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On the Utility of the Concepts of Markedness and Prototypes in Understanding the Development of Morphological Systems*

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In attempting to understand the history of the morphology of a language or group of languages, we occasionally face a problem of isomorphy, where two or more semantic categories evince the same formal marking. We then must decide which use of that particular form of marking is the oldest, and also determine the possible source and path of development of the marking. In languages with written documents of great time depth this is often not a problem, but in unwritten languages it can be quite difficult. This paper discusses two tools that can be used for this purpose: the concepts of markedness and prototypes. Markedness can tell us which use of the morphological form is cross-linguistically common, while prototype theory can tell us which semantic categories (or members within a semantic category)

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are more psychologically salient or semantically basic. Using two relatively uncontroversial examples, this paper suggests that aside from the standard types of evidence used for determining the probable path of development of a form of marking, particularly in cases of isomorphy we can use the concepts of markedness and grammatical prototypes to help us determine the most probable path of development of isomorphic forms. In the first part of the paper the concepts of markedness and prototypes used are explained, then two examples from Tibeto-Burman languages are presented: the isomorphy of the reflexive, middle, and “stativizing” markers in Dulong, and the cross-linguistic phenomenon within Tibeto-Burman where a single case marker is used to mark a number of different semantic roles. Using the concepts of markedness and prototypes, it is shown that the isomorphy of the reflexive, middle and “stativizing” markers in Dulong/Rawang is most likely the result of a marker originally having only a reflexive use being extended to cover middle situations, and then, because of the nature of middles, being further extended to the use as a “stativizer,” and that the patterns of isomorphy of case marking in the 145 Tibeto-Burman languages surveyed probably developed along the following clines: ablative > instrumental > manner adverbial > agentive > anterior or causal clause subordinator; comitative > instrumental; locative > dative > patient > purposive, temporal, or conditional clausal subordinator.

1.0 Introduction

In attempting to understand the history of the morphology of a language or group of languages, we occasionally face a problem of isomorphy, where two or more semantic categories evince the same formal marking.¹ We then must decide which use of that particular form of marking is the oldest, and also determine the possible source and path of development of the marking. In languages with written documents of great time depth this is often not a problem, but in unwritten languages it can be quite difficult. Two tools that can be used for this purpose are the concepts of

¹This is looking at the problem from the point of view of the categories involved; from the point of view of the forms used in these situations, we are talking about polysemy.

markedness and prototypes. Markedness can tell us which use of the morphological form is cross-linguistically common, while prototype theory can tell us which semantic categories (or members within a semantic category) are more psychologically salient or semantically basic.

Two examples from Tibeto-Burman languages where the concepts of markedness and prototypes can be useful in understanding the development of patterns of isomorphic morphological marking are the isomorphy of the reflexive and the middle voice in Dulong, and the cross-linguistic phenomenon within Tibeto-Burman where a single case marker is used to mark a number of different semantic roles. I will first discuss the concepts of markedness and prototypes to be used in this paper, then discuss the two patterns of isomorphic marking and how the concepts of markedness and prototypes can help us to understand the development of these marking patterns.

1.1 Markedness

The concept of markedness was first developed by the Prague School of linguistics in the late 1930's, beginning with Trubetzkoy's observation that given two mutually opposite phonetic categories, one category will be "marked" vis-à-vis the other because of the presence (either positive or negative) of a particular property, though in some contexts the contrast between the two categories is neutralized.² That is, in some contexts only the unmarked form can appear, and in those contexts the form will represent either the marked category or the opposite of the marked category. Because of this, use of the marked category entails the presence of the particular

²This is of course in the case of privative oppositions; Trubetzkoy also recognized the existence of equipollent oppositions.

property, while use of the unmarked category is neutral as to the presence or absence of the property. A well-known example from phonology is the neutralization of the voicing contrast of obstruents in word-final position in German. Voiceless obstruents are unmarked vis-à-vis the voiced obstruents, as they lack the feature “voiced.” In word-final position only voiceless obstruents can appear, the voiceless obstruents then representing both voiced and voiceless obstruents in that context. Jakobson extended this concept to the understanding of the coding of grammatical categories, using the example of the categories of the Russian verb to talk about markedness contrasts. For example, feminine marking signals that the participant is definitely female, while masculine marking does not specify the sex of the participant. Feminine marking is then marked vis-à-vis masculine marking in Russian.³

Markedness later developed a number of other different senses or criteria used to define markedness (Greenberg 1966), so that now the concept of markedness can be broken down into at least seven types (Zwicky 1978). Only three of these types are relevant here. The first is implicational or typological markedness. The definition of this type of markedness is given in (1) (Forner et al. 1992:78):

- (1) For any pair of minimally different linguistic structures or characteristics A and B, A is typologically marked relative to B (and B is typologically unmarked relative to A) if and only if every language that has A also has B but not every language that has B also has A.

³The discussion of markedness began with an exchange of letters between Trubetzkoy and Jakobson in 1930 (see Jakobson and Waugh 1979:90ff, Anderson 1989:21-22). See Trubetzkoy 1939 on markedness in phonology, Jakobson 1957[1971], building on Jakobson 1932, 1939, for markedness in grammatical categories.

This conception of markedness harks back to another early Prague school notion, that of markedness being related to what is less normal or less expected (cf. Comrie 1976, Chapter 6). For example, every language that has voiceless nasals has voiced nasals, but not vice versa. In terms of morphology, every language that has dual marking has plural marking, but not vice versa. It is implicational in that we can say, for example, that the existence of dual marking in a language implies the existence of plural marking. In terms of relational morphology, agreement marking on the verb in which the verb only agrees with human objects is less marked than marking that agrees with non-human objects, as agreement with non-human objects implies agreement with human objects (Lehmann 1989:181-2).

A second type of markedness is based on language-internal diversification and semantic specificity. The definition for this type of markedness is given in (2) (Lehmann 1989:176):

- (2) Let there be a binary feature $[\pm\alpha f]$ and two corresponding categories of linguistic elements, defined by $[\alpha f]$ and $[-\alpha f]$.
 Then $[\alpha f]$ constitutes a “mark” as against $[-\alpha f]$ if for any subcategory $[\beta g]$ of $[\alpha f]$, there is a corresponding subcategory $[\beta g]$ of $[-\alpha f]$, but not necessarily vice versa.
 Correspondingly, an element A belonging to category $[\alpha f]$ is “marked” as against an element B belonging to category $[-\alpha f]$.

To put this in simpler terms, we can say (if A is the marked category) that the number of distinct forms in category A will always be less than or equal to the number of distinct forms in category B. Lexically, a term that shows less diversification of subcategories, such as *piglet* “young pig”, is more marked than one that shows more diversification, such as *pig*. *Pig* is differentiated

(that is, subcategorized) into *sow* and *boar*, whereas there is no such differentiation of *piglet* into male and female piglets. *Piglet* is also marked in the classical Prague sense of being more morphologically and semantically complex, being made up of the morpheme *pig* plus a diminutive morpheme. At the same time *sow* and *boar* are also marked relative to *pig*, as they are more semantically restricted.

In the grammatical realm we find greater differentiation in unmarked grammatical categories and less differentiation in marked grammatical categories. That is, a grammatical category with only one form and/or a more restricted distribution is more marked than one with a greater number of forms and a wider distribution. For example, the future tense of Latin is marked relative to the present tense, as it has only one mood, the indicative, while the present has two moods, the indicative and the subjunctive (Lehmann 1989:177). In French, the plural definite marker is more marked than the singular, as it has only one gender, while the singular has two.

Related to these two types of markedness is the third type, statistical markedness, or language-internal distribution and frequency of occurrence.⁴ Whereas implicational or typological markedness deals with the relative frequencies of abstract categories cross-linguistically, statistical markedness is based on the frequency of language-internal tokens of forms belonging to those categories. A category whose forms appear more often in texts is less marked than one whose forms appear less frequently. Greenberg (1966) gives a number of examples from both phonetics and grammatical forms based on text counts. For example, from a count of glottalic and non-glottalic

⁴See Greenberg 1966, and also the discussion in Moravcsik & Wirth 1986 on the correlation between frequency, variability, and complexity.

consonants in texts from Hausa, a language which contrasts these two categories, Greenberg (p. 15-17) found that non-glottalic consonants (the unmarked forms) accounted for 92.2 percent of the forms counted, while the glottalic consonants (the marked forms) accounted for only 7.8 percent of the forms counted. In terms of case marking morphology, a case marker that is obligatory and appears frequently in texts of a particular language, and in more contexts, is less marked than one that appears less frequently, and in restricted contexts, in the same texts.

As discussed by Greenberg (1966) and further supported by Gundel, Houlihan and Sanders (1986), there is a correlation between typological markedness and language-internal frequency such that the forms instantiating the typologically more frequent category will generally have a wider range of distribution and frequency of use than those of the typologically less frequent category within a particular language.

1.2 Prototype theory

The development of prototype theory began in the late 60's and early 70's with the work of Brent Berlin, Paul Kay, Eleanor Rosch, and others on lexical items such as color terms, showing that membership in semantic categories cannot be defined using the traditional Aristotelian conception of necessary and sufficient conditions; membership in a category is not a simple yes or no matter, as categories are not digital, with clear boundaries. Cognitive categories are analog, as there is a degree of vagueness to the boundaries of the categories, though the center of the categories is clear. That is, some members of a semantic category fit that category better than other members of the category, and the line where one category ends and another begins is not always clear, as a peripheral member of one category may also

have characteristics that make it a peripheral member of another category.⁵ Work on lexical semantics has been very strongly influenced by these developments (see for example Fillmore 1975, Coleman & Kay 1981, Langacker 1988).

Application of the concept of prototypes has since been extended from the lexical realm to the grammatical realm, for example showing that the categories noun and verb are not discrete (Ross 1972, 1973, Hopper & Thompson 1984, 1985, Croft 1991), and that transitivity is not a yes or no matter, that it can be a matter of degree, with clear prototypical transitive situations and situations that are less prototypical, though arguably still transitive (Hopper and Thompson 1980).⁶

There is abundant evidence that speakers often use existing linguistic units in new ways that are semantically related, but stretch the original category semantically, possibly encroaching on related categories. That is, the new usages often deviate to some extent from the prototype meaning of the form, and this not only gives the category its fuzzy edges, but is often also responsible for diachronic change (see in particular Brugman 1983, 1984; Sweetser 1990). Very often a form will be extended to more and more situations that are more and more at variance with the prototypical meaning of the form, possibly to the point of changing the definition of the category. Bybee & Pagliuca (1985:75) argue that this type of metaphorical extension is what drives grammaticalization, and they “suggest that human language users have a natural propensity for making metaphorical extensions that lead to the

⁵See Berlin & Kay 1969, Kay 1975, Kay & McDaniel 1978, Rosch 1973, 1975a, 1975b, 1977. See especially the summaries and discussions in Rosch 1977, 1978, 1981; Lakoff 1987; and Givón 1989, Chapter 2.

⁶For other discussions and applications of prototype theory, see Taylor 1989, Tsohatzidis 1990, and Corrigan, Eckman & Noonan 1989.

increased use of certain items. The metaphorical extensions are cognitively based, and are similar across languages.” The increased use of an existing form for new uses is a function of economic motivation (Haiman 1983), as it is easier to use a form already in the language than to create a new one. The extension is cognitively based on connections (“family resemblances,” in Wittgenstein’s terminology) that the speakers perceive between the meanings of the two uses. These connections are not objective, but subjective. As argued by Lichtenberk (1991:477), “what counts is the connections (such as similarity) that people perceive or indeed form between phenomena, not some objectively existing connections. Connections between phenomena exist only to a perceiving mind.”⁷ It is these connections that motivate the extensions of meaning, so the extensions are not arbitrary, though the connections in no way necessitate the extension.⁸

Aside from the well-known example of the historical differentiation of color terms in predictable ways from the prototypes, other examples from the lexical realm of the extension of a prototype category can be found throughout the lexicon of just about any language. One example from English is the extension of *can* from the meaning “know” to the meanings “know how to,” “be able to,” and “be permitted to” (see Givón 1989:56-57). Traugott (1986, 1989) has given a number of examples of such extensions from the history of English both in the lexical realm and in the development and extension of grammatical forms. In terms of grammatical marking we can look again at the example of agreement on the verb, which

⁷See also Lakoff’s (1987:92ff.) interesting discussion of Dyirbal noun categories in this regard.

⁸See also Claudi & Heine 1986, Sweetser 1990, and Heine, Claudi & Hünemeyer 1991a on the metaphorical motivation of grammaticalization.

when first grammaticalized will only mark prototypical subjects and/or objects, and then will often come to be used for more and more types of subjects and/or objects that differ from the prototypical meaning of the category.

1.3 Markedness, prototypes, and diachrony

There is a very strong correlation between degree of markedness of a category and degree of deviation from prototypicality, and in fact the type of typological unmarkedness we discussed above has been one of the key types of evidence for the existence of prototype categories. The more prototypical a category is, the more likely it will be kept formally distinct and associated with a particular morphosyntactic form, the more stable and universal marking for it will be cross-linguistically, and the more easily a language will acquire marking for it historically (Kemmer 1992:148ff). For example, the coding of prototypical transitive situations cross-linguistically generally involves a verb plus coding (noun phrases, pronouns, or agreement forms) of two participants, as in *John kissed Mary*. Intransitive situations are generally coded by a verb plus coding for one participant, as in *John burped*. Reflexive situations are not as prototypical as the basic transitive and intransitive situations, but distinct marking for reflexive situations is quite common cross-linguistically. That they are more marked than the prototypical transitive and intransitive situations can be seen by the extra overt marking (verb affix, pronoun, etc.) often required in the coding of reflexive situations. There is also no language that has coding of reflexives that does not have coding for prototypical transitive and intransitive situations. In fact reflexive coding is generally a marked form of the coding for prototypical transitive situations.

As discussed by Kemmer (1992:150), based on the semantic connections between prototype and related non-prototype categories, we would expect to find a diachronic relationship between them as well:

[I]t is reasonable to presume that the same cognitive factors that underlie the synchronic polysemies found recurrently in association with particular grammatical markers are also responsible for determining the potential diachronic paths of a given marker as it changes from a marker of one category to that of another, related category. The semantic connections among categories constrain both the possible synchronic formal relations among categories, and the diachronic relations among categories, i.e. the attested grammaticalization channels.

As we will see below, this is the situation with the development of middle marking from reflexive marking and abstract case markers from concrete, local case markers. What is key for our purposes here is that non-prototypical categories, that is, the marked, less frequently found categories, generally develop, in those languages that have them, out of prototypical categories.

2.0 Dulong reflexive-middle marking

In Dulong⁹ there is a verbal suffix *-cu*³¹ which appears in situations such as those in the examples in (3):¹⁰

⁹Dulong is a Tibeto-Burman language spoken in Kachin State in northeastern Myanmar and Yunnan Province in southwestern China. The data here are from LaPolla 1995a, based on my own fieldwork on the dialect of Kongmu Village in Yunnan, China. According to fieldwork in Myanmar, the related Rawang dialects in Myanmar show similar uses of the reflexive/middle marker, though the form of the marker is *ci*³¹.

¹⁰Abbreviations used in the examples: RM unique reflexive marker, MM unique middle marker, R/M reflexive-middle marker, INST instrumental marker, PP past participle.

- (3) a. aŋ⁵³ sat⁵⁵-ɕu³¹
 3sg hit-R/M
 ‘He is hitting himself.’
- b. aŋ⁵³ mu⁵⁵gu⁵³-mi⁵⁵ kɔp⁵⁵-ɕu³¹
 3sg rainwear-INST cover-R/M
 ‘He is covering himself with the rainwear.’
- c. aŋ⁵³ tu³¹ɔŋ⁵³-ɕu³¹
 3sg curse-R/M
 ‘He is cursing himself.’
- d. aŋ⁵³ a³¹-lu⁵⁵-ɕu³¹
 3sg happy-R/M
 ‘He is happy.’
- e. aŋ⁵³ klot⁵⁵-ɕu³¹
 3sg move-R/M
 ‘He is going out.’
- f. aŋ⁵³ et⁵⁵-ɕu³¹
 3sg laugh-R/M
 ‘He is laughing.’

In Sun 1982 and Liu 1988, this marker was referred to as a marker of “self-initiated” action (自動態) distinct from reflexives, which were said to be marked by reflexive pronouns. No clear line was drawn between the “self-initiated” type and unmarked transitives and intransitives. In LaPolla 1995a, using examples such as those given in (3) above, I show that self-initiated action is only one of a number of situation types that can be marked with -ɕu³¹, and that the core meaning associated with the use of this suffix is self-directed action.¹¹

¹¹The forms discussed as “reflexive pronouns” by Sun (1982:81-82) are actually emphatic pronouns which are not used in reflexive situations. That is, they reinforce or emphasize the agent of the action, as in (i):

- (i) aŋ⁵³ a³¹-du⁵³ lɔ⁵⁵
 3sg self return
 ‘S/he went back by himself/herself (without anyone assisting).’

In terms of the semantic situation types coded by this suffix, in (3a,b,c) we have clear examples of reflexive situations, as can be seen from the English translations, while in (3d,e,f) we have examples of situations that show the same marking, but are not typical reflexive situations; they are the type of situations that are marked with middle voice marking in languages that have distinctive middle voice marking, such as Old Norse, Russian, Dutch, and Turkish. These situation types include grooming actions, changes in body posture, emotions, cognitive actions, perception, spontaneous events, indirect middles (e.g. Classical Greek *ktâ-sthai* “acquire [for oneself]”, Latin *ap̄iscor* “get [for oneself]”), and naturally reciprocal events.¹²

The middle situation is like the direct reflexive in that the referent performing the action and the one affected by the action are the same referent, that is, both involve self-directed action, but the middle voice situation differs from the prototypical direct reflexive situation in that the nature of that referent as actor and the nature of that referent as undergoer are not as distinct as in the reflexive situation. There is what Kemmer (1993) refers to as a “low elaboration of participants in an event” (Ch. 3), or, on a more general level, a “low elaboration of events” (Ch. 6), as the subparts of the complex action involved in a middle situation are not as distinguishable as in a reflexive situation. This can be seen in comparing the Russian examples below (Kemmer 1994:203, citing Haiman 1983:796):

- (4) On utomil sebjâ
 he exhausted RM
 ‘He exhausted himself’ (reflexive event)

¹²See Kemmer 1993, Appendix A, for a full listing of the categories of semantic middles.

- (5) On utomil-sja
 he exhausted-MM
 ‘He grew weary’ (spontaneous event)

In (4) the use of the Russian reflexive marker *sebjā* emphasizes the conceptual distinction between the actor as initiator of the action and as endpoint of the action. Use of the middle marker, as in (5), involves no such clear distinction.

In Dulong $-\text{cu}^{31}$ appears on a large number of verbs that represent situations with middle semantics. The use of this form in Dulong is in fact very similar to that of the reflexive pronouns in French, which also mark both reflexive and middle situations. The Dulong form, though, is not a pronoun, and is invariant for person.¹³ The verbs in Dulong which require the use of the reflexive/middle marker for situations that in English would not require a reflexive construction fall into the same semantic categories as those in French and the unique middle marking languages. As in French, without the middle marker the verb root often either has no independent meaning, or has a meaning different from that of the verb with the middle marker, e.g., $\text{et}^5 \text{ }^5$ ‘to laugh at (someone)’, $\text{et}^5 \text{ }^5\text{-cu}^{31}$ ‘to laugh, smile’; $\text{t}\alpha\text{I}^5 \text{ }^5$ ‘to throw’, $\text{t}\alpha\text{I}^5 \text{ }^5\text{-cu}^{31}$ ‘to run’.

Looking at the uses of this marking in terms of typological markedness, we can see that its use for middle situations is more marked than its use for reflexives: every language that has middle voice marking has

¹³Actually there are changes in the form in some contexts for different persons, but this is due to the suffixation of person marking segments, and not due to suppletion, as in French.

reflexive marking (see Kemmer 1993), but not vice versa. While the reflexive is marked vis-à-vis the normal transitive and intransitive situations, it is less marked than middle marking.

In terms of prototypes, reflexive situations differ from prototypical two-participant transitive situations in that there is only one participant; the actor and the undergoer (or recipient/ benefactive) are the same referent, but, as discussed by Kemmer (1992, 1993, 1994), in terms of marking, reflexives are almost universally kept distinct from prototypical transitives and intransitives, so can be considered a third type of prototype category. The middle voice category, on the other hand, is not a prototype category. There is no consistency in the marking of this category cross-linguistically. Only a minority of languages in the world have distinct marking for middle situations (e.g. Russian, Old Norse, Hungarian, Turkish). In other languages the marking of middle situations patterns with either prototypical reflexive situations, as we saw in Dulong, and as in, for example, French, German, and Quechua, or with prototypical transitive and intransitive situations, as in English, Chinese, Tagalog, and other languages (see examples below).

Just as the reflexive can be seen as an intermediate semantic type between the two poles transitive and intransitive (Hopper & Thompson 1980:277), from the different types of marking used for these situation types we can see that the middle is intermediate semantically between the reflexive and intransitive situations on the total transitive-reflexive-intransitive cline represented in Figure 1 (Kemmer 1993:73):

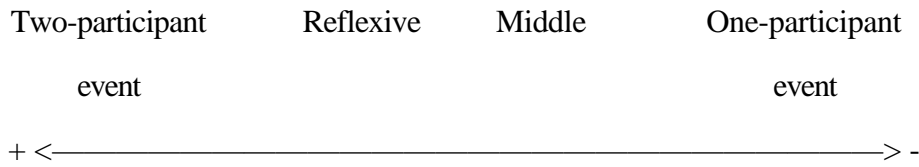


Figure 1: Degree of distinguishability of participants/events

In both languages of the French type and those of the English type (i.e. the two types of language that do not have distinct middle marking) there are three types of prototype category marking: transitive, intransitive, and reflexive. What is different between the two types is what semantic categories are covered by each type of marking. In languages of the French type (including Dulong), the form of the reflexive prototype is used to mark middle situations, as in the French example in (6):

- (6) Je me suis lavé.
 1sg R/M to.be wash:PP
 'I washed; got washed.'

In languages of the English type, on the other hand, it is the form of the intransitive prototype or the transitive prototype, and not the reflexive prototype that is used to mark middle situations, as in the examples in (7):¹⁴

- (7) a. I rose from the chair.
 b. I washed my face.

In languages with unique marking for the reflexive (i.e. those with middle forms distinct from reflexive forms, such as Russian, and those without middle marking, such as English), it is usually possible to add a reflexive form, or a pronoun or noun interpreted as having reflexive meaning (such as *shēn* "body" in example (9) below), to an intransitive form which

¹⁴In English it is also possible to use the "get passive" or reflexive pronoun to express some middle semantic situations, e.g. *get dressed*, *enjoy oneself* (Kemmer 1993:184). See also ex. (8).

marks middle semantics in order to emphasize the dual semantic nature of the participant of the action. This is often done to emphasize the effort put into an action or the affect of the action. We saw the Russian example of this above (ex. (4)); below are examples from English (ex. (8)) and Chinese (ex. (9); from Jin 1993:174):

- (8) I sat myself down and started working.
- (9) tián gūniáng zhàn qǐ shēn lái fúzhē ménkuàng
 Tian miss stand up body come holding doorframe
 chuǎnxī yīhuì fāng zǒu.
 panting a.while only.then go
 'Miss Tian stood herself up and, holding on to the doorframe, rested a while before leaving.'

In many of those languages where we know middle marking developed out of reflexive marking, as in French, this extended emphatic use of the reflexive simply became more consistent, lost its emphatic sense, and eventually became obligatory.

Historically the most common source of overt middle marking is the reflexive, which comes over time to be extended from prototypical reflexive situations to situations involving middle semantics (cf. Croft, Skyldkrot, & Kemmer 1987). The best known example of this is the extension of the Latin reflexive marker to middle situations in the Romance languages (see Kemmer 1993:151ff). Even in those languages that have distinct middle marking, that marking often evolved out of reflexive marking, with the unique middle form being created through repartition or reinforcement of the reflexive form, as in Dutch.¹⁵ As the originally emphatic use of the reflexive to mark middle situations became obligatory, a new reinforced form for reflexives began to

¹⁵In Dutch the original reflexive marker *zich* came to be used for middle situations, and now must be reinforced by *-zelf* (i.e. *zich-zelf*) to express reflexive situations (Kemmer 1993:184ff.).

be used, and these forms then developed into a system with distinct reflexive and middle marking.¹⁶

I would like to suggest that the marking of middle voice in Dulong is also the result of the spread, through metaphorical extension, of the use of the form of the prototype category reflexive from prototypically reflexive situations to somewhat less prototypically reflexive situations, and finally to situations with middle semantics. One avenue for this change would be the overuse of an emphatic sense, as mentioned above in the discussion of (8) and (9). A second possible avenue would be through indirect reflexive expressions where, due to the presence of an object-like body part, the grammatical form is that of a reflexive, though the semantic situation being expressed is a middle situation. Use of the reflexive in this type of situation could also lead to the eventual development of the obligatory use of this marking in middle situations. Examples of such situations are presented in (10):

- (10) a. aŋ⁵³ ɲuɪ⁵⁵ tɔt⁵⁵-ɕu³¹
 3sg fingernail cut-R/M
 ‘S/he is cutting his/her fingernails.’
- b. aŋ⁵³ tu³¹wan⁵³ kɪaʔ⁵⁵-ɕu³¹
 3sg snow shake-R/M
 ‘S/he shook off the snow (from his/her body).’
- c. aŋ⁵³ u⁵⁵ ɕuɪ⁵³-ɕu³¹
 3sg head cut(hair)-R/M
 ‘S/he is cutting his/her hair.’

¹⁶In many languages with unique reflexive and middle markers, there is an etymological relationship between the two forms, as in Russian, though this is not always the case. For example the Latin mediopassive (middle) marker *-r* and the reflexive *se* have no etymological relationship.

- d. aŋ⁵³ ma⁵⁵ tɕi⁵⁵-ɕu³¹
 3sg face wash-R/M
 ‘S/he is washing his/her face.’

In these examples there seem to be prototypical transitive events, and in languages such as English and Chinese, in which some middle situations are marked the same as prototypical transitives, the marking does not differ from normal transitive marking, and the relationship between the agent and the body part affected has to be inferred (as in Chinese) or overtly marked with a genitive construction (as in English). Compare the Chinese sentence below with its English translation:

- (11) Wǒ yào xǐ liǎn
 1sg want wash face
 ‘I want to wash my face.’

The form of the Chinese sentence is that of a normal transitive sentence, and the fact that the face to be washed is the speaker’s own face is inferred. The English translation also is in the form of a normal transitive, though here the fact that the face to be washed is the speaker’s own is overtly marked by a genitive construction. In Dulong, on the other hand, the addition of the reflexive/middle marker overtly specifies, for example in (10a), that the fingernails he or she cut were his or her own, and in (10b), that the snow that was shaken off was snow that was on his or her own body.¹⁷ Semantically it is then a short step from this sort of situation to other types of middle situations.

¹⁷Without the addition of -ɕu³¹, the sentences in (10) would not be complete. Unlike Chinese, it is not possible to rely on inference. If, for example, the face to be washed was other than the actor’s, an overt genitive phrase would be required for the sentence to be semantically complete (see LaPolla 1995a for discussion).

There is another use of the suffix $-\text{cu}^{31}$ which we have yet to discuss.

This is shown in (12) and (13):

- (12) a. $\text{a}\eta^{53} \text{cam}^{53} \text{pai}^{55}\text{-cu}^{31}$
 3sg knife hang.on.shoulder-R/M
 ‘S/he has a knife on.’
- b. $\text{a}\eta^{53} \text{cam}^{53} \text{pai}^{55}$
 3sg knife hang.on.shoulder
 ‘S/he is putting on a knife.’
- (13) a. $\text{a}\eta^{53} \text{jo}^{55} \text{pu}^{31} \text{sai}^{55} \text{ti}^{55} \text{tap}^{55} \text{gua}^{55}\text{-cu}^{31}$
 3sg clothing red one piece put.on/wear-R/M
 ‘S/he is wearing a piece of red clothing.’
- b. $\text{a}\eta^{53} \text{jo}^{55} \text{pu}^{31} \text{sai}^{55} \text{ti}^{55} \text{tap}^{55} \text{gua}^{55}$
 3sg clothing red one piece put.on/wear
 ‘S/he is putting on a piece of red clothing.’

In examples (12a) and (13a), the situation involved is presented as an existing state, while in (12b) and (13b) the situation is presented as an activity. What is involved in these examples is that use of $-\text{cu}^{31}$ emphasizes the stative nature of the *result* of the action, while non-use of $-\text{cu}^{31}$ expresses a simple transitive action.¹⁸ Based on our understanding of the development of the use of $-\text{cu}^{31}$, it seems that once $-\text{cu}^{31}$ came to be used more and more to express middle situations, it came more and more to be associated with events where there is a “low elaboration of events.” Addition of this marker to a transitive verb then came to have a function similar to that of a “stativizer”: diminishing the conceptual separation of the events involved, making the overall event more like a state. In many languages with middle marking we also find that this marker has a stativizing function. Following are examples

¹⁸As can be seen from the translations of the sentences in (12) and (13), English uses different verbs to express this difference in meaning.

from French ([14a]), Choctaw ([14b]; Nicklas 1974), and Chichewa ([14c]; Watkins 1937).

- (6.14) a. La fenetre s'est ouverte.
 the window REF/MID-be open
 'The window got opened.'
- b. okhisa at tinwah
 door open-MID
 'The door is open.'
- c. mwana wanga wapandi:-ka
 child my beat-MID
 'My child has been beaten.'

Above we mentioned that, in languages without middle marking and languages with unique middle marking, the reflexive can sometimes be used to emphasize the dual semantic nature of the participant as initiator and endpoint of the action. Here we have just said that the reflexive/middle marker in Dulong can be used to reduce the conceptual separation of the two participants involved in the situation. These two statements seem to be contradictory, but in fact they are simply two aspects of the same phenomenon. Looking back at Figure 1, we can see that using reflexive marking on a single participant verb such as in examples (4), (8), and (9) moves the perspective of the situation towards the left (the transitive) side of the cline, while using reflexive/middle marking on a transitive verb moves the perspective of the situation towards the right (the intransitive) side of the cline. The marking then in both cases is moving the perspective towards the same area in semantic space.

To summarize, then, the isomorphy of the reflexive, middle and “stativizing” markers in Dulong is most likely the result of a marker originally having only a reflexive use being extended to cover middle

situations, and then, because of the nature of middles, being further extended to the use as a “stativizer.”

3.0 Case marking

In LaPolla 1992, 1995b, I showed that none of the case marking we find in the Tibeto-Burman languages can confidently be reconstructed back farther than the level of the branch, such as the level of Bodish, and I suggested that when we find marking of some time depth, it is generally a locative or ablative case at the earliest stages. In doing the comparative work for those papers, I noticed a very large number of languages where the same form is used for marking what are generally considered different semantic roles. For example, in many languages the same form was used for the agentive and the ablative, or the agentive and the instrumental, or for the agentive, the instrumental, and the ablative. I then did a systematic survey of these patterns of isomorphy in 145 Tibeto-Burman languages and dialects. Twenty-two different pairings of case markers were examined. The pairings examined are listed in (15):

- | | | |
|------|-----------------------|-------------------------|
| (15) | ablative/agentive | instrumental/ablative |
| | ablative/dative | instrumental/agentive |
| | allative/dative | instrumental/comitative |
| | allative/patient | locative/ablative |
| | benefactive/dative | locative/agentive |
| | genitive/ablative | locative/allative |
| | genitive/agentive | locative/dative |
| | genitive/dative | locative/instrumental |
| | genitive/instrumental | locative/patient |

genitive/locative	locative/patient/dative
genitive/patient/dative	patient/dative

Among these pairings, eight showed significant isomorphy (in order of frequency):

- (16) patient and dative marking (84 lgs.)
 locative and allative marking (65 lgs)
 agentive and instrumental marking (52 lgs.)
 ablative and instrumental marking (45 lgs.)
 patient/dative and locative marking (27 lgs.)
 agentive and ablative marking (23 lgs)
 comitative and instrumental (19 lgs)
 allative and dative (17 lgs)
 agentive and genitive marking (16 lgs.).

The isomorphisms found in these languages can be roughly divided into an agentive-instrumental-ablative type, a patient-dative-allative-locative type,¹⁹ and an instrumental-comitative type.²⁰ The cases of agentive-genitive isomorphy are of a different nature than the other patterns of isomorphy. The majority of the cases of agentive-genitive isomorphy are not due to metaphorical extensions, but are syncretisms where cases that were originally different fell together because of sound changes, such as in some Modern Spoken Tibetan dialects, where the loss of the *-s* final on the agentive marker

¹⁹In more than a few languages the agentive, instrumental, and/or ablative forms are morphologically derived from the locative forms, e.g. Zaiwa locative *ma*, ablative/instrumental *mai*. This is a somewhat different relationship than that shown by complete isomorphy, so will not be treated here.

²⁰See Croft 1991:184-198 on the naturalness of these groupings and their commonness cross-linguistically; see also Blake 1977:60-61 on the commonness of these groupings in Australian languages.

resulted in a form which is the same as the genitive marker.²¹ Compare, for example, the Written Tibetan and Spoken Tibetan given below:²²

	Genitive	Agentive-Instrumental
Written Tibetan:	gyi	gyis
Spoken Lhasa Tibetan:	ki	ki/kε

The agentive-instrumental form was originally formed from the genitive form plus the *-s* morpheme, which DeLancey characterizes as “indicating abstract Source, subsuming both agent and starting point of motion” (1985:57). This morpheme also appears in the ablative forms *nas* and *las*, which are complex forms consisting of the locative *na* and *la* respectively plus the *-s* morpheme. Rather than being exceptions to the agentive-instrumental-ablative isomorphic pattern, then, the Tibetan forms are prime examples.

The agentive-instrumental-ablative type of isomorphism also shows frequent isomorphy with (manner) adverbial markers as well as anterior and causal clause subordinators; the locative-allative-patient-dative type of isomorphism also shows frequent isomorphy with purposive, temporal, and conditional clausal subordinators (cf. Genetti 1986, 1991; Ebert 1993).

In my earlier papers on the development of case markers, I suggested that the forms for the more abstract cases, such as the agentive, were derived from the local (here including ablative) cases. I did so for a number of

²¹Luraghi (1987:355) distinguishes between functional syncretism, the merging (of function but not necessarily form) of two or more cases due to functional similarity, and morphological syncretism, the homophony of two or more cases due to phonological erosion of the original forms. The Tibetan case then is one of morphological syncretism.

²²The genitive marker has a number of allomorphs in Written Tibetan depending on the final of the preceding syllable (*-gyi*, *-gi*, *-kyi*, *-i*). As the agentive-instrumental marker consists of the genitive plus the ablative, the agentive-instrumental marker also follows the same pattern of allomorphs.

reasons. First, a number of cross-linguistic studies on grammaticalization (e.g. Heine & Reh 1984, Traugott & Hopper 1993, Lehmann 1982, 1985, inter alia) have shown this pattern to be a general feature of the development of case marking systems. For example, Heine, Claudi & Hünnemeyer (1991b:156) state in their principles for establishing the relative degrees of grammaticalization within a case marking system, which generally correspond directly to the relative ages of the markers, that “If two case functions differ from one another only in the fact that one has a spatial function whereas the other has not, then the latter is more grammaticalized.” Dirven (1993) discusses the extensions of locative prepositions in English from marking only spatial location to marking location in time, to marking other adverbials, and to marking causes. She states that “The extensions of the meanings of a preposition from physical space via time into more abstract domains do not occur in any haphazard way but follow a path of gradually increasing abstractions” (p. 76).

Second, in some Tibeto-Burman languages the historical or derivational development from locatives is relatively clear, such as when several languages share a particular form with only a locative meaning, or locative plus instrumental, but only one language used that form for an agentive marker. This is the case, for example in the Konyak group, where quite a few languages have *ma* as an ablative and/or instrumental marker, yet only one language, Nocte, uses that form as an agentive marker (see LaPolla 1995b).²³

²³Cf. also the following quote from DeLancey (1984:63), talking about the development of the case markers in Tibeto-Burman: “It is clear from those instances where the historical process can be reconstructed that the direction of change is always from the more concrete local to the more abstract grammatical sense.”

In the present paper I would like to give further justification for this assumed path of development using the concepts of markedness and prototypes.

Applying the definitions of markedness given above to the patterns of isomorphy we find in Tibeto-Burman, we find that the abstract cases are more marked than the local cases, and that there is a cline of markedness within each of the two major isomorphic types mentioned above. For example, there is no language in my database that does not have some type of locative marking, while there are many languages that do not have any sort of ergative, anti-ergative, accusative, or instrumental marking. Many languages in my database have several types of locative marking, but only two languages (Dhimal and Apatani) in my database have two semantically conditioned variants of the ergative marker. The instrumental is somewhat more diversified, with nine languages showing two semantically conditioned variants (usually one being a locative, for the sense of “use a container” to move liquids, etc.).²⁴ The ablative is the most common and most diversified of the types of marking within that isomorphic grouping. There is then a cline of markedness with the ergative being the most marked, the instrumental being somewhat less marked, and the ablative being the least marked.

There is also evidence from language acquisition studies (see Clark & Carpenter 1989) that children begin with a universal conceptual category of Source which, aside from true locative source, includes agents, causes, possessors, natural forces, standards of comparison, and prior events.²⁵

²⁴The nine languages are Anong, Baima, Ersu, Ladakhi, Lepcha, Singpho, Shixing, and Zaiwa.

²⁵In Tibeto-Burman, the grammaticalized category of Source evinced by the isomorphy of the agentive, instrumental, and ablative forms does not generally include possessors and

They mark this category using the form for locative source. For example, in English, children consistently acquire the locative use of *from* before any other use, and then extend the use of this form to agents and causes, and still further to possessors and standards of comparison (Clark & Carpenter 1989:11). They use *from* for these extended meanings even though these uses are not conventional in English. That is, they are not based on adult language behavior. We can see from this that the ablative use is more prototypical than the more abstract uses, and that the more abstract uses are extensions of the ablative use.

There is also a cline of markedness within the patient-dative-locative type of isomorphy, with patient marking being the most marked, as it is the least common and least diversified, dative marking being somewhat less marked, as it is somewhat more common and diversified, and locative marking being the least marked, as it is the most common and diversified.

As discussed in LaPolla 1992, 1995b, in a very large number of Tibeto-Burman languages the more abstract cases, ergative and what I have been calling anti-ergative or accusative, very often do not form a tight obligatory paradigm, but are used only in cases where the speaker feels it is necessary to avoid ambiguity, such as when there are two possible agents in the sentence or when the word order is not the unmarked one.²⁶ The more familiar or unmarked situation in most Tibeto-Burman languages is for the agent to precede the object in the sentence, and in many languages no

standards of comparison, though there are a few languages with these isomorphic patterns as well.

²⁶Cf. item (b) of Givón's Quantity Principle: "Less predictable information will be given more coding material" (1991:87). See also Mithun 1991, especially pp. 536-7, for discussion of the rise and development of agentive marking in North American languages, which parallels very closely that of Tibeto-Burman.

marking is used when this is the case. The ergative or anti-ergative marking is obligatory only when the word order varies from this order.²⁷ Here we can see how markedness is related to frequency, through Zipf's (1935) "principle of least effort", which Haiman (1983) has redubbed "economic motivation." This is the tendency for the speaker to use a phonetically simpler form (in this case NOT using a case marker) in unmarked, more familiar situations, and longer more explicit forms (here using a case marker) in less familiar situations. On the other hand, locative marking is usually obligatory for true locations regardless of word order.

I believe the cline of markedness within the agentive-instrumental-ablative type is due to the increasing semantic deviation (or abstraction) from the prototypical meaning of the ablative as a physical "source" or "origin." The extension was from ablative to instrumental, to agentive, and to clause-connecting "cause" marker.

In the other cline, the patient is more marked than the dative, and the dative is more marked than the locative. Here again there is deviation from the prototype meaning of physical location of the action. While in some languages there may still be a locative sense in the use of the locative or allative for dative and patient marking, as this use becomes more grammaticalized the form loses more of its locative sense in those contexts. The path of development of these forms then should have followed the markedness/prototypicality clines: the locative and ablative uses arose first, and were extended to the more abstract cases.

²⁷Cf. Clark and Carpenter's observation (1989:21) on the use of Source markers by children in the early stages of acquiring language: "Sources are explicitly marked as such only when they are in oblique positions and are not canonical subjects or topics. It is only then that agents must be marked in some way as AGENTS" (emphasis in original).

The third type of isomorphic pattern I found, that of instrumental and comitative, is a common extension of the sense of “accompaniment” through the metaphor AN INSTRUMENT IS A COMPANION (Lakoff & Johnson 1980:134-5).

4.0 Conclusion

I have used two relatively uncontroversial examples in this paper to suggest that aside from the standard types of evidence used for determining the probable path of development of a form of marking, some of which were mentioned above, particularly in cases of isomorphy we can use the concepts of markedness and grammatical prototypes to help us determine the most probable path of development of isomorphic forms.

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