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Elements of Space Grammar in Leggbó*

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This paper aims to give a description of the basic elements of the grammar of space in a hitherto virtually undescribed language, the Upper Cross language Leggbó of the Niger-Congo phylum. The areas under investigation are deictics, topological relations, caused positions, and motion verbs. In addition to making use of conventional elicitation methods, we also employed tools for the exploration of spatial language developed at the Max Planck Institute for Psycholinguistics, Nijmegen; tools which are much more systematic than anything previously available to individual researchers and fieldworkers. The results show a strong tendency for Leggbó to express topological relations in terms of the activities which bring about the topological relations, rather than in terms of the stative relationship between the figure and the ground involved. Consequently, prepositions and locative nouns play only a minor role. There is no particular word for the concept 'under,' which is mostly expressed as 'inside.' Complex motion events are expressed through serial verb constructions. With respect to Talmy's typology of motion verbs, one can observe a slight preference for the expression of manner over path.

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Keywords: grammar of space, deictics, topological relations, caused positions, motion verbs

1. Goals of this paper[1)]

The primary goal of this paper is to provide a preliminary description of the grammar of space of Leggbó, an Upper Cross language of the Benue-Congo branch of the Niger-Congo language phylum. The area of the expression of spatial relationships is of particular interest for the semantic description of languages because of its basicness for language and cognition. The description is part of a larger project of the description of this hitherto virtually undescribed language. It is in large parts based on the cognitive framework for the study of grammar of space developed at the Max Planck Institute for Psycholinguistics, Nijmegen (henceforth abbreviated as MPIN).[2)] The Language and Cognition group at this institute has developed on a grand scale tools for the cross-linguistic analysis of space and cognition which are much more systematic than, and go far beyond, the possibilities previously available to individual researchers.

In addition to the purely descriptive side, we will try to reach some generalizations with respect to the language of space in Leggbó, and point out those aspects which seem to be of particular typological relevance.

2. Contents

The following two sections will provide brief information on Leggbó, the language under investigation and the methods of description, in particular the framework of research developed at Nijmegen. Section 5 gives a brief overview over spatial deictics. Section 6 will discuss the basic grammatical means employed for the expression of static spatial scenes. Section 7 provides additional data for the study of topological relations in Leggbó, based on the MPIN questionnaire. Section 8 will do the same for caused positions, hence dealing with the interface between the conceptualization of dynamic and static spatial scenes. The last two sections will introduce the expression of dynamic scenes, namely motion verbs, and transitive verbs of moving objects.

3. The language under investigation

As mentioned above, Leggbó is an Upper Cross language of the Benue-Congo branch of the Niger-Congo language phylum. It is spoken by about 60,000 people in ABI and Yakurr Local Government Areas of Cross River State of Nigeria (Southeastern Nigeria).[3)] Upper Cross languages are, in general, not satisfactorily documented. Pre-

1) We wish to express our deep-felt gratitude to Larry Hyman (University of California Berkeley) who has initiated and organized the project of the description of Leggbó, and has provided us with invaluable information and support. Magnus Wilson (Central University of Nationalities, Peking,) kindly took care of the English proof reading. We appreciate the valuable comments that we received from two anonymous reviews for JAAS.

2) The MPIN, and Eric Pederson, University of Oregon, have generously supplied field manuals.

liminary grammatical descriptions exist for Lokaa of the Loko subbranch[4] and Mbembe of the Mbembe-Leggbó subbranch.[5] Leggbó is a tone language, with three level tones, high, mid, and low. They are rendered here as is common with accents, e.g. /ó/ (high), /o/ (mid), and /ò/ (low), respectively. Basic word order is SVO, SOV occurring mainly in negation. Subjects are obligatorily marked as prefixes on the verb.

4. Methodology and conventions

The data presented here were elicited with two types of methods. About half of the data were obtained by conventional elicitation, by finding the expression for sentences given in English or situations described in English. This applies for the data in sections 6, 9 (except 9.1.), and 10. These data also contain incidental evidence, such as data from elicitation on different topics or, more rarely, from stories. The other data, namely those from sections 5, 7, 8, and 9.1 were obtained by employing various picture book and video questionnaires developed at MPIN. The questionnaires developed at MPIN are the output of the "Spatial Language and Cognition" project running at the institute since 1992 This project has been extremely successful resulting in numerous qualitatively outstanding publications.[6] With a large number of scientists participating in the same project, the language of space has been explored in unprecedent systematicity and depth, driven by the motivation to go beyond surface phenomena and link the results to broader issues in areas such as language acquisition[7] and linguistic relativity.[8]

For the purposes of the present research, the scenes were either re-enacted in real space and with real objects, or shown as pictures. These picture books and videos are not reproduced in the present article.[9] For one thing, this would be quite impossible within the limited space available. For another thing, this is not really necessary, because the decisive characteristics of the scenes can be described sufficiently verbally. The source of the Leggbó data is Dr. Imelda Udoh of the University of Uyo, Nigeria. We decided to indicate ungrammaticality by "??" instead of "*", because Dr. Udoh found it often hard to exclude the possibility that an "ungrammatical" expression would be acceptable under very specific pragmatic circumstances.

5. Locative Deictics

We start here with a very basic area in the language of space, the deictics. We cannot

3) Udoh 2000. The data concerning the location of Leggbó provided in the Ethnologue (Grimes 2000) are outdated.
4) Iwara 1982.
5) Barnwell 1969.
6) e. g. Pederson et al. 1998, Levinson 2003, Levinson et al. 2003.
7) e. g. Bowerman 1996.
8) e. g. Levinson 1996a.
9) They are available on the following URL: http://www.mpi.nl/world/data/fieldmanuals/STIMKITS/

do full justice here to the whole deictic system of Leggbó, which would at least require a lengthy paper of its own. We will limit ourselves here to dealing with the most basic core spatial deictic notions, which are captured in the following MPIN questionnaire.

5.1 The questionnaire

The questionnaire used is a 1999 revised and improved version of a 25 picture-scene questionnaire designed by David Wilkins. It aims to systematically vary spatial situations along three parameters which its creator has identified as being most fundamental in the conceptualization of spatial deixis. These three parameters are (1) speaker-anchoredness vs. addressee-anchoredness vs. speaker&addressee-anchoredness vs. other-anchoredness; (2) distinctions in distance from speaker; and (3) distinctions of visibility vs. non-visibility.[10] Other factors that might influence the choice of encoding, such as physical contact between the speaker and the object, attention of the speaker, and gesturing, are marginally included in the instructions, or can be added by the investigator.

5.2 The data

The data obtained through the use of the questionnaire are listed below. The verbal description of the scene is the description provided by Wilkins. In elicitation, the scenes were re-enacted with actual objects in actual space. It turned out that all scenes could be covered by just two deictic terms, namely *amma* and *ámmɛ*. We thus divide the scenes according whether *amma* or *ámmɛ* are used for them, and within that grouping list them according to the sequence in the questionnaire. The numbers in brackets refer to the number in the questionnaire. They are given in square brackets to distinguish them from the numbers of examples in our paper which are given in round brackets. In the data, speaker is abbreviated as "spkr", addressee as "addr".

amma is used when the speaker refers to:

- her/his own body part [1]
- a movable object in contact with her/his body [3]
- an object close to her-/himself and visually not easily accessible to the addr [6]
- an object close to her-/himself and visually easily accessible to the addr [7]
- an object that is in equal, short distance from both spkr and addr, between them [8]
- an object that is in equal but long distance from both spkr and addr, between them [17]
- an object outside the door in equal, short distance from both spkr and addr [20]
- an object outside the house, closer to spkr than to addr, who is outside the house [22]

ámmɛ is used when the speaker refers to:

- addr's body part [2]

10) Wilkins 1999: 1.

- a movable object in contact with addr's body, pointing at it [4]
- a movable object in contact with addr's body, not pointing at it [5]
- an object in front of addr and visible to the spkr [9]
- an object close to the addr and visually not easily accessible to him-/herself [10]
- an object behind her-/himself, and visually easily accessible to addr, but not spkr [11]
- an object that is in equal, mid-distance in front of spkr and addr [12]
- an object that is far from both spkr and addr, with a third person, but clearly visible [13]
- an object that is far from both spkr and addr, between spkr and addr on one side, and a third person on the other side [14]
- an object that is far from both spkr and addr, with a third person, and not visible [15]
- an object that is far from spkr with the addr, but clearly visible [16]
- an object that is far from spkr with the addr, and not visible [18]
- an object that is inside a house, distant from addr who is also inside the house, but close to the spkr who is looking at it through a window [19]
- an object outside the door, in mid-distance from spkr and addr but closer to spkr [21]
- an object visible up in the hills, several kilometers away [24]
- an object up in the hills, invisible, several kilometers away [25]

5.3 Some generalizations and conclusions

amma is used for speaker's body parts, objects attached to speaker's body, and objects that belong to a common space between speaker and addressee. *ámmɛ*, in contrast, looks like the unmarked term, as it can be used for all other scenes. It denotes things belonging to the addressee physically or in terms of space, and things that belong neither to the speaker's nor the addressee's space, including things far away. Thus, with respect to the three basic parameters named above, the Leggbó deictics *amma* and *ámmɛ* are first and foremost speaker-vs. addressee-anchored. Secondarily, distance plays a role, since *amma* is used with objects within an equal, but short distance to speaker and addressee while *ámmɛ* is used when the distance to addressee and speaker becomes longer. Visibility is not an obvious factor.

On the other hand, the designation by *amma* vs. *ámmɛ* may change if the speaker directly touches an object when pointing at it. The objects in scenes [2], [4], [5] for which otherwise *ámmɛ* is used are referred to as *amma* if the speaker touches them. In contrast, mere pointing doesn't seem to make a difference, except for scene [19]. Here, pointing (putting her/his hand through the window) would give the speaker a physical presence in the space of the object that (s)he otherwise doesn't have. Another factor that the questionnaire draws attention to, namely whether there is a difference when the addressee is supposed to know an object and/or is supposed to be aware of its presence,

does not seem to be relevant in the choice of the deictic marker.

6. Basic grammatical means for the expression of topological relations

Unlike most of the data in the later sections, the data presented here have been collected through conventional elicitations. Although there is no contradiction with the data obtained through the visual tasks of the MPIN questionnaires, it is interesting to see that some expressions that are less salient in the conventionally elicited data became more salient in the picture book tasks, which are probably closer to actual language use. We will refer to this point again in sub-section 5.3.

6.1 Basic locative construction

In the MPIN framework it is assumed that languages have a default kind of construction for the expression of spatial relations, a construction that is used in unmarked cases and more frequently than others. It is the construction used in answers to "where..."-type questions.[11] In Leggbó, the following construction can be identified as the basic locative construction (BLC):

V PREP (LOCN) N

V stands for verb. In fact, there is a specific verb which is fairly neutral with respect to specific spatial configurations, and this is the locational verb *kkù* 'be, stay'. PREP stands for one of the two general locational prepositions *ŋ́kɛ* or *ìì*, which are explained below in a little more detail (6.2). The optional locative noun (LOCN) specifies a frame of reference or a topological relationship, and N the point of reference for the spatial relationship. The nouns also are described in their own subsection below (6.3). We will not go into much detail there, however, because in section 7 numerous examples of their use will be provided. Finally, subsection 6.4 provides a list of verbs other than *kkù* that feature prominently in spatial scenes.

6.2 Locative prepositions

Leggbó only has four prepositions, two of which have a spatial function. *ŋ́kɛ* is the most natural choice for the locative preposition slot in the BLC, but it can be replaced by *ìì*, or the combination of *ŋ́kɛ ìì* in correlation with any locative nouns. Thus,[12]

(1) *ŋwɛnɛ sɛ́ e-kkú ŋ́kɛ gèzɔ ekkpokolo#*
book DEF 3SG-be LOC top.of table
'The book is on the table'

is equivalent to:

(2) *ŋwɛnɛ sɛ́ e-kkú ìì gèzɔ ekkpokolo#,*

11) cf. Levinson et al. 2003: 486.

12) The following abbreviations are used in the glosses: LOC, locative; DEF, definite article; 1,2,3, first, second, third person; SG, singular; PL, plural; DIM, diminuitive; PRG, progressive; IMP, imperative; GER, gerund. # indicates the end of an utterance.

where *ŋ́kɛ* is replaced by *ii*, or:

(3) *ŋwɛnɛ sé e-kkú ŋ́kɛ ii gèzɔ ekkpokolo#,*

where both prepositions occur together. Very general and easily inferable locations, like 'at', 'in', or 'on', do not need to be further specified by a locative noun. Thus, the following sentences without locative noun are also acceptable as the expression of the same meaning as the sentences above:

(4) *ŋwɛnɛ sé e-kkú ŋ́kɛ ii ekkpokolo#*

(5) *ŋwɛnɛ sé e-kkú ŋ́kɛ ekkpokolo#*

(6) *ŋwɛnɛ sé e-kkú ii ekkpokolo#*

Furthermore, *ii* can fuse with the initial vowel of the following noun, as in the following example:

(7) *ŋwɛnɛ sé e-kkú eèkkpokolo#*

eèkpokolo is the result of a fusion of *ii* with *ekkpokolo*.

A noun alone without any prepositional marking, on the other hand, is not acceptable in the case of static relationships:

(8) *??ŋwɛnɛ sé e-kkú ekkpokolo#*

In anticipation of the later sections dealing with dynamic scenes, we shortly refer here to the use of prepositions in dynamic scenes as well. Basically, the same combination of preposition(s) and locative nouns that is used to encode static spatial relations, is also used to encode dynamic situations. Consider the following example:

(9) *wàhé sé ɛ-sɛŋi ŋ́kɛ ǹzàm èttɔ sé#*
child DEF 3SG-go LOC back.of house DEF
'The woman went behind the house'

If the goal of motion does not need any further topological specification (general 'to'), the preposition can be omitted without any change of meaning. The sentence

(10) *ɛ-sɛŋi ɛppya#*
3SG-go market
'(S)he went to the market'

is equivalent to:

(11) *ɛ-sɛŋi ŋ́kɛ ɛppya#*

Regardless of the stativity/dynamicity of the scene, *ŋ́kɛ* can be abbreviated to *kɛ*:

(12) *ŋwɛnɛ sée-kkú kɛ ekkpokolo#*

(13) *ɛ-sɛŋí kɛ ɛppya#*

As the second example demonstrates, where the regular form of the verb is *sɛŋi*, the high tone of the deleted segment /ŋ́/ is "inherited" by the preceding syllable.

The exact conditions under which the initial /ŋ́/ of *ŋ́kɛ* can be omitted have not been established. It seems clear, however, that these are pragmatic-prosodic in nature, rather than being predictable from specific grammatical, lexical, semantic, or phonotactic features.

There is just one position where /ŋ́/ cannot be elided, namely sentence-initially:

(14) *wàhé sé e-kkú da?# - ŋ́kɛ/*kɛ ètt ɔ#*
child DEF 3SG-be where LOC house
'Where is the child?' - 'In the house'

The fact that Leggbó has two general locative prepositions (and there are no others) that not only vie for the same slot but can also co-occur, is remarkable. It seems likely that *ìì* is the older one and is in the process of being reinforced and eventually replaced by *ŋ́kɛ* as a locative preposition. *ìì* is more "inside" the noun phrase than *ŋ́kɛ* (cf. *ŋ́kɛ ìì ètt ɔ* vs. *??ìì ŋ́kɛ ètt ɔ*), and it is far less common. Furthermore, it is being attenuated by fusion with the initial syllable of the following noun, and as such in the "danger" of getting reduced to zero.

While *ŋ́kɛ* is undoubtedly of deictic origin, it seems reasonable to assume that *ìì* originally expressed a topological relationship, namely containment. Although it can replace/or co-occur with *ŋ́kɛ* in almost any position, those cases where it occurs naturally are rather limited, and mostly refer to some kind of containment or enclosure:

(15) *kàa-yé kubbà (kɛ) ìì ètt ɔ#*
carry.IMP-3SG enter LOC LOC house
'Carry it into the house!'

(16) *mèmmɛ (kɛ) ìì ìbèn#*
remove.IMP LOC LOC room
'Remove it from the room!'

6.3. Locative nouns

The following represents a list of nouns that function in the basic locative construction to specify the spatial relation between a figure and a ground that have been identified in Leggbó. Their meaning as a noun is given, and then their equivalent(s) in English prepositions and other spatial expressions:

èz ɔ 'top of' ⇒ 'on', 'above', 'over'
ètbba 'side' ⇒ 'besides', 'along'
ǹzàm 'back' ⇒ 'behind'
esovvém 'forehead', 'front' ⇒ 'in front of'
etekpan 'outside' ⇒ 'outside of'
littol 'inside' ⇒ 'inside of'
livil 'left' ⇒ 'to the left of'
(g)edub ɔ 'right' ⇒ 'to the right of'

ɛvvém 'center' ⇒ 'in the middle of', 'between'

As can be seen, the number of locative nouns is rather limited (9), and each of them covers a large area. For instance *èzɔ* 'top of' is both appropriate if the figure (object) is in physical contact with the ground, like a book on the table, or not, like a bird flying over the house. There is no single expression corresponding to 'under' in English; *littol* is used when the ground can be conceptualized to enclose the object. This can be observed from the examples of concrete spatial scenes provided in the next section.

Below two examples are given with the basic locative construction and different locative nouns:

(17) *wàhé sé e-kkú ŋ́kɛ èbba ɛttɔ sé#*
child DEF 3SG-be LOC side.of house DEF
'The child is (stands) besides the house'

(18) *wàhé sé e-kkú ŋ́kɛ ǹzàm ɛttɔ sé#*
child DEF 3SG-be LOC behind house DEF
'The child is (stands) behind the house'

The position of LOCN and N can be reversed without obvious difference in meaning:

(19) *wàhé sé e-kkú ŋ́kɛ èttɔ ǹzàm sé#*
child DEF 3SG-be LOC house behind DEF
'The child is (stands) behind the house'

However, while the noun following the locative noun undergoes tone sandhi, the locative noun following the noun doesn't.

6.4. Verbs of position and body posture

Besides the very general *kkù* 'be, stay', the following verbs in Leggbó denote either a static position, or both a static position and an action that leads to that position:

be 'stand' for humans; objects when emphasizing vertical position, also the sun; cf. *venne* 'stand up'
mìna 'lay', 'lie', 'lie down' (tr./itr.)- for humans, and objects when emphasizing horizontal position
tɔ̀ghɔ 'sit', 'sit down'
zɛ̀ɛ̀nɛ 'hang (on to)' (tr./itr.)
pɛ̀ɛghɛ 'lean against' (tr./itr.)

The following sentence exemplifies the use of one of these verbs, *be* 'stand':

(20) *ètt͡ɔ sé e-be ŋ́kɛ gèvè èbba#*
house DEF 3SG-stand LOC lake side
'The house stands at the lakeside'

7. Use of the expressions for topological relations

7.1. Questionnaire on topological relations

This section demonstrates how the grammatical means of expression sketched above, in combination with other means not mentioned yet, feature in the conceptualization of spatial relations in Leggbó. We do so by presenting the results of the questionnaire for static topological relations developed at the MPIN by Pederson, Wilkins and Bowerman in 1993.

According to its three creators, the questionnaire is "intended for an open-ended exploration of how different languages use their linguistic resources to 'carve up' the domain of topological spatial relations." It is seen as a step towards "(i) identifying a language's total resources for encoding static topological relations [...], (ii) delimiting the pragmatics of such resources; and (iii) discovering the semantics of spatial terms".[13] The picture series focuses on figure-ground relations like contact, support, adjacency, inclusion and attachment. It does not claim to be exhaustive, however, and the authors admit the existence of some blind spots (underrepresentation or non-representation of certain relations). For instance, there is a certain bias towards what we might call 'on' – scenes, with a single figure being supported by or attached to a single ground.

The structure of the data given below is as follows. On the left side, a phrase in English describes the focus of the scene, which in the questionnaire is presented as a drawing. The number in brackets refer to the number of the drawing in the questionnaire. Often one picture is used to illustrate different spatial relationships, changing the viewpoint. Therefore the same scene may appear more than once in the data, since the results are organized semantically. The 24 headings ("figure supported by (more or less) horizontal surface" etc.) render what Bowerman and Pederson call "situational classes," groupings to whose members most languages give a uniform grammatical treatment in their experience.[14]

The sentences on the right describe the scene in Leggbó. When more than one expression for the same scene is possible, all expressions are provided. So are other related expressions that seemed relevant. Particularly, many scenes can be expressed both as a transitive action and an intransitive event. When a word or concept was not available in Leggbó, it was replaced by a similar concept. Frequently, the most natural way to express static scenes in Leggbó is as a relative clause, resulting in different tones, but the renditions below with a few exceptions have been unified to main clause phonology.

13) Pederson, Wilkins and Bowerman 1993: 1.
14) Pederson, Wilkins and Bowerman 1993: 7.

7.2. The data

7.2.1. Figure supported by (more or less) horizontal surface

pencil on desk [59]
èttí sé e-kkú kɛ ekkpokolo sé#
stick DEF 3SG-be LOC table DEF
'The stick is on the table'

cup on table [1]
àmóò e-kkú kɛ ekkpokolo#
cup 3SG-be LOC table
'A cup is on a table'

book on shelf [8]
ŋwèǹè e-nyíná kɛ ekkpokolo#
book 3SG-place.on LOC table
'A book is placed on a table'

tablecloth on table [29]
ɛggɔ̀ e-bémmí kɛ ekkpokolo#
cloth 3SG-cover LOC table
'A cloth covers a(on a)table'

man on roof [34]
ènɔ̀n e-bé kɛ èttɔ èzɔ#
person 3SG-stand LOC house top
'A person stands on the top of a house'

cat on mat [40]
ànwaŋ ɛ-tɔ̀ghɔ̀ kɛ likól#
cat 3SG-sit LOC mat
'A cat sits on a mat'

hose on tree stump, coiled [23]
àkpɔ ɛ-dání kɛ èttí dɔ̀#
hose 3SG-spin.around LOC tree stump
'A hose spins around a tree stump'
cf. *wadum sé ɛ-dani àkpɔ kɛ*
man DEF 3SG-spin.around hose LOC
èttí dɔ̀#
tree stump
'The man spins a gum hose around the tree stump'

hose on tree stump, draped [43]
àkpɔ ɛ-zéɛné kɛ etti dɔ̀#
hose 3SG-hang LOC tree stump
'A hose hangs on a tree stump'

cf. only with animates:
zɔ̀ ɛ-yɔ̀ŋŋɔzí kɛ etti dɔ̀#
snake 3SG-pass LOC tree stump
'A snake passes on a tree stump'

tree on top of mountain [65]

ètti e-bé kɛ ekkpon èzɔ#
tree 3SG-stand LOC mountain top
'A tree stands on a mountain top'

tree on side of mountain [17]

ètti e-mení kɛ ekkpon ɛbbà#
tree 3SG-grow LOC mountain side
'A tree grows on a mountain's side'

hat on head [5]

ɛ-ŋwá esì letól#
3SG-wear bag head
'X wears a hat (bag of head)'
cf. *??esì letól ɛ-ŋwá kɛ letól#*
bag head 3SG-wear LOC head
'A hat is worn on the head'

boat on/in water [11]

kwal ŋ̀kɛ lesaŋal#
boat LOC river
'A boat on a river'

7.2.2. Figure supported by hanging

clothes on line [37]

áwìlì, kkàkki, ibɔsɔ̀m ba-yáani
woman's.gown trousers shirt 3PL-dry
ŋ̀kɛ gèzí#
LOC rope
'A female gown, trousers, and a shirt dry on the rope'
less naturally:
àwìlì, kkàkki, ibɔsɔ̀m ba-zéɛnɛ
woman's.gown trousers shirt 3PL-hang
ŋ̀kɛ gèzí#
LOC rope
'A female gown, trousers, and a shirt hang on a rope'

flag on mast [56]

ɛggɔ̀ ɛ-zɛ́ɛnɛ́ kɛ ètti#
cloth 3SG-hang LOC pole
'A cloth hangs on a pole'

pendant on chain [57]

èdzɛ̀ ɛ-zɛ́ɛnɛ́ kɛ ezi#
bead 3SG-hang LOC thread
'A bead hangs on a thread'

coat on hook [9]

nkon ɛ-wai ŋ́kɛ eppi#
coat 3SG-hang LOC wall
'A coat hangs on the wall'

earring in ear [69]

èdzɛ̀ lìtɔ́l ɛ-zɛ́ɛnɛ ŋ́kɛ lìtɔ́l kolo#
bead ear 3SG-hang LOC ear hole
'A bead of ear hangs in the ear hole'
or: *èdzɛ̀ lìtɔ́l ɛ̀-ŋwá kɛ lìtɔ́l#*
bead ear 3SG-wear LOC ear
'A bead of ear is worn on ear'

apples on tree [45]

nttiwɔmá kɛ ètti#
fruit LOC tree
'Fruits on a tree'
nttiwɔmá ba-wɔmi wɔmɔzi#
fruit 3PL-fruit fruit-GER.PLU
'Fruits fruit fruiting' [15]

leaves on twig (hanging down) [41]

lìgwàl ɛ-ggama kɛ ètti#
leave 3SG-hang.on LOC twig
'Leaves hang on a twig'

apple on twig [27]

nttiwɔmá e-kkú kɛ ètti#
fruit 3SG-be LOC twig
'A fruit that is on a twig'

picture on wall [44]

ndisá ɛ-zɛ́ɛnɛ ŋ́kɛ èppì#
picture 3SG-hang LOC wall
'A picture hangs on the wall'

15) The stem meaning 'fruit' is used both as a noun and a verb, and furthermore in the gerund of the verb. The same expression in English would clearly be infelicitous.

7.2.3. Adhesion

stamp on letter [3]

ligwàl ɛ-ggama ŋkɛ ŋwènè#
leaf 3SG-stick LOC book
'A leaf sticks on a book' (also used if leaf/ stamp wet)
also: *ŋwènè awóó vvɔ́m e-bbi*
book ASS thing 3SG-blacken
èbbi í-kɛ#
3SG-blacken.GER LOC
'A book on which it blackens black' (= 'A book on which there is something')

7.2.4. Wet or smeary substance on a surface

raindrops on window [48]

àsi/ètewa ɛ-tɔɔŋɔzi ŋkɛ lèmmàl#
water/rain 3SG-drip.PRG LOC window
'Water/rain is dripping on the window'
also: *ètewa e-ttéi kɛ lèmmàl#*
rain 3SG-rain.PRG LOC window
'Rain is raining on a window'

butter on the knife [12]

ízɔ̀ɔ̀m e-bbi èbbi#
knife 3SG-blacken blacken.GER
'A knife blackens black'
or: *ànàn ɛ-ffagha ŋkɛ ízɔ̀ɔ̀m#*
oil 3SG-stick.onto LOC knife
'Oil is on a knife'

7.2.5. Marks on a surface

picture on stamp [28]

cf. *gwanɔ sé e-kkú kɛ ndisa#*
woman DEF 3SG-be LOC picture
'The woman is on the picture'

writing on letter [3]

ŋwènè ba-nyani vvɔ́m í-kɛ#
book 3PL-write thing LOC
'A book on which they wrote things'

stain(/letters) on shirt [68]

ba-nyáni vvɔ́m ŋkɛ ibbɔsɔ̀m#
3PL-write thing LOC shirt
'They wrote things on the shirt'

7.2.6. Living creature on (nonhorizontal) surface

snail on wall [52]

èkwɔ̀ ɛ-daŋŋí kɛ èppì#
snail 3SG-crawl LOC wall
'A snail is crawling on the wall'

spider on wall [52]

ǹdòdòwe sé ɛ-ddáŋŋi ŋ́kɛ èppì#
insect DEF 3SG-crawl LOC wall
'The insect is crawling on the wall'

spider on the ceiling [7]

ǹdòdòwe ɛ-ggama ŋ́kɛ ǹttɔ́kpan#
insect 3SG-crawl LOC ceiling
'An insect perches on the ceiling'

7.2.7. Figure both tightly attached to and projecting from ground

lamp affixed to ceiling [63]

etòlikaŋ ɛ-zɛ́ɛnɛ èzɛɛnɛ ŋ́kɛ ǹttɔ́kpan#
lamp 3SG-hang hang.GER LOC ceiling
'A lamp hangs hanging on the ceiling'

telephone on wall [25]

ŋkalikaŋ ɛ-zɛ́ɛnɛ ŋ́kɛ èppì#
bell 3SG-hang LOC wall
'A bell hangs on the wall'

shelf on wall [8]

èbúkkpɔ̀ ɛ-zɛ́ɛnɛ ŋ́kɛ èppì#
board 3SG-hang LOC wall
'A board hangs on the wall'

handle on cupboard [61]

cf. *lèbɔl lɛmàl#*
handle door
'Handle of door'

hook on wall [50]

cf. *vvɔ̀ banà-kaa-zèènè vvɔ́m#*
thing 3PL.HAB-hang thing
'A thing that they usually use to hang sth on'

leaf on twig (upright) [41]

ligwàl ɛ-ggama kɛ èttì#
leaf 3SG-hang LOC twig
'Leaves hang on a twig'

flag on mast [56]

ɛggɔ̀ ɛ-zɛ́ɛnɛ ŋ́kɛ èttì#
cloth 3SG-hang LOC pole
'A cloth hangs on/from a pole'

clothespin on line [33]

aggà è-ggama kɛ gèzi#
nail 3SG-stick LOC rope
'A nail sticks on the rope'

7.2.8. Tied to - relations

balloon on stick [20]

àkpɔ ɛ-zéɛnɛ ŋ̀kɛ èttì#
balloon 3SG-hang LOC stick
'A balloon hangs on a stick'

flag on mast [56]

ɛggɔ̀ ɛ-zéɛnɛ ŋ̀kɛ èttì#
cloth 3SG-hang LOC pole
'A cloth hangs on/from a pole'

strap on purse [66]

esì è-kaa lɛ̀bɔl#
bag 3SG-carry.SRA handle
'A bag that carries a handle'
lɛ̀bɔl esì#
handle bag
'A handle of a bag'

cord on telephone [25]

èzi ɛ-zéɛnɛ ŋ̀kɛ nkalikaŋ#
rope 3SG-hang LOC bell
'A rope hangs on the bell'

strings on mat [40]

èzizibɛ́ ɛ-zénni ŋ̀kɛ likól#
small.rope 3SG-hang.PRG LOC mat
'Strings are hanging on a mat'

7.2.9. Encirclement

bandana around head [45]

emínakol ɛ-bayi èzi ŋ̀kɛ letól#
girl 3SG-tie rope LOC head
'A girl has a rope tied on her head'

ribbon around candle [4]

èkkwɛn awɔ aa ba-bayì vvɔ́m í-kɛ#
fire ASS 3PL-tie thing LOC
'A fire on which they tied something'

ring on finger [10]

àgbanɔ̀nɔŋ ɛ-ŋwá ŋ̀kɛ inɔnɔ́ŋ#
ring 3SG-wear LOC finger
'A ring is worn on a finger'

also: *gwànɔ sé ɛ-ŋwá agbanɔ̀nɔŋ ŋ́kɛ inɔnɔ́ŋ#*
woman DEF 3SG-wear ring LOC finger
'The woman wears the ring on her finger'

hose around stump [55]

zɔ̀ ɛ-daní kɛ ètti dɔ̀#
hose 3SG-wrap LOC tree stump
'A hose wraps around the tree stump'

fence around house [15]

ŋkátti e-kko ètːɔ#
fence 3SG-encircle house
'A fence encircles a house'

7.2.10. Envelopment

shoe on foot [21]

ɛ-ŋwá ákpaikon#
3SG-wear shoe
'X wears a shoe'

7.2.11. Clothing on

hat on head [5]

ɛ-ŋwá esì letól#
3SG-wear bag head
'X wears bag of head'

shoe on foot [21]

ɛ-ŋwá ákpaikon#
3SG-wear shoe
'X wears a shoe'

belt on [42]

èzi e-ssíla/bai ŋ́kɛ lìvɔl#
rope 3SG-tie LOC belly
'A rope ties on her belly'

necklace on [51]

eminakol ɛ-ŋwá èdzɛ̀ lekòòl#
girl 3SG-wear bead neck
'A girl wears a necklace'

ring on [10]

agbanɔnɔŋ ɛ-ŋwá ŋ́kɛ inɔnɔ́ŋ#
ring 3SG-wear LOC finger
'A ring is worn on a finger'

earring on [69]

èdzɛ̀ lìtɔl e-kkú kɛ lìtɔl#
bead ear 3SG-hang LOC ear
'A bead of ear hangs in the ear'

èdzɛ̀ lìtɔl ɛ-ŋwá kɛ lìtɔl#
bead ear 3SG-wear LOC ear
'A bead of ear is worn on the ear'

7.2.12. Complete containment

dog in kennel [71]

èvva e-kkú kɛ èttɔ lìttol#
dog 3SG-be LOC house inside
'A dog is inside a house'

fish in bowl [32]

ètèrn e-kkú kɛ ìzɔ̀hɔn así#
fish 3SG-be LOC pot water
'A fish is in a water pot'

rabbit in cage [54]

ànwáŋ e-kkú kɛ ɛ̀kpon#
cat 3SG-be LOC box
'A cat is in a box'

apple in bowl [2]

ìsokòlo e-kkú kɛ ákkpaŋ#
orange 3SG-be LOC plate
'An orange is on a plate'

owl in tree/hole [67]

lìzɔl e-zuí kɛ ètti lìttol#
bird 3SG-dwell LOC tree inside
'A bird dwells inside a tree'

apples on/in tree [45]

nttiwɔmá kɛ ètti#
fruit LOC tree
'Fruits on a tree'
cf. also: *nttiwɔmá ba-wɔmi wɔmɔzi#*
fruit 3PL-fruit fruit-GER.PLU
'Fruits fruit fruiting'

7.2.13. Partial containment

cork in bottle [62]

ɛ̀kkpa e-bémmí kɛ ekpoma#
cover 3SG-cover LOC bottle
'A cover covers the bottle'

box in bag [14]

èkpokpo-wɛ́ e-kkú kɛ ésì#
box –DIM 3SG-be LOC bag
'A small box is in a bag'

dog in basket [46]

èvva ɛ-tógh5́ kɛ ikàtàm#
dog 3SG-sit LOC basket
'A dog sits in a basket'

candle in holder [4]

èkkwɛn sé e-bé kɛ ákkpan#
fire DEF 3SG-stand LOC plate
'Fire stands on a plate'

cigarette in mouth [39]

èzòzòŋ ɛ-ggaméé kɛ ɛmma#
smoke 3SG-hang-3SG LOC mouth
'A cigarette hangs him in the mouth'
cf. also *wàdum e-ggwai èzozòŋ#*
man 3SG-drink smoke
'A man drinks smoke'

7.2.14. Containment in liquid or other mass

fish in water [32]

ètèrn e-kkú kɛ ìzɔ̀hɔn así#
fish 3SG-be LOC pot water
'A fish is in a water pot'

7.2.15. Containment by an encircling object

house in fence [60]

èttɔ e-kkú ŋ́kɛ ǹkatti lìttol#
house 3SG-be LOC fence inside
'A house is inside a fence'
cf. also
èttɔ aa ǹkatti e-kko èkko#
house ASS fence 3SG-surround surround.GER
'A house that a fence surrounds round'

7.2.16. Skewered

papers on spike [22]

ŋwɛnɛ ba-ttonni kɛ ìtɔɔyì#
book 3PL-pierce.PRG LOC spike
'Paper is being pierced on a spike'

apple on stick [70]

ìsokòlo e-ttonni kɛ ìtɔɔyì#
orange 3SG-pierce LOC spike
'An orange is being pierced on a spike'

7.2.17. Skewering

spike in/through papers [22]

ìtɔɔyì e-ttonni ŋwɛnɛ#
spike 3SG-pierce.PRG book
'A spike is piercing paper'
cf. also:
ìtɔɔyì e-kumazi ŋwɛnɛ#
spike 3SG-pierce.PRG book
'A spike is piercing paper'

arrow in/through apple [30]

ìtɔɔyì e-ttonni ìsokòlo#
spike 3SG-pierce.PRG orange
'A spike is piercing the orange'
cf. also: *mkpa e-kumi kɛ nttiwɔmá#*
arrow 3SG-pierce LOC fruit
'An arrow pierces through the fruit'

7.2.18. Odd containers

hole in towel [18]

cf. *ikpò ɛ-yaà èyáà#*
towel 3SG-tear tear.GER
'A towel tears tearing'

crack in cup [26]

cf. *àmmô ɛ-pàna èpána#*
cup 3SG-break break.GER
'A cup breaks breaking'

7.2.19. Above

cloud over mountain [36]

èdzì e-be kɛ ekkpon èzɔ#
sun 3SG-stand LOC mountain top
'The sun stands over the mountain'

lamp over table [13]

etòlíkaŋ ɛ-zéɛnɛ ŋ̀kɛ èzɔ ekkpokolo#
lamp 3SG-hang LOC top table
'A lamp hangs over the table'

7.2.20. Behind

boy behind chair [64]

mkpalawa è-bbakkí kɛ ekpìan ǹzàm#
boy 3SG-hide.PRG LOC chair back
'A boy hides at the back of a chair'

7.2.21. In front of

tree in front of church [49]

èttì e-be ŋ́kɛ esovvɛm ikɔbasi#
tree 3SG-stand LOC front church
'A tree stands in front of a church'
cf. also: *èttì e-be kɛ ikɔbasi ɛbbà#*
tree 3SG-stand LOC church side
'A tree stands on the side of a church'

7.2.22. Under

ball under chair [16]

ìsokòlo e-kku kɛ ekpian lèzèl#
orange 3SG-be LOC chair ground
'An orange is on the chair's ground'

cat under table [31]

àŋwaŋ è-kku ké ekkpokolo lìttol#
cat 3SG-be LOC table inside
'A cat is inside a table'

chewing gum under table [53]

vvɔ́m è-ggàma kɛ ekkpokolo lìttol#
thing 3SG-hang LOC table inside
'A thing hangs inside the table'

spoon under cloth [24]

èkɔ̀lìgbaŋ ɛggɔ̀ è-bémmi#
spoon cloth 3SG-cover.ORA
'A spoon that a cloth covers'
cf. also: *ɛggɔ̀ e-bémmi èkɔ̀lìgbaŋ#*
cloth 3SG-cover spoon
'A cloth covers a spoon'
cf. also: *ɛggɔ̀ e-nyínà kɛ èkɔ̀lìgbaŋ#*
cloth 3SG-be.placed LOC spoon
'A cloth is placed on a spoon'

7.2.23. Next to

boy next to fire [38]

wàhé ɛ-tɔ́ghɔ è-kpo/è-fɔlɔ èkkwɛn#
child 3SG-sit 3SG-be.close fire
'A child sits and is close to a fire'
also: *wàhe e-wabazi èkkwɛn#*
child 3SG-warm.PRG fire
'A child is warming at the fire'
also: *wàhé ɛ-tɔ́ghɔ/tɔ́bbi èkkwɛn ɛbbà#*
child 3SG-sit/sit.PRG fire side
'A child sits/is sitting at the side of a fire'

dog next to kennel [6]

èvva e-kkú kɛ ètto ɛbbà#
dog 3SG-be LOC house side
'A dog is at the side of a house'

7.2.24. Miscellaneous

hose draped over stump [43]

àkpɔ ɛ-zéɛnɛ́ kɛ etti dɔ̀#
hose 3SG-hang LOC tree stump
'A hose hangs on a tree stump'

ladder against the wall [58]

ɛrvɛnnɛ ɛ-péégbé kɛ eppi#
ladder 3SG-lean LOC wall
'A ladder leans against the wall'

7.3. Some generalizations and conclusions

In the following paragraphs, based on the data of the preceding sections some generalizations about the expression of topological relations in Leggbó are presented:

The "situational classes" identified by the authors of the picture book questionnaire rarely have a uniform expression in Leggbó. In fact there is not a single class consisting of more than one scene which has a uniform expression. Still, at least a few tendencies conforming to the proposed groupings can be identified:

⇒ support by hanging is often expressed by the verb *zɛ̀ɛnɛ* 'hang' (groups 2, 7, 8)

⇒ skewering is expressed by the verbs ttonni and, alternatively, *kumi* (groups 16, 17)

⇒ different types of wearing (clothes) etc. are generally expressed by the verb *ŋwà* (groups 10, 11)

Other than that we find more differentiation within the groupings and overlap between the groupings. The verbs that were most frequently used are *kkù* 'be', 14 scenes, *zɛ̀ɛnɛ* 'hang', 13 scenes, *ŋwà* 'wear' and *ggama* 'stick to', 6 scenes each, *be* 'stand' with 5 scenes, and *tɔ̀ghɔ* 'sit', *bemmi* 'cover', and *tonni* 'pierce' with 3 scenes each. All other verbs were used only once or twice.

In general, the verb carries the main load in expressing the spatial relationship. No relevant variation at all could be found in the preposition, and the locative nouns identified in translational elicitation were used rather infrequently, namely in only 12 scenes. They are used only if there is a particular necessity to elaborate on the position of the figure against the ground. This does not entail that the BLC (see 5.1. above) identified in translational elicitation is mistaken. In fact, *kkù* is confirmed as the verb for the most general and unmarked situations in the picture elicitation as well. However, there is a noticeable shift to expressions with verbs when the more "natural" picture scenes are employed. Perhaps, in conventional elicitation the English constructions with preposition and noun tend to trigger a construction with preposition and locative noun in the

target language when translated.

The conceptualization expressed through verbs shows particular sensitivity to the following features: (1) position of the figure; e.g. *be* 'stand', *tɔ̀ghɔ* 'sit' vs. *kkù* 'be'; (2) type of contact between figure and ground; e.g. *zɛ̀ɛnɛ* 'hang', *ggama* 'stick to', *ŋwà* 'wear', *bayi* 'be tied to'; (3) contact vs. support (verbs named in (2) vs. those named in (1)). In contrast, the notion of inclusion is obviously paid less attention to. This would in fact correspond to the lack of differentiation in lexical concepts in this field: The notions of 'inside' and 'under' are conflated in *lìttol* 'inside'. Also, the concept of animacy plays only a very small role. Most verbs, including *be* 'stand' and *ggama* 'stick, hang, perch' can be used with both animate and inanimate referents with the exception of *tɔ̀ghɔ* 'sit'. Although certain attention is paid to the position of the figure, apparently more than in English, there is no parallel to languages like Tzeltal[16] that are almost excessive in differentiating the shape of the figure in spatial relationships.

One point about the verb-centered expression of spatial relationships in Leggbó seems particular remarkable: Leggbó clearly prefers to describe a static situation by an activity conceptualized in that situation, rather than by expressing the spatial relationship of figure and ground directly. Thus we have at least 13 scenes which are expressed by a non-locative activity verb followed by a NP introduced by *ŋ́kɛ*, and 8 scenes which depict activity only, without reference to a location.

Trying to express these scenes employing expressions of spatial relationships would produce unacceptable sentences. E.g.

(21) *nttiwɔmá ba-wɔmi wɔmɔzi#*
fruit 3PL-fruit fruiting
'The fruit fruit fruiting'
but:
?? *nttiwɔmá ba-zɛ́ɛnɛ ŋ́kɛ ètti#*
fruit 3PL-hang LOC tree
'The fruit hang on/from the tree'

(22) *gèvà e-sí-ɛ kɛ gèvè#*
wound 3SG-do-3SG LOC knee
'The wound does it on the knee'
but:
?? *ɛ-nnɛni gèvà kɛ gèvè#*
3SG-have wound LOC knee
'(S)he has a wound on his/her knee'

16) cf. Brown 1994, Levinson 1996a.

(23) *ikpò ɛ-yaà ɛ̀-yáà#*
towel 3SG-tear 3SG-tear
'The towel tears tearing'
but:
?? *lèbbòl e-kkú kɛ ikpò#*
hole 3SG-be LOC towel
'There is a hole in the towel'

(24) *ɛggɔ̀ e-bémmi èkɔ̀ligbaŋ#*
cloth 3SG-cover spoon
'The cloth covers the spoon'
but:
?? *èkɔ̀ligbaŋ e-kkú kɛ ɛggɔ lìttol#*
spoon 3SG-be LOC cloth inside
'The spoon is under the cloth'

(25) *áwìlì kkàkki ibɔsɔ̀m ba-yáni ŋ́kɛ gèzì#*
woman's.gown trousers shirt 3PL-dry LOC sun
'The female gown, the trousers, and the shirt dry in the sun'
but:
? *áwìlì kkàkki ibɔsɔ̀m ba-zéɛnɛ ŋ́kɛ gèzí#*
woman's.gown trousers shirt 3PL-hang LOC sun
'The clothes hang on the rope' (less natural)

More generally, we may tentatively conclude that Leggbó is a language with a propensity to conceptualize situations with focus on the activity or event taking place in contrast to a possible focus on entities.

A topic that hasn't been touched upon yet is the question of the frame of reference.[17] Leggbó primarily uses a relative frame of reference, that is, one where "[l]ocalisations in space are derived from, and described on the basis on the basis of, the position and orientation of the speaker." [18] In this questionnaire the question of relative vs. absolute spatial orientation is touched only marginally, namely in examples like [38], [49], and [64]. Here, particularly languages with an absolute frame of reference[19] would likely have different expressions. Besides this rather marginal evidence, we wish to mention that we also conducted experiments that are specifically designed to detect the frame of reference,[20] and they led to the same conclusion, namely that Leggbó's basic frame of

17) cf. Levinson 1996b, 1997.
18) Senft 2001: 526.
19) "Absolute systems ... are based on conventionalized directions or other fixed bearings that can be derived from meteorological, astronomical, or landscape features" (Senft 2001: 526).
20) specifically tasks of the design described in Levinson 1996b: 113.

reference is a relative one.

8. Caused positions

Compared to the topological relations, when it comes to caused positions, one more salient element enters into the equation, namely an actor. Thus, there are at least three elements bearing on the conceptualization and linguistic expression: A figure, a ground, and an actor. In translational elicitation and from incidental evidence we had previously identified at least the following five verbs which might feature in the expression of caused position:

nyìna 'put, place', 'be placed' (tr./itr.) – general for objects
dzo 'put' (general)'
kè 'put inside sth'
kpaa 'put on a very high place' (e.g. roof); 'lock away' (also by putting sth inside sth)
bele 'put an object in a container somewhere'

8.1. The questionnaire

Again, an MPIN questionnaire, developed by Birgit Hellwig and Friederike Lüpke (2001 version), is available which allows the language investigator to go far beyond the data obtained through translational tasks. The questionnaire is produced on video and systematically varies the three factors named above. Essentially two types of scenes are captured: (1) Scenes where a figure is moved by an actor with relation to the ground; and (2) the same scenes but the actor being absent, and only a figure being shown in a certain position, supported by the ground. An obvious point of interest here is whether both types of situations, transitive and intransitive, are encoded similarly or divergently. For some reason, only part of the scenes with an actor are also provided without actor. Now, in addition to presence or absence of the actor, scenes are varied systematically according to type of figure and ground, thus also effecting variation in the kind of contact/support between figure and ground, number of figure, and type of action.

The list below shows the three crucial variables, actor (A), figure (F), and ground (G), on the left side, together with the scene number of the video questionnaire in brackets for reference purposes. The absence of the actor is indicated by "-A." On the right side, the linguistic encoding for each scene, the morpheme transcription, and a rough English translation are given.

Unlike in the case of topological relations, the creators of the questionnaire have not provided any groupings or situational types. We therefore arranged the scenes according to the verb actually used in Leggbó.

8.2. The data

8.2.1. nyìna 'put, place' (tr.)

A; F bottle; G table [14]

e-nyína ekkpoma wɔ̀ni kɛ ekkpokolo#
3SG-put bottle one LOC table
'A put one bottle on a table'

A; F 2 bottles; G table [10]

e-nyína ekkpoma àfɔŋ kɛ ekkpokolo#
3SG-put bottle two LOC table
'A put two bottles on a table'

A; F ball; G table [15]

e-nyína (ball) *kɛ ekkpokolo#*
3SG-put (ball) LOC table
'A put a ball on a table'

A; F 2 balls; G table [4]

e-nyína (ball) *àfɔŋ kɛ ekkpokolo#*
3SG-put (ball) two LOC table
'A put two balls on table'

A; F cassava; G table [39]

e-nyína jäkpu kɛ ekkpokolo#
3SG-put cassava LOC table
'A put a cassava on a table'

A; F cassavas; G table [26]

e-nyína jäkpu àtan kɛ ekkpokolo#
3SG-put cassava three LOC table
'A put three cassavas on table'

A; F stick; G table [30]

e-nyína ètti kɛ ekkpokolo#
3SG-put stick LOC table
'A put a stick on a table'

A; F pot; G table [33]

e-nyína ìzɔ̀hɔn kɛ ekkpokolo#
3SG-put pot LOC table
'A put a pot on a table'

A; F rope; G table [19]

e-nyína lèdudùl èzí kɛ ekkpokolo#
3SG-put bundle rope LOC table
'A put a bundle of ropes on the table'

A; F cloth (folded); G table [12]

e-nyína ɛggɔ̀ kɛ ekkpokolo#
3SG-put cloth LOC table
'A put cloth on table'

8.2.2. nyìna 'be placed'(itr.)

-A; F bottle; G table [25]

ekkpoma e-nyína kɛ ekkpokolo#
bottle 3SG-place LOC table
'A bottle is placed on a table'

-A; F stick; G table [44]

ètti e-nyína kɛ ekkpokolo#
stick 3SG-place LOC table
'A stick is placed on a table'

-A; F pot; G table [34]

ìzɔ̀hɔn e-nyína kɛ ekkpokolo#
pot 3SG-place LOC table
'A pot is placed on a table'

-A; F cloth; G table [42]

ɛggɔ e-nyína kɛ ekkpokolo#
cloth 3SG-place LOC table
'A cloth is placed on a table'

-A; F ball; G table [11]

(ball) *wɔ̀ni e-nyína kɛ ekkpokolo#*
(ball) one 3SG-place LOC table
'One ball is placed on a table'

-A; F cassava; G table [35]

jäkpu e-nyína kɛ ekkpokolo#
cassava 3SG-place LOC table
'A cassava is placed on a table'

8.2.3. ffagha 'wedge into, stick onto, attach to'(tr.)

A; F bottle; G tree/branch [43]

ɛ-ffagha ekkpoma kɛ ǹtti-mggba#
3SG-stick bottle LOC tree-fork
'A placed a bottle on a tree fork'

A; F pot; G tree/branches [8]

ɛ-ffagha ìzɔ̀hɔn kɛ ǹtti-mggbà#
3SG-stick pot LOC tree-fork
'A placed a pot on a tree fork'

A; F ball; G tree/branch [17]

ɛ-ffagha (ball) *wɔ̀ni kɛ ǹtti-mggba#*
3SG-stick (ball) one LOC tree-fork
'A placed one ball on a tree fork'

A; F cassava; G tree/branch [31]

ɛ-ffagha jäkpu kɛ ǹtti-mggba#
3SG-stick cassava LOC tree-fork
'A placed a cassava in a tree fork'

8.2.4. ffagha 'be wedged in between, stuck onto, attached to' (itr.)

-A; F bottle; G tree/branch [22]

ekkpoma ɛ-ffagha kɛ ǹtti-mggba#
bottle 3SG-be.stuck LOC tree-fork
'A bottle is stuck in a tree fork'

-A; F pot; G tree/branches [18]

izɔ̀hɔn ɛ-ffagha kɛ ǹtti-mggbà#
pot 3SG-be.stuck LOC tree-fork
'A pot is stuck in a tree fork'

-A; F ball; G tree/branch [32]

(ball) *ɛ-ffagha kɛ ǹtti-mggba#*
(ball) 3SG-be.stuck LOC tree-fork
'A ball is stuck in a tree fork'

8.2.5. pɛ̀ɛghɛ 'lean against' (tr.)

A; F bottle; G tree/earth [16]

ɛ-pɛ́ɛghɛ ekkpoma wɔ̀ni kɛ ètti lèzil#
3SG-lean bottle one LOC tree base
'A leaned a bottle against the base of a tree'

A; F stick; G tree/earth [13]

ɛ-pɛ́ɛghɛ ètitiwɛ kɛ ètti kkoŋŋ lèzil#
3SG-lean stick.DIM LOC tree big base
'A leaned a small stick against the base of a big tree'

A; F cassava; G tree/earth [23]

ɛ-pɛ́ɛghɛ jäkpu kɛ ètti lèzil#
3SG-lean cassava LOC tree base
'A leaned a cassava against the base of a tree'

A; F ladder; G tree [24]

ɛ-pɛ́ɛghɛ ɛrvɛnnɛ kɛ ètti#
3SG-lean ladder LOC tree
'A leaned a ladder against a tree'

8.2.6. kumma 'put upside down' (tr.)

A; F bottle; G table [20]

e-kumma ekkpoma kɛ ekkpokolo#
3SG-put bottle LOC table
'A put a bottle upside down on a table'

A; F pot; G table [36]

e-kumma izɔ̀hɔn kɛ ekkpokolo#
3SG-put pot LOC table
'A puts a pot upside down on a table'

8.2.7. kumma 'stand upside down' (itr.)

-A; F pot; G table [40]

ìzɔ̀hɔn e-kumma kɛ ekkpokolo#
pot 3SG-be.placed LOC table
'A pot stands upside down on a table'

8.2.8. kè 'put into' (tr.)

A; F rope; G box [27]

e-ké lèdudùl èzí kɛ èkpoon#
3SG-put bundle rope LOC box
'A put a bundle of ropes into a box'

A; F cloth (folded); G box [37]

e-ké ɛggɔ̀ kɛ ekpoon#
3SG-put cloth LOC box
'A put a cloth into a box'

A; F cassava; G box [7]

e-ké jäkpu kɛ ekpoon#
3SG-put cassava LOC box
'A put a cassava into a box'

8.2.9. zɛ̀ɛnɛ 'hang' (tr.)

A; F rope; G branch [38]

ɛ-zɛ́ɛnɛ èzí kɛ ǹtti-mbbɔ́#
3SG-hang rope LOC tree-branch
'A hung a rope on a tree branch'

8.2.10. zɛ̀ɛnɛ 'hang' (itr.)

-A; cloth; G tree branch [21]

ɛggɔ̀ ɛ-zɛ́ɛnɛ kɛ ǹtti-mbbɔ́#
cloth 3SG-hang LOC tree-branch
'A cloth hangs from a tree branch'

A; F rope; G branch [2]

èzí ɛ-zɛ́ɛnɛ kɛ ǹtti-mbbɔ́#
rope 3SG-hang LOC tree-branch
'A rope hangs from a tree branch'

8.2.11. zɔlɔ 'spill' (tr.)

A; F beans G table [5]

ɛ-zɔlɔ ǹzèzénì kɛ ekkpokolo#
3SG-spill bean LOC table
'A spilt beans on a table'

8.2.12. zɔlɔ 'be spilt' (itr.)

-A; F beans; G table [3]

ǹzèzénì ɛ-zɔlɔ kɛ ekkpokolo#
bean 3SG-be.spilt LOC table
'Beans are spilt on a table'

8.2.13. Various Verbs that only occurred once

A; F cassava on rope; G branch [29]
e-ssilla jäkpu kɛ ǹtti-bbɔ́#
3SG-tie cassava LOC tree-branch
'A tied cassava to tree branch'

A; F beans in bowl; G table [9]
e-bele ákkpaŋ ègídì kɛ ekkpokolo#
3SG-put plate bean LOC table
'A put a bowl of beans on a table'

A; F bottle; G table [28]
e-mína ekkpoma kɛ ekkpokolo#
3SG-lay bottle LOC table
'A lay a bottle on atable'

A; F stick; G ground [41]
ɛ-ŋwa ètti kɛ lèzèl#
3SG-plant stick LOC ground
'A planted a stick into the ground'

A; F ladder; G ground [46]
e-dzoi ɛrvɛnnɛ kɛ lèzèl#
3SG-put ladder LOC ground
'A put a ladder on the ground'

A; F cloth; G table [1]
e-bémmi ɛggɔ kɛ ekkpokolo#
3SG-cover cloth LOC table
'A covered a table with a cloth'

A; F pot; G table [45]
e-viŋŋa ìzɔ̀hɔn kɛ ekkpokolo#
3SG-roll pot LOC table
'X rolled a pot on a table'

-A; F rope; G table [6]
lèdudùl èzí ɛ-ttɔ́ kɛ ekkpokolo#
bundle rope 3SG-fall LOC table
'A bundle of ropes falls on a table'

8.3. Generalizations and conclusions

The verb most frequently appearing in the data is *nyina* 'put', which seems to be a "default" verb broadly used with caused positions when the ground (as a result of an action or not) supports the figure. More specific situations are rendered with verbs like *ffagha* 'wedge' (7 occurrences), *kumma* 'put upside down', *kè* 'put into' (3 occurrences each), and *pèɛghɛ* 'lean against' (4 occurrences). The more specific verbs are triggered mainly by the kind of contact between figure and ground (e.g. *ffagha, pèɛghɛ, zèɛnɛ* 'hang'), the position of the figure (e.g. *kumma, mina* 'lie'), containment *(kè)*, and

specific motion of the figure (e.g. *zɔlɔ* 'spill', *viŋŋa* 'roll', *ttɔ́* 'fall').

On the other hand, Leggbó shows no sensitivity towards the number of the figure. Also, transitive and intransitive realizations of the same situation are encoded basically in the same manner. Some verbs like *pèɛghɛ* 'lean against', *mìna* 'lie', and *bèmmi* 'cover' are only represented in their transitive use above, but that doesn't mean they are actually used only transitively. Rather, an "intransitive" scene corresponding to transitive use simply wasn't contained in the questionnaire. This reveals a broader characteristic of Leggbó, namely that a large number of verbs can be used both intransitively and transitively (and even di-transitively, although this does not appear in the questionnaire) without morphophonological change.

9. Motion verbs

9.1. Verbs of coming and going

Among motion verbs, verbs of coming and going have traditionally attracted particular attention.[21] This is due to a number of facts, one of which is that in many languages verbs of coming and going are used extremely frequently and are often further grammaticalized to express other non-spatial notions, another being the presence or absence of deictic properties in them, depending on the language. In general, their use can vary to such a degree cross-linguistically that it has been seriously questioned that they are in any sense universal.[22]

At the MPIN, David Wilkins designed a questionnaire which is supposed to capture the denotational range of coming and going verbs within a wider system of verbs of (intransitive) motion. The main parameters along which the paths of motion were varied in the 20-picture questionnaire are (1) anchoring of a path, that is the presence or absence of particular points of start and/or finish; (2) the orientation of the path, e.g. towards the deictic centre or not; and (3) the shape of the path. Below we will list the verbs that were used in response to the tasks given in the questionnaire. The numbers in brackets are the scene numbers from the questionnaire given for reference purposes:

sɛŋ 'go'	motion from deictic center to a determinate point [1]
vi 'go out/away', 'exit'	motion from deictic center to an indeterminate destination [2]
wèel (*ffu*) 'come', 'arrive'	motion from a determinate source towards deictic center [3]-[6]
nɔŋɔlɔzi - 'wind'	moving around aimlessly [8]
kko - 'circle'	motion in circles [9]-[12]
zɛ̀ɛ - 'walk'	any other kind of motion; e.g. from determinate point distinct from the deictic center to other determinate

21) e. g. Fillmore 1997: 77-102.

22) Cf. Wilkins and Hill 1995, Senft 2000.

point distinct from deictic center; motion from the deictic center with a certain direction but with indeterminate destination; motion on an unanchored path; etc. [7], [13]-[20]

The results are largely unproblematic. In concordance with incidental evidence from other elicitations, we can identify *sɛŋ* as the typical 'going' verb of the language, and *wèel* as the typical 'coming' verb, both being deictic in nature. For other kinds of motion *zɛ̀ɛ* is the most frequently used verb. The form *ffu* 'come', mentioned in brackets, is used suppletivley for *wèel* in verb serializations.

9.2. Other path verbs

From conventional elicitation, we have identified a number of additional path verbs that were not captured by the questionnaire. The following are such verbs that alone, or with a satellite (object) lexicalize the notion of a path:

sɛŋ lèsol ('go face') 'advance'		*nàa èden* ('take way') 'pass'	
bila	'ascend, climb, go up'	*yoŋŋo*	'cross, go/pass through, go past'
ssia	'descend, go down'	*vɛɛmɛ*	'depart, leave'
kkuba	'enter' [23]	*mɔ̀ɔ̀ŋɔ*	'recede (e.g. from combat), return'

The example below illustrates the use of *mɔ̀ɔ̀ŋɔ* 'recede, return':

(26) *ɛ-mɔ̀ɔ̀ŋɔ* *kɛ* *ii* *Lagos#*[24]
3SG-return LOC LOC (name of a place)
'(S)he came back from Lagos'

9.3. Manner verbs

The following are verbs that alone, or with a satellite (object) lexicalize the notion of manner:

kaa lɛval ('carry race') 'run'		*zɛ̀ɛ*	'walk, hike'
kpɔɔ lɛval 'chase'		*wòŋŋo*	'fly'
ggbɔ	'jump'	*nyammi*	'tumble'
kuŋŋa	'crawl'	*wee*	'float, swim'
myɛ̀ɛli	'slide'	*gboŋŋi*	'bounce'
viŋŋa	'roll'		

The following sentence illustrates the use of one of these verbs, *gboŋŋi* 'bounce':

23) The verb for 'exit' already appeared in the previous section.

24) Cf. section 6.2. for the co-occurrence of the two locative prepositions. This seems to happen most naturally when the meaning is something like 'out of'.

(27) *ìsokòlo sé e-gboŋŋi kɛ lɛ̀zɛ̀l#*
orange DEF 3SG-bounce LOC ground
'The orange bounced back from the ground'

9.4. Verbs for direction/goal

Direction/goal is commonly indicated by the verb *nii* 'give', optionally followed by *(ŋ́)kɛ*. *nii* as the "main verb" will have its literal meaning. It only indicates a direction if serialized to a preceding manner verb of motion.

Manner+goal (V *nii (kɛ)* goal):

(28) *e-weei e-nii lɛzaŋabba#*
3SG-swim 3SG-give river.bank
'(S)he swam towards the river bank'

(29) *ɛ-kaa lɛval e-nii kɛ lɛmmal#*
3SG-run race 3SG-give LOC door
'(S)he ran towards the door'

With path verbs, the notion of goal usually needs no overt realization. The goal of motion is indicated simply as a prepositional object when entailed by the lexical meaning of the path verb (construction V *nii* (*kɛ*) goal; e.g. *sɛŋ* 'go to', *kubba* 'enter'), but can be expressed with a verb indicating an endpoint when not entailed by the path verb. Here, the verbs *ŋwà* 'reach' or *kpoo* 'end' are used:

(30) *ɛ-sɛŋ́ kɛ lɛvɔl#*
3SG-go LOC village
'(S)he went to the village'

(31) *e-kkubá kɛ lɛvɔl#*
3SG-enter LOC village
'(S)he entered the village'

(32) *e-bila ètti e-kpoo ɛ̀zɔ ètti#*
3SG-climb tree 3SG-end top tree
'(S)he climbed the tree to the top'

9.5. Verb for source

be 'stand', obligatorily followed by *ŋ́kɛ* indicates the source of a motion. Independently, as a main verb, it will have its literal meaning, but if followed by a verb of motion it acquires a "source" meaning as in the following examples:

(33) *e-bé kɛ ɛppya sé è-sɛŋ kɛ ikɔɔbàsì#*
3SG-stand LOC market DEF 3SG-go LOC church
'(S)he went from the market to the church'

(34) *e-bé* *kɛ* *èppì* *è-ggbɔ#*
3SG-stand LOC wall 3SG-jump
'(S)he jumped from the wall'

9.6. Verbs for distance

vila indicates long distance, *fɔ̀lɔ* short distance. If serialized to a verb of motion they indicate the distance of the subject from a point of reference as either part of or result of the motion, as in the following examples:

(35) *ɛ-zéɛ* *è-fɔ̀lɔ* *kɛ* *ikɔɔbàsì#*
3SG-walk 3SG-be.near LOC church
'(S)he walked close to the church'

(36) *e-yóŋŋo* *è-fɔ̀lɔ* *kɛ* *ikɔɔbàsì#*
3SG-pass 3SG-be.near LOC church
'(S)he passed close to the church'

(37) *ba-kpɔɔi-ɛ* *lɛval* *è-vìla#*
3PL-chase-3SG race 3SG-be.far
'They chased him/her far away'

9.7. Combining path and manner

The following verb lexicalizes a combination of path and manner:
ttɔ̀ 'fall, plunge'

However, often, a combination of path and manner describing the same motion activity is expressed in a serial verb construction. The first verb encodes the manner of motion, the second the path:

(38) *e-kuŋŋa* *è-bilà* *ekkpon#*
3SG-crawl 3SG-climb hill
'(S)he crawled up the hill'

(39) *e-kuŋŋa* *è-ssià* *ekkpon#*
3SG-crawl 3SG-descend hill
'(S)he crawled down the hill'

(40) *ɛ-wɔ́ŋŋɔ* *è-yòŋŋò* *lɛvɔl#*
3SG-fly 3SG-pass village
'The bird flew over the village'

(41) *ɛ-zɛ́ɛ̀ è-kkɔ̀ geve sɛ́#*
3SG-walk 3SG-circle lake DEF
'(S)he walked around the lake'

Path preceding manner would be infelicitous in the same meaning:

(42) *??e-kkó geve sɛ́ è-zɛ̀ɛ̀#*
3SG-circle lake DEF 3SG-walk
'(S)he walked around the lake'

There are also cases in which the path is not construed as a separate event but as a direct object to the verb (*ggbɔ* 'jump'), or as a prepositional phrase (here with *zɛ̀ɛ̀* 'walk'). In the latter case, the path is simply conceptualized as the place where the activity took place:

(43) *ɛ-ggbɔ èppì#*
3SG-jump wall
'(S)he jumped over the wall'

(44) *ɛ-zɛ́ɛ́ kɛ èkɔttì#*
3SG-walk LOC forest
'(S)he walked through the forest'

9.8. Combining path, manner, and goal

A combination of three verbs, manner preceding path and goal is found to be grammatically correct but no natural way of expression:

(45) *isokolo sɛ́ e-viŋŋa è-ssìa è-nìí kɛ lèzàŋàl#*
orange DEF 3SG-roll 3SG-descend 3SG-give LOC river
'The orange rolled down towards the river'

In a more natural way of expression, the path would be left out:

(46) *isokolo sɛ́ e-viŋŋa è-nìí kɛ lèzàŋàl#*
orange DEF 3SG-roll 3SG-give LOC river
'The orange rolled towards the river'

With *ttɔ̀* ('fall, plunge'), which lexicalizes manner and path simultaneously, the goal is expressed as a prepositional object:

(47) *ɛ-ttɔ́ kɛ asi#*
3SG-jump LOC water
'(S)he plunged into water'

10. Transitive motion

The data in this section come from translation-based elicitation and incidental evidence.

10.1. Verbs of moving an object

In sections 5. and 7., a considerable number of verbs of moving objects (putting), in which mainly the resulting position is encoded, were already introduced. There are other verbs that encode the path and the direction of force employed by the person moving the objects, like the following.

nnui	'push'	*tɔ̀l*	'pull, drag'
mèmmɛ	'remove'	*gwekke*	'raise'

cf. also *kàa wèèl* ('carry come') 'bring'

10.2. Source, path and goal with verbs moving an object:

The expression of source, path and goal in transitive motion is fundamentally the same as with intransitive motion. It was already noted in section 7.3 that in Leggbó the transitivity of an activity does not have dramatic impact on the linguistic encoding, particularly lexical encoding. Similar to other verbs of motion, source, path and goal are expressed either by verbs or by a prepositional phrase with *ńjkɛ (ii)*.

10.2.1. Source of motion, path

The original position of the object and the path of motion are usually expressed as a prepositional phrase:

(48) *mèmmé kɛ ii ìbèn#* [25]
remove.IMP LOC LOC room
'Remove it from the room!'

(49) *ɛ-tɔ́li-é kɛ lèzàŋàl#*
3PL-pull-3SG LOC river
'(S)he pulled it out of the river'

(50) *ɛ-tɔ́li-é kɛ lèzèl#*
3PL-pull-3SG LOC ground
'(S)he pulled her/him up from the ground (or: 'dragged her/him along the ground').'

The path can be further specified by a path verb:

25) See previous footnote for the co-occurrence of two locatives.

(51) *ɛ-tɔ́li ekpian ɛ-vvɛɛmɛ ŋ́kɛ ekkpokolo#*
3PL-pull chair 3SG-go.away LOC table
'(S)he dragged/moved the chair away from the table'

Also, the original position of the mover can be further specified with the help of *be* 'stand':

(52) *e-be kɛ ekpon è-nnui-ɛ è-nii kɛ lɛ̀zàŋàl#*
3SG-stand LOC hill 3SG-push-3SG 3SG-give LOC river
'(S)he pushed it down the slope' [lit.: 'She stood on a hill and pushed it down to the river.']

10.2.2. Goal of transitive motion

If the verb lexically entails a goal of motion, e.g. *kè* 'put into', *kàa wèèl* 'bring', the goal of motion is encoded by a simple prepositional phrase. If no goal is entailed, e.g. *tɔ̀l* 'pull, drag', *nnui* 'push', *gwekke* 'raise', the verb of direction *nìi* 'give' indicates the goal:

(53) *e-ké ŋwɛnɛ ŋ́kɛ essì#*
3SG-put book LOC bag
'(S)he put the book into the bag'

(54) *kàa wèel kɛ lɛ̀vɔ̀l#*
carry.IMP come.IMP LOC village
'Bring it to the village!'

(55) *e-tɔ́li ekpian e-nii-m#*
3SG-drag chair 3SG-give-1SG
'(S)he dragged the chair towards me'

(56) *e-gwekke ekpian sɛ́ è-nii ŋ́kɛ nttɔkpan#*
3SG-raise chair DEF 3SG-give LOC roof
'(S)he raised the chair to the roof'

(57) *nnui-ɛ è-nìí kɛ lɛ̀zɛ̀l#*
3SG-chase-3SG 3SG-give LOC ground
'Push him to the ground!'

10.3. Some generalizations and conclusions

Throughout sections 9 and 10 the following points may have been noticed:

- Notions of source, goal, and path, that in some other languages are encoded by prepositional satellites (English), case marking on nouns (Japanese), or lexically by compound verbs (Japanese), are preferentially expressed by serial verb constructions in Leggbó. However, simple prepositional phrases with *ŋ́kɛ* are also used, namely if the role

of the prepositional phrase in the conceptualization can easily be inferred by the clause semantics, particularly the semantics of the verb.

- With respect to Talmy's original typology of the encoding of motion events (three-way classification of languages lexicalizing either Motion+Manner/Cause, or Motion+Path, or Motion+Figure in verbs[26]), Leggbó first of all does not show a clear bias to either manner or path. Both notions are fairly well lexicalized in the motion verb inventory. The fact that in serializations involving three or more factors (among path, manner, goal etc.) it is "path" which is omitted betrays a certain bias towards manner. This would also coincide with the tendency observed in sections 6 and 7, namely the emphasis on the activity of a figure over other potential factors such as the position of the figure. With respect to Talmy's later typology (two-way classifcation of verb-framed vs. satellite-framed languages[27]), Leggbó is verb-framed, containing the path information in the verb.

11. Wrap-up

In this paper we have given an overview over some of the most basic areas of Leggbó space grammar. The framework and materials developed at MPIN have allowed us to bring to light some details that are otherwise difficult to identify. Perhaps the most distinguishing feature of Leggbó space language is the focus on activities and, consequently, verbs, rather than entities and their shapes, or static relationships. This is a fact that is potentially of considerable typological interest. The circumstance that Leggbó does not have a specific expression for 'under'-relations adds an attractive detail. Our description of the verbs of movement has been comparatively sketchy, but the analytic expression of complex motion events through serial verbs apparently constitutes the basic pattern in this language.

26) Talmy 1985.
27) Talmy 2000.

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