Language as Culture:
the Conventionalization of Constraints on Inference [*]

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1. Introduction

The concept of 'ethnosyntax' can be understood in at least two different ways: it can refer to the study of the interaction of (or 'interface' between) two separate entities, culture and syntax, or it can (on analogy with 'morphosyntax') refer to the view that language and culture form one entity. I will argue the latter position, that language *is* culture, in that a language is a set of social conventions which have evolved in a particular way in response to the need to constrain the inferential process involved in communication, just as conventions of, for example, eating with a fork and wearing clothes are social conventions that have evolved in response to the need to eat and stay warm, respectively. In order to expound this view it will be necessary to first discuss the nature of communication as an inferential process and then the nature of language as constraining that process.

2. Ostensive-Inferential Communication

In human communication, one person (the speaker) does something (an ostensive act) with the intention to cause another (the hearer) to come to share some information. The hearer uses inference to recognize the communicative intention of the speaker and deduce the intended information. Communication can occur without language; language is simply an instrument used to help the interpreter more easily infer the speaker's intended meaning. As Georgia Green has said, 'communication is not accomplished by the exchange of symbolic expressions. Communication is, rather, the successful interpretation by an addressee of a speaker's intent in performing a linguistic act' (1996: 1). What language does is make the communication more determinate. It is simply a more explicit tool for communication. The difference between non-linguistic communication and linguistic communication is like the difference between ripping bread into pieces with your hands, and cutting it carefully with a knife, a difference of tool or mode, with resulting differences in precision. We often communicate with our hands or other body parts, such as pointing at the wrist to ask the time, or nodding the head, or wagging the finger with pouted lips to show disapproval (there are both conventionalized and non-conventionalized gestures). Interpretation of linguistic communication involves identification of the stimulus as a linguistic act and recovery of its form. We can see evidence that this involves inference from experiments where a sound or even a word in a sentence was replaced with a cough or other sound, and hearers could still interpret the utterance properly (e.g. Warren 1970). The subjects must then have been using inference to fill in the gaps. The need of non-fluent speakers of a language for clearer and louder speech is due to the fact that they do not have sufficient knowledge of the language

and culture to be able to fill in the gaps in the perception of the utterance that are created by ambient noise. The inferential process becomes conscious when we are trying to understand an illegible word in a hand-written letter.[1]

Inference is also involved in turning the linguistic form recovered into a full proposition expressing the explicit content of the utterance, what is called the EXPLICATURE in Sperber & Wilson 1996 (similar to what was called the 'sentence meaning' by Grice (1989)), such as identifying referents, resolving ambiguities, etc., and then there is inference involved in deriving any implicatures that must be created in the processing of the explicature for the use of the explicature in that context to 'make sense' (Grice's 'speaker meaning').

Interpretation then involves more than simply decoding a signal. Even interpreting something as code-like as *1 + 1 = 2* involves inference of a non-binary number system based on the appearance of the number *2* rather than *10*. All linguists would agree that the pragmatic aspects of meaning, such as resolving ambiguities, correcting mistakes, identifying referents, identifying illocutionary force, recognizing irony and humor, and completing incomplete utterances, all must be interpreted by inference, but I would argue that ALL aspects of interpretation involve inference. The inference involved in interpretation is essentially guesses at what the communicator's intended message might be. These guesses are possible because of the unconscious assumption of the principle of relevance, given in (1).

(1) The principle of relevance (Sperber & Wilson 1996:260/270)
1. Human cognition tends to be geared to the maximisation of relevance. (cf. Bartlett's 'effort after meaning')
2. Every act of ostensive communication communicates a presumption of its own optimal relevance, such that
(a) The ostensive stimulus is relevant enough for it to be worth the addressee's effort to process it.
(b) The ostensive stimulus is the most relevant one compatible with the communicator's abilities and preferences.

The speaker then will tailor the utterance, in the case of linguistic communication, in such a way that the hearer will not have to expend unnecessary effort to create a context that will allow him/her to arrive at the intended interpretation. In doing this, the speaker takes into consideration guesses as to what information is available to the hearer at the time of utterance for use in interpreting the utterance. A speaker must decide what to make explicit and what to make implicit (and also, among implicatures, what to make stronger or weaker implicatures), and this is done on the basis of the speaker's estimation of the hearer's processing abilities and contextual resources, but also partly on politeness considerations and what we think of as 'style'.[2] The more information that the speaker assumes the hearer is

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[1] Where I work in Hong Kong, there is often an extra step in the inferential process (after inferring that some act was intended to be a communicative ostensive act): as three different languages (Mandarin, Cantonese, and English) are regularly used by the same people, and you don't know when they will use which language, inference is necessary to determine which language the person is using.

[2] An example of the use of a particular utterance form in order to convey weak implicatures for the sake of politeness is the following:

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A: Would you like to go see a movie tonight?
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able to access in the processing of an utterance, the less explicit the utterance can be. There are often a great number of degrees of explicitness possible, depending on the speaker's estimation of the hearer's inferential abilities and current knowledge state; the more explicit the utterance, the more constrained the interpretation, as in the six different possible answers to the question given in (2) (all of which have the same 'meaning'; of these, the first is attested).

(2) Q: Do you want something to drink?
    A1: (points to soup bowl)
    A2: I have soup.
    A3: No. I have soup.
    A4: No, because I have soup.
    A5: No, since I have soup, I don't need anything to drink.
    A6: No, I don't want anything to drink. Since I have soup, I don't need anything else to drink right now.

A1 does not constrain the interpretation very much, A2 somewhat more, and so-on. A1 was interpretable in the situation where it occurred, in an interaction between a husband and wife at the dinner table, but would not be interpretable in a context such as an interaction between a waiter and a customer in a restaurant. Here a form which constrains the interpretation to a much greater degree, possibly as much as A5 or A6, would be necessary.

3. Constraints on interpretation

The degree to which the hearer is forced to deduce a particular interpretation depends on the degree to which the form of the utterance constrains the hearer in choosing the contextual assumptions necessary to achieve relevance in interpreting the utterance. In (2) we saw that having more words in the utterance can more greatly constrain the interpretation, and also having more grammatical marking can more greatly constrain the interpretation. The order of elements that the speaker chooses also influences the hearer's interpretation. [3] In fact all aspects of language can be shown to constrain the interpretation, and that is in fact their *raison d'être*. Gumperz (e.g. 1977, 1982, 1989, 1992a, 1992b) has argued that hearers interpret the meaning of an utterance based on inferences about the speaker's underlying strategies and intentions, and these inferences are drawn on the basis of interpretive frames (contexts) evoked by certain linguistic or non-linguistic contextualization cues produced by

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       `B: Thanks, but I have an important test tomorrow morning.`

The implicated conclusion, a strong implicature, is that B cannot go to the movies that night, but there is a weak implicature that were it not for having that test the next day B WOULD go with A to the movies, and it is in order to convey this weak implicature that this particular form of utterance is chosen. (The proposition conveyed by the weak implicature need not be true; it may be that the speaker is just trying to be polite (save A's 'face')—the strength of an implicature is directly proportional to the degree to which the speaker takes responsibility for the hearer making that particular interpretation. In this case, if B wanted to be sure A made that interpretation, B could add *How about next week*, or some such expression.)

[3]The hearer begins to assemble the context of interpretation (the set of assumptions necessary to interpret the utterance) as soon as the first word is uttered (or possibly earlier), and this initial set will influence the eventual set used for the overall interpretation. This is true both at the clause level and at the phrase level. See for example discussion in Halliday 1994:197 of how the order of elements in the noun phrase in English is related to the degree to which the element helps the hearer identify a particular referent.

the speaker. An utterance might have many possible interpretations, and the hearer decides how to interpret the utterance based on his or her understanding of what is going on in the interaction (what type of activity the interaction is), and this understanding itself is based on recognition of identifiable or familiar patterns (frames) (Gumperz 1982:130). The type of frame 'does not determine meaning but simply constrains interpretations by channeling inferences so as to foreground or make relevant certain aspects of background knowledge and to underplay others' (Gumperz 1982:131). The speaker signals the type of activity, and alerts the hearer to how the utterance is supposed to be interpreted and how the particular utterance relates to those that precede or follow by the use of contextualization cues, which are elements of the utterance that help to signal contextual presuppositions (Gumperz 1982:130).

An example of how prosody, one type of contextualization cue, can influence how a hearer processes an utterance is the use of a rising tone to signal the relationship between two clauses. In (3) (from Gumperz 1977:201), if the first clause ends on a rising tone, then it will be interpreted as subordinate to the second clause, and therefore the relation between the two clauses will be understood as cause and effect. But if instead the first clause ends with a falling tone, then the link between the two clauses would be difficult to make, and so the interpretation might not be of a cause-effect relationship between these two clauses, especially if there were another clause preceding the first clause with which it might be linked instead, such as *I can't talk to him now*.

(3)   Because I'm busy / I don't want to be interrupted //

Another example is the difference in interpretation between (4a) and (4b) (from Gumperz 1982:110):

(4)   a. My sister who lives in New York / is very nice //
       b. My sister / who lives in New York / is very nice //

Here the difference in tone grouping is one of the main cues used to distinguish whether the phrase *who lives in New York* is a restrictive or a non-restrictive relative clause. (See also Halliday 1994:295-97 for similar examples.)

Gumperz also talks about how prosodic factors are used to determine higher level implicatures, such as whether to interpret an utterance as a joke or as sarcasm, etc. (see also Selting 1992). In (5a-b) (from Gumperz 1982:110), the difference in tone grouping leads us to interpret (5a) as a simple clarification, but (5b) as conveying an attitude of annoyance or impatience.

(5)   a. I said sit down //
       b. I said / sit / down //

Accent placement is also a key cue in interpretation. It marks new from old information (i.e. topic from focus), and links different parts of the text together, allowing us to trace the thematic development of an exposition (Gumperz 1982:114; see also Gumperz, Aulakh, and Kaltman 1982).

Gumperz argues that contextualization cues, which are constitutive of language use, evolve out of social interaction (are a set of social conventions), and are involved in all aspects of interpretation:

> To the extent that our knowledge and use of contextualization cues is a function of shared interactive history and rests on socially based presuppositions, we can say that social knowledge is part of the input that determines what we perceive as linguistic reality. In other words, all perception and interpretation rests on selective processing of perceptually available cues. Contextualization conventions help to determine which of such cues are seen as information bearing in the first place. (1992b:50)

More specifically, contextualization cues assist in three distinct levels of interpretation. At the most basic level the perception of auditory and visual communicative signals and their analysis into information units involves inference guided by contextualization cues, and is not a simple decoding (Gumperz 1992:232). At the second level, the level of speech act implicatures (or sequencing), contextualization cues assist in the determination of what Gumperz calls the 'communicative intent'. At this level are included inferences not explicitly coded in the lexical content (Gumperz 1992:232-233; cf. Wilson & Sperber's (1993:5) 'higher-level explicatures'). At the highest, most global level of framing, contextualization cues can give rise to expectations about what is to happen in the communicative activity and resolve possible ambiguities at the perceptual or speech act implicature levels (Gumperz 1992:233). Gumperz argues that '[c]ontextualization cues on this view can simultaneously act as local level signals and serve as inputs to higher level processes of conversational inference which retrieve the cultural presuppositions about the activity with reference to which interpretations are made and validated' (1989:78-9).

Gumperz has focused his discussions on the use of prosody; deixis and anaphora; lexical, code and style choice; use of certain speech-act verbs and formulaic expressions; and what Gumperz calls 'paralinguistic signs of tempo, pausing and hesitation, conversational synchrony ... and other "tone of voice" expressive cues'. But the term 'contextualization cue', according to Gumperz (1977:199), 'refers to any aspect of the surface form of utterances which, when mapped onto message content, can be shown to be functional in the signaling of interpretive frames'. In Gumperz, Aulakh, & Kaltman 1982, examples are given of how particular uses of word order, particular inflections of the verb, emphatic particles, focus marking particles, conjunctions, deictic marking, and repetition can all be involved in the signaling of interpretive frames (see also Uhmann 1992 on the contextualizing function of speech rate changes).

A similar approach to communication had been pursued within Relevance Theory (e.g. Blakemore 1987, 1988a,b, 1990; Wilson & Sperber 1993; Nicolle 1997), where, for example, it is argued that one way the speaker can constrain the interpretation of implicature is to use discourse connectives such as *so* and *after all*, which are said to contain procedural information (procedures for manipulating conceptual representations), that is, information on how to interpret the proposition, to alert the hearer to the fact that one part of the utterance has a particular relationship to another part of the utterance, such as providing additional evidence or an explanation. In (6a-b) is an example with two possible interpretations (from Wilson & Sperber 1993:11). In one interpretation the statement in (6a) provides evidence for the conclusion in (6b); in the other the conclusion in (6a) is confirmed by the evidence

presented in the statement in (6b). In this case it would be possible for the speaker to constrain the hearer's choice of one or the other of these two interpretations by adding either *so* or *after all* to the beginning of the second clause, as in (7a) and (7b) respectively.

(6) (a) Peter's not stupid. (b) He can find his own way home.
(7) a. Peter's not stupid; *so* he can find his own way home.
   b. Peter's not stupid; *after all*, he can find his own way home.

Discourse connectives such as these are said by Wilson & Sperber to not encode concepts (that is, they do not contribute to truth conditions); they just constrain the inferential phase of the comprehension, narrowing down the search for relevance, and thereby make the search easier, and make the interpretation selected more determinate.

   Work by both Gumperz and those working in the Relevance Theory framework assumes that language involves two types of elements, those that express conceptual information, and those that simply constrain the interpretation of the elements which express conceptual information. I would argue that in fact there is no functional difference between the two types, as both types of elements constrain the interpretation of the speaker's intention. Communication is not about decoding a linguistic form, but about using inference to try to understand the speaker's communicative intention. This can happen with or without language, and the only purpose of language in this process is to constrain the inferential deduction of the communicative intention. So the so-called 'conceptual' items are also constraining interpretation.[4] If I hand an assistant a piece of paper and wave my hand towards someone else (who may be in a crowd of people) with the intention that the assistant should give the paper to him, the interpretation of the action and the person it is to be given to is quite unrestrained (though may be unproblematic in that context). If, instead, I say *Give it to him,* the interpretation of the person it is to be given to is still relatively unconstrained, but if I say *Give this paper to the tall man with the red hat by the back door,* or *Give this paper to the teacher,* then I have constrained the interpretation of the referents involved considerably, and the constraining is mainly done by the extra lexical items. (In this example there are both grammatical and non-grammatical elements, but this would not be true in all languages). Given an expression like *the teacher,* do we want to say that the 'procedural' marking (the definite marking) helps us interpret the 'conceptual' item *teacher,* or do we want to say that the phrase *the teacher* (rather than pointing or using a more general noun phrase) helps us identify the relevant referent? Communication does not necessarily involve language, but the use of any amount of language constrains the interpretation more than not having language involved, and generally the more explicit the language involved, the more constrained the interpretation. In this case, *teacher* would constrain the interpretation of a particular referent more than, for example, *him,* or *person.*[5] The function of both lexical and grammatical means in constraining interpretation is the same. For example, those making a distinction between so-called 'conceptual' information and 'procedural' information might say that adding the expression *I guess* to an English declarative clause such as *I guess he's coming*

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[4]The difference between lexical and grammatical items is the generalness of use; lexicalization (idiomization) and grammaticalization are the same process (conventionalization), but differ in terms of generalness. See below for discussion.

[5]For arguments that there is no difference between 'conceptual' and 'procedural' from the point of view that all linguistic structures are meaningfull, see Langacker 1987.

would be adding conceptual information, while adding an evidential particle marking a guess to a similar clause in some other language that has grammaticalized evidential marking would be considered as adding only procedural information, yet the function/information of both is the same. It is precisely because they have this function that lexical items can grammaticalize into grammatical marking.

4. The development of language structure

Givón (1979a, Ch. 5; 1979c) has argued that language develops from pragmatic, loosely structured linguistic modes to tighter, more structured modes, and that these modes can be seen in the differences between child language and adult language, between pidgin languages and standard languages, between spoken and written registers, between informal and formal registers, and between unplanned and planned discourse. Communication in the pragmatic mode depends largely on word order and the lexicon alone, while communication in the more syntacticized mode depends much more on conventionalized constructions and morphology in tightly structured relationships. Grammar develops as the originally free collocations of lexical items become fixed in a particular structure. Paul Hopper (1987, 1988) has developed this idea into the conception of grammar as 'emergent' from discourse. He has argued that rather than taking grammar as a given (what he called 'a-priori grammar'), and then possibly seeing how discourse can affect grammar after it is established, linguists should see discourse as prior to grammar, and giving rise to grammar, as repeated patterns of discourse develop into what we think of as grammar. Grammar is then not seen as fixed structure, but something that is constantly evolving (see also Langacker 1987, Ono & Thompson 1995).

The emergent grammar view of the development of language structure is a natural corollary of a theory of ostensive-inferential communication. The discourse patterns that lead to the development of grammar are those that are repeatedly used for constraining the interpretation of utterances in a particular way. For example, in Old English the word *lic* 'like' was used so often after an adjective to make explicit an adverbial relation to a verb that it became conventionalized and developed into the adverb-forming suffix `-ly` used obligatorily in many contexts in English today. In Mandarin Chinese the frequent use of a preverbal locative phrase where there was an implicature of an on-going event led to the development of a progressive marker from the locative verb `z\ai`. What begins as a conversational implicature over time becomes conventionalized, so it is then a conventional implicature, and then can become further conventionalized until it is simply a part of the grammar that forces a particular interpretation. We can think about grammaticalization and the fixing of particular patterns in language use like the creation of a path through a field. One can cross a field any number of ways, and `there was originally no difference betw` `part that eventually became the path and the rest of the field, exce` `expedient to all go the same way through the field, and so the grass wa` `the path. Eventually people start using the path just because it is` `about whether it is the best way to go through the field.` At some point, ei conventionalization or because of some social factor (e.g. attitudes towards preserving the grass that is left), it may become recognized as the 'unmarked' way to go through the field and crossing any other way would be considered 'marked'. This conventionalization is the same whether it is the fixing of a particular word order or construction, the fixing of a lexical item in a particular context such that it becomes grammatical marking, or involves the extension of the use of already existing morphology. What we think of as a grammatical

construction (or 'constructional schema'—Langacker 1987; Ono & Thompson 1995; Barlow & Kemmer 1994) is also simply a pattern of usage that was 'instantiated frequently enough that it [now] has a cognitive status independent of any particular context' (Ono & Thompson 1995:219).

The fixing of repeated patterns into grammar is nothing more than the development of conventionalized forms that restrict interpretation, and Givón's cline of forms from more pragmatically to less pragmatically based types correlates with the degree to which interpretation is constrained grammatically rather than lexically. The development of grammar out of repeated discourse patterns then can be seen as the fixing of constraints on the search for relevance during the process of interpretation.[6] Some of these developments function to constrain the interpretation of the explicature, such as gender distinctions in pronouns, syntactic subjects, tense marking, etc., while others function to constrain the interpretation of implicatures, e.g. discourse connectives, conditionals, concessives, etc., that is, particles and other morphology that help in the determination of what has been called 'speaker meaning' as opposed to 'sentence meaning'.

There are at least four types of conventionalization that affect language structure. Morphological means for constraining the interpretation of particular functional domains develop out of the repeated use of particular lexical items for constraining interpretation in a particular context. An example from English is the development of definite marking from the frequent use of a demonstrative pronoun for constraining the identification of the referent of an expression to a contextually accessible referent.

Already available morphological marking may be extended in new ways and become conventionalized in that new use. The extension of the use of the reflexive marker from direct reflexive situations to middle situations is a good example of this. In this extension a marker that originally was used only to mark direct reflexives comes to be used in some middle situations optionally with an emphatic sense to narrow the range of possible interpretations (e.g. the use of *myself* in *I stood myself up* constrains the interpretation of the purposefulness of the action), and later comes to be used so often that it becomes obligatory for many verbs. This happened in the Romance languages (see Kemmer 1993), and also in the Tibeto-Burman language Dulong (LaPolla 1995b; see example below).[7]

A third type of conventionalization is the fixing of syntactic (rather than morphological) constraints on interpretation, such as many of those associated with the concept of 'subject' in English, for example the cross-clause same-subject constraint in coordination with a reduced second clause (see discussion below). This development is simply the fossilization of a frequent pattern of coreference. Like in the path analogy given above, it became so common to have the same subject in the two clauses it became the unmarked and assumed pattern through conventionalization.

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[6]Though I am presenting this from the point of view of constraints on interpretation, I do not assume that linguistic change is hearer-driven. From one point of view we can say it is speaker-driven, as the patterns can only become conventionalized if speakers choose to use the patterns over and over again. From another point of view the conventionalization process takes time, and involves the same people as speakers and hearers. That is, a speaker uses a particular pattern and other people pick up on that (we are creatures of habit and imitation), and repeated use of that pattern by a number of people causes it to become grammaticalized (such as the same-subject interpretation of English clause-coordination).

[7]Once this happens, there is then no formal distinction between reflexives and middles, and so some languages then reinforce or renew the direct reflexive marking, again being driven by the desire to constrain the interpretation. This has happened, for example, in Dutch (Kemmer 1993).

A fourth type of conventionalization is a type of secondary grammaticalization where a form that has grammaticalized from a lexical item and at first only constrains the interpretation of the external described situation later further grammaticalizes in the direction of constraining the interpretation of subjective (speaker-oriented, expressive) aspects of the interpretation, with a stage in between of marking textual cohesion (that is, the path of development is 'propositional ((> textual) > (expressive))'; Traugott 1990:497; see also Traugott 1982, 1988, 1989, 1990; Traugott & König 1991).[8] In Traugott 1989, three semantic-pragmatic principles of grammaticalization are given:

Semantic-pragmatic Tendency I:
Meanings based in the external described situation > meanings based in the internal (evaluative/perceptual/cognitive) situation. (p. 34)

[e.g. *behind* (body part) > (space) > (time), where it operated twice]

Semantic-pragmatic Tendency II:
Meanings based in the described external or internal situation > meanings based in the textual situation. (p. 35)

[cohesive, e.g. *æfter* 'following behind' first became a temporal connective (tendency 1), then became a marker of textual cohesion as a subordinator]

Semantic-pragmatic Tendency III:
Meanings tend to become increasingly situated in the speaker's subjective belief-state/attitude toward the situation. (p. 35)

[e.g. English *sippan* 'after, from the time that', through conversational inference from the temporal sequence came to have a causative meaning (*since*: *Since you've got a cold, we'll cancel the trip*); also *while*: OE *pa hwile pe* 'at the time that' > ME *while (that)* 'during' > PDE *while* 'although'; situation viewed as existing in the world > signal of cohesive time relation between two clauses > expression of speaker's attitude (Traugott 1990:497)]

All three of these tendencies involve movement 'in the direction of explicit coding of relevance and informativeness that earlier was only covertly implied' (Traugott & König 1991: 212). In the first two types of grammaticalization, relatively concrete concepts are being used as models for specifying more abstract concepts, and so they are examples of metaphor, but in the last type, Traugott & König argue that the development of causals, concessives, and preference or denial connectives is the strengthening of informativeness and the conventionalizing of conversational inferences. This strengthening of informativeness is said to be a type of metonymy, where metonymy is said to be 'indexical', i.e., it points to semantic relations in certain contexts, though in this case the contexts are pragmatic contexts of conversational and conventional inference, and '[t]he "indexing" involved is the pointing

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[8]The terms 'propositional', 'textual' and 'expressive' are based to some extent on Halliday and Hassan's (1976; see also Halliday 1994) 'experiential', 'textual' and 'interpersonal' metafunctions of language, respectively. Traugott's view of the development of subjective/expressive meanings has certain parallels in Halliday's conception of 'grammatical metaphor' (Halliday 1994, Ch 10).

to the relevance that conversational inferences about stereotypical situations entail.' (p. 211) This development is part of an attempt by the speaker to more and more explicitly express her perspective on what is said, and in doing this she influences the interpretation of the utterance by more and more specifically constraining the possible interpretations of her intentions.

5. Why languages differ

Language is a tool which aids in the process of inference and so is shaped by the demands of that process, just as a hammer is shaped the way it is because the main use it is put to is hammering nails. The development of particular types of linguistic structure is not teleological, any more than the evolutionary development of species is. It is in fact a type of evolution, though an aspect of socio-cultural evolution rather than biological evolution. This applies equally to the development of the lexicon and the development of morphosyntax (which are actually not two separate things—see below). Just as the evolution of species is related to particular environments, many of the conventions of a people are responses or adaptations to particular environmental factors, such as building houses on stilts where there is frequent flooding. We find conventionalizations of language also related to particular environments. For example, it is no coincidence that the Qiang people of Sichuan, China, who live on the sides of mountains along river valleys, have conventionalized in their language (Qiang; Tibeto-Burman) a complex system of direction prefixes including prefixes marking 'up-river' vs. 'down-river' and 'up the mountain' vs. 'down the mountain' (LaPolla 1997a).

(8)   Qiang directional prefixes (*ue* 'throw')
tœ	'throw up (the mountain)'	*zœ*	'throw towards the speaker'
a	'throw down (the mountain)'	*da*	'throw away from the speaker'
sœ	'throw down-river'	*œ*	'throw inside'
nœ	'throw up-river'	*ha*	'throw outside'

There has been work (e.g. Bernstein 1971, Perkins 1980, Trudgill 1996, 1997) showing that the size and complexity of the speech community will influence the use patterns of the language spoken, and this in turn will influence the form that the language takes. For example, complex inflectional deictic systems such as the one we find in Qiang are said to be more often found in small homogeneous communities rather than large complex communities (Perkins 1980).

We often find the same types of structures appearing in totally unrelated languages, but again, in parallel with evolution, where both sharks and dolphins have similar body shapes even though they are unrelated creatures, and bats, birds, and butterflies all have wings, similarities among languages may not be due to some predetermined or universal genetic imprint, but due to similar adaptations to similar environments.

As language structure is formed from repeated discourse patterns that constrain the hearer's interpretation in particular ways, it necessarily must be the case that those aspects that were being constrained were salient to the speaker and also assumed by the speaker to be salient or relevant to the hearer, at least in the contexts where the pattern was used. For example, Pawley & Lane (1998) argue that to understand the grammaticalization of serial verb constructions in Kalam (Papuan, New Guinea), it is necessary to understand that in reporting an event, a speaker of Kalam is expected to make reference to a sequence of

associated actions that express whether the actor was at the scene of the event or moved to the scene; what the actor did; whether the actor then left the scene, and if so whether the actor took the affected object along or not; and what the final outcome was. That is, where in English we would usually mention a single action to represent a series of related actions, e.g. *I cut firewood,* in Kalam the individual associated (prerequisite and consequent) actions would be made explicit. The interpretation of these aspects of the action are then generally more constrained in Kalam than in English. The expression of the various aspects of the overall multi-scene event or action in Kalam can be elaborately spread over many clauses, spread over just a few clauses, or, in the case of relatively familiar multi-scene events, can be done with a serial verb construction. It is the fact of the salience of mentioning all these different aspects of an event, plus the fact that some types of action sequences are performed regularly, that caused these serial verb constructions to become conventionalized (grammaticalized). In this case it is easy to see the 'smoking gun' of the demand on event narration that lead to this grammaticalization, but we do not need to find the 'smoking gun' in all cases to know that the grammaticalized patterns reflect the salience of the type of information being constrained.

The particular patterns we find used to constrain the interpretation reflect particular ways of construing the world. To give one example, Heine (1994, see also Heine 1997a, 1997b) discusses the four main basic event schemas (conceptual source structures) that give rise to the different types of comparative constructions found in the world's languages: the Location Schema (X is Y at Z), the Action Schema (X surpasses Z with regard to Y), the Polarity Schema (X is Y, Z is -Y), and the Temporal Schema (X is Y, then Z). Heine (1994) argues that how a particular group of people construe the comparative relation determines the type and structure of the comparative construction used by those people.

One area of culture often influences another area of culture. For example, the culture of house-building in Hong Kong includes the practice of putting the electric switches outside the door of the bathrooms, having drains in the floors of the bathrooms, and not putting any electric sockets in the bathrooms. These customs are related to the culture of cleaning, which includes the practice of spraying a large amount of water on the floor and possibly other surfaces in order to clean the bathroom. One set of conventionalizations (related to cleaning) has influenced another set of conventions (related to house-building). In terms of the set of conventions related to communication (language and language use), we can also find that it is influenced by sets of conventionalizations involved in other (non-linguistic) aspects of the culture. Many of the papers in this volume are examples of this. There are also dependencies among the conventions of language (see Aikenvald & Dixon 1998).

There are also sometimes competing motivations (DuBois 1985) for one pattern or another, but the process of a particular form becoming conventionalized is the same. For example, English lost the distinction between singular and plural second person pronouns because of a repeated pattern of using the plural pronoun when referring to a singular referent out of politeness considerations, but some Southern (U.S.) dialects have regrammaticalized a second person plural form *y'all* from repeated use of *all* after *you* to clarify when *you* was referring to a plural referent.

I have argued that the development is towards constraining the inter the utterance more explicit. The case of the Pennsylvania German cons and for expressing future actions discussed by Kate Burridge (this vo counter-example, as it seems the world view of the speakers has made t

explicit when talking about future activities and desires. Yet the co
particular patterns is still constraining the set of possible interpret
will not be held to have made a strong statement of desire or future ce

I mentioned above Heine's work showing that how speakers of a language construe a particular situation, such as a comparative relation, determines the type and structure of the linguistic construction used by those people in talking about that situation. Heine (1994) also shows that there are clear areal distribution patterns (that cross genetic lines) for the different event schemas behind the different comparative construction types. Heine's conclusion is that 'areal distribution plays a major role in the cognitive patterning underlying the development of comparative constructions in the languages of the world, and areal distribution is suggestive of massive linguistic and cultural communication' (p. 66). That is, because of massive contact, the speakers of the languages of an area come to construe an aspect of the world in the same way, i.e. share the same event schema, and this leads them to have similar linguistic constructions for representing that schema. The influence of language contact on language development is then not always directly linguistic. Learning another language means learning to think in a different way, or to construe the world in a different way, and this may then affect our native language. This is often what calquing is. Calquing is not necessarily direct linguistic influence, the way loan words are. It is often the result of influence in the way people construe events or situations. Substratum effects can also be of this type, that is, the effect of a way of thinking or the effect of deep-seated habits of language use. That is, if our native language obligatorily constrains the interpretation of some functional domain, when we learn a second language, we will tend to want to constrain the interpretation of that domain in the new language. For example, I mention below (??) that in Chinese no genitive phrase is necessary in an expression that would translate as 'I washed my hair', but English speakers learning Chinese often will add a genitive phrase in that context when speaking Chinese because they feel it is needed to constrain the interpretation. The influence can be the other way as well. The third person pronoun in Chinese does not inflect for gender, but in the early 20th century many Chinese intellectuals learned English, French, or German, and came to feel the need to constrain, at least in writing, the interpretation of the referent of the third person pronoun, and so developed different ways of writing the third person pronoun in Chinese for male, female, inanimate, and godly referents.

6. How languages differ

It has been said that languages differ not so much in what they can say, but in what they must say. This is looking at it from the speaker's point of view. From the hearer's point of view, we can say that languages differ not so much in what can be understood, but what must be understood.[9] All languages can constrain the interpretation of just about any functional domain, but most languages have developed obligatory grammatical marking that obligatorily constrains the interpretation in certain functional domains to some extent. Which domains the speakers of a language will chose to constrain, and how they constrain the interpretation,

[9]Some have also talked about this in terms of responsibility for communication being successful: In a language like German or Russian, where there is a relatively great amount of obligatory grammatical information marked in each clause, the speaker has to do relatively more work in constructing an utterance than in a language like Chinese, which has relatively little morphology. On the other hand, in a language like Chinese, where interpretation depends largely on inference, the listener must do comparatively more work in determining the intended interpretation. This is why some scholars (e.g. Huang 1984, LaPolla 1995c) have talked of Chinese being a 'cool' language (like a cool medium) and German as a 'hot' language.

are the two major ways languages differ from each other. Just as cultures differ as to what tools they use for a particular activity, for example using chopsticks as opposed to using the hands or a fork for eating, and these tools can vary in terms of specificity (e.g. Chinese people traditionally use much less specialized tools for cooking than Westerners), the tool we think of as language can differ between cultures in terms of how specialized its structures are. I would like to turn now to some examples of the ways that languages can differ in terms of specialization, and show how this relates to interpretation.

For a number of years I have been arguing that Chinese and most other Sino-Tibetan languages do not work the same way, in terms of pivots and grammatical relations, as either languages with largely nominative-accusative structure, such as English, or those that have largely ergative structure, such as Dyirbal (LaPolla 1988, 1990, 1993, 1995a, 1996). For example, in a language with an [S,A] pivot for coordination (the accusative pattern), such as English, an argument shared by two conjoined non-passive clauses can be represented by a zero pronoun in the second clause only if it is in the A or S role in both clauses, as in (9a).

(9)   a.   The man went downhill and Ø saw the dog.
       b.   *The dog went downhill and the man saw Ø .
       c.   The dog went downhill and Ø was seen by the man.

It is not possible to have the representation of the actor of the first clause coreferring with a zero pronoun representing the undergoer (O role argument) of the second clause without using a passive construction, as shown in (9b). It is not possible to say *The dog went downhill and the man saw.   If the argument the two clauses have in common is the undergoer of the second clause, in order for the two clauses to be conjoined, the representation of the argument (here the zero pronoun) must appear as the single direct argument of a passive construction, as in (9c).

In a language with an [S,O] pivot for coordination (the ergative pattern), such as Dyirbal (Dixon 1980:461ff), a shared argument which appears as a zero pronoun in the second of two conjoined clauses must be in the S or O role in each clause, as in (10a). If the argument in the second clause is instead in the A role, in order for the two clauses to be conjoined and for the argument to be represented by a zero pronoun in the second clause, the shared argument must appear as the derived S of an antipassive construction, as in (10b). It is not possible to say the equivalent of *The man went downhill and saw the dog* with a transitive second verb and a zero anaphor referring to an A argument, as in (10c) (from Dixon 1980:461-2.).[10]

```
(10)a. balan          guda         bu‡a-n                  ba‡gul   yara-‡
       she-ABS    dog-ABS   descend-and    he+ERG man-ERG see-PAST
       The  dog  went  downhill  and  was  seen  by  the  man  (Lit.:  The  dog
       and the man Øsaw)
```

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b. bayi   yara   buɟa-n   bulralɟanyu
   he+ABS   man+ABS descend-PAST see+PAST ANTI he+ABS   dog+
   The man went downhill and saw the dog (with antipassive indica   second verb).

c. *bayi   yara   buɟa-n   bura-n   baɟ
    he+ABS   man+ABS descend-PAST see-PAST the+ERG dog   ABS
   The man went downhill and saw the dog (with transitive verb a
   (yaraɟgu unexpressed).

In Chinese we don't find either the English or the Dyirbal type of restriction on cross-clause coreference. In Chinese it is possible for the shared argument of a conjoined structure to be deleted regardless of whether it is in the A or O role, as we can see from the examples in (11):

(11) a. Xiˇao gˇou¡ zˇou   d\ao sh an   d\ixi\a,   ṇ\ei ge   r|e
        little dog walk to   mountain bottom that CL person then see
        'The little dog went downhill and was seen by the man.'
        (Lit.: 'The little dog went downhill and the man saw Ø.')

   b. N\ei ge¡ r|en zˇou   d\ao sh an Ø¡ k\an j\i\an\le   jixi\u ˇao gˇo
      that CL person walk to   mountain bottom then   see   CSM
      'The man went downhill and saw the little dog.'

The result of this situation is that in languages with grammatical constraints on the control of anaphor like those we've just looked at, those constraints force a particular interpretation of an utterance. For example, if the meaning 'The man saw the dog and went downhill' was said in English, the interpretation would have to be that the MAN went downhill; but if the same meaning was expressed in Dyirbal *(balan guda baɟgul yaranɟgu b*ṵ*ra, the buɟan*) the meaning would have to be that the DOG went downhill. This forcing of the interpretation holds even if the resulting interpretation is nonsensical, as in (12), from Comrie (1988:191):

(12) The man dropped the melon and burst.

Because of the grammatical constraint on conjunction reduction in English, this sentence has to be interpreted as saying that the man burst after dropping the melon. That is, when there is a coordinate structure such as this, the rules of English syntax force the interpretation that the zero pronoun is coreferential with the S or A role argument of the first clause, and block the semantically more likely interpretation that it is the O role argument that controls the zero anaphor, that it is the melon that burst. In a language such as Chinese, though, where there is no such grammatical constraint on interpretation, the equivalent sentence would not force such an interpretation, even with the man being the topic of the utterance, as real world semantics would influence the interpretation more than the structure. Over the years I have asked well over a hundred native speakers of Chinese to translate this sentence into Chinese and then tell me who or what burst. The answer is invariably 'Of course the melon burst.' They are generally quite surprised when I tell them that the English sentence MUST mean that the man burst.

In Rvwang, a Tibeto-Burman language spoken in Northern Burma, we h
lack of constraints on the interpretation of clause coordination, as
sentences in (13).

```
(13)a. Vp ung|  Vd| s\vng vdip b| \a n\  ng| a:pm\
       Vp ung-|         Vd| -s\vng    vdip b| -\a
       Apung-AGT Adeu-LOC hit   PFV-Trans.PAST  PS  cry-TMdys-Inrans
       'Apung hit Adeu and cried.' (Adeu cried)

   b. Vp ung|  Vd| s\vng vdip b| \a n\  vh  sh\  a:pm\
      Vp ung-|          Vd| -s\vng  vdip b| -\a
      Apung-AGT Adeu-LOC hit    PFV-Trans.PAST PS  laugh-R/M TMdys-In
      'Apung hit Adeu and laughed.' (Apung laughed).
```

Here the structures are exactly the same, though the actor of the second clause is interpreted differently due to real world expectations of who would be more likely to cry or laugh after an act of hitting. In fact the interpretation is quite unrestrained; although I've written 'Adeu cried' and 'Apung laughed' after the free translations, actually the interpretation could be that the one who cried or laughed was either one of these two people, or even a third person, such as someone standing nearby watching what was happening between Adeu and Apung. Most Sino-Tibetan languages are similar to Chinese and Rvwang in not having syntactic constraints that force particular interpretations of cross-clause coreference.

Let's look at some other ways that the grammar of English constrains interpretation. One way is with verb agreement. Aside from the obvious effect that verb agreement has on the identification of particular arguments, it can also constrain the interpretation of the syntactic structure. To borrow an example from Georgia Green (1996:144), the use of singular vs. plural agreement in (14a) and (14b) forces two different analyses of the structures. In (14a) pickles and ice-cream must be interpreted as two different items about which the same predication is made, while in (14b) they must be interpreted as one item (a dish with two things combined) about which a predication is made.

```
(14) a. Pickles and ice cream are really great.
     b. Pickles and ice cream is really great.
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In Chinese it is not possible to constrain the interpretation in this way, as there is no agreement marking, so there would be only one form for both these meanings in Chinese; the inferential process involved in deciding on the proper structure (and therefore the proper interpretation) would not be constrained by the linguistic form in the way that it is in English.

In terms of whether a language constrains the interpretation of the relations between elements of a complex clause structure or not, we can give the example of verb juxtaposition in Lahu. Matisoff (1991:403) gives an example with the verb $q\ddot{}$ 'hoe' in simple juxtaposition with 12 other verbs, and contrasts the use of this one syntactic form (simple juxtaposition) in Lahu with the use of six different types of construction for expressing the same relations in English (see (15)). There is nothing in the grammar of this Lahu construction that constrains the interpretation of the relationship between the two verbs, while

in English the interpretation is constrained to a greater degree by the different constructions used.

(15) complementary infinitives *q̈¿ ˙s* 'easy to hoe'   *g q̈¿* 'help to hoe'
    `-ing` complements   *q̈¿ k* 'busy hoeing'   *t\ q̈¿* 'start hoeing'
    `modal auxiliaries` *q̈¿ c* 'should hoe'   *g q̈¿* 'must hoe'
    `adverbs`   *q̈¿ b* 'hoe away'   *q\¿   q* 'hoe again'
    `prepositional phrases` *q̈¿ p″* 'hoe for smn'   *pḧo q* 'hoe in a group'
    `subordinate clauses` *q̈¿ ni* 'hoe and see'   *c q̈¿* 'go and hoe'

Tense marking also restricts the search for the relevant interpretation. For example, to interpret the proper time frame for the situation expressed by the Chinese sentence in (16a), the hearer must depend on inference based on the context, whether overall what is being talked about is something that happened in the past or a current situation. In English, though, as English has grammaticalized obligatory tense marking, the equivalent of (16a) would be (16b), (16c), or (16d), all of which constrain the interpretation of the time frame. (As can be seen from this example, the identification of the gender of the referent (and therefore the identification of the referent) of some pronouns is also constrained by the form of the pronoun, and this too in Chinese is unconstrained.)

```
(16)a. T a   q\u xu|exi\ao.
       3sg go  school
```
    b. She went to school./He went to school.
    c. She is going to school./He is going to school.
    d. She goes to school./He goes to school.

We can see that compared to Chinese, English obligatorily constrains the interpretation of the time frame, limiting the identification to either a past or non-past situation, but within those broad categories, say, for example given a past tense form, to determine how far in the past the action was the interpreter of the utterance must rely on linguistically unconstrained inference. That is, if I say *I already ate lunch,* then you will probably draw the inference that I ate within the last hour or two, or at least within today; if I say *I already went to the doctor,* then you may make the inference that it was within the last few days; if I say *I already went to Tibet,* then you will not make the inference that it was within the last one or two hours, or even within the last few days, as it could have been quite some time ago. The search for the proper interpretation of the length of time from an overtly marked past action to the time of the speech act is not further constrained grammatically in English. If we then compare English to Rvwang, we can see that in Rvwang there is a four-way past tense system which marks whether the action took place an hour or two ago, a few hours ago but within this day, sometime from yesterday up to a year ago, or more than a year ago. The examples in (17) all are of the verb *d* 'to go'.

```
(17)a. \ang d    |a/S/he left, went away (within the last 2 hours).'
         3sg go DIR-Intrans.PAST
     b. \ang d    di\S/he went (within today, but more than two hours ago).'
         3sg go TMhrs-Intrans.PAST
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a [S/he went (within the last year).'
        3sg go TMdys-Intrans.PAST
d. \ang d\ y [S/he went (some time a year or more ago).'
        3sg go TMyrs-Intrans.PAST

The point is that languages differ quite a lot in how much they constrain the search for the most relevant interpretation, and in what aspects they choose to constrain. As can be seen from these examples, while Rvwang constrains the interpretation of the time frame more than English, it does not constrain the search for the referent of a pronoun as much as English does (and we saw does not have the same-subject constraint that English has). From this we can see that we can not talk about LANGUAGES as being more or less grammaticalized or their interpretation more or less constrained, only particular FUNCTIONAL DOMAINS being more or less grammaticalized or their interpretation more or less constrained in a certain language.

An interesting three-way contrast of what is or is not left to inference in different languages can be seen from a comparison of Chinese, Tagalog and English. The normal way of saying 'Let's go' in Chinese involves just a verb and a particle, as in (18a), and only the use of the hortative particle constrains the interpretation of the actor referent (so it could be 'you go' or 'we go', but not 'he goes'); in Tagalog, as in (18b), it is normal to just say *Tayo na,* which is the 1st person plural inclusive pronoun plus a change of state marker, with no verb, and leave the interpretation of the action suggested unconstrained (it could mean 'Let's go' or 'It's our turn'), while in English both the pronoun and the verb must be specified, so the interpretation of the actor and the action are both obligatorily constrained.

(18) a. Zˇou ba!
        go   hortative particle
        'Let's go.' or '(Why don't) you go.'

     b. Tayo   na!
        1pl.incl CSM
        'Let's go.' or 'It's our turn.'

Grammatical marking can also function to constrain the interpretation of an utterance by canceling implicatures. For example, the most unmarked interpretation of (19a) would be that the speaker had direct evidence for the claim that the sky had cleared, but this implicature can be canceled by adding extra lexical items, such as the modal verbs *should be/have* or *must be/have*, as in (19b), or a whole clause, as in (19c). In a language with evidential marking that marks assumptions arrived at through deduction differently from those gained through direct experience, such as Qiang, the canceling of the implicature can be done with a single grammatical suffix, as can be seen in comparing (20a) and (20b) (from LaPolla 1997a).

(19) a. The sky has cleared.
     b. The sky should have cleared (by now).
     c. The sky has cleared, I guess.

(20) a. mœ tœ-˘qa-ji.
      sky DIR-clear-CSM
      'The sky has cleared.' (direct experience)

    b. mœ tœ-˘qa-ji-k.
      skyDIR-clear-CSM-INF
      'The sky has cleared.' (guess based on inference rather than direct perception)

Languages can also differ in terms of the type of grammaticalization used to constrain the interpretation of a particular functional domain. For example, given the Chinese sentence in (21a), the interpretation that the hair being washed belongs to the person doing the washing is purely a matter of inference, as given the right circumstances (such as a professional hair-washer in a barber shop) it could mean the person is washing someone else's hair, but in the English and Rvwang examples in (21b) and (21c) the interpretation is constrained by the obligatory use of the genitive phrase on the object and the reflexive/middle marking respectively.

(21)a. Tā z\ai xʾ fˈa
     3sg PROG wash hair
     'S/he is washing (her/his) hair.' (Lit.: 'S/he is washing hair.')

    b. He is washing his hair.

    c. \ang n z|vl-sh\ – e
     3sg hair wash-R/M-NPAST
     'S/he is washing her/his hair.'

In both English and Rvwang the interpretation of the relationship between the actor and the undergoer is constrained, but by very different grammatical categories.[11]

7. Implications of this view of language

What I am arguing for involves a different way of viewing structure. Rather than assuming that language structures are the building blocks of relatively effortless deterministic

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[11]In earlier papers (LaPolla 1990, 1993, 1996) I have compared patterns of syntactic behavior in Chinese with those in accusative, ergative, active, and Philippine type languages, and have shown that Chinese does not pattern like any of those systems. I have argued this is because Chinese has not grammaticalized a syntactic pivot for any of its constructions. Chinese therefore should not be considered accusative, ergative, active, or of the Philippine type, but is it another type, possibly called a 'neutral' type, or is it a non-type? Given the facts mentioned above, and others of a similar nature, the tendency has been to see Chinese as another syntactic type, to try to make a syntactic relation out of topic or topic chain (Huang 1989, Shi 1989, Her 1991), or to see 'topic prominence' as a syntactic type in opposition to 'subject prominence' (as many have done based on Li & Thomspon's (1976) original proposal of these concepts). I would like to argue instead that a lack of evidence of constraints such as we find in Chinese is precisely that, a lack of constraints. When we say 'type', we mean a set of constraints of a certain type, and if a type is a set of constraints, then the lack of evidence of constraints in Chinese is evidence of the lack of a type, not a separate type. There are ways that Chinese has grammaticalized constraints that English has not, such as numeral classifiers, but in terms of the constraints associated with subject in English, Chinese simply has not grammaticalized them, and so what we get is less constrained inference.

interpretation and treating ambiguous expressions as aberrant, we should assume that forms used in communication are inherently indeterminate (Reddy 1979; Grace 1987), and look at structure from the point of view of how it constrains interpretation, that is, how interpretation is made more determinate by, for example, the grammaticalization of subject or other grammatical categories. Most linguistic studies, even many of those that use natural language data rather than made-up sentences, still take the grammar as given, and only look for the 'interface' between semantics and syntax or pragmatics and syntax. For many, such as Susumo Kuno (e.g. 1987) and Ellen Prince (e.g. 1988), pragmatics is simply another module of the package, and not the foundation of communication and therefore of grammar.[12] The view I am presenting here is that the fundamental aspect of communication is not the linguistic structure, but the interaction of the speaker and hearer in performing a communicative activity. The role of the context in the performance of this activity involving the interpretation of utterances is not to simply supplement semantic meaning; the context is the base on which all communicative activity depends.

To take one example of what I mean by looking at grammar in a different way, we can look at Ekkard König's (1995) excellent study of the meaning of converb constructions. This paper focuses on how the converb constructions are vague and so need to be enriched by contextual factors. That is, König takes the form of the converb construction as something basic and then tries to see how contextual factors help us to interpret the meaning of the converb construction. He says that general background assumptions and contextual information and general principles of language use 'make an important contribution to an interpretive enrichment of the nonspecific basic meaning of converbs.' (p. 83). An alternative possibility is to look at the utterance and try to interpret the speaker's communicative intention, and see how the use of a particular structure, such as a converb construction, constrains our search for the proper interpretation of the speaker's intention, that is, how the use of a particular grammatical form constrains our search through general background assumptions and contextual information and general principles of language use in order to help us find the intended interpretation. Rather than taking grammar as basic and trying to interpret grammar, we should see inference as the basis of communication, and try to determine how grammar develops to constrain interpretation.

The view of grammar I am presenting here means not trying to define what, for example, a 'subject' is, the way Keenan (1976) did, assuming it is some sort of 'thing', but seeing what we call 'subject' in English as a set of constraints on the interpretation of certain syntactic constructions such as clause coordination, etc., and seeing which constraints individual languages have or have not grammaticalized as part of their grammatical system (see Van Valin & LaPolla 1997, Ch. 6). It also means not inventing covert movements and structures to try to explain all differences of interpretation as differences in syntactic structure.

One consequence of this view is that there is no difference in quality or type between lexicalization and grammaticalization. Both are processes of conventionalization, and differ only in the generalness of application. That is, lexicalization affects only a single specific item (whether long or short), whereas grammaticalization applies more generally to a class of items. This forms something more like a continuum, rather than discrete categories. This view also implies that much of language use involves recall of complete forms, including sentences, from memory rather than pure generation of totally new forms, as these

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[12]For arguments against the modular view of pragmatics, see Wilson & Sperber 1986.

remembered forms are what become fixed syntactic patterns (constructional schemata). As with so many other things, Bolinger (1961, 1976; see also Ladefoged 1972, Pawley 1985, Grace 1987) was ahead of his time when he argued for something like schemata, what he called 'idioms', and combinations of schemata, what he called 'syntactic blends' to form new syntactic structures, and attempted to show 'the permeation of the entire grammatical structure by threads of idiom' (p. 366). He argued against a purely generative view of grammar, suggesting that our use of grammar was partly creative and partly a matter of memory: 'At present we have no way of telling the extent to which a sentence like *I went home* is a result of invention, and the extent to which it is a result of repetition, countless speakers before us having already said it and transmitted it to us in toto. Is grammar something where speakers 'produce' (i.e. originate) constructions, or where they 'reach for' them, from a preestablished inventory, when the occasion presents itself? ... Probably grammar is both of these things ... ' (p. 381). A corollary of this is that there are then no clear lines between lexicon, morphology and syntax, as they form continua of generalness and rigidity (the degree to which they are fixed) (see Bolinger 1976:3; cf. also Langacker 1987).

Looking at language this way makes possible explanations not only of why a particular type of marking develops, but also of why the use of marking that has already developed becomes extended in predictable ways, such as the development of agentive marking from ablative marking or the extension of reflexive marking to middle situations (see LaPolla 1995b). The development is in the direction of greater specificity and a more constrained set of possible interpretations, utilizing resources already present in the language when possible.

This view of language development also has a number of other important implications for linguistic theory. I will mention three here: (a) As languages differ in terms of constraining interpretation, both in terms of constraining or not constraining a particular type of interpretation (functional domain), and also in the degree to which the interpretation is constrained and how it is constrained, the differences between languages are gradient differences, not simple parameters. (b) As these constraints are the result of grammaticalization, they are therefore not genetically hard-wired. `(c) (a second order conclusion) The human language ability then can not be an autonomous programmed module; language development and use must be based on gen structures. In short, from the point of view presented in this pape` genetically determined parameters for language features, such as [± configurational], makes no more sense than saying that there are genetically determined parameters for other conventionalized behaviors, such as [± necktie-wearing].

This view has implications for the history of language development as well. We have seen that languages differ in terms of what aspects of interpretation their speakers chose to constrain, and in how they constrain it. There is no absolute necessity for constraining any particular aspect of interpretation. What aspects the speakers constrain and how they constrain them changes over time with the development of language. Though we cannot know for sure, the development of human language should have been something like the development of language ability in children. Languages would have begun as simple conventionalized vocalizations, aided by hand gestures. Little by little lexical items would have become conventionalized, but there would not be any constraints such as the cross-clause coreference constraint (there are plenty of languages that still do not constrain interpretation in this way) and without any grammatical marking, so at that stage constraints on the interpretation would have been limited to lexical items and pragmatically determined

word order. With time repeated discourse patterns got fixed in the language, leading to the grammaticalization of grammatical marking and the fixing of particular structural constraints. At this stage interpretation is more constrained; still involving inference, but inference constrained by an the grammar. The fact that there are no languages without grammar is not evidence against this view of development, as languages have been evolving for over 100,000 years. Even pidgins are formed on the basis of already evolved languages by speakers used to having grammatical constraints on interpretation.

5. Summary and Conclusions

Communication, linguistic or otherwise, is based on inference. A speaker (communicator) performs an ostensive act in order to communicate. This gets the attention of the hearer (interpreter), and the hearer must first infer that the speaker has a communicative intention and it is directed at the hearer. Then the hearer must work to recover the (visual or acoustic) signal that the speaker has produced, and attempt to make sense of it, first arriving at what has been called the 'explicature', then determining the implicatures which must be created in order for the explicature to make sense in the context of the communicative activity. All of this is done using inference; all aspects of interpretation involve the creation of a set of assumptions, a context, which can be added to whatever part of the signal or message has been recovered up to that point (it is a dynamic process) to deduce the most likely form and interpretation. Communication is not a simple matter of coding and decoding. The inference involved in communication is essentially guesses at what the communicator's intended message might be. These guesses are based on the principle of relevance, i.e. the assumption that an ostensive act involves a guarantee of relevance, and that the communicator will chose the form for the ostensive act that will most likely lead to the intended interpretation. The speaker then will tailor the utterance, in the case of linguistic communication, in such a way that the hearer will not have to expend unnecessary effort to create a context that will allow him/her to arrive at the intended interpretation. In doing this, the speaker takes into consideration guesses as to what information is available to the hearer at the time of utterance for use in interpreting the utterance. The most straightforward reflection of the latter aspect is the amount of lexical content that the communicator includes in the utterance. Grammaticalized marking (including intonation) can also be used to help the hearer process the utterance by constraining the search for relevance. The grammatical marking performs the same role in constraining or guiding the interpretation of the utterance that an increase in the number of lexical items can have.

Grammar develops from repeated patterns of language use, and is often extended in its use by metaphoric and metonymic processes. Grammatical marking develops out of repeated use of lexical items that eventually get fixed in a particular structure. A second aspect of grammar is the development of constraints on structures such as those we associate with the concept of 'subject' in English, for example the same-subject constraint in clause coordination with a reduced second clause. With time repeated discourse patterns get fixed in the language, leading to the grammaticalization of grammatical marking or the fixing of particular structural constraints. While the development is not teleological, it can be said that structure develops to constrain interpretation, as the initial repeated pattern that eventually became fixed as grammar was used to constrain the interpretation. Languages come to differ in terms of what will be constrained and what will not, in terms of the degree to which interpretation of a particular functional domain is constrained, and how particular functional

domains are constrained, because of the social behavior and the world view of the speakers of the language. Language is then a set of evolved social conventions like any other set of evolved social conventions within the total set of conventions we define as 'culture'.

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