The organization of reference grammars: 
A typologist user’s point of view

Sonia Cristofaro

1. Introduction: language description in a typological perspective

This paper addresses the issue of the organization of reference grammars from a user’s point of view.

Literature on the organization of reference grammars (see among others Lehmann (1980) and (1998), Schultze-Berndt (1998), Mosel, this volume, and Zaefferer, this volume) usually addresses this issue from the author’s point of view, and focuses on matters such as what topics should be necessarily covered in a reference grammar, how information should be distributed across the various parts of the grammar, what type of information (e.g. morphological as opposed to syntactic information) should be provided first, and the like. A related problem is also whether a grammar should take a form-to-function (semasiological) or a function-to-form (onomasiological) approach, that is, whether the description should select particular functional domains, and show how they are expressed in the language, or it should select particular forms, and describe the range of functions associated with these forms.

These issues are obviously of interest not only to authors, but also to users. There are however various respects in which a user’s perspective may differ from an author’s perspective, with regard both to the topics that should be covered in a grammar and the way in which these topics should be presented. In particular, this paper aims to provide the perspective of a particular type of user, namely the typologist who uses grammars for the purposes of cross-linguistic comparison, and is interested in the cross-linguistic manifestations of some grammatical phenomenon rather than some particular language as a whole.

Before proceeding to discuss the specific needs of such an user, it is worth pointing out that language description has experienced some signifi-
cant methodological changes over the past decades, ones that have been
directly influenced by typological research. For example, it was not un-
common for grammars written until about the ‘80s to privilege phonology
and morphology over syntax. Thus, several grammars written in that period
have long and detailed sections about noun and verb structure, while the
space devoted to sentence structure is comparatively limited (see, for ex-
ample, many of the grammars in the ‘University of California Publications
in Linguistics’ series, such as LeCron Foster 1969 or Langdon 1970, as
well as other grammars such as for instance Fortune 1942, Abraham 1985
or Arokhianatan 1987).

From the ‘80s on, the range of topics covered in reference grammars has
become increasingly balanced and diversified. More and more attention has
been devoted to syntax in general as well as to a whole host of topics that
are now regarded as crucial for language description, such as passive con-
structions, alignment patterns (including phenomena such as ergativity and
split intransitivity), or evidentiality. This expansion in perspective has been
largely influenced by typological studies, that have revealed the existence
and cruciality of a number of previously unobserved phenomena in more
and more languages (Dryer, this volume).

At the same time, the vast cross-linguistic variation revealed by typo-
logical studies has reinforced the idea (ultimately of structuralist origin)
that each language should be described in its own terms, rather than in
terms of categories tailored for European languages. As repeatedly pointed
out in the typological literature (see for instance Keenan and Comrie 1977;
Stassen 1985: 14–15; Croft 1990: 11–18), languages do not display the
same categories, intended as the combination of particular morphosyntactic
structures and particular semantic or pragmatic functions. The same struc-
tures are not associated with the same functions cross-linguistically, and,
conversely, the same functions are not associated with the same structures.
It follows that individual grammatical categories cannot help being lan-
guage-specific (Dryer 1997; Croft 2001).

This has led to an increased awareness that grammatical categories
should be postulated for each language independently of the categories
postulated for other languages, and they should be motivated in distribu-
tional terms. As a result, detailed discussions of the distributional criteria
used to identify individual grammatical categories can now be found in
most grammars. For example, until the ’80s most grammars would take for
granted that the language being described should have a subject and a direct
object category.\textsuperscript{2} As a result, the criteria used to identify these categories in
The organization of reference grammars

139

each language would not be discussed, even in languages where these notions are more problematic, such as ergative languages (see for example Saltarelli 1988: 146–148 on the morphological marking of grammatical relations in Basque). On the other hand, many grammars now include a detailed discussion of the evidence available in the language to postulate categories such as subject and direct object (see for example Foley 1991: 195–200 on grammatical relations in Yimas).

As is observed by Dryer (this volume), the influence of typological research on language description has also led to growing convergence in the descriptive frameworks adopted in reference grammars. Grammars written in the period of around 1965 to 1975 display considerable variation in their theoretical framework. On the other hand, the practice of using the notions and descriptive apparatus basically drawn from traditional grammar has become increasingly widespread in language description. The use of a descriptive framework based on traditional grammar has a number of advantages, in that such a framework will presumably be familiar to most readers, and so there will be no need for the reader to work out the notions and terminology used in the grammar before being able to access the data being described.

These changes have all contributed to set user-friendlier and typologically more adequate standards for reference grammars, resulting in increased awareness about which topics should be covered in a grammar, and the descriptive tools that should be employed in describing them. Thus, the typologist user can now count on more complete grammars, that often provide an accurate picture of the way in which the grammatical categories of the language are similar or different from the grammatical categories of other languages.

This does not mean, of course, that all grammars conform to the same standards, cover the same range of topics, or adopt the same theoretical framework. In fact, any grammar user is probably familiar with the feeling that a particular grammar doesn’t cover exactly the topic they are interested in, or fails to cover it in an appropriate way. This is virtually unavoidable, because grammar writing usually takes place under severe time and space constraints, so no grammar can probably be fully comprehensive (see Mosel, this volume). However, more and more grammars now conform to typologically oriented standards, and there are general expectations that a good grammar should cover at least some topics, and it should cover them in a certain way.
Nevertheless, there still are a number of respects in which even grammars that on the whole conform to typologically oriented standards may not be fully adequate for the purposes of cross-linguistic comparison. In what follows, this issue will be discussed with respect to the following points:

i. The distribution of information across different parts of a grammar, with regard to form-to-function approaches as opposed to function-to-form approaches to language description.

ii. The parameters taken into account when providing information about the categories described in the grammar.

iii. The criteria used in identifying the categories described in the grammar.

Each of these points is discussed in detail in the following sections. The discussion is meant to contribute some general methodological insights about the organization of reference grammars, based on specific examples concerning grammatical domains such as clause linkage and tense, aspect, and mood. Some of these examples were collected while carrying out typological studies of the relevant grammatical domains (Cristofaro 2003 and 2004), and they were selected for their general methodological implications, rather than the overall theoretical relevance of the specific linguistic phenomena involved. This means that the reason why I will focus on particular phenomena (such as for example the expression of modal and phasal notions, or purpose relations) is not that I regard them as more interesting or more important than other phenomena that might be described in a grammar. Rather, I have chosen these phenomena because they provide a clear illustration of a number of general problems about the organization of reference grammars, ones that are potentially relevant to any linguistic phenomenon described in a grammar. As a result, the discussion in the following sections should be understood as pertaining to the question of how a grammar should present individual phenomena, rather than what phenomena exactly it should cover.

2. Form and function in language description

As illustrated by Mosel (this volume), there is a long-standing debate in the linguistic literature as to whether language description should proceed from particular forms, and describe the range of meanings associated with these
forms, or rather particular functional domains, and describe the range of forms that can be used to encode them (see also Comrie 1998).

Although the necessity of a function-to-form approach to language description was argued for as early as von der Gabelentz (Mosel, this volume), and repeatedly advocated ever since, the overwhelming tendency for grammars has always been to take the form-to-function approach. There are several reasons for this. The most obvious one is that the form-to-function approach gives an immediate idea of what the language is like, and how its grammatical system works. In this respect, the form-to-function approach is a more natural and direct way to describe a language than the function-to-form approach, which is based on semantic and pragmatic domains defined independently of the target language. Also, as is observed by Mosel (this volume), a function-to-form approach may fail to show the similarities between the various uses of individual forms, thus leading the user to miss potential polysemic links between these uses.

Proponents of the function-to-form approach have given various motives for this approach. A general theoretical reason advocated in early discussions of the function-to-form approach such as von der Gabelentz’s and Jespersen’s (Mosel, this volume), is that the function-to-form approach and the form-to-function approach reflect two distinct processes: the encoding process that takes place in the speaker’s mind, on the one hand, and the decoding process that takes place in the hearer’s mind, on the other. Both approaches are therefore essential to language description.

Typological praxis suggests that there are also empirical reasons for taking a function-to-form approach. A distinguishing feature of the functional-typological approach adopted by most typologists is the assumption that at least certain aspects of language structure depend on, and can be explained in terms of, language function. Functional-typological research is therefore crucially interested in the correspondence between particular structures and particular functional domains. However, languages display tremendous variety with respect to their morphosyntactic structures and the functional domains with which these structures are associated. In particular, individual morphosyntactic features need not occur in exactly the same combinations cross-linguistically, nor be present in all languages. Therefore, if cross-linguistic comparison is based on particular morphosyntactic features or combinations thereof, a number of languages that lack these features or that do not combine them in the required way will have to be left out. As a result, the typologist will not be able to say anything about the way the selected functional domains are encoded in those languages.
On the other hand, all languages presumably have means to encode the same range of functional domains. Thus, if cross-linguistic comparison is based on particular functional domains, all languages can be included within the analysis, and the typologist will be able to investigate form-function correspondences in all languages. For this reason, typologists generally believe that cross-linguistic investigation should select particular functional domains, and examine how they are encoded across languages, rather than select particular morphosyntactic structures, and examine their functional correlates cross-linguistically (see among others Stassen 1985: 14–15; Croft 1990: 13–16 and 2001: chap. 1; Cristofaro 2003: 9–14; Zaef-ferer, this volume).

In principle, examination of the ways in which a particular functional domain is encoded in a particular language is quite independent of the way the description of that language is organized. If the grammar takes a form-to-function approach, one can browse it in order to find out what constructions are used to express the relevant functional domains.

The major problem with this procedure, however, is that the user has to guess where the relevant information can be found, and this may be difficult if one doesn't have previous knowledge of the range of constructions that can be used to express a given functional domain. This means that, unless one browses the whole grammar in search for any bit of information that may be relevant, one may miss part of the information.

For example, in a number of languages, modal notions such as possibility, necessity, and ability are expressed by means of complement clauses introduced by a main predicate (so called modal predicates: Noonan 1985). The main predicate describes a modal condition on some situation, while the complement clause describes the situation for which the modal condition holds. This is illustrated in the Gulf Arabic sentence in (1) below:

Gulf Arabic (Afro-Asiatic, Semitic; Arabian Gulf)

(1) ma yiqdar yishiil hal-kooma bruuHah
    ‘He can’t remove this pile by himself.’ (Holes 1990: 201)

Modal conditions, however, can also be expressed by special affixes on the verb describing the situation for which the modal condition holds, or by independent particles. Gulf Arabic, for example, expresses the notion of necessity by means of the independent particle laazim:
Gulf Arabic (Afro-Asiatic, Semitic; Arabian Gulf)

(2)  laazim akammil il-baHth gabilla asaafir
must 1SG:finish the:research before 1SG:travel
‘I must finish the research before I travel.’ (Holes 1990: 201)

A third morphosyntactic option is illustrated by West Greenlandic, where necessity is expressed by means of the verbal affix -sariaqar-:

West Greenlandic (Eskimo-Aleut, Eskimo; Greenland)

(3)  imir-nirus-sariaqar-putit
drink-more-must-2SG:IND
‘You must drink more.’ (Fortescue 1984: 292)

A similar situation is found with phasal notions such as ‘start’ or ‘finish’, desiderative notions such as ‘want’, and causativity. In a number of languages, these notions are expressed by specific predicates, that take clausal complements describing the situation to which the phase, desire, or act of causation refers:

Lango (Nilo-Saharan, Eastern Sudanic; Uganda)

(4)  ògwà òcàkò bùccò òpíô
Ogwang 3SG:start:PERF yell:INF Opio
‘Ogwang started to yell at Opio.’ (Noonan 1992: 225)

Lezgian (North Caucasian; Daghestan, Azerbaijan)

(5)  Ada ča-w ixtilat-ar aqwazar-iz
he-ERG we-ADEL conversation-P stop-INF
cause-FUT-PAST
‘He would make us stop the conversations.’ (Haspelmath 1993: 358)

In other cases, however, these notions are expressed by means of verbal affixes:

Tangkhul Naga (Sino-Tibetan, Tibeto-Burman; India)

(6)  i ukrl wa-nAy
I Ukrl go-DES
‘I want to go to Ukrl.’ (Arokhianatan 1987: 83)
In Kayardild, the notion of desire can be expressed simultaneously by the potential verbal inflection and oblique case marking on NPs. This is an instance of a more general pattern whereby case marking is used to express temporal, aspectual and modal notions (so-called ‘modal case’: Dench and Evans 1988; Evans 1995).

In principle, all of the constructions exemplified in (1)-(9) are potentially relevant to a cross-linguistic investigation of the expression of possibility, necessity, causativity etc. Information about these constructions may however be quite difficult to recover from a form-to-function description of the relevant language, since the various constructions would normally be described in different parts of the grammar. For example, in Noonan (1992), the construction exemplified in (4) is described in the chapter on complementation, while Fortescue (1984) describes the construction in (7) in the section on continuous aspect. Now, a researcher may not know in advance what constructions are used to express possibility, necessity, causativity etc. in a given language. So, unless they browse the whole grammar, they might not find out what parts of the grammar deal with the expression of the notions they are investigating. As a result, they might miss some of the relevant constructions.

Another case in point is provided by the expression of purpose. Purpose relations are usually expressed by linking two clauses that describe the two events involved in the purpose relation, that is, an event that is brought about with the goal of obtaining the realization of some other event, and the
event whose realization is desired. This is exemplified in the following sentences from Ika and Cubeo:

Ika (Chibchan, Aruak; Colombia)
(10) *monu t̲̂̄ai-n n̲̂̄zō̲za-na*

monkey shoot-IMPFV REF-go-DIST

‘He went (in order) to shoot monkeys.’ (Frank 1990: 107)

Cubeo (Tucanoan, Central Tucanoan; Colombia)
(11) *jí-re xejo-ki-re epe-lbã xi-bì’kì-wA*

1SG-OBJ child-M.SG-OBJ put-N/H.3PL 1SG.POSS-adult-PL

1SG.OBJ N/H.3PL 1SG.POSS

‘From (when I was) a child, my parents put me in a school in order that I learn something that I didn’t know.’ (Morse and Maxwell 1999: 175)

In some cases, however, purpose relations may be expressed by fusing the two verbs. For example, Cubeo has a second purpose construction that is used with motion verbs. In this construction, the motion verb takes affixes agreeing with the subject in gender and number, and is encliticized to the verb expressing the event whose realization corresponds to the purpose of motion:

Cubeo (Tucanoan, Central Tucanoan; Colombia)
(12) *oko-kobe-I *i-kọ=Rì-bìkọ*


oko-RE

‘She recently went to get water at the well’ (Morse and Maxwell 1999: 65)

In the only existing grammar of Cubeo (Morse and Maxwell 1999), the two purpose constructions of Cubeo are described in different parts of the grammar, with no cross-references between these parts, and no subject index. The construction in (11) is described in the section on subordination,
while the construction in (12) (which is labeled ‘independent purpose clause’) is described in the chapter on verbs, under ‘auxiliary verb constructions’. The reader is unlikely to know in advance that purpose in Cubeo is expressed by means of these two constructions, particularly because the construction in (12) appears to be quite rare cross-linguistically. So, unless they browse the whole grammar looking for constructions used to express purpose, they are most likely to disregard one of the two constructions, particularly the construction in (12).

A similar problem is encountered with languages using the same construction to express a variety of meanings that must be inferred from the context. For example, in Mandarin Chinese, purpose relations are expressed by means of a construction involving clause juxtaposition. This construction can be used to express a variety of relations between events, that must be inferred at the contextual level. This can be seen from the two possible readings of the sentence in (13):

Mandarin Chinese (Sino-Tibetan, Chinese; China)
(13) 你 guì-xialai [qiú Zhāng-san]
you kneel.down beg Zhang-san
‘You knelt down and begged Zhang-san/ You knelt down in order to beg Zhang-san.’ (Li and Thompson 1973: 98)

In cases like this, the construction only conveys a very general meaning (for example, in the case of the serial verb construction in Mandarin Chinese, the fact that two events are related), and any more specific meaning is inferred from the context. As a result, grammars are most likely to define the construction in terms of its formal properties, rather than in terms of the functional domains it encodes. These properties, however, cannot always be readily related to the functional domains expressed by the construction. For example, the Mandarin Chinese construction in (13) is described in Li and Thompson 1981 in a section called ‘serial verb constructions’. Once again, however, the reader is unlikely to know in advance that the constructions defined in this way are used in Mandarin Chinese to express purpose relations, and so runs the risk of missing the relevant construction.

It is quite clear that in all of these cases it would be much more convenient for the typologist user if the grammar were organized in terms of functional domains such as ‘necessity’, ‘possibility’ ‘ability’, ‘desire’ (or possibly ‘modality’ in general), ‘inception’, ‘purpose’ and the like. Such an approach would however have a number of problems. First, as was pointed
out above, a form-to-function description gives a more immediate idea of how the language works, so it should be included in a grammar anyway. This means that if a function-to-form approach were also taken, the grammar would involve quite a lot of redundancy.

Thus, neither the form-to-function approach nor the function-to-form approach are free from problems. A number of compromise solutions between the two approaches are however available. One obvious solution is inclusion within the grammar of detailed subject indexes, referring both to the constructions and the functional domains being described. In this way, the reader is able to immediately identify all of the places in the grammar where the functional domain under investigation is discussed. In fact, many grammars, for example those published in the Mouton Grammar Library, do have detailed subject indexes including functional categories such as causativity, desire and the like. However, many other grammars lack subject indexes altogether (this is for example the case with many of the grammars in the Pacific Linguistics series and the SIL series). Also, some grammars have subject indexes, but these are organized in terms of formal categories, or a mixture of formal and functional categories. This may make it difficult to retrieve the relevant information. For example, Fortescue's grammar of West Greenlandic (1984) has a subject index including entries such as 'aspect', 'mood', and 'verbal inflection'. Verbal inflection is a formal category. Aspect and mood are semantically based categories, but they pertain to one specific way of expressing the underlying semantic notions, namely in terms of verb paradigmatic categories. As the affixes illustrated in (3) and (7) fall under 'mood' and 'aspect' respectively, and they are part of verbal inflection, information about where these affixes are described in the grammar can be found under the corresponding index entries. However, once again, modal and phasal notions are not always expressed in terms of verb-paradigmatic categories or by means of verbal inflection cross-linguistically, and the reader may not know in advance how they are expressed in West Greenlandic, for example. So they may fail to realize what the relevant index entries are.

Another solution to the problem of recovering information from the various parts of a grammar is the one envisaged by Comrie (1998) and Zaefferer (this volume), namely the creation of electronic grammars. In an electronic grammar, access to information is in principle independent of the linear ordering of the various topics, or the collocation of individual topics in specific parts of the grammar. For example, an electronic grammar may have links between individual functional domains and all of the construc-
tions used to express these domains in the language, or individual constructions and all of the functional domains associated with that construction. In this way, the limitations imposed by the linear and hierarchical structure of paper grammars may be overcome (Comrie 1998: 14–15).

Finally, grammars could be provided with resumptive tables matching constructions and functional domains. Some grammars provide tables illustrating the range of functions associated with a given construction (see for example Evans 1995: chap. 11). However, there could also be tables illustrating the range of constructions expressing a given function, with references to the appropriate parts of the grammar. Such tables would be expanded versions of subject indexes, while at the same time avoiding the redundancy involved by treatment of the same topic from both a form-to-function and a function-to-form perspective in different parts of the grammar.

All of these solutions provide the reader with useful tools to identify the whole range of constructions used to express a particular functional domain in a language. It should also be pointed out, however, that subject indexes, electronic grammars and resumptive tables do not completely solve the problem of information recoverability in a grammar. A general problem is that the functional domains selected for discussion in a grammar cannot always be defined in a straightforward way. For example, phasal notions such as ‘begin’, ‘continue’ etc. pertain to the internal temporal development of events, and are therefore related to aspectuality (intended as a functional category, that may be expressed differently in individual languages, for example by means of verbal affixes or phasal predicates). However, as pointed out by Siewierska (1991: 118), these notions are semantically quite different from aspectual categories such as perfective, imperfective and the like. As a result, it is not clear whether they should be described under aspectuality, or under a separate category. On the other hand, strict delimitation of the boundaries of a particular functional domain may end up in a proliferation of the functional domains that should be taken into account in the grammar. Although there probably is no ready solution to this problem, awareness of it may lead to greater accuracy and typological adequacy in defining and treating these functional domains.
3. Information about interacting parameters

Grammars are often centered around categories identified in terms of specific features. However, these categories usually present a great deal of internal differentiation, in that their structural properties may vary depending on an often large number of interacting parameters. For example, complement clauses are generally defined as clauses that function as an argument (subject or object) of a main predicate. However, as first pointed out by Givón (1980) (see also Noonan 1985; Cristofaro 2003), the form of complement clauses may vary to a considerable extent depending on the semantics of the complement-taking predicate. For example, particular complement-taking predicates are more likely than others to take complements with reduced verbal inflection, and the same complement-taking predicate can take different complement types in different semantic contexts. Similarly, relative clauses are usually defined as clauses that function as adjectival modifiers of a head noun in the main clause. However, as shown by Keenan and Comrie (1977) and Lehmann (1984), the form of relative clauses may vary depending on the syntactic role of the relativized item.

Failure to recognize this fact often leads to incomplete and typologically inadequate descriptions of individual categories in particular languages. For example, descriptions of complement clauses often provide information about only a few complement-taking predicate types, or possibly even just one. This is for instance the case with Reh’s (1985) grammar of Krongo, where the description of complement clauses is supported with examples involving complements of utterance, knowledge and desiderative predicates, and nothing is said about whether or not the relevant complement types can also be used with other predicate classes. Similarly, Arokhi-anatan’s (1987) grammar of Tangkhul Naga only provides information about complements of utterance predicates.

In cases like this, it is impossible to gain a complete overview of the complementation system in the language, because the fact that a particular predicate type takes a particular complement type tells very little, or possibly nothing, about what complement types combine with the other predicate types, or even the same predicate in different semantic contexts. A related problem is that the same complement-taking predicate may take different complement types when used in different semantic contexts. This means that, when describing a particular combination of complement type and complement-taking predicate, the grammar should ideally specify
whether the relevant complement-taking predicate can also take other complement types, and, if yes, under what circumstances. Failure to do so may make it impossible for the reader to use the data provided by the grammar. This can be illustrated with an example from Bhatia’s (1993) grammar of Punjabi. Bhatia (1993: 144) argues that perception predicates such as ‘see’ take indicative complements introduced by a complementizer. However, the only example of perception complements provided in the grammar is the following:

Punjabi (Indo-European, Indo-Iranian; India)

(14) \( \text{tad \ ó \ ne \ vekhiaa \ ki \ ciRii \ uADii} \)

\( \text{then he ERG see:PAST:M:SG that \ bird:F:SG \ fly:PAST:F:SG} \)

‘Then he saw that a bird flew.’ (Bhatia 1993: 44)

The English translation of this sentence does not entail that the action described by the complement-taking predicate is one of sensory perception. The perceiver might have realized that a bird flew without actually seeing the bird (for example, he might have had indirect evidence that a bird flew by seeing the branches of a tree move, or the like). In this case, the predicate does not function as a sensory perception predicate, but rather as a predicate of acquisition of knowledge, not unlike ‘realize’, ‘understand’ or the like. Neither the description provided by the grammar nor the example glosses specify whether or not the Punjabi construction involves sensory perception. Since the example is not part of a text, this information cannot be retrieved from the context either.

In a number of languages, however, predicates like ‘see’ may be used both as sensory perception predicates and predicates of acquisition of knowledge, and may then take different complement types accordingly. One such language is English, where constructions such as ‘he saw the bird fly’ can only be used if the predicate describes an act of sensory perception. Another one is Ancient Greek, where predicates such as \( \text{hor\textasciitilde} \) ‘see’ take participial or indicative complements depending on whether they denote sensory perception or acquisition of knowledge (Cristofaro 2003: 106). This is illustrated by the contrast between (15a) and (15b) below:
This means that, in the absence of further specification, one cannot make any assumption about the actual distribution of the Punjabi construction. Moreover, in cases like this one cannot know whether the grammar does not provide any specification about the distribution of the relevant construction because that's the only possible construction, or simply because other possible construction types were not taken into account. So the information provided in the grammar cannot actually be used to determine the complementation pattern of perception predicates in Punjabi.

Cases like this are quite common in reference grammars. For example, as is well-known, in a number of languages accessibility to relativization is restricted to some syntactic roles only. When describing relativization strategies in a language, grammars often do not specify to what syntactic roles a particular relativization strategy applies, and the examples provided concern some syntactic roles only, usually the ones more accessible to relativization such as subject and object. This is for example the case in Morse and Maxwell (1999: 151–159). When describing relativization strategies in Cubeo, this grammar only mentions relativization of subjects, objects, and place adjuncts, without noting whether relativization of other roles is possible.

This possibly originates from the fact that relative clauses formed on more accessible roles are more frequent at the discourse level (Fox 1987; Fox and Thompson 1990), and easier for speakers to comprehend and produce. Hence it is easier to collect data about the relativization of more accessible roles than about the relativization of other roles. In the absence of any specification, however, it is not possible for the reader to establish
whether the relevant relativization strategies apply to all syntactic roles, or only to those that have been exemplified, and, in the latter case, whether the other roles are relativizable at all, and if so, how. Thus, explicit specification should be provided both about what roles are accessible to relativization in the language, and how these roles are relativized.

Particularly crucial in this area is a more general problem regarding the balance of corpus and elicited data in the grammar. If the data are from naturally occurring discourse, it may be the case that the corpus includes no examples of a particular phenomenon (such as for example relativization of a less accessible role) because that phenomenon is less frequent at the discourse level, not because it is altogether impossible in the language. On the other hand, if the data were elicited, and no examples of the relevant phenomenon could be obtained from elicitation, the reader may reasonably conclude that that phenomenon is impossible in the language. This implies that ideally, if data from naturally occurring discourse provide no evidence about some particular grammatical phenomenon, the relevant evidence should be sought through elicitation. In fact, although the issue of elicited as opposed to naturalistic data is an object of debate among fieldworkers (Rice, this volume), reference grammars are often based on a mixture of data from naturally occurring discourse and elicited data (see for example Frank 1990: 2; on the other hand, Heath 1984 provides an example of a grammar ostensibly based just on natural material).

A similar situation is encountered in descriptions of the constructions used to express notions such as purpose and desire that something takes place. In many languages, these constructions vary depending on whether or not the events being described share a participant. For example, in Retuarã, desiderative predicates have complements with verbs not inflected for person under identity of subject between main and complement clause, while the verb takes person agreement affixes when the subject of the complement clause is different from the subject of the main clause.

Retuarã (Tucanoan, Western Tucanoan; Colombia)

(16) a. waïa e-e-ri-ka ko-yapa-nu
   she  get-DVBLZ-NT 3:F:SG-want-PRES
   ‘She wants to get fish.’ (Strom 1992: 160)

b. waïa yi-e-ri-ka ko-yapa-nu
   she 1:SG-get-DVBLZ-NT 3:F:SG-want-PRES
   ‘She wants me to get fish.’ (Strom 1992: 160)
When describing particular constructions used to express purpose or desire, grammars often provide no information about whether the use of these constructions is related to sharing of participants between the linked events, or motion (see the discussion of Cubeo in connection with examples (11) and (12)). In many cases, though, the examples provided only concern particular cases, typically ones involving same subject between main and dependent clause, and, as far as purpose is concerned, motion. For example, Cubeo has desiderative suffixes that can be attached to verbs. In all of the examples provided in the grammar, the entity that desires the realization of some situation is the same one that brings it about:

Cubeo (Tucanoan, Central Tucanoan; Colombia)

(17) `di-wa-ij-RrowikbU Mitú-I
    go-ACST-DES-NFUT.PL.NOMLZ-be Mitú-LOC

`They customarily want to go to Mitú.’ (Morse and Maxwell 1999: 28)

The notions of purpose and desire involve an element of will, or an interest in the realization of some event. Someone’s desires or interests are more likely to concern the occurrence of events involving themselves rather than events in which they play no role. Therefore, there is reason to believe that sharing of participants between the events being described is the prototypical situation for purpose and desire constructions. This is presumably the reason why the data provided by grammars usually concern cases where the linked events share a participant. Once again, however, in the absence of further specification, one cannot assume that the relevant constructions are also used when the relevant events share no participants. So, for example, Morse and Maxwell (1999) provide no information about whether desiderative suffixes can also be used in Cubeo when the entity that desires the realization of some event is different from the entity that brings about that event, nor about how this situation is encoded otherwise. Conversely, purpose relations involving motion imply that the motion event and the event representing the purpose of motion share a participant, while other types of purpose relation have no such implication. The Cubeo construction in (11) is not used with motion verbs. When describing this construction, however, the grammar only provides examples involving no sharing of participants. As a result, there is no information about whether or not this construction can also be used under sharing of participants between the linked events, and, if not, how this situation is expressed in Cubeo.
Another domain in which grammars fail to provide adequate information about the parameters interacting with a particular category is the expression of tense, aspect and mood. For example, cross-linguistic investigation shows that the expression of habitual aspect is sensitive to whether the habitual situation is located in the present or the past. In many languages, present habitu als are zero-marked, while past habitu als are marked overtly (Bybee, Perkins, and Pagliuca 1994: 158–160). Also, habitu als are sometimes expressed by means of the same constructions used to express various types of unrealized situation, but this phenomenon seems to involve past rather than present habitu als (Cristofaro 2004). It follows that, when describing habitu ality, a grammar should ideally specify how past and present habitu als are expressed. In many cases, however, this is not specified, and the examples provided (if any) only concern present habitu als (this is for example the case with many of the grammars used in Cristofaro 2004; see Cristofaro 2004: table 1 for details).

Also, grammars often fail to provide information about what restrictions there are (if any) on the tense, aspect and mood of particular clause types. In many languages the verb forms used in particular clause types are inflected for tense, aspect and mood, but the examples provided by the grammar involve verb forms displaying just one tense, aspect or mood value. In the absence of further specification, this makes it impossible for the reader to find out whether or not the relevant verb forms may also have other tense, aspect and mood values. For instance, when sensory perception predicates allow complements with verb forms inflected for aspect, the examples provided by grammars usually involve imperfective verb forms. This is the case in the following sentence from Huallaga (Huánuco) Quechua:

Huallaga (Huánuco) Quechua (Quechuan, Quechua; Peru)

(18) \textit{Aywa-\textit{ya}ka-q-t\textit{a} rika-shka-:}
\textit{go-IMPFV-SUB-OBJ see-PERF-1}
\textit{‘I saw him going.’} (Weber 1989: 116)

Imperfective verb forms are exactly what one would expect to find in complements of sensory perception predicates, because sensory perception predicates imply that the event being perceived is ongoing at the moment the act of sensory perception takes place. If the grammar does not provide explicit information about whether or not there are semantic restrictions on the aspect value of the complement clause, however, one cannot be sure
whether the forms attested in the examples are the only possible ones, or whether other possibilities are also allowed.

What all these cases show is that selection of a particular distinctive criterion to identify a given category (such as the fact that a certain clause is a relative clause or a purpose clause) does not imply that the structural properties of that category will always be the same. For example, there will be different types of relative or purpose clauses, different habitual forms, and the like. As a result, when describing a particular category in a language, as many interacting parameters as possible should be taken into account. The choice of the interacting parameters is of course an empirical matter, in that the linguist basically will tend to notice that a particular parameter is or is not relevant to the structural properties of the category being described. Previous knowledge of the parameters that may be relevant to a particular category, based on descriptions of other languages or general typological observations, may however be of help in deciding what parameters one should focus on when collecting data on the relevant category.

4. Identifying categories

Grammars usually identify the categories they describe in terms of particular structural features, or a combination of structural features and functional properties. For example, particular verb forms are identified in terms of features such as the presence vs. absence of inflectional distinctions, the presence vs. absence of nominal morphology, or the ability to occur in independent clauses. Particular clause types are identified in terms of presence of particular verb forms (e.g., finite vs. nonfinite clauses, nominalized clauses, serial clauses), or their syntactic function vis à vis other clauses (for example, coordinate vs subordinate clauses, and, within subordinate clauses, complement, adverbal, and relative clauses). Grammatical relations such as subject or object are usually identified in terms of a combination of morphosyntactic properties, such as case marking, verbal agreement, or ability to undergo particular syntactic operations, and semantic properties such as agentivity.

As was observed in section 1, cross-linguistic research has shown that categories identified in terms of particular structural features, or combinations of particular structural features and particular functions, turn out not to be cross-linguistically robust. For example, many of the criteria traditionally taken as distinctive for subjects identify different argument roles in
different languages (A+S in nominative as opposed to S+O in ergative: see, among others, Dixon 1994). Similarly, the various properties taken as distinctive for non-finiteness (such as lack of verb inflectional distinctions, presence of nominal morphology on the verb, or inability of the verb form to occur in independent clauses) do not combine in the same way cross-linguistically, or even across different verb forms within the same language (Koptjevskaja-Tamm 1993).

This has a number of consequences for the definition of the categories described in a grammar. Since individual categories are language-specific, it is essential that the information provided by the grammar show in what ways they are similar and in what ways they differ from the categories that can be identified in other languages. A major implication of this is that the grammar should always provide as much information as possible about the criteria used to identify a particular category (such as for example subject, direct object, nonfinite verb forms etc.). As was mentioned in section 1, most authors are now quite aware of this, so more recent grammars usually provide detailed discussions of the criteria followed for establishing at least some categories. This is especially true for categories such as subject or direct objects, or parts of speech, due to the huge theoretical debate on these issues over the past decades.

In other cases, however, the existence of particular categories in the language is simply taken for granted, and the grammar does not specify whether there are language internal criteria to identify them, or they are identified on the basis of similarities with categories identified in other languages. This is often the case, for example, with the arguments vs. adjunct distinction. Adjuncts (or obliques, peripheral constituents, or satellites, as they are variously called) are usually identified as a distinct category with respect to arguments on the basis of morphosyntactic criteria such as for instance presence vs. absence of case markers or adpositions. In some cases, however, the distinction between arguments and adjuncts may be blurred, at least at the morphosyntactic level. In Anejom, for example, certain time and place adjuncts are zero marked just like objects, intransitive subjects, and inanimate transitive subjects. On the other hand, animate transitive subjects are marked in the same way as certain types of adjuncts (Lynch 2000: chap. 6). However, Lynch (2000) distinguishes between a peripheral phrase category, including all types of adjuncts, and a core argument category, including subjects and objects. Given the structural similarities between certain types of peripheral phrases and certain types of core arguments, it is not clear whether these two categories are identified on the
basis of language internal criteria (for example, structural properties that are common to all members of either category, and which make it possible to distinguish them from members of the other category), or just the fact that languages are generally assumed to have an argument vs. adjunct distinction.

Another important consequence of the language-specificity of individual categories concerns the labels used for these categories. Grammars display an overwhelming tendency to use the same labels, often deriving from traditional grammar (see section 1) for categories that display some similarities across languages; as these categories are not entirely overlapping, however, it is essential that the labels be used so as to reflect as much as possible the extent to which the various categories are alike and the extent to which they differ. This is often not the case.

For example, some languages display a variety of constructions consisting of a string of juxtaposed verbs with no intervening conjunctions. These verbs usually refer to events that are understood to be related in some way, and are often part of the same event frame. Individual verbs in the series may have a variety of forms. In some cases, each verb is fully inflected for the categories allowed to verbs in the language, may have independent arguments, and there are no specific restrictions as to the time reference, aspect and mood value of the events being described. This is in fact the case with the Mandarin Chinese construction exemplified in (13) above (Li and Thompson 1981: chap. 21). Another example from Anejom is provided in (19).

Anejom (Austronesian, Malayo-Polynesian; Vanuatu)

(19) Ekrau edou ajamrau, ek ațahni
1EXL.DL.AOR roam we.EXL.DL 1SG.AOR go.everywhere
aŋak era-i iji-teptag asga
I LOC-CS COL-nakal all
‘We wandered around and I went to every single nakamal.’ (Lynch 2000: 141)

In other cases, there are structural and semantic constraints on individual verbs. For example, in Berbice Dutch Creole each verb is fully inflected, but tense, aspect, mood, person and illocutionary force usually must be the same for all verbs (Kouwenberg 1994: 388–407).
Berbice Dutch Creole (Creole, Dutch based; Guyana)

(20) *Titijo koma nau o reja, reja*

  - time:3:SG come:IMPFV now 3:SG ride:IMPFV ride:IMPFV
  - koma nau
  - come:IMPFV now

‘When he comes, he rides, comes riding.’ (Kouwenberg 1994: 388)

Sometimes, only one verb in the series is fully inflected for the categories that are relevant to verbs in the language, and the other verbs depend on this verb for the expression of these categories. This is the case in the Anejom example below.

Anejom (Austronesian, Malayo-Polynesian; Vanuatu)

(21) *is âm lecxe-i uwu-n aan imy-athut*

  - 3SG.PAST and take-PL-TR POSS.G-his he COM-run
  - awapawap imy-apan a-nworen iyilki tiptoe COM-go LOC-place DEM.AN.SG

‘… and he took his and ran on tiptoe and brought it to that place.’ (Lynch 2000: 151)

In this sentence, only the first verb is specified for tense and person, while the following verbs only bear the comitative marker *imy-* and depend on the first verb for the identification of their time reference and the person of the subject.

A similar situation is found in the following sentence from Kobon.

Kobon (Trans-New Guinea, Main Section; Papua New Guinea)

(22) *Yad ma rîb-em dokta wös ujan g-aŋ*

  - 1.SG foot cut-SS:1SG doctor sore parcel do-IMP:3SG
  - a g-em ausik ar-bin QUOTE do-SS:1SG aidpost go-PERF:1SG

‘Because I cut my foot, I went to the aidpost so that the doctor could bandage the sore.’ (Davies 1981: 38)

In this case, only the last verb in the series is inflected for tense, aspect and mood, and the other verbs depend on it for identification of their time reference and their aspect and mood value.

These constructions are described in the literature under two major labels, ‘verb serialization’ and ‘clause chaining’. However, these labels are often used quite inconsistently from one grammar to the other. ‘Clause
chaining’ is usually used for constructions such as the Kobon one, where only one verb in the series is fully inflected for the categories relevant to verbs in the language. However, Lynch (2000) labels as ‘clause chaining’ also the construction in (19), where all verbs are fully inflected and could occur independently. Similarly, ‘verb serialization’ is used for constructions where all verbs are fully inflected and quite independent from each other, as in Mandarin Chinese (Li and Thompson 1981: chap. 21). However, this label is occasionally used also for constructions where either some of the linked verbs have reduced inflection, as in the Anejõm example in (21) (Lynch 2000: 150–152), or they are fully inflected but not independent of each other, as in Berbice Dutch Creole (Kouwenberg 1994: 388). Use of the same labels for these various constructions presumably originates from the fact that they all involve a string of juxtaposed verbs. It would however be more consistent if use of labels reflected the internal differentiation within constructions displaying this property. For example, constructions where all of the linked verbs are fully inflected, such as the ones in (13) and (19), should be labelled in the same way, and distinguished from constructions where verbs display reduced inflection, such as the ones in (21) and (22). These two construction types should in turn be labeled differently from constructions where verbs are fully inflected but not independent from each other, as in (20).

Another problem is that grammars sometimes use highly idiosyncratic labels to describe categories that are similar to categories found in other languages, and could be described by using traditional labels familiar to most linguists. For example, in Morse and Maxwell (1999) clause linkage types in Cubeo are divided into relative clauses, temporal adverbial clauses, locative adverbial clauses, ‘logical adverbial clauses’, and ‘event clauses’. One such division appears to be based on a mixture of traditional grammatical notions (relative clause, adverbial clause) and semantic notions (logical clauses, locative clauses, event clauses). The labels ‘logical clause’ and ‘event clause’ are however highly idiosyncratic, and in fact they cover clause types for which more traditional and better-known labels are available, for example clauses expressing purpose, cause, concession, conditions, and comparison. In fact, these labels are used in subsections describing the various types of logical clauses, but subsections are not listed in the table of contents, and the grammar has no subject index. So, in order to know that logical clauses correspond to well-known clause types such as purpose clauses and the like, the reader has to read the whole section on
‘logical clauses’, and they may have no reason to do so if they don’t realize that logical clauses actually correspond to these clause types.

In this case, a problem similar to the one described in section 2 arises. A reader interested in particular grammatical phenomena (for example, purpose clauses, conditional clauses, or the like) may not know in advance what labels are used in the grammar to designate these phenomena. If the labels used in the grammar do not allow easy identification of these phenomena, they may not realize where the phenomena are described in the grammar, thus missing the relevant information.

A similar situation is found in the aforementioned chapter on serial verb constructions in Li and Thompson’s (1981) grammar of Mandarin Chinese. In Mandarin Chinese, serial verb constructions may function as complement constructions, for example with predicates of acquisition of knowledge (23a). In this case, the linked clauses need not share any arguments. However, serial verb constructions are also used with complement-taking predicates involving sharing of arguments between main and complement clause, such as ‘tell to’ (23b).

Mandarin Chinese (Sino-Tibetan, Chinese; China)

(23) a. wǒ méi xiǎng dào nǐ zhù zài Nánjīng
I not think arrive you live at Nanjing
‘I didn’t realize you lived in Nanjing.’ (Li and Thompson 1981: 599)

b. tā jiào wǒmen qǐng shǎo shuō huà
s/he tell we please little speak speech
‘S/He told us please not to talk too much.’ (Li and Thompson 1981: 610)

The two cases in (23a) and (23b) are described in different sections of the chapter. (23a) is described in a section devoted to constructions where one of the two clauses is the subject or object of the other. (23b) is described in the section on pivotal constructions, that is, constructions where the same noun phrase is simultaneously the subject of the second verb and the direct object of the first verb. This distinction blurs the fundamental similarity between these two cases, that under most analyses would probably be grouped together as instances of complement constructions (albeit semantically different ones). In fact, the label ‘pivotal construction’ is a generic one that cannot readily be associated with complement constructions, so,
once again, the reader may fail to realize that some of the complement constructions of Mandarin Chinese are actually described in this section.

Of course, inconsistent use of labels from one grammar to the other, or use of highly idiosyncratic labels, may not represent a major problem as long as the grammar specifies what the exact properties are of the categories designated by the label. In fact, use of idiosyncratic labels has been encouraged within structuralism, in an effort to capture what were felt as unique properties of every linguistic system. Once typological research has shown that cross-linguistic variation is not unlimited, and reflects ordered and universally valid patterns, this perspective has been abandoned, and the need has been increasingly felt for more standardized terminology in language description.

It is however clear that inconsistent use of labels and use of idiosyncratic labels make it more difficult for the reader to find out what the differences and similarities are between the categories being described and comparable categories in other languages. Thus, a standardization in the labels used to denote particular categories would result in greater comparability of the data provided by different grammars, and a concomitantly greater typological adequacy of the grammars themselves. Such a standardization would require that choice of the labels used in the grammar should be based both on the labels used in other grammars, and typological praxis in general.

5. Concluding remarks

In the previous sections, two basic problems in the organization of reference grammars were outlined. First, the organization of the grammar may lead the user to miss pieces of information that actually are there, but are located in parts of the grammar where they may be not easily recoverable (section 2). Second, the grammar may actually fail to provide complete and typologically adequate information on the phenomena being described. This may be for two reasons. On the one hand, the grammar may fail to take into account parameters that interact with the categories being described and may determine variations in the structural properties of these categories. This results in incomplete information about the relevant categories (section 3). On the other hand, the description may be organized so as to fail to reveal the differences and similarities between the relevant categories and comparable categories in other languages, thus resulting in
lower typological adequacy of the information provided by the grammar (section 4).

A number of solutions to these problems were proposed. Recoverability of information from different parts of the grammars may be enhanced by tools such as subject indexes, resumptive tables or, in the case of electronic grammars, links between the various parts of the grammar. These solutions are empirical ones, and they are in principle independent of the theoretical orientation of the author of the grammar, and the theoretical and methodological choices made in describing particular categories. On the other hand, whether or not the grammar provides complete and typologically adequate information about particular categories is crucially related to the author’s degree of awareness about the way in which comparable categories are treated in descriptions of other languages, and cross-linguistic research on these categories. This means that the description of individual languages is crucially tied to knowledge about other languages, both knowledge about the way in which other languages are described, and knowledge about the general properties displayed by individual grammatical phenomena cross-linguistically.

The paper has taken the perspective of a typologist user interested in cross-linguistic comparison. The needs of one such user may not completely overlap with the needs of other user types. For example, the remarks in section 2 about recoverability of information from the various parts of a grammar imply that ideally a typologist would like to be able to find the information they need without having to read the whole grammar. This is in fact a practical necessity. Given the size of typological samples, that often include hundreds of languages, it is not always feasible for a typologist to read the whole grammar for each of the languages they take into account. On the other hand, the problem of information recoverability is less crucial for a user who is interested in a specific language, because such a user will probably read the whole grammar, and will therefore be able to find specific pieces of information anyway.

Another domain in which the needs of the typologist user may not overlap with those of other user types is terminology. While standardization of the terminology used in reference grammars enhances the cross-linguistic comparability of the data provided by the grammar, there may be a number of reasons for using nonstandard terminology, including the existence of established terms peculiar to the study of a particular language or language family, motivating a terminology that may be more familiar to readers interested in the language as such, rather than in cross-linguistic comparison.
Also, typologists, with their need for linguistically standardized data, need to rely on elicited data more than other types of user. As typologists are interested in the cross-linguistic manifestation of some grammatical phenomenon, rather than some particular language as such, it is crucial, from their point of view, that the grammar provide data about that phenomenon. However, as illustrated in the discussion on relativization in section (3), data from naturally occurring discourse may provide no data about the relevant phenomenon. In this case, it is desirable, from the typologist reader’s point of view, that the relevant data be obtained through elicitation.

In sections 2–4 a number of proposals were put forward that are meant to enhance the typological adequacy of grammars, such as organization of the content of a grammar in terms of functionally based categories, compliance with the results of typological research in terms of parameters taken into account in the analysis, use of elicited data as a means to supplement data from naturally occurring discourse, and standardization of the descriptive framework and terminology adopted in individual grammars. These proposals are primarily of interest to the typologist user. However, as the discussion in sections 2–4 should have made clear, compliance with these proposals should also result into greater completeness of the information provided in the grammar, and greater generality of the descriptive assumptions made in the grammar. This is of course of interest to any type of reader.

6. Notes

1. The expansion in the range of topics covered by reference grammars has also been crucially influenced by generative grammar, see Rice (this volume).

2. Two notable exceptions are Schachter and Otanes (1972) and Dixon (1972), where the notion of subject is deliberately eschewed because of the problems in applying this notion to Tagalog and Dyirbal respectively.

3. For example, some grammars (e.g. Arnott 1970; Walker 1982) seem to assume little beyond the concepts of traditional grammar. French grammars, such as for example Thomas (1963), Dez (1980), or Cloarec-Heiss (1986), are usually written within the framework of French structuralism. Some American grammars, for example Allin (1976), are written within the framework of tagmemics, while others (e.g. Vitale 1981) assume some version of transformational-generative grammar.
4. Indeed, investigators like Dixon (1997) have gone so far as to suggest this be dignified by the label ‘Basic Linguistic Theory’ to stress that this builds on a multimillennial theoretical tradition in linguistics.

5. In fact, in some cases information missing in a grammar can be recovered if the grammar has a collection of texts as an appendix. For example, it may be the case that a grammar does not say anything about whether or not a particular construction can be used in a particular semantic context, but the grammar is supplemented with texts where the construction is actually used in the relevant contexts. This is the case with Weisshar and Illius (1990), where a rather sketchy description of the grammar of Shipibo-Conibo is supplemented with texts including examples of categories not taken into account in the description itself, for example temporal clauses. It is however clear that the information that can be obtained in such a case is based on the reader’s inferences and intuitions about the language, rather than on direct evidence about the use of a particular construction. Ideally, therefore, texts should supplement explicit discussion about particular phenomena, rather than replace it.

6. For a similar perspective see Rice (this volume) on the role of generative theory in driving systematic elicitation in fieldwork.

7. For a detailed discussion about the impossibility of establishing a clear-cut distinction between arguments and adjuncts in some cases, see Glinert (1989: chaps. 15 and 21) on the distinction between objects and adjuncts in Hebrew.

8. In Vanuatu, a nakamal is a traditional meeting house where kava (an herbal drink) is served and consumed.

9. For similar observations about the use of idiosyncratic labels in language description, see Hill’s discussion (this volume) of Benjamin Whorf’s grammar of Hopi.

7. **Acknowledgements**

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### 8. Abbreviations

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<th>Meaning</th>
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