## VIEWPOINT IN OKSAPMIN

# Marshall Lawrence Summer Institute of Linguistics

## 0. Introduction.

Oksapmin 1 seems to go out of its way to mark viewpoint in certain narrative discourses. In these discourses the speaker actually marks from whose viewpoint or perspective a story is being told by the tense ending on sentence final verbs. In this paper I describe the morphological marking of viewpoint along with related considerations an Oksapmin speaker has to keep in mind when using it. Although viewpoint as described here has been discussed elsewhere (H. Lawrence 1972; M. Lawrence ms, 1972a, 1972b), it has not received the full treatment it deserves.

Before describing viewpoint in Oksapmin I will discuss two other aspects of Oksapmin grammar. The first of these is the distinction made between firsthand information and secondhand information. The second is the distinction made between perception by sight and perception through another sense. A brief description of these will provide a context in which to better understand viewpoint in Oksapmin.

1. Firsthand Information versus Secondhand Information.

Oksapmin distinguishes between information which originates with the speaker--information about things which he has experienced, observed, or thought out--(firsthand information) and information which he has received from someone else (secondhand information). Firsthand information is unmarked; secondhand information is marked by the clitic -ri attached to the end of each sentence. The clitic -ri comes from the verb ri `say´ (but with no inflection) and carries the meaning "I am telling you something which has been told

to me." The use of the clitic -ri is illustrated by examples (1) and (2), where example (1) is from a first person narrative relating firsthand information and thus does not use the clitic and example (2) relates something which had been told to the speaker and thus has -ri attached to the last verb of the sentence.

- (1) Uumnong hahtaham waapero rima yot haan ihitsi
  Um:to hunting let:us:go say two men they:two
  nuhur waaihpaa
  we went:down
  'I said, "Let's go hunting down at the Om," and so
  two other men and I went down to hunt.
- Haperapnong mahan kuu gaamin tit
  Haperap:to over:there woman husband:and:wife one

  pipaa-ri.
  went secondhand
  There was a husband and wife who went over there to Haperap.

Distinguishing between firsthand and secondhand information is not unique to Oksapmin<sup>2</sup>, but it interacts with the marking of viewpoint in a way which does seem to be unique. Without the clitic -<u>ri</u> viewpoint is that of the first person narrator; with the clitic viewpoint is that of a third person participant in the story.

2. Perception through sight versus perception through another sense.

As well as marking whether the narrator is giving firsthand or secondhand information, Oksapmin distinguishes between events seen by the experiencer of the action and those perceived only through some other sense, usually hearing, but also includes feeling3. A special verb phrase is used to mark an event which is perceived by a sense other than sight. The verb phrase uses a verb stem with minimal marking (the marking is the same as that used in verb phrases showing a close knit sequence of action, which is the morpheme -m, -r, or -s, depending on verb class) plus the verb ha 'do'. This verb phrase is used when one hears a plane coming which

is still too far in the distance to be seen, as in example (3). There the verb phrase <u>apris hah</u> `is coming' says that the person speaking can hear the plane but does not see it.

- (3) Barus apri-s ha-h
  plane come sequence do immediate:past
  The plane is coming. or
  I hear the plane coming.
- (4) Mon oh uaa-r ha-ngop- ri
  brother he call sequence do far:past:sg secondhand
  Her brother called out for her.

Example (4) is part of a story where the sister is working in the garden and her brother calls her from down at his house. The phrase <u>uaar hangopri</u> indicates that she could hear him calling without being able to see him.

Although the verb phrase illustrated in examples (3) and (4) usually expresses perception of an event by hearing without seeing, it is not restricted to that. One day and old man was getting an injection in the buttocks. Suddenly he gave a sigh and said:

(5) Gin sur oh mara- s ha-h
now needle it come:in sequence
Now the needle has gone in. or
Now I feel the needle going in.

In this example the event was perceived by feeling rather than by sight as expressed by the verb phrase maras hah.

Another example of an event perceived by feeling is from a traditional story where two women were watching a man eat some human flesh. The man offered them some flesh to eat, but they refused. So the man held some flesh in his fingers and motioned as if to throw it and suddenly they felt it in their mouths. This is given in example (6) where the verb phrase dam hangopaari `were eating it' says that they felt themselves eating it without having taken the food or seen someone put it into their mouths,

(6) Ihit waamat patin be ite atem mahan they: two looking were just their mouths there ha-ngopaaeat sequence do far:past:pl secondhand They were watching when all of a sudden they felt themselves eating the flesh.

Finally, this particular verb phrase can also be used when one smells something but does not see the source. Thus (7) might be said by a person walking along the trail and smells some pork being cooked somewhere in the bushes.

(7) Imaah gapgwe na-ha- m
pig good:smell to:me do sequence
ha-h- mur
do immediate:past:sg statement
I smell some pork roasting.

Perception of an event other than by sight may be narrated as firsthand information as in example (3), thus without the clitic  $-\underline{ri}$ , or as secondhand information as in example (4), with the clitic -ri.

In marking the way in which an event is perceived, the unmarked case is perception by sight. Perception by a sense other than sight is marked by the verb phrase illustrated in examples (3) to (7). Although such verb phrases do not mark from whose viewpoint the story is being told, they do show the Oksapmins' interest in keeping events perceived by sight distinguished from events perceived in other ways. Viewpoint is an additional parameter relating to the perception of events.

## Viewpoint

We have seen so far that Oksapmin speakers are interested in marking secondhand information in contrast to firsthand information, and marking events perceived by a sense other than sight. In addition, Oksapmin may overtly mark the viewpoint from which a story is being told—whose perspective is reflected in the events as the narrative unfolds.

Every language reflects viewpoint in some way, so Oksapmin is not unique in this regard. Deictics, for example, reflect viewpoint. These include verbs of motion where `come' and verbs like it reflect a motions toward the person whose viewpoint is being represented; `go' reflects a motion away from that person. They also include locational words in Oksapmin (H. Lawrence 1972). The order of clauses may reflect viewpoint. Thus in Oksapmin the order of clauses in example (8) reflects, among other things, the viewpoint of the person coming, while example (9) reflects the viewpoint of the person splitting wood. The participants and events are the same, but the viewpoint has changed.

- (8) Kuriktap oh apiroh Dramtap oh iraat
  Kuriktap he came Dramtap he wood

  suhupaatgopri
  was:splitting
  When Kuriktap came Dramtap was splitting wood.
- (9) Dramtap oh iraat suhupaatin Kuriktap oh he wood was:splitting Kuriktap he apingopri came While Dramtap was cutting wood Kuriktap came.

Oksapmin is like other languages in using verbs of motion, locationals, and clause order to reflect viewpoint. But Oksapmin goes beyond that. It is able to overtly mark from whose viewpoint the story is being told by the form of the tense ending on the final verb of a sentence. Oksapmin has two sets of past tenses. One set, Set A of Chart 1, is used when the participant from whose viewpoint the story is being told is also the subject of the clause. The other set, Set B of Chart 1, is used when the participant from whose viewpoint the story is being told is not the subject of the clause.

	Set A (Viewpoint of the subject)		Set B (Viewpoint of a participant other than the subject)	
	Singular	Plural	Singular	Plural
Immediate past (continuative aspect)	<u>ø</u>	<u>-yaa</u>	<u>-he</u>	<u>-yaahe</u>
This morning past (punctiliar aspect)	<u>ø</u>	<u>-yaa</u>	-nong	<u>-ngwe</u>
Yesterday past	<u>-r</u>	<u>-ri</u>	-ngwer	-ngweri
Far past	<u>- p</u>	-paa	-ngop	-ngopaa

Chart 1: Two sets of Oksapmin past tenses

Two consecutive sentences from an Oksapmin narrative will illustrate the use of these two sets of past tenses and how their use reflects from whose viewpoint the story is being told.

- (10) Kimsidapat haan rop ohnong ambur tomorrow: from man grandfather he: to get

  pi-paa- ri
  go far:past:setA:pl secondhand
  The next day they went to get their grandfather.
- (11) Susaa ham koriyaaoh haan rop oh grandfather he

  paat-(n)gop- ri,
  be far:past:sg:setB secondhand
  When they got down there their grandfather was there.

In example (10) the past tense ending -paa on the verb pi `go' says that the story is being told from the viewpoint of the subject of that clause, `they', identified earlier in the story. In example (11) the ending -ngop on the verb paat `be' says that the story is being told from the viewpoint of a participant other than the subject of that clause.

It is possible to mark viewpoint both in narratives where information is given firsthand and in narratives where information is given secondhand. Examples (10) and (11) above are from a story related as secondhand information, thus the use fo the clitic -ri

on the verbs as well as a tense ending from set A or B. Examples (12) and (13) below illustrate the use of these two sets of past tenses from a firsthand account. Example (12) uses a past tense from set A indicating that the story is told from the viewpoint of the subject of that clause, in this case, <u>noh</u> `I´. Example (13) uses a past tense from set B indicating that the story is told from the viewpoint of a participant other than the subject of that clause.

- (12) Hanaat oh iraat suhupaatinaa noh ning
  Hanaat he wood splitting I opossum

  aakemti- p
  take:out:stomach far:past:sg:setA
  `While Hanat was splitting some wood I took out the oppossum's stomach.'
- (13) ... Hanaat oh apin kaak sa-ngop go far:past:sg:setB ... Then Hanaat went to get some leaves.

It will be seen from Chart 1 that the two sets of tenses are given only for past tenses; there is no such distinction in present or future tenses. I believe this is because viewpoint as described here develops from a speaker marking events which he has seen, which, of course, must be in the past. Thus viewpoint can be marked in this way only in narrative discourse genre, which is past tense oriented, or in conversation where the speaker is talking about an event in the past.

It is the speaker's choice whether or not to use the two sets of past tenses and thus mark from whose viewpoint the story is being told. For narrative discourse this is a choice which the narrator makes at the beginning of a story and maintains throughout the story. If the narrator chooses not to mark from whose viewpoint the story is being told, he can tell the story in what we have called 'omniscient viewpoint<sup>4</sup>.' A speaker using omniscient viewpoint relates the events as they happen, more as historical facts, without much concern about viewpoint. Omniscient viewpoint

is expressed by using set A tense forms from Chart 1 with the discontinuous morpheme maa ...-oh, as illustrated in example  $(14)^5$ .

(14) Kusaan ihirsi kiaap ohsi maa
Kusaan they:with kiap he:with omniscient

gusut-paa- oh
fight far:past:pl:setA omniscient
The Kusaan people and the kiap fought.

An omniscient viewpoint telling does not distinguish between firsthand and secondhand information.

For narrative discourse genre, then, an Oksapmin speaker may choose to tell a story from an omniscient viewpoint using the tense and morpheme combination illustrated in example (14) or else he can tell a story from a participant's viewpoint using tense endings from both sets A and B. Nothing in the story itself determines a participant viewpoint telling or an omniscient viewpoint telling, although some stories, such as folk tales, are nearly always told from a participant's viewpoint. Legends, on the other hand, are more likely to be told from an omniscient viewpoint<sup>6</sup>.

3.1. Restrictions related to participant viewpoint telling.
Once a narrator chooses to tell a story from a participant's viewpoint, certain restrictions must then be observed. To best understand some of the restrictions let us consider events in a narrative as activity on a stage. There is only one stage. Scenes can change, but two scenes cannot be playing on the stage at the same time. Once a participant is off stage he can no longer view what is going on on stage.

Now to list some restrictions given a narrator telling a story from the viewpoint of a participant in the story.

1. If the story is a first person narrative (the narrator is also a participant), the story must be told from the narrator's viewpoint. He cannot choose to tell the story from the viewpoint of

another participant in the story. In such stories the secondhand information clitic -ri is of course never used.

Examples (15) and (16) illustrate a first person narrative using a participant viewpoint telling.

(15) ... Yarapeng nuhut ner hahmar ohot up:there

ruh- paa go:up far:past:pl:setA ...then Yarapeng and I went up to hunt some birds.

(16) ...wandasaa aap ham ner awaam oh Maso house down bird awaam come:down it Marshall he ihirnong pande ha-ngop feed:immed:past do far:past:sg:setB to:them ...we came back down and Marshall had fed some of the awaam bird to the rest.

According to this restriction it may be obvious that tense endings from set B of Chart 1 should never be used on verbs with first person subject. And this seems to hold true. If one tries to elicit these endings using a first person subject, they are rejected as unacceptable. However, there is a special case when one can use set B past tenses with a first person subject. If I were to loan out my axe and the next day the person I had loaned the axe to came and asked me again for my axe, but had not returned it from the previous day, I would say something like:

(17) Nohe maa naapi- ngwer
my nominalizer give:you yest:past:sg:setB

oh-waa
it what:about?
What about the one I gave you yesterday?

In this example <u>maa...-oh</u> is used to nominalize the clause. Focus seems to be shifted to the axe which was loaned out. But in such constructions it is possible to use set B tense endings with first person subject, which seems to shift the viewpoint from first person to the person asking for the axe.

- 2. A second restriction. In a third person narrative the viewpoint will reflect the viewpoint of the original narration. Normally the original story is a first person narration. X tells Y a first person narrative from his viewpoint, according to restriction in 1 above. When Y tells the story to somesone else it is now a third person narrative, but he will tell it from X's viewpoint as he originally heard it. Since the narrative is now secondhand the clitic -ri will be used. To see how this works out let us take examples (15) and (16) and change them to a third person telling as in examples (18) and (19).
  - (18) ... Yarapeng ihit ner hahmar ohot
    Yarapeng they: two bird hunt up: there

    ruh- paa- ri
    go:up far:past:pl:setA secondhand
    ... then Yarapeng and he went up to hunt birds.
  - (19) ...wandasaa aap ham ner awaam oh Maso come:down house down bird awaam it Marshall he <u>ihirnong</u> pande to:them feed:immed:past ha-ngopri do far:past:sg:setB secondhand

...they came back down and Marshall had fed some of the <u>awaam</u> bird to the rest.

The only modifications needed to change from a first person viewpoint telling to a third person viewpoint telling are to replace the first person subject with a third person subject (pronoun or noun as appropriate) and to add the clitic -ri. The viewpoint orientation is kept the same. The story will be passed on this way from generation to generation. Thus, though the narrator has a choice whether to tell a story from the viewpoint of a participant or from an omniscient viewpoint, having chosen a viewpoint telling he has little choice whose viewpoint he will represent. That is established by the history of the story, which often begins with a first person viewpoint telling.

Folktales are interesting in that they seem to be always told from a participant's viewpoint (rather than omniscient viewpoint) even though they are stories not believed to be true and never had a first person viewpoint telling. How does the speaker decide in this situation whose viewpoint he will represent? The viewpoint chosen seems to be that of the participant with whom the person telling the story can most easily identify. Thus if the story is a conflict between the good guy and the bad guy, the story will be told from the viewpoint of the good guy. If it is a story about a hero, it will be told from the viewpoint of those who see what the hero does. There is no indication that a story teller ever tries to change the viewpoint orientation from the traditionally accepted one.

- 3. A third restriction in a viewpoint telling is this: if set B past tenses are used, another participant must be on stage as observer. Putting this the other way around, using set B past tense implies that a participant is on stage observing. Thus in example (20) using -ngop on the verb suhu `split' implies that someone is on stage watching what is going on. If we look back in the story we find two women hiding in the bushes watching, and the story is of course being told from their viewpoint. If the man splitting wood were the only participant on stage, -ngop could not be used.
  - (20) ...<u>aah</u> <u>tit</u> <u>marim</u> <u>marasaa</u> <u>iraat</u> axe one hold <u>come:out</u> wood

suhu- ngop- ri
split far:past:sg:setB secondhand
...then the man came out holding an axe and started splitting some firewood.

This restriction provides an interesting complication. In a folk tale about a family of brothers and an old man the story is told from the brothers' viewpoint. The oldest brother goes out hunting and doesn't return so the next oldest goes looking for him. He eventually meets the old man who tricks him, kills and eats him.

Up to this point, since the story is being told from the brothers' viewpoint, set A tenses are used in clauses where the brother is the subject; set B in clauses where the old man is the subject. But when the old man kills the brother there is now no one left on stage to observe the old man and set B tense can no longer be used.

To handle this Oksapmin uses a special particle <u>sa</u> along with set A past tenses. This indicates that viewpoint orientation has been temporarily shifted (or perhaps suspended). In the present story the other brothers are still waiting at home and in the next sentence the scene shifts back to them with events being told from their viewpoint again. No special marking is used to show the shift back. The shift in viewpoint to the old man is illustrated in (21) and the shift back in (22).

- (21) Rus ning maawandao por go:up opossum intensifier come:down sav Ihan oh ning do far:past:sg:setB secondhand so he opossum wanpaat- do rim mahat- nong wamtiporhan come:down question say up wandasaa kaak moh kwei taan oh kwes poraa sumaa come:down head this stone side it split do haan paser oh sa man old he viewpoint:shift kill eat far:past:sg:setA secondhand
  The old man went up the tree and shouted out, "The opossum has fallen down." The brother wondering if the opossum had really fallen looked up. The old man then jumped down on him, split his head open with a flat stone, killed and ate him.
- (22) Gahan naap mutuh tah oh
  then brother middle next he

  pi-p- ri
  go far:past:sg:setA secondhand
  And then the next oldest brother went.
- 4. Fourthly, there is minimal shifting of viewpoint in Oksapmin narratives. This is true in two senses. Firstly, as mentioned earlier, each narrator does not choose the viewpoint

orientation at will; the viewpoint is kept constant from one telling to the next. Secondly, within a story viewpoint is not shifted from one participant to another unless something in the story demands it. Normally a story is told from the viewpoint of just one participant who is on stage throughout the whole story.

Two situations arise which demand a shift in viewpoint. One of these is where the participant from whose viewpoint the story is being told is for some reason no longer on stage. This was illustrated in examples (21) and (22). The other situation is where the scene shifts, involving different participants.

Oksapmin has two ways of handling a shift in viewpoint. One is to use the particale <u>sa</u> before the verb along with set A tense endings, as in example (21). The other way is to use omniscient viewpoint. Although I don't have a lot of text material with a shift in viewpoint it seems that the prefered method for marking a shift is to use the particle <u>sa</u> when the participant from whose viewpoint the story is being told is temporarily removed from the scene; and to use omniscient viewpoint when the scene changes involving different participants. In the second instance, if the new scene is short then returns to the previous scene, omniscient viewpoint can be used throughout the new scene. If, however, the new scene is prolonged, omniscient viewpoint is used to introduce the new participants, then participant viewpoint is used for the remainder of the scene.

Examples (23), (24), and (25) are taken from consecutive sentences in a story. In (23) the son is talking to his mother. Set A tense ending on pi 'go' in (24) shows that the story is being told from the mother's viewpoint. In (25) the son goes off and does things in another location involving other participants and there is a temporary shift to omniscient viewpoint as seen by the phrase maa ruhup-oh.

(23) ... haan ire patinong moh naa apriptimur man their place this not come

- (24) Ihan sup uh it aap han so mother she again house there

  pi-p- ri
  go far:past:sg:setA secondhand
  So then his mother went back to the house.
- (25) ...ohe daapkup Karomar-nong oh ohot it his Karomar-to up:there ruhu- pmaa oh omniscient go:up-far:past:sg:setA omniscient ...then he went up the trail he usually went on up to Koromar.
- 5. We come now to the final restriction which needs to be observed whenever there is a viewpoint telling of a narrative: all aspects of the language which reflect viewpoint, such as verbs of motion, clause order, etc., must be consistent with the participant viewpoint expressed in the narrative.

In applying this restriction it must be kept in mind that two levels of viewpoint are involved in a narrative at all times. One is the participant's viewpoint of each event in the story as it unfolds; the other is the relation of the whole story to the narrator's situation. Two examples will serve to illustrate these two levels. Example (26) uses the verb <u>marperhan</u> `come up', which we would expect since the motion is toward the participant from whose viewpoint the story is being told.

(26) mongsut hatporhan Tandeitaarsi Maihrop ihit hoon do Tandeitaar Maihrop they:two marperhan

come:up
...at noon Tandeitaar and Maihrop came up, then...´

Example (27) establishes the viewpoint as `we' by using a set A tense ending on <u>waaih</u> `go down' in the first sentence. It then, however, uses the verb <u>wanda</u> `come down' in the second sentence even though this is a direction away from the participant from

whose viewpoint the story is being told. The answer is that the participant is telling the story in Marshall's house and the verb come down' is in relation to the situation of the narrator as he tells the story, not in relation to the events within the story.

(27) ... nuhurhe aapnong waaih- paa Maaso we house:to go:down far:past:pl:setA Marshall

oh orhe his house:to come:down far:past:sg:setB

We went down to the house and Marshall came down to his house.

#### 4. Conclusion

As in some other languages it is important in Oksapmin to mark whether information is firsthand or secondhand. In Oksapmin, however, the importance of observing an event has been developed in two ways. One is to distinguish between seeing an action and perceiving it through some other sense. The other is to use two sets of past tenses: one for verbs where the subject is viewing the events; the other for verbs where the subject is being viewed. This latter development serves effectively to mark the participant in the narrative from whose viewpoint the story is being told. Such participant viewpoint telling of a narrative is a well developed and intergrated system in Oksapmin.

Such a delightful complexity as viewpoint in Oksapmin for the linguist is equally delightful for the translator. The challenge to use the system properly is also great.

#### NOTES

Oksapmin is a language spoken by about 7,000 people living in the Oksapmin sub-district, West Sepik Province. They are bounded by the Om River to the north and the Strickland River to the east.

Oksapmin appears to be a language isolate.

Field work was carried out between July 1968 and June 1983 under the auspices of the Summer Institute of Linguistics. A

special appreciation goes to Guhyem, my teacher of Oksapmin for many years, who taught me all I know about viewpoint in Oksapmin. Also thanks to Bob Litteral for reading and commenting on an earlier draft of this paper.

The phonemes of Oksapmin are consonants  $\underline{p}$   $\underline{t}$   $\underline{k}$   $\underline{b}$   $\underline{d}$   $\underline{g}$   $\underline{s}$   $\underline{h}$  (velar fricative)  $\underline{r}$  (flap)  $\underline{m}$   $\underline{n}$   $\underline{w}$   $\underline{y}$  and vowels  $\underline{i}$   $\underline{e}$   $\underline{aa}$  (low front)  $\underline{a}$  (mid central)  $\underline{ei}$   $\underline{u}$  (high close back, fronted and slightly rounded)  $\underline{uu}$  (high open back) and  $\underline{o}$ . The velar consonants may be labialized. There are also two contrastive pitch patterns on words, which do not carry a high functional load and are not symbolized in the orthography.

- 2 Lowe (1972) illustrates a similar thing in Nambiquara, a language of Brazil, which he calls narration (in contrast to observation and deduction). Höhlig (1978) talks about a secondhand information marker in Syuwa (Kagate), a language of Nepal. Fasu, a language in the Southern Highlands of Papua New Guinea, has a similar marker (Loeweke and May 1980:71).
- 3 The languages bordering Oksapmin to the south and west (OK family languages) do not make this kind of distinction, but languages to the east do. I have no data from Duna, the language immediately east across the Strickland River, but Enga has a verb suffix -lu which relates information "based on evidence perceived by the senses with the exception of vision." (Lang 1973:xliii). Fasu also has a verb suffix -rakae, which gives information about something heard but not seen (Loeweke and May 1980:71).
- A speaker often introduces characters of a narrative using omniscient viewpoint, then switches to participant viewpoint. A speaker may also use omniscient viewpoint with a changes of scene, as described below. But this does not alter the basic choice of a viewpoint telling.
- 5 The discontinuous morpheme  $\underline{\text{maa}}$  ...  $\underline{\text{-oh}}$  is also used to nominalise a clause.

6 Folktales are stories told to children, not believed to be true. They are categorized by Oksapmins as <u>sekei</u> stories. Legends, on the other hand are believed to be true and are not categorized as <u>sekei</u>.

### REFERENCES

Grimes, Joseph E (ed.) 1978 Papers on discourse.

Dallas: The Summer Institute of Linguistics.

- Höhlig, Monika. 1978. "Speaker orientation in Syuwa (Kagate)". In Grimes (ed.) 1978:19-24.
- Lang, Andrianne. 1973. Enga dictionary. Pacific Linguistics Series C, No. 20.

Lawrence, Helen. 1972. "Viewpoint and location in Oksapmin".

Anthropological Linguistics 14:311-316.

- Lawrence, Marshall. 1972a. "Structure and function of Oksapmin verbs". Oceanic Linguistics 11:47-66.
- ----, 1972b. "Oksapmin sentence structure". <u>Pacific Linguistics</u> Series A, 34:17-46.
- -----, Oksapmin discourse and paragraph structure. Unpublished manuscript.
- Loeweke, E. and J. May. 1980. "General grammar of Fasu (Namo Me)".

  <u>Workpapers in Papua New Guinea Languages</u>. 27:5-106.
- Lowe, Ivan. 1972. "On the relation of formal to semantic matrices with illustrations from Nambiquara". Foundations of Language, 8:360-390.