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**Phonetic and Morphological Coding of Minimal Syntactic Units
in Isolating Languages**

(A tentative draft with insights from Chinese and Vietnamese)

Abstract

The problem of identifying minimal syntactically relevant intrasentential units in isolating languages has not been treated sufficiently thus far within morphological typology. Such units will be called here ‘syntactic words’ or ‘tagmons’. This article inquires into properties of tagmons and intends to provide some new insights into the structure of these units in Chinese and Vietnamese. Two kinds of tagmons of these languages, namely, affixal and adpositional, are subjected to examination in light of flexion, paradigmaticity, and linguistic codematics. This, in turn, together with the partisential categorizability of tagmons justifies treating them as relatively coherent integral wholes capable of entering flexional relations which are controlled by intrasentential syntax. The codematic approach to tagmons reveals their morphological and phonological patterning.

Keywords: phonetics, morphology, Chinese, Vietnamese, linguistics

1. Introduction

Our article originates from the quandaries in which we have been caught for quite some time while pondering over the morphological and syntactic status of words occurring in isolating languages and the possible similarities and differences between units of this kind and their corresponding counterparts in agglutinative and fusional languages. Our perplexity tends to increase because of inconclusive linguistic statements unable to resolve doubts about the adequate description of the units at issue. Thus, for example, among the properties based on which a given language obtains the status of a member in isolating

languages the lack of morphological complexity of its words figures prominently (cf. Li, Thompson 1989: 10f). Or, to put it differently, the relative morphological simplicity of the words has been made to stand out as one of the characteristic features of a language belonging to the isolating type.

The weakly developed grammatical morphology (syntactic morphology, syntactomorphology) of the isolating languages is usually illustrated with the alleged absence of morphological marking of grammatical relationships which are not indicated by affixes or by morphological alternations in the word but rather by word order. However, at the same time, it is admitted that the use of grammatical morphemes such as particles, adpositions, auxiliary verbs, etc. plays an important role in the indication of grammatical relationships (cf. Norman 1988: 10, 84). But such a statement is evidently in contradiction with the supposed lack of morphological marking of the relationships in question, since grammatical morphemes are not independent words, and consequently as synsemantic units they enter into the composition of the corresponding fully lexical words in order to form syntactically manageable objects.

In order to account for the syntactic diversity of intrasentential words, a theory of minimal syntactic units or tagmons will be offered for consideration. This theory, which provides for the integration of words grammaticalized to a sufficient degree with the corresponding fully lexical words whereby syntactically operable objects are arrived at, seems to be applicable pan-lingually.

Before the analysis of Chinese and Vietnamese language material is begun, some of the primitive terms are enumerated and briefly explained. Subsequently, the possibility of treating affixal and adpositional tagmons of these languages in light of flexion, paradigmatication, and linguistic codematics is considered.

We are aware of the hazardous nature of our non-conventional approach to morphology, but nothing will keep us from changing or rejecting it, if we become convinced that it fails to project an adequate image of the morphological reality.

2. Primitive and Some Defined Terms

By way of leveling the ground for our theoretical approach the terminology used will be clarified first, since it considerably diverges from that traditionally applied in linguistics. The terms enumerated below have been distinguished as primitive, and they are as follows:

- (i) **Lgu** – the set of all relevant lingual units,
- (ii) **Fon** – the set of all sounds (actual phones),
- (iii) **Mor** – the set of all actual morphs (morphons),
- (iv) **Vcb** – the set of all actual words (vocalulons),
- (v) **Tgm** – the set of all syntactic words (tagmons),
- (vi) **hfn** – the relation of homophony,

- (vii) *dsg* – the relation of designation,
- (viii) *sgf* – the relation of signification,
- (ix) *lkf* – the relation of lexification,
- (x) *smf* – the relation of semification,
- (xi) *DSM* – the family of semic dimensions (parameters),
- (xii) \leq *smc* – the relation of a not greater degree of semicalization (grammaticalization).

Lingual utterances may be segmented into units of various kinds. The set of lingual units which are relevant linguistically has been denoted as *Lgu*. Within this set, among other units, the following can be distinguished: sounds (actual phones), morphons (actual morphs), vocabulons (actual vocables), tagmons (actual tagms). The *relation of homophony* binds those units which are auditorily indistinguishable.

Not all of the lingual units however are signs. Those functioning as signs are bound with extralingual entities by the relations of designation and signification. By means of *designation* objects are represented as certain wholes, whereas by *signification* what is represented are the properties of these objects. These properties are in turn conceived of as meanings signified by the signs designating these objects. Thus, the *relation of signification* binds lingual signs with the corresponding meanings. A meaning being signified is either lexified or semified. These two modes of meaning signification find reflection in the *relation of lexification* and the *relation of semification*, respectively. These relations are but two sub-relations within signification. A meaning being semified is more specific and conspicuous than a meaning being lexified. The set of the semified meanings or sems can be classified into the *family of semic dimensions* (parameters). Among such dimensions the following can be distinguished: Person, Casus, Numerus, Tempus, Aspectus, etc. Each of these dimensions is a set of homogenous meanings.

Semification may manifest itself as: (i) affixation, (ii) adpositioning, (iii) particulation, (iv) auxiliatation, (v) sequentialisation. The respective semificators appear as: affixes, adpositions, particles, auxiliaries, and sequentials (that is, definite positions of the lingual units within sentences).

The *relation of homolexy* binds those lingual units which lexify identical meanings and, analogously, the *relation of homosemy* binds those lingual units which semify identical meanings. Semificators may differ or not in the degree of their *semicalization* (grammaticalization). In order to account for this property of semificators the *relation of a not greater degree of semicalization* can be used. In terms of this relation, the relation of a smaller degree of semicalization can be defined. Thus, for example, affixes are more semicalized (grammatically) than are adpositions, and these latter are more semicalized than auxiliaries.

The terms 'vocabulon' and 'tagmon' are closely related to the term 'word'. However, this latter is not sufficiently precise to satisfy our theoretical requirements, and also for technical reasons it is hardly convenient. Therefore we decided to use these two terms instead of the term 'word'. These two new terms will denote two different lingual entities.

The *vocabulon* is conceived of here as the maximal unit of sequential (linear) ordering within the sentence. Consequently, a linear structure of the sentence can be represented as a sequence of its constituent vocabulons. The vocabulon is always linearly continuous, and always functions as a sign. It also seems to be sufficiently conspicuous to native linguators' consciousness. Intrasentential vocabulons are semantically and syntactically fairly differentiated, that is, they differ with respect to their auto- and synsemantic as well as to auto- and synsyntactic status.

In the framework of intrasentential syntax or, to put it differently, at the intrasentential syntactic level, the vocabulonic structure of the sentence is converted into *tagmonic* structure. Intrasentential *tagmons* are syntactically homogeneous units. That is, they are units which enjoy the same syntactic status, and hence are comparable with each other. They result thus from the intervention of syntax into the intrasentential vocabulonic structure, whereby all synsemantic vocabulons, that is, those already grammaticalized to a certain extent, are attached to the corresponding fully-lexical vocabulons. Consequently affixes, adpositions, particles, auxiliaries, and the like, are treated syntactically as intratagmonic constituents. The tagmons emerge thus as minimal syntactic units capable of entering syntactic relations with other tagmons in order to form intrasentential syntagms.

The operation of *tagmonification* of intrasentential vocabulons into the corresponding tagmons may be exemplified with the following Chinese and Vietnamese sentences, which are, respectively, mutually translatable:

CHINESE:

(2.1) *Xuéshēng zài fángjiān yòng diànnǎo xiě xìn gěi māma.*

student in room with computer write letter to mother.

'The student is writing a letter to his mother on a computer in a room.'

This sentence consists of 9 vocabulons but only of the following 6 tagmons: *xuéshēng*, *zài fángjiān*, *yòng diànnǎo*, *xiě*, *xìn*, *gěi māma*.

(2.2) *Shū cóng zhūozǐ shàng diào dào dìxia le.*

book from table on fell to floor ASP.

'The book fell off the table onto the floor.'

This sentence consists of 8 vocabulons but only of the following 4 tagmons: *shū*, *cóng zhūozǐ shàng*, *diào... le*, *dào dìxia*.

VIETNAMESE:

(2.3) *Cậu sinh viên viết thư cho mẹ bằng máy vi tính ở trong phòng.*

CL student write letter to mother with computer inside room.

'The student is writing a letter to his mother on a computer in a room.'

This sentence consists of 11 vocabulons but only of the following 7 tagmons: *cậu sinh viên*, *viết*, *thư*, *cho mẹ*, *bằng máy vi tính*, *ở trong*, *phòng*.

(2.4) *Quyển sách rơi từ trên bàn xuống sàn nhà.*
 CL book fell from on table down floor.
 ‘The book fell off the table onto the floor.’

This sentence consists of 7 vocabulons but only of the following 4 tagmons: *quyển sách*, *rơi*, *từ trên bàn*, *xuống sàn nhà*.

3. Tagmons as Lexificators and Semificators

The lexificational and semificational function of tagmons can be examined at the level of morphs as well as at the level of words (vocables). In Chinese and Vietnamese lexification is accomplished by means of lexical morphs and words. The morphs, if they are not bound, coincide with single words. The compound words, in turn, are composed of at least two lexical morphs. However, we are not primarily interested here in the types of lexificators but rather in the types of those semificators which contribute to the creation of tagmons. Nevertheless, for the sake of illustration let us adduce three types of lexificators.

Table 3.1 CHINESE:

Types of lexificator	Compound word	Translation in English	Derived from
noun word + noun bound lexical morph	<i>diànnǎo</i>	‘computer’	electricity-brain
noun bound LM + noun bound LM	<i>mǔxiào</i>	‘alma mater’	mother-school
noun bound LM + affix	<i>zhàotou</i>	‘omen’	sign + DAF

Table 3.2 VIETNAMESE:

Types of lexificator	Compound word	Translation in English	Derived from
noun word + noun bound lexical morph	<i>cá voi</i>	‘whale’	fish-elephant
noun bound LM + noun bound LM	<i>giang sơn</i>	‘country’	river-mountain
affix + noun bound LM	<i>nhà binh</i>	‘army’	DAF + military

Proceeding now to semification we shall concentrate only on tagmon-forming affixation and adpositioning.

3.1. Affixation

An affix is a morph which has attained the highest degree of semicalization (grammaticalization), whence it always is a bound morph. In the following tables, commonly used affixes (suffixes and interfixes) with their corresponding approximate English translation are given.

Table 3.3 CHINESE:

Semified meaning	Affix	Fully-lexical word presently in use	Translation in English
PLURALITY/COLLECTIVITY	- <i>men</i> - <i>jiā</i>	<i>jiā</i>	‘house, home’
PERFECTIVITY/COMPLETION	- <i>le</i>	<i>liǎo</i>	‘to finish’
EXPERIENTIAL	- <i>guo</i>	<i>guò</i>	‘to pass, cross’
DURATIVITY/CONTINUATION	- <i>zhe</i> - <i>zài</i>	<i>zháo</i> <i>zài</i>	‘touch, catch’ ‘exist, remain’
POTENTIALITY positive	- <i>de</i> -	<i>dé</i>	‘get, gain, obtain’
POTENTIALITY negative	- <i>bu</i> -	<i>bù</i>	‘not’

Table 3.4 VIETNAMESE:

Semified meaning	Affix	Fully-lexical word presently in use	Translation in English
PLURALITY/COLLECTIVITY	<i>những</i> - <i>các</i> - <i>mọi</i> -		
PERFECTIVITY/COMPLETION	<i>đã</i> -, - <i>đã</i> - <i>rồi</i>	<i>đã</i> <i>rồi</i>	‘to be sated’ ‘last, past’
EXPERIENTIAL	- <i>qua</i>	<i>qua</i>	‘to pass, cross’
DURATIVITY/CONTINUATION	<i>đang</i> (<i>đương</i>) -		
POTENTIALITY positive	- <i>được</i>	<i>được</i>	‘get, gain, obtain’

However, the morphological status of the affixes, which still have corresponding homophonous fully-lexical words currently in use, is not clear. This is because their

autosemanticity is further supported by these words. Consequently, they do not seem to have yet attained the status of ‘true affixes’, and it is safer to qualify them as quasi-affixes.

3.2. Adpositioning

Adpositions are words (vocables) semicalized (gramaticalized) to some extent though less so than affixes. All the Chinese prepositions developed from verbs as a result of the process of grammaticalization and most of them still have corresponding homophonous fully-lexical verbs. And, it seems that to some degree their status as verbs may still be felt in Chinese prepositions, and some grammarians still recognize in them certain verbal properties (cf. Norman 1988: 161; Packard 2000: 131). Therefore the terms ‘adpositional verb’ or ‘deverbal adposition’ would perhaps be more appropriate, at least when homophonous fully-lexical verbs coexist with them. For the sake of illustration several adpositions with approximate English translations and corresponding verbs are given in the following tables.

Table 3.5 CHINESE:

Case-meanings	Preposition (Postposition)	English translation of the preposition	English translation of the fully-lexical verb
GENETIVITY/POSSESSIVITY	- <i>de</i>		
DATIVITY/BENEFACTIVITY	<i>gěi</i> <i>dào</i>	‘to, for’ ‘to, for’	‘give’ ‘arrive, reach, go to’
PATIENTIVITY	<i>bǎ</i>		‘grasp, take, hold’
INSTRUMENTALITY	<i>yòng</i> <i>ná</i>	‘with, by’ ‘with’	‘use’ ‘take’
ABLATIVITY/ELATIVITY	<i>cóng</i>	‘from’	‘follow’
LOCATIVITY/INESSIVITY	- <i>li</i> <i>zài</i>	‘in’ ‘in, at’	‘inside’ ‘remain, exist’
DESTINATIVITY	<i>dào</i>	‘to, towards’	‘arrive’
COMMITATIVITY/ SOCIATIVITY	<i>gēn</i>	‘with, together with’	‘follow’
AGENTIVITY (in passive)	<i>bèi</i> <i>jiào</i> <i>ràng</i> <i>gěi</i>	‘by’ ‘by’ ‘by’ ‘by’	‘receive’ ‘call’ ‘let, allow’ ‘give’

Table 3.6. VIETNAMESE:

Case-meanings	Preposition (Postposition)	English translation of the preposition	English translation of the fully-lexical verb
GENETIVITY/POSSESSIVITY	<i>của</i>	‘of’	
DATIVITY/BENEFACTIVITY	<i>cho</i>	‘to, for’	‘give’
PATIENTIVITY	<i>bị- được-</i>		‘suffer, get’ ‘get, obtain, win’
INSTRUMENTALITY	<i>bằng</i>	‘by, with, in, by means of’	
ABLATIVITY/ELATIVITY	<i>từ</i>	‘from’	
LOCATIVITY/INESSIVITY	<i>ở trong trên</i>	‘at, on, in’ ‘in’ ‘on, over’	‘live, stay’ ‘inside’
DESTINATIVITY/ ALLATIVITY	<i>đến tới</i>	‘to’ ‘to, towards’	‘arrive, come’ ‘arrive, reach’
COMMITATIVITY/ SOCIATIVITY	<i>với cùng</i>	‘with, together’ ‘together, with’	
AGENTIVITY (in passive)	<i>bởi</i>	‘by’	

4. Flection

We shall proceed from the assumption that flection is present in every language, regardless of whether this language belongs to fusional, agglutinative, or isolating morphological types. The differences may concern:

- (i) the grammatical dimensions for which lingual units inflect, or
- (ii) the signifiers of grammatical meanings.

The kind of flection considered here will be conceived of as the relation of opposition binding homolexical and homopartiorational tagmons which differ with regard to one or more grammatical dimensions. Below we shall briefly concern ourselves with the flection of Chinese and Vietnamese tagmons for two dimensions, that is to say, for Number and Case.

Generally speaking, the following two sets of meanings form corresponding numeral dimensions:

Dm 1 {MASS, COUNT}

Dm 2 {SINGULARITY, DUALITY, PLURALITY}

The meanings enumerated in Dm 2 are in fact sub-meanings of the meaning COUNT in Dm 1.

The exact specification of the numeral meanings and dimensions for Chinese and Vietnamese is far from easy. According to some linguists neither of these languages distinguishes between mass and count nouns. What is more, nouns in these languages seem to signify neither SINGULARITY nor PLURALITY but rather are unspecified for Number (cf. Ross; Ma 2006: 22). Let us inspect the following pairs of tagmons:

CHINESE:

- (4.1) *péngyǒu* ‘friend’ ~ *péngyǒumen*
xuéshēng ‘student’ ~ *xuéshēngmen*
tóngxué ‘fellow student’ ~ *tóngxuémen*

VIETNAMESE:

- (4.2) *bạn* ‘friend’ ~ *các bạn*
sinh viên ‘student’ ~ *các sinh viên*
bạn học ‘fellow student’ ~ *các bạn học*

The meaning semified by the Chinese suffix *-men* is not completely clear. This suffix often referred to as ‘plural suffix’, is being attached to pronouns and human nouns only. However, tagmons suffixed with *-men* seem to semify the meaning of COLLECTIVITY, since they tend to designate groups of people taken together.

- (4.3) *tóngxuémen* ‘(a certain group of) fellow students’
lǎoshīmen ‘the teachers’ (cf. Norman 1988:159)

Regardless whether nouns suffixed with *-men* semify COLLECTIVITY or PLURALITY, they are in the relation of flection with the corresponding homolexical nouns without this suffix, since these latter may be unspecified for Number. Hence, the pair of tagmons like (*xuéshēng*, *xuéshēngmen*) as well as other similar pairs belong to the flection for Number in Chinese.

The dimension of Case will be conceived of as the set of case-meanings. These meanings semified by tagmons underlie certain relationships between nouns or between nouns and verbs within sentences. Tagmons, which semify different case meanings, that is, which are bound by the relation of opposition with regard to the dimension of Case, and which are homolexical, enter the relation of flection for Case. What is more, this dimension will specify the corresponding paradigms.

A *paradigm* for Case will be defined as the set of all homolexical tagmons which assume the meanings from this dimension, and belong to the same part of speech. For the sake of exemplification let us consider the following fragments of tentative paradigms.

Table 4.1 CHINESE:

<i>péngyǒude</i>	(Genitive)	<i>chēde</i>	(Genitive)
<i>bǎ péngyǒu</i>	(Accusative)	<i>bǎ chē</i>	(Accusative)
<i>bèi péngyǒu</i>	‘by friend’	<i>bèi chē</i>	‘by the car’
<i>dùì péngyǒu</i>	‘to friend’	<i>cóng chē</i>	‘from the car’
<i>gěi péngyǒu</i>	‘to, for friend’	<i>gēn chē</i>	‘with the car’
<i>gēn péngyǒu</i>	‘with, from friend’	<i>dào chē li</i>	‘to the car’
<i>tì péngyǒu</i>	‘for friend’	<i>yòng chē</i>	‘with the car’
<i>xiàng péngyǒu</i>	‘from friend’	<i>zài chē li</i>	‘in the car’

Table 4.2 VIETNAMESE:

<i>của bạn bè</i>	‘of friends’	<i>của máy bay</i>	‘of the airplane’
<i>bởi bạn bè</i>	‘by friends’	<i>bởi máy bay</i>	‘by the airplane’
<i>tới bạn bè</i>	‘to friends’	<i>từ máy bay</i>	‘from the airplane’
<i>cho bạn bè</i>	‘to, for friends’	<i>với máy bay</i>	‘with the airplane’
<i>với bạn bè</i>	‘with friends’	<i>tới máy bay</i>	‘to the airplane’
<i>từ bạn bè</i>	‘from friends’	<i>bằng máy bay</i>	‘by the airplane’
<i>ở bạn bè</i>	‘at/in friends’	<i>ở máy bay</i>	‘in the airplane’

The prepositions semifying the case-meanings do not combine with all nouns, and hence the resulting paradigms are defective. Perhaps it would be appropriate to treat them as *quasi-paradigms*.

5. Morphological Codematics

The subject matter of linguocodematics are codes operating in language and language communication. The *code* will be understood here as an operation of association of certain lingual objects with other objects, lingual or extralingual. Metaphorically it could be said that by means of language code lingual objects of one kind are converted into objects of another kind. Thus *coding* is simply the application of a code.

Morphocodematics as a subdiscipline of linguocodematics is concerned with those codes which operate in the domain of morphology, that is, which apply to morphological units such as: tagmons, morphons, vocabulons. Every lingual unit is encoded by means of all the kinds of its lower level constituent units. Consequently, since tagmons are decomposable on four levels, they are simultaneously coded in terms of sounds, syllables, morphons, and vocabulons. In Chinese and Vietnamese the mutual coincidence in phonic substance of tagmons, vocabulons, morphons, and syllables can often be found. More precisely, a tagmon may be here very often homophonous with a vocabulon, a morphon, or a syllable.

The operation of coding tagmons will be conceived of as *tagmonification* (*tgf*), within which, regarding the subtagmonic units, vocablic, morphic, syllabic, and phonic tagmonification can be distinguished. Each of these operations, if inspected under a generalized and formal light, could be viewed as a mapping (transformation) of the powerset of the set of subtagmonic constituents types of one kind onto the set of all tagmons types, that is, *tagms*. The creation of tagmons occurs within sentences. If considered as an intrasentential operation, tagmonification should also provide tagmons with information on their membership in the respective partisential categories.

A more abstract operation, namely, the *morphotagmification* (*Mtgf*) could be represented as the following mapping:

$$\text{Mtgf: pot (MRF)} \rightarrow \text{pot (TGM)}.$$

This symbolic notation expresses the idea that certain subsets of morphs are combinable into tagms, that is, they are tagmifiable. Each subset of tagmifiable morphs could be termed a *tagmomorpheme*. Consequently, the set pot (*MRF*) divides into the following two disjoint subsets:

- (i) the set of all tagmomorphemes (*TMFM*), and
- (ii) the set of non-tagmomorphemes.

(5.1) For the sake of exemplification, let us consider a subset of Chinese morphs {*Yǒu, Péng, Gēn*}. This subset is an element of the family pot (*MRF*), and by virtue of the operation *Mtgf* lends itself to being converted into the corresponding tagmomorpheme {*YŌU, PÉNG, GĒN*} which already is an object of a higher morphological status. This conversion is possible in Chinese because there is at least one sequence created out of the elements of this tagmomorpheme, and functioning as a *tagmic morphotacteme* in the shape of *GĒN PÉNG YŌU*. This tagmic morphotacteme, in turn, represents each corresponding tagmon in the shape of *gēn péngyǒu*. Let us also adduce here a Vietnamese example.

(5.2) A subset of morphs {*Bạn, Bè, Vói*} (Friend, Collectivity, Commitativity) can be converted into the corresponding tagmomorpheme {*BẠN, BÈ, VÓI*}, because there are four sequences with similar meanings ('together with friends') created out of these three elements: (i) *VÓI BẠN BÈ*, (ii) *VÓI BÈ BẠN*, (iii) *VÓI BẠN VÓI BÈ*, (iv) *VÓI BÈ VÓI BẠN* which differ from each other not only in their morphotactemic structure but also in their stylistic values, and function as the tagmic morphotactemes representing all the corresponding tagmons in the shape of *vói bạn bè, vói bè bạn, vói bạn vói bè, and vói bè vói bạn*, respectively.

Obviously, in order to form a tagmomorpheme as well as a tagmic morphotacteme morphs have to satisfy certain requirements which could be formulated in terms of the corresponding postulates. However, for obvious reasons, we shall refrain from giving these postulates here.

6. Phonological Codematics

Let us still mention that an approach to the phonic coding of Chinese dictionary entries (words) was presented in Bańczerowski 2009. However, a dictionary whose entries were solely words given in phonetic transcription and with the exclusion of syntagms was not available to us. What was available was the *MDBG Chinese-English dictionary* (CC-CEDICT) the entries of which were given as ideographs (characters) and transliterated in *pīnyīn*, but which also included certain syntagms. The effective exclusion of these syntagms from the calculations was not possible. Therefore the calculations worked out by P. Wierzchoń operated with dictionary entries rather than with word-entries. Since the dictionary did not give its entries in phonetic transcription, the calculation data reflect the graphotactic rather than the phonotactic structure of the dictionary entries. In other words, these data refer to the graphic coding of words, performed in terms of the letters used in *pīnyīn*. Nevertheless, some interesting although only approximate inferences concerning the phonetic coding of words can be made. In the Chinese dictionary **55.699** graphotactemes are encoded by means of **49.997** tactographemes. The results obtained by Wierzchoń for Chinese are given in Table 6.1 presented below. This table consists of three columns A, B, and C, giving the following information:

- (i) in A – the number of letter-types, that is, graphs,
- (ii) in B – the number of tactographemes created out of the corresponding number of graphs, and
- (iii) in C – the corresponding number of graphotactemes.

The magnitudes listed in Table 6.1 are represented in Table 6.2 by plotting the values given in column A on the *x*-axis, and those given in B and C on the *y*-axis, in a system of coordinates. The curves being obtained show the dependency of the number of tactographemes and graphotactemes upon the number of graphs (letter-graphs) from which they are created. These curves assume for Chinese the shape of a Gaussian curve. The number of tactographemes and graphotactemes gradually increases with the increase of the number of graphs (letter-graphs) up to 7, and then gradually decreases.

7. Breaking the *tgf*-code

To conclude, let us answer the question of what it means to break the *tgf*-code. Generally speaking the *tgf*-code is broken when the principles underlying this code, and the corresponding rules of coding, the application of which results in correct target-tagmons, become known. Consequently, based on this knowledge each tagmon is recognized and is morphologically, semantically and syntactically decoded.

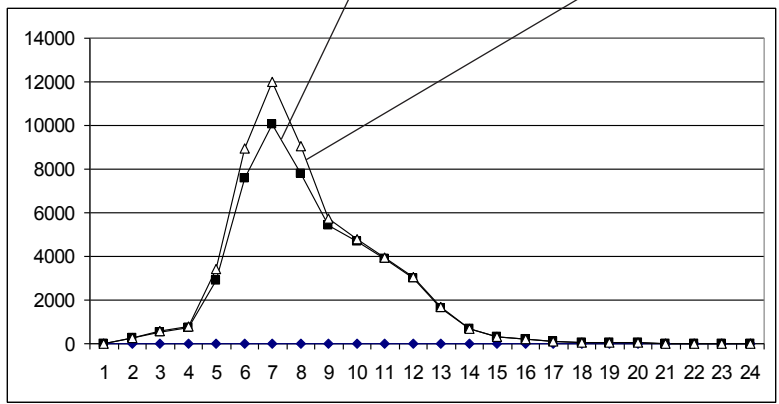
Thus, practically, the breaking of the *tgf*-code presupposes knowledge of the *tgf*-grammar which would be only one component of a more comprehensive morphological grammar containing morphotactics.

The language code which underlies the creation of the entirety of language objects may turn out to be no less complex than the genetic code.

Table 6.1 CHINESE

A (graphicity)	B (tactographemicity)	C (graphotactemicity)
1	12	12
2	254	265
3	548	604
4	719	783
5	2911	3401
6	7560	8965
7	10043	12013
8	7801	9030
9	5439	5742
10	4692	4770
11	3874	3927
12	2995	3028
13	1645	1666
14	665	669
15	335	338
16	215	215
17	102	103
18	60	60
19	48	48
20	31	31
21	15	15
22	5	6
23	5	5
24	3	3
	49997	55699

Table 6.2 CHINESE



8. Concluding Remarks

If the concept of tagmon, as proposed above, turns out to be adequate for the identification of the minimal intrasentential syntactic units in isolating languages, then the assertion of the morphological simplicity of syntactic words in these languages should be revised. More than this, the tagmon as an integral whole functioning as the atom of syntax, susceptible to flection and paradigmatication, and being multiply coded by means of all the kinds of its constituent units, allows us to look upon the morphology of the isolating type in a somewhat different light. Chinese and Vietnamese prefer adpositional tagmons.

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