

# ADJUSTMENT AND MOTIVATION<sup>1</sup>

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## ABSTRACT

This paper bears on formal and semantic adjustment as devised by Dik (1989, 1997) and puts forward a proposal of motivation of derived constructions based on the notions of semantic prototypicality and syntactic markedness. After revising the topics of cross-domain generalization, computation and monostratal representation, the Principle of Literal Linking is formulated, which stipulates that the lower the impact of metaphor on the linking between semantics and syntax, the more iconic syntax is. The conclusion is reached that quantitatively or qualitatively non-iconic syntax provides the functional motivation of adjustment. As regards the cognitive motivation of adjustment, it is very tentatively suggested that it lies in the general cognitive abilities of inclusion and correspondence.

KEY WORDS: Functional Grammar, syntax, adjustment, motivation, cognition.

## RESUMEN

Este artículo se centra en el ajuste formal y semántico propuesto por Dik (1989, 1997) y expone una propuesta de motivación de las construcciones derivadas basada en las nociones de prototipicidad semántica y carácter sintáctico marcado. Tras revisar los temas de generalización a través de los dominios, computación y representación monoestratal, se formula el Principio de Enlace Literal, que estipula que cuanto menor es el impacto de la metáfora en el enlace entre semántica y sintaxis, más icónica es la sintaxis. Se llega a la conclusión de que una sintaxis cuantitativa o cualitativamente no-icónica proporciona la motivación funcional de ajuste. Respecto a la motivación cognitiva de ajuste, se apunta que, en principio, podría relacionarse con las habilidades cognitivas generales de inclusión y correspondencia.

PALABRAS CLAVE: Gramática Funcional, sintaxis, ajuste, motivación, cognición.

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## 1. INTRODUCTION

This aim of this paper is to set up an overall framework for the study of derived constructions. More specifically, I focus on the functional (i.e. semantic and syntactic) and cognitive motivation of the adjustment of derived constructions. I have organized this paper as follows: To begin with, I formulate the philosophical underpinnings that guide the research reported here. In the second place, I suggest that the nature of the notions of markedness and prototypicality is essentially syntactic and semantic respectively. These notions provide the grounds for a non-intuitive approach to the question of derived constructions. In the third place, I revise the theoretical constructs associated with the topic of adjustment, namely cross-domain generalization, computation and monostratal representation. Fourthly, I hold that the functional motivation of adjustment lies, at least, in quantitatively or qualitatively non-iconic syntax. To continue with, I put forward that the cognitive motivation of adjustment is to be found in two cognitive abilities which I call inclusion and correspondence, the linguistic manifestations of which are the metaphoric and metonymic character of syntax. To round off this paper, I explore some implications of the model proposed here and show the avenues that remain to be investigated more fully.

## 2. MOTIVATION AND DERIVATION

It is probably the case that the main concerns of functionalism in linguistics (Foley and Van Valin 1984; Dik 1979, 1989, 1997; Halliday 1985; Givón 1984/1990) have been the emphasis on the communicative function of language and the question of motivation. What I mean by *motivation* is, in the first place, the kind of explanation of linguistic phenomena put forward by Dik (1986), which is based on general principles, specific principles and rules, makes use of functional notions like hierarchy and markedness (Dik 1989: 21-42), and draws a difference between language universal and language specific linguistic phenomena (Van Valin and LaPolla 1997: 31). In the second place, I mean by *motivation* what the Prague School of Linguistics calls *a three level approach to syntax* (Firbas 1992: 16), an approach that provides for the complex associations of syntax and semantics that lie at the very heart of linguistic expressions. By *motivation* I also mean, in the third place, the relationship that holds between complex and derived constructions. Goldberg (1995), elaborating on Lakoff (1987), takes this line. The position that I adopt on this question is that motivation falls into three categories, semantic, syntactic and cognitive. In this respect, I align myself with Dik's (1985) distinction between formal

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Grammar descriptions; and Arg (argument), Nuc (Nucleus) and NPIP (Noun Phrase Internal Position), in Role and Reference Grammar descriptions.

(that is, syntactic) and semantic adjustment of derived expressions. I part company with Dik, however, in the sense that I consider adjustment itself as being motivated by general cognitive abilities of an extralinguistic nature whose linguistic manifestation is to be found in the metaphorical and metonymic aspects of constituent structure. I have derived part of my inspiration from Lakoff (1987: 290):

Image schemas characterize conceptual structure. They also characterize syntactic structure. Hierarchical syntactic structure is characterised by PART-WHOLE schemas: The mother node is the whole and the daughters are the parts. Head-and-modifier structures are characterized by CENTER-PERIPHERY schemas. Grammatical relations and coreference relations are represented structurally by LINK schemas. Syntactic “distance” is characterized by LINEAR SCALE schemas. Syntactic categories, like other categories, are characterized structurally by container schemas.

Even though the scope of this paper is not so ambitious as Lakoff’s proposal and the solution that I advance is different, I draw on Lakoff as regards the idea that constituent structure may have an explicit cognitive dimension. I also follow Ruiz de Mendoza (1999, 2000), who, in two more lexically-oriented studies, deals with the impact of metonymy on grammatical areas like anaphora, recategorization of nominal and verbal predicates, valency extension and reduction, modality and noun phrase operators. This paper offers a more systematic framework for the functional study of adjustment and motivation than Ruiz de Mendoza’s, while enlarging the inventory of grammatical phenomena involved. Unlike Dik, I prefer the term *construction*, rather than *expression*, because the former acknowledges more explicitly the fact that morphosyntactic arrangements, and not only the lexical items that are inserted into them, convey meaning (Bloomfield 1933).

Saying derivation of constructions is tantamount to saying linguistic creativity. Its creative dimension is certainly one of the most intriguing characteristics of language. One of the basic tenets of classical generative grammar was that linguistic competence allowed speakers of the language to produce an infinite set of grammatical sentences out of a finite set of lexical items and syntactic rules (Chomsky 1965: 47). Complex phrases and sentences, in this view, were the result of the recursive, i.e. repeated, application of the appropriate rule, such as the modifier insertion rule in (1):

- (1)
- a. the woman
- b. the woman at the entrance
- c. the woman in blue at the entrance
- d. the woman in blue at the entrance who is hailing a taxi
- e. etc.

Classical generative grammar soon firmed up a distinction between acceptable and unacceptable sentences (i.e. too long or complex to be uttered or understood) and displaced the latter to the periphery (as opposed to core grammar), which contained what came to be known as *marked sentences* (Chomsky 1982). The

set of unmarked sentences belonged in the core grammar and were either primitive or derived. Primitive sentences were kernel sentences in which the transparency between form and function reached a maximum. Derived sentences were the result of some degree of semantic-syntactic opacity that was described as the result of the application of certain transformational rules, which performed operations of addition, permutation or deletion of structure. In the pair that follows in (2), the question was the product of the transformation of *wh*-insertion whereas no transformation was said to apply in the answer:

(2)

A: Who won?

B: The local team won

The functional tradition has drawn no distinction between the core and the periphery grammar, thus considering all linguistic expressions that fulfill their communicative aim the object of study of grammar (Hymes 1992). However, the functional tradition has met the formal tradition in acknowledging the atypical character of certain expressions which, intuitively, strike us as complex and, therefore, infrequent. This is the case with nominalizations like the following:

(3)

a. John's refusing the offer

b. John's refusal of the offer

c. John's refusing of the offer

Dik (1985: 1-2) proposes an inventory of derived constructions that includes, along with nominalizations like (3), derived intransitives like (4.b) and causatives such as (4.d):

(4)

a. Textbooks are being sold quickly

b. Textbooks sell quickly

c. The noise frightened me

d. The noise made me jump

Dik considers that there is valency reduction in (4.b) with respect to the primitive counterpart (4.a); and valency extension from the primitive (4.c) to the derived (4.d). Nominalizations like (3) represent another instance of valency reduction since nominalizations, "as compared with analogous finite predications, display a marked reduction in 'actual valency', i.e. the number of arguments that receive overt expression in attested discourse" (Mackenzie 1985: 29). Dik (1997: 8) enlarges the inventory of derived constructions, although the emphasis seems to have shifted from the general notion of adjustment to the particular phenomena undergone by the quantitative and qualitative valency of predicates: extension and reduction in valency and modification of semantic function. Incorporation of argu-



ment as in (5.b), incorporation of satellite of level 1 as in (5.d), and locative/instrumental pairs such as (5.e)/(5.f) are thus added to the derived constructions (4.b) and (4.d).

(5)

- a. Trams used to be drawn by horses
- b. Trams used to be horse-drawn
- c. We make these goods by hand
- d. These goods are hand-made
- e. Spray paint on the table
- f. Spray the table with paint

Dik (1997: 20) finds the functional motivation of derived constructions in two principles of adjustment that he formulates as follows:

Principle of formal adjustment (PFA)

Derived constructions of type X are under pressure to adjust their formal expression to the prototypical expression model provided by non-derived constructions of type X.

Principle of semantic adjustment (PSA)

To the extent that a derived construction yields to the pressure of the Principle of formal adjustment, it will also tend to adjust to the semantic properties of the prototypical expression model.

These principles contain a motivation of derived constructions if one adopts the definition of motivation as relationship between primitive and derived constructions. If the definition of motivation as explanation is chosen, though, these principles of adjustment, being restricted to the descriptive level, do not reach the explanatory level. In this paper I argue that it is the notions of markedness and prototypicality that provide the motivation at the syntactic and the semantic level respectively, i.e. the explanation for the existence of derived constructions.

### 3. EMPIRICAL AND THEORETICAL JUSTIFICATION OF ADJUSTMENT

The following philosophical postulates represent the meta-theoretical stance adopted in this piece of research:

- (i) Knowledge of language is linguistic knowledge

Unlike scholars like Lakoff (1987) or Langacker (1987), I will consider linguistic knowledge a specialized module which can be identified as performing the tasks associated with language production, storage and comprehension.

(ii) There is not continuity between syntax and the lexicon

Unlike authors like Goldberg (1995) or Kay (1997), I will distinguish grammatical meaning from lexical meaning, thus stressing the encyclopedic and cultural character of lexical items as opposed to the structural and relational nature of grammatical constructions.

(iii) Syntax is a formalized component

Even though syntax is not autonomous from semantics and pragmatics, it constitutes an integral part of the theory. As such, it is to be described and explained in objective terms: a set of principles and rules guarantee the linking between syntax and semantics (Van Valin and LaPolla 1997). Unlike Givón (1993), we take syntax to be far more organized than a mere set of unrelated grammatical principles is.

The empirical evidence I take to be central to the whole question of adjustment came from the field of language typology: Greenberg (1966) stated that the relative position of the main constituents of the clause had far-reaching consequences—described in terms of implicational universals—for other areas of the grammar, with particular implications for the structure of the noun phrase. In the functional tradition, Dik's (1989: 344) Principle of Cross-domain Harmony accounts for the structural similarities between the domains of the noun phrase, the clause and the sentence:

#### The Principle of Cross-domain Harmony

Each language has a certain degree of consistency in either using Prefield or Postfield ordering across the different domains

The Principle of Cross-domain Harmony predicts that verb-final languages prefer noun phrase structures like (6.a), (6.c) and (6.e), whereas verb-initial languages favour orderings within the noun phrase such as (6.b), (6.d) and (6.f):

(6) (Dik 1989: 348)

- a. man-of-house 'house of the man'
- b. house of-man 'house of the man'
- c. garden-in chair 'chair in the garden'
- d. chair in-garden 'chair in the garden'
- e. chair-on-sit man 'man sitting on a chair'
- f. man sit-on-chair 'man sitting on a chair'

The main concern of the Principle of Cross-Domain Harmony is to explain the relative position of dependents with respect to heads in several domains. This principle accounts for the fact that the possessor of verb-final languages tends to precede the possessed while the opposite holds for verb-initial languages; the adjectival modifier of verb-final languages usually precedes the nominal head in verb-final languages whereas the opposite order is typically found in verb-initial



languages; the clausal modifier of verb-final languages often precedes its nominal head, while it typically follows its head in verb-initial languages. This kind of evidence led classical generative grammar (Lees 1966) to link deverbal nominals and verbal predications by means of the theoretical device available in the second half of the decade of the 1960s, the syntactic transformation between two abstract levels of syntactic representation. Indeed, in classical generative grammar sentences were related to one another not directly but through abstract representations that contained all the information necessary for generating a number of intuitively-related sentences. For example, (7.a)-(7.d) were regarded as different variations on the same theme (as Givón (1993) puts it), the deep syntactic structure, a logical representation that displayed all the syntactically relevant features common to all four sentences.

(7)

- a. They consider that Mary is an asset
- b. They consider Mary to be an asset
- c. They consider Mary an asset
- d. Mary is considered an asset

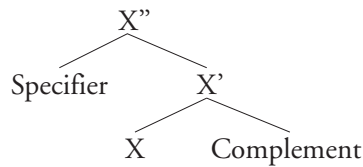
The justification for the existence of two levels of syntactic description is provided by the introduction of operations that take deep structures as input, modify them, and turn them out as output. Modifications on deep structures may be of various kinds which Dik (1989: 18-19) groups together as deletion, substitution and permutation of elements. Even though the role of transformations was put into question in the 1970s, the general theoretical constraint remained that computation is preferable to idiosyncrasy or, in other words, that syntactic solutions are preferable to lexical solutions because they are less costly: syntactic rules may be relatively context-free whereas lexical rules are heavily context-dependent, which makes the inventory of lexical rules, of necessity, larger and more complex than the set of syntactic rules. Little thought seems to have been given to the fact that syntactic rules must account for far fewer different items than lexical rules (say several hundred syntactic constructions vs. many thousand lexical entries). Bearing this in mind, it is not out of place to consider a larger inventory of lexical rules than of syntactic rules. Nevertheless, grammatical theories have laid great emphasis on the question of generality understood as the economy resulting from the use of syntactic devices at the expense of lexical devices. Taking this line, X-bar syntax constitutes a syntagmatic description procedure that allows for cross-domain generalizations of category and structure and is based on the general principles of recursiveness (maximal projections are structurally more complex than minimal projections), hierarchy (there are compulsory and optional constituents in any given constituent) and dependency (constituents have heads on which non-heads depend). (8.a) summarizes the general schema of X-bar syntax. (8.b)-(8-d) are instances of maximal projections of noun, adjective and preposition respectively. The maximal projection of the category verb is the sentence, which replaces the configurational definition of grammatical relations: the subject is no longer the noun phrase directly



dominated by the node verb phrase, but the N' directly dominated by V'; the direct object is not any more the noun phrase directly dominated by the node verb phrase, but the N' directly dominated by the node V'. This is shown by (8.e):

(8)

a.

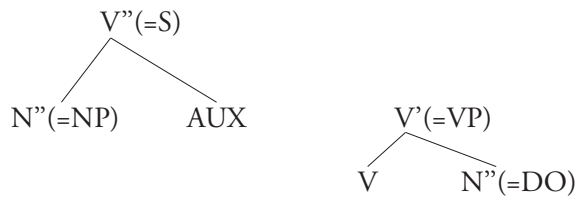


b. the cat on the roof (N'')

c. too early to get up (ADJ'')

d. from inside the car (P'')

e.



f.

Dogs

eat

bones

Before x-bar syntax was adopted in the generative field, Chomsky (1970) had already admitted that derived expressions must be the outcome of complex interactions of lexicon and grammar:

(9)

a. John's denying the charge

b. John's denial of the charge

c. John's denying of the charge

While still considering instances like (9.a)-(9.c) derived, Chomsky abandoned the transformational derivation of these constructions by means of a transformation of nominalization (Lees 1966) in favour of a more lexically-driven explanation, according to which phrases like (9.a) were turned out by the syntax whereas phrases like (9.b) and (9.c) must be produced by the lexicon. But the focus remained on the maximal exploitation of computation at the expense of lexical redundancy, even though deverbal nominals provide evidence that sentence-phrase systematic correspondences transcend the barriers of constituent ordering to reach the areas of morphological coding. This is the case with the form of the nominal predicate *refusal* and the possessive expression of the arguments *John* and *the offer* in (10.a); the introduction of the determiner *the*, number distinctions and the morphologically marked expression of *by John* in (10.b); the adjectival expression of *departmental* and *rude* in (10.c), corresponding to the argument the department



and the satellite rudely in a primitive expression such as *The department refused the offer rudely*.

(10) (based on Dik 1997: 158)

- a. John's refusal of the offer
- b. The refusal-s of the offer by John
- c. The rude departmental refusal of the offer

Grammatical theories of the functional paradigm like Functional Grammar (Dik 1989, 1997) and Role and Reference Grammar (Foley and Van Valin 1984; Van Valin and LaPolla 1997) do not rely on the use of transformations, thus rejecting the existence of more than one level of syntactic representation. An important theoretical consequence of the abandonment of transformations is that constructions are not generated from one another but rather related to one another. If no structure-changing operations hold the question arises of how to define primitive and derived constructions. Indeed, structural descriptions and changes link in an explicit way primitive to derived constructions in, for instance, nominalizations like (9.a). Methodologically, the existence of the transformation identifies a derived construction and links it to its primitive counterpart, even though the descriptive device for generating some transformations like (9.b) and (9.c) is to be sought in the lexicon. Although the functional paradigm has always displayed reluctance to use transformations, functional and generative theories have been alike in drawing the same theoretical conclusion from the empirical evidence of cross-domain harmony, namely that theories of language must meet the validity requirement of generalization. As Van Valin and LaPolla (1997: 5) point out:

While it is not always easy to come up with explicit criteria for simplicity in a particular theoretical domain (...) all other things being equal, the simplest theory is to be preferred (...) Motivation (...) refers to the extent to which the hypotheses follow in a natural way from the preexisting theory and the extent to which the constructs invoked in the explanation are also required elsewhere in the theory. An account in which the explanatory constructs have no other function beyond dealing with the problem at hand is less highly valued than one in which they play a role in the explanation of other phenomena; in this case the constructs are said to be *independently motivated* (italics as in the original), because they are required by the theory for phenomena other than the problem at hand.

In the same vein, Dik (1997: 1) stresses the typological applicability of generalization:

Most languages have a system of productive rules through which new predicates can be derived from given predicates (...) The fact that derived predicates do not necessarily consist of single words implies that languages which do not have any word-internal morphological structure may nevertheless have predicate formation processes, expressed in analytical form. If synthetic formation processes (...) and analytic formation processes (...) are treated under the general heading of predi-

cate formation this also means that more significant generalizations across languages can be made, which adds typological adequacy to the theory.

Dik's remark logically follows from the unification of morphology and syntax posited by Functional Grammar, or, in Dik's (1989: 299) terminology, the assimilation of *word-internal structure* and *word-external structure*. Functional Grammar and Role and Reference Grammar, however, differ in the way they favour generalization by means of productive rules. Dik (1985: 3; 1989: 115) defines four prototypical expression models, one of which is nominal and three verbal, the verbal ones showing syntactic valence one, two and three respectively:

(11)

- a.  $\text{pred}_N$ :  $\text{pred}_A$   
three blind mice
- b.  $\text{pred}_V(x_1)$   
The sun set
- c.  $\text{pred}_V(x_1)_{\text{Agent}}(x_2)_{\text{Goal}}$   
The store was looted by the mob
- d.  $\text{pred}_V(x_1)_{\text{Agent}}(x_2)_{\text{Goal}}(x_3)_{\text{Recipient}}$   
Cyrus was given the sack by the company

The examples in (11) do not only illustrate Dik's prototypical expression models but also show that the scope of derived constructions is much wider in a theory that allows for transformations like passivization or dative shift (or a combination of both), these operations describing in terms of structural changes the constructions (11.c) and (11.d) respectively. Indeed, constructions like (11.a) and (11.b) are not considered derived with respect to (12.a) and (12.b) respectively, but the result of differences in the assignment of functional relations:

(12)

- a. The mob looted the store
- b. The company gave the sack to Cyrus

I turn back to this question in the next section. For the time being, it is enough to bear in mind that the role of construction derivation by means of productivity rules in functional grammars is not so central and widespread as that of transformations in classical generative grammar.

Where Functional Grammar defines prototypical semantic domains, Role and Reference Grammar prefers semantic-syntactic units that, being the same in the noun phrase as in the sentence, contribute to the generalization potential of the theory. The semantic provision is made nonetheless that noun phrases display the property of reference while clauses show the characteristic of predication (Van Valin and LaPolla 1997: 54). Although operators and their scope vary from the noun phrase to the sentence, the domains of the nucleus, the core and the periphery, and even the syntactic initial position in (13.c), have explanatory status in pairs like the following:

(13)

- a. [[[[The company]<sub>Arg</sub> [constructed]<sub>Nuc</sub> [a bridge]<sub>Arg</sub>]<sub>Core</sub> [in New York]<sub>Periphery</sub>]
- b. [<sup>Clause</sup>[that]<sub>NPIP</sub> [<sup>Sentence</sup>[construction]<sub>Nuc</sub> [of a bridge]<sub>Arg</sub> [by the company]<sub>Arg</sub>]<sub>Core</sub> [in New York]<sub>Periphery</sub>]<sub>NP</sub>]<sub>NP</sub>
- c. [[the company's]<sub>NP</sub> [<sup>NPIP</sup>[construction]<sub>Nuc</sub> [of a bridge]<sub>Arg</sub>]<sub>Core</sub> [in New York]<sub>Periphery</sub>]<sub>NP</sub>]<sub>NP</sub>

Indeed, the same arguments or adjuncts belong in a given syntactic domain both in the clause and the derived noun phrases: the arguments *the company* and *a bridge* appear in the core in (13.a), (13.b) and (13.c); and the adjunct *in New York* is aligned in the periphery of the three expressions.

#### 4. EXPLAINING ADJUSTMENT: FUNCTIONALISM AND COGNITION

In the previous section I have provided the methodological and empirical justifications of adjustment, economy and cross-domain harmony respectively. I have observed that Functional Grammar defines adjustment in terms of convergence between the structure of the semantic domain of the primitive expression and that of the derived expression. Predicate formation rules, operators and expression rules turn out the output linguistic expression with the semantic and syntactic properties of derived expressions. Role and Reference Grammar, on the other hand, defines semantic-syntactic domains which enjoy explanatory status (this is applicable to nominalizations but not to causatives, for instance, which are accounted for in the lexicon by means of a different logical structure with the abstract semantic predicate CAUSE).

I start this section by bearing the question of the definition of derived constructions. As I have pointed out in the previous section, monostratal theories restrict the inventory of derived constructions because they do not admit structure-changing operations. If transformations are not excluded from the descriptive apparatus of the theory, the distinction between basic and non-basic sentence (Keenan 1976: 307) holds: a syntactic structure *x* is semantically more basic than a syntactic structure *y* if, and only if, the meaning of *y* depends on that of *x*. It logically follows that to understand the meaning of secondary sentences it is necessary to understand the meaning of primitive sentences. The form of non-basic sentences then depends on the form of basic sentences. For example, (14.a) constitutes a basic sentence with respect to (14.b), (14.c) with respect to (14.d), and (14.e) with respect to (14.f):

(14)

- a. It is raining  
b. I think that it is raining  
c. She is clever  
d. Is she not clever?

- e. I prefer pizza
- f. What I prefer is pizza

Even though the distinction between basic and non-basic sentences is not admitted by functional models, (14.a), (14.c) and (14.e) exhibit some properties that prove useful in delimiting derived constructions and provide them with a non-intuitive definition. As Keenan (1976: 309) observes, basic sentences enjoy the greatest morphological and syntactic potential (i.e. they present no restrictions on their range of tense, aspect, modality, mode and voice distinctions), they are structurally unambiguous and free from presupposition. As I see it, the solution that the functional paradigm may find for this question comes from the concept of iconic and non-iconic syntax given that iconicity relates the syntactically marked/unmarked status of linguistic expressions to their semantically prototypical/non-prototypical character, thus linking syntax and semantics in an explicit way. I have already made reference to prototypicality, which I take to be a semantic notion that allows for the existence of radial structures based on the higher or lower level of adequacy of a linguistic segment to the prototype of his category. If, along with Dik, we consider the semantic structure in (15.a) the prototype of the semantic domain of the term phrase, (15.b) is a more prototypical instance of noun phrase than (15.c), which, in turn, qualifies as more prototypical than (15.d), the criterion being that the prototypical noun phrase contains the function determiner and the function modification (Langacker 1991: 145).

(15)

- a. pred<sub>N</sub>: pred<sub>A</sub>
- b. three blind mice
- c. blind mice
- d. mice

I consider markedness a syntactic notion. As is well known, markedness was first studied by the discipline of phonology and was adopted by typologists like Greenberg (1966), Givón (1984/1990) and Croft (1990, 1991) to explain relations of asymmetry in the interlinguistic axis. Croft (1991) distinguishes three phenomena of markedness: structural (qualitative), textual (quantitative) and distributive (behaviour and control) markedness. The three types of markedness usually converge:

The marked member is expressed by at least as many morphemes as the unmarked member; the unmarked member can occur in at least as many inflectional distinctions and in at least as many syntactic contexts as the marked member, and the unmarked member is textually at least as frequent as the marked member (...) Typological markedness involves the convergence of the structural, behavioural and textual criteria of markedness (Croft 1991: 59-60).

Givón (1995: 25) adds another markedness type, namely substantive markedness, which he does not define. I suggest that communicative substantive mark-



edness may be defined with respect to the degree of topicality of a noun phrase, while cognitive substantive markedness may be the result of the degree of iconicity of the linguistic expression. For example, (16.a) and (16.c) are unmarked if compared with (16.b) and (16.d) respectively:

(16)

- a. The Johnson brothers
- b. They
- c. The circus arrived
- d. The arrival of the circus

Example (16.b) is substantively marked because the degree of topicality of pronominal noun phrases is higher than that of noun phrases; the marked character of (16.d) results from the non-iconic syntax that it displays: whereas the semantics of both (16.c) and (16.d) consists of a participant that engages in an activity, there is a change in perspective that causes lack of iconicity in (16.d), instead of focusing on the action, (16.d) focuses on the possession, thus backgrounding the only semantic participant.

In Haiman's (1985: vii) words, "linguistic forms are frequently the way they are because, like diagrams, they resemble the conceptual structure they are used to convey." Dik (1989: 340) and Givón (1994: 49), among others, have formulated the functional principles that explain both qualitatively and quantitatively the iconic relation between syntax and information. In Givón's version:

The quantity principle: A larger chunk of information will be given a larger chunk of code. Less predictable information will be given more coding material. More important information will be given more coding material.

The proximity principle: Entities that are closer together functionally, conceptually, or cognitively will be placed closer together at the code level, i.e. temporally or spatially. Functional operators will be placed closest, temporally or spatially at the code level, to the conceptual unit to which they are most relevant. (Givón 1994: 49-51)

Let us examine the inventory of derived constructions put forward by Dik (1985, 1997) in the light of the remarks on prototypicality and markedness I have just made. I recall examples (3), (4) and (5):

(3)

- a. John's refusing the offer
- b. John's refusal of the offer
- c. John's refusing of the offer

(4)

- a. Textbooks are being sold quickly
- b. Textbooks sell quickly
- c. The noise frightened me
- d. The noise made me jump

(5)

- a. Trams used to be drawn by horses
- b. Trams used to be horse-drawn
- c. We make these goods by hand
- d. These goods are hand-made
- e. Spray paint on the table
- f. Spray the table with paint

In semantics, adjustment turns out non-prototypical members of a category: as Dik's Principle of Semantic Adjustment predicts, the monoargumental expression of biargumental verbal predicates like *sell* in (4.b), and the codification of events as entities, as happens in (4.d), diverge from the transitive prototype  $\text{pred}_V(x_1)_{\text{Agent}}(x_2)_{\text{Goal}}$ . The instance of locative raising (5.f), whereby a compulsory adjunct is coded as a direct argument, also diverges from the transitive prototype in that the Goal argument has been backgrounded whereas the Locative has been foregrounded.

Dik's Principle of Semantic Adjustment, however, is not concerned with metaphorical uses which also produce non-prototypical instantiations of a given domain. I have already stated that there is a shift in perspective in nominalizations: events are codified as possession, thus converting an action into a state, as is the case with (3.a), (3.b) and (3.c). The explanation for incorporations like (5.b) and (5.d) is similar: a verbal predication is coded as a non-verbal predication, which results in an action being presented as a state. If the reasoning is correct, it follows that a third principle should be added to the principles of iconic ordering put forward by Givón. I call this principle the Principle of Literal Linking:

- (17) The Principle of Literal Linking: the lower the impact of metaphor on the linking between semantics and syntax, the more iconic syntax is

The Principle of Literal Linking predicts that the metaphorical coding of events as states in nominalizations, and incorporations causes disruptions in the linking syntax-semantics which are reflected in the former by the non-prototypical character of the expression and in the latter by the marked status of the sentence. Moreover, the Principle of Literal Linking accounts for the fact that the codification of prototypically animate semantic participants as inanimate or even abstract also produces non-prototypical expressions such as the following:

(18)

- a. I read this letter font easily
- b. This letter font reads easily
- c. You bore me with your complaints
- d. Your complaining bores me

In (18.a) and (18.c) the prototypically animate first argument is animate, whereas it is inanimate in (18.b) and abstract in (18.d), (18.b) and (18.d) thus



showing non-literal semantics-syntax linking because a type of entity is metaphorically replaced by another.

In syntax, adjustment turns out marked constructions. As regards structural markedness, nominalizations involve the compulsory marked coding of the first argument and the optional marked coding of the second argument, as is shown by (19.a); the accusative expression of the first argument of the embedded predication, as happens in (19.b); and the oblique expression (i.e. governed by a preposition), as is the case with (19.c):

(19)

- a. Speke's criticism of Burton
- b. The film made me cry
- c. Spray the wall with paint

With reference to textual markedness, derived constructions occur less frequently than their non-derived counterparts. A case in point may be the following:

(20)

- a. Cigars are still made by hand
- b. Cigars are still hand-made

Regarding behavioral markedness, Dik (1997: 160) notes that derived construction may lose its capacity to express additional grammatical features like the perfect aspect, thus being behaviorally marked:

(21)

- a. I disapprove of Mark's leaving the firm
- b. I disapprove of Mark's having left the firm
- c. I disapprove of Mark's leaving of the firm
- d. \*I disapprove of Mark's having left of the firm

(21) shows that the possessive expression of the second argument of the embedded predication is incompatible with the addition of the feature of perfect aspect. Example (21) also provides the ground for discussing substantive markedness in this respect. Derived expressions, as is the case with (21), are substantively marked because they are more topical and less iconic. I assume that derived expressions are more topical because they entail a higher degree of grammatical complexity, which, for the sake of communicative purposes, should be accompanied by a fairly high degree of topicality: if the difficulty of processing the content of the expression is added to the complexity of its structure, speakers would tend to avoid derived expressions for production reasons and listeners would find it hardly possible to understand and store them. Derived expressions are less iconic because they often imply the non-literal aspects of linking to which I have already referred. To these, I would like to add the coding of a predication (*John left the firm*) as a first order entity (*John's leaving of the firm*).

## 5. SOME IMPLICATIONS

In the previous section I have explained adjustment in terms of semantic prototypicality and syntactic markedness, which, among other causes, may be due to non-literal linkings between syntax and semantics. There is already a long tradition of studying non-literal aspects of language, particularly metaphor and metonymy. This tradition may be traced back to the studies by Lakoff (1987) and Lakoff and Johnson (1980, 1999), who consider metaphor and metonymy an integral part of our understanding of the world as coded by linguistic means. These authors, and, in general, all the members of the cognitive school, do not draw a dividing line between linguistic knowledge and knowledge, because, in their view, linguistic knowledge is knowledge and there is no need to posit any kind of interface between linguistic abilities and the more general abilities of human cognition. I have already remarked that I do not adopt this position. I consider metaphor and metonymy linguistic phenomena, the cognitive correlate of which may be—in a very tentative formulation—the general principles of association and inclusion respectively: the cognitive motivation of the linguistic phenomenon of metaphor is the ability of association, which enables us to establish one-way or two-way links between different domains; the cognitive motivation of the linguistic phenomenon of metonymy lies in the ability of inclusion, which enables us to move from general to particular items or characteristics of a given set. This is reflected linguistically as follows in

(22)

- a. The new boss is a pain in the neck
- b. Babies will embark first

In (22.a) there is an association between annoyance and pain. A new boss may not cause literally pain, but may be as annoying as a pain in the neck. Linguistically, the metaphor ANNOYANCE IS PAIN operates. In (22.b) the relevant relationship is the one between a given part and the whole of a set. Our experience of life tells us that couples sometimes carry babies and that babies do not embark on their own. Linguistically, the metonymy PART FOR WHOLE (babies for couples with babies) applies here.

Metaphor and metonymy are conspicuous characteristics of language. In stating that non-literal linkings of syntax and semantics may account for derived expressions I am not saying that any instance of non-literalness produces a derived expression. This is certainly not the case because non-literal linkings are often compulsory, which rules out the existence of a non-derived counterpart. Let us consider the following examples:

(23)

- a. I have brought salami to eat
- b. \*I have brought salami to eat it
- c. I<sub>i</sub> have brought salami<sub>j</sub>, Ø<sub>i</sub> to eat Ø<sub>j</sub>





(23.a) is metonymic, that is, less literal, than (23.b), which makes the second argument of *to eat* explicit, whereas *it* remains implicit in (23.a). Since the syntax of the construction, as rendered in (23.c), excludes the overt expression of the second argument of *to eat*, no non-derived counterpart could be found for (23.a) if it were considered a derived construction. For this reason, I disassociate derivation from non-literality. Anaphoric substitution may provide additional evidence in favor of the disassociation of derivation and non-literality. It is doubtful that the more literal noun phrase reference might be kept throughout discourse at the expense of the less literal anaphoric substitution. In other words, anaphoric reference is preferred for economy reasons, which explains why (24.b) is preferable to the “question mark” (24.a):

(24)

- a. ?I saw a cat yesterday that (...) The cat that I saw (...) The cat that I saw (...)  
The cat that I saw...
- b. I saw a cat yesterday that (...) The cat (...) It (...) it...

The same reasoning is applicable to nominal and clausal substitution:

(25)

- a. A: Which do you prefer, the big or the small bag?  
B: I prefer the small bag
- b. A: The train must be leaving  
B: I think so

At least the following metonymic constructions, which come in pairs consisting of a more literal linking and a less literal linking, do not qualify as derived, either:

(26)

- a. Functional shift: determiner > head  
Give me three tickets vs. Give me three
- b. Functional shift: modifier > head  
Handicapped citizens > the handicapped  
The thing that you want > what you want  
I criticise the fact that she has resigned >  
I criticise that she has resigned
- c. Conjunction reduction  
I think that you are right > I think you are right
- d. Clause reduction  
I prefer the flight that arrives at seven >  
I prefer the flight arriving at seven  
The man who is carrying a bag > the man with a bag
- e. Gapping  
A: Where do you live?  
B: I live in Hastings > in Hastings



- f. Raising  
They believe that John has got a rise >  
John is believed to have got a rise
- g. Subject deletion  
The man opened the gates and let the truck in

All these phenomena have in common the feature of allowing for a more literal coding in which the whole semantic domain receives syntactic expression along with a less literal expression in which a part of the semantic domain is left out of the syntax. For instance, raising involves the sharing of an argument by the matrix clause and the embedded predication, at least one of which is metonymically coded. The kind of metonymy that applies is THE PART FOR THE WHOLE Possessor raising, on the other hand, involves a different kind of metonymy, namely THE WHOLE FOR THE PART:

- (27) Possessor raising
- a. I touched his arm
  - b. I touched him on the arm

Subject deletion is probably the most similar to the situation that holds in purpose constructions and anaphoric substitution: it is questionable that the more literal counterpart exists. In general, if these constructions, which involve some degree of metonymy, were considered derived, transformations would be required that constituted the stronghold of the descriptive apparatus of the theory.

I have outlined the beginning of a research line on the integration of the cognitive notions of metaphor and metonymy into functional syntax, in the belief that much effort is still needed in the area of the convergence of functional and cognitive models. There remains a task for future research, however, to delimit the semantic-syntactic domains with respect to which derived constructions should be described and explained (tentatively, the simple and complex phrase, the clause and the sentence); to look into some constructions that have received no attention in this paper, including, at least, reduced and headless verbal restrictors, verbal substitution, reflexivization, clefts, zero-marked conjunction and embedding; and to explore the complex ways in which metaphor and metonymy interact in the syntax and semantics of derived constructions.



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