Principles of event framing:
genetic stability in grammar and discourse

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1. Introduction

Ever since Wilhelm von Humboldt's (1836) pioneering study of Nahuatl,[1] linguists have recurrently recognized that languages differ fundamentally in the syntactic weight they attribute to noun-phrases as the arguments of a verb. Currently, the most prominent attempts to turn this intuition into a precise hypothesis revolve around the notion of 'configurationality'. Under one reading of this notion, particularly favored in Transformational Grammar (Jelinek 1984, Speas 1990, Hale 1994, Baker 1996, Pensalfini, in press, etc.), languages are said to differ in whether arguments are associated with phrase-structure position in the clausal core or whether they are relegated to optional adjunct positions (also cf. Van Valin 1985, Mithun 1985 and others for similar ideas in other theoretical frameworks). Another popular reading of 'configurationality', associated mostly with work in Lexical Functional Grammar (K.P. Mohanan 1982, Hale 1983, Simpson 1991, Austin & Bresnan 1996, Nordlinger 1998, etc.), locates the typological parameter in the degree to which phrase-structure and argument roles are interconnected. Common to these approaches is that they take variation in phrase-structure to play a fundamental role in typology and therefore predict that word order and word order freedom, for instance, are core correlates of such a typology. Such parameters, however, are well-known to rapidly change in diachrony and to easily spread in contact zones (Masica 1976, Nichols 1992 and in press, Austin & Bresnan 1996). Also, they bear little prospect for a wider typological perspective that seeks to correlate grammar with issues of language use and cognition (e.g., Hopper & Thompson 1980, 1984, Givón 1984, 1990, Seiler 1984, Seiler & Premper 1991, Foley & Van Valin 1984, Van Valin & LaPolla 1997, among many others). In this paper I propose that an alternative assessment of the

syntactic weight of NPs yields a typology that is genetically much more stable[2] and that has systematic repercussions in discourse patterns and their cognitive background.

The typology is conceptualized in terms of 'event framing', i.e., the way in which cognitive participation frames (in the sense of Fillmore 1977) are mapped into linguistic clause structures. Cross-linguistic research suggests that event framing varies along principled lines (Bickel 1997, in press-b; Bickel & Yadava 1999). In the following I concentrate on Indo-European (IE) and Sino-Tibetan (ST) languages and review evidence from Bickel (1999a) that despite strong variation in superficial morphosyntactic appearance (case alignment, word order, clause-linkage types, etc.) (Section 2), both families are historically stable to a remarkable degree in the choice of event-framing principles — even in the intense contact zone of these languages in the Himalayas (Section 3). In Section 4, I argue that the differences in event-framing allow predictions about discourse preferences, specifically about the degree to which languages tolerate clauses with one or more overt argument NPs ('NP-density'; cf. Munro & Gordon 1982): event-framing in Indo-European strongly integrates NPs into clause structure, resulting in high overall NP-density, whereas Sino-Tibetan principles of event framing tend to dissociate NPs and verbs, which correlates with low NP-density. This difference is discussed in Section 5 against the background of the heavy mutual assimilation that characterizes other parts of grammar and discourse style in IE and ST languages of the Himalayas. Section 6 closes the paper and offers some speculations about the interplay of opposite forces in processes of sociocultural assimilation and change.

This paper is largely programmatic and exploratory in nature and rests on a small-scale pilot study rather than a full-fledged analysis. Extensive research that tests the proposed hypotheses against larger and more balanced discourse samples is currently being designed.

2. Areal convergence in syntax

Both Indo-European and Sino-Tibetan are prime examples of how strongly a language family can typologically diversify under the pressure of areal spread features in syntax. Word order (Dryer 1992), for example, is an areal feature: IE languages of Europe follow the right-branching ('VO') pattern and its correlates whereas their relatives in South Asia

comply with the same left-branching ('OV') type that is characteristic of Dravidian and most ST languages (Masica 1976).

Types of case-marking, too, are better predicted by areal than genetic affiliation: European IE languages show an accusative case system, while South Asian IE languages are with few exceptions ergative and follow in this regard the pattern found in those ST languages that have case (Masica 1976). The reverse pattern, where it is the ST rather than the IE languages that split on areal factors, is found in the expression of feelings. IE languages tend to encode experiencers as the 'goal' or 'receiver' of a directed experience, i.e., by using a dative or accusative case. An alternative, but usually less common type encodes experiencers as nominatives. ST languages of South Asia follow this Experiencer-as-Goal pattern (1) or use plain nominatives, while in South-East Asia they are in line with Tai-Kadai, Miao-Yao and Mon-Khmer languages and use what Matisoff (1986) has termed 'Psycho-collocations' (cf. Jaisser 1990 and Matisoff, pers. comm.) or, haplologized, 'Psychollocations'. In these expressions, the experiencer is marked as the possessor of an affected body part (2).

(1) a. *Dolākhāe Nepālbhāṣā[3] (ST, Nepal)* (Genetti 1994)

thau-ta   gyāt-ki.
REFL-DAT fear-1sPT

   b. *Nepali (IE)*

malāī   ḍar lāg-yo.
1sDAT   fear be(come).perceptible-3sPT

   c. *Russian (IE)*

mne   strašno.
1sDAT frightened

'I am scared / afraid.'

(2) a. *Lai Chin (ST, Burma)* (Van-Bik 1998)

ka-niŋ   a-ṭiː.
1sPOSS-heart 3sS/A-fear:Σ1

   b. *Thai (Tai-Kadai)* (Matisoff 1986)

tòg caj
heart fall

'I am scared / afraid.'

Interestingly, ST languages at the border between the South Asian and the South East Asian domain of influence, feature both patterns. This is exemplified by Belhare, which is spoken in South-Eastern Nepal. There is no dative or accusative case, whence the zero-marked absolutive is used instead to express the experiencer-goal:

(3)   a.   *Belhare (ST, Nepal)*

a-kitma   kar-he.   (Psychollocation)
1sPOSS-fear   come.up-PT[3sS/A]

'I am afraid.'

   b.   *Belhare (ST)*   (Experiencer-as-Goal)

ŋka hagliũa lus-e.
1s   sweat   be(come).perceptible-PT[3sS/A]

'I am hot.'

   c.   *Nepali (IE)*

malāī garmī lāg-yo.   (Experiencer-as-Goal)
1sDAT   heat   be(come).perceptible-3sPT

'I am hot.'

   The dominance of geography over genetic affiliation also holds on the sentence-level: clause linkage in European IE languages is achieved primarily by what Longacre (1985) calls 'co-ranking', i.e., by finite clauses and conjunctions which differentiate an adverbial subordination type from coordination and chaining. South Asian IE languages, by contrast, follow the pan-Asiatic pattern of converb constructions where a single type of nonfinite verb forms ('converbs') covers both adverbial modification and narrative chaining, relegating conjunctional constructions (if any) to ad-sentential subordination (topic clauses). ST languages show an areally determined split too: most ST languages in South Asia and the Himalayan plateau — e.g., Nepālbhāṣā, Hayu or Tibetan — follow the converb type (Poucha 1949, Masica 1976, and many others), whereas in East and South East Asia the dominating clause linkage type is verb serialization without obligatory linking morphemes (although such morphemes are occasionally available as options; cf. Matisoff 1969 on Lahu). A special case are languages of a region extending from Orissa through Bihār to Eastern Nepal, where ST languages share a third type of clause linkage with Munda and North(-Central) Dravidian languages (Ebert 1993, 1999). This type relies on converb constructions with various degrees of finiteness, limiting the use of nonfinite verbs to tightly embedded adverb clauses (also cf. Bickel 1998).

Further examples for the dominance of areal over genetic affiliation could be adduced from the domain of relativization, numeral classifiers, compound verbs and much else beside. In the following, however, I want to turn my attention to the opposite, viz. to syntactic features whose distribution is better predicted by genetic rather than areal features.

3. Interface constraints and genetic stability

A common aspect of the areal features surveyed in the preceding is that they concern for the most part the inventory of grammatical units and the form of their markers. If combinatorial CONSTRAINTS are involved, they are of a purely formal nature, deciding on the unmarked direction of phrasal branching. To know about these constraints, speaker and hearer need not pay attention to what is being conveyed in a specific utterance. For example, if a language is left-branching and has, therefore, postpositional phrases, pre-nominal genitives, a verb-final clause structure, etc., this ordering constraint holds irrespective of the semantics of the individual PPs, NPs and IPs that are used in a given utterance. In other words, this type of combinatorial constraint is not sensitive to the interface of syntax with semantics.[4] There are other constraints, however, which manifest precisely this kind of interface sensitivity:

(4)   INTERFACE CONSTRAINTS are combinatorial constraints which include in their definition information about both the kind of grammatical unit to which they apply and about a grammatically restricted part of their semantic content.

I hypothesize that for these constraints, genetic affiliation is a better predictor than geographic location:

(5)   GENERAL HYPOTHESIS:
      Principles governing interface constraints are genetically more stable than the form and inventory of grammatical units.

Constraints based on the syntax-semantics interface involve notions of basically two kinds: grammatical relations ('GR') and agreement type ('AGR'). Constraints of both kinds apply to the combination of grammatical units — such as, e.g., a control verb and an embedded infinitive in the case of GR-constraints, NPs and conjugational desinences in the case of AGR-constraints. At the same time, the constraints are sensitive to semantic features of these units: GRs are mapped from semantic roles, AGR concerns a specific relation between semantic features:

(6) a. GR-CONSTRAINT: unit A and unit B can combine only if there is an argument α in A and/or B such that α participates in a specific GR, understood as a grammatically restricted set of semantic roles.

   b. AGR-CONSTRAINT: unit A and unit B can combine only if a grammatically restricted subset of semantic features in A and B are in a specific AGR-relationship, understood as a grammaticized relation of identity, partition or apposition (or other).

There are several typological options on how GR- and AGR-constraints are defined in particular languages, and these option largely depend on the interplay between two levels of linguistic structure: the clause-level and the predicate-level. Figure 1 gives an overview of the options that are available in many languages when event participants are encoded or 'framed' in either or both of these levels:

semantic roles: *referential features:*

Clause-level coding choice: NP-frame: $\langle A...P \rangle$ NP: $\{F_1...F_n\}$

Interface constraints: GR   AGR

Predicate-level coding choice: V: $\langle A...P \rangle$ V-agreement: $\{F_1...F_n\}$
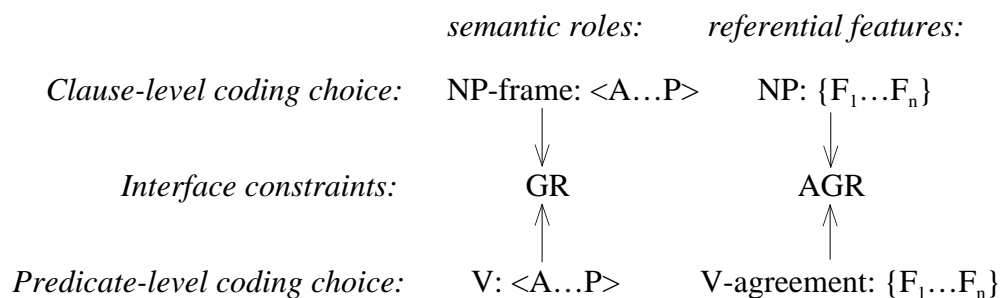
FIGURE 1: CORE DIMENSIONS OF EVENT FRAMING

A first coding choice for semantic roles is on the predicate-level: which verb is used largely determines the kinds of participants that are represented as valence-bound arguments and in which role they are portrayed. This is perhaps best illustrated by the often-

discussed difference between *sell* and *buy* in English, which, albeit conveying the 'same' event with the 'same' participants, impose a different constellation of participants in terms of semantic roles (Fillmore 1977). Semantic roles on the predicate-level are labeled 'participant roles' by Goldberg (1995). Another coding choice that many languages exploit is found on the clause-level and relates to case-marking on NPs or the assignment of NPs to certain phrase-structural (configurational) positions. I subsume both these possibilities under the notion 'NP-frame'. Choosing between NP-frames corresponds to what Fried (1998, 1999) calls 'viewpoint assignment', an operation that maps participant roles into specific clausal frames. It is best illustrated with alternations like the following, where one and the same verb (*to swarm*) associates with either an 'actional' NP-frame that gives prominence to the stimulus argument as an 'initiator' of an action (7a) and an 'attributive' NP-frame that highlights the location as a 'patient' that is 'befallen' by an event (7b) (from Fried 1999):

(7)　a.　The bees are swarming in the garden.　　(Actional frame)
　　　b.　The garden is swarming with bees.　　　(Attributive frame)

Roles as defined by constructional frames are called 'argument roles' by Goldberg (1995), distinguishing them terminologically from predicate-level roles ('participant roles'). Often, the choice of NP-frames and their associated argument roles is predictable from the verb (as when a specific verb 'governs', say, the genitive) or the tense/aspect system (as when, say, perfective aspect requires an ergative – absolutive case frame).

　　Semantic roles appear schematically in Figure 1 as ordered sets '<A…P>'. On the predicate-level, the ordering follows typically (if not universally) a hierarchy based on agency potential and animacy likelihood (see Foley & Van Valin 1984, Givón 1984, Bresnan & Kanerva 1989, among others). For our immediate purposes a simplified hierarchy suffices:

(8)　SEMANTIC ROLE HIERARCHY (SIMPLIFIED):
　　　A ⟵——————————————⟶ O
　　　　agent experiencer theme patient

On the clause-level, roles are semantically modified by NP-frames and their ordering can be reversed through viewpoint assignment (cf. (7b), for example), although it often follows the same hierarchy as in (8). [5]

Turning to the coding of referential features ('F' in unordered sets in Figure 1), there is again a coding choice on both levels. On the predicate-level, referential features are coded in many languages by verb agreement or, with similar function, pronominal clitics. In Maithili (IE), for instance, the choices offered by verb agreement covers the referential domains of person, honorific degree, distance and focus: one and the same participant can be coded as honorific or not, as near or far, as in-focus or out-of-focus, etc. Choices on the clause-level result in the selection of certain NP features as what is usually thought of as agreement 'triggers' (e.g., person and number features). Clause-level choices often coincide with what is selected by the agreement (or clitic) system, but we will see in Section 3.2 that this is by no means necessarily so.

Note that from a typological perspective, none of the four coding devices in Figure 1 is obligatory. Many languages, for example, use only agreement, others only NP-frames: in the terminology of Nichols (1986, 1992), they are exclusively head- or dependent-marking, respectively. Other languages employ neither NP-frames nor agreement, as in the case of, say, Chinese or Thai. Most languages allow free dropping of NPs, retaining only a verb or, less commonly, only an agreement-bearing element (as in the Australian language Jingulu; cf. Pensalfini, in press). Many languages also tolerate the use of NPs alone, without any predicate-level item or at least without lexical verbs (retaining only auxiliaries, copulas and other agreement-bearing elements). Such NPs can appear with a certain frame, as is typical, e.g., in Russian verbless sentences (*My ix i granatami, i iz avtomatov, i štykami* 'we them with grenades, from submachine-guns, with bayonets'; see Weiss 1993, Nichols 1993). Or they may occur without frames, as in 'nominal sentences' (*Him — a liar?*), where there is not much perspectivization beyond a general topic-comment articulation, or, indeed, no structure at all, as in exclamations like *Fire!* (see Seiler 1984, Broschart 1991).

In Figure 1, the Interface Constraints appear between the clause- and the predicate-level and are potentially sensitive to the content on both levels (cf. the arrows in Figure 1). Like the coding choices, Interface Constraints hold either for the role or the reference system. One the one hand, there are GR-constraints that impose conditions on argument sharing and gapping in certain types of clause linkage or, within a single clause, that select specific arguments as the exclusive triggers of agreement.[6] In the referential

system, on the other hand, there are AGR-constraints that determine the matching of nominal and conjugational features in the AGR-system. Like the coding choices summarized in Figure 1, both types of constraints are optional and subject to substantial cross-linguistic variation. Following the hypothesis in (5), I submit, however, that this variation is genetically determined: in IE, GR-constraints are determined by NP-frames and perhaps additionally by predicate-level roles, while in ST they are determined exclusively by predicate-level argument structure. AGR-systems in IE languages are restricted to identificational relations between nominal and conjugational features, while in ST they allow for various other types of relations. In the following, I first discuss GR-, then AGR-constraints.

3.1 GR-constraints in Indo-European and Sino-Tibetan

In some IE languages, the primary GR — the 'subject' — is often a straightforward correlate of the NP-frame that is used, and in these languages most GR-constraints can be formulated simply by specifying a case or phrase-structure position and its associated viewpoint semantics (Fried 1994, 1998, 1999).[7] In other IE languages, GR-constraints are sensitive to both clause-level and predicate-level coding choices. Verb agreement in Indo-Aryan, for instance, is usually determined simultaneously by (i) a subset of case-markers and their associated frame semantics and (ii) a subset of arguments as defined by lexical verb semantics (cf. Bickel & Yadava 1999, drawing on earlier suggestions by Kachru *et al.* 1976 and T. Mohanan 1994). The relevant cases are usually ergative and nominative; predicate-level argument selection follows the universal pattern of an agency hierarchy along the lines sketched in (8). In Nepali, for instance, the outcome of combining information from verbal participant roles and clausal NP-frames is the following GR-constraint:

(9)   GR-CONSTRAINT ON VERB AGREEMENT IN NEPALI:
       The verb agrees with the argument that is assigned nominative or ergative case and that is highest on the Semantic Role Hierarchy.

Thus, the agreement trigger can bear either ergative (10a) or nominative (10b) case, depending on the clause-level case frame that is used in line with tense and aspect choices (as well as other factors; see Pokharel 2054). If all arguments are in the nominative (10b), it is the one in the highest role on the hierarchy in (8) that wins out as agreement trigger. Note that role is indeed the crucial factor — not, for example, position or information structure: verb agreement is not blocked in (10c) if *ma* 'I' is moved to the preverbal focus position:

(10) *Nepali (IE)*

    a. maile patrikā   kin-ẽ.   (Perfective Ergative Frame)
        1sERG newspaper:NOM buy-1sPT
        'I bought the newspaper.'

    b. ma   patrikā   kin-chu.   (Non-perfective Nominative Frame)
        1sNOM newspaper:NOM buy-1sNPT
        'I buy the newspaper.'

    c. patrikā   ma   kin-chu   (*kin-cha).
        newspaper:NOM 1sNOM buy-1sNPT   buy-3sNPT
        '*I* buy the newspaper.'

Thus, there is variation within IE between languages where GR-constraints are sensitive to NP-frames alone and others where they are sensitive to both NP-frames and predicate-level argument structure. That NP-frames are relevant at all, however, is, I hypothesize, a genetically stable principle:

(11)   HYPOTHESIS ON GR-CONSTRAINTS:
     If a construction in an IE language is subject to a GR-constraint, the GR is usually sensitive to NP-frames and their associated semantics and in some languages also predicate-level argument structure. If a construction in a ST language is subject to a GR-constraint, the GR is usually not sensitive to NP-frames, but only to predicate-level participant roles and their associated semantics.

This is extensively evidenced in Bickel & Yadava (1999) with regard to Indo-Aryan and in Bickel (1999a) with regard to other IE languages. It is best illustrated again with data from Nepali, an IE language that has had about a millennium of exposure to ST languages and has assimilated in virtually all respects to the South Asian features

surveyed in Section 2. Emotions, for instance, are commonly framed in the 'Experiencer-as-Goal' construction (cf. the examples (1b) and (3c) above). In this frame, experiencer arguments are systematically excluded from GR-constraints: verb agreement, for instance, is blocked if an experiencer bears dative case and this contrasts with what we find in ST languages. In these languages, verb agreement can be found, as we saw in the Nepālbhāṣā example (1a), even with dative-marked experiencers. Other ST languages, like Belhare, do not show agreement in 'Experiencer-as-Goal' constructions (3b), but this is an idiosyncrasy that is not due to the case-marking: there is no rule in Belhare that would prevent an absolutive NP from triggering agreement — on the contrary, this is the normal situation in other constructions (see the examples in (25) below). In the 'Psychollocation' frame, the verb can even agree with the experiential possessor:[8]

(12) *Belhare (ST)*

ŋka hale ekchumma hani-niũa ka-tiu-s-ik-kha <IV.116>
1s before sash 2pPOSS-mind 1sO-laze-TR.PERF-2pA-PERF
'Before, you liked me for my sash.'

In contrast to this, agreement blocking by case-marking reflects a general principle in IE languages. Indeed, the same effect is found in other GR-constraints in Nepali, and most other IE languages.[9] A case in point are control constructions:

(13) GR-CONSTRAINT ON CONTROL IN NEPALI:

The shared argument in control constructions must be an argument that is assigned nominative or ergative case and that is highest on the Semantic Role Hierarchy.

The following examples show that an experiencer argument can be the shared argument in a control construction as long as it is not assigned a case other than ergative or nominative:[10]

(14) *Nepali (IE)*

a. Rām-le uslāī$_i$ [∅$_i$ na-ḍarāu-na] bhan-yo.
   R.-ERG 3sDAT NOM NEG-fear-INF tell-3sPT
   'Ram told him/her not to be afraid.'

b. Rām-le uslāī$_i$ [∅$_i$ Harī-lāī na-tarsāu-na] bhan-yo.
   R.-ERG 3sDAT ERG H.-DAT NEG-frighten-INF tell-3sPT
   'Ram told him/her not to frighten Hari.'

c. *Rām-le uslāī_i [ø_i   ḍar na-lāg-na]   bhan-yo.
   R.-ERG 3sDAT DAT fear NEG-be(come)perceptible-INF tell-3sPT

   'Ram told him/her not to be afraid.'

A reason for this might be that, semantically, the dative deprives the experiencer referent of any ability to control the experience. However, cross-linguistically, the constraint reflects a more general pattern. In the following instance from German, controllability is unlikely to be the decisive factor. The 'Experiencer-as-Goal' frame conveys a more gene-ral sense of 'befalling' (Fried's 1999 term) which systematically blocks inclusion of the argument in the GR:

(15) *German (IE)*

   a. Sie_i   hoffte   [ø_i   in Kalifornien nie   zu frieren].
      3sF:NOM hope:3sPT   NOM in C.   never to   feel.cold:INF

   b. *Sie_i   hoffte   [ø_i   in Kalifornien nie   kalt zu   sein].
      3sF:NOM hope:3SG.PT   DAT in C.   never cold to   be:INF

      'She hoped not to feel cold in California.'

The same pattern is also found in other construction, e.g., in participial relative clauses. Again, the 'befalling' frame blocks an argument from bearing the required GR in the construction. This is exemplified by German (16) and Marathi (17) (Nepali does not impose GR-constraints on relativization; see Genetti 1992):

(16) *German (IE)*

   a. Der   Junge   lieb-t   Äpfel.
      ART:MsNOM boy(M):sNOM love-3sNPT   apple(M):pACC

      'The boy loves apples.'

   a´. der   Äpfel   lieb-end-e   Junge.
       ART:MsNOM apple(M):pACC lov-ACT.P-MsNOM   boy(M):sNOM

       'the boy who loves apples'

   b. Dem   Jungen   schmeck-en   Äpfel.
      ART:MsDAT boy(M):sDAT be.tasty-3pNPT apple(M):pNOM

      'The boy finds apples tasty.'

   b´. *der   Äpfel   schmeck-end-e   Junge
       ART:MsNOM apple(M):pACC be.tasty-ACT.P-MsNOM boy(M):sNOM

       'the boy who finds apples tasty'

(17) *Marathi (IE, Central India)* (Pandharipande 1990)

    a.   to   mulgā   gāṇī   mhaṇ-to.
        DEM boy(M):sNOM song(F):sNOM sing-MsNPT

        'That boy sings songs.'

    aʹ. gāṇī   mhaṇ-ṇārā   mulgā
        song(F):sNOM sing-ACT.P:MsNOM boy(M):sNOM

        'the boy who sings songs'

    b.   mulgī-lā   sāḍī   āvaḍ-te.
        girl(F)-sDAT saree(F):sNOM like-FsNPT

        'The girl likes the saree.'

    bʹ. *sāḍī   āvaḍ-ṇārī   mulgī
        saree(F):sNOM please-ACT.P:FsNOM girl(F):sNOM

        'the girl who likes the sari'

This is all different in ST languages. In Belhare, for example, the 'Experiencer-as-Goal' frame, which is copied from the South Asian and general IE model, does not prevent the experiencer argument from bearing any specific GR that is operative in the language.

(18) *Belhare (ST)*

    han iŋa lim-yu   i?
    2s   beer be(come).tasty-NPT(3sS) Q

    'Do you like the beer?' (lit., 'is the beer tasty to you?'; cf. Nep. *timīlāī jā̃ḍ miṭho lāgyo?,* Germ. *Schmeckt dir das Bier?,* Russ. *Pivo vkusno tebe?* or Span. *¿Te gusta la cerveza?*)

This is the case for example with *ka*-participles which are, like the active participles of German and Marathi, restricted to S (19a) and A (19b) arguments. The experiencer in the construction type (18) qualifies as an A-argument following the hierarchy in (8) and can therefore be relativized on (19c). The stimulus, by contrast, is an O-argument, whence it cannot be relativized on by *ka-* (19d). This is in line with other O-arguments (19e):

(19) *Belhare (ST)*

    a.   asenle ka-pikga-ba   maʔi   (S-Patient, ABS)
        lately   ACT.P-fall.down-M person

        'the man who fell down lately'

b. dhol ka-ten-ba   maʔi   (A-Agent, ERG)
    drum ACT.P-beat-M   person

'the man who beats the drum'

c. iŋa ka-lim-ba   maʔi   (A-Experiencer, ABS)
    beer ACT.P-be(come).delicious-M   person

'the man who likes the beer'

(vs. Germ. *der Bier schmeckende Mann*)

d. *ka-lim-ba   iŋa   (O-Stimulus, ABS)
    ACT.P-be(come).delicious-M   beer

'the beer that [one] likes'

e. *ka-ten-ba   dhol   (O-Patient, ABS)
    ACT.P-beat-M drum

'the drum that [one] beats'

Thus, while particular NP-frames are incompatible with constructions like (19c) in German or Marathi, frame-choice is irrelevant for the GR-constraint in Belhare participles. The same observation holds for other ST languages which have GR-constraints. Lai Chin, for example, has a relativization strategy that is restricted, as in Belhare, to S (20a) and A (20b) arguments, banning O-arguments (20c) (Peterson 1998 and Van-Bik, pers. comm.). The psychollocation frame, where the experiencer is coded as a possessor, does not block relativization (20d):

(20) *Lai Chin (ST)*

a. a-tlaː   miː thil   (S-Patient, ABS)
    3pS/A-fall:Σ1 N   clothes

'the clothes that fell down'

b. thil   a-bat   miː law thlaw paː   (A-Agent, ERG)
    clothes 3sS/A-hang.up:Σ1 N   farmer

'the farmer who hung up the clothes'

c. *Tsew maŋ niʔ   a-bat   miː thil   (O-Patient, ABS)
    T.   ERG   3sS/A-hang.up:Σ1 N   clothes

'the clothes that Ceu Mang hung up'

d. an-luŋ   ka-roːk   miː lawthlaw poːl   (A-Experiencer, POSS)
    3pPOSS-heart   1sS/A-break:Σ1 N   farmer   p

'the farmers who are disappointed with me'

The principle that GR-constraints in ST languages are insensitive to NP-frames holds irrespective of the particular kind of GR. Apart from the subject-like GR relevant for *ka*-participles, Belhare has some constructions which are constrained by an absolutive GR, i.e., by an 'S/O-pivot' in Dixon's (1979) or Foley & Van Valin's (1984) sense. This is the case, for instance, with control constructions (Bickel, in press-b):

(21) *Belhare (ST)*

han$_i$(*-na)   lu-ma   nui-ka$_i$.
2s(-ERG)   tell-INF   may-NPT:2sS

'You may be told (by him/her).'

Not: 'You may tell him/her.'

The Semantic Role Hierarchy in (8) predicts that the experiencer is an A-argument, the stimulus an O-argument — and this is all one needs to know. It is again irrelevant whether experiencers are coded as goals (absolutives) (22) or as possessors (23). Whatever is an A-argument cannot be shared (a-examples), whatever is an O-argument can (b-examples):

(22) *Belhare (ST)*

a.   *[ø$_i$ iŋa su-ma]   nui-ʔ-ŋa$_i$.
           beer sour-INF   may-NPT-1sS

'I like the beer sour.'

b.   [ŋka   ø$_i$ su-ma] nu-yu$_i$.
      1s   sour-INF may-NPT[3sS]

'I like it sour.' (lit., 'to me the beer may be sour')

(23) *Belhare (ST)*

a.   *n$_i$-ris   kat-ma   n-nui-ʔ-ni-ga$_i$.
      2sPOSS-anger   come.up-INF   NEG-may-NPT-NEG-2[sS]

'You shouldn't get angry.'

b.   n-ris$_i$ kat-ma   n-nui-ʔ-ni$_i$.
      2sPOSS-anger   come.up-INF   NEG-may-NPT-NEG[3sS]

'You shouldn't get angry.' (lit., 'your anger shouldn't arise')

3.2 AGR-constraints in Indo-European and Sino-Tibetan

As in the domain of GR-constraints, AGR-systems show principled differences between ST and IE languages:

(24)   HYPOTHESIS ON AGR-CONSTRAINTS:

If an IE language has verb agreement, the features of trigger and target must be identified. If an ST language has verb agreement, the features of trigger and target can be linked through several kinds of AGR-relations.

Research on agreement, even more than research on GRs, is heavily biased by IE structures and has usually failed to notice that other languages exhibit quite a different system of agreement. One usually thinks of agreement as a relation of feature identity (or 'copying', 'unification', 'percolation', etc.). A notable exception to this is Hale (1983), who distinguishes between a 'merged' and an 'unmerged' relationship between NPs and agreement clitics in the Australian language Warlpiri. In fact, there are more possibilities (Bickel 1997, 1999b), and they characterize agreement throughout ST. Table 1 gives a synopsis (where 'identificational' corresponds to Hale's term 'merged' and 'appositional' to 'unmerged').

$F_N = F_V$	identificational
F_V as F_N	appositional ('as NP')
F_N of F_V	partitional ('NP of')
F_N *re* F_V	relational ('NP as related to')

TABLE 1: AGREEMENT RELATIONS IN SINO-TIBETAN

The following examples from Belhare (25) and Lai Chin (26) illustrate two of these additional AGR-relations. Apart from simple identification (a-examples), the features of NPs and the features signaled by the conjugational morphology can be combined in terms of an apposition (b-examples) or a partition (c-examples):

(25) *Belhare (ST)*

    a. han=cha khai-ka   i?
        2s=ADD go-NPT:2sS Q

        'Do you go too?'

    b. masiŋ=cha   siŋ-taŋŋ-e   thaũ-ʔ-ŋa.
        old.woman=ADD wood-plant-LOC climb-NPT-1sS

        'Even as an old woman I climb trees.'

    c. sati   khar-e-iga?
        who(s) go-PT-2pS

        'Who of you went?'

(26) *Lai Chin (ST)*

    a. Tsew Maŋ niʔ   thil   khaː   a-baʔ.
        T.   ERG   clothes PTCL   3sS/A-hang.up:Σ2

        'Tsewmang hung up the clothes.'

    b. patar   ka-thoːŋ   riʔ.
        old.man 1sS/A-strong:Σ1 still

        'Even as an old man I am still strong.'

    c. miː   pa-khat kan-raː.
        person one-CL   1pS/A-come:Σ1

        'One of us came.'

Lai Chin adds to this a systematic exploitation of what I call a 'relational' combination of features ('F_N *re* F_V') in Table 1. This is in fact the prime means of indicating the stimulus argument in Psychollocations (also cf. example (20d) above):

(27) *Lai Chin (ST)*

    ka-luŋ   an-r̥iŋ.
    1sPOSS-heart 3pS/A-suspicious:Σ1 (lit., 'green')

    'I suspect them.' (lit., 'my-heart [F_N] *re* them [F_V]-suspicious')

Note that the semantic role of *r̥iŋ* 'be green, suspicious' is occupied by *luŋ* 'heart', not by the stimulus of the suspicion. The agreement marker does not refer to this role but instead expresses the features of the stimulus argument.

    At first sight one might take the examples in (25) through (27) as simple cases of agreement mismatches of the kind that is common in IE languages (e.g., Corbett 1983). However, 'disagreement' in IE is not exploited as a CONSTRUCTIONAL RESOURCE.

Instead, it has commonly to do with variation in the semantic construal of features in the NP and in the conjugational system. In a case like English *the government is/are…*, for example, the relation between the NP and the conjugational system is still one of identity: the variation results from whether or not *government* is taken to be a collective or an individuated noun. Another source for variation arises from the way features are inherited in phrase-structures. This can be seen in the following example from Nepali:

(28) *Nepali (IE)*

    a. (hāmīharu madhye)ek jana   āu-ncha   / āu-nchaũ.
        1pNOM   among   one person(s):NOM come-3sNPT   come-1pNPT

        'One of us will come.'

    b. ek jana   āu-ncha,   / *āu-nchaũ,   hāmīharu madhye.
        one person(s):NOM come-3sNPT   come-1pNPT   1pNOM   among

        'One will come, one of us.'

First person plural agreement in (28a) is reminiscent of the Belhare and Lai Chin constructions in (25c) and (26c), respectively. However, for the Nepali construction it is essential that *ek jana* is the head of a complex NP containing the PP *hāmīharu madhye* 'among us' — even if the PP is suppressed through ellipsis. Moving the PP out of the NP into a post-sentential afterthought position blocks first person plural agreement (28b). This suggests that first person plural agreement (28a) results simply from 'piping' the relevant features from the PP to the NP-head, or in the absence of an overt PP, from construing the notion of 'among us' within the NP (*constructio ad sensum*). This is different in the ST constructions. Where an adverbial expression like the PP in (28) is at all available, it does not form a subconstituent of the agreement-triggering NP. Hence, placing it into the afterthought position does in no way interfere with the agreement system (29b):

(29) *Lai Chin (ST)*

    a. kan-khua   in   miː   pa-khat   kan-raː.
        1pPOSS-village from person one-CL 1pS/A-come

        'One from our village came.'

    b. miː pa-khat kan-raː   kan-khua   in.
        person one-CL   1pS/A-come 1pPOSS-village   from

        'One came, one from our village.'

Often, however, such PPs are not even available: in Belhare and Lai Chin, for instance, there are no adpositions like Engl. *as* that would mark appositional readings, and in the Lai Chin construction in (27) lexical expression of the stimulus argument would result in a bare NP rather than in a (genitival) subconstituent of *kaluŋ* 'my heart'.

Some cases of agreement mismatches in IE languages have been compared to the kind of appositional relation found in Warlpiri (Jelinek 1984) and could thus also be compared to what we find in ST languages:

(30) *Spanish (IE)*

    a. Los   español-es bebe-mos   mucha cerveza.
         ARTpM   spaniard(M)-p drink-1pPRES much   beer

        'We Spaniards drink a lot of beer.'

    b. Los   español-es bebé-is   mucha cerveza.
         ARTpM   spaniard(M)-p drink-2pPRES much   beer

        'You Spaniards drink a lot of beer.'

However, this is likely to result from ellipsis of the agreement-triggering pronouns *nosotros* 'we' and *vosotros* 'you (pl.)', respectively, which are much longer and prosodically heavier than their monosyllabic counterparts in the singular (*yo, tú*). This explains why 'disagreement' is impossible with any other person in Spanish (31a). Also note that the structure can only have an apposition-like interpretation and is therefore incompatible, for instance, with question words (31b).

(31) *Spanish (IE)*

    a. *El   español beb-o   mucha cerveza.
          ART:sM   spaniard drink-1sPRES much   beer

        'As a Spaniard I drink a lot of beer.'

    b. *¿Quién bebéis   cervéza?
          who:s   drink-pPRES beer
        'Who of you drinks beer?'

As illustrated by the Belhare examples in (25), there is usually no such constraint in ST languages.

In summary, while IE languages often allow some variation in feature construal and inheritance and ellipsis, they never seem to exploit 'disagreement' as a CONSTRUC-

TIONAL RESOURCE in the way that is common throughout those ST languages that have agreement systems.

4. NP-integration in discourse

Taken together, the differences in Interface Constraints found between Indo-European and Sino-Tibetan can be interpreted as stronger vs. weaker integration of argumental NPs into clause structure. With regard to GR-constraints, the difference is whether or not NP-frames are at all relevant; with regard to AGR-constraints, the two families differ in whether they bind NP-features and conjugational features together into a single unified referential notion or whether NPs and inflectional markers are allowed to make their own, autonomous contribution to the coding of participants. If this interpretation is correct, we can expect that the structural differences in GR- and AGR-constraints correlates with other phenomena where clause-level NP-integration is at stake. I propose that such a correlate is indeed found in discourse patterns. Apart from the very few languages that require overt NPs (i.e., that are not 'pro-drop'), there is typological variation in the degree to which languages tolerate overt NPs (lexical and pronominal) in clauses:

(32)   HYPOTHESIS ON DISCOURSE PREFERENCES:
       If the grammer of a (pro-drop) language follows event framing principles with a stronger/weaker integration of NPs into clause structure, then speakers of this language tend to use more/less clauses with overt argument NPs (= 'NP-density'), within the limits of universal principles of information flow.

It is well-known that universally, clauses tend not to have more then one overt NP per clause (Givón 1984, Du Bois 1987, Chafe 1994). However, the degree to which languages tolerate deviations from this principle varies cross-linguistically (cf. Munro & Gordon 1982, Genetti & Crain, in press). The hypothesis in (32) predicts that this variation correlates with the degree of grammatical NP-integration and is therefore genetically stable. This is tentatively confirmed by a pilot study.

4.1 A pilot study

I investigated free, unplanned discourse data from two ST and two IE languages, as listed in Table 2.

Language	Source	Sample
Belhare	own data	1 conversation, 2 personal experience stories, 2 folktales (total of 498 clauses)
Chinese (Mandarin)	Tao 1996	12 conversations (total of 722 clauses out of 1675 IUs)
Nepali	Genetti & Crain, in press	1 personal experience story, 9 folktales (total of 786 clauses)
Spanish (Venezuelan)	Bentivoglio 1992	10 'interviews' (total of 1000 clauses)

TABLE 2: PILOT STUDY SAMPLE

Unfortunately, the samples are not fully balanced, neither in terms of quality nor in terms of quantity.[11] The strongest bias away from unconstrained and unplanned discourse is found in the Nepali sample, where folktales are over-represented. As pointed out by Crain & Genetti (in press) this might decrease NP-density because the stories and the participants in it are already familiar to most Nepali listeners. Another problem is that the various sources do not count NP-density in the same way. Tao (1996) is the only available source which systematically starts from intonation units. The percentage of clauses of all intonation units is less then 50% in Chinese, the rest being NP-units serving as sentential NP topics and discourse markers. NP topics of the Chinese style are not very prominent in any of the other three languages, and it is likely that in these languages the percentage of clausal intonation units is much higher. If this is true, the figures in Tao's (1996) study tend to overrate NP-density: putting argumental NPs into extraclausal positions is a strategy of decreasing NP-density that goes unnoticed if one excludes non-clausal units from the total of units against which the numbers of clauses with overt NPs are measured: a sequence of [NP], [V], [V], [NP V], [V] would give 25% clauses with overt-NPs if compared to the over-all number of clauses rather than intonation units (in which case the result were only 20%). This would reduce the difference to a language that does not make much use of free NPs, but instead shows stronger clause-integration

of NPs. In such a language, counting clauses only would rate a sequence like [NP V], [V], [V], [NP V], [V] by 40%. Ideally, one would compare figures of NP-density measured against the sum total of intonation units, but these data are not (yet) available for the other languages in the sample.

In the analysis I counted across all clause types, assuming that the speaker has multiple choices in distributing NPs over clauses: a two-participant event can be expressed by one transitive clause with two NPs, by two intransitive or detransitivized (passive) clauses with one NP each or, indeed, the event can be distributed over a long series of short, NP-less clauses, with a preceding topic NP and one single-NP clause in between. Tao (1996) argues that generic clauses ('one needs a ticket to get in') are in Chinese intrinsically NP-free and proposes to exclude them from counting overt argument structure. However, the use of generic clauses is itself a discourse choice that is known to vary cross-linguistically (e.g., Nichols 1988). Such variation is therefore another way in which languages can favor higher or lower NP-density. The use of generic clauses is therefore part of what I want to explore and I included them in the Chinese sample.

The Spanish data reported in Bentivoglio (1992) excludes copular clauses (nominal sentences), while Tao (1996) does not give the figures for NP-density without copular clauses. Genetti & Crain (in press) as well as my own data give both figures. As a result of this, we cannot directly compare all four languages together, but only three at a time. The results are given in Tables 3 and 4, with separate figures for 'low-density' clauses (one NP per clause) and 'high-density' clauses (more than one NP per clause) (also cf. the associated charts in the Appendix).

	No NP	*One NP*	*More NPs*	*Total*
Belhare	259 (52%)	215 (43%)	24 (5%)	498
Nepali	273 (35%)	404 (51%)	109 (14%)	786
Spanish	359 (36%)	551 (55%)	90 (9%)	1000
Total	891	1170	223	2284

TABLE 3: NP-DENSITY (WITH COPULAR CLAUSES)

	No NP	One NP	More NPs	Total
Belhare	252 (52%)	206 (43%)	24 (5%)	482
Nepali	259 (40%)	296 (44%)	109 (16%)	664
Chinese	245 (34%)	418 (58%)	59 (8%)	722
Total	756	920	192	1868

TABLE 4: NP-DENSITY (WITHOUT COPULAR CLAUSES)

As predicted by the hypothesis in (32), the two IE languages, Nepali and Spanish, show significantly more clauses with overt NPs than the ST language Belhare (Table 3), whether one compares only high-density clauses (χ^2 = 29.41, d.f. = 2, p < .001), only low-density clauses (χ^2 = 18.94, d.f. = 2, p < .001) or all clause types together (χ^2 = 63.60, d.f. = 4, p < .001). In Table 4, Chinese sides with Belhare in having less clauses with overt NPs than Nepali, if ones considers only high-density constructions (χ^2 = 45.38, d.f. = 2, p < .001). Unexpectedly, however, Chinese shows a higher percentage of one-NP-clauses than both Belhare and Nepali (χ^2 = 35.89, d.f. = 2, p < .001). It is impossible to fully evaluate whether or not this is significant because, as noted before, the counting strategy used in the Chinese sample could yield an unnaturally high percentage of overt-NP-clauses. That this may indeed be the case is suggested by the following. If there is a counting strategy effect, it is the stronger the more clauses there are: measuring low-density clauses against the sum total of intonation units (N = 1675; Tao 1996: 72) brings down the percentage from 58% to 25%. In the case of high-density clauses, by contrast, the difference is only 8% vs. 3%. This is in line with what we find in Table 4: only low-density clauses, which are much more numerous to begin with, show an unexpectedly high percentage of overt-NP-clauses; the percentage of high-density clauses is as low as expected.

The difference between Belhare and Nepali NP-density (in both tables) is particularly significant in view of the fact, mentioned above, that the bias towards folktales in the Nepali sample may reduce referential pressure and thereby decrease NP-density (cf. Genetti & Crain, in press). Tested against a larger variety of genres, the difference might therefore turn out to be even greater. The source of the difference is likely to result from their position in the event-framing typology: Nepali is IE and shows higher NP-integration in clause structure, while Belhare is ST and shows a weaker degree. There is, however, one other typological parameter in which the two languages differ, viz. 'richness of agreement': Belhare shows a much richer verb inflection than Nepali. While

Nepali agreement is restricted to 'subjects' (S- and A-arguments), the Belhare verb also registers objects. Thus, an alternative hypothesis might relate NP-density to richness of agreement: the richer the agreement system, the lower the NP-density. The logic behind this is that the conjugational and nominal realization of arguments are seen as forming an information equilibrium of some kind: if an argument is not identified by an overt NP, then at least one should code it on the verb, in order to avoid ambiguity. Such a line of reasoning is a core ingredient of most current syntactic theories — cf., e.g., the Completeness Conditions in LFG and RRG or the Projection Principle in GB. I believe that this approach is fundamentally misguided since it underestimates the role of pragmatics in identifying arguments and does not acknowledge the fact that some languages do indeed show an exceedingly high degree of implicitness in discourse.[12] This is notably the case in languages of East and South East Asia (cf., among others, Bisang 1996).

Nevertheless, let us test the 'Richness of Agreement Hypothesis' against the data. To do so, we can compare NP-density of Belhare and Spanish. If the hypothesis is true, we expect Spanish to show a similar pattern as Belhare, because this language has an elaborate system of object clitics which were counted as inflections,[13] not as NPs. A look at Table 3 shows that, counter to the expectation, Spanish shows a significantly higher percentage of overt-NP-clauses than Belhare. This holds true even in the domain of high-density clauses ($\chi^2 = 8.21$, d.f. = 1, $p < .005$), where the Spanish object clitics could fully exert their function in reducing NP-density since these clauses are necessarily (di)transitive. This is unexplained under the Richness of Agreement Hypothesis. Another way of testing the hypothesis is to compare Nepali and Chinese, which has no agreement system whatsoever. If richness of agreement were decisive we would expect Chinese to have a higher NP-density than Nepali. At first sight, a look at Table 4 seems to confirm this, but recall that the Chinese figures are likely to be biased towards an increased number of overt-NP-clauses. Moreover, if we limit ourselves to high-density clauses, we note that Chinese speakers use them significantly less often than Nepali ($\chi^2 = 22.02$, d.f.=1, $p < .001$) — an observation that would again be left unexplained under the Richness of Agreement Hypothesis.

5. NP-density, discourse convergence and genetic stability

Belhare shows a lower over-all NP-density than Nepali. This is very significant in view of the fact that the two languages are not only geographically adjacent to each other, but that their contact resulted in many features of syntactic convergence in clause structure (cf. Section 2): both languages are left-branching, have ergative case morphology and use, at least in part, 'Experiencer-as-Goal' frames. Convergence between Belhare and Nepali is an ongoing process. Belhare speakers are all bilingual in Nepali, which is not only the dominating *lingua franca* between different ethnic communities but is the language of the successful and the powerful on a national level. Indeed, until the Revolution in 1990, use of languages like Belhare was heavily discouraged, sometimes even actively suppressed by the government. Today, Belhare discourse is full of code-switching. People not only use Nepali expressions quite frequently, but would often fall into long periods of ('Belharicized') Nepali. Using Nepali is highly prestigious and mostly taken as a sign of progress, of successful adaptation to the modern world. Expectedly, code-switching comes along with intensive, on-the-fly borrowing of grammatical items. The Nepali dative case-marker *-lāī,* for example, gets occasionally suffixed to Belhare nominals (e.g., *hanlai* 'to you'), although at this time it is clearly not yet part of Belhare grammar.

It is not only individual items that are borrowed, but also complete discourse strategies. One of the hallmarks of conversational discourse in Nepali and other South Asian languages is what one may call the 'INFORMATIONAL DIPTYCH'.[14] In this structure, the speaker first announces (in the first part of the diptych) the KIND of information he or she is going to supply, before actually transmitting this information (in the second part of the diptych). This typically involves raising a rhetorical question, closing it off by some topic marker and then going on with conveying the actual information. The topic marker that is used in Nepali is *bhane*, a grammaticized version of a converb (conjunct participle) meaning '(while, if, when) saying'. Before beginning to relate a story, for instance, speakers are likely to say something like (33a) or, preceding an explanation, something like (33b).

(33) *Nepali (IE)*

   a. aba ke   bha-yo bhane, ... [follows a narrative]
       now what be-3sPT TOP

       'What happened was this:…' (lit., 'talking about "what happened?", …')

b. tyo   kasto cha   bhane, ... [follows an explanation]
   DEM how   be:3sNPT TOP

'[That's] how this is: …' (lit., 'talking about "how is this?", …')

Both the marker *bhane* and the diptych construction is as widely used in Belhare conversations as in Nepali. In the following examples, Nepali loan items are type-set in italics to illustrate the code-switching mentioned earlier:

(34) *Belhare (ST)*

a. *ʌbo chʌ nʌmbarr*-e, emu ta-yu   *bhʌne=ni* ..
   now six   number-LOC how come-NPT[3sS] TOP=PTCL

   thaŋma ŋ-khat-ke. <B10.G3#7>
   upwards 3nsS-go-INC

   'Now, on [picture] number 6, what you get is [people] going upwards.'

   (lit., 'What is coming up on number 6? — they are going upwards.')

b. *ʌbo* na   Athpare Rai-chi-ha *bhasa bistari bistari* maĩ-sa   khat-ke.[15]
   now DEMA.   R.-ns-N   language slowly slowly lose-CONV go-INC[3sS]

   ika *bhʌne* na-kha-ek-kha piccha-chi-ŋa ŋke-riŋ   cek-ma
   why TOP   DEM-ns-LOC-N   child-ns-ERG   1piPOSS-language speak-INF

   mi-n-niu-t-u-n. <III.109>
   NEG-3nsS-know-NPT-3O-NEG

   'Now the language of the Athpare Rais is slowly getting lost. This is because the local children don't know how to speak our language.'

   (lit., '… Why I say so? — the children from here don't know …')

Aspects of conversational etiquette too are imitated by some speakers: Belhare makes no grammatical honorificity distinctions, and this makes speakers who want to adopt Nepali conversational style and social norms often uneasy when talking to respected people (Nep. *ṭhulo mānche* 'big people'). In such cases, one overhears constructions like (35a), which are calques of the standard Nepali honorific construction (35b):

(35) a. *Belhare (ST)*

      endua khat-ma li-yu?
      when   go-INF   be(come)-NPT[3sS]

      b. *Nepali (IE)*

      kahile jā-nu   hu-ncha?
      when   go-INF be(come)-3sNPT

      'When will you[h] go?'

This is the more remarkable as there is no equivalent to the Nepali second person honorific pronoun *tapāī̃*! This forces speakers to either avoid situations of ambiguity or, more commonly, to switch completely to Nepali.

6. Conclusions and prospects

The pilot study presented in the preceding suggests that NP-density in discourse correlates with the typology of event-framing. On the one hand, there are languages with more integrative event framing, where argumental NPs are more central for clause structure. Morphosyntactically, this manifests itself in GR-constraints that are sensitive to NP-frames and in AGR-constraints that require a strict identification ('unification') of nominal and verbal referential features. In discourse, integrative framing effects a relatively high NP-density. On the other hand, there are languages with less integrative, 'associative', event framing, where argumental NPs are relatively marginal additions to clause structure. Here, NP-frames are irrelevant for GR-constraints, and AGR-constraints allow various ways of combining referential features that are independently realized in the nominal and verbal systems. On the level of discourse, weak integration results in relatively low NP-density.

Further correlates of this distinction in event-framing are possible. Genetti & Crain (in press) have argued, for instance, that the relatively high NP-density in Nepali correlates with the observation that in this language the sentence — as opposed to the clause — plays a privileged role for the packaging of information flow: there is a strong tendency in Nepali for heaving one overt NP PER SENTENCE. I would suggest that this is an effect of integrative event-framing. Languages with associative event framing are unlikely to exploit a notion of 'sentence' as a distinct level in information flow packaging.

The difference between the two types of event-framing is likely to be genetically stable. The associative framing type of Sino-Tibetan persists even in the intensive contact zone of the Himalayas and shows its effects on Belhare discourse despite code-switching, borrowing and imitation of Nepali style. Code-switching, borrowing and structural copying are the first steps toward syntactic convergence and it is likely that the currently ongoing processes of adaptation will increase the typological similarity of Belhare and 'Standard Average South Asian' grammar (during the short time that Belhare may

survive). At the same time, these processes are important signs of adapting to new ways of conversational interaction, and, in the case of politeness constructions, new patterns in social thinking. Principles of event-framing, and their effects on discourse, appear to escape such processes of assimilation and to resist the social and cultural forces that bring native discourse into the mould of the national Nepali norm. It is as if giving up such principles is equivalent to completely giving up the language itself.

How is this possible? How can principles of event-framing resist assimilation? An answer might be found in terms of Whorfian effects, i.e., in effects of language structure on patterns of thinking and speaking (Lucy 1992, Gumperz & Levinson 1996, Dirven & Niemeier, in press). Choices in the grammar of event framing influences the way NPs are used in discourse and this influence counteracts the socio-cultural and political determinants of discourse style. Notice that if these are indeed Whorfian effects, they have a relatively 'deep' source. Unlike spatial deixis (Levinson 1997, Pederson, *et al.* 1998, Bickel, in press-a), for instance, event framing is not inherently linked to the socio-cultural world of speaker and hearer, but rather appears as a relatively 'autonomous' part of grammar. This raises the question whether they are also 'deep' in scope: does NP-density correlate with patterns of non-linguistic thinking, beyond the 'thinking of speaking' (Slobin 1996) that presumably underlies discourse? The use of NPs entails specification of referential properties, minimally the role of participants in the conversation (as in the case of pronouns) but often well beyond this. From this point of view, it is not unlikely that NP-density correlates with differences in how people balance their attention between properties of individual referents vs. other characteristics of events. Research into this may provide us with a unique view on the role and interplay of various cognitive domains in the processes of sociocultural assimilation and ultimately of cultural change in general.

Abbreviations

A 'most agentive argument of transitive verbs', ACT 'active', ADD 'additive ('also, even')', ART 'article', CL 'classifier', CONV 'converb', DAT 'dative', DEM 'demonstrative', ERG 'ergative', F 'feminine', i 'inclusive (of addressee)', INC 'inceptive (aspect)', INF 'infinitive', LOC 'locative', M 'masculine', N 'nominalizer', NEG 'negative', NOM 'nominative', NPT 'non-past (tense)', ns 'non-singular', O 'most patientive argument of transitive verbs', p 'plural', P 'participle', POSS 'possessive', PRES 'present (tense)', PT 'past (tense)', PTCL 'particle', Q 'question', REFL 'reflexive', s 'singular', S 'single argument of intransitives', Σ 'stem form (in Chin)', TOP 'topic'.

Notes

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[1] As noted by Mithun (1985), a similar analysis was developed at about the same time by DuPonceau (1819) for several North American languages.

[2] I use the term 'genetically stable' in the sense of Nichols (in press): a 'stable' feature is one that has a higher 'life expectancy' in its family and is therefore less prone to change than an instable element. In general, the highest life expectancy of any linguistic feature seems to be about 6000 years, after which families change so drastically that detection of their original unity is no longer possible.

[3] This language is better known as 'Newari' in the literature but more and more native speakers strongly object to this term and urge the linguistic community to adopt 'Nepālbhāṣā' as the name of preference.

[4] or phonology, but this is a story of its own. There is tentative evidence, explored in Bickel (in prep.), that constraints which are defined by simultaneous reference to phonological and grammatical units (such as alignment constraints in the sense of McCarthy & Prince 1993) are genetically more stable than purely phonological constraints.

[5] Another means for reverting role ordering, diathesis, can affect either the predicate-level or the clause-level or both. Passives restricted to the predicate-level typically leave patients in their original case (e.g., accusative). Passives restricted to the clause-level allow 'demoted' agents to keep a certain prominence, e.g., as controllers of reflexives. Both phenomena are widely attested in Indo-Aryan languages.

[6] Counter to traditional wisdom, I see no reason to assume GRs as existing independently of the constructions for which a specific GR-constraint holds (so that the constructions are nothing more than 'tests' or diagnostic means' for the GR). Unlike semantic roles, GRs can vary across constructions, so that one and the same argument of a given verb (say, the agent) may bear different GRs depending on the construction (e.g., control, relativization, etc.) in which the argument appears (see Van Valin 1981, Van Valin & LaPolla 1997, Dixon 1994: 175 – 77, Bickel, in press-b, etc.).

[7] Abstracting away from viewpoint semantics, this corresponds more or less to the approach taken in Chomsky (1965, etc.) with regard to English or in Reis (1982) with regard to German.

[8] This is different from an external possessor (a.k.a. 'possessor raising') construction, where the possessor appears as an additional argument. Here, it substitutes for the 'A[ctor]'-inflection.

[9] In the literature it is often assumed that dative-marked experiencers behave syntactically like subjects. This is refuted for Indo-Aryan in Bickel & Yadava (1999) on the basis that the tests that are commonly used for subjecthood (e.g., reflexivization or conjunction reduction) do not pick out GRs but rather a pragmatic topic notion (also see Ichihashi-Nakayama 1994 on Nepali). In Icelandic, another IE language

for which true dative 'subjects' have been postulated, the dative experiencer associates with a rigid pre-verbal 'subject' position, and the relevant GRs are sensitive to this configurational NP-frame, not to the nominative-based case-frame that is relevant for other IE languages (Lazard 1994: 112 – 14, Van Valin & LaPolla 1997: 358f, Bickel 1999a).

[10] To facilitate understanding of the examples, I gloss shared arguments ('ø') by the case-marking they would receive if they were overt NPs.

[11] In the full-scale study that I am currently designing I hope to collect data with roughly the same content (perhaps Pear Stories; Chafe 1980) and from languages spoken in roughly the same cultural area (Nepal, where both ST and IE languages are well represented with substantial typological variation).

[12] Indeed, the idea that arguments must be morphosyntactically identified at least once in clause may turn out to be a Whorfian effect due to the relatively high NP-density in English and other European IE languages!

[13] In the planned full-scale study I hope to incorporate data from Maithili, an IE language with a fully grammaticized system of object agreement. My prediction is that Maithili will still us as many overt-NP-clauses as Nepali or Spanish.

[14] I propose this term in allusion to Lehmann's (1984) notion 'correlative diptych' for the type of relative construction that is common in modern Indo-Aryan and many classical IE languages ('which man I saw, that [man] was your friend'). It is likely that the correlative diptych evolved through grammaticization from informational diptychs.

[15] Incidentally, this aspectual construction is yet another (but rare) calque on Nepali; cf. the Nepali periphrastic 'continuative' *gar-dai jā-ncha* [do-CONV go-3sNPT] 's/he keeps doing it'.

References

Austin, Peter & Joan Bresnan, 1996. Non-configurationality in Australian Aboriginal languages. *Natural Language and Linguistic Theory* 14, 215 – 68.

Baker, Mark C., 1996. *The Polysynthesis Parameter.* New York: Oxford University Press.

Bentivoglio, Paola, 1992. La estructura argumental preferida del español moderno. In: Vaquero, María & Amero Morales [eds.], *Homenaje a Humberto López Morales,* pp. 107 – 20. Madrid: Arco.

Bickel, Balthasar, 1997. Double-marking languages and morphosyntactic typology. Paper presented at the 2nd Conference of the Association for Linguistic Typology, Eugene, Oregon, 11 – 14 September 1997. (Ms. in preparation).

Bickel, Balthasar, 1998. Review article of Haspelmath & König, eds., Converbs, Berlin: Mouton de Gruyther 1995. *Linguistic Typology* 2, 381 – 97.

Bickel, Balthasar, 1999a. Grammatical relations, agreement, and genetic stability. Ms., University of California at Berkeley [http://socrates.berkeley.edu/~bickel/papers].

Bickel, Balthasar, 1999b. On the syntax of agreement in Tibeto-Burman. Ms., University of California at Berkeley [http://socrates.berkeley.edu/~bickel/papers].

Bickel, Balthasar, in press-a. Grammar and social practice: the role of 'culture' in linguistic relativity. In: Dirven, René & Susanne Niemeier [eds.], *Evidence for linguistic relativity,* Amsterdam: Benjamins.

Bickel, Balthasar, in press-b. Hidden syntax in Belhare. In: Driem, George van [ed.], *Himalayan Linguistics,* Berlin: Mouton de Gruyter.

Bickel, Balthasar, in prep. Toward a theory of genetic stability in grammar.

Bickel, Balthasar & Yogendra Yadava, 1999. A fresh look at grammatical relations in Indo-Aryan. Ms., University of California, Berkeley, and Royal Nepal Academy, Kathmandu [http://socrates.berkeley.edu/~bickel/papers].

Bisang, Walter, 1996. Areal typology and grammaticalization: processes of grammaticalization based on nouns and verbs in East and Mainland South East Asian languages. *Studies in Language* 20, 519 – 97.

Bresnan, Joan & Jonni Kanerva, 1989. Locative inversion in Chichewa: a case study in factorization in grammar. *Linguistic Inquiry* 20, 1 – 50.

Broschart, Jürgen, 1991. On the sequence of techniques on the dimension of PARTICIPATION. In: Seiler, Hansjakob & Waldfried Premper [eds.], *Partizipation: das sprachliche Erfassen von Sachverhalten,* pp. 29 – 61. Tübingen: Narr.

Chafe, Wallace L. [ed.], 1980. *The Pear Stories: cognitive, cultural, and linguistic aspects of narrative production.* Norwood, NJ: Ablex.

Chafe, Wallace L., 1994. *Discourse, consciousness, and time: the flow and displacement of conscious experience in speaking and writing.* Chicago: The University of Chicago Press.

Chomsky, Noam, 1965. *Aspects of the theory of syntax.* Cambridge, Mass.: MIT Press.

Corbett, Greville, 1983. *Hierarchies, targets, and controllers: agreement patterns in Slavic.* London: The Pennsylvania State University Press.

Dirven, René & Susanne Niemeier [eds.], in press. *Evidence for linguistic relativity.* Amsterdam: Benjamins.

Dixon, R. M. W., 1979. Ergativity. *Language* 55, 59 – 138.

Dixon, R. M. W., 1994. *Ergativity.* Cambridge: Cambridge University Press.

Dryer, Matthew S., 1992. The Greenbergian word order correlations. *Language* 68, 81 – 138.

Du Bois, John W., 1987. The discourse basis of ergativity. *Language* 63, 805 – 55.

DuPonceau, Peter S., 1819. Report of the Historical and Literary Committee. *Transactions of the American Philosophical Society* 1.

Ebert, Karen H., 1993. Kiranti subordination in the South Asian areal context. In: Ebert, Karen H. [ed.], *Studies in clause linkage,* pp. 83 – 110. Zürich: ASAS-Verlag.

Ebert, Karen H., 1999. Nonfinite verbs in Kiranti languages — an areal perspective. In: Yadava, Yogendra P. [ed.], *Topics in Nepalese Linguistics,* Kathmandu: Royal Nepal Academy.

Fillmore, Charles J., 1977. The Case for case reopened. In: Cole, Peter & Jerold Sadock [eds.], *Syntax and Semantics 8: Grammatical Relations,* pp. 59 – 82. New York: Academic.

Foley, William A. & Robert D. Van Valin, Jr., 1984. *Functional syntax and universal grammar.* Cambridge: Cambridge University Press.

Fried, Mirjam, 1994. Grammatical functions in case languages: subjecthood in Czech. *Proceedings of the 20th Annual Meeting of the Berkeley Linguistics Society* 184 – 93.

Fried, Mirjam, 1998. Construction Grammar and the syntax-semantics interface. Book Ms., University of California at Berkeley.

Fried, Mirjam, 1999. A frame-based approach to linking: the missing viewpoint. Ms., University of California, Berkeley.

Genetti, Carol, 1992. Semantic and grammatical categories of relative clause morphology in the languages of Nepal. *Studies in Language* 16, 405 – 27.

Genetti, Carol, 1994. *A descriptive and historical account of the Dolakha Newari dialect.* Tokyo: Institute for the Study of Languages and Cultures of Asia and Africa.

Genetti, Carol & Laura D. Crain, in press. Beyond Preferred Argument Structure: sentences, pronouns, and given referents in Nepali. In: Ashby William, John Du Bois & Lorraine Kumpf [ed.], *Preferred Argument Structure: the next generation,* Amsterdam: Benjamins

Givón, Talmy, 1984. *Syntax: a functional-typological introduction, Vol. I.* Amsterdam: Benjamins.

Givón, Talmy, 1990. *Syntax: a functional-typological introduction, Vol. II.* Amsterdam: Benjamins.

Goldberg, Adele, 1995. *Constructions: a Construction Grammar approach to argument structure.* Chicago: The University of Chicago Press.

Gumperz, John J. & Stephen C. Levinson [eds.], 1996. *Rethinking Linguistic Relativity.* Cambridge: Cambridge University Press.

Hale, Kenneth, 1983. Warlpiri and the grammar of nonconfigurational languages. *Natural Language and Linguistic Theory* 1, 5 - 47.

Hale, Kenneth, 1994. Core structures and adjunctions in Warlpiri syntax. In: Corver, Norbert & Henk van Riemsdijk [eds.], *Studies on scrambling,* pp. 185 – 219. Berlin: Mouton de Gruyter.

Hopper, Paul J. & Sandra A. Thompson, 1980. Transitivity in grammar and discourse. *Language* 56, 251 – 99.

Hopper, Paul J. & Sandra A. Thompson, 1984. The discourse basis for lexical categories in universal grammar. *Language* 60, 703 – 52.

Humboldt, Wilhelm von, 1836. *Über die Verschiedenheit des menschlichen Sprachbaus und ihren Einfluss auf die geistige Entwickelung des Menschengeschlechtes.* Berlin: Dümmler.

Ichihashi-Nakayama, Kumiko, 1994. On dative 'subject' constructions in Nepali. In: Genetti, Carol [ed.], *Aspects of Nepali grammar,* pp. 41 – 76. Santa Barbara: Dept. of Linguistics, UC Santa Barbara (Papers in Linguistics 6).

Jaisser, Annie, 1990. DeLIVERing an introduction to psycho-collocations with SIAB in Hmong. *Linguistics of the Tibeto-Burman Area* 13.1, 159 - 78.

Jelinek, Eloise, 1984. Empty categories, case, and configurationality. *Natural Language and Linguistic Theory* 2, 39 – 76.

Kachru, Yamuna, Braj B. Kachru & Tej K. Bhatia, 1976. The notion 'subject': a note on Hindi-Urdu, Kashmiri, and Panjabi. In: Verma, Manindra K. [ed.], *The notion of subject in South-Asian languages,* pp. 79 – 109. Madison: South Asian Studies Publications Series, University of Wisconsin.

Lazard, Gilbert, 1994. *L'actance.* Paris: Presses Universitaires de France.

Lehmann, Christian, 1984. *Der Relativsatz.* Tübingen: Narr.

Levinson, Stephen C., 1997. From outer to inner space: linguistic categories and non-linguistic thinking. In: Nuyts, Jan & Eric Pederson [eds.], *Language and conceptualization,* pp. 13 – 45. Cambridge: Cambridge University Press.

Longacre, Robert E., 1985. Sentences as combinations of clauses. In: Shopen, Timothy E. [ed.], *Language typology and syntactic description, vol. 2: complex constructions,* pp. 235 – 86. Cambridge: Cambridge University Press.

Lucy, John A., 1992. *Grammatical Categories and Cognition*. Cambridge: Cambridge University Press.

Masica, Colin P., 1976. *Defining a linguistic area (South Asia).* Chicago: The University of Chicago Press.

Matisoff, James A., 1969. The syntax and semantics of 'simple' juxtaposition in Lahu. *Acta Linguistica Hafniensia* 12, 69 – 120.

Matisoff, James A., 1986. Hearts and minds in South-East Asian languages and English: an essay in the comparative lexical semantics of psycho-collocations. *Cahiers de linguistique asie-orientale* 15, 5 - 57.

McCarthy, John J. & Alan S. Prince, 1993. Generalized alignment. *Morphology Yearbook* 1993, 79 – 153.

Mithun, Marianne, 1985. Disagreement: the case of pronominal affixes and nouns. *Georgetown University Round Table on Language and Linguistics* 1985, 50 – 66.

Mohanan, K.P., 1982. Grammatical relations and clause structure in Malayalam. In: Bresnan, Joan [ed.], *The mental representation of grammatical relations,* pp. 504 – 845. Cambridge, Mass.: MIT Press.

Mohanan, Tara, 1994. *Argument structure in Hindi.* Stanford: CSLI.

Munro, Pamela & Lynn Gordon, 1982. Syntactic relations in Western Muskogean. *Language* 58, 81 – 115.

Nichols, Johanna, 1986. Head-marking and dependent-marking grammar. *Language* 62, 56 - 119.

Nichols, Johanna, 1988. Nominalization and assertion in scientific Russian prose. In: Haiman, John & Sandra A. Thompson [eds.], *Clause combining in grammar and discourse,* pp. 399 – 428. Amsterdam: Benjamins.

Nichols, Johanna, 1992. *Language diversity in space and time.* Chicago: The University of Chicago Press.

Nichols, Johanna, 1993. Heads in discourse: structural vs. functional centricity. In: Corbett, Greville G., Norman M. Fraser & Scott McGlashan [eds.], *Heads in grammatical theory*, pp. 164 – 185. Cambridge: Cambridge University Press.

Nichols, Johanna, in press. Diversity and stability in language. In: Janda, Richard D. & Brian D. Joseph [eds.] *Handbook of Historical Linguistics*. London: Blackwell.

Nordlinger, Rachel, 1998. *Constructive case: evidence from Australian languages.* Stanford: CSLI.

Pandharipande, Rajeshwari, 1990. Experiencer (dative) NPs in Marathi. In: Verma, Manindra K. & K. P. Mohanan [eds.], *Experiencer subjects in South Asian languages,* pp. 161 – 79. Stanford: CSLI.

Pederson, Eric, Eve Danziger, David Wilkins, Stephen Levinson, Sotaro Kita & Gunter Senft, 1998. Semantic typology and spatial conceptualization. *Language* 74, 557 – 89.

Pensalfini, Robert, in press. Towards a typology of nonconfigurationality. *Natural Language and Linguistic Theory*

Peterson, David A., 1998. The morphosyntax of transitivization in Lai (Haka Chin). *Linguistics of the Tibeto-Burman Area* 21, 87 - 153.

Pokharel, Mādhavaprasād, 2054. *Nepāli Vākya Vyākaraṇ.* Kāṭhmāṇḍū: Nepāl Rājakīya Prajña-Pratiṣṭhān.

Poucha, Pavel, 1949. The syntactical relationships of some Asiatic languages. *Archiv Orientální* 17, 265 – 93.

Reis, Marga, 1982. Zum Subjektbegriff im Deutschen. In: Abraham, Werner [ed.], *Satzglieder im Deutschen: Vorschläge zur syntaktischen, semantischen und pragmatischen Fundierung,* pp. 171 – 211. Tübingen: Narr.

Seiler, Hansjakob, 1984. Die Dimension der Partizipation. Book Ms., University of Cologne.

Seiler, Hansjakob & Waldfried Premper [eds.], 1991. *Partizipation: das sprachliche Erfassen von Sachverhalten.* Tübingen: Narr.

Simpson, Jane, 1991. *Warlpiri morpho-syntax: a lexicalist approach.* Dordrecht: Kluwer.

Slobin, Dan I., 1996. From "thought and language" to "thinking for speaking". In: Gumperz, John J. & Stephen C. Levinson [eds.], *Rethinking linguistic relativity,* pp. 70 – 96. Cambridge: Cambridge University Press.

Speas, M., 1990. *Phrase structure in natural language.* Dordrecht: Kluwer.

Tao, Hongyin, 1996. *Units in Mandarin conversation.* Amsterdam: Benjamins.

Van Valin, Robert D., Jr., 1981. Grammatical relations in ergative languages. *Studies in Language* 5, 361 – 94.

Van Valin, Robert D., Jr., 1985. Case marking and the structure of the Lakhota clause. In: Nichols, Johanna & Anthony C. Woodbury [eds.], *Grammar inside and outside the clause,* Cambridge: Cambridge University Press.

Van Valin, Robert D., Jr., & Randy J. LaPolla, 1997. *Syntax: structure, meaning, and function.* Cambridge: Cambridge University Press.

Van-Bik, Kenneth, 1998. Lai psycho-collocations. *Linguistics of the Tibeto-Burman Area* 21.1, 201 – 33.

Weiss, Daniel, 1993. Die Faszination der Leere: die moderne russische Umgangssprache und ihre Liebe zur Null. *Zeitschrift für slawische Philologie* 53, 48 – 82.
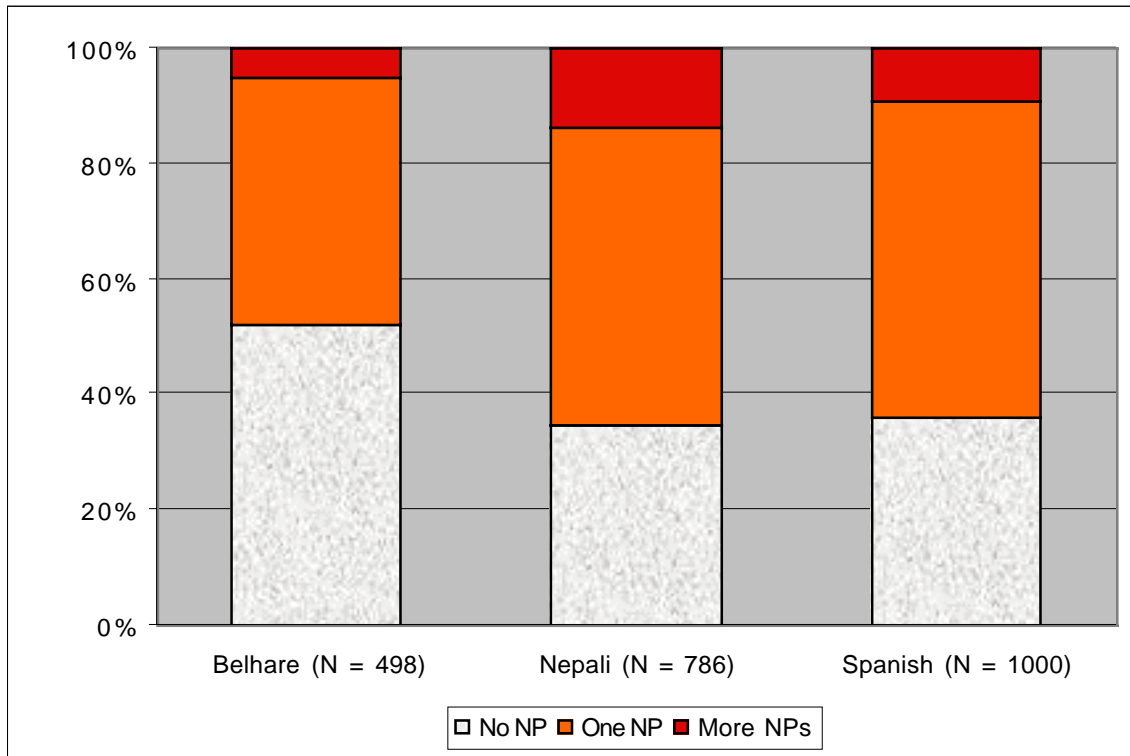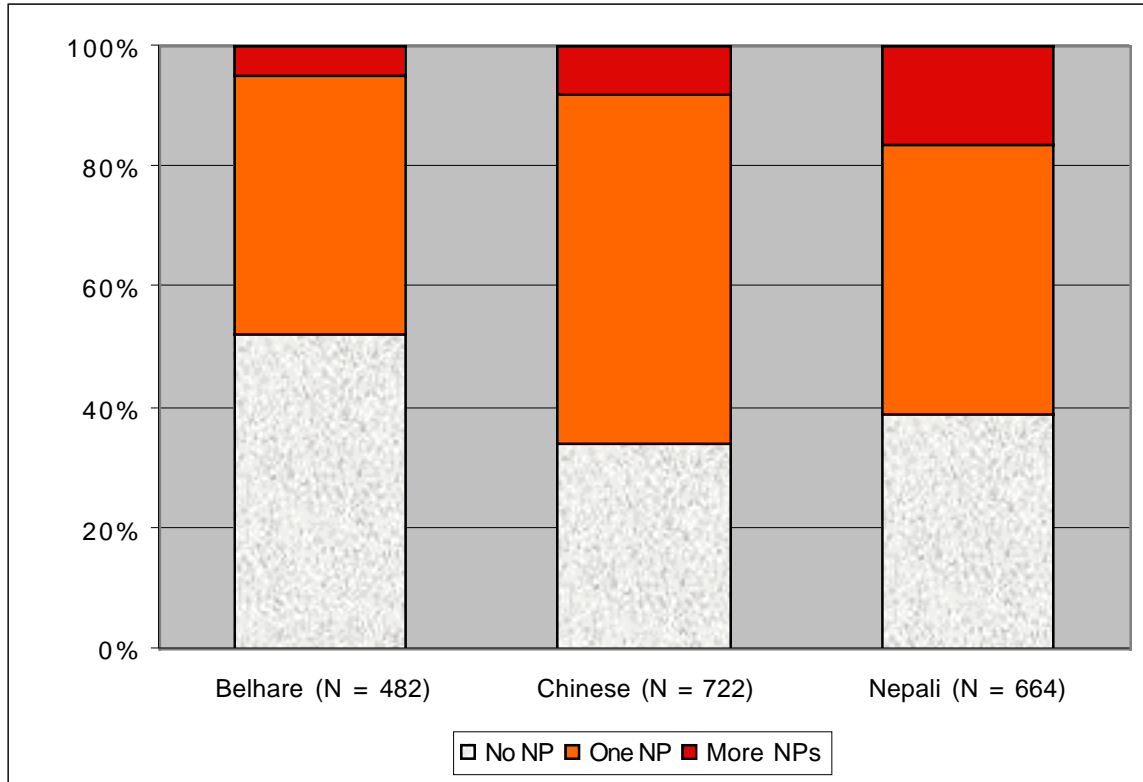
Appendix

Chart 1: NP-density (with copular clauses)

Chart 2: NP-density (without copular clauses)