat seine Schuldigkeit.*
b. **Seine Schuldigkeit an dem Unglück...*
c. *Seine Schuld an dem Unglück...*³⁰

Let us say, finally, that the correlation between the degree of reification of any abstract noun and the restrictions on its combination within semipredicative or sentential structures is an important subject in need of further research. The method should be the same: it is not a matter of classifying the predicates that can take abstract nouns as arguments, but of arranging them in a scale. To judge from my own observations, I would say that in the middle of the scale there is a large number of predicates with relatively few restrictions, as opposed to both poles where we find predicates that behave in a gradually complementary manner. Thus, verbs like *lauern*, which are commonly used with NPs that refer to living beings, tend to exclude nominalized infinitives, whereas "fuzzy" predicates like *Platz nehmen* prefer them to the exclusion of more individualized derivatives:

(25) *Auf der Strasse lauert der Tod* (**das Sterben*).

(26) *Das Wissen* (**die Kindererziehung*) *nimmt keinen Platz*.³¹

I have already said that we should not give gender an absolute value, that its real value is to be found in their relations with other factors such as productivity and degree of semantic motivatedness of a given formation, transitivity, global relationality, topicality (see below), etc. That's why we shouldn't be surprised that different formations belonging to the same gender have different places within the scale of nominality (e.g. the feminine nouns with *-ung*, *-tion* and *-e*). But again, none of the other criteria has an absolute value. Thus, we find sporadically abstractives in Greek and Latin that show verbal rection, and not in high-faluting or sophisticated texts, but precisely in the comedy and the inscriptions, which are the least suspect of artificiality (more examples in Löfstedt 1942:253f.):

(27) *Quid tibi hanc curatio est rem?* (Plautus)

In the section about *nomina actionis*, Benveniste (1948) establishes the following duality:

(a) The nouns ending in *-tio/-sis* denote, according to him, an effective action, conceived as an objective realization. The corresponding Latin forms (*-tio*) govern sometimes the accusative

case; in Greek, they are at least transitives, because they are quite regularly constructed with a *genitivus obiectivus*, whereas

(b) the nouns ending in *-tus* are constructed with a *genitivus subiectivus*. This is exactly the difference we saw in (20). That's why such nouns do not form compounds. They express a subjective capacity, ability or disposition, an internal condition. The former are characterized by a wider capacity for rection, the latter have, e.g. in Old IndoIranian, no nominal complement, and they are intransitive, at least until they participate in the process of infinitive formation, which makes them increasingly more verbal.³²

3.22 Reification in Euzkara and in Spanish. Passive, perfective, masculine

If we, then, consider other parameters, we can establish important differences within a given gender; but this is not in contradiction with general results concerning that gender. Linguistic analysis must always be multi-factorial and be directed towards the correlations between the various factors. For this very reason, any language can make such differentiations but use procedures other than gender for that purpose. That is what makes possible the functional-operational comparison between languages—a comparison that is not based on common categories. Some of the above-mentioned properties re-appear, for instance, as a result of the contrastive analysis of the Euzkara formations ending in *-te* and *-keta* (the details of that analysis can be read in Iturriz 1985b). A statistical analysis of the distribution of the various structures covering the whole gamut of nominalization—whose one end corresponds to those two formations—arrived at quite interesting results. The text analyzed³³ is seen to go through changes at several levels: its vocabulary becomes increasingly more technical, its structures more complicated, its descriptions more minute, more detailed, and fuller of references to certain central topics. The colloquial, story-telling mood of the beginning yields to a descriptive-technical stance, and the author gravitates, first slowly, then more and more rapidly, towards certain activities and processes: the preparation of raw material and the production of various handicrafts. In the first chapters, a story is told about visiting a Basque farm and about the life of bees, all

in a rather informal vein, and, in order to talk of temporally ordered facts and events that won't be mentioned a second time, the author doesn't need more complicated structures than fully predicative constructions. But, as the text goes on, the relative frequencies undergo a progressive displacement towards more nominal structures, until the *-keta* formations—followed at a distance by the verbal noun ending in *-te*, which occupies a middle position similar to that of German *-ung* nouns—acquires a clear predominance over all other structures. The interesting thing is that there is a correlation between the different indices of nominality (which include some parameters related to text structure, such as case distribution and accessibility, as I will briefly indicate in what follows).

The programme of reification of propositional contents reaches its highest point with *-keta*. Nouns that have this suffix occur in most cases without any complement; but in the few cases where they have one, it is usually either a possessive genitive, a "delimitative" or a relative sentence. As opposed to this, the nouns ending in *-te* (their immediate predecessors in the scale) can have two or more complements, and it is only a third of the occurrences which has none; their higher degree of verbality is indicated by the greater range of possibilities of combination as to the kind of complements: the most frequent is the absolutive, then follow the dative, the locative, the directive, the instrumental, the comitative, the ablative, then adverbs, negation, etc. Now, as to the case in which the nouns themselves occur, the *-keta* nouns have grammatical cases (absolutive, ergative, dative) twice more often than with the other cases that go into the accessibility hierarchy taken together, whereas the *-te* nouns show a 1-to-1 ratio between the grammatical and the "concrete" use, and the ratio becomes even more inclined towards the "concrete" cases in correlation with the greater predicativity of the structures within which those nouns occur. The *-keta* formations weigh most in terms of discursive function: their topicality is high, they are in the focus of interest of the speaker/writer (cf. esp. Zubin 1979), they constitute the points of condensation, where the technical process

that has to be described becomes one thing, they are the constants or invariants when we want to talk of a new realization of that process. Whereas all other structure convey mostly background information, the *-keta* formations are the foregrounded figures, the Gestalten, the (second-order) objects we are really interested in. A last fundamental fact confirms this interpretation. The occurrences of *-keta* are distributed among a few verbal radicals, much fewer than is the case with *-te*. Thus, the last chapter of the book has the following ratios: 58 occurrences to 11 radicals for *-keta*, 50 to 37 for *-te*, and—just for you to compare—7 to 7 for a finite circumstantial construction (with *-larik*). The *-keta* formations have therefore maximum topicality, they denote the main phases, the basic actions that go into the processes involved, and serve thus to constitute—to apprehend—the objects that matter in the text, its topics or referents.

Among the functional antecedents of *-keta*³⁴ we have the constructions with *-ta* (adnominal *-tako*), which are perfective in nature and have clearly a passive component,³⁵ as it is shown by the fact that the modified noun would always be in the absolutive case (would be either the subject of the underlying intransitive verb or the object of the underlying transitive verb):

(28) *Etorri-ta-ko gizon-a nere anai-a d-a.*
 EUZK come-GNR-DEL man-IDR my brother-IDR ABS-PRS
 'The man (who's) come is my brother.'

(29) *Donaka ta jai oso-eta-n eragotzi-ta-ko beharr-a-k.*
 EUZK sunday and holiday all-PL-LOC forbid-GNR-DEL work-IDR-PL
 '(It is) forbidden to work on sundays and holidays.'

Bihurri-keta 'braiding, plaiting', *gurutze-keta* 'intertwining', *aURI-keta* 'peeling', etc., do not denote a singular action that leaves the agent and goes to the object, but what is done, the "done" thing, the action seen as an object, as a rounded and bounded "thing". The *-keta* (and, as we shall see below, the Spanish *-ado*) formations introduce into the universe of discourse a new kind of referents, of "entities" that are the "figures" within a second-order (abstract) language; at such a second-order level of discourse, the counteracting principles of generalizat-

ion and individualization have the same mutual relation as they do with respect to the usual individuatives or count nouns of the first-order language. This is the outcome of a new synthesis. The new objects can thus be counted:

(30) *Bi marka-keta egi-te-n d-it-u-la-rik...*
 EUZK two mark-NMR do-NMR-LOC ABS-PL-AUX.2-AS-PTT
 'Making two mark(ing)s...'

(31) *Aipatu d-it-u-gu-n bi gurutze-keta-kin...*
 EUZK mention ABS-PL-AUX.2-ERG.1.PL-REL two intertwine-NMR-COM
 'With the two intertwinings we have mentioned...'

Brinkmann's "Vorgangsbegriffe" (de-relationalized, absolute deverbal nouns) are formed in many languages in the image of passive participles. The Spanish language has both masculine (*lavado, fregado, encalado*)³⁶ and feminine nouns of this kind (*venida, llegada, partida, vista, sentada, huída, puesta, entrada, salida, pintada, acometida*).³⁷ They were also frequent in Latin, especially in non-literary language and in the singular form (*factum, dictum, ausum, coeptum, cogitatum/-us, responsum, consultum, decretum, delictum, peccatum/-us*, etc.), but sometimes also in the plural (*narrata, mandata, destinata*,³⁸ *cupita, consultata, offensa, ausa, cogitata, conata, permissa*, etc.), which in Low Latin begin to occur as feminines: *collecta, remissa, defensa, festa*, French *promesse, réponse*, Spanish *consulta, respuesta, promesa*,...³⁹ These adjustments have to be explained not only in terms of diachronic morphology, but also in the terms of the different individualizing force of the genders, as this was shown for the first time by J. Schmidt (1889), for whom the masculine plural denoted a plurality of single objects, as opposed to the neuter plural that was, in its origin, actually a feminine derivative with collective value.⁴⁰ There have been many writers who insisted—mostly in a very vague and often in a downright speculative fashion—on the affinity between the feminine gender and the concepts of abstractivity and collectivity.⁴¹ The affinity between perfective, passive, and some nominal formations has also been pointed out. Comrie (1976:84f.) mentions the fact that in several languages the overt expression

of perfective is only possible in the passive voice; I have talked above of the loss of transitivity and hence verbality that goes with progressive nominalization. I am not going to give here a survey of the literature on these correlations; instead, I would like to finish this already too long paper by offering some brief comments upon a remarkable fact connected with them.

If we examine the Spanish translation of the Basque text we were talking about before, we will find that abstractives ending in *-ado/-ido* occur in it with an extraordinary frequency—even more so than is the case with the *-keta* formations of the original Euzkara. These nouns establish a linear order (a succession) of second-order referents which are, so to speak, the landmarks of the discourse; the function of the perfective aspect is to bring about a progress in discourse, to go one step further by introducing a new condensation point, a kind of nucleus; the individualization that is intrinsic to the perfective is connected with the aforementioned operation of ordering, which is one of the four constitutive operations of INDIVIDUATION. Thus, the individualization is here only marginally brought about by application to an object NP or by indication of the agent (be reminded of what I said about the passive nature of these formations—traditionally speaking, they are nomina acti).⁴² The masculine gender is an index of this individualization. I set here forth a list of those terms that are thus the topics of each chapter of the book (this is only for purposes of reference, so I do not include repetitions):

VISITA AL CASERIO: el acabado de estos orificios; el marcado del tronco; el terminado de la lanza; el preparado del mango; el fabricado del queso; el barrenado; para el mejor acabado del vaciado; el cometido del cardado; para el hilado; el debido sujetado de lo que sería la colmena.

EL CARPINTERO: para lograr su debido sujetado; el preparado de las ruedas; el acabado del "gurdi"; en el debido terminado.

LA FRAGUA: el fabricado de hachas; previo su cortado; el colocado de estas maderas; después de un breve forjado; el arreglo y

aguzado de las púas; previo calentado del hierro; el afilado de los extremos; el templado; el comprobado del color; otro sumergido del hacha; el total enfriado del metal; el afilado; el cor-tado.

MIMBRE: cuna del manipulado del mimbre; el preparado del mimbre; el realizado de la operación; el aprovechado del mimbre; seis ho-ras de hervor para su cocido; para el debido conservado; el pela-do; el normal acelerado del proceso del secado; el entretejido; el acordonado; el cruzado; el aplicado de las asas; previo retor-cido; el revestido; el colocado del bastidor; (seguidamente viene) el colocado del mimbre; el deslizado de la tira de mimbre; el fi-jado de los "kartxeak"; un atado de una vuelta; al colocado de los "montanes" segufan su tejido, cerrado o calado.

PREPARADO DEL JUNCO: (especializado en) el manipulado de esta planta; en su preparado; para su posterior aprovechado, secado, remojado; para el forrado del garrafón; previo su pesado; la la-bor de tejido y alíneado de los montanes; después de su reblande-cido en el horno; su introducido en el respectivo orificio; para su debido acoplado en el orificio del tablero; el terminado infe-rior del mueble; para regular su inclinado; el colocado de los montanes; para completar el cerrado o tejido del asiento; el ten-sado de las tiretas; el proceso del cocido; a esto sigue el re-forsado del mueble; realiza dos marcados en cada una; previo su reducido a la medida necesaria; arrollado; barnizado.

A great deal of these nouns are not usual in daily ordinary speech, they may even seem artificial and recherché. Someone who had literary ambitions would have substituted at least part of these nouns with other formations (e.g. *termina-ción*, *acopla-miento*) if not downright with sentential structures. But que-stions of taste and style are not the linguist's proper subject-matter. The fact is that our text is neither a letter nor a novel, but a technical book that intends to describe minutely a number (literally a series, an ordered set) of technical processes. Hence our interest should be put into the question, How is this purpose connected with such an accumulation of abstractive con-

structions? Elsewhere I have shown the relation that exists between the technique ABSTR (substantive abstraction) and the technical, scientific, formal discourse: this technique creates second-order objects for a second-order discourse.⁴³ This sub-section wanted to ask a more concrete question: Which may the role of gender be within that linguistic operation I call rei-fication of sentential contents?

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FOOTNOTES

¹ Cf. *Stachowiak 1981, Helbig 1969, 1973 (passim).

² Cf. *Seiler 1974, 1979, 1980a, 1980b, *Lehmann 1974, 1979:25f., 1980.

³ Haarmann (1976:20f.) talks of two necessary components of contrastive grammar.

⁴ Cf. French masc. *soleil*/fem. *lune* vs. German fem. *Sonne*/masc. *Mond*, etc.

⁵ It is clear that this only proves that the problem is general and hence we need a general explanation.

⁶ Hjelmslev suggests that this same characterization applies to verbal as-pect in solidarity with tense a very interesting thought indeed.

⁷ Hjelmslev accepts Bindseil's (1838) account of gender. Bindseil was the first linguist who, on the strength of a big data collection, could refute the conception of an "analogic" or "metaphoric" generalization of sexual notions and who wanted to replace that conception by "generic terms" which would ma-nifest the subjective evaluations of a given speaker community. As you can see, structuralism was not needed to come to such a conclusion. Besides, no indoeuropeanist who had the least acquaintance with internal reconstruction would have thought that the Indoeuropean gender was, in a more primitive or ancient stage, nearer certain semantic features (mainly sex) than in our present languages; in many cases, quite the contrary seems to have taken place.

⁸ This is commonly known as "indefinite declension" ("mugagabea"), which is not an exact term, because it is easily confused with one of the terms of the opposition definite-indefinite of the dimension of DETERMINATION (*the book* vs. *a book* or *books*); in fact, it has to do rather with the opposition individuated-nonindividuated of the dimension of APPREHENSION (cf. *Iturrioz 1982b).

⁹ This is neither incorrect use nor a metonymy; the term "animate" is used metalinguistically to denote something that is, as we shall see, itself me-talinguistic, i.e. relative to the code.

¹⁰ Cf. *Drossard 1982b, *Heine 1982a, *Walter 1982a.

¹¹ "Only as a hypothesis do we want to present our view. It is a question of method, not a question of facts." (Hjelmslev 1928:175.)

¹² Cf. *Iturrioz 1987b ("The hierarchy of animacy. Begriffe und Techniken").

¹³ On African noun class systems see *Heine 1982a:190s. ("sex-based vs. nature-based gender systems"), also *Serzisko 1981a:95f.

¹⁴ Cf. *Lehmann 1982b:227f., 250f.; *Heine 1982a:174f.; Corbett 1979.

¹⁵ Cf. Heibig 1969, 1973 (passim); Abraham 1974 (under *Funktion, Bedeutung*); Lyons 1977:ch. 7 and 11 (*refer, denote, connote, describe, express, designate, ascribe* are only some of the terms used).

¹⁶ 1956:281 (failure upon the commutation test).

¹⁷ Martinet refers his observations mostly to French. He admits the fact of English speakers' referring to a machine by *she* when they decide to consider it as female (1962:29), but he does not see here any semanticity of gender, but the merest formal coincidence in the expression of sex and gender.

¹⁸ For details I refer to the monographic papers on the various techniques as they are given in the general bibliography (see above "La producción científica de UNITYP"). For a survey, cf. *Iturrioz 1986a:§1.4.

¹⁹ See the practical and detailed demonstration through a functional analysis of the Basque affixes *-a* (individualizer) and *-ta-* (generalizer) in *Iturrioz 1982b, 1985a.

²⁰ On the dimensions of POSSESSION, DETERMINATION, DESCRIPTIVITY, PARTICIPATION, cf. *Seiler 1975a, 1983a, 1984b, *Seiler ed. 1978, *Clasen 1981, *Lehmann 1979 (relative sentences).

²¹ I.e. the total loss of functionality, as in German *Gift, Tat*, or English *deed*, which are not synchronically analyzable into *geb-* 'give', *ta-/tu-/do* 'do, make' and a derivative affix *-t/-d* (this affix has lost all semantic transparency and all productivity).

²² This idea is developed in *Iturrioz 1987a ("Operationen und formale Schemata").

²³ This paper was already finished when I read Zubin and Köpcke on gender (1981, 1984). I think that their study and mine complement each other.

²⁴ The reason why these verbs resist nominalization is their semantic fuzziness, their contentual unboundedness, their inherent imperfectivity: their lack of any clear contour makes them the very opposite of a (prototypically individuated) noun. When such unboundedness is broken by morphological means like composition, preverbs, etc., nominalization becomes possible: *Namengebung, Genugtuung, Wiedergutmachung, Eingebung, Belegung*, etc. Cf. *Iturrioz 1987a.

²⁵ Already Hjelmslev (1928) suspected an affinity between gender/number and aspect/tense.

²⁶ The properties that Strawson (1959) uses to ground his claim that rain, lightning and the like are objects allow thus of a grammatical re-interpretation.

²⁷ For details cf. *Iturrioz 1986a:§2.4 and 1987b ("Pluralität und Quantifikation bei Abstraktiva", "Topikalisierungsprozesse").

²⁸ That's why people are wont to say that this formation is "transitive", but valency is a more complex matter, having to do not only with direct objects

(cf. Rewsins 1955:54f.; Franck 1958:94f.; Rodičeva 1971). Transitivity is one of the features that Howden (1979) uses to distinguish some French derivative suffixes from others.

²⁹ On the difference between generalizations (dimension of INDIVIDUATION) and generic NPs (dimension of DETERMINATION), cf. *Iturrioz 1982a:§3, 1986i, 1987b ("Generisch-spezifisch, nominal-verbal").

³⁰ Cf. also Mundschnurscher 1970.

³¹ Cf. the proposal for a scale of predicates within a "limited universe of discourse" in Leal (next paper). The scale needed for a natural language in the strict sense of the word would be, of course, much more complicated (even a scale for the same purposes as has Leal in his paper, if it should embrace a whole branch of mathematics, say, group theory, would have to reckon with more than a hundred different predicates, or so Leal tells me).

³² This diachronic process shows the gradual character of the opposition "nominal vs. verbal" at least as well as typological comparison. Sgall (1958) and Gippert (1978) are interesting above all because of the enormous collections of data they have to offer.

³³ *Euskal Esku-Langintza. Artesanía Vasca*. Juan Garmendia. Ed. Auñamendi. San Sebastián, 1980.

³⁴ Cf. *Iturrioz 1982b, 1985a.

³⁵ Cf. Ballenbacher 1977.

³⁶ French *le prononcé, défilé, procédé*.

³⁷ Italian *caduta*, French *chute*.

³⁸ Cf. French *destinée*.

³⁹ Something similar has happened with Spanish *cormamenta, gesta, herramienta, hoja* (from Latin *folia*, cf. Italian *la foglia*), which were originally collectives.

⁴⁰ For Latin cf. Meyer-Lübke 1921:58f.; Collin 1886; Ermecke 1929.

⁴¹ Baldinger 1950, Mikkola 1966:38f.

⁴² Some traditional (non-functional) linguists might find the following description more enlightening: "These nouns are always used to refer to actions that are the successive phases of a process, each one of which has to be finished before the next can begin (perfective); each one of these actions becomes individualized by the mere fact of its being a link in a chain of actions, and not so much by attaching itself or producing a given object (in fact, the objects are in general generic) and even less by indicating the agent who brings the action about (the nouns are passive, *nomina acti*).". Indeed, these were my own words in an earlier draft, until I became aware that I had fallen into ontological talk (or even worse: into mixedly ontological and linguistic talk). My unconscious reason to do so was, I think, the search of brevity. Maybe ontological talk is nothing else but a kind of "condensed" discourse (where "condensation" is a linguistic operation, as I have shown for substantive abstraction, cf. *Iturrioz 1985b). Anyway, a linguistic-operational account of the facts, which would be more intelligible than the one I finally included in the body of the paper, would have taken many pages. The question arises, whether ontological talk could be analyzed (hence not simply condemned, but understood) along the general lines of the kind of linguistic analysis this paper, and this journal, preconize.

⁴³ F. Leal's purpose, method and results (see next paper) are very similar to my own: he is trying to understand how a mathematician arrives at an apprehension of numbers, sets, etc. as objects. Only I suspect that mathematical language is at least third-order language.

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