



## Grammatical morphemes, conceptual structures and semantic representation

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### APA Citation:

Koné, K. A., & Silué, N. D. (2021). Grammatical morphemes, conceptual structures and semantic representation. *Journal of Language and Linguistic Studies*, 17(Special Issue 2), 726-734.

Submission Date:04/08/2020

Acceptance Date:23/10/2020

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### Abstract

This paper takes issue with the view of conceptual structures as autonomous syntactic structures generated by syntactic formation rules. Instead, it adopts the position developed by Croft and Cruse (2004), in showing that linguistic knowledge – knowledge of meaning and form – is basically conceptual structure. In fact the, fundamental problem posed by the rules-based approach is that conceptual structures are treated as purely formal and devoid of any meaning. If we consider grammatical morphemes to be part of the conceptual structures of language, this position would hardly be applicable. As the instruments of thought, the meaning attached to grammatical morphemes is highly abstract and must be reconstructed based on attested uses. In line with the position adopted, the paper provides an explanation through the analysis of the uses of the *-s* morpheme and the *-ø* morpheme in English as well as the noun-class morpheme *-m* in Tagbana, about the fact that grammatical morphemes cannot be treated as abstract symbols devoid of intrinsic meaning. In fact the syntactic configurations which characterize the notions of plurality expressed by these morphemes evidence the types of conceptualization attached to them. The semantic representations denoted by these morphemes are, then, proven to be basically conceptual.

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**Keywords:** noun-class morpheme; conceptual structures; semantic representation; syntactic structures; form; knowledge; meaning

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## 1. Introduction

The view of language as embodiment of a conceptual system, and the explicit attempt to describe its relevant syntactic structures as reflections of conceptual structures has been the main focus in cognitive linguistics theories. However, the correlation between grammatical morphemes, conceptual structures and semantic representations has been of a less focus. The paper attempts to fill in the gap in showing that there is a link between speakers' conceptualizations, semantic representations and syntactic

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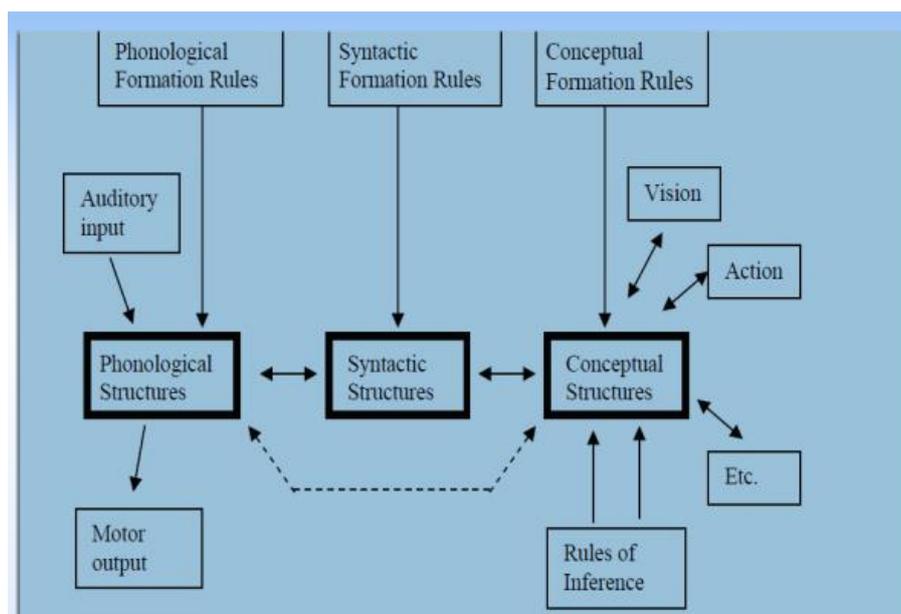
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phenomena. This position amounts to viewing syntactic structures not as autonomous but rather as concrete manifestations of speakers' conceptualizations. Mainly, the position developed in the paper takes issue with the cognitive view which consists in describing conceptual structures as generated by conceptual formation rules, just as syntactic structures are generated by syntactic formation rules (see Jackendoff, 1990). Instead, conceptual structures are apprehended as strongly correlated to what is meaningful to thinking and how do different speakers through different words or linguistic means make sense of their experience. Expression of grammatical number in English and Tagbana is used to explore the position adopted and make the point. The paper is structured around three parts. The first part consists in a critical analysis of Jackendoff (1990)'s theory of semantics, focusing on his conceptual formation rules. The second part of the paper accounts for the nature of a conceptual structure and sheds light on its connection with semantic representations. The third part serves as an illustration of the position developed through the analysis of the uses of the *-s* morpheme and the *-∅* morpheme in English as well as the noun-class morpheme *-m* in Tagbana.

## 2. Jackendoff (1990)'s theory of semantics

One way of getting more insights into Jackendoff (1990)'s theory of semantics is to take a look at the following diagram which suggests a grammatical organisation based on three autonomous levels of structures: phonological, syntactic, and conceptual.



**Figure 1.** Organisation of grammar (Jackendoff, 1990, p. 16)

Furthermore, more striking about the organization of grammar suggested by Jackendoff (1990) is the idea that conceptual structures are generated on the basis of a finite set of primitives and principles of combination. In other words, conceptual structures are rule-governed. On these two remarks, it is quite obvious to say that Jackendoff's (1990) semantics operates on the basis of formal principles based on an autonomous syntax conceived of as the driving force of any grammatical organisation. In fact, the type of grammatical organisation promoted by Jackendoff (1990) poses a fundamental problem. That is how to make compatible the potential knowledge or meaning attached to concepts as instruments of thought with the principle of formation rules build upon the manipulation of abstracts symbols considered as devoid of intrinsic meaning. In actual fact, it seems inadequate to characterise conceptual structures as rule-governed, since conceptual structures, with regards to the nature of human language, presuppose a correlation between experience and human understanding of it. Therefore, speakers do not

use conceptual structures as abstract symbols devoid of meaning. The endowment of conceptual structures with human thought allows a referential capacity which largely extends the rule-governed approach.

The limits of the rules formulated by Jackendoff in accounting for concepts of spatial location and motion in English can serve in illustrating the position defended. For example, one of the most important conceptual formation rules proposed by Jackendoff (1990, p. 43) in accounting for English prepositions can be formulated as:

[PLACE]     [-PLACE PLACE-FUNCTION     ([THING])]

Rule (1), suggests that the conceptual constituent of the category PLACE can be conceived of as a place-function, plus an argument of the category THING. Furthermore, the reference object always serves as an argument for the PLACE-FUNCTION in defining the spatial location (see Tai, 2005, p. 514). For example, in the expression *in the cup*, ‘the cup’ designates a reference object and the preposition *in* serves as a place-function which maps ‘the cup’ into the space inside it. The rule proposed by Jackendoff suggests that the reference object introduced by the proposition *in* always functions as a container, a place or space which contains other entities. However, that is not always the case with some uses of the preposition *in* in English as the following examples do illustrate:

- (1) *Unfortunately, there was a crack in the cup*
- (2) *Hopefully, there was some sugar in the cup*

The conceptual spatial relation denoted by the preposition *in* in (1) is concerned with a flaw which is part of the cup, while the conceptual spatial relation denoted by the preposition *in* in (2) is concerned with the interior space bounded by the cup. In (1), we are concerned with a construction which highlights part of the cup as cracked. Therefore, we are concerned with the presentation of the entity cup itself and, not its function as container. The fundamental observation which can be made in line with the uses of the preposition *in* in (1) and (2) is that, the derived nuances are based on the understanding, or interpretations of these different uses of the preposition *in* as well as the knowledge of what a crack is in the ordinary experience. This clearly shows that conceptual structures can hardly be defined as abstract symbols devoid of any meaning which exist independent of human understanding.

To account for human language, grammatical patterns or syntactical combinations without including how these linguistic resources contribute into the process of symbolization of speakers’ conceptualization of experience, seems reductive. This approach to language tends to focus on one layer, (i.e., the physical ordering of linguistic signs) among the different layers which make up linguistic knowledge. Grammatical patterns and syntactic constructions stand for the interpretation of experience represented by conceptual structures. For example, WHORF (1956, p. 139) clearly shows that a category such as number (singular vs plural) in English is an attempted interpretation of how experience is to be segmented, what experience is to be called ‘one’ and what ‘several’. Therefore, the notion ‘one’ and ‘several’ are instances of pure conceptualization, i.e. instances of human understanding or knowledge of experience.

It could be argued on that basis that the structuring of the experience we intend to convey is responsible for syntactic combinations observable in utterances or the discourse.

### 3. Linguistic expressions and the conceptualisation of experience

Cognitive Grammar (see Lakoff, 1987; Langacker, 1987) is driven by the idea that language is essentially and inherently symbolic in nature. By symbolic relations it should be understood that linguistic elements are associated with conceptual elements. More precisely, the symbolic thesis implies

that any morpheme stands for a particular way of construing meaning, or thinking about experience. This applies particularly to grammatical morphemes.

### 3.1. Grammatical morphemes as conceptual structures

It could be argued that a grammatical morpheme stands for a conceptual structure in the sense that any grammatical morpheme associates a particular knowledge of meaning and a linguistic form (see. Croft and Cruse, 2004, p. 2). This fundamental aspect of grammatical morphemes turns them into inherently symbolic units. They stand for a particular type of conceptualisations, i.e. particular ways of thinking about experience. What is, therefore, stored in mind as part of speakers' linguistic knowledge is both: the linguistic form and the particular knowledge of meaning associated with it. It could be argued on that basis, then, that a grammatical morpheme denotes for a conceptual structure, i.e., meaning conventionally associated with words, stored in mind as part of speakers' knowledge.

### 3.2. The -s morpheme in English and its underlying conceptual structure

The existence of the category number (singular vs plural) in English, as shown by WHORF (1956, p. 139), has a correlation between experience and the need to give it a form of knowledge or understanding in terms of what should be called 'one' and 'more-than-one'. It could be argued on that basis that the grammatical morphemes -s which denotes the notion of plurality in English and the zero morpheme - $\phi$  which denotes the notion of singular in English, have a conceptual basis which can be unveiled with regard to their uses. With regards to the -s morpheme, it is worth mentioning that the grammatical notion of plurality which characterizes its uses is supported by a conceptual structure, i.e. a type of knowledge, understanding or view associated with the -s morpheme which signified how the speaker apprehends a certain type of experience.

First of all, Jespersen mentions, while addressing the issue that, the notion of plurality attached to the -s morpheme in English "is applicable to things which without being identical belong to the same kind (nature)" (see. Jespersen, 1975, pp. 189-190). Furthermore, he goes on in highlighting that the -s morpheme presupposes *individuation*, which should be contained within the idea of same kind: "the simplest and easiest use of the plural is that seen in:

horse-s = (one) horse + (another) + (a third) horse... or; horse-s:  $\rightarrow$  horse A + horse B + horse C + horse D..., i.e., (A+B+C+D...) HORSE.

Furthermore, the conceptual structure underlying the notion of plurality attached to the -s morpheme in English, i.e. *the mental process of individuation*, can be put forward in explaining its syntactic compatibility with count nouns:

(3) Cat- $\emptyset$  vs cat-s

(4) Car- $\emptyset$  vs car-s

(5) Symphony- $\emptyset$  vs symphonie-s

In actual fact, notions like 'cat', 'car' or 'symphony' are subject to any process of individuation. Therefore, it quite normal that these notions be used with the -s morpheme in English to denote plurality. The same principle can be invoked in explaining the syntagmatic incompatibility which exists between the -s morpheme and mass nouns in English:

(6) Meat- $\emptyset$  vs \*meat-s

(7) Traffic- $\emptyset$  vs \*traffic-s

(8) Music- $\emptyset$  vs \*music-s

The fact that mass nouns resist pluralisation with the *-s* morpheme in English also has a conceptual basis. A Mass noun, as pointed out by Langacker when addressing the issue, designates a substance viewed internally as homogeneous. Therefore, any portion of a substance counts as a valid instance of it and multiplication of instances also counts as an instance (see Langacker, 1991, p. 70). Notions like ‘traffic’, ‘meat’ or ‘music’ are internally construed as homogeneous; therefore, they resist any process of individuation in English.

Furthermore, Hirtle (1982, p. 2009) in his theory of number suggests that accounting for the category of number in English on the basis of the opposition *singular vs plural* i.e. ‘one’ vs ‘more than one’ can be misleading since the *-s* morpheme, for example, can be used to refer to the ‘more than one’ sense as in:

(9) *The two crossroad-s are being watched;*

As well as the ‘one’ sense as in:

(10) *One crossroad-s is blocked, the other is being watched.*

In the same line, he shows that the *-ø* morpheme can be used to convey the ‘more than one’ sense too as in:

(11) *The Edmonton committee -ø are sponsoring a nine-week course.*

(12) *The embassy-ø are instructed to...*

(13) *Half the hotel-ø were scandalized at her.*

Based on these observations, Hirtle proposes that the system of number in English be apprehended on the basis of how the ‘inner space’ contained in a lexical entity evoked by a noun is represented. His theory of number consists in grasping the types of conceptualization denoted by the *-s* morpheme vs the *-ø* morpheme in English.

### 3.3. *The -s morpheme vs the - ø morpheme in English*

In his theory of number, Hirtle (1982, p. 94; 2009, p. 99) has proved on the basis of attested uses in English that there is a correlation between the expression of number and the representation of the space occupied by the entities represented by the substantive noun in discourse: “The system of number represents the space contained in the lexical entity or entities evoked by a noun, its inner space” This space can be represented as *continue* or *discontinue*. The *continue* conceptualization represented by the *ø-ending*, provides a continue view of an entity as an undivided space. The *discontinue* conceptualisation represented by the *s-ending* provides a discontinuous view of the referent as broken up into more than one stretch of space. In order to be perceived in their full relevance however, the concepts of *continue* or *discontinue*, should be construed on the basis of an internal view of the configuration of the class of entities represented.

The *continue view* provides a representation which neutralizes the possible limits which might exist between the entities falling under the concept. On the other hand, the *discontinue view* provides a representation which emphasizes the limits which exist between the entities represented by the concept. That is, with the *discontinue* conceptualisation, the entities represented by the concept denoted by the noun are individually or separately identifiable. The following examples highlight the variation in use between *-s* and *-ø* plurals in English with respect to wild animals:

(14) *We observed three elephant-ø in the game park.*

(15) *We saw three elephant-s in the game park.*

(cf. Hirtle 2009, p. 99)

The application of the *-s* morpheme to the noun *elephant* indicates that the speaker conceptualizes the elephants referred to as three distinct individuals of the category ‘elephant’. On the other hand, the application of the zero morpheme i.e. *-∅* to the noun *elephant* indicates that the speaker does not view the three elephants as three distinct individuals of the category ‘elephant’; instead, he thinks of them as species-animated individuals, an abstract characterization which neutralizes the distinguishing features between the three elephants and leads to viewing them as integrated into their species, i.e. as *continue*.

The question at issue then, is how the speaker conceptualizes the space occupied by the set of individuals subsumed by a notion in a specific discourse situation. Under this perspective, it could be argued that the application of the *-s* morpheme to a noun in a particular discourse situation denotes a particular way of apprehending the space occupied by the set of individuals categorised by this noun; otherwise, he may use another type of plurality expressed by the zero ending, i.e. the morpheme *-∅*. These facts show that linguistic resources are not reducible to abstract symbols which can be manipulated as symbols which do not have intrinsic meaning or intrinsic conceptual structures. In this perspective, the position defended by Croft and Cruse (2004) with regard to the correlation between linguistic knowledge and conceptual structures is proven to be relevant when they stipulate that: ‘The representation of linguistic knowledge is essentially the same as the representation of other conceptual structures’ (Croft & Cruse, 2004, p. 2). In the same line, a parallel can be established between the noun class morpheme *-m* in Tagbana and the morpheme *-∅* in English with regard to the expression of the *continue* view which provides a representation that neutralizes the possible limits which might exist between the entities falling under the concept.

#### 4. The parallel between the the morpheme *-∅* and the noun class morpheme *-m*

Among the six noun-class markers which categorise noun stems in Tagbana (see. Koné & Duffley, 2017, p. 133), i.e. *-k* for inanimate entities (e.g., chair); *-w* for human or higher animate (e.g., man, ghost, lion, dog); *-l* for clearly delineated, often small entity demarcated from its environment (e.g., rabbit, tooth); *-p* for group made up of individuals (e.g., men, types of commodity); *-t* for conglomerated grouping (e.g., money/coins), the noun-class marker *-m* which categorizes homogenous mass-like substance noun stems (e.g., water) denotes a *continue* view like the morpheme *-∅* in English. This is evidenced by the fact that noun stems categorised by the morpheme *-m* in Tagbana are reluctant to any process of vowel reduplication, which can be parallel to the type of plural denoted by the morpheme *-s* in English.

#### 5. Incompatibility between *m*-nouns and reduplication

The incompatibility of *m*-nouns with vowel reduplication can be exemplified by the following examples:

(16)	<i>hé-m-é</i>	<i>nugbé</i>	vs	<i>pō</i>	<i>nugbé</i>
	family	ONE		dog	ONE
	‘One family’			‘ONE dog’	
(17)	<i>hé-m-é</i>	<i>shiē</i>	vs	<i>pōō</i>	<i>shiē</i>
	family	two		dog-s	TWO
	‘Two families’		vs	‘two dogs’	

Unlike the noun stem *pō* ‘dog’ which undergoes the process of vowel reduplication in the plural form, i.e., *pōō* ‘dog-s’ when associated with the numeral *shiē* ‘two’, the noun stem categorized by the morpheme *-m*, i.e., *hé* ‘family’ remains unchanged when associated with numeral *shiē* ‘two’. Before going into an in-depth analysis about these facts, it is worth mentioning that the phenomenon of

reduplication itself operates on a conceptual basis. In actual fact, reduplication is a type of stem modification, i.e. a morphological and phonological process used for a variety of purposes, of which signalling plurality is the most frequent (cf. Corbett, 2000, p. 148). Conceptually, the phenomenon of vowel reduplication iconically signifies that the internal configuration of the ‘more than one’ entities talked about is construed as ‘one + one’, i.e. as an aggregate of items that maintain their individuality. The type of internal configuration associated with the phenomenon of vowel reduplication, which presupposes distinctions and limits among the ‘more than one’ entities referred to, contrasts with the internal configuration based on the homogeneous view. The syntactic association *hé-m-é shiẽ* ‘two families’ in Tagbana, does not suggest a construction of the type ‘one family’ + ‘another family’ which presupposes distinct families; rather it suggests the addition of two *undifferentiated* families, which implies an internal augmentation, and neutralizes the limits between the two families.

The absence of the vowel reduplication which characterizes *m*-noun stems indicates that *m*-nouns symbolize a homogeneous conceptualization with regard to the internal configuration of the members of the category. This view contrasts with the ‘one +one’ configuration denoted by reduplication, while fitting with the type of plurality expressed by the zero ending, i.e. the morpheme *-∅* in English. This also constitutes an illustration of the fact that noun-class markers or classifiers in classifier languages cannot be treated as abstract symbols which do not have intrinsic meaning. Instead, it could be postulated, on the basis of attested data, that the semantic representation they denote, is basically conceptual: it always implies a particular way of thinking about a certain experience.

The analysis of the expression of grammatical number in English and Tagbana constitutes an obvious manifestation of the fact that syntactic structures or combinations do not stand for autonomous linguistic units. As proven by data, these syntactic structures can be accounted for on the basis of the conceptual structures which underlie their semantic representation in discourse.

## 6. Conclusions

One of the basic linguistic issues which underlie the following paper can be related to the nature of semantic representation in cognitive linguistics. It basically takes issue with Jackendoff (1990)’s model of semantic representation, which operates on the basis of formal principles based on an autonomous syntax. Instead, the paper adopted the position developed by Croft and Cruse (2004), in showing that ‘linguistic knowledge – knowledge of meaning and form – is basically conceptual structure’, which suggests that semantic representation cannot be apprehended on the basis of autonomous syntax.

As shown in the analysis of the linguistic forms, expressions and syntactic constructions are related to the expression of plurality in both English and Tagbana. These forms, despite their physical manifestations (e.g., *reduplication* in the case of Tagbana), must be apprehended, comprehended and produced. Furthermore, all these processes involved the mind, i.e., a process related to the retrieval of a particular knowledge associated with linguistic forms. In this perspective, conceptual structures cannot be reduced to the principle of formation rules built upon the manipulation of abstract symbols considered as devoid of intrinsic meaning.

As demonstrated by the analysis of the use of the *-s* morpheme and the *-∅* morpheme in English as well as the noun-class morpheme *-m* in Tagbana, grammatical morphemes cannot be treated as abstract symbols devoid of intrinsic meaning. Furthermore, the semantic representations denoted by these morphemes are proven to be basically conceptual. It is possible, on the basis of these observations to postulate that any grammatical morpheme subsumes a conceptual structure responsible for its semantic representation which associates the knowledge of a particular meaning and a linguistic form.

## 7. Ethics Committee Approval

The authors confirm that ethical approval was obtained from Université Félix Houphouët-Boigny (Approval Date: 08/01/2021).

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### Özet

Bu makale, kavramsal yapıların sözdizimsel oluşum kuralları tarafından üretilen özerk sözdizimsel yapılar olduğu görüşünü ele almaktadır. Bunun yerine, dil bilgisinin - anlam ve biçim bilgisinin - temelde kavramsal yapı olduğunu göstermede Croft ve Cruse (2004) tarafından geliştirilen pozisyonu benimser. Aslında, kurallara dayalı yaklaşımın ortaya koyduğu temel sorun, kavramsal yapıların tamamen biçimsel ve herhangi bir anlamdan yoksun olarak ele alınmasıdır. Dilbilgisel morfeplerin dilin kavramsal yapılarının bir parçası olduğunu düşünürsek, bu pozisyon pek uygulanamaz. Düşünce araçları olarak, dilbilgisel biçimbirimlerine eklenen anlam oldukça soyuttur ve onaylanmış kullanımlara göre yeniden yapılandırılmalıdır. Kabul edilen pozisyona uygun olarak, makale İngilizce'deki -s morfemi ve -ø morfeminin yanı sıra Tagbana'daki isim sınıfı morfem -m'nin kullanımlarının

analizi yoluyla, gramatik morfeplerin içsel anlamı olmayan soyut semboller olarak ele alınmalıdır. Aslında, bu morfepler tarafından ifade edilen çoğulluk kavramlarını karakterize eden sözdizimsel konfigürasyonlar, bunlara eklenen kavramsallaştırma türlerini kanıtlar. Bu morfeplerle gösterilen anlamsal temsillerin temelde kavramsal olduğu kanıtlanmıştır.

*Anahtar sözcükler:* isim sınıfı morfepl; kavramsal yapılar; anlamsal temsil; sözdizimsel yapılar; form; bilgi; anlam

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