

Contact-induced Language Change and Grammaticalization: A Case Study in Papua New Guinea

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Abstract *Heine & Kuteva introduce areal contact-induced grammaticalization for many types of language contact. Grammaticalization is a process that changes word use from lexical meanings to grammatical function words, and from the original grammatical functions to various other grammatical forms. Heine & Kuteva have expanded the grammaticalization theory from single language-internal to languages in areal contact. This contact-induced grammaticalization can explain several types of language changes (Sprachbund, metatypy, creole) due to contacts, such as gap filling, coexistence, equivalence, replication, and so on. This study attempts to limit this theory through data gathered by fieldwork examining highly complicated language contacts in Madang City, Papua New Guinea. In Madang, nearly 500 languages are spoken, resulting in very complex language contacts. This study concludes that in Madang language contacts alone are insufficient to explain the contact-induced grammaticalization observed.*

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1. Introduction

When we consider the evolutionary processes of languages, we use many kinds of diachronic and synchronic data on language phenomena: grammatical and lexical structures, geneological¹ relations of languages, language contact, and language change, and so on (Aikhenvald & Dixon

1. This article uses the term “geneological” instead of “genetic” to avoid confusion with biological genetics (see Haspelmath (2004: 222)). The term “geneological” indicates the linguistic relationship in question and not “related to genesis/ origin” in a general sense.

(2001), Thomason & Kaufman (1988)). The book reviewed in this study (Heine & Kuteva 2005) focuses on language contact and contact-induced language change in relationship to grammaticalization. When we study language contact, its sociolinguistic or lexical factors resulting of language contact must be considered. Heine & Kuteva do not discuss such sociolinguistic or lexical factors in the book. Thomason & Kaufman (1988: 4) also consider only grammatical, not sociolinguistic, factors and proposed two factors in contact-induced change, borrowing and substratum interference (1988: 37-39).

The main purpose of the book being reviewed is to describe the grammatical factors of language contact, and thus to explain the transfer of grammatical meaning with a theory based on comparative-historical linguistics and grammaticalization. Grammaticalization is a process that changes word use from lexical meanings to grammatical function words, and from the original grammatical functions to different grammatical forms. The grammaticalization process has previously been applied only to language-internal changes (Heine, Claudi & Hünnemeyer (1991)), but Heine and Kuteva apply it to areal language contact (see also Heine & Kuteva (2003: 529)).

Heine and Kuteva collect a number of case studies occurring in language contact situations around the world, and try to formalize several processes found in contact-induced language changes through grammatical replication and contact-induced grammaticalization. Heine & Kuteva claim that grammaticalization (especially contact-induced grammaticalization) plays an important role in explaining grammatical replications of language contacts among genealogically different languages, and pidgin-creole languages. In this study, I will explain the contact-induced grammaticalization theory through the language changes in the linguistic area in Madang City, Papua New Guinea.

2. Contact-induced grammaticalization

When we observe a language contact, or a contact-induced language change, we need at least two languages—a model language **M** and a replica language **R**—and two concepts or structures, a grammatical structure of the model language **Mx** and of the replica language **Rx**. Previous studies have observed language contact within a linguistic area (mainly, “Sprachbund”), but few attempted to explain the grammatical changes by means of the language contact².

2. Moravcsik’s classical paper (Moravcsik 1978) on language contact notes that language contact and borrowing from one language to another are a necessary part of linguistic research.

Heine & Kuteva use a grammaticalization theory for the contact between **M** and **R**. Earlier grammaticalization theory explains only syntactic or morphological changes inside one language (cf. Heine, Claudi & Hünnemeyer (1991)). In considering the areal contact-based changes, Heine & Kuteva suggest two kinds of contact-induced grammaticalizations, ordinary grammaticalization and replica grammaticalization.

First, Heine and Kuteva propose the ordinary contact-induced grammaticalization, as in (1).

- (1) Ordinary contact-induced grammaticalization (p. 81)
- a. Speakers notice that in language **M** there is a grammatical category **Mx**.
 - b. They create an equivalent category **Rx** in language **R** on the basis of the use patterns available in **R**.
 - c. To this end, they draw on universal strategies of grammaticalization, using construction **Ry** in order to develop **Rx**.
 - d. They grammaticalize **Ry** to **Rx**.

An example of contact-induced grammaticalization is adpositions in Pipil (an Aztecan languages of El Salvador), due to Spanish influence (p. 84-85). Under the influence of Spanish (**M**), Pipil (**R**) has drawn on the relational nouns (**Ry**) to develop a set of Spanish-type prepositions (**Rx**). This common process is also observed in the definite/indefinite article in Hungarian, as in (2).

- (2) Definite/indefinite article in Hungarian:
- a. indefinite: egy könyv (a book)
 - b. definite: a könyv (the book)

Finno-Ugric languages, excluding Hungarian, do not have a definite/indefinite article. Hungarian had a contact with German (Indo-European), and may have grammaticalized the definite/indefinite article as a result of that contact. The definite/indefinite article in Hungarian in (2) cannot be explained by internal language change or simple grammaticalization.

Heine & Kuteva also suggest replica grammaticalization, which differs from ordinary contact-induced grammaticalization in its grammaticalization process. Replica grammaticalization replicates a grammaticalization process in the model language, [**My** > **Mx**]: [**Ry** > **Rx**]. (p. 92, Heine & Kuteva (2003: 533, 539)). Heine & Kuteva give one example from Tok Pisin and Tigak (p. 96-97), as shown in (3). Tok Pisin grammaticalizes from

clause final adverb to clause initial subordinator, and afterward, Tigak (Austronesian) replicates the grammaticalization process of Tok Pisin.

(3) Replica grammaticalization in Tok Pisin and Tigak

Tok Pisin (English-based creole): *tasol*

clause final adverb > clause initial subordinator

Tigak (Austronesian): *kisang*

clause final adverb > clause initial subordinator

Furthermore, Heine & Kuteva apply their theory to explain not only two-language contact, but also contact of more languages, such as sprachbund and macro-area contact, which involve more languages. Heine & Kuteva provide several case studies for each contact area—the Balkans, Balto-Finnic, Papua New Guinea, and others (chapter 5).

3. Discussion

Heine & Kuteva claim that grammaticalization theory can explain contact-induced language changes. This study will consider one case study based on my fieldwork in Papua New Guinea, and discuss whether contact-induced grammaticalization can explain the language changes there.

I performed my fieldwork especially in Madang, Papua New Guinea. There are many languages spoken in Madang Province, and several kinds of language contacts can be observed. One person (Nebot Arey, p.c.) in Madang estimates that there are potentially speakers of more than 500 languages, and this fact indicates the existence of a single, complicated linguistic area, more complicated than the Balkans and South East Asia. I observed several language changes and contacts in my fieldwork, and explored several causal factors in the Madang area. The differences between the Balkans and Madang are too great to be explained using only the grammaticalization theory. This study found that when we try to explain certain language changes induced by language contacts, we must consider the influence of coexistence and other external factors. In addition, especially in the Madang area, the effects of the Creole language (Tok Pisin) also will be considered.

3.1 Five hundred languages spoken in Madang, Papua New Guinea

In this section, we discuss the complicated contact situation in Madang, and this study demonstrates that contact-induced grammaticalization is not sufficient to explain creole-based contact, and so we must identify another cause for the changes in Tok Pisin and other languages in Papua New

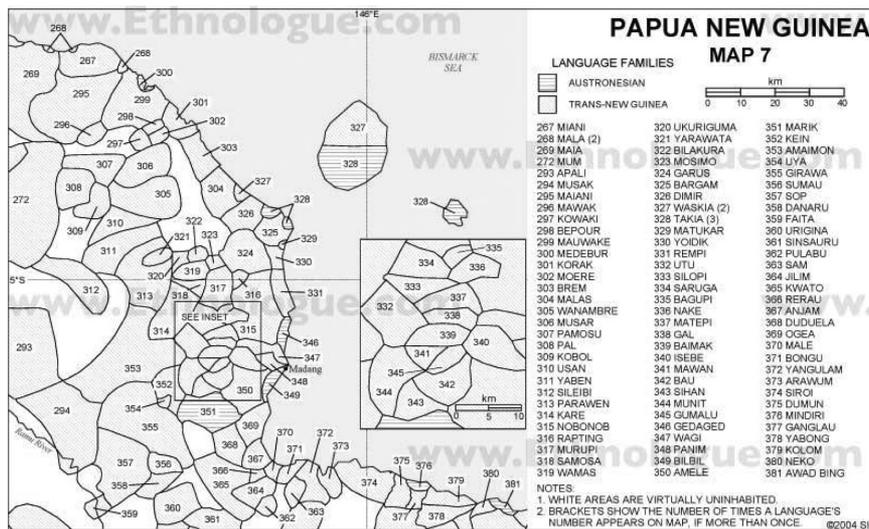


Figure 1. The languages in Madang Province, Papua New Guinea
(http://www.ethnologue.com/show_map.asp?name=PG&seq=90)

Guinea. The contact-induced grammaticalization can explain the contacts among two or three language, and classical examples of Sprachbund like the Balkan and Baltic areas. However, it cannot explain the contact-induced changes among many languages in situations similar to that in Madang.

In Papua New Guinea, there are more than 800 languages spoken, and more than 1000 languages are spoken throughout New Guinea island (including the Irian Jaya area, Indonesia). In Madang Province alone, there are around 260 languages, consisting of Trans-New Guinean and Austronesian language groups, as shown in Figure 1. English and Tok Pisin, of course, are spoken widely in Papua New Guinea. In Province, Takia (328) and Waskia (327) are spoken on Karkar Island, shown in Figure 1. Heine and Kuteva (2005: 158-159) also point out that there is metatypy between Takia and Waskia (see also Ross 2001).

Madang, population around 30,000, is the capital of Madang province. The languages spoken in Madang number more than 500, with a variety of language contacts occurring daily for many years. The languages spoken in Madang are classified into the following four groups.

- (4) Four language groups in Madang (Nose 2008)
 - a. Three major languages near Madang: Amele (Trans-New Guinean), Bilbil (Austronesian) and Nobonob (Trans-New Guinean): 3 languages
 - b. Other Papuan and Austronesian languages: Takia, Waskia, lan-

- guages in Sepik and Highlands: more than 500 languages
- c. Other foreign languages: Chinese, Thai, Indonesian, Japanese, German, French, etc.: around 30 languages
 - d. Every day communication: Tok Pisin and English: 2 languages

In (4), the first group of major languages near Madang contains Amele, Bilbil, and Nobonob. The peoples speaking these languages live in neighboring areas of Madang. Although some people speaking Amele, Bilbil, and Nobonob live in Madang, others only come to the city for work every day or, at least, frequently. Second, there are many kinds of New Guineans living in Madang. They are mainly from Madang Province, the Sepik area and the Highlands (Usan, Yimas, Kobon, and so on). Some people live there permanently, or have been there for a long time, while others are rather short-term residents. There are many native languages, but there might be only one person who speaks a given language. Third, there are also many foreign people in Madang—tourists, academic researchers, volunteers, and workers from Australia, Japan, China, France, the Philippines, Thailand, Malaysia, and so on. They speak their own languages, which should also be counted. Finally, Tok Pisin and English are spoken by a variety of people in order to communicate with each other³.

To summarize, I estimate that more than 500 languages are spoken in Madang in (4), and therefore a high number of language contacts may occur among such a great variety of languages. The kind of multi-linguistic area represented by Madang is entirely different from the Sprachbund areas in the Balkan and Baltic regions of Europe. Remarkably, although there is such a great variety of language contacts in Madang, apparently there exist few contact-induced language changes.

3.1.1 Cases of contact-induced grammaticalization

The cases in this section illustrate two points. The first is that some language contacts can be explained by contact-induced grammaticalization. The second is that other language contacts cannot be explained by contact-induced grammaticalization.

First, I will illustrate the changes in the Madang area that can be explained by contact-induced grammaticalization with the examples of the contacts between English and Tok Pisin, and between Tok Pisin and Amele. The when-clause in Tok Pisin is considered to be borrowed from English, as in (5) and (6).

3. For example, I observed when one man from the Amele area went to Krangkret Island near Madang, he spoke Tok Pisin with the Krangkret people who speak Bilbil.

(5) English:

When it rains tomorrow, I will not go to the town.

(6) Tok Pisin:

Taim em i rain tumora, mi no bai go long town.

The time conjunction “when” is not used in Tok Pisin; instead, the form “taim” is used as a conjunction. Tok Pisin also has another interrogative pronoun for expressions of time, “wataim” (what time), instead of “when.” Tok Pisin copied this expression from that of English, and then grammaticalized the time conjunction individually. This change came about through the contact between English and Tok Pisin (not in Madang, of course, but in another area, such as Australia, or Samoa).

In considering the contact-induced change between Tok Pisin and Amele, no evidence exists of a direct contact between English and Amele, and the grammar in Amele seems to borrow from Tok Pisin. One example is the forms of the progressive aspect in Amele. Amele is a rich language in tense forms, but there is no specific form of the aspect. Roberts (1988: 248) points out that “(t)here is no formal way of making the progressive aspect of the verb, but such aspectual meaning is inherent in the present (progressive) tense.” In Amele, we can express the progressive aspect by using the verb “bil-ec” “to be/sit,” as in (7).

(7) Amele:

Ija Madang biliga.
“I am living in Madang.”

(8) Tok Pisin:

Mi i stap long Madang.
“I am living in Madang.”

In contrast, there is a progressive aspect form in Tok Pisin in (8). The auxiliary verb “stap” (to be/sit) is used to express the progressive. It is believed that Amele replicated the progressive form from Tok Pisin, and this case might be typical of contact-induced grammaticalization.

3.1.2 Cases not caused by contact-induced grammaticalization

In three different cases of language contacts in Madang, we find examples that can be explained only by causes other than contact-induced grammaticalization. One is a contact between English and Tok Pisin, and another is between Tok Pisin and Amele, while the third is the number systems of

Takia and Waskia. Tok Pisin is constructed mainly by contact with English, but the grammar and lexicon of Tok Pisin are to varying degrees affected by other languages (German, Tolai, and Malay). Heine and Kuteva (2005) do not mention the possibility that the contact-induced changes in the grammar are borrowed from other several languages. For example, there is one expression “maski” in Tok Pisin in (9).

(9) Tok Pisin: *maski*

“to be indifferent, in spite of,” “it does not matter, I don’t care,” “Never mind”

(10) German

Es macht nicht. “It does not matter.”

This expression “maski” in Tok Pisin is obviously borrowed from German, as shown in (10). It is remarkable that the meaning in German has extended in Tok Pisin. That is, the form has grammaticalized because of being borrowed. Although it is easy to consider the contact between English and Tok Pisin, it is more difficult to describe the contact between German and Tok Pisin. This phenomenon in (9) may be the result of contact-induced grammaticalization, and it is remarkable that Tok Pisin could borrow it from a language other than English. This borrowing, however, results from not only purely linguistic reason, but also other external causes (e.g., the history of Melanesia, and German influences on Oceania).

In the second example, one language does not borrow the form from another. There is grammatical borrowing in the progressive aspect in Amele, but there is no equivalent expression of the perfective aspect. Roberts (1989: 232) notes that Amele has a perfective meaning by using the adverb “wele” (already), but it is not contact-induced. In (11a), the perfective form “pinis” in Tok Pisin is posited at the sentence final position. This perfective marker cannot be posited at the position before the verb, as in (11b). Obviously, this perfective form “pinis” is borrowed from “finish” in English, and Tok Pisin has grammaticalized this form as the perfective. The form of “pinis” results from contact-induced grammaticalization, but the position of the perfective form “pinis” is determined by another cause (see (11b)).

(11) Tok Pisin

a. Em i dai pinis.

“He has dead.”

b. * Em i pinis dai.

Cardinal number	Waskia	Takia
1	swanta	kak
2	ragura	ural
3	raguraswan	utol
4	raguraragura	iwoiwo
5	raguraraguraswan	kaapenda

Table 1. Cardinal numbers in Takia and Waskia

The third example is the number systems in Takia and Waskia, shown in Table 1. The contact between Takia and Waskia is so heavy and they show metatypy phenomena, as in (4) (Ross 2001). While their contact has affected the morphosyntax in both languages, their number systems still maintain each characteristic.

In spite of the similarity of the morphosyntax, each cardinal number in Takia and Waskia is totally different, and each language maintains its own cardinal system. Usually, lexical elements like numbers are easier to borrow than grammatical elements, but Takia and Waskia do not borrow the number system. The extent of this type of contact between Takia and Waskia is greater than amount the contact-induced grammaticalization between them.

3.2 The coexistence of 500 languages and Tok Pisin as a lingua franca

To summarize the contact case studies of the Madang area, this study reached two conclusions regarding contact-induced language changes. The first is that many languages are in contact in Madang, making identification of direct contacts among the languages difficult. For example, although a change might be induced from Tok Pisin to language X, it might also be induced from Tok Pisin to X via contact with another language, Y. The native language Amele has some contact-induced changes, but it is not easy to determine the language from which it has replicated. Heine & Kuteva also admit that pidgins and creoles are more or less the product of language contact, but contact-induced grammaticalization alone does not fully explain them. We must admit that the actual contacts do not coincide with the theoretical ones. Secondly, I have noted that there are 260 languages in Madang Province, and as many as 500 languages in Madang City. In this study, I show some examples of the language contacts and contact-induced changes in Madang. In addition, Takia and Waskia have metatypy on Karkar Island, and the people of this area visit Madang frequently, possibly causing some language contacts in Madang as well. It is almost impossible to observe and describe all the possible contacts in the city, and to analyze one linguistic area according to the grammaticalization

theory proposed by Heine and Kuteva (2005). People in Madang speak to each other primarily in Tok Pisin and English, not their native languages. As a result, many languages coexist in the area, and Tok Pisin is the language used for everyday communication. It is unlikely that contact-induced grammaticalization causes the contacts in Madang.

This study found that the grammaticalization theory is useful to explain some of the contact-induced language changes in the Madang area, but we need more theories of the causes of language change to explore the dynamic processes of the language evolution in Madang. Heine & Kuteva do discuss the limits of replication through case studies (Chapter 6). Grammatical replication is constrained by a number of additional internal and external factors of language contact. The external ones are sociolinguistic factors, such as pidgin/creole distinction. Regarding language change, there are internal and external changes. In Madang, the language changes are not always attributable to contact-induced grammaticalization.

To explore other external factors, this study suggests that we consider the following points in analyzing language contacts. The first consideration is linguistic description. The fieldworker who describes a language in an area should gather information about not only the linguistic data (phonology, morphology, and syntax), but also about the neighboring linguistic situation, and anthropological and sociolinguistic data. For example, a fieldworker should pay attention to whether the population is monolingual or bilingual, whether the people speak another language outside the village, or the people frequently visit other villages or not, and so on. Usually in language contacts, replication or borrowing occurs through communication among neighboring speakers, such as those in a big town near the village. In certain language contacts, we will find many signs of sociolinguistic and anthropological events, such as festivals, everyday business, or events at schools and churches.

Second, we do not distinguish between grammar and lexicon in grammaticalization theory, although we do consider lexicon, especially loanwords. Tok Pisin has borrowed not only the grammar of English, but also the lexicons of English, German, Malay, and others. For example, words for new tools or technology tend to be borrowed (for example, potato, pineapple, and computer), and words necessary for business communications (i.e., money, trade) become loanwords, too. Such loanwords also indicate borrowing and help us identify the contacts between one language and another.

4. Final remarks

Heine & Kuteva discuss language contact and contact-induced language changes, not in terms of sociolinguistics or lexical contact, but in terms of grammatical replication and grammaticalization. Despite the objections and critical remarks mentioned here, their book is valuable for contact linguistics, with detailed studies of several contact areas and grammaticalization. Further, we need several other interdisciplinary approaches to grasp language contact and contact-induced changes linguistically and extra-linguistically (anthropology, genetics, psycholinguistics, archeology, etc.). Language contacts always occur together with human contacts. Heine & Kuteva's study includes a considerable number of case studies and considerations based on grammaticalization, and the data will help us to explore language contact, as well as the evolutionary processes of languages, and human evolution in general, as well. Finally, Heine and Kuteva summarize grammatical replication as an evolutionary process of language (Chapter 7).

The conclusion is that it remains doubtful whether grammaticalization is appropriate for interpreting contact-induced language changes. Heine & Kuteva suggest the contact-induced grammaticalization model and provide many case studies of language contact and grammatical replication in applying their grammaticalization theory. Heine & Kuteva's approach seems to lead us from language-internal change or the traditional historical approach to a developed evolutionary model among genealogically unrelated languages in contact. Grammaticalization is useful for African languages (Heine, Claudi & Hünemeyer (1991)), for which there are no the past artifacts or documents, making it impossible to measure the time span of language change. In Papua New Guinea, it is difficult to gather the information of the time span of the changes due to the lack of documents. The matter of time span is related to the possible cause for the change. Grammaticalization theory can explain the causal path of the changes backward from the results, but it remains difficult to find when a replication occurred or how long a change continued.

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