A Functional Analysis of Nonactive Voice in Quiche Mayan

Passive constructions represent a challenge for any theory of language acquisition, be it structuralist or functionalist. It would be easy to explain how children acquire language if language was simply a 1-1 mapping from a semantic or functional base to syntactic structure. The existence of passive constructions proves that a direct mapping isn't always necessary and in some languages may not even be the norm. Children cannot acquire language if they always expect a direct mapping between agents and subjects or patients and objects.

The problem wouldn't be so insurmountable if children had some means of distinguishing between active and passive sentences. One possibility is that passive sentences provide a means of focusing on or topicalizing patients while active sentences are more neutral in focus or focus more on agents. Foley & Van Valin (1984) make a useful distinction between languages that have discourse oriented focal devices and languages that rely instead on a semantic distinction between agent and patient. Languages with semantically defined subjects do not have passives while languages with pragmatically defined subjects do. A child acquiring English would find positive evidence that subjects were not restricted to agents and could conclude that the language contained a passive construction.

There are two immediate problems with such a scenario. The first is that languages have other means of focusing on objects besides passives. Word order and intonation are two devices in general use. If the child confused focused nps with subject nps he might be in deep doodoo. The second problem is that languages do not use passives exclusively to focus on object nps. Passives in many

languages primarily encode an aspectual dimension. The passive in Thai and Japanese, for example, denotes that the object has suffered in some way from the action. These languages cannot use passives to translate sentences like "The prize was won by Mary."

My own conclusion is that there are no easy solutions. Anyone proposing simple form-function mappings hasn't looked at the cross-linguistic data. In order to make any progress we need to survey the range of forms in human languages and the functions they serve. There are regularities in mapping, but at this point they are poorly defined much less understood. One measure of progress would be a list of the functions languages communicate. While lists are available for some language domains no one has proven that these lists are complete.

I will concentrate the remainder of my talk on the focus devices available in Quiche, a Mayan language spoken by 1.5 million people in the western highlands of Guatemala. There is an extensive literature treating active and nonactive sentences in Quiche and other Mayan languages from a functionalist perspective. After outlining a functional description of voice alternation in Quiche, I will address the issue of whether a functionalist treatment provides an adequate explanation of voice acquisition.

Quiche is an example of a pure head-marking language (Nichols 1986) which contains an ergative system of cross-referencing argument functions on the verb. A sample conjugational paradigm for transitive and intransitive verbs in Quiche is shown in (1).

(1)

k-in-a-q'alu:j	'You hug me'	k-in-pe:tik	'I'm coming'
k-0-a-q'alu:j	'You hug him'	k-at-pe:tik	'You're coming'
k-at-u-q'alu:j	'He hugs you'	k-0-pe:tik	'He's coming'

The extensive system of cross-referencing licenses pro-drop in

the language. Quiche speakers only use independent pronouns for emphasis or contrast. Thus, the use of independent pronouns is one device Quiche speakers may call upon to focus on a particular entity. Quiche clauses with transitive verbs seldom contain a subject noun phrase. My count showed that 14% of sentences with transitive verbs in a Quiche text contained subjects. Du Bois (1987) states the 6% of sentences with transitive verbs in the closely related language Sacapultec contain subjects. Quiche children use overt subjects with transitive verbs at roughly the same frequency as adult speakers or three times less frequently than children acquiring English.

Quiche has two forms of passive and antipassive voices in addition to the active voice. The two forms of the Quiche passive are similiar to the English passive in that they promote an underlying object to the subject position and optionally allow the underlying subject to be expressed in a prepositional phrase. One of the Quiche passives (or 'passive1' as Mondloch (1981) refers to it) is restricted to underlying subject NPs in the 3rd person. This passive cannot be used with logical subjects in the 1st or 2nd person. Grammatical and ungrammatical examples of this passive are shown in (2).

(2) a. k-0-q'alu:-x ri: ak'al r-uma:l ri: u-na:n
IMPERF-3A-hug-PASS1 the child 3E-cause the 3E-mother
'The child is being hugged by his/her mother.'

b. * k-0-q'alu:-x ri: ak'al w-uma:l
IMPERF-3A-hug-PASS1 the child 1E-cause
'The child is being hugged by me.'

Mondloch (1978) and others have observed that passive1 is used to distinguish between a 3rd person subject and object. The active form of the sentence in (2) is ambiguous; there is no unambiguous indicator of the subject. Even changing the word order does not affect a

speaker's ability to distinguish the subject. The sentences in (3) can all mean the child is hugging his/her mother or his/her mother is hugging the child. The only difference between them is that the np in preverbal position is in focus.

(3) a. k-0-u:-q'aluj ri: ak'al ri: u-na:n
hug child his/her-mother

b. ri: ak'al k-0-u:-q'aluj ri: u-na:n
c. ri: u-na:n k-0-u:-q'aluj ri: ak'al

Quiche speakers use such sentences when the subject is apparent from previous discourse or the nonlinguistic context. This is an excellant example of the way languages may separate focus from other grammatical functions. Passive1 provides a means of unambiguously describing events involving two 3rd person antagonists. It is only secondarilly used to focus on object nps.

The second passive in Quiche (passive2) serves primarilly an aspectual function. It can be used to express either the successful completion of an action or the fact that an action can be carried out successfully. An example of passive2 is shown in (4).

(4) k-0-q'alu-taj ri: ak'al aw-uma:l
IMPERF-3A-hug-PASS2 the child 2E-cause
'The child can be hugged by you.'

As (4) demonstrates Quiche sentences in passive2 are acceptible with 1st and 2nd person oblique agents. Passive2 also serves to distinguish between two 3rd person participants.

Quiche has two distinct forms of antipassive as well as passive voices. Antipassive voices are used to focus on the subject. The object is sometimes demoted to an oblique phrase. Like passives, antipassives convert transitive verbs to intransitive verbs. One consequence is that antipassive verbs, like passives, only allow the absolutive set of cross-referencing affixes to appear on the verb.

The focus antipassive is one of the more obscure constructions in Quiche. It is used when an underlying subject is moved to the focus position in front of the verb. This occurs in questions, relative clauses and sentence clefts. Examples of all three of these contexts appear in (5).

(5) a. jachin x-0-q'alu-n ri: ak'al
who PERF-3A-hug-FOC_AP the child
'Who hugged the child?'

b. utz ri: winaq (ri:) k-e:-q'alu-n ri: ak'al
good the people (who) IMPERF-6A-hug-FOC_AP the child
'The people who hug the child are good.'

c. are: ri: ak'al k-at-q'alu-n-ik
focus the child IMPERF-2A-hug-FOC_AP-TERM
'It is the child who is hugging you.'

There are no limitations on which verbs can appear in the focus antipassive, however either the subject or the object must be a third person np. As the example in (5c) shows, the verb agrees with whichever np is highest on an animacy hierarchy. If neither the subject or the object is a third person np then the active voice is used. This shows that the primary function of the focus antipassive is to distinguish between two 3rd person nps in the context of questions, relative clauses and clefts. Other languages, such as the Bantu language Sesotho, use passives in these contexts. The focus antipassive cannot be used if the subject and possessor of the object have the same referent. In such situations Quiche speakers use the regular active voice, see (6).

(6) a. * are: ri: at x-at-q'alu-n ri: aw-alk'uwa'al
focus the you PERF-2A-hug-FOC_AP the 2E-children
'It was you who hugged your children.'

b. are: ri: at x-e:-a-q'alu-j ri: aw-alk'uwa'al
focus the you PERF-6A-2E-hug-TERM the 2E-children
'It was you who hugged your children.'

The second antipassive construction in Quiche, the absolutive

antipassive, is also productive in the language, but there are a number of transitive verbs which do not have absolutive forms (for example, -esa:j 'to take out', -il 'to see' -cha:ji:j 'to take care of', -woq'e:j 'to cry over'). A number of other verbs seem to appear almost exclusively in the absolutive, e.g. -yaja-n 'to scold', -tzijo-n 'to talk', and -chaku-n 'to work'. These verbs also demonstrate that the Quiche absolutive voice is not equivalent to the connative construction (e.g. cut at) which Guerssel et al. (1985) claim only applies to verbs whose conceptual structure contains an effect clause and a contact clause. In absolutive constructions the direct object np may optionally be expressed in an oblique phrase headed by a preposition, see (7). The absolutive can be used with two nonthird person nps.

(7) k-in-yoq'-on (che: le: in-ta:t) [from Mondloch 1981]
IMPERF-1A-mock-ABS at the 1E-father
'I mock (at my father).'

Mondloch (1981:186) states that one function of the absolutive voice is "to delete or demote an indefinite, obvious or insignificant transitive object." It can also be used to distinguish between a third person subject and object.

In case you haven't followed all of this strange language stuff, the main point is that the extensive cross-referencing system on the Quiche verb fails to distinguish between a third person subject and object. In such cases, Quiche speakers may use a passive or antipassive construction. In fact, the passive1 and the focus antipassive constructions are limited to contexts where the active verb would be ambiguous. The focus properties of the passive and antipassive constructions are secondary. Quiche speakers use word

order and pronouns as the primary focusing devices. The grammatical relations of subject and object in Quiche are relatively independent of focus or topicalization functions.

At this point I should probably turn things over to my fellow panelists and allow them to explain how functionalism could account for the acquisition of the Quiche nonactive voices. I can't see how functionalist theories would make any testable predictions. In the remaining time I'll point out some difficulties I found in attempting to develop a functionalist account.

One problem is that the nonactive voices in Quiche do not have the same function as their English counterparts. A perspective which emphasizes a similarity of function over form cannot predict how children acquire forms that serve different functions. In fact, it seems unreasonable in a functionalist theory even to compare the acquisition of passives in English and Quiche. It would probably be more legitimate to compare children's use of passive in English with Quiche children's use of variable word order and emphatic pronouns. Ultimately, functionalist theories don't permit very explicit hypotheses because no one knows any precise way of stating the functions of language independently of the forms which encode the functions. I can't tell you whether any Quiche form serves the exact function that passives play in English. I find it extremely unsettling to have a theory which claims it is illegitimate to compare English and Quiche passives.

For the sake of an argument, however, let's ignore this problem and ask how the English and Quiche passives compare. Bresnan (19) and Wasow (1978) argue that English actually contains two distinct

types of passive rules. One operates at the syntactic level while the other operates at the lexical level. The lexical rule creates adjectival forms that may then undergo un- prefixation while the syntactic operation does not change the lexical category and, as a result, does not feed the rule of un- prefixation. The only way a functionalist theory has of explaining this distinction is to assume that the two rules serve different functions. A functionalist theory cannot explain why one rule would have more exceptions than the other.

Will Norman (1978?) has argued that the two Quiche passives may also be distinguished by assuming they result from the operation of rules on the syntactic and lexical levels. He argues that passive1 is syntactic while passive2 is lexical. Recall that passive2 adds its own aspectual meaning to the construction. It also changes the meaning of some verbs unpredictably and interacts with other rules in a way that is best explained by assuming it is lexical.

This raises an intriguing question of how the acquisition of lexical and syntactic passives in Quiche compares to their acquisition in English. A structuralist theory assumes there is a reason to compare the lexical rules with one another and apart from the syntactic rules. A functionalist theory would not make such a distinction; it would only assume that these were four distinct rules with four distinct functions. It isn't even worth asking in general how the acquisition of lexical rules compares with the acquisition of syntactic rules in a functionalist theory.

Another problem I face in making a comparison between English and Quiche is that Quiche speakers use the passive voice more frequently than English speakers. Contrary to popular belief, there is no reason

to associate differences in frequency exclusively with functionalist theories. Structuralist theories also predict that the frequency of any given form will reflect its use in different contexts. What functionalist theories need to show is that they make predictions that are attributable to differences in function, not frequency. The more frequent use of nonactive voices by Quiche caretakers is correlated with their children's more frequent usage. A rough comparison of the frequency of passives in English and Quiche is shown in (8)

(8) Comparison of passive frequencies in English and Quiche

English (from Pinker, Lebeaux & Frost 1987)

Children	Ages	MLU	Hours Recorded	No. of Passives
Adam	2;3-4;11	2.00-5.20	110	72
Eve	1;6-2;3	1.50-4.26	40	10
Sarah	2;3-5;1	1.74-4.10	139	32
Allison	1;5-2;10	1.73	4	2
Quiche				
Al Tiyaan	2;1-2;10	1.07-3.30	16	19
Al Chaay	2;9-3;6	1.57-4.31	24	99
A Carlos	3;0-3;10	1.59-3.69	20	68

Van Valin (1987) provides the clearest discussion of voice acquisition from the standpoint of a functional theory of grammar. Foley & Van Valin's (1984) Role and Reference Grammar distinguishes between two types of 'subjects.' Some languages select subjects solely on the basis of the np's semantic features. Other languages select subjects on the basis of the pragmatic/discourse features of the nps. One characteristic of languages with pragmatic subjects is a passive or antipassive construction that changes the semantic role of the

subject. Both English and Quiche are languages with pragmatic subjects.

Van Valin claims that RRG predicts children would first fail to distinguish between the different possible semantic roles of a pragmatic subject. They would treat all languages as though they contained only semantic subjects. This, he states, accounts for the failure of children learning English 'to comprehend passives correctly for a considerable period of time'. He contrasts the acquisition of the passive in English with the acquisition of passive in Sesotho, a southern Bantu language. Sesotho also has a pragmatic subject, but Van Valin states that the crucial feature of the subject in Sesotho is that it is always definite, referential and highly topical. Van Valin claims that this 'direct form-function correlation' is responsible for the appearance of full passives in children's speech as early as 2.8 years. Thus, the guiding acquisition principle for Van Valin is the same as Karmiloff-Smith's (1979) or Dan Slobin's (1973) that one form should serve one function.

We can test Van Valin's proposal by seeing whether Quiche subjects are always 'definite, referential and highly topical.' If they are Van Valin predicts Quiche children would use nonactive voices as early as Sesotho-speaking children. If not, then Quiche children should use nonactive voices as late as English-speaking children. I list some sentences from my transcripts of adult Quiche speech in (9). As you can see, it is not necessary that Quiche subjects be definite.

(9) Quiche sentences with indefinate subjects

The structure of Quiche permits the acquisition of focus and topicalization to be separated from the acquisition of voice alternation. The passive and antipassive constructions include a focusing role by default so it is possible to predict that voice alternation is more complex than word order changes. We cannot predict on the basis of function alone however, how long it would take before children learned to focus or topicalize a np by means of word order changes. In fact Quiche children use flexible word orders from the beginning (see 8). In this respect, they resemble children acquiring Finnish (Bowerman 1973) and Turkish (Slobin 1982).

(8) Word order in Quiche children's 3-term utterances

	Al Tiya:n				Al Cha:y				A Carlos			
Samples	VOS	VSO	SVO	OVS	VOS	VSO	SVO	OVS	VOS	VSO	SVO	OVS
1-3	-	-	-	-	2	1	-	2	-	-	1	1
4-6	-	-	-	-	19	4	5	1	1	-	5	-
7-9	-	-	1	-	14	5	2	1				
10-12	-	-	-	-	11	14	7	-				
13-15	1	4	4	-	6	12	6	2				

The primary function of the passive1 and focus antipassive constructions is to provide an unambiguous means of distinguishing between two 3rd person antagonists. There is some reason to suspect that the children's use of passive1 and focus antipassive constructions might be tied to the children's acquisition of the 3rd person cross-referencing markers on verbs. I see two distinct possibilities. One is that the children realize the main function of these constructions is to disambiguate subjects and objects. Before children acquired the cross-referencing markers they might use the passive and antipassive constructions to compensate for the lack of

verbal morphology. A second possibility is that children could only learn the disambiguating function of the passive1 and focus antipassive constructions after they controled the 3rd person cross-referencing system on verbs. It seems reasonable then to predict that Quiche children wouldn't begin to use passive 1 and focus antipassive constructions until they had starting using the 3rd person cross-referencing markers on verbs with some degree of success.

Data on the children's use of the 3rd person cross-referencing markers is provided in (9).

(9) The use of 3rd person markers on verbs (expressed as % used in obligatory contexts)

Samples	Al Tiya:n	Al Cha:y	A Carlos
1-3			9
4-6			66
7-9			46
10-12			55
13-15			87

Data on the children's use of passive1 and the focus antipassive is provided in (10).

(10) Use of the passive1 and focus antipassive constructions

Samples	Al Tiya:n	Al Cha:y	A Carlos
1-3			
4-6			
7-9			
10-12			
13-15			

References

Bresnan, J. W. 1982. Passive. In J. W. Bresnan (Ed), The Mental Representation of Grammatical Relations. Cambridge, MA: MIT Press.

Du Bois, John W. 1987. The discourse basis of ergativity. Language 63.805-855.

Foley, William A. & Van Valin, Robert D. Jr. 1984. Functional Syntax and Universal Grammar. Cambridge: CUP.

Guerssel, Mohamed, Kenneth Hale, Mary Laughren, Beth Levin & Josie White Eagle. 1985. Papers from the parasession on Causatives and Agentivity. CLS 21, part 2, pp. 48-63.

Karmiloff-Smith, A. 1979. A Functional Approach to Child Language: A Study of Determiners and Reference. Cambridge: CUP.

Mondloch, James. 1978. Disambiguating subjects and objects in Quiche. Journal of Mayan Linguistics 1.3-19.

Mondloch, James. 1981. Voice in Quiche Maya. Unpublished doctoral dissertation, SUNY Albany.

Nichols, J. 1986. Head-marking and dependent-marking grammar. Language 62. 56-119.

Slobin, Dan I. 1973. Cognitive prerequisites for the development of grammar. In Ferguson & Slobin (Eds), Studies of Child Language Development. New York: Holt, Rinehart & Winston.

Van Valin, Robert D. Jr. 1987. Some implications of a functionalist theory of syntax for language acquisition. ms. Linguistics Program, University of California, Davis.

Wasow, T. 1977. Transformations and the lexicon. In P. Culicover, T. Wasow & A. Akmajian (Eds), Formal Syntax. New York: Academic Press.