

Semantics of Functional and Locative Relations in Rongga

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Abstract

Many scholars have proposed a universal set of locative relations. Herskovits's comprehensive study of English locative relations found that locative concepts such as inclusion, support and contiguity, and coincidence are basic in English. Her findings offer support for strong Universal Conceptual Categories. On the other hand, Levinson et al.'s examination of locative relations of nine unrelated languages revealed that the basic concepts are attachments, superadjacency, full containment, subadjacency, and proximity which suggest Universal Tendencies rather than Universal Conceptual Categories. This study investigates how locative relations are encoded in Rongga and their implications for the universalism of locative relations. A standard elicitation technique was used.

It appears that Rongga is unique in the priority it gives to the notion of functional relations over locative relations. Functional relations refer to the "natural" function between located and reference objects. Thus, when a natural function is present the relation is functional rather than spatial. Rongga uses the preposition *one* to refer to functional relations. However, when the natural relation is absent the relation becomes locative. Various prepositions such as *zheta wewo/zheta tolo* 'on', *zheta wena* 'over/above', *zhale one* 'inside', *zhale wena/zhale lewu* 'below/under' are used to express locative relations. In other words, instead of encoding the locative relationship based upon the locative concepts described by Herskovits and Levinson et al., Rongga emphasizes the importance of natural function between located and reference objects.

1. Introduction

The semantics of topological or locative prepositions (e.g. *in*, *on*, *at*, etc.) has been addressed by many scholars. Herskovits's detailed and comprehensive study of English topological prepositions reveals that the basic notions related to the topological relations are **inclusion**, **support** and **contiguity**, and **coincidence**. Her findings further support the claim of strong version of the Universal Conceptual Categories or UCC (e.g. Piaget & Inhelder, 1956, Jackendoff, 1983, Talmy, 1983). Levinson et al.'s cross-linguistic study, however, reveals distinct topological notions such as **attachment**, **superadjacency**, **full containment**, **subadjacency**, and **proximity** allowing us to discern the Universal Tendency or UT rather than the strong Universal Conceptual Categories. Levinson et al. proposed, among other things, that the notion **attachment** is important cross-linguistically and it is successively fractionated into the notions on/over/on top. Furthermore, they claimed "attachment has at least one clear focus of its own and is an important category that tends to be recognized in language after language" (2003: 513-514).

The main goal of this article is to look at how the basic concepts relevant to the use of topological prepositions in Rongga (e.g. *mok zheta wewo meja* 'the glass is **on** the table', *li'e one mako* 'the fruit is **in** the dish', *bola zhale lewu kursi* 'the ball is **under** the chair', *nusa zheta wena wolo* 'the cloud is **over** the mountain', etc.) are

different or similar with those of UCC (e.g. Herskovits, 1982, 1986; Piaget & Inhelder, 1956; Jackendoff, 1983; Talmy; 1983, etc) or those of UT (e.g. Levinson et al., 2003).

2. Grammar of Rongga

Rongga is an endangered language spoken in the eastern part of Indonesia. The language is spoken by around 4000 speakers (Arka, 2004) mainly in the villages of Tanarata, Bamo, and Watungene, Kota Komba sub-district, in the regency of West Flores or Manggarai. It is a highly isolating language. The following are some basic properties of Rongga. The examples presented here are from my elicitation, the *Pake* 'Frog' text, and the Rongga Grammar book by Arka et al., and Bapak Antonius Gelang's autobiography.

a. The basic word order of Rongga is SVO.

1. *Ja'o ala li'e one mako*
I take fruit in bowl
'I took the fruit in the bowl'. (Elicitation)

This basic word order is determined based on two tests – frequency and markedness. Of 35 sentences that occur in the text *Pake* 'Frog', 94% of them have SVO word order. In cases where the order VO is found the subject is dropped as the following example shows.

2. *Wuku-wuku niu pake ndau dano pota mbiwa*
shout shout call frog that also lost not
zhenge ko talu
answer part hear
'Called out the frog but there was no answer from it'. (*Pake* 'Frog' text)

In contrast to the subject, there is no example of a sentence with a missing object in the text. It seems that, based on the data available, the object is obligatory in Rongga. The markedness test also confirms that SVO is the basic word order in Rongga. Even though the example *Ndoi, Sis ti'i na'a ja'o* 'Money, Sis gave me' is possible, that structure is uncommon in Rongga (i.e. it is only spoken to emphasize that *ndoi* 'money' is given to me, not something else). Put another way, *Ndoi, Sis ti'i na'a ja'o* 'Money, Sis gave me' is more "marked" than *Sis ti'i ndoi na'a ja'o* 'Sis gave me some money'.

Rongga does not distinguish the morphological forms of subject and object. In other words, Rongga lacks a case system. Thus, the form of the pronoun *ja'o* 'I' as a subject (e.g. *Ja'o ti'i kau li'e* 'I gave you fruits') is the same as its form as an object (e.g. *Kau ti'e ja'o li'e* 'You gave me fruits'). Note that the form *kau* 'you' as the subject is also the same as *kau* 'you' as the object.

b. Tense in Rongga is marked by distinct lexical forms such as *ngai* (progressive), *mbiwa* (imperfective), *tako*, *nembumai* (perfective), *tau* (future). In other words, the verb is not marked to indicate the tense. The *nembumai* can also occur at the end of the sentence. However, *nembumai* does not appear between *mata* and *ga* in Rongga (**Ana nadau mata nembumai ga*).

3. *Ana ndau nembumai mata ga*
 child that yesterday die already
 ‘The child died yesterday’. (Rongga grammar book)
4. *Ana ndau mata ga nembumai*
 child that die already yesterday
 ‘The child has died yesterday’. (Rongga grammar book)

c. The locative constructions that use prepositional phrases are placed after the subjects or objects. Typologically, this property of adpositions (i.e. preposition) is consistent with Rongga as a verb-medial language.

5. *Ja’o ala li’e one mako*
 I take fruit in bowl
 ‘I took the fruit in the bowl’. (Elicitation)
6. *Mok zheta wewo meja*
 cup on table
 ‘The cup is on the table’. (Elicitation)

Example 6 shows that Rongga lacks of copula verbs.

2.1 Overview of locative constructions in Rongga

A locative construction describes how *Lo* is spatially related to *Ro*. The locative relation between the *Lo* and *Ro* itself is expressed using locative prepositions (e.g. *one* ‘at’, *zheta wewo* ‘on’, etc). As can be seen in the previous examples, the *Ro* appears after the *Lo* and locative prepositions. Another example is presented below.

7. *Lambu kau one lemari*
 shirt you in cupboard
 ‘Your shirt is in the cupboard’. (Elicitation)

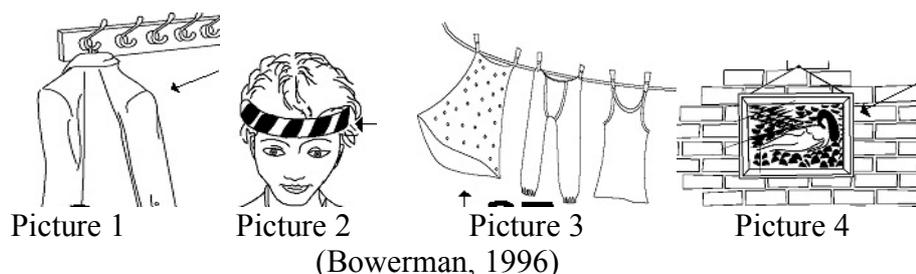
The expression *Lambu kau one lemari* ‘Your shirt is in the cupboard’ is called a **locative construction**. In Rongga, locative constructions can occur within an existential clause (e.g. *Manga one sa mbo mazhi ko ana ito ndau* ‘There is a little child living in the house’), or it can also appear as a prepositional phrase modifying a noun phrase (e.g. *li’e one mako* ‘the fruit in the bowl’).

2.2 Normality

The locative construction *the man at the desk* (Herskovits, 1982: 12) can have multiple interpretations (e.g. the location of the man, the man is working at his desk). To interpret it truly and appropriately, Herskovits says that it is based on “normal” situation types. However, the discussion of normality provided by Herskovits (i.e. conformity to the laws of physics, the place where the objects belong, and the “normality” of objects) is to encode and decode an English conception of locative relations. English locative constructions encode the conventional cultural expectations of English speakers.

The generation and interpretation of Rongga locative constructions are related to the normality of the locative relation between the *Lo* and *Ro*. But, what is the concept of “normality” that is expressed in Rongga? In addition to the precision given by Herskovits, it seems that the normality of the Rongga locative relation is based on the “natural” functions of the objects for Rongga speakers. For example, given a locative situation like Picture 1 below, the preposition *one* is appropriate to describe the spatial relation between *lambu* ‘shirt’ and *hanger* ‘hook’ (*Lambu one hanger* ‘The shirt is on the hook’). The “natural” function applies since the shirt is “naturally” located on the hook. This example suggests that *one* describes a functional relation between the *Lo* and *Ro* rather than a locative relation. The prominence that Rongga gives to function over location has not been documented in other languages and will be the main focus of this article. The Rongga preposition contrasts semantically with the locative expressions in English and Yeli Dnye to describe the topological relation between objects in Picture 1. In English, the notion **support** is relevant, hence *on* is appropriate. Meanwhile, the postposition *p:uu* is used in Yeli Dnye since the notion “**attached to**” is more salient in that language.

In Pictures 2-4, the “natural” function also holds to describe the topological relations between the *Lo* and the *Ro*. The “natural” function and other features relevant to the locative constructions in Rongga will be further discussed in section 3.



The salience of function rather than location seems to be a decisive feature in the description of locative relations in Rongga. In many cases there is considerable overlap between the expression of locative/spatial and functional relations, however the two concepts are distinct and should not be confused. I will attempt to clarify the functional relation that *one* expresses in the rest of this article and demonstrate the distinction between functional and locative relations. Rongga appears to be unique in the priority it gives to functional relations. No other discussions of locative relations in the world’s languages have discussed a functional basis as the primary determinant of locative relations (e.g. Cienki, 1989, Herskovits, 1982, 1986, Jackendoff, 1983, Levinson, 2003). In this article, I will illustrate the functional basis of locative relations in Rongga and attempt to define the functional relations that Rongga speakers consider “normal”.

3. Semantics of functional and locative prepositions in Rongga

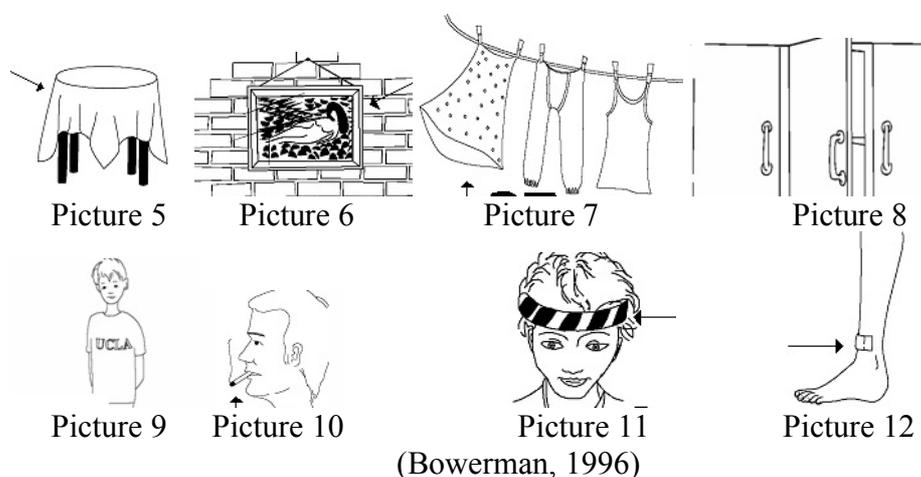
This section discusses the semantics of locative prepositions in Rongga such as *one* ‘at’, *zheta wewo/ zheta tolo* ‘on’, *zheta wena* ‘above/over’, *zhale one* ‘inside’, and *zhale lewu/zhale wena* ‘under/below’. The basic topological prepositions fall into two categories: a preposition that encodes *functional relations* (i.e. *one*) and a set of prepositions that encode *locative relations* (i.e. *zheta wewo, zheta tolo, zheta wena, zhale one, zhale lewu, and zhale wena*). I explore their semantic domains in the following sections.

3.1 The functional relation of *one*

As Herskovits explains in section 2.2, the “normal” situation combined with pragmatic principles is used to generate or interpret locative expressions in English. Additionally, she indicates, though implicitly, that the notion “natural” function is important (i.e. “*where the function is relevant, they behave according to their normal function*” (Herskovits, 1982: 20)). In section 2.2, I pointed out the prominence that “natural” functions have in Rongga locative system. I will discuss it further in the following section.

3.1.1 “Natural” functions and “normality” in Rongga

The “natural” functions of *one* include two main semantic domains. The first of these domains provides compelling evidence of the significance of “natural” functions in Rongga. This evidence is provided by the following pictures.



To use the appropriate preposition in the contexts of these pictures, one should have knowledge of the “natural” functional relation between the *Lo* and *Ro*. More specifically, one should know that a tablecloth “naturally” covers the upward facing surface of a table (*Kain meja one meja* ‘The tablecloth is on the table’), a picture is generally or “naturally” put on a wall (*Manga foto ja’o one kembi mbo* ‘There is a picture on the wall’), it is “natural” that clothing is pinned on a line (*Ngani wari one azhe* ‘The clothing is pinned on the line’), it is commonly understood that the door’s handle is “naturally” located on either vertical surfaces of a door that it can be used to open or close it, it is common that writing is printed on a T-shirt, for smokers it is “natural” to put a cigarette in their mouth, etc. Thus, *one* is true and appropriate to describe the functional relations between objects in the pictures.

Furthermore, the “natural” functions also describe the employment of *one* across body parts. For instance, if we want to describe the location of earrings on someone’s ear, a necklace on someone’s neck, a headband tied around someone’s head (Picture 11), a band aid on someone’s ankle (Picture 12), a watch on someone’s wrist, *one* should be used. In such contexts, those located objects are “naturally” located on those reference objects (i.e. body parts).

Even though the locations of the *Lo* with respect to the *Ro* in the pictures above indicate the notion of **support** (Pictures 5-7), **attachment** (when *Lo* is placed on body parts), and **containment** (Picture 10) the locative relations between the *Lo* and *Ro* in

those contexts are specified with *one* signifying the functional relations. In those contexts what is more relevant and salient in Rongga is the functional relation between the objects, not such notions as the **support**, **attachment**, and **containment** themselves. Thus, the preposition *one* indicates *the normal functional relation* between *Lo* and *Ro*. This functional relation can be tested with “unnatural” relations between objects (e.g. when a folded tablecloth is placed on a table). In this context, the “unnatural” relation *zheta wewo* is used to describe the *locative relation* as discussed in 3.1.2.

The second semantic domain is one where the preposition *one* is used to describe a general locative relation. The general location (i.e. reference objects) includes places (e.g. *a river bank*), buildings (e.g. *a school, a house, an office*), containers (e.g. *a glass*), sources (e.g. *location*), goals (e.g. *a river*), permanent locations (e.g. *a house*), and temporary locations (e.g. *shoes*). Regarding the *Lo*, it includes both animate and inanimate things (e.g. *human beings and animals*), and physical objects (e.g. *a car, a wooden box, etc*). Thus, *one* encodes a very general location of *Lo* with respect to *Ro* (i.e. places).

The basic idea motivating the use of *one* ‘at’ specifying general location is that for Rongga speakers objects “naturally” occupy a place (in Herskovits words “objects are where they belong – most of them near the earth, within the field of gravity”). In other words, the locative relation between the *Lo* and *Ro* is, following Levinson (2006: 164-165), “expected” (i.e. the characteristic or normal spatial relation between objects as in part-whole relations, clothing-body relations, etc). The idea that “objects naturally occupy a place” shows the important role of the “natural” functions that determine the “expected” topological relations in Rongga. These “natural” functions (i.e. the two semantic domains) themselves define what the “normal” situation is in Rongga, and it is crucial in the encoding and decoding process of locative expressions.

3.1.2 Testing the “natural” functions

Understanding the function of the *Lo* in relation to the *Ro* is crucial in Rongga since a change of function will change the preposition used to describe the relation between them. We can use some tests to clarify the distinction between functional and locative relations. For instance, in Picture 5 (*Kain meja one meja* ‘The tablecloth is on the table’) shows that *one* is appropriate to locate the tablecloth in relation to the table. It is because, commonly, the natural function of the tablecloth is to cover the upward surface of the table. But now, if the tablecloth is folded and put back on the upward surface of the table, *one* is inappropriate because the tablecloth no longer performs its “natural” function in relation to the table (i.e. to cover the upper surface of the table). Rather, *zheta wewo* ‘on’ is appropriate since the locative relation is now more prominent than the functional relation.

Another example showing that having knowledge of the “natural” functions is essential in Rongga can be illustrated in the example *Air one gelas* ‘The water is in the glass’. *One* is employed to describe the location of water in the glass because naturally water is contained in *a glass* or other containers such as a cup, a tea pot, etc. However, if the water is now removed from *the glass* and *a pen* is put in it instead, *one* is inapplicable. In this context, *zhale one* ‘inside’ is required since once again the locative relation is more prominent than the functional relation.

Moreover, in a situation when a passenger is in a car and the car is moving on the road the relation between the passenger and the car is described with *one* (*Sis one oto* ‘Sis is on the bus’). On the other hand, if somebody is in a car and the car does not

perform its “natural” function (i.e. it does not move on the road as naturally happens) *zhale one* ‘inside’ is more appropriate (e.g. *Sis zhale one oto* ‘Sis is inside the bus’). Thus, as the tests point out when the “natural” function is prominent *one* is used in Rongga. Otherwise, one of the locative prepositions is used to express the specific locative relation between *Lo* and *Ro*.

In addition, the tests can also be applied to the second semantic domain (i.e. the general locative relation). For example, if someone’s motorbike is parked in a garage, the topological relation between the motorbike and the garage is described with *one* in Rongga. In that situation, the functional relation is more prominent than the locative relation. But, imagine now that the motorbike is parked in somebody’s house. The locative relation is then prominent, not the functional relation. Thus, *zhale one* ‘in’ is true and appropriate in that context.

3.1.3 The ambiguity of *one*

In the previous examples (e.g. Pictures 5-12) the *functional* and *locative* relations can be pointed out in a straightforward manner based on our knowledge of the “natural” functions of the objects. In Pictures 5-12 a tablecloth “naturally” covers an upward facing surface of the table (*Kain meja one meja* ‘The table cloth is on the table’), a picture is generally or “naturally” put on the wall (*Manga foto ja’o one kembi mbo* ‘There is a picture on the wall’), etc. Nonetheless, there are indeterminate situations in which more than one spatial term is used to describe the locative relation. Let us look at the picture below.



Picture 13 (Bowerman, 1996)

Given this locative situation, my language consultants (Om Domi (OD), Om Domi’s wife (DW), Fransiscus Seda (FS), Yuventus Rau (YR), Yohanes Nani (YN), and Ivan Ture (IT)) offered various responses:

<i>one</i>	<i>zheta wewo</i>	<i>zheta tolo</i>
2 (YN, IT)	2 (OD, DW)	2 (FS, YR)

The use of *one* (*Mok one meja* ‘The cup is on the table’) is predicted from the “natural” function that it is “natural” that a cup is put on the horizontal surface of the table. The use of *zheta wewo* and *zheta tolo* ‘on’ (*Mok zheta wewo/zheta tolo meja* ‘The cup is on the table’), however, is related to typicality of a table. If you put the cup on a kitchen table, *one* is more natural to use. But, if the cup is put on a less typical table, for example a table with a concave surface and glass is put on top of it as its surface, *zheta wewo* or *zheta tolo* ‘on could be used to describe the relation between the cup and that table. It seems that the factor of typicality of *Ro* that motivates my language consultants to use *zheta wewo* or *zheta tolo* to describe Picture 13 above. But, even though the three prepositions are true and appropriate, they encode distinct perspectives on this situation. The distinctions are related to the speakers’ pragmatic emphasis. The use of *zheta wewo* and *zheta tolo* is to inform that the cup is directly supported by the table. This pragmatic information was emphasized

by four speakers. Since the cup is not directly supported by the table (i.e. there is another object between the cup and the table such as a magazine) *zheta wewo/zheta tolo* are still used, but in relation to the magazine, not the table (*Mok zheta wewo/zheta tolo majalah* ‘The cup is on the magazine’). In the latter context, the pragmatic information is different from the former one. More specifically, the support in the latter context is provided by the magazine, while in the former context it is provided by the table. However, as predicted by the functional relation test, *one* cannot be used in the latter context since it is not “natural” that a cup is placed on a magazine. Put differently, the relation in the latter context is *locative*, not *functional*.

Further, a different pragmatic emphasis can be revealed in the use of *zheta wewo* and *zheta tolo* which is related to the viewing distance. When *zheta tolo* is used the speakers said that both *Lo* and *Ro* are relatively distant (but within “here” context). But, when the *Lo* and *Ro* are close (within “here” context) the speakers use *zheta wewo* (further discussed in section 4.4.1).

Another ambiguous situation in which the use of *one* cannot be easily inferred from the “natural” functions can be seen from Picture 14 below.



Picture 14 (Bowerman, 1996)

My language consultants’ responses are as follows:

<i>one</i>	<i>zhale one</i>
2 (IT, DW)	4 (YN, FS, YR, OD)

As indicated by the number of responses, the ambiguity here is less than what we saw in the previous example. *Zhale one* is used by more language consultants because the locative relation is more salient than the functional relation. It is due to the fact that it is rather difficult to define the “natural” functions related to the first semantic aspect of the functional relation between the objects here since sticks are not commonly inserted into apples in Rongga culture. Thus, applying our previous test, the absence of the “natural” function motivated the speakers to use *zhale one* ‘in’ to describe the *locative relation* between the objects (*Lidi tusuk zhale one li’e* ‘The stick is in the apple’).

The use of *one* seems to be motivated by the idea that “objects have a natural functional relation to other objects” (though this function may be rather indeterminate). This “natural” function motivates Rongga speakers to use *one*. This is another example that shows the prominence of natural function in Rongga.

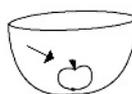
3.2 The locative relation of *zhale one*

As the previous functional relation test shows when a “natural” function is irrelevant in a particular situation, the relation is defined as locative rather than functional. The first locative relation I discuss is *zhale one*.

The form *zhale one* consists of the prepositions *zhale* ‘down/under’ and *one* ‘at’. When *zhale one* is used the meanings ‘down’ and ‘in’ are incorporated implying that the location of *Lo* is within a concave surface of *Ro*. Thus, the combination of the two prepositions produces the meaning ‘inside’. To apply *zhale one* correctly, we have to

be able to determine whether the objects involved in the given locative relation is “naturally” related or not. For example, it is natural that fruits, stones, sand, etc. are contained in a sack. In that context, as predicted, *one* is appropriate. However, even though *zhale one* is also possible in that context with a distinct pragmatic emphasis (i.e. to emphasize that the *Lo* is ‘inside’ the *Ro*), it is less commonly used. There are two explanations for this. First, as explicated in the previous section the “natural” function is crucial in the use of *one*. Thus, it is sufficient to describe the topological relation using *one*. Second, when *one* is used in that situation it already implies that *Lo* is ‘inside’ *Ro* given the natural function of sacks. In other words, the use of *zhale one* is redundant. Because of this redundancy and of the salience of the “natural” function *one* is more commonly applied.

Imagine now that other objects which are “unnaturally” related to the sack (e.g. shirts) are put in it. The *zhale one* must be employed to describe the *locative* relation between the shirts and the sack. This example confirms that the “natural” function is important in defining Rongga’s topological relations. To see a more explicit context of the use of *zhale one*, let us look at Picture 15 below.



Picture 15 (Bowerman, 1996)

As can be predicted from the context (i.e. it is natural that fruits are placed in a bowl), *one* is appropriate to describe the functional or “expected” relation between the objects in the picture. But, when the fruit is removed from the bowl and a pen is placed in the bowl now *zhale one* is used to describe the “unnatural” relation between the two objects. If the pen is again removed and a block of tofu is put in the bowl *one* is used to specify the *functional* relation between the two objects since the tofu is “naturally” placed in a bowl.

In addition to the absence of a “natural” function, there is another specific feature relevant to the use of *zhale one* - **containment** (i.e. *Lo* lies within the interior of *Ro*). The *Ro* that serve as containers include cup-like objects (e.g. *glasses*), objects with holes (e.g. *shoes*, *a bottle*), and objects with complete enclosure (e.g. *sack*). Additionally, institutional objects (e.g. *a school*, *a university*, etc.) are also conceived to perform containing functions. In relation to *Lo*, it can be both animate and inanimate objects (e.g. *human being*, *animal*, etc), and physical objects (e.g. *water*, *book*, etc).

3.3 The locative relations of *zheta wewo*, *zheta tolo*, *zheta wean*

The actual meaning of *zheta* is ‘up’. Topologically, it is associated with *wewo* (*zheta wewo*) and *tolo* (*zheta tolo*) that also mean ‘up’. It is typical of Rongga to juxtapose two words with the same meanings.

As I have emphasized, *one* is applied to specify the “expected” function of *Lo* with respect to *Ro*. Thus, *one* can be used to express the functional relation of objects in Picture 16 below (*Mok one meja* ‘The cup is on the table’). As also pointed out in section 3.1.3, both *zheta wewo* and *zheta tolo* are also applicable in that situation. In the following section the more detailed meanings of *zheta wewo* and *zheta tolo* are explained, while the discussion of *zheta wena* ‘over/above’ is presented in section 3.3.3 below.

3.3.1 *Zheta wewo, zheta tolo*

In addition to the absence of a functional relation as discussed in 3.1.3, *zheta wewo* is used to show the “unexpected” or spatial relation between *Lo* and *Ro* where the latter objects provide a support for the former one.

But, what objects can be considered to provide support to the located objects? The objects that have an upward facing surface such as in Pictures 16 and 17 (as prototypical examples) or objects that are conceptualized as having such features as human’s shoulder, head, a tree branch, etc. In relation to *Lo*, it includes both animate and inanimate objects (e.g. *persons, animals*) and physical objects (e.g. *a cup, a pen, etc.*). Thus, *zheta wewo* is applicable in the following pictures (i.e. the *Ro* provides the support for the cup and the rope).



Picture 16



Picture 17 (Bowerman, 1996)

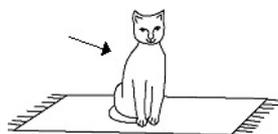
8. *Gelas ndau zheta wewo meja*
Glass that on table
‘The glass is on the table’. (Elicitation)
9. *Azhe ndau zheta wewo jala kaju*
Rope that on cut wood
‘The rope is on the wood’. (Elicitation)

The direct support provided by the *Ro* in these contexts also entails a direct contact between the *Lo* and *Ro*. Thus, as explained before, if there is another object between the cup and the table, let us say *a magazine*, *zheta wewo* is inappropriate to describe the spatial relation between the two objects. To describe such a locative construction, Rongga speakers will say *Mok zheta wewo majalah* ‘The cup is on the magazine’ not *Mok zheta wewo meja* ‘The cup is on the table’.

It appears that the use of *zheta wewo* is in the context of “immediate geometric relations” (i.e. “the immediate geometric relation” in Picture 16 is between the cup and the table). However, when there is another object between the cup and the table (e.g. a magazine), the “immediate geometric relation” can be between the cup and the magazine or between the magazine and the table). Which “immediate geometric relation” is activated depends upon which geometric relations the speaker intends to specify. The “immediate geometric relation” contexts are also relevant in the discussion of *zhale lewu* in section 3.4 below.

Regarding the support, it is not only provided by upper flat surface such as those in Pictures 16 and 17, but also by other objects that are imagined to have such a surface as *ulu* ‘head’, *bhako* ‘shoulder’, *watu* ‘stone’, *kaju* ‘tree’, etc. Being imagined to have such a surface, the objects are conceived to provide supports. So, when an object is put on one’s head, one’s shoulder, or a stone (in particular in the absence of the “natural” functions) *zheta wewo* is appropriate. However, as pointed out before, when the natural function is prominent as in the case between the hat and the head *one* is applicable.

In Picture 18, the direct contact between the cat and the mat is obvious. Nevertheless, since the “natural” function is salient in this situation (i.e. it is natural that the cat sits on the mat), therefore the use of *one* is more appropriate to describe the “expected” relation between the objects (e.g. *Eo po’o one te’e* ‘The cat sits on the mat’), not *zheta wewo*.



Picture 18 (Bowerman, 1996)

The other informative feature that is also associated with the use of *zheta wewo* is distance. *Zheta wewo* is used for the spatial relation between the *Lo* and *Ro* at a close distance to the speaker. More specifically, *zheta wewo* is applied to Picture 16 above when, for example, we are sitting in the living room and are describing the spatial relations of the objects. But, if the located and reference objects are distant from the speaker (but within the speaker’ and hearer’s sight) the spatial relations are specified by *zheta tolo* ‘on’ as in example 10 below.

10. *Manu lalu zheta tolo kaju*
 cock male on three
 ‘The cock is in the tree’.

In this context, the *Ro* (*kaju* ‘tree’) is relatively distant from the speaker. The use of *zheta tolo* here is motivated by the absence of the functional relation. In this situation, someone is in a search of a cock that has been lost for days and finds that the cock is in a tree. Hence, *zheta tolo* is appropriate to describe the locative relation in example 10 above. This example again shows how the functional relation is prominent in Rongga.

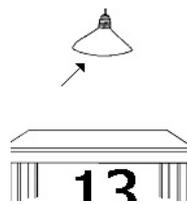
3.3.3 *Zheta wena*

The meaning of *zheta wena* is composed of the literal meanings of its components. The actual meaning of *zheta*, as I said before, is ‘up’. But, the exact meaning of *wena* is rather unclear. Arka et al. listed the meanings of *wena* in the Rongga dictionary as (1) ‘down’ and (2) ‘leftover’. However, based on its distribution in such expressions as *muzhi wena* ‘back of’ (*muzhi* ‘back’), *olo wena* ‘front of’ (*olo* ‘front’), *wena* could mean ‘side’, and with regard to its occurrence in the locative situations as in Pictures 19 and 20 below, *wena* could be interpreted as ‘in relation to a place below’. Literally, *zheta wena* is translated into ‘up of a place below’. Thus, in this study *zheta wena* is glossed mainly as ‘above/over’ based on its appearance in particular locative situations.

Zheta wena is applied to *Lo* that are ‘over/above’ the *Ro* and there is no contact between them. Thus, to specify the spatial relations between the objects as shown in the following pictures:



Picture 19



Picture 20 (Bowerman, 1996)

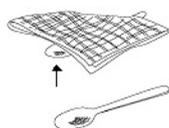
zheta wena is applied (*Nusa zheta wena wolo* ‘The cloud is over the mountain’, *Sulu zheta wena meja* ‘The lamp is above the table’). To use *zheta wena* in that context, the position of the *Lo* is not necessarily exactly over the *Ro*. When the *Lo* is ‘over’ and in a tilted position in relation to the *Ro*, *zheta wena* is still applicable. In Herskovits’s term, in such a context the precise axis between the *Lo* and *Ro* is “ignored”. The notion of “ignorance” is supported by ‘Jackendoff (1990: 35-37) in his *Semantic Structures* with the preference rule system (i.e. “preference rules’ because these rules establish not inflexible decisions about the structures, but relative preferences among a number of logically possible analyses” cited in Cienki, 1989: 34).

The requirement of ‘above/over’ and without contact between the objects explains why *zheta wena* is inapplicable to that Picture 5 (i.e. the tablecloth is on the table). In that situation there is a direct contact between the tablecloth and the table. More importantly, the functional relation in the picture excludes the use of *zheta wena*.

3.4 The locative relations of *zhale wena*, *zhale lewu*

Unlike *zheta wena*, the meaning of *zhale wena* is more transparent. The meaning ‘under/below’ of *zhale wena* is derived from its component meanings *zhale* ‘under’ and *wena* ‘down’. Regarding *zhale lewu*, its component meanings *zhale* ‘under’ and *lewu* ‘void’ produce the meaning of *zhale lewu* ‘under/below’.

Direct contact between the *Lo* and *Ro* is also relevant in distinguishing the use of *zhale wena* and *zhale lewu*. *Zhale wena* is used when there is contact between the *Ro* and *Lo* under it. For example, the locative relation between the objects in Picture 21 below, *zhale wena* is appropriate as in *Soke zhale wena kain lap* ‘The spoon is under the napkin’ (*zheta weno* is also applicable to specify the spatial relation between the two objects, especially when the two objects are on *the table*, depending on which geometric relation a speaker intends to describe). But, when there is a space between the *Ro* and *Lo* (i.e. there is no contact between them), the spatial relation is specified with *zhale lewu*. Thus, to specify the spatial relation of the objects in Picture 22 below, Rongga speakers say *Bola zhale lewu kursi* ‘The ball is under the chair’.



Picture 21



Picture 22 (Bowerman, 1996)

If, in Picture 22, there is another object such as *a book* under *a ball*, *zheta lewu* is not used to describe the spatial relation between *the ball* and *the chair*. *zheta lewu* is applicable to specify the spatial relation between *the ball* and *the book* in relation to *the chair* (*Bola ne’e buku zheta lewu meja* ‘The ball and the book are under the table’). To demonstrate the locative relation between *the ball* and *the book*, either of the following expressions is appropriate: *Bola zheta weno buku* ‘The ball is on the

book' (the natural function is absent and there is a horizontal support and direct contact between the *Lo* and *Ro*), or *Buku zhale wena bola* 'The book is under the side of the ball' (in such a geometric relation *the book* is under *the ball* and there is contact between them). So, there are three spatial terms that can be applied in such a context (e.g. *zhale lewu* to specify the spatial relation between *the ball*, *the book* and *the chair*, *zheta wewo* to identify the spatial relation between *the ball* and *the book*, and *zhale wena* to indicate the spatial relation between *the book* and *the ball*). As explained previously, such spatial relations are related to the context of "immediate geometric relations".

4. Conclusions, Implications, and Suggestions

In this concluding section, I would like to highlight some points related to the main goal of this study. As pointed out in the introduction, there are two "faiths" in the study of topological relations. Herskovits's study of English topological prepositions reveals that the basic notions related to the topological relations are **support** and **contiguity**, **inclusion**, and **coincidence**. It suggests that it further supports the claim of the strong version of the Universal Conceptual Categories. Levinson et al.'s findings, however, reveal distinct topological notions such as **attachment**, **superadjacency**, **full containment**, **subadjacency**, and **proximity** allowing us to discern the Universal Tendency rather than the strong Universal Conceptual Categories. Levinson et al. proposed, among other things, that the notion **attachment** is important cross-linguistically and it is successively fractionated into the notions on/over/on top. Furthermore, they claimed "attachment has at least one clear focus of its own and is an important category that tends to be recognized in language after language" (2003: 513-514).

Quite interestingly, the notion of basic topological relations in Rongga is distinct from Herskovits's and Levinson et al.'s findings. It is distinct from Herskovits since the notion of "natural" function is basic and decisive to systematically encode or decode the locative relations. Furthermore, even though Herskovits's notions **support** and **inclusion** are found in Rongga, their uses are more restricted. The former is only applicable for horizontal support and the latter is only effective for three-dimensional *Ro*. Note that the **support** and **inclusion** in Rongga are identifiable in the absence of the "natural" functions. Additionally, Rongga speakers consider that the "natural" functions serve to define the "normal" situation.

Levinson et al. also did not include functional relations in their findings. Moreover, 'over' (*zheta wena*) and 'on' (*zheta wewo/zheta tolo*) are distinguished in Rongga, while in Levinson et al.'s findings they are collapsed into 'on/over' (i.e. collapse under the notion **superadjacency**). Regarding the containment in Rongga, it is not necessarily in the context of **full containment**. What matters is that the *Lo* lies within the interior or volume of the *Ro* (i.e. it is applicable for the partial containment as well). Note also that the **containment** in Rongga is not coded when the "natural" function is present (e.g. *books in a bag*, *water in a glass*).

Additionally, Levinson et al.'s claim about the cross-linguistic importance of the **attachment** is not confirmed in Rongga. They found that such examples as an earring on someone's ear, a necklace on someone's neck, a painting on the wall, and clothing pinned on a line were coded with the notion attachment, while the examples such as a tablecloth on a table, a cup on the table were coded with a different notion – **superadjacency**. In Rongga, on the other hand, all those examples are described with *one* to indicate their *functional* relation. It is decisive in Rongga that with its absence

the relation becomes *locative* and affects the use of different locative terms such as *zhale one*, *zheta wewo*, *zheta tolo*, *zheta wena*, *zhale wena*, and *zhale lewu*.

With the salience of the “natural” functions in Rongga, there are theoretical implications to studies of topological relations. The topological relations, as I would like to propose, seem to fall into two main categories. One category is composed of *functional relations* based on the topological relations upon the “natural” functions (i.e. the general location and the “natural” relation indicated by such examples as the earring on someone’s ear, clothing pinned on a line, etc). Hence, the relation is “expected”. The second one consists of *locative relations* where the functional relations are not prominent and topological relations are “marked” or “unexpected” according to the relevant features (e.g. with or without contact, support, containment, etc).

Another implication is related to the acquisition of topological prepositions by children. Cognitive complexity based studies such as object feature specification by Masongkay et al. (1974) and proximity coordination by Braine (1959) and Piaget & Inhelder (1967) (cited in Johnston & Slobin, 1979: 531) reveals the order of acquisition goes as follows: in/on/under < beside < back_{feature}/front_{feature} < between < back/front.

Another study (e.g. Tanz, 1976 cited in Johnston & Slobin, 1979: 531) which is based on a comprehension test of English children found out that *behind* and *in back of* were more frequently produced by the children. This study, which was based upon salience predicted the order of development as: in/on/under < beside < back_{feature} < front_{feature} < between < back < front.

Johnston and Slobin (1979) also conducted research on the same domain. Unlike the first two studies, Johnston and Slobin investigated the development of children’s locative acquisitions cross-linguistically (i.e. English, Italian, Serbo-Croatian, and Turkish). They pointed out, despite the various patterns of developmental acquisition within the individual languages, a general cross-linguistic pattern of order emerged: in/on/under/beside < back_{feature}/front_{feature}/between < back/front.

Furthermore, Piaget (cited in Johnston, 1985: 969-970) also found a similar pattern of locative acquisition as those three studies above. At the earliest stage, Piaget claimed, children acquired *functional* concepts (e.g. in/on/under), then proximity or topological concepts (e.g. back/front for featured-objects), and finally projective concepts (e.g. back/front for unfeatured-objects). Thus, as Johnston (1985: 969) said “the Piagetian account of spatial conceptualization during the preschool years proposes a developmental progression from functional to topological to projective-Euclidean representation of space”.

Regarding the order of the development, Johnston & Slobin (1979: 542) thought that it is affected by an interaction between conceptual factors (i.e. the spatial understanding underlying locative terms and their relative salience) and linguistic factors (e.g. homonymity, lexical diversity, and lexical complexity). For example, the 11-month age difference between Turkish and Serbo-Croatian children who advanced at the locative term *back* showed that, for the Turkish children, their interpretation of the use of *back* (*arkasinda*) is only for featured-objects (e.g. a chair). They did not understand that *back* was also applicable for nonfeatured-objects (e.g. trees).

Bearing in mind Piaget’s order of development (functional < proximity/topological < projective) and the two factors (i.e. the conceptual and linguistic factors), it seems that the prepositions indicating the functional relation (i.e. *one*) should be acquired earlier by Rongga children because it is morphologically and syntactically less complex and its semantics is more abstract than the prepositions

indicating the locative relations (*zheta wewo/zheta tolo* ‘on’, *zheta wena* ‘over/above’, *zhale one* ‘inside’, *zhale wena/zhale lewu* ‘below/under’).

Nevertheless, to confirm this result further study of the acquisition of topological relations in Rongga is imperative. It is also strongly suggested that the proposal (i.e. the categories of *functional* and *locative* relations) needs further testing in other (related or unrelated) languages to find out more cross-linguistic patterns (notions) of topological relations. In this manner, it allows us to study more definitely the universalism of topological relations.

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