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Causes and Effects of Substratum, Superstratum and Adstratum Influence, with Reference to Tibeto-Burman Languages

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1. Language Contact and its Result

Language contact has become a major focus of inquiry in historical and typological linguistics in the last twenty years, spurred in a large part by the publication of Thomason & Kaufman (1988), which tried to make sense of a large amount of language contact data. They argued that there was a direct relationship between the degree or intensity of language contact and the amount and type of influence the contact would have on one or more of the languages involved. Essentially, the greater the degree of bilingualism, the greater the degree of contact influence (see also Thomason 2001); if the contact and bilingualism was minimal, then there might just be a few loanwords adapted to the borrowing language's phonology and grammatical system, but if the contact and bilingualism was of a greater degree there would be influence in the grammar and phonology of the affected language. As more linguists came to take language contact more seriously, they came to realize how common language contact phenomena are. Dixon (1997) argued for the concept of "punctuated equilibrium", the idea that for most of history languages exist side by side (the equilibrium period) and slowly mutually influence each other, but occasionally there are periods of "punctuation", generally population movements due to natural or man-made disasters, or conquest of one people by another. What historical linguistics focused on in the past was the clear and rapid changes of the punctuations, and did not pay as much attention to the slow, less obvious changes due to the long periods of equilibrium. An important change in our way of thinking that grew out of all of this research on language contact was the realization that language contact is a part of the development of all languages, and so we cannot treat internal language change independently from changes influenced by language contact.

In a situation where there is deep and prolonged bilingualism in a society, there are two major types of outcome scenario:

1. The speakers of one language eventually all shift to speaking another language. This might be a shift of speakers from a less dominant language to a more dominant language, as happened with the Mon-Khmer speakers of southern Burma and Thailand, or it might be a shift of speakers of a politically dominant language to a more popular but less prestigious language, as in the case of the Norman French speaking rulers of England in the early part of the second millennium eventually switching to English.
2. The speakers of both languages maintain their languages and retain some sense of their being independent languages, but the languages develop certain commonalities of structure, in some cases becoming typologically very different from other members of their family, such as in the case of Vietnamese and southern Chinese becoming very similar in structure. If a group of languages come to share a significant typological profile, then they may form a *Sprachbund* (linguistic area).

In the case of the first scenario, shift from L1 to L2, even though there has been a shift, the language that is shifted to L2 will generally show some influence from the language that was shifted from L1, if the number of speakers of the language that was lost was significant. Influence of L1 on L2 is **substratum** influence. We see this in the development of Burmese, where Mon-Khmer speakers in the south of what is now Burma switched to speaking Burmese, but left a strong impression on the language, that is, Burmese now shows a number of Mon-Khmer features (Bradley 1980). If instead speakers of a language that was superimposed on another language shift to the language of the main population, as in the case of the Norman French rulers of England after the 11th century, if the period of contact was long enough and widespread enough (over four hundred years in the case of England), the language of the main population might be influenced by the superimposed language, such as was the case with English borrowing many words and features of Norman French (which, incidentally, itself had a Scandinavian substratum). Influence of L2 on L1 is **superstratum** influence.

In the case of the second scenario, both languages survive, either because they are equally dominant, or because a stable diglossia situation develops, but become more like each other. It might be that one becomes like the other, with the second one being less influenced, as with Vietnamese being more influenced by Chinese than Chinese was by Vietnamese, or it might be that both influence each other so that they both move toward a common typology unlike what either one had before. This latter case is **adstratum** influence, or the *Sprachbund* phenomenon, such as we find in the Balkans, where languages from several language families are in contact, such as Serbo-Croatian, Macedonian, Bulgarian, Albanian, Greek, and Romanian, and have developed certain common typological features (Friedman 1997). Other known linguistic areas include Central America (Campbell, Kaufman, & Smith-Stark 1986), the Amazonian area (Aikhenvald 2002), Australia (Dixon 2001), Europe (Haspelmath 2002), and Southeast Asia (Matisoff 1991, 2001).

What I would like to argue in this paper is that the cognitive and behavioural causes for the manifested influence are the same in all these cases. First we will look at some examples of each phenomenon, and then look at the cognitive and behavioural reasons for the phenomena.

2. The Manifestation of Influence

One example of substratum influence is the Mon influence on Burmese. Before the eighth century, the Mon (Mon-Khmer) controlled lower Burma and the Menam Chao Phraya valley (now part of Thailand). In the eleventh century Tibeto-Burman speakers who we identify as the ancestors of the modern Burmese conquered the Mon and set up the Pagan kingdom, adopting much of Mon culture, including the language, as the court culture. Burmese control of the Mon continued until the Mongol invasion in the late 13th century, when the Mon became independent again. Again in the 18th century the Burmese conquered the Mon and the formerly Mon area (including the Irrawaddy Delta and Rangoon) became incorporated into Burma and is now largely Burmese speaking. Bradley (1980) argues that many of the Mon-like features now found in Burmese are due to the fact that the south was largely Mon speaking and as the former Mon speakers shifted to Burmese, there was substratum influence on Burmese. Aside from a large number of lexical loans from Mon into Burmese, in terms of the phonology there has been convergence of the vowel systems of Mon and Burmese, and to a lesser extent of the consonantal system, such as a loss of contrast between alveolar fricatives and affricates versus palatal or alveopalatal fricatives and affricates, and the appearance (in Written Burmese) of palatal finals, as in Mon, but unlike in most Sino-Tibetan languages. Burmese ‘tones’ are unlike the usual Sino-Tibetan type of tones in being more like a register contrast (and in the Arakanese dialect of Burmese show vowel height differences related to the registers), as is the case in Mon. In terms of word structure, Burmese has the typical sesquisyllabic structure of Mon-Khmer languages where the first ‘half-syllable’ or ‘minor syllable’ is unstressed and the second syllable is stressed (e.g., the Burmese pronunciation of the word Burma: [bə'mɑ]).

There are many examples of superstratum influence among the Tibeto-Burman languages, due to the fact that most Tibeto-Burman languages are minority languages within the sphere of a much more dominant language. One example is the influence of Chinese on Bai, where aside from an extremely large number of loan words from Chinese we find the gradual shift to Chinese word order patterns, such as verb-medial syntax. In Burma an example would be the influence of Jinghpaw on Rawang. The Rawang live in Kachin State in Burma and are considered part of the Kachin ethnic group in Burma. As the dominant language of the Kachin group is Jinghpaw, most Rawang speakers are fluent in Jinghpaw as well, and the Rawang language has borrowed a large number of words and certain structural patterns, such as the pattern of nominalising a clause with *pa* or *na* (the latter borrowed from Jinghpaw) and making the nominalized clause the complement of the copula as a way to show uncertainty about the proposition expressed in the nominalized clause (exx. (1)–(2), from LaPolla 2008).

(1) à:ngí dʷng a:pmà pà íē.

[àng-í	dʷng	ap-à	pà]	í-ē
3sg-AGT	finish	DIR-TR.PAST	NOM	be-N.PAST
'I guess he finished it.'				

(2) *àng tuqám nā íē.*

[àng tuq-ám nā] í-ē
 3sg arrive-DIR PROB be-N.PAST
 ‘He might have arrived (there) (already).’

The influence of Tibetan on non-Tibetan languages within the Tibetan cultural sphere (and defined ethnic group in China) is a third example of superstratum influence. Languages such as Baima, rGyalrong, and the languages of the Deng people have numerous Tibetan loanwords and features, to the extent that in some cases, such as Baima, it is unclear if the language is a dialect of Tibetan or a distinct language (see Chirkova 2005, Sun, Qi and Liu 2007). There is also influence of dominant Indo-Aryan languages on the Tibeto-Burman languages within the Indic cultural sphere. In these cases, we find, for example, the development of retroflex stop consonants and co-relative structures of the Indic type, often involving borrowed Indo-Aryan relative pronouns, as in the examples in (3), from the Chaudangsi language of the Pithoragarh District of Uttar Pradesh, India (Shree Krishan, 2001: 412), where a relative clause is formed using one of two borrowed (Indo-Aryan) relative pronouns, *jo* (with human subjects) or *jəi* (with non-human subjects).

(3) a. *hidi əti siri hle jo nyarə ra-s*
 this that boy is who yesterday come-PAST
 ‘He is the same boy who came yesterday.’

b. *hidi əti hrəng hle jəi be ər guun-cə*
 it that horse is which mountain from fall-PAST
 ‘It is the same horse which fell from the mountain.’

A classic example of adstratum influence is the Indian linguistic area, first identified by Emeneau (1956; see also Emeneau 1980, Masica 1976, Abbi 1991), where languages of different families have developed a similar typological profile and similar structures. In some areas the languages have become almost identical in structure, while largely maintaining different lexical forms, such as the case of Kupwar village of Maharashtra state in India, as described by Gumperz and Wilson (1971). In this village there are three different languages, varieties of Urdu, Marathi (both Indo-European), and Kannada (Dravidian). Because most of the residents of the village speak all three languages, they slowly influenced each other until they developed a common typological profile, what Ross (2001) calls “metatypy”. And it wasn’t a matter of one or two languages changing to be like the third, but all three languages changing relative to their standard varieties: “There are in fact *no* instances of changes involving just two of the varieties to the exclusion of the third. *All* changes are convergences involving the three varieties as a set, being changes either of one toward the other two, or of two toward the other one” (Gumperz and Wilson 1971: 163, emphasis in original). Because of this Gumperz and Wilson (1971: 154) argue that there is an “extraordinary degree of translatability” among the three languages. This can be seen in the examples in (4) (adapted from Gumperz and Wilson 1971: 154):

- (4) Urdu: *pala* *jəra* *kaʃ* *ke* *le* *ke* *aya*
 Marathi: *pala* *jəra* *kap* *un* *ghe* *un* *alo*
 Kannada: *tapla* *jəra* *khod* *i* *təgond* *i* *bəyn*
 greens a.little cut having take having 1sg+come+PAST
 ‘I cut some greens and brought them.’

In these examples, although the forms of the words are different in most cases between the languages, the structures are the same. Gumperz and Wilson (1971: 155) argue that although there are three languages in the village, there is only one grammatical and phonetic system.

An example from among the Tibeto-Burman languages of how the structures can become similar can be seen from the description of the Rongpo language of Chamoli District of Uttar Pradesh, India, by S. R. Sharma (2001). Speakers of this language also speak Hindi and Garhwali (both Indo-Aryan). Sharma (p. 223–224) presents example (5a) as an example of a particular participial form, and gives the English translation in (5a), but says “In fact this translation is not very close in its meaning. The Hindi sentence is more appropriate”, and then gives the sentence in (5b). We can see that the structures of (5a) and (5b) are quite similar.

- (5) a. *di* *phəl* *gyi-tə* *jəping* *yã.*
 this fruit I-DAT eaten is
 ‘This fruit was eaten by me.’
- b. *yəh* *phəl* *mera:* *kha:ya:* *hua:* *hai.*
 this fruit I+POSS eaten be+PAST is
 giving the sense—‘I have the experience of eating this fruit in the past.’

One common feature of the Indian linguistic area (found in Indic and Dravidian languages) is the grammaticalization of a verb meaning ‘say’ into a causal connective marker. Saxena (1988a, b) gives the examples in (6) and (7) for the use of the verb for ‘say’ as part of a causal connective in Nepali (Indo-European; Saxena 1988a: 376) and Newar (Tibeto-Burman; Saxena 1988a: 379), respectively.

- (6) *timiharu madh-e* *ek* *jana* *murkh* *ho* *kinabhane* *yo* *dhorohoro* *hoina*
 you(pl) among-LOC one CL fool is why+say+PART this tower be+NEG
 ‘One of you is a fool because this is not a tower.’
- (7) *chi-pi* *cho-mho* *murkho* *kho* *chae-dha-e-sa* *tho* *dhorohora* *mo-khu*
 you-pl one-CL fools are why-say-INF-if this tower NEG-IS
 ‘One of you is a fool because this is not a tower.’

Again we can see that not only have both languages grammaticalized (non-cognate) verbs meaning ‘say’ into causal connectives, the overall structures are almost the same. Some of the phenomena that we previously talked about as ‘drift’ (see for example LaPolla 1994) might actually be due to adstratum influence (see also LaPolla 2001).

3. The Reason for the Influence

Each language is unique, and the grammar and semantic categories of each language uniquely reflect the cognitive categories of the speakers of that language (see Whorf 1956, LaPolla 2003). How a speaker represents a state of affairs reflects how that speaker conceives of the state of affairs, and how one conceives of a state of affairs depends on cultural norms (conventions) and experiences. For example, Heine (1994, see also 1997a, b; Heine and Kuteva 2005) shows that different conceptualisations of comparative situations (e.g., as differing locations as opposed to one surpassing the other) will determine the way that situation is expressed, and will lead to the grammaticalization of particular comparative structures that reflect these conceptualisations. For example, Rawang uses a stative locative conception of comparatives (e.g., A is above B in some respect), whereas Cantonese uses an active “surpass” type comparative (A surpasses B in some respect) (see also Ansaldo 1999 for different types and examples).

A second aspect of cognition and language use relevant here is that our use of our native language is a kind of habit of both thinking and behaviour. When we learn our first language we develop habits related to the use of that language, and that includes both behavioural aspects, such as developing the habits related to producing the sounds required for the language, but also cognitive aspects, such as learning to construe the world in the categories manifested in the language. These categories include how the speakers of the language divide up the possible human sounds, that is, what they take as representing one sound and what they take as representing two distinct sounds (e.g., in Rawang [b] and [p] are part of one phoneme, but in Burmese they are two phonemes), and they include the higher level conceptualisations of objects, phenomena, and activities (e.g., in English ownership and temporary possession of something not owned can be conceived of within the same category, and the word *have* used for both, but in Mandarin Chinese temporary possession of something not owned is conceived of as location rather than possession, and so the word that would translate as ‘have’ (*yǒu*) cannot be used in such cases).

Another aspect is that when we speak our own language we are used to constraining or not constraining the interpreter’s inference of our meaning in certain ways (see LaPolla 2003), and if the other language constrains the interpretation in a way that we are not used to, we will make mistakes in that regard, such as English speakers not using the 2nd person plural pronoun in Chinese (using the second person singular form instead), because they are not used to constraining the interpretation of second person number (Standard English does not obligatorily make number distinctions in second person pronouns). On the other hand English speakers do have a habit of constraining the interpretation of the time of an action relative to the time of the speech act (there is obligatory tense marking in English), and so when speaking a language that does not have tense marking, such as Chinese, they will often overuse the perfective aspect marker to satisfy their habit of using past tense marking when talking about past actions. Habits are hard to change, and the more ingrained a habit is, the harder it is to change. This is why the younger we are the easier it is to learn a second language: the habits of our first language, which would get in the way of learning the different set of habits related to the second language, have not become as ingrained; there is no critical

period for language learning. It is the strength of our first language habits that causes our accent and other errors when speaking a second language.

Because of these two aspects, when people learn a second language, the learning of the forms of the language is really only a small part of becoming bilingual; the more important part is learning how to use the forms, and developing the habit of using those behavioural patterns and ways of thinking that the native speakers use, and this can only be done by learning to think like a native speaker of that language, that is, to think in the categories that the language represents. On a very obvious level it means learning to hear the phonemes of the language, so a Rawang speaker learning Burmese (as many of them do) needs to develop the habit of distinguishing between [b] and [p] as phonemes (not distinguishing them is an obvious trait of the Rawang accent in Burmese). On a higher level it means, for example, learning what referents can be referred to by a particular word, e.g., the set of referents which can be referred to by the term *biscuit* in Australian English is much larger than that for the same term in American English, while the set of referents referred to by the term *school* is smaller in Australian English than in American English. It also means learning the prototype representative or core of a semantic category, for example, what referent native speakers think of when they hear the word that translates as ‘soup’ or ‘bread’. This is true of actions as well. On an even higher level it means internalising the metaphors used in the language, so that, for example calling someone a pig in Chinese means something quite different from calling someone a pig in English. It means conceptualising situations and activities differently. For example, when we talk about doing e-mail, in English we often profile the activity/event from the point of view of the sending, so we say *I’m going to send a few e-mails*, also using the same verb/conceptualisation as to send a letter, whereas in mainland China it is conceptualised from the point of view of the typing, so one often says what would translate directly as ‘hit a few e-mails’ (where ‘hit’ refers to the typing), and when one does talk about “sending” an e-mail, one does not use the same verb/conception as sending a letter (*ji*), one uses the verb *fā*, which is closer in meaning to ‘distribute’ or ‘emit’ in English.

Substratum influence comes about because speakers shift to a second language while retaining the habits of pronunciation, semantic and metaphorical characterisation, and general conceptualisation of their native language. Clear examples are the development of “world Englishes”, such as Indian English and Philippine English. Native speakers of Philippine languages learn English, but within the Philippines they mainly talk to each other, and so there is no need to fully adapt to the habits of native English speakers. They can maintain their native habits of pronunciation and conceptualisation while using English forms. An example from Philippine English would be a common way of saying the traffic was bad: *It is bery trapic today*, where the concept of ‘traffic’ is conceptualised as an attribute, and the word *traffic* is pronounced with a true *tr-* initial (rather than as *tʃr-* as in American English), and *-f-* is pronounced as *-p-*, as [p] and [f] are heard as the same phoneme by native Tagalog speakers (same for *v-* > *b-* in ‘very’). An example from the Tibeto-Burman area is the case of Wutun (Chen 1982), which is a variety of Chinese with a strong Tibetan substratum. In that language the Chinese word for ‘widow’ is not used exclusively for women, as in Chinese, but is used for both widows and widowers, reflecting the Tibetan rather than the Chinese conceptualisation. In the example of Burmese given above, Mon speakers kept many of the habits of their Mon

pronunciation, lexical uses and conceptualisations, while speaking Burmese, and this ended up influencing the Burmese language.

With superstratum influence, what happens is also related to the habits of behaviour and conceptualisation, but in this case a speaker of one language (L1) learns a second language (L2), and in so doing acquires the habits related to the use of that language, and if this language is used often enough, then the newly acquired habits of the use of L2 can affect the habits of the use of L1. This can be as simple as developing new phonemes, such as the phonemicisation of [v] in English due to the influence of Norman French, or it can affect the whole structure of the language, as in the case of Bai mentioned above.

With adstratum influence and linguistic areas, the factors involved are again the same: speakers of different languages come to have what Bhattacharya (1974) has called 'new agreements in their outlook of life', in which there is 'a common cultural core', or as Ross (2001) puts it, speakers 'increasingly come to construe the world around them in the same way' as speakers of other languages in their community. What this means is that they come to share the same habits of conceptualisation and expression, and in many cases come to share the same behavioural habits as well, such as having the same phonemic inventories.

4. Conclusion

What I am arguing for here is the view that language use is a set of behavioural and conceptual habits, and the habits acquired speaking one language can influence the use of another language, be it L1 or L2, and the influence of these habits is what underlies the phenomena that we call substratum, superstratum, and adstratum influence on languages. In substratum influence, the habits of L1 are carried over to the production of L2. In superstratum influence the habits of L2 are brought back into the production of L1. In adstratum influence you have two or more sets of habits influencing each other to create a common set of habits. As a last comment I'd like to point out that the cognitive mechanisms and behavioural principles involved here are the same for other aspects of human behaviour, such as the substratum influence of the Bon religion on Tibetan Buddhism.

Abbreviations

AGT	agentive marker	NEG	negative marker
CL	classifier	NOM	nominaliser
DAT	dative marker	PART	participial form
DIR	directional marker	POSS	possessive marker
INF	infinitive marker	PROB	probability nominalizer
LOC	locative marker	TR.PAST	transitive past tense marker
N.PAST	non-past declarative marker		

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