

# DESCRIPTIVE ADEQUACY IN FUNCTIONAL GRAMMAR

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## ABSTRACT

This paper argues that descriptive adequacy in FG covers both typological and single-language facts. In order to illustrate this, a semantically based hierarchy, predicting the use of verb forms in adverbial clauses, is shown to be operative both cross-linguistically and with respect to frequency of occurrence in the grammar of a single language: English.

KEY WORDS: Functional Grammar, standards of adequacy, typology, corpus linguistics, syntax.

## RESUMEN

Este artículo sostiene que la adecuación descriptiva de la GF abarca tanto hechos tipológicos como otros propios de las lenguas particulares. Para ilustrar este argumento, se pone a prueba una jerarquía semántica que predice el uso de formas verbales en las oraciones adverbiales, demostrando su operatividad tanto tipológicamente como con respecto a la frecuencia de aparición en la gramática de una lengua en concreto, en este caso el inglés.

PALABRAS CLAVE: Gramática Funcional, estándares de adecuación, tipología, lingüística de corpus, sintaxis.

## 1. INTRODUCTION

Dik (1997) stresses the relevance of three different standards of explanatory adequacy: pragmatic, psychological, and typological adequacy. These three standards of explanatory adequacy are considered to exist next to the standard of descriptive adequacy (Dik 1997: 13-14), as formulated in e.g. Chomsky (1965). In his treatment of the standards of adequacy, Dik gives a narrow interpretation to this notion of descriptive adequacy: it is applied to the grammar of individual languages, not to languages in general. That is, a grammar that is descriptively adequate may be typologically inadequate.

Boland (1999), in a study on FG and first language acquisition, introduces a new standard of *acquisitional adequacy* and proposes a somewhat different organization of the standards of adequacy in general. She argues that the pragmatic and



psychological standards operate as restrictions on possible language models, i.e. they restrict the theory of FG, whereas the typological and acquisitional standards operate as tests on the output of the theory. In her view, both cross-linguistic and diachronic descriptions are subject to the standard of typological adequacy, whereas acquisitional adequacy applies to descriptions of first and second language acquisition and language acquisition disorders.

Following up on Boland's ideas, we might say that there is a broad distinction between explanatory standards of adequacy on the one hand, and descriptive ones on the other. The explanatory standards are extra-linguistic: They impose restrictions on a theory of grammar in terms of general cognitive restrictions on the production and interpretation of messages (psychological adequacy) and with reference to the instrumentality of language in establishing communicative relationships (pragmatic adequacy). The descriptive standards are intra-linguistic: They evaluate a theory of grammar in terms of its capacity to correctly describe a wide range of linguistic facts, whether synchronic or diachronic, typological or single-language, centering on the language user or on the language system, spoken or signed, looking at language acquisition or language loss. Schematically, this may be represented as follows:

### *Standards of adequacy*

Explanatory adequacy → restriction → FG ← evaluation ← Descriptive adequacy

This alternative view on the nature of and relation between the various standards of adequacy leads to a new formulation of research questions, particularly with respect to the relation between various types of description of linguistic facts. For if the standards of explanatory adequacy restrict the theory irrespective of the nature of the facts to be described, then necessarily the descriptions of various types of fact should be fully compatible, in the sense that they can be explained in terms of the same restrictions. For instance, acquisitional facts should be compatible with typological facts, facts about language loss in Alzheimer patients should be compatible with facts about language attrition, and signed facts should be compatible with spoken facts.

In this paper we will investigate whether one particular type of compatibility holds between two types of fact in the area of linguistic variation: the compatibility between cross-linguistic and intra-linguistic variation. Our area of investigation is the expression of adverbial clauses. In view of what has been said above, our hypothesis is that the variation across languages as regards two different types of expression formats used in adverbial clauses will be reflected in the quantitative distribution of these expression formats in a single language, English, which uses both of them. The cross-linguistic data were obtained from a stratified sample of European languages. These data are presented in more detail in Hengeveld (1998). The English data were obtained from the LOB-corpus. A full description of these data may be found in Pérez Quintero (1998). Indirectly, we hope to show in this paper that typological and corpus-based studies have a lot to offer to each other.

## 2. SETTING THE SCENE

In Hengeveld (1993, 1996, 1998) it is argued that, cross-linguistically, the form of adverbial clauses is determined by their semantic type. The semantic types of adverbial clauses are defined in terms of four interacting parameters, which concern *Entity Type*, *Time Dependency*, *Factuality* and *Presupposition*. These parameters constitute four hierarchies, which describe the distribution of the expression formats across different types of adverbial clause. We will test our hypothesis on the relation between cross-linguistic and single-language data on the basis of the Entity Type Hierarchy. But before we are in a position to do so, we will present our classification of the expression formats of adverbial clauses in 2.1, and describe the different parameters used for the semantic classification of adverbial clauses, as well as the four corresponding hierarchies in 2.2. This section ends up with a delimitation of the scope of our analysis to a specific group of adverbial clauses in 2.3.

### 2.1. EXPRESSION FORMATS

The study of the expression formats of adverbial clauses consists of the analysis of the verb forms of these subordinate constructions. There is, traditionally, a distinction between finite and non-finite verb forms, which is based on the inflection features which the verb form might show. This formal classification, based on the concept of *finiteness*, causes problems, since, as Givón states, finiteness must be considered “a complex, multi-featured, *scalar* grammatical meta-phenomenon (rather than a single, discrete, binary feature)” (1990: 853).

In order to adopt universally valid criteria, Hengeveld (1998) proposes a functional classification of verb forms, establishing distinctions between verb forms depending on the function that they fulfill in the language. The classification which he proposes is as follows (Hengeveld 1998: 339):

1. INDEPENDENT: An independent verb form is one which may be used in main clauses.
2. DEPENDENT: A dependent verb form is one which is used in subordinate constructions only.
  - 2.1. PREDICATIVE: A predicative verb form is a dependent verbform which is used as the predicate of a subordinate construction.
  - 2.2. ATTRIBUTIVE: An attributive verb form is a dependent verbform which, apart from being the predicate of the subordinate construction, is used directly as an attribute within a noun phrase.
  - 2.3. ADVERBIAL: An adverbial verb form is a dependent verbform which, apart from being the predicate of the subordinate construction, is used directly as an adverbial modifier.

This functional classification which distinguishes between independent forms, which realize a function in a main clause, and dependent forms, which real-



TABLE 1. CLASSIFICATION OF ENTITY TYPES

| ENTITY TYPE  | DESCRIPTION           | EVALUATION      |
|--------------|-----------------------|-----------------|
| Zero order   | Property or Relation  | Applicability   |
| First order  | Individual            | Existence       |
| Second order | State of Affairs      | Reality         |
| Third order  | Propositional content | Truth           |
| Fourth order | Speech Act            | Informativeness |

ize a function in a subordinate clause, avoids the problem of having to distinguish between finite and non-finite forms, a distinction which, as has been mentioned, turns out to be of little typological validity.

Certain verb forms which are generally considered to fulfill an adverbial function are excluded from our investigation. In recent publications, these verb forms have been called “contextual converbs” (cf. Nedjalkov 1998). An example of a contextual converb is the *-ing* form in *Writing the final chapter of his thesis, John happily whistled away* (Kortmann 1991: 2). Typical of contextual converbs is that they are indeterminate as regards their semantic interpretation. Depending on the context, they may receive a temporal, causal, conditional, concessive, etc. interpretation, and as such defy classification in terms of semantic parameters. Furthermore, constructions based on contextual converbs are probably better classified as co-subordinate verb forms rather than as subordinate ones. For both of these reasons, we do not take contextual converbs into consideration in what follows.

## 2.2. CLASSIFYING PARAMETERS AND HIERARCHIES

Although our analysis will be centered around the Entity Type Hierarchy, it is necessary to give a brief description of the other three parameters, together with the hierarchies they constitute, since the proposed hierarchies do not act independently but rather they interact with one another.

The first parameter for the classification of adverbial clauses is the type of entity designated by the adverbial clause. Hengeveld (1998: 345) contends that four different types of adverbial clause can be distinguished, depending on the kind of entity they designate, as indicated in Table 1.

In accordance with this classification of entities four large groups of adverbial clauses might be expected: zero order, second order, third order and fourth order clauses. There are no first order subordinate clauses because first order entities can only be expressed by terms and not by clauses, therefore they do not form part of our analysis.

The following examples, taken from the *LOB corpus*,<sup>1</sup> show four kinds of adverbial clauses which designate entities belonging to different layers of the hierarchical structure of the clause:<sup>2</sup>

- (1) At the age of six months she amused people *by greeting them with "how d' ye,"* and delighted her proud parents *by shouting "tea, tea, tea."* (LOB G29 5-6) (Means - Zero order)
- (2) *Because these two central figures are looking strongly to the right* the design also looks too heavy on the right. (LOB E10 149) (Cause - Second order)
- (3) She was my first love and when she smiled at him I was jealous, and when he bullied her I changed the gun to a knife *because it would last longer.* (LOB N12 111) (Reason - Third order)
- (4) You're not telling me that all schools are perfect except Waterloo, *because I know better than that.* (LOB B23 194) (Explanation - Fourth order)

The difference between an adverbial clause which designates a zero order entity and one which designates a second order entity lies in the fact that the former is part of a clause which describes only one event, even if complex, while in the latter case two independent events are described. In (1) two coordinated single events are described (i.e. 'She amused people by greeting' and 'She delighted her parents by shouting'), whereas in (2) two different events are described (i.e. 'Two central figures are looking strongly to the right' and 'the design also looks too heavy on the right'). This difference is reflected in the fact that the predicates which form part of the first type of clause are characterized by sharing arguments (cf. *\*She amused people by her sister greeting them with "how d' ye"*), while the arguments of the predicates in the second type of clause are independent.

Regarding the difference between second order clauses, which designate states of affairs, and third order clauses, which designate propositional contents, we can mention the fact that the latter allow for the expression of a propositional attitude, while the former do not. In (3) the subordinate clause contains a modal verb 'would', expressing epistemic possibility and, therefore, modifying the proposition, whereas it is not possible to modalize the subordinate clause in (2) in the same way, because in this case we are dealing with a predication (cf. *\*Because these two central figures would / may / might be looking strongly to the right the design also looks too heavy on the right*).<sup>3</sup>

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<sup>1</sup> In the examples taken from the *LOB corpus*, each reference identifies: (i) the category to which the text belongs, represented by a letter of the alphabet from A to R; (ii) the number of the text within each category, indicated by the two digits which follow it and (iii) the number of the line within each text, represented by a number consisting of one or two digits.

<sup>2</sup> In all the examples, the adverbial clauses appear in italics.

<sup>3</sup> See van der Auwera (2001) for a new approach to the classification of the domains of modality.



Regarding the difference between clauses which designate third order and fourth order entities, the fact that fourth order entities constitute a speech act which is different from that of the main clause can be seen in the possibility of inserting illocutionary modifications in the subordinate clause (e.g. *You're not telling me that all schools are perfect except Waterloo, because, frankly, I know better than that*).

Following this classification based on the types of entities designated by adverbial subordinate clauses, the following hierarchy can be established regarding the distribution of expression formats:

### *Entity Type Hierarchy*

Zero order > Second order > Third order > Fourth order

This hierarchy predicts, just like those derived from the parameters which will be discussed below, that it is more likely that dependent forms will occur in adverbial clauses of the type lying further to the left of the hierarchy (i.e. zero order) than in those situated further to the right (i.e. fourth order).

The *Time Dependency* parameter establishes that certain adverbial clauses show Dependent Time Reference (DTR) with respect to the main clause, while others show Independent Time Reference (ITR), as can be seen in the following examples:

- (5) I mean science works *because it has abandoned the classical idea that seeking truth means grasping theoretical principles "underlying" experience*. (LOB G64 34) (cf. *...because it abandoned / is abandoning the classical idea...*) (Cause – ITR)
- (6) He moved a little in his chair *so that he was facing Farland*. (LOB L16 72) (cf. *\*...so that he is / will be facing Farland*) (Consequence – DTR)

This parameter is only relevant for second order adverbial clauses, since zero order clauses necessarily have Dependent Time Reference and third and fourth order clauses necessarily have Independent Time Reference. According to this parameter the following hierarchy can be established:

### *Time Dependency Hierarchy*

Dependent Time Reference > Independent Time Reference

The third parameter in the classification of semantic types of adverbial clauses is that of *Factuality*, an independent parameter which is applicable to all types of entities. According to this parameter we distinguish between Factual clauses which, depending on the type of entity designated, describe a property or relation as applicable, a state of affairs as real, a propositional content as true and a speech act as assertive, and Non-factual clauses, which describe the different types of entities in opposite terms.



Factuality differences can be illustrated by contrasting two types of clause, Cause and Potential Circumstance (Eventive Condition in Pérez Quintero's (1998) terminology), which designate second order entities, exhibit Independent Time Reference and are Non-presupposed (the latter feature derives from the fourth parameter, which we will discuss below):

- (7) You're not trying to say that Hewson would victimise Forrest *for behaving with ordinary moral courage!* (LOB N02 140) (Cause – Factual)
- (8) But Miss Courtney is perfectly happy in any amount of water, *provided it's not too cold.* (LOB A39 183) (Potential Circumstance – Non-factual)

In (7) the state of affairs designated by the subordinate clause (i.e. 'behaving with ordinary moral courage') is presented as a fact, whereas in (8), the state of affairs (i.e. 'not too cold') is not presented as such.

The Factuality parameter determines the subsequent hierarchical order, according to which it is more probable that dependent forms would be seen in Factual adverbial clauses than in Non-factual ones, situated on the right of the hierarchy.

#### *Factuality Hierarchy*

Factual > Non-Factual

The final parameter in the classification of adverbial subordinate clauses is that of *Presupposition*. The approach to the concept of presupposition that has been adopted is a pragmatic rather than a semantic one, since it allows the description of presupposition "in terms of a speaker's strategies to package her message against her estimate of what her audience knows" (Saeed 1997: 102) and is, therefore, more appropriate from the point of view of the criterion of pragmatic adequacy defended within FG. This approach allows the analysis of the presupposition of a clause, not in an abstract way but in relation to the suppositions that the speaker has of the information which the addressee makes use of. This is what van der Auwera (1979) calls *irrefutable meaning*. Although this parameter has been mainly applied to the study of complement clauses (cf. Kiparsky and Kiparsky 1970, Noonan 1990, Mairal Usón 1993), it constitutes a very useful parameter for the classification of adverbial clauses as well.

In the sphere of adverbial subordination, the difference between Presupposed and Non-presupposed adverbial clauses can be seen by contrasting an adverbial clause of Purpose with one of Negative Circumstance, since both designate second order entities, show Dependent Time Reference and are Non-factual:

- (9) If, therefore, these bags are retained, *in order to use them from time to time for storage purposes*, they should be kept out of the reach of children. (LOB B10 212) (Purpose – Non-presupposed)
- (10) She walked on *without waiting for an answer*, leaving four malevolent eyes fixed on her back. (LOB L21 159) (Negative Circumstance – Presupposed)



In (9) it is not presupposed that the state of affairs designated in the subordinate clause is not a fact (e.g. *These bags are retained in order to use them from time to time for storage purposes, but some people use them and others throw them away after a while*), whereas in (10) it is presupposed that the state of affairs (i.e. 'waiting for an answer') described in the subordinate clause is not a fact (cf. *\*She walked on without waiting for an answer but she waited for an answer*).

Presupposition determines the following hierarchy:

### *Presupposition Hierarchy*

Presupposed > Non-presupposed

According to this hierarchy, it is more likely that dependent forms will be seen in Presupposed than in Non-presupposed adverbial clauses. This hierarchy can be applied to various types of adverbial clauses, principally to Factual and Non-factual clauses. Moreover, it can be applied to clauses which designate second and third order entities. In the Factual domain, Presupposition implies Factivity, the presupposition that an event is real (second order) or that a propositional content is true (third order). In the non-factual domain, Presupposition implies Counterfactivity, the presupposition that an event is unreal or that a propositional content is untrue. Lastly the hierarchy can be applied, within the types of adverbial clauses which designate second order entities, to adverbial clauses with Dependent and to those with Independent Time Reference.<sup>4</sup>

### 2.3. DELIMITATION OF THE OBJECT OF STUDY

Of the four hierarchies presented before, the Entity Type Hierarchy could be considered the most relevant one, since it confirms one of the basic tenets of FG, the layered structure of the clause. According to this model,<sup>5</sup> any clause has an underlying structure consisting of two levels, the interpersonal and representational level, and four different layers that correspond to the types of entities described above. Nevertheless, in the new layered model developed by Hengeveld (forthcoming), the fourth layer, the *clause* designating a speech act, is considered to operate at a different level than the other ones. In the new model, acts are distinguished sys-

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<sup>4</sup> Hengeveld (1998) does not apply the Presupposition parameter to adverbial clauses which designate fourth order entities, because in his typological study he only distinguishes one type, Explanation (Non-presupposed). However, this parameter can also be applied to clauses designating fourth order entities, as is shown in the classification of adverbial clauses in English presented by Pérez Quintero (1998), where different types of subordinate clauses are distinguished for this layer.

<sup>5</sup> Cf. Hengeveld (1989, 1990, 1997).



TABLE 2. FACTUAL - NON-PRESUPPOSED ADVERBIAL CLAUSES

|                 | 0 ORDER | 2ND ORDER    | 3RD ORDER |
|-----------------|---------|--------------|-----------|
| Factual         | MEANS   | ITR          | REASON    |
| Non-presupposed |         | CAUSE        |           |
|                 |         | DTR          |           |
|                 |         | SIMULTANEITY |           |

tematically from designations, as a consequence of the development of FG from a sentence grammar into a discourse grammar. In line with this new conception, we will exclude adverbial clauses that designate fourth order entities from our analysis, limiting ourselves to the analysis of zero, second and third order subordinate clauses.

For reasons of space we cannot present the data obtained from the analysis of this hierarchy in all the domains determined by the intersection of the other classifying parameters (Factual / Non-factual; Presupposed / Non-presupposed). Thus, we have limited the scope to the domains of Factuality and Non-presupposition, since it is the intersection of these two domains, which contains the only type of zero order adverbial clause, and thus offers the greatest possibilities for testing the Entity type Hierarchy.

Table 2 offers the classification, through the application of the different parameters, of the adverbial clauses that we will investigate in the following sections.

### 3. TYPOLOGICAL ANALYSIS

In order to test the implicational hierarchy cross-linguistically, let us turn to the typological data. Hengeveld (1998) investigated the use of dependent and independent verb forms in adverbial clauses in a representative sample of European languages. A full account of the sampling procedure may be found in that paper. Here we will concentrate on the data. Note that the data presented here differ from the ones presented in Hengeveld (1998), in view of the alternative account of contextual converbs, in accordance with Pérez Quintero (1998), that we presented in 2.1. The relevant data are given in Table 3. In this table a “+” indicates that a dependent verb form may be used to express the adverbial clause under consideration and a “-” that an independent verb form may be used. Where information concerning the expression of an adverbial clause is lacking, a blank is used.

The data in Table 3 are arranged in such a way that it is immediately clear that the Entity Type Hierarchy is indeed effective in the languages under investigation: whenever a dependent verb form is used in a certain language at some point in the hierarchy, it is also used to the left of that point; and whenever an independent



TABLE 3. THE TYPOLOGICAL DATA

| Language   | Means | Simultaneity | Cause | Reason |
|------------|-------|--------------|-------|--------|
| Abkhaz     |       | +            | +     | +      |
| Chechen    | +     | +            | +     | +      |
| Chuvash    | +     | +            | +     | +      |
| Kabardian  | +     | +            | +     | +      |
| Kalmyk     | +     | +            | +     | +      |
| Karachai   | +     | +            | +     | +      |
| Lezgian    | +     | +            | +     | +      |
| Nenets     | +     | +            | +     | +      |
| Tsez       |       | +            | +     | +      |
| Turkish    | +     | +            | +     | +      |
| Irish      | +     | +            | +/-   | +/-    |
| Basque     | +     | +/-          | +/-   | +/-    |
| Welsh      | +     | +/-          | +/-   | +/-    |
| Dutch      | +     | +/-          | +/-   | +/-    |
| Polish     | +     | +/-          | +/-   | +/-    |
| Sardinian  | +     | +/-          | +/-   | +/-    |
| Spanish    | +     | +/-          | +/-   | +/-    |
| Assyrian   | +     | +/-          | +/-   | -      |
| English    | +     | +/-          | +/-   | -      |
| Georgian   | +     | +/-          | +/-   | -      |
| Armenian   | +     | +/-          | -     | -      |
| Finnish    | +     | +/-          | -     | -      |
| Udmurt     | +     | +/-          | -     | -      |
| Albanian   | +     | -            | -     | -      |
| Faroese    | +     | -            | -     | -      |
| Greek      | +     | -            | -     | -      |
| Kirmanji   | +     | -            | -     | -      |
| Lithuanian | +     | -            | -     | -      |
| Ossetic    | +     | -            | -     | -      |
| Rumanian   | +     | -            | -     | -      |
| Russian    | +     | -            | -     | -      |
| Bulgarian  | +/-   | -            | -     | -      |
| Danish     | +/-   | -            | -     | -      |
| Latin      | +/-   | -            | -     | -      |
| Hungarian  | +/-   | -            | -     | -      |
| Megrelian  |       | -            | -     | -      |
| Maltese    | -     | -            | -     | -      |
| Romani     | -     | -            | -     | -      |

verb form is used in a certain language at some point in the hierarchy, it is also used to the right of that point. Note, incidentally, that the data in Table 3 also confirm the Time Dependency Hierarchy for the adverbial clauses under consideration.

#### 4. CORPUS BASED ANALYSIS

In the introduction to this paper, the importance of corpus linguistics for FG was emphasized as a way of achieving descriptive adequacy. In this section we complement the typological study presented in section 3 with an analysis of a textual corpus representative of the use of adverbial clauses in English. The corpus used is the *LOB Corpus*, from the texts of which 25% were selected using a random probability method.<sup>6</sup>

In this section we first describe, qualitatively and quantitatively, the verbal expression formats used in English for each of the different semantic categories of adverbial clause under consideration (4.1). Later, we will present the data that show the existence of a systematic relation between the expression of these adverbial clauses and the semantic type which they designate, as the Entity Type Hierarchy predicts (4.2).

##### 4.1. EXPRESSION FORMATS

###### *CLAUSES OF MEANS (Zero order / Factual / Non-presupposed)*

In all cases found in the *LOB Corpus*, adverbial clauses of means are expressed by way of dependent verb forms, specifically by the non-finite *-ing* form. The subordinating particles which introduce this type of adverbial clause are, in order of frequency: *by*, *in*, *through*, *from* and *by way of*. A total of 133 Means clauses from the corpus were examined.

###### *CLAUSES OF SIMULTANEITY (2nd order / DTR / Factual / Non-presupposed)*

Temporal Simultaneity clauses in English can be expressed through independent verb forms (848 cases) and dependent verb forms (99 cases; 80 ending in *-ing* and 19 ending in *-ed*). The conjunctions which introduce adverbial clauses with an independent form are, in order of frequency: *when*, *as*, *while*, *whereas*, *whenever*, *as long as*, *whilst*, *so long as*. The subordinating particles which introduce Simultaneity clauses with a dependent verb form are: *in*, *when*, *while*, *whilst*, *on* (+ *-ing*) and *when* (+ *-ed*).

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<sup>6</sup> Butler (1985: 2) puts forward some of the advantages of using a sample of data.

TABLE 4. THE ENGLISH DATA

| Entity type | Clauses             | Independent |        | Dependent |        | Total |        |
|-------------|---------------------|-------------|--------|-----------|--------|-------|--------|
|             |                     | Nº          | %      | Nº        | %      | Nº    | % DEP. |
| 0 order     | <i>Means</i>        | -           | 0%     | 133       | 100%   | 133   | 100%   |
| 2nd DTR     | <i>Simultaneity</i> | 848         | 89.55% | 99        | 10.45% | 947   | 9.99%  |
| 2nd ITR     | <i>Cause</i>        | 170         | 92.4%  | 14        | 7.6%   | 184   |        |
| 3rd order   | <i>Reason</i>       | 77          | 100%   | -         | 0%     | 77    | 0%     |

#### CLAUSES OF CAUSE (2nd order / ITR / Factual / Non-presupposed)

Causal clauses can be expressed through independent and dependent forms. 92.4% of the examples of this type of construction which were analyzed contain independent forms, introduced by the conjunctions *because*, *as* and *since*. Adverbial clauses of cause expressed through dependent (infinitive or *-ing*) forms constitute only 7.6% of the examples. The conjunction which most frequently introduces constructions with the *-ing* form is *for*, although in one instance each the use of *for fear of* and of *by* was also attested. Clauses which contain an infinitive, on the other hand, are not introduced by any subordinating particle.

#### CLAUSES OF REASON (3rd order / Factual / Non-presupposed)

Adverbial clauses of Reason are expressed only through independent verb forms. The conjunctions which introduce this type of construction are: *because* (62.33%), *as* (23.38%), *since* (12.99%) and *for fear that* (1.3%).

### 4.2. THE ENTITY TYPE HIERARCHY

As we have shown earlier, the Entity Type Hierarchy predicts that dependent verb forms are more likely to occur in clauses designating lower order entities than in those designating higher order entities. Table 4 shows the percentages of independent and dependent verb forms for each type of factual non-presupposed adverbial clause in English.

As Table 4 shows, 100% of the clauses which designate zero order entities are expressed through dependent verb forms, while clauses designating third order entities are expressed through independent forms only. The percentage of dependent forms in second order clauses is 9.99% (10.45% in clauses with DTR and 7.6% in clauses with ITR), which shows the quantitative validity of the Entity Type Hierarchy in the description of the English corpus data. Note that, again, the Time

Dependency Hierarchy, as applicable within this group of adverbial clauses, is confirmed as well.

## 5. CONCLUSION

In this paper we have started out from the assumption that typological adequacy pertains to the wider standard of descriptive adequacy. Following from this assumption, we predicted that typological data and single-language corpus-data should manifest the same patterns of distribution along implicational hierarchies. Our analysis of the expression of factual non-presupposed adverbial clauses in a representative sample of European languages and in a representative corpus of English texts confirmed this prediction. Further confirmation of the original assumption would require the investigation of the expression of the same set of adverbial clauses using data from the domains of language acquisition, language change, language contact, and language loss.



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