Demuth, K. 1992. Acquisition of Sesotho. In D. Slobin (ed.), *The Cross-Linguistic Study of Language Acquisition,* vol 3, 557-638. Hillsdale, N.J.: Lawrence Erlbaum Associates.

The Acquisition of Sesotho*

I. Introduction

This chapter focusses on the acquisition of Sesotho, a southern Bantu[1] language (Guthrie (1967) zone 32.1) spoken by approximately 4 million speakers, about half of whom reside in the country of Lesotho, the others living in South Africa (SA Yearbook 1987-88). Sesotho (or Southern Sotho) is part of the Sotho language group which also includes various dialects of Setswana (spoken in Botswana and South Africa) and Sepedi and related dialects (or Northern Sotho, spoken in South Africa). Setswana, one of the other languages discussed in this chapter, is, with some effort, mutually intelligible with Sesotho, though it exhibits several lexical, phonological, morphological and grammatical differences.

While descriptive grammars of several southern Bantu languages were written as early as the late 1800's and early 1900's, there is to date only a small, though growing, body of linguistic literature that is informed by current linguistic theory. This is particularly dissatisfying as Bantu languages like Sesotho provide a very rich source of information for several areas of language acquisition research. In particular, they exhibit complex tonal systems, pervasive morphological noun class and agreement systems, intricate tense/aspect systems, pro-drop, word order flexibility, in situ question formation, and many other grammatical phenomena which are yet to be fully explored. This chapter will therefore be necessarily selective, focussing primarily on those areas which have received the greatest

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* The work reported here would not have been possible without funding and support over the years from a Fulbright-Hays Fellowship, a Social Science Research Council Fellowship and Grant, Indiana University, the University of California at Berkeley, Boston University, NSF Grant #BSN-8709938, the National University of Lesotho and Brown University. I would like to thank Jill de Villiers and Jim Morgan for comments on previous versions of this manuscript.

[1] The term 'Bantu' has been traditionally used by linguists to refer to a group of genetically related languages of the Niger-Congo family characterized by, among other attributes, their extensive noun-class and agreement systems. The appropriateness of this term is today being questioned by many speaker-linguists of these very languages. It will be used in this chapter for lack of a viable, universally agreed upon alternative at this time.

theoretical linguistic and/or acquisition attention to date. After a brief grammatical sketch of Sesotho in Part I, I review the acquisition literature and discuss the specifics of acquisition in Part II. I conclude in Part III by outlining several directions for further research.

1. A Grammatical Sketch of Sesotho[2]

Sesotho is a language with basic SVO word order. It has a very productive noun class and agreement system which I discuss in section 1.1. It also has several interesting grammatical properties which I discuss in section 1.2, including pro-drop, word order flexibility, subject/object asymmetries, applicative and causative constructions, passives, question formation, relative clauses and clefts, and finally locatives, expletives and impersonal constructions. I then turn to certain aspects of the phonological and tonal system in section 1.3.

In the following examples a modified Lesotho orthography is used. Sesotho makes a three-way distinction between stops - voiced, ejective and aspirated (e.g. /b/, /p/, and /p^h/); phonemic aspiration is marked by 'h' in Lesotho orthography and will be retained here. Other consonants, following Lesotho orthography, are represented as 'hl' = voiceless lateral fricative, 'q' = palatal-alveolar click, 'ng' = velar nasal, and 'ny' = palatal nasal. Long nasals or liquids are written as geminates, and the first nasal becomes syllabic.(see Tables 3. and 4., section 1.3.1 for more detail). The tonal system distinguishes between High and Low tones; I mark High and high-falling tones as ´ and ^ respectively, lowered High (mid) as +, and leave Low tone unmarked. Sesotho is also characterized by phrase-final penultimate lengthening; non-predictable lengthening will be represented with a colon (:).

The reader will also want to pay close attention to the grammatical glosses. Glossing conventions are as follows:

ADJ=adjective
APL=applicative/benefactive
CAUS-causative
CONJ=conjunction
COP=copula
DEM=demonstrative pronoun
EXT=verbal extension
FUT=future marker
LOC=locative marker

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2 For a more extensive descriptive treatment of Sesotho grammar the reader is referred to Doke & Mofokeng (1957).

M=mood
NEG=negative marker
OBJ=object clitic
PASS=passive
PAST/CONT=past continuous tense (*ne*)
PERF=perfect
PN=independent pronoun
POSS=possessive
POT=potential
PREP=preposition (*ká*)
Q=question marker
RF=reflexive
REL=relative marker
RL=verbal relative marker
SM=subject marker
T/A=tense/aspect
8=noun class 8
1sSM=1st person singular subject marker

A typical Sesotho sentence reads:

(1) ba-na‰ ba‰-rat-a‰ le-be‰se le‰-le-cha‰
2-children 2SM-like-M 5-milk 5ADJ-5-new
'The children like fresh milk'

where the lexical subject *ba-na* 'children' is the same class as the subject marker *ba*; both are class 2. The subject marker is prefixed to the verb, and the final vowel of the verb indicates mood (e.g. indicative, subjective). The adjectival markings *le* (class 5) are the same as the the noun class prefix on the object *le-bese* 'milk'. The reader may want to refer back to these orthographic and glossing conventions during the course of this chapter.

1.1 The Nominal System

Bantu languages are typically characterized by a set of singular/plural noun class prefixes, where the nominal stem is invariant. Thus, in (1) above, the nominal stem for 'milk' is *-bese*, and affixing the plural class marker would yield 'types of milk' *ma-bese*. The Sesotho noun class prefixes (and corresponding sample nouns) are listed below in Table 1.

	Class	Singular	Class	Plural
'person'	1	mo-tho	2	ba-tho
'aunt'	3	rakha‰di	4	bo-rakha‰
'dress'	5	mo-se‰	6	me-se‰
'day/sun'	7	le-tsatsi‰	8	ma-tsatsi
'tree'	9	se-fate	10	di-fate
'health'	14	bo-phelo		
'to cook'	15	ho-phe‰ha		

Table 1. Sesotho Singular and Plural Noun Class Prefixes[3]

Though most class 14 nouns are abstract and take no plurals, those that can take plurals derive them from class 6. Unlike many Bantu languages, the locative noun class prefixes (classes 16, 17 and 18) in Sesotho have been largely lexicalized and, with the slight exception of class 17 *ho* are no longer productive (see Demuth 1989c).

The noun class system is part of a much larger inflectional agreement system that permeates most Bantu languages. In this system subject-verb agreement, adjectival agreement, possessives, demonstratives, independent pronouns, relatives, and object clitics all 'agree' in noun class with their head noun. In other words, there is an agreement 'feature' associated with each NP, and it is usually phonologically related to the noun class marker. The Sesotho nominal agreement system is presented in Table 2.

Class	N. Cl. Prf	Subj M.	Obj M.	Adjective*	dim PN**	Ind PN	Poss PN	Rel PN***
1	mo-	o-	-mo-	e-mo-	enwa	yena	wa-	ya
1a	o	o-	-mo-	e-mo-	enwa	yena	wa-	ya
2	ba-	ba-	-ba-	ba-ba-	bana	bona	ba-	ba
2a	bo-	ba-	-ba-	ba-ba-	bana	bona	ba-	ba
3	mo-	o-	-mo-	o-mo-	ona	oona	wa-	o
4	me-	e-	-me-	e-me-	ena	yona	ya-	e
5	le-	le-	-le-	le-le-	lena	lona	la-	le
6	ma-	a-	-a-	a-ma-	ana	ona	a-	a
7	se-	se-	-se-	se-se-	sena	sona	sa-	se
8	di-	di-	-di-	tse-N-	tsena	tsona	tsa-	tse
9	o	e-	-e-	e-N-	ena	yona	ya-	e
10	di-	di-	-di-	tse-N	tsena	tsona	tsa-	tse
14	bo-	bo-	-bo-	bo-bo-	bona	bona	ba-	ba
15	ho-	ho-	-ho-	ho-ho-	hona	hona	ha-	ho

*Note that, expecting class 1 and 1a, the first formative is idintical to (indied dirived from) the subject relative marker.

** There are three positions for Sesotho dimonstrative pronouns (proximity to speaker, proximity to hear and distant from both), each of which have 2 forms. The form given here is the one of 'proximity to speaker' and takes HH tone.

*** This form is the subject relative marker.

Table 2. The Sesotho Noun Class and Agreement System

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3 High tone is marked (´), while Low tone is left unmarked.

The nominal agreement system is displayed in (2) below, where each noun-class and agreement feature is marked by the relevant number in the gloss.

(2) ba-sha‰nya‰na ba‰-ne ba‰-fu‰ma‰n-e‰ di-pere‰kisi‰ tse‰-mona‰te

2-boys 2-DEM 2SM-find-PERF:M 10-peaches 10ADJ-good

'Those boys found some tasty peaches'

The demonstrative pronoun *ba-ne* 'those' and the subject-marker *ba-* both 'agree' with the noun *ba-shanyana* 'boys'; both are noun class 2. Likewise, the adjective *tse-monate* 'nice/tasty' 'agrees' in noun class with the head noun *di-perekisi* 'peaches'. There is usually a degree of phonological transparency between the noun class prefixes and the respective agreement markers (compare the first two columns of Table 2.).

Though the Proto-Bantu noun class system was at one time semantically based (e.g. class 1/2 = human, class 5/6 = paired body parts and natural phenomena, class 9/10 = animals, class 14 = mass nouns and abstract nouns, class 15 = infinitives, classes 16-18 = locatives) (cf. Hiene 1982), much of the semantic productivity of the Bantu noun class system is much more restricted today. Thus, while one can still add a class 1/2 prefix, say, to an animal from class 9/10, thereby giving it 'human' attributes (as in folktales), loan words are not assigned on the basis of semantics. Rather, loan words fall into a 'default' class (in Sesotho this is class 9), or are assigned to the class that most closely resembles the its first syllable. Thus, in Sesotho, *buka* 'book' and *tafole* 'table' (< Afrikaans *boek*, *tafel*) have been incorporated into class 9, their plurals thereby falling into class 10 *(buka/di-buka*, *tafole/di-tafole*). However, *se-tulo* 'stool/chair' and *bo-rikhwe* 'trousers' (< Afrikaans *stoel*, *broek*) are assigned on a phonological basis to classes 7 *se-* and 14 *bo-* respectively. The plurals are then derived accordingly (*se-tulo/di-tul*o = 7/8, *bo-rikhwe/ma-rikhwe* = 14/6). Psycholinguistic experiments with adults (Burton & Kirk 1976) provide further evidence that novel nouns in Kikuyu, a Bantu language spoken in Kenya, are productively incorporated into the noun class system on a phonological rather than semantic basis.

The Sesotho noun class system can be considered more or less 'typical' of that found in many other Bantu languages. The exact number of synchronically productive noun classes, and their particular phonological shape, varies somewhat from language to language, as does the default class that incorporates new nouns into the system. Some languages, like Zulu, have an additional feature known as a pre-prefix, where nouns are marked with V-CV-

rather than CV-, the pre-prefix often being a near copy of the prefix vowel. Thus, *mo-tho* 'person' in Sesotho is rendered as *u-mu-ntu* in Zulu.

It should also be noted that certain noun class prefixes are subject to omission by adult speakers of Sesotho (Demuth 1988a). Classes 5 *le-*, 7 *se-*, 8 *di-* and 10 *di-* are frequently dropped in adult speech, especially when a demonstrative or possessive pronoun is part of the NP. Thus, one finds examples of *ø-tsatsi le-na* < *le-tsatsi le-na* 'day this' = 'today', or *ø-eta sa-ka* < *se-eta sa-ka* 'shoe my' = 'my shoe' (see Demuth, Faraclas & Marchese 1986).

1.1.2 Demonstratives, Adjectives and Relatives

Demonstrative pronouns agree in noun class with the head noun. This is illustrated in (3):

(3) di-ntjá ts-éna dí-nw-el-é le-bése
10-dog 10-DEM 10SM-eat-PERF-M 5-milk
'These dogs drank the milk'

The forms for both adjectival and relative markers are derived from the demonstrative forms.

Bantu languages generally have few adjectives (i.e. about 20, plus color terms), most of which are numerals and terms of size or quality. Adjectives are morphologically marked by one or two agreement particles (ADJ) which are prefixed to the adjectival stem, as in (4).

(4) ke-batl-a le-bése lé-le-tle‰
1sSM-want-M 5-milk 5ADJ-5-nice
'I want good milk'

Sesotho also has about 19 nominal adjectives, which take only the second part of the adjectival marker (identical to the relative marker), as shown in (5).

(5) ke-batl-a le-bése lé-tala‰
1sSM-want-M 5-milk 5ADJ-uncooked
'I want raw/uncooked milk'

The relative marker is also used with verbs to form relative clauses. There are two sets of relative markers, those that mark subject relatives, as in (6),

(6) ke-batl-a le-bése lé beh-il-w-é-ng tafolé-ng
1sSM-want-M 5-milk 5REL put-PERF-PASS-M-RL 9table-LOC
'I want the milk that was put on the table'

and those that mark object or oblique relatives, as in (7).

(7) ke-batl-a le-bése léo ré-le-béh-il-é-ng tafolé-ng
1sSM-want-M 5-milk 5REL 1pSM-5OBJ-put-PERF-M-RL 9table-LOC
'I want the milk that we put (it) on the table'

In both cases, the relative marker 'agrees' with the head noun in noun class.

1.1.3 Possessives

Possessives also participate in the noun class agreement system, as shown in Table 2. Possessives can be formed with either pronouns (8) or nouns (9):

(8) di-jó tsá-ka
8-food 8POSS-my
'my food'

(9) di-jó tsá-ntjá
8-food 8POSS-9dog
'the dog's food'

In both cases the possessive marker agrees with the head noun (e.g. *dijo* 'food'), and not with the pronoun or noun which does the possessing.

1.1.4 Independent Pronouns[4]

Independent pronouns can stand by themselves in the place of a noun. They contrast with subject and object markers which cliticize (see sections 1.1.5). Independent pronouns agree with a head noun that is their referent, even if that referent is not available in the immediate linguistic context. Independent pronouns are generally used for contrastive focus or

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[4] Independent pronouns have traditionally be known as 'absolute pronouns' (e.g. Doke & Mofokeng 1957).

emphasis (Demuth, 1989e), as seen in (8), where the referent of the independent pronoun belongs to class 2 - perhaps *basadi* 'women'.

(8) Thabo ó-rat-á di-perékísi, fééla bo-ná bá-rat-á di-ápole
1T 1SM-like-M 10-peach but 2-PN 2SM-like-M 10-apple
'Thabo likes peaches, but *they* like apples'

1.1.5 Subject and Object Markers[5]

In Sesotho, subject markers appear as obligatory preverbal clitics that agree with the lexical subject. This is shown in (11)

(11) Thabo ó-pheh-íl-é di-jó
1T 1SM-cook-PERF-M 8-food
'Thabo cooked food'

Note that the subject marker 'agrees' with the lexical subject in noun class; both are class 1.

The object marker is optional, occurring in complementary distribution with the lexical object (compare (12) with (13)).

(12) Thabo ó-rek-á di-jó
1T 1SM-buy-M 8-food
'Thabo is buying food'

(13) Thabo óá[6]-di-rék-a+
1T 1SM-8OBJ-buy-M
'Thabo is buying it'

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[5] Subject markers and object markers are generally known as subject concords and object concords in the classic literature on Bantu languages. I will call them 'markers' here, in keeping with more recent work on Bantu languages (e.g. Bresnan & Mchombo 1987).

[6] The present tense affirmative subject marker suffixes an *-a* when the verb has no lexical argument (i.e. is either intransitive or takes an object marker). This suffix also shows up in the negative of the perfect aspect.

Note that the object marker *di-* still agrees in noun class with the logical object *di-jo* 'food'; both are class 8. Subject and object markers are also integrally tied to the word order flexibility of Sesotho and to issues of pro-drop. The status of subject and object markers within the grammar of Sesotho will be discussed in sections 1.2.2 and 1.2.3 below. I turn now to a discussion of these and related grammatical issues.

1.2 The Verbal and Grammatical System

The Sesotho grammatical system has many interesting phenomenon which are yet to be fully explored. I will restrict the following discussion to those areas where there has been both adequate linguistic analysis and corresponding acquisition research.

1.2.1 Word Order and Pro-drop Phenomena

Basic word order in Sesotho is SVO. The verbal complex is composed of prefixes including the subject marker, an optional tense/aspect marker, and an optional object marker, and suffixes including the possibility of various verbal extensions and/or the perfect tense/aspect marker and the final vowel which indicates mood. The morphemes of the verbal complex are ordered as shown in (14):

(14) (S) SM-(T/A)-(OBJ)-V-(EXT)/(PERF)/(PASS)-M (O)

Clauses in Sesotho are headmarked (Nichols 1986), i.e. the verb carries the marking of the subject in the form of the subject marker, as illustrated in (15). The lexical subject *Thabo* can then be dropped, as in (16), or postposed, as in (17).

(15) Thabo ó-pheh-íl-é di-jó
1T 1SM-cook-PERF-M 8-food
'Thabo cooked some/the food'

(16) ó-pheh-íl-é di-jó
1SM-cook-PERF-M 8-food
'S/he cooked some/the food'

(17) ó-pheh-íl-é di-jó Thabo
1SM-cook-PERF-M 8-food 1T
‘He cooked some/the food, Thabo’

While Sesotho has a basic SVO word order (18a), and allows VOS word order when the subject is inverted (18b), the nominal agreement system also permits the other four possible word orders if the object marker is also present (18c-f). This results in additional pragmatic focus on the extraposed NP(s) (Demuth & Johnson 1990; Demuth 1989e).

(18)

a)	SVO	Thabo ó-pheh-íl-é di-jó 1T 1SM-cook-PERF-M 8-food 'Thabo cooked some/the food'
b)	VOS	ó-pheh-íl-é di-jó Thabo
c)	OSV	di-jó Thabo ó-di-phéh-il-e
d)	VSO	ó-di-phéh-il-e Thabo di-jó
e)	SOV	Thabo di-jó ó-di-phéh-il-e
f)	OVS	di-jó ó-di-phéh-il-e Thabo

Thus, while Sesotho has no overt case marking, the nominal agreement system facilitates the recovery of nominal referents and permits flexibility in the placement of lexical NPs.

Bantu languages show varying amounts of flexibility with regard to the ordering of verbal arguments in double object constructions. Sesotho has the interesting property of ordering the most animate NP closest to the verb (Morolong & Hyman 1977), resulting in the grammaticality of (19) and the ungrammaticality of (20).

(19) Thabo ó-pheh-éts-é Mphó di-jó
1T. 1SM-cook-APL:PERF-M 1M 8-food
'Thabo cooked Mpho some food'

(20) *Thabo o-pheh-ets-e di-jo Mpho
1T 1SM-cook-APL:PERF-M 8-food 1M
'Thabo cooked some food for Mpho'

When the animacy of the NPs is equal, i.e. both are either animate or inanimate, the NPs can be interchanged. This is shown by the grammaticality of both (21) and (22).

(21) Thabo ó-pheh-éts-é di-jó mo-kéte
1T 1SM-cook-APL:PERF-M 8-food 3-feast
'Thabo cooked food for the feast'

(22) Thabo ó-pheh-éts-é mo-kété di-jó
1T 1SM-cook-APL:PERF-M 3-feast 8-food
'Thabo cooked food for the feast'

1.2.2 Subjects

The status of subject markers in Bantu languages has been the topic of recent theoretical linguistic interest (e.g. Bresnan & Mchombo 1987, Demuth & Johnson 1990). Bantu languages generally exhibit pro-drop phenomena; i.e. well formed sentences do not have to include a lexical subject as English does. However, Bantu languages differ from pro-drop languages like Italian (e.g. Burzio 1986) in that the subject marker is alternatively either an agreement marker, showing grammatical agreement between the subject NP and the verb (23), or a clitic pronoun (incorporated pronominal) when the subject NP has been dropped (24).

(23) Thabo ó-pheh-íl-é di-jó
1T 1SM-cook-PERF-M 8-food
'Thabo cooked some/the food'

(24) ó-pheh-íl-é di-jó
1SM-cook-PERF-M 8-food
'He cooked some/the food'

Thus, the subject marker is always obligatory, but has the potential for fulfilling two different types of grammatical roles; it can be analyzed alternatively as a grammatical agreement marker (when the lexical subject is present), or as an incorporated pronominal (when no lexical subject is present). This distinction is perhaps best characterized within a theory of Lexical Functional Grammar (see Bresnan & Mchombo 1987).[7]

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[7] See also a discussion of subject differences in Role & Reference Grammar (Foley & Van Valin 1984).

Sesotho, and other Sotho languages (Louwrens 1981), have a constraint that restricts subjects to topical (old, given, thematic) referents. While many other languages, including English and Italian, are also disposed to placing given referents in subject position and introducing new referents in object position, tendency is greater in many Bantu languages. Compare the English and Sesotho question/answer pairs below.

(25a) Where did you get that book?

(25b) John gave it to me

(25c) ?I was given it by John

(25d) I got it from John

(26a) o-n‰k-íl-é búka kae?
2sSM-get-PERF-M 9book where?
'Where did you get the book ?'

(26b) ??Thabo o-m-ph-il-e eona
1T 1SM-1sOBJ-give-PERF-M 9DEM
'Thabo gave it to me'

(26c) ke-e-f-úw-e ké Thabo
1sSM-9OBJ-give-PASS-M by T
'I was given it by Thabo'

Note that the English answers allow for the questioned NP to be encoded in subject position (25b), while this is highly questionable in Sesotho (26b), even though the sentence itself is grammatical and would be appropriate in another context. Likewise, the use of the passive in English, though 'grammatical', is awkward (25c), but the passive is the grammatical option in Sesotho(26c). Sesotho subjects select for Topics while English subjects tend to prefer Agents; even though 'John' is new information in (25b) English allows it to occur in subject position because it is the agent. Given an option between coding given information versus agents in subject position, English will choose the agent. Alternatively, English can encode the topic in subject position, but when it does, agentivity is suppressed (25d). Thus, English subjects tend to be Agent oriented, while Sesotho subjects, and those of several other Bantu languages, tend to be Topic oriented. Sesotho takes this to an extreme, as shown by the ungrammaticality of question words in subject position (27).

(27) *mang o-pheh-il-e di-jo?
who 1SM-cook-PERF-M 8-food
'Who cooked some/the food?'

Subjects can only be questioned from the by-phrase of a passive (28),

(28) di-jó dí-pheh-íl-w-e+ ké mang?
8-food 8SM-cook-APL:PERF-PASS-M by who
'Who cooked the food?'

or by use of a cleft (29).

(29) ké máng yá pheh-íl-é-ng dijó?
COP who 1REL cook-PERF-M-RL 8-food
'It's who that cooked the food?'

It should be noted here that there is a difference between Topic oriented subjects (i.e. true arguments of the verb) and the ability to Topicalize. Sesotho can also topicalize (i.e. *Thabo, kea-mo-rata* 'Thabo, I like him), but when it does these NPs (in this case *Thabo*) function as adjuncts, not as arguments of the verb.

The Topic orientation of Sesotho subjects will be shown to have important implications for the acquisition of Sesotho grammar.

1.2.3 Objects & Reflexives

As noted in section 1.1.5, Sesotho object markers differ from subject markers in that they are optional rather than obligatory. Object markers occur in complementary distribution with the lexical object NP; this is shown again in (30) and (31).

(30) Thabo ó-rek-á di-jó
1T 1SM-buy-M 8-food
'Thabo is buying food'

(31) Thabo óá-di-rék-a+
1T 1SM-8OBJ-buy-M
'Thabo is buying it'

As was seen in (18d), the lexical object can be postposed when the object marker is present, this is shown again in (32).

(32) Thabo óá-di-rék-a+ di-jó
1T 1SM-8OBJ-buy-M 8-food
'Thabo is buying it, the food'

Notice, however, that the lexical object is tonally external to the VP; i.e. the tone on the verb *réka* 'buy' is HH (high high) in (30) when there is no object marker and the lexical object *dijó* 'food' is part of the VP. However, once the object marker has been incorporated into the VP in both (31) and (32), the tone on the verb *réka* 'buy' is HM (high mid) in both cases, signaling the end of the VP (see discussion of tone in section 1.3.4). Thus, the lexical object in (32) is no longer an argument of the verb, but only an adjunct.

As discussed in section 1.2.1, the arguments of the Sesotho verb are ordered according to animacy, the most animate occurring closest to the verb. If animacy is equivalent, either NP can occur next to the verb. In Sesotho only NPs that can occur next to the verb can appear as object markers (Morolong & Hyman 1977). This is shown in (33)-(36).

(33) Thabo ó-mó-pheh-éts-é di-jó
1T 1SM-1OBJ-cook-APL:PERF-M 8-food
'Thabo cooked him food'

(34) *Thabo o-di-pheh-ets-e Mpho
1T 1SM-8OBJ-cook-APL:PERF-M 1M
'Thabo cooked it for Mpho'

(35) Thabo ó-dí-pheh-éts-é mo-kéte
1T 1SM-8OBJ-cook-APL:PERF-M 3-feast
'Thabo cooked it for the feast'

(36) Thabo ó-mó-pheh-éts-é di-jó
1T 1SM-3OBJ-cook-APL:PERF-M 8-food
'Thabo cooked food for it'

Furthermore, Sesotho does not allow more than one object marker, as shown by the ungrammaticality of (37).

(37) *Thabo o-mo-di-pheh-ets-e
1T 1SM-3OBJ-8OBJ-cook-APL:PERF-M
'Thabo cooked it (food)or it (the feast)'

The invariant Sesotho reflexive *i-* occurs adjacent to the verb and functions grammatically like an object marker; it is also disallowed from co-occurring with an object marker, as shown in (38).

(38) *Thabo o-di-i-pheh-ets-e
1T 1SM-8OBJ-RF-cook-APL:PERF-M
'Thabo cooked it for himself'

The Sesotho restriction permitting only one object marker contrasts with many other Bantu languages, including closely related Setswana, where two object markers (and even a reflexive) are permitted concurrently (Cole 1955:233). While there has been no comprehensive study of the restrictions on Sesotho reflexives, they appear to be locally bound and must be correferent with the subject of that clause, as in (39).

(39) John$_i$ ó-náhan-a hore Thabo$_j$ óá-i$_j$-thát-a+
J 1SM-think-M COMP1T 1SM-RF-like-M
'John$_i$ thinks that Thabo$_j$ likes himself$_j$

1.2.4 Causatives and Applicatives

Bantu languages typically encode grammatical relations through the use of 'verbal extensions' which are infixed before the final vowel of the verb radical. In Sesotho these extensions include the causative (*-is-*) and the applicative/benefactive (*-el-*) among several others (see Doke & Mofokeng (1957)). Examples of these constructions are provided below:

(40) Thabo ó-rek-ís-a di-jó
1T 1SM-buy-CAUS-M 8-food
'Thabo sells food'

(41) Thabo ó-phéh-el-a Mphó di-jó
1T 1SM-cook-APL-M 1M 8-food
'Thabo cooks food for Mpho'

In addition to these verbal extensions, the perfect tense/aspect marker *-il-* and the passive *-w-* are also infixed before the final vowel, as shown in (42) and (43).

(42) Mphó ó-phéh-el-w-a di-jó
1M 1SM-cook-APL-PASS-M 8-food
'Mpho is being cooked food'

(43) di-jó dí-pheh-il-w-e
8-food 8SM-cook-PERF-PASS-M
'The food was cooked'

However, when a verbal extension and the perfect co-occur, coalescence results and the passive is added last.

(44) Mphó ó-pheh-éts-w-é di-jó
1M 1SM-cook-APL:PERF-PASS-M 8-food
'Mpho was cooked food'

Sesotho exhibits certain lexical and grammatical restrictions on when causative and applicative constructions can occur. Following Machobane (1989), Sesotho orders the causative before the applicative, as shown by the grammaticality of (45) and the ungrammaticality of (46a-b) respectively.

(45) ó-hód-is-ets-a mo-rádí ngwaná
1SM-grow-CAUS-APL-M 1-daughter 1child
'S/he brings up the child for her/his daughter

(46a) *o-hol-ed-is-a mo-radi ngwana
1SM-grow-APL-CAUS-M 1-daughter 1child
'S/he brings up the child for her/his daughter

(46b) *o-hol-ed-is-a ngwana mo-radi
1SM-grow-APL-CAUS-M 1child 1-daughter
'S/he brings up the child for her/his daughter

The ungrammaticality of (46a-b) is apparently due to the fact that, in terms of Case Theory (see Stowell 1981, Chomsky 1986), the causative controls inherent case, while the applicative controls structural case. As might be expected, this grammatical difference is manifested by other causative/applicative asymmetries. For instance, though neither causative nor applicative can occur with double argument verbs like *neha* 'give', the applicative can occur with S' (finite clause) complements (47), while the causative cannot (48).

(47) akhénté é-fúmán-éts-é mo-áhlódi hore ma-sole á-utsw-íts-é chelete
9lawyer 9SM-find-APL:PERF-M 1-judge COMP 6-soldiers 6SM-steal-PERF-M 9money
'The lawyer found out for the judge that the soldiers have stolen money'

(48) *akhente e-fuman-ts-its-e mo-ahlodi hore ma-sole a-utso-its-e chelete
9lawyer 9SM-find-CAUS-PERF-M 1-judge COMP 6-soldiers 6SM-steal-PERF-M 9money
'The lawyer made the judge find out that the soldiers have stolen money'

Likewise, while both arguments of an applicative verb can take object agreement and passivize, only the object of the causative verb (that receiving structural case) is allowed to move, thus accounting for the ungrammaticality of (49b-c).

(49a) rakhádí ó-hlátsw-is-a ba-ná di-kobo
1aaunt 1SM-wash-CAUS-M 2-children 10-blankets
'My aunt makes the children wash blankets'

(49b) *rakhadi o-di-hlatsw-is-a ba-na
1aaunt 1SM-10OBJ-wash-CAUS-M 2-children
'My aunt makes the children wash them

(49c) *di-kobo di-hlatsw-is-w-a ba-na ke rakhadi
10-blankets 10SM-wash-CAUS-PASS-M 2-children by 1aaunt
'The blankets are made to be washed by the children by my aunt'

Thus, Sesotho is intermediate between the more restricted system of languages like Chichewa, where both applicative and causative infixes add inherent Case, and more flexible languages like Xhosa and Kinyarwanda, where both applicatives and causatives add structural case (see Machobane 1989 for further detail).

1.2.5 Passives

Sesotho syntactic passives resemble English syntactic passives in several important ways. Both promote the object to subject position, and the agent optionally becomes the object of a by-phrase. The verb is then marked with passive morphology; in the case of Sesotho the passive is marked with the infix [w] or [uw] (causing preceding labial consonants to palatalize - *roba* 'break' > *robjwa/rojwa*). In Government-Binding terms (e.g. Chomsky 1981, Jaeggli 1986) there is NP movement from object position to subject position and the

absorption of accusative case. The passive morpheme absorbs the external theta-role which can optionally be assigned to an oblique object marked with the by-phrase marker *ké*.[8] Thus, as in English, the formation of verbal passive involves movement of the NP from [NP, VP] position (as the object of the verb) to [NP, S] position (as the subject of the verb) where it then receives nominative case.[9] As in English, a coindexed trace [e] is left behind after NP movement, forming an argument chain, or A-chain, as shown in (50).

(50) di-jó$_i$ dí-pheh-íl-w-e+ [e]$_i$ (ké Thabo)
8-food 8SM-cook-PERF-PASS-M (by T)
'The food was cooked (by Thabo)'

Unlike the restricted use of passives in English, passivization is a more productive grammatical process in many Bantu languages (e.g. Kimenyi 1980). This is due to the fact that most NPs can passivize. As Morolong & Hyman (1977:203) show for Sesotho, it is only in cases where there is a nonhuman benefactive and a human accusative (53b) that passivization is ruled out (though see certain restrictions with causative verbs discussed in section 1.2.4.).

(51a)ngwaná ó-pheh-éts-w-é di-jó
1child 1SM-cook-APL:PERF-PASS-M 8-food
'The child was cooked food'

(51b)di-jó dí-pheh-éts-w-é ngwaná
8-food 8SM-cook-APL:PERF-PASS-M 1child
'The food was cooked for the child'

---

[8] The reader will note that the by-phrase marker *ké* is homophonous with the copula *ké*. Both carry high tone, thereby contrasting with low toned *ke* - the 1st person subject marker.

[9] While Sesotho does not overtly mark case, abstract case can be assumed, nominative case being assigned when the NP in subject position agrees in noun class with the subject marker. See Machobane (1987) for further explication of a abstract case assignment and Sesotho passives.

(52a)mo-kété ó-pheh-éts-w-é di-jó
3-feast 3SM-cook-APL:PERF-PASS-M 8-food
'The feast was cooked food'

(52b)di-jó dí pheh-éts-w-é mo-kéte
8-food 8SM-cook-APL:PERF-PASS-M 3-feast
'The food was cooked for the feast'

(53a)baná bá-bíts-edíts-w-é mo-kéte
2child 2SM-call-APL:PERF-PASS-M 3-feast
'The children were invited to the feast'

(53b)*mo-kete o-bits-edits-w-e bana
3-feast 3SM-call-APL:PERF-PASS-M 2child
'The feast was called for the children'

(54a)mo-rena ó-bíts-édíts-w-é baná
1-chief 1SM-call-APL:PERF-PASS-M 2child
'The chief was called for the children'

(54b)baná bá-bíts-édíts-w-é mo-rena
2child 2SM-call-APL:PERF-PASS-M 1-chief
'The children were called for the chief'

Sesotho does not have adjectival passives as does English; as seen in section 1.1.2, Sesotho adjectives take specific adjectival morphology (see Table 2.). Passives of inchoative verbs, when used with perfect tense/aspect, may ambiguously indicate either a completed action or a resultant state, as in (55).

(55) di-jó dí-pheh-il-w-e
8-food 8SM-cook-PERF-PASS-M
'The food has been/(is in a state of having been) cooked'

However, while passives formed from inchoative verbs may semantically resemble English adjectival passives, they are formed syntactically as verbal passives (see Demuth 1989a).

Sesotho does, however have impersonal passives; these will be discussed along with other impersonal and expletive constructions in section 1.2.8. I turn now to a discussion of question formation, where passives also play an important role.

1.2.6 Questions

Sesotho declaratives are signaled by penultimate lengthening and by a declination in pitch (Doke & Mofokeng 1957). Thus, a statement is rendered as in (56),

(56) Thabo ó-pheh-íl-é di:-jó
1T 1sSM-cook-PERF-M 8-food
'Thabo cooked food'

where the colon represents penultimate lengthening, and the low tone on *di:-* is falling. Yes/no questions are signaled by the suspension of penultimate lengthening and declination, with the initial pitch starting at a somewhat higher register, and with the optional addition of the question marker *nâ:* at either the beginning or the end of the utterance, as in (57).

(57) (nâ:) Thabo ó-pheh-íl-é di-jó (nâ:)?
(Q) T 1sSM-cook-PERF-M 8-food (Q)
'Did Thabo cooked food?'

Though question formation has not been formally studied, there appears to be no syntactic movement nor addition of auxiliaries in Sesotho yes/no question formation.

Similarly, with information questions, Sesotho question words generally occur in situ, as illustrated in (58)-(60).

(58) o-batl-a-n‰g?
2sSM-want-M-what
'What do you want?'

(59) o-tsamay-a neng?
2sSM-go-M when
'When do you go?'

(60) o-y-a kae?
2sSM-go-M where
'Where are you going?'

However, like other types of new, non-given, non-topical information, Sesotho question words are only found in object or oblique position; only old, given, topical information is

allowed in subject position (see section 1.2.2). This means that no question words can occur in subject position, accounting for the ungrammaticality of (61).

(61) *mang o-batl-a di-jo?
who 1SM-want-M 8-food
'Who wants food?'

In order to question subjects, the subject must be 'moved' and questioned as the object of a passive by-phrase, or as the object of a cleft construction, as illustrated in (62) and (63) respectively:

(62) di-jó dí-bátl-w-a ké mang?
8-food 8SM-want-PASS-M by who
'Who wants food?' (lit. 'The food is wanted by who').

(63) ké máng yá bátl-á-ng di-jó?
COP who 1REL want-M-RL 8-food
'It's who that wants food?'

The cleft question is the focussed or marked alternative to the passive question. The prohibition on subject questions means that both passives and clefts play a prominent grammatical role in Sesotho grammar.

Thought there has yet to be a comprehensive study of Sesotho wh-movement and extraction phenomena, it appears that movement is local and restricted to passive and cleft constructions like those in (62) and (63).

1.2.7 Relative Clauses and Clefts

Relativization is a productive grammatical process in Sesotho; subjects, accusatives/datives, and genitives can all be relativized. Two sets of relative markers are used, one when the head noun functions as the subject of the relative clause (subject relatives) (64), and another when the head noun is an object (or oblique) of the relative clause (object relatives) (65) and (66). Both sets of relative markers must agree in noun class with the head noun. A resumptive pronoun, either an object clitic (65) or a possessive pronoun (66), is required when the head noun functions as an object or oblique in the lower clause. In other words, while there is an NP trace in subject relatives, Sesotho does not have a 'gap' in the embedded clause of object relatives.

(64) ba-tho$_i$ [bá$_i$ [e]$_i$-pheh-á-ng di-jó]
2-person$_i$ [2REL$_i$ [e]$_i$-cook-M-RL 8-food]
'people [that cook food]'

(65) ba-tho$_i$ [báo$_i$ ké-ba$_i$-rát-á-ng]
2-person$_i$ [2REL$_i$ 1sSM-2OBJ$_i$-like-M-RL]
'people [that I like (them)]'

(66) ba-tho$_i$ [báo$_i$ ké-batl-á-ng pere yá-bo-na$_i$]
2-person$_i$ [2REL$_i$ 1sSM-want-M-RL 9horse 9POSS-2-PN$_i$]
'people [whose horse I like]'

Headless, or free relatives are often found in Sesotho discourse, where the head noun has been mentioned previously in the discourse. The resulting clause commences with the relative marker that also functions somewhat as a demonstrative (67).

(67) .....báo ké-ba-mém-é-ng lapé-ng
2REL 1sSM-2OBJ-invite-PERF:M-RL (7)house-LOC
'(those)/that I invited (them) to the house'

In the case of locative relative clauses the relative marker is derived from the degenerate 'locative' class, as in (68).

(68) ....móo ré-ba-bón-é-ng ten‰g
18REL 1pSM-1OBJ-see-PERF:M-RL there
'(there)/where we saw them (there)'

Sesotho relative clauses are also marked by an invariant relative marker *-ng* which suffixes to the first verbal element (i.e. main verb or tense/aspect marker) of the relative clause, resulting in the contrast shown in (69) and (70) respectively.

(69) ba-tho bá pheh-á-ng di-jó
2-person 2REL cook-M-RL 8-food
'people that cook food'

(70) ba-tho bá né-ng bá-phéh-a di-jó
2-person 2REL PAST/CONT-RL 2SM-cook-M 8-food
'people that were cooking food'

Note that word order within the Sesotho relative clause is identical to that of non-focussed main clauses. However, relative clauses are formed from the participial mood (present, perfect, futures), taking high toned subject markers, participial negation, and participial tone (Melody I - see section 1.3.4).

Relative clauses also appear as part of cleft constructions. The cleft is formed with the copula *ke* and an extracted NP, as shown in (71).

(71) ké Thabo$_i$ [yá [e]$_i$ pheh-íl-é-ng di-jó]
COP 1T$_i$ [1REL [e]$_i$ cook-PERF-M-RL 8-food]
'It's Thabo [that cooked the food]'

And, as seen in section 1.2.6, the cleft can also be used to form a question, as in (72).

(72) ké máng$_i$ [yá [e]$_i$ pheh-íl-é-ng di-jó?]
COP who$_i$ [1REL [e]$_i$ cook-PERF-M-RL 8-food]
'It's who [that cooked the food?]'

As in other languages, clefts are used to focus information. In Sesotho, where subjects can not be questioned in situ, clefts like that in (72) serve as a focussed alternative to passives for questioning subjects.

1.2.8 Locatives and Impersonal/Expletive Constructions

Unlike many Bantu languages which have a productive locative class system (classes 16, 17, and 18) (e.g Chichewa - Bresnan & Kanerva 1989), the Sesotho locative system has been largely lexicalized, resulting in locative adverbs that take no separable locative prefixes (e.g. *fatse* 'down', *kantle* 'outside', *kahara* 'indoors', *kamora* 'behind', *hodimo* 'above'). Rather, than adding a locative prefix to a noun, Sesotho suffixes an invariant locative marker *-ng*.[10] Motion and direction ('at', 'to', 'from' are then encoded as part of the semantics of the verb (73)-(74)[11].

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[10] The reader may recall that another suffix *-ng* is used to mark relative clauses.

[11] Sesotho also has 'locative prepositions *ka* 'into' and *ho* 'to someone's place'. When these are used the locative suffix *-ng* is generally dropped.

(73) béh-á di-tápolé tafolé-ng
put-M 10-potatoe 9table-LOC
'Put the potatoes on the table'

(74) bá-il-é toropó-ng
2SM-go-PERF-M 9town-LOC
'They went to town'

Class 17 *ho-* retains a restricted locative function with personal nouns (75),

(75) bá-il-é hó-Thabo
2SM-go:PERF-M 17-1T
'They went to Thabo's place'

but otherwise operates as a 'dummy subject' or expletive, forming impersonal constructions much like those found in Dutch and other Germanic languages. It functions as an existential when it co-occurs with the copula (*hó-ná-lé dijó* 'there is food'), as an expletive when there is no copula (*ho-na-le dijo* 'there is food'), as an expletive when there is no copula (*hoa-bata* 'its cold'), or it can be used in locative expressions (*Maseru ho hole* 'Maseru is far away'). It can also occur with verbs, both passive and active: Active impersonal constructions are restricted to unaccusative and motion verbs, and can occur with or without a logical subject, as shown in (76) and (77) respectively.

(76) hó-fihl-íl-é ntaté[12]
17SM-arrive-PERF-M 1afather
'There arrived father'

(77) ho-ká-lok-a
17SM-POT-fix-M
'It can be alright'

Impersonal passives can occur with both transitive and intransitive verbs, as shown in (78) and (79).

---

12 Note that there is no definiteness effect in Sesotho impersonal constructions.

(78) hó-tlá-pheh-uw-a (di-tapóle)
17SM-FUT-cook-PASS-M (10-potatoes)
'There will be cooked (the) (potatoes)'

(79) hóa-bín-w-a
17SM-sing-PASS-M
'There is singing'

One of the features that makes *ho-* different from other subject markers is that it does not control agreement with a subject NP. It therefore violates one of the primary characteristics of canonical subjects in Sesotho (see section 1.2.2). It can co-occur with preverbal locative or temporal NPs, as seen in (80) and (81) (from Machobane 1987), but is not permitted with others, as shown by the ungrammaticality of (82) (Demuth 1988b).

(80) Maserú hó-hóle
Maseru 17SM-far
'Maseru is far'

(81) maríhá hó-bátá hahólo
winter 17SM-cold more
'In winter it is colder'

(82) *di-tapole ho-tla-pheh-uw-a
10-potatoes 17SM-FUT-cook-PASS-M
'Potatoes there will be cooked'

Locative objects can be fronted, as in (83), though there is no resulting grammatical agreement between the locative noun (class 10) and the subject marker (locative class 17).

(83) (dithab-eng) hó-pheh-éts-w-é Mphó di-jó
(10-mountain-LOC) 17SM-cook-APL:PERF-PASS-M 1M 8-food
'(In the mountains) there was cooked some food for Mpho'

The reading in (83) is much that of an impersonal passive like those found in Dutch (Perlmutter 1978) where *ho-* functions like a dummy subject and there is no inherent 'locative' meaning involved, especially if the locative NP is omitted.

This lack of lexical NP agreement with *ho-* leads Machobane (1987) to propose that Sesotho has two different types of inflection/agreement (INFL) structures, one that allows

for agreement between lexical NPs and the verb, and one that does not. In the latter case, she suggests that nominative case is assigned VP internally to the postverbal NP, which is the 'logical subject' of the sentence.

Given recent acquisition work on the pro-drop parameter, where is has been suggested that the presence of lexical expletives is what triggers the non-pro-drop setting of the parameter for English-speaking children (Hyams 1986), Sesotho presents a problem; it is a pro-drop language, yet it has expletive/impersonal constructions. The pro-drop parameter and it implications for acquisition have, however, undergone considerable re-evaluation, and acquisition evidence from Sesotho may help play a role in the future understanding this and related issues.

1.2.9 Tense, Aspect, Mood and Negation

Like most Bantu languages, Sesotho has a complex tense/aspect system with several auxiliary verbs, several moods, and a different negative form for almost every tense/aspect form (see Doke & Mofokeng 1957, Machobane 1978, Chaphole 1989). In particular, Sesotho does not have 'descrete' tenses, such as the 'today, yesterday, day before yesterday' division of some Bantu temporal systems. Rather, the Sesotho tense system interacts robustly with the aspectual system, with the perfect and various 'imperfective' aspects to form a 'relative' temporal and aspectual system. While space does not permit a full treatment of the Sesotho tense/aspect system here, the following few examples in Table 3. afford an abbreviated glimpse of the system, each with its corresponding negative form:

Affirmative	Negative	Tense
kea-réka+	ha ké-réke	I buy/I am buying (present, habitual)
ke-tla-réka+	n-ké-ké ka-réka	I will buy (future)
ke-il'ó-réka	ha ké-y'ó-réka+	I'm about to buy (immediate future)
ke-tswa-réka+	ha ké-tswa-réka	I have just come from buying (immediate past)
n-ká-réka+	n-ké sé-ng ka réka	I can buy (potential)
ke-rékíle+	ha kéa-réka	I have bought/I bought (perfect)
ke-ilé ka-réka	ha-n-ká ba ka-réka	I bought (punctual past)
ke-ne ké-réka	ke-ne ké-sa-réke	I was buying (past imperfect)
ke-ne ké-rekíle	ke-ne ké-sa-réka	I had bought (past perfect)

Table 3. Examples form the Sesotho Tense/Aspect/Negation/Mood System

I have touched here on a few of the important grammatical characteristics of Sesotho. I turn now to a brief discussion of the sound system.

1.3 The Sound System

Like many other languages of southern Africa, Sesotho has a very interesting sound system, including a rich set of affricates, fricatives and laterals. In addition, it has a palatal-alveolar click, syllabic nasals, and 9 phonemic vowels. Like many other Bantu languages, it distinguishes two tonal classes of verbs, those that High and those that are not High (i.e. surfacing as Low tone). I briefly present some of the details below.

1.3.1 The Phonemic Inventory and Phonological Processes

Doke & Mofokeng (1957) and Tucker (1969) discuss some of the more important characteristics of the Sesotho sound system. The Sesotho consonantal phonemic inventory, adapted from Doke & Mofokeng (1957:10), is presented in Table 4.

		Bilabial	Labiodental	Alveolar	Prepalatal	Velar	Glottal	Compounds
Stops	Voiced	b						bz
	Ejective	p		t		k		pß
	Aspirated	ph		th		kh		pßh
Fricatives	Voiced		[v]		(z)			
	Voiceless		f	s	ß	[x]	h	fß
Affricates	Voiced				dz			
	Ejective			ts	tß			
	Aspirated			tsh	tßh	kxh		
Lateral Affricates	Ejective			t¬				
	Aspirated			t¬h				
Laterals	Voiced			l, l				
	Fricative			¬				
Nasals		m, m̩		n, n̩	ñ, ñ̩	Ñ, Ñ̩		
Rolled				r				
Glides		(w)			j	w		
Clicks				q (palatal/alveolar)				

[] =in loan words
() = alternative position

Table 4. Phonemic Inventory of Sesotho Consonants

Note that Sesotho has syllabic nasals. They are identified as occurring before another consonant. Thus the word for 'sheep' - *nku*, is syllabified as *n-ku*. Sesotho also has no /d/ phoneme. [d] only arises as an allophonic variant of /l/, appearing before high vowels. Thus, while Sesotho orthography, as written in Lesotho, has no 'd', the phonetic representation of *mosali* 'woman' is /mosadi/. Sesotho has many interesting phonological processes including the ‘strengthening’ processes (*n + ruta > nthute* ‘teach me’ (lit. me-teach) and palatalization of labials (*shapa* ‘lash’ > *shatjwa* ‘be lashed’), among others.

In addition to an interesting consonantal system, Sesotho has nine phonemic vowels rather than the five or seven found in most Bantu languages today. These vowel distinctions are collapsed in Sesotho othography, with all front and back mid vowels being represented as *e*

and *o* respectively. The phonemic vowels are represented on the Sesotho vowel chart in Table 5. below, again adapted from Doke & Mofokeng (1957).

High	i				u
Mid (close)	ì				ù
Mid		e		o	
Mid (open)		è		ò	
Low			a		

Table 5. Phonemic Inventory of Sesotho Vowels

The mid open and close vowels participate in a vowel harmony process whereby they are raised when followed by a higher front vowel or certain nasals (e.g. *rèka* 'buy' > *rekile* 'have bought').

1.3.2 Penultimate Length

Sesotho, like several other Bantu languages, shows penultimate in lengthening utterance final position. Thus, the sentence *ke-bóná ntjá* 'I see the dog' is rendered phonetically /kì-bò‰na n⁄:tßa‰/, the penultimate syllable, in this case a syllabic nasal, being lengthened. It is only in yes/no questions (section 1.2.6) that penultimate lengthening is suspended. Since penultimate lengthening is completely predictable, it is not marked unless unusually exaggerated.

1.3.3 Intonation

Like most languages, Sesotho makes use of intonation to distinguish certain sentence types. Declarative utterances are usually marked by declination - i.e. in a series of High (H) and Low (L) tones, a H tone that follows a L tone will be somewhat lower than a preceding H. In yes/no questions, however, declination is suspended.

1.3.4 Tone

There have been several descriptive studies of the Sesotho tonal system (Letele 1955, Köhler 1956, Kunene 1961, 1972; Tucker 1969, see also Doke & Mofokeng 1957). Current research on Sesotho tone (Clements 1988, Kisseberth 1989) has been able to incorporate much of this original work into an autosegmental framework (e.g. Goldsmith

1976, Pulleyblank 1986). Consequently, Sesotho can be characterized as having underlying H and L tone, though for verbs the distinction is between H and no tone (Ø). (Syllables underspecified for tone are eventually assigned a default L tone). Most lexical items (e.g. nouns and verbs) have their own lexical tone which is given underlyingly in the lexicon. These tones are then subject to modification, or tone sandhi, once certain tonal rules (e.g. rules of H tone spread; morphological Tone Melody rules, etc.) apply. Finally, certain tonal rules that are sensitive to the syntax, such as phrasal phenomena, apply.

Given the High tone verb *ho-bóna+* 'to see', tone is derived as in (84).

(84) ***báa-bo‰na+*** **'They see/understand'**

Underlying Form

a) Tonal Assignment

```
[ba]   [a]   [bona]

 H            H
```

Lexical Rules

b) Tonal Association

```
[ba]   [a]   [bona]
 |            |
 H            H
```

c) High Tone Doubling - 1st Cycle

```
[ba]   [a]   [bona]
 |            | /
 H            H
```

d) Bracket Erasure
High Tone Doubling - 2nd Cycle

```
[ba   a   bona]
 |   /        | /
 H            H
```

e) High Tone Delinking (OCP Effect)

```
[ba   a   bona]
 |   /        |/
 H            H
```

Postlexical Rules

f) Phrasal Lowering

```
[ba-a-bona]
 |    |/  \
 H    H   L%
```

g) Penultimate Lengthening [ba-a-bo:na]

```
|    |   \
H    H   L%
```

h) Default Low Tone Assignment [ba-a-bo:na]

```
| |  |   \
H L  H   L%
```

Phonetic Output [báa-bo‰:na+] 'they see'

Tone is posited at the underlying level in (84a), and becomes associated (predictably to the first syllable of the verb) in (84b). Various tonal rules, such as High Tone Doubling, can now apply. The rule applies first to the verb (on the inner, or first 'cycle') in (84c). Then, the brackets around the verb are erased and the subject marker is encorporated into the verb (84d). Now the rule of High Tone Doubling has a second chance to apply. However, once it does, it violates a condition known as the Obligatory Contour Principle (the OCP) that prohibits two High tones from being adjacent on the tonal tier. To 'correct' this situation, a rule of High Tone Delinking is invoked (84e) and the OCP violation is 'repaired'. The resulting Lexical Representation can now enter into the postlexical (phrasal or syntactic) component of the grammar where phrase level rules such as Phrasal Lowering can apply (84f). After Penultimate Lengthening (a non-tonal rule) (84g), any syllables that were left toneless can now be filled in with a Default Low tone (84h.).

The derivation in (84) provides a sampling to the tonal rules of Sesotho. There are also different morphological tone rules, or 'tonal melodies' that apply at within the lexical component of the grammar to which different tenses/aspects/moods are assigned. These can be classified roughly as the Assertive Melody (I), the Non-Assertive Melody (II), and the Subjunctive Melody (III). Melody I uses the tonal formula BL*, Melody two uses BH*, while Melody III uses HL*H, where B=base (i.e. the underlying lexical tone of the verb), and * = iterative application. Note the tonal differences between *lohela* 'knit for', a Ø tone verb, and *rekisa* 'sell', a High tone verb in Table 6.

Melody	**Ø Verb**	**High Verb**
*I - BL**	ke-lohela Thabo	ke-re‰ki‰sa-ntja‰
Assertive	'I'm knitting for Thabo'	'I'm selling the dog''

*II - BH**	ha-ke‰-lohe‰le‰ jesi‰	ha-ke‰-re‰ki‰se‰-ntja‰
Non-assertive	'I'm not knitting for Thabo'	'I'm not selling the dog'
*III - HL*H*	ke‰-lo‰hele‰ jesi‰?	ke‰-re‰kise‰-ntja‰?
Subjunctive	'Should I knit for Thabo?'	'Should I sell the dog?'

Table 6.
Verbs and Tonal Melodies

Unlike lexical tone languages like Chinese, where tone is assigned at the underlying level and there are a limited number of tone sandhi rules at the lexical level, Sesotho has both underlying tones and a rich array of both tonal rules and morphological tonal melodies that interact with the underlying lexical tones. This provides the input to the phrasal, or postlexical level of phonology, where intonational languages like English finally assign pitch. Thus, Sesotho assigns pitch at three different levels of phonology, rather than at only one or two. This will become important during the discussion of tonal acquisition.

I have discussed above some of the major grammatical and phonological (especially tonal) characteristics of Sesotho grammar. I turn now to a discussion of how the grammar of Sesotho, and some related Bantu languages, is acquired.

II. The Data and its Theoretical Import

2.0 The Data Base and Research Methodologies Used

During the past ten years there have been numerous dissertations and several articles written on the acquisition of (mostly southern) Bantu languages. While this chapter focusses on the acquisition of Sesotho, I will include reference to acquisition work conducted on Setswana, Zulu, Siswati and Chichewa. Zulu and Siswati are closely related Nguni languages spoken in South Africa and Swaziland respectively. Chichewa (also known as Chinyanja) is spoken in Malawi and parts of Mozambique, Zambia and Zimbabwe. And, as mentioned in the introduction, Sesotho and Setswana are closely related Sotho languages. While there are certain typological characteristics which are common to these and other Bantu languages, there are also critically different linguistic details, like those found between Romance or Germanic languages, which influence the course of acquisition in important ways. Thus, a comparison of the acquisition of Bantu languages provides a particularly rich

area for acquisition research. A brief summary of the Bantu acquisition literature is provided below. The map in Figure 1. provides a geographical orientation to where each of these languages is spoken.

[Figure 1. - Map of southern Africa]

Siswati

Kunene's (1979) study of Siswati acquisition consisted of recordings from the researcher's spontaneous speech and informal elicitation sessions with one child 2;2-3 years and those of a second child of 2;11-3;6 years. Further experimental study was conducted with three children aged 4;6-6 years. The primary focus of the study was on the acquisition of the morphological system, both noun class prefixes and agreement (possessives and demonstratives).

Zulu

The data on Zulu acquisition (Suzman 1980, 1982, 1985, 1987, forthcoming) includes a longitudinal study of two children aged 1;11-2;6 years, plus complementary data from other children that has been collected for shorter periods of time. The children come from homes in Soweto where Zulu is the preferred language of use; recordings are conducted in naturalistic settings during interactions with an adult member of the family. Suzman (1980) investigates the acquisition of the noun class system, while the acquisition of agreement is addressed in Suzman (1982). The acquisition of Zulu passive is treated in Suzman (1985, 1987). These and other topics are dealt with in Suzman (forthcoming). It should be noted that the Zulu (and Siswati) noun class systems differ from that of Sesotho and Setswana in that they incorporate pre-prefixes; Sesotho *mo-tho* = Zulu *u-mu-ntu* 'person'.

Chichewa

Chimombo (1981, 1987) focuses on the acquisition of negation in English/Chichewa bilingual children and monolingual Chichewa-speaking children between 1-2;6 years. More recent work (Chimombo 1988) has focussed on the role of tone in the acquisition of the Chichewa negation system. Moto (1988) has also reported on aspects of the acquisition of Chichewa tone. I will not discuss the acquisition of Chichewa in this chapter, but will concentrate on the southern African languages.

Setswana

Tsonope (1987) conducted a study of two Setswana-speaking children aged 1;11-2;6 years and 2;5-3 years. Data was collected at 2 week intervals in naturalistic settings during interaction with the researcher and the children's family members, each recording session (audio and video) lasting approximately 1 hour. The focus of the study, like that of the Siswati, was on the acquisition of the morphological system, both the noun class system and agreement in possessives and demonstratives.

Sesotho

Connelly (1984) conducted a one year longitudinal study of 2 urban and and 2 rural children aged 1;6-2;6, 1;9-2;9, 2;4-3;4 and 3;1-4;2 years. The study consisted of monthly recordings of 45 minutes, and focussed again on the acquisition of the morphological system, with particular reference to the acquisition of noun class prefixes and its implications for Slobin's Operating Principles (1985). There is also a brief discussion of the acquisition of click sounds and the prosodic, morphological and grammatical characteristics of 2 year-olds' use of 'motherese' during interactions with infants.

Demuth's (1984a) research on Sesotho acquisition consisted of a longitudinal study of four rural children over a 1 year period. Ages reported in this study were 2;1-3;0, 2;1-3;2, 2;4-2;9, and 3;8-4;1 years. Monthly recordings of spontaneous speech consisted of 3-4 hours each, resulting in a corpus of 13,250 verbal utterances (i.e. utterances with verbs). The initial (1984a) study focussed on child-caregiver interactions, particularly prompting (Demuth 1987a) and question routines, and the early acquisition of relative clauses and cleft constructions. Subsequent study, using the same data base, but occasionally augmented with spontaneous utterances of 3 older children between 4;6-6 years-old, has focussed on the acquisition of word order (Demuth 1984b, Demuth 1987b) and the noun class and agreement system (Demuth 1988a), the acquisition of passives (Demuth 1989a, 1990), the acquisition of impersonal constructions (Demuth 1988b), and the acquisition of tone (Demuth 1989b).

Unless otherwise specified, the examples included in this chapter are drawn from the Demuth (1984a) corpus.[13] Data was collected during a 2 year stay in a small Lesotho mountain village of 550 people where it was possible to establish close rapport with both the children and their families. Most able-bodied men were away working in the mines in South Africa, leaving the women to till the fields of corn, sorghum, beans, lentils and look after the children. Recordings of the four children were collected as they interacted with members of the extended family including mothers and/or grandmothers, an uncle and occasionally the father (in one family), and especially older siblings, cousins, and peers. Broad phonemic transcription was conducted by the researcher with the assistance of the mothers and grandmothers as soon as recording sessions were complete. These transcripts were then verified independently by a researcher at the National University of Lesotho.

What is striking about Sesotho verbal interactions is the inclusion of young children, and even pre-verbal infants, into the construction of discourse situations through question routines ('Where has your mother gone?'), prompting routines ('Say she's gone to the store'), and third party interactions (answering for the child when s/he is unable to speak yet or doesn't know what to say). Thus, young Basotho children become 'conversational partners' before they can utter a word The second important aspect of Sesotho discourse styles is that, after about the age of 2;6 years, about the time a younger sibling has been born, adult attention becomes increasingly focussed on the newborn and toddlers are thrust into the peer group to fend verbally, and otherwise, for themselves. When this happens it becomes increasingly difficult to get access to the tradition middle class American English 'mother-child' interactive situation. Thus, the Demuth (1984a) corpus is characterized by more peer interactions than that found in many other longitudinal studies of language acquisition. As will be seen in the ensuing discussion, this addition of child-child interaction provides a rich and seldomly tapped window into children's early spontaneous abilities with the grammar of the language they are acquiring.

As seen from the brief description of the literature, a large number of the acquisition studies on Bantu languages have been concerned with the morphological system. Interestingly, the acquisition phenomena reported for these different languages have been remarkably similar. I turn now to a discussion of these findings in section 2.1.

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[13] Portions of the Demuth 1984a Sesotho corpus are currently being prepared for the CHILDES archive.

2.1 Nominal system

Most of the work on the acquisition of Bantu languages has focussed on the morphological system, most specifically on how nominal morphology is acquired. This is a logical area for research in that 1) the noun class and agreement system of most Bantu languages is extremely productive, and 2) because it addresses specific questions that have been raised in the early cross-linguistic acquisition literature. Many of these questions form the basis for Slobin's Operating Principles (henceforth OPs) (1973, 1985), including issues relating to the mapping between form and function, and to universals in acquisition of morphology - e.g. paying attention to the beginnings/ends of words. Of additional concern has been the possibility that semantics might play a role in the acquisition of a Bantu noun class system, but this has been largely rejected by all the researchers. As noted in the section 1.1, Bantu noun class systems are characterized not only by nominal prefixes, but also by a pervasive 'agreement' system that operates within the NP (demonstratives, possessives, relatives, independent pronouns), within the VP (object markers), and between the subject NP and VP (subject markers). Thus, an investigation of how Bantu noun class and agreement systems are acquired reveals information not only about the classification of nouns within a class/gender system - with implications for the learning of other gender and/or classifier systems (e.g. Romance, Chinese, Navajo, Australian Aboriginal languages), and about children's abilities to cope with inflectional morphology (MacWhinney 1978, Peters 1983) and morphological paradigms like those found in other languages with rich inflectional systems (e.g. Romance, Slavic, and Semitic languages), but also for current issues in lexical morphology and syntax relating to agreement and headedness. While the literature reviewed here does not deal with these more current theoretical issues, the time has arrived where it should; I will discuss possible directions for future research in section 2.1.4.

Of particular interest for the study of noun class systems, and specifically addressed in studies of Siswati (Kunene 1979), Setswana (Tsonope 1987) and Sesotho (Connelly 1984), is the question of when plural marking is acquired. Brown (1973) and de Villiers & de Villiers (1978) found that the marking of English plural occurred quite early in the process of acquisition. What would happen in a language where both plurals and singulars are morphologically marked? Perhaps the singular would be taken as unmarked - an amalgam (MacWhinney 1978) or unit (Peters 1983), and the plural prefix added to it? How do children go about learning a system that presents so many morphological possibilities for plurals? Would plural markers be rote learned, as suggested by Park (1978) for German, or would one form be overgeneralized to fulfill the plural function?

Other hypotheses about the acquisition of morphology have also been posed: First, in cases where there is a 'hole' in the paradigm (i.e. the Sesotho noun class marker for class 9 is Ø), children might tend to regularize and insert some prefix if indeed they are using a 'paradigmatic' strategy. Secondly, the OP dealing with functors leads to the hypothesis that nominal stems, which carry semantic content, would be acquired before non-referential units or functors - in this case noun class prefixes. One would therefore predict that content morphemes (nominal stems) might be acquired before functors (noun class prefixes).

It is interesting to note, in light of these various proposals, that the acquisition of noun class prefixes in the Bantu languages studied to date develops with bare nominal stems first, followed by error free prefixes by 3 years. I now turn to a more extensive discussion of the acquisition of noun class prefixes and the nominal agreement system in Sesotho and related languages.

2.1.1 Noun Class Prefixes

All the present acquisition studies of Bantu nominal morphology report very similar findings: First, there is virtually no evidence to support a chunking or holistic approach to the acquisition of noun class prefixes and nominal stems. Rather, there is ample evidence showing that children actively use a morphological approach to the acquisition of prefix and stem. Monosyllabic stems provide the only evidence that children might be acquiring prefix and stem as a unit (i.e. *di-jó* > **dijo* 'food'). Likewise, there is no evidence to suggest that singulars are easier to acquire than plurals, nor that singular forms are treated as unmarked amalgams, with a plural prefix added to the singular form (e.g. *se-fate* 'tree', *di-fat*e 'trees' (**di-se-fate)).* As predicted by certain OPs, there may be some evidence showing that suffixes are acquired before prefixes: Siswati locative suffixes are acquired before noun class prefixes regularly appear (Kunene 1979:92-96), and this is consistent with findings in the other languages. It should be noted, however, that the locative suffix is invariant in form (Sesotho/Setswana *-ng*, Siswati /Zulu *-ni*), and is therefore difficult to compare directly with the numerous noun class prefixes.

All of the studies report that the acquisition of noun class prefixes occurs during the 2-3 year period and takes place in three identifiable, yet overlapping stages:

(85) **Development of Noun Class Prefixes**
- (a) No prefixes (full or partial noun stems)
- (b) 'Shadow' vowel and nasal prefixes
- (c) Full and phonologically appropriate noun class prefixes

These three developmental stages, all concurrent in this sample at 2;1 years, are shown for Sesotho in (86a-c) (from Demuth 1988:309):

(86)

(a)	ø-phokò	<	ma-phòqò	'green corn stalk'
(b)	a-pokò			
(c)	ma-pënkë			

Similar phenomena are reported for the Siswati-speaking child between 2;3-2;8 years. By 2;8 years Siswati noun class prefixes were generally used in their correct form, a little later than the 2;6 years reported for Sesotho (Connelly 1984:80, Demuth 1988:310). The Sesotho 'shadow' vowel tends to be realized as a reduced vowel (ä), a schwa (ë) or *e-* (Connelly 1984) (though note also the use of shadow *a-* in (86b)). The use of this same shadow vowel in Setswana led Tsonope (1987:64) to claim that nouns might be being classified as noun class 9 (prefix = Ø, but subject marker = *e*), but one would need further evidence to support this hypothesis. Suzman (1980) makes a similar claim for Zulu, arguing that prefixes from 'human class' 1a *u-* and 'default/loan word' class 5 *i-*, develop first and are overgeneralized to nouns from other classes. The children's inventory of nouns from both of these classes is very high, as it is for the 'default/loan word' class 9 in Sesotho and Setswana. More research must be carried out to determine if children's use of shadow vowels indicates an attempt to lump all nouns into one 'class', or is merely a morphological place marker, the precise phonological shape of which is determined at a later stage. Support for the latter view comes from the fact that nasal shadow prefixes also show up early in Sesotho, and that in both Siswati and Sesotho (and apparently in Setswana and Zulu as well), the child's system includes all three stages of development concurrently. Thus, the shadow vowel may indicate a lack of performance on the part of the child, rather than a lack of competence.

Once full noun class prefixes began to be produced, there was no evidence of Sesotho speaking children using a semantic analysis in their attempt to match noun class prefixes with nouns; i.e. there were no attempts to produce human nouns such as class 9/10 *ø-tichere/di-tichere* with 'human' class 1/2 prefixes **mo-tichere/*ba-tichere*. The lack of a semantic strategy is confirmed in studies of Setswana, Zulu and Siswati. There was also no Sesotho evidence of 'paradigm regularization' or addition of a prefix to class 1a or class 9 nouns, both of which have ø prefix.

When nominal prefixes become well-formed, there are no cases in any of the languages studied of a systematic set of errors or overgeneralizations. There was not, for example, one plural form extended to all plurals, nor one singular used for all singular forms. Only a small portion of Sesotho nouns (less than 17% - Connelly 1984:106) were plurals, but this was an artifact of the natural speech corpus rather than an indication that plural forms of nouns were more difficult. The only 'errors' reported from spontaneous speech come from Sesotho where the language has opted for a less frequent singular/plural pairing - e.g. classes 9/6, rather than the more frequent classes 9/10. A child at 1;9 years selected the more common class 10 *di-* prefix, but by 1;11 years was producing the correct class 6 plural *ma-*.

(87) (from Connelly 1984:81)
(1;9 yrs.) *di-simba < ma-simba 'Simba chips'
(1;11 yrs.) ma-simba

While each noun usually has its appropriate plural (i.e. person/people is class 1/2 = *mo-tho/ba-tho*), some class 9 nouns can take either class 10 *di-* or class 6 *ma-* as their plural. Thus, there is a possibility for both *di-tichere* 'teachers' or *ma-tichere* 'types of teachers'. For novel nouns, such as the loanword *ma-simba* 'chips', a child would have to select one of these forms as the appropriate plural. Note here that the 'error' in (87) is not truly an error in the sense that it is not random, i.e. it was not a plural from some unrelated class like class 2, 4, or 8. Rather, it is the logical type of 'error' that one would expect to find, and in fact it shows that the child knows how the noun class system works.

It is quite remarkable, given the number of studies of noun class acquisition across four different Bantu languages, that the acquisition pattern should be so similar. One would expect that there should be a unified explanation for this phenomenon, an explanation that might provide insight for similar acquisition problems in other languages. There have been several attempts to explain the fact that, in the Bantu languages studied to date, the initial stage is largely composed of bare noun stems. Kunene (1979) concludes that it is the content morphemes (noun stems) that are acquired before non-content functors (noun class prefixes), and that Siswati-speaking children have been able to analyze them as such. She rules out the possibility that either penultimate lengthening or the high tone on Siswati noun class prefixes contributes to the production of bare nominal stems at initial stages of acquisition (1979: 76-81). Kunene reports that Siswati-speaking adults never omit noun class prefixes (though it is not clear if this includes caregiver speech), and that Siswati-speaking children are therefore never provided with input that includes prefix-less nouns.

The morphological, content-functor explanation for Siswati differs from the input explanation offered for Setswana. Tsonope (1987) argues that it is caregiver CVCV prefixless nominal input that provides Setswana-speaking children with a LH toned disyllabic template, and that this is the source of children's early prefixless nouns (though CVCV prefixless stems are also found in adult-adult speech). However, if Kunene is correct in claiming that Siswati-speaking adults never omit noun class prefixes, even in caregiver speech, the input explanation for Setswana will not be able to account for the cross-linguistic use of prefixless stems.

Though it is not clear how children perceive tone, the fact that noun class prefixes in Sesotho and Setswana are low toned (except for class 2b), might contribute further to their low perceptual saliency and increased chances for omission. However, this again presents problems for a unified, cross-linguistic explanation, as Nguni noun class prefixes are not all low toned, especially in cases where pre-prefixes occur. Thus, it would appear that tone alone can not account for the early omission of noun class prefixes across languages.

While more research is needed on the tonal and morphological characteristics of Sesotho caregiver input, there is an alternative explanation for children's early, largely CVCV nominal forms. As discussed in section 1.3.2, Sesotho, along with the other Sotho and Nguni languages, exhibits penultimate lengthening, a feature which has sometimes been called penultimate 'stress'. Current research on input and perception indicates that children may more accurately perceive syllables that are stressed or are at the ends of words, and that production of these syllables will be more accurate in early speech (e.g. Echols & Newport (under review)). It has also been argued that children have a universal tendency to omit pre-stressed syllables and to produce trochaic feet (Allen & Hawkins 1978, 1980). While the cross-linguistic relevance of this proposal has been somewhat controversial (see discussion Vihman & Elbert 1986), it would appear that the tendency of Sesotho and other southern Bantu languages is toward the maintenance of trochaic feet. This is found in the language's incorporation of extra syllables (epenthetic vowels) to preserve left headed disyllabic feet, as in the formation of imperatives from monosyllabic verb radicals (*ja* 'eat' > *eja!* 'eat!' - imperative). Thus, we might expect that young Sesotho speakers would also show a similar tendency, and, in that many nominal stems are disyllabic, this might help explain the early omission of noun class prefixes.

One of the critical sets of data needed to evaluate the presence of a trochaic foot hypothesis in early Sesotho grammar is an examination of what children do with monosyllabic and polysyllabic stems. From the small about of data addressing this issue it would appear that

monosyllabic stems are frequently produced with their noun class prefix (or at least a vowel) intact (e.g. *di-jo* 'food') - preserving trochaic foot structure, while polysyllabic nouns are reduced to fewer syllables (*ba-esekele* > *eskele* 'bicycle'), often going beyond a CVCV structure, but omitting more than simply the noun class prefix. Further research on both the structure and acquisition of these languages, perhaps incorporating perspectives from lexical, metrical or prosodic phonology, might shed additional light on these issues.

The error-free development of the noun class system in spontaneous Sesotho, Setswana, Zulu and Siswati contrasts somewhat with experimental results from Siswati-speaking 4;6-6 year olds that show difficulty with providing the appropriate singular/plural pairs. Using experimental methods similar to those developed by Berko (1958) in the 'wug' tests and Anisfeld & Tucker (1968) using pictures, speech and story-telling tasks, Kunene examined 3 Siswati-speaking children's derivation of plural from singular and singular from plural nouns (see Kunene (1979) for further detail). While most of the derived nouns were marked appropriately, nouns from class 11 *lu-* were rendered as class 5 *li-*[14], and class 9 *in-* plurals were given as class 6 *ema-* rather than class 10 *tin-*. Class 2a *bo-* was added to class 1 nouns - *umu-ntfu* 'person' > *bo-mu-tfu* (class 1a has ø prefix), as well as to nouns from classes 14 and 15 that normally do not take plurals - *bu-so* 'face' > *bo-bu-so*, *ku-dla* 'food' > *bo-ku-dla*. Furthermore, singulars for class *si-* and *ti-* were given with only the vowel *i-*. In Siswati, as in Sesotho, some class 9 nouns take class 6 plurals, thus children's over-production of class 6 *ema-* is the type of 'error' one might expect (see Sesotho example (87)). Noun class marker 2a *bo-* is apparently being used as a marker of plurality when the noun takes ø in the singular (classes 14 and 15), or is analyzed as taking ø in the singular (i.e analyzed as class 1a *umuntfu* 'person').

Thus, while the experimental Siswati results show certain 'errors' in the generation of corresponding singular and plural pairs, the overgeneralizations are systematically phonological and morphological rather than semantic. What is interesting is that these same children, as well as younger children, never made such errors in spontaneous speech. It

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[14] It is interesting to note that, in related languages like Sesotho, class 11 has been entirely lost, having been merged with class 5. While one should be cautious in predicting the course of historical change through the examination of acquisition errors, it may be that children do have some influence on the restructuring of Bantu noun class systems (see Demuth, Faraclas and Marchese 1986 for discussion.)

would appear that, much like adults, these children are grouping novel nouns on a phonological basis, and that many of the cases of double noun class marking occurred with monosyllabic nouns. There is obviously a need for further carefully designed experimentation in this area, controlling for the number of syllables and phonological factors, and using tasks that could, if possible, be used with younger children.

In conclusion, the spontaneous use of noun class prefixes in Sesotho and related languages is delayed to around 2;6-3 years, but is error free when it occurs; while there may be some phonological underspecification, there are no cases of random overgeneralization. There is little evidence, either from Sesotho or cross-linguistically, to support the OP of one form being used for one function: singular and plural morphemes emerge simultaneously with no evidence of overgeneralization in spontaneous speech. There is no evidence that plural morphemes are more marked than singulars, nor that the concept of number is delayed due to the complexity of the morphological system. There is also no evidence to support the hypothesis that the singulars might be acquired as amalgams, with the plural morpheme simply added to them; even in the Siswati experimental data where such cases occasionally occurred, they were primarily in cases of monosyllabic stems where prefix + stem had been misanalyzed as a CVCV stem. Other than these experimental data, there are no obvious cases of 'filling in the paradigm', or adding noun class prefixes to nouns where the prefix is ø (e.g. Sesotho classes 1a and 9). There is also no evidence of any kind that indicates an appeal to semantics in figuring out the noun class system; if anything the Siswati experimental evidence support a phonological grouping for novel nouns. While the Sotho and Nguni acquisition data would appear to support the OP of 'pay attention to the ends of words', these languages have little comparable prefixal and suffixal morphology; it is therefore difficult to assess the actual validity of this principle. The studies presented here provide no counter evidence for the OP supporting the acquisition of content words before functors. However, I suggest that further understanding of the acquisition of Bantu noun class prefixes will be gained through more detailed study of early word formation constraints.

Additional insight into the marking of noun class prefixes will be gained in the following discussion of agreement in section 2.1.2, where there is evidence that children learning Sotho and Nguni languages are aware of the morphological composition of nouns and the phonological shape of noun class prefixes even while they leave nominal stems unmarked.

2.1.2 Nominal Agreement: Possessives, Demonstratives, Adjectives and Independent Pronouns

The acquisition of nominal agreement in the Sotho and Nguni languages studied again shows remarkable cross-linguistic similarity: At first the child uses a shadow vowel, and then appropriate marking emerges. The developmental scenario is very similar to that found in the acquisition of noun class prefixes except that the initial unmarked stage is not present:

(88) **Development of Nominal Agreement Markers**
(a) shadow vowel
(b) appropriate marking

Again, the developmental 'stages' of agreement marking may be concurrent, sometimes appearing in consecutive utterances. At 2;2 years Demuth (1988:313) finds both 'shadow vowel' and appropriate marking of the demonstrative within several utterances of each other.

(89) a) kolo yáne ~ b) kolo sáne < se-kólo sá-ne
7-school 7-DEM
'that school'

What is interesting is that appropriate marking of possessive and demonstrative agreement forms is well in place before nouns are consistently marked with noun class prefixes. This is illustrated in the examples in (90).

(90) (from Connelly 1984:102)

(1; 9 yrs.)	kwena a-ka	ma-kwenya a-ka 6-fat-cakes 6POSS-my 'my fat-cakes'
(2 yrs.)	asale a-hae	ma-sale a-hae 6-earrings 6POSS-her/his 'her earrings'
(2;3 yrs.)	ekausi tsa-ka	di-kausi tsa-ka 10-socks 10POSS-my 'my socks'
(2;7 yrs.)	okhwe ba-ka	bo-rikhwe ba-ka 14-trousers 14POSS-my 'my trousers'

While some would say that the demonstrative in (89a) is in fact the class 9 marker *yá* which has been overgeneralized, the fact that it occurs within a few utterances of the correct form would make this conclusion less attractive. Rather, I suggest that (89a) is an

‘underspecified’ form. Further evidence for this position comes from examples such as (91) (Demuth 1988:314), where more than only the independent pronoun is underspecified:

(91) (2;2 years)
lebese ké éo é pápa
(le-bésé ké léo lé pápa)
5-milk COP 5DEM CONJ 9porridge
‘There’s the milk, and the porridge’

Here not only the independent pronoun is minus the initial consonant, but the invariant conjunction *le* is also minus the same initial consonant. It would appear that the child has underspecified both pronoun as well as conjunction in (91). More work on early Sesotho phonology is needed to fully assess these phenomena, but I suggest that some of the apparent morphological 'overgeneralizations' may rather be cases of phonological ‘weakening’ or 'underspecification' of the initial consonant, in (89a) the consontant surfacing as a glide, in (91) it being deleated altogether. Though noun *le-bese* 'milk' is fully marked for noun class in (91), many of the cases of 'underspecification' (such as (89a)) involve a parallel underspecification on head noun as well. This could be evidence of a learning strategy, or it could be the result of a generally articulatory/phonological leveling process.

Tsonope (1987:114-116) confirms a similar developmental scenario for Setswana, noting that a shadow vowel *a:-* or *ya:-* is generally used in initial cases of agreement marking. He suggests that these forms represent an overgeneralization of class 9 possessive marker *ya-*, and that this might be due to the large number of class 9 nouns in the child's repertoire (though note (Table 2.) that all the possessive forms end in *a-* and the *y-* may be interpreted as a 'weak' consonant). He reports, however, that by 2;4 years there is appropriate use of the class 8 possessive *tsa-*, again prior to the consistent marking of noun class prefixes.

Similar findings are reported for Siswati possessive agreement. Kunene (1979:283) reports that initial agreement marking (2;5 years) took the shadow vowel *e-*, while appropriate agreement forms began to be used at 2;6 years, and were consistently used by 3;0 years. Kunene (1979: 99-103) does report a Siswati-speaking child at 2;2 years using the singular possessive agreement form *sa-* (class 7) instead of plural *ta-* (class 8) to refer to *ti-cathulo* 'shoes'. There were also occasional examples of inappropriate class cross over, where a class 1 possessive agreement marker *wa-* was used instead of class 9 *ya-* (note, however, that both involve glides). However, by 2;4-2;6 years the child was using appropriate plural

possessive forms in appropriately plural contexts, even while the noun was still used without a noun class prefix. The spontaneous speech findings contrast once again with experimental findings that indicated a tendency to render class 11 *lwe-* with class 5 *le-*. It would appear that, for young Siswati speakers there is no class 11.

2.1.3 Summary

In sum, the acquisition of both the Sesotho noun class system and that of the other Bantu languages studied, is in place by the age of 3, showing no systematic semantic or other overgeneralizations. Development follows in three identifiable 'stages': No marking > shadow vowel marking > appropriate marking. However, these 'stages' are not discrete; examples of each of these 'stages' can be found concurrently, even in consecutive utterances of the same construction. This would indicate that some of the grammatical knowledge about the existence and shape of the noun class prefix is there from an early age, but that performance factors, perhaps involving word formation constraints such as working with trochaic feet, are responsible for its erratic production.

This hypothesis is supported by the fact that the marking of agreement with possessives and demonstratives is apparently in place several months before nouns are consistently marked with prefixes, indicating that the child has access to the noun class (and number) features before s/he consistently marks nouns with those features. This would be a predictable result if the child is working with leftheaded disyllabic feet; both possessives and demonstratives are disyllabic, being composed of the CV agreement feature plus the monosyllabic possessive or demonstrative stem (e.g. *ya-ka* ‘my’, *tse-na* ‘those’). Further work investigating constraints on early word formation, especially with monosyllabic and multisyllabic nominal stems, and appealing to aspects of metrical phonology, will hopefully provide a better understanding of the acquisition of the Bantu noun class and agreement systems, and its implications for the acquisition of gender, number and case marking in other languages.

The relatively early and ‘error free’ acquisition of the Bantu noun class and agreement system raise certain questions regarding the nature of acquisition. In particular, it suggest that the organization of complex morphological paradigms will be most easily acquired when it is phonologically transparent. Failing phonological correspondences, the child will then, perhaps at a latter age or stage of development, begin to categorize on the basis of semantics, or natural gender classes. Form a crosslinguistic assessment of acquisition patterns and errors this appears to be the case: Young Hebrew learners (2-3 years) use

phonological rather than semantic cues to inform them of number and gender agreement (Berman 1981, Levy 1983), while Icelandic learners of 4;6--8;6 years, with no consistent phonological shapes to work with, use semantic criteria to organize the case, number and gender of nouns and pronouns (Mulford 1985) (see Demuth 1988a for discussion).

2.2 The Verbal and Grammatical System

There has been an assumption in some of the acquisition literature that young children omit lexical subjects (though this has yet to be confirmed on a more universal basis). Semanticists maintain that subjects are generally given, known information, and that children tend to assume given information, thereby omitting subjects and verbalizing the new information - i.e. verbs and objects (see discussion in Bowerman 1985). Syntacticians (e.g. Hyams 1986), on the other hand, assume a more parameterized explanation for the lack of early lexical subjects, claiming the existence of a pro-drop parameter with a +pro-drop default. The pro-drop parameter is defined as being a clustering of grammatical properties that pattern according to whether a language can optionally drop lexical subjects (+pro-drop), as in Italian, Spanish and Portuguese, or whether lexical subjects are obligatory (-pro-drop), as in English and French. Positing the existence of a default setting for the parameter means that all children would approach the language learning process with the same, default setting of the parameter. If it is the case that both English and Italian-speaking children first construct sentences with no lexical subjects, then setting the default value of the parameter at +pro-drop accounts neatly for the facts: Italian children would approach their language with a +pro-drop setting, and it would remain as such, following the +pro-drop character of Italian. English-speaking children would also approach their language with a +pro-drop setting, but once they became more familiar with the facts of English grammar, would have to re-set their parameter to the -pro-drop value.

While more research needs to be conducted on the acquisition of subjects (see for example Bloom (to appear), Valian 1989), the pro-drop hypothesis provides an interesting theoretical backdrop for future work on the acquisition of subjects in other languages. Once again, Bantu languages are of interest: Like Italian, most Bantu languages exhibit pro-drop phenomena, i.e. lexical subjects are optional. However, unlike Italian, most Bantu languages mark subjects with preverbal clitics. This means that, while Sesotho is similar to Italian in that both are pro-drop languages, they differ in the type of pro-drop characteristics they exhibit: Italian inflects each verb for person and number. In contrast, Sesotho marks the verb with a subject marker that can be analyzed either as a grammatical agreement marker

(when the lexical subject is present), or as an incorporated pronominal (when no lexical subject is present) (see section 1.2.2)

With these distinctions in mind, I turn to the acquisition of Sesotho subjects and objects.

2.2.1 Subject and Object Markers

The morphological development of Sesotho subject markers is very similar to that reported for noun class prefixes ion section 2.1.1 above:

Lack of early inflection > 'shadow' vowel > well formed morphemes

Once again, these three developmental phases are not discrete; rather, they overlap, even in consecutive utterances. And, as might be suspected, similar phenomena are also reported for the other Bantu languages studied: Kunene (1979:85-91; 244) reports the use of bare verb stems in Siswati at 2;2 years, with shadow vowels /a/ or /i/ around 2;3 years. The shadow vowel is generally /a/ or /e/ for Sesotho (Demuth 1988:312); this is shown in (92), where the child's utterance is given on the first line and the well-formed equivalent on the second line in parentheses.

(92) (2;1 years)
a lahlíle
(ke-di-láhl-íl-e+)
1sSM-10OBJ-throw away-PERF-M
'I threw them away.'

Recall that the order of morphemes within the Sesotho verbal complex is SM-(T/A)-(OBJ)-V-(PERF)-M. It may be that the complexity of the preverbal morphology slows the acquisition of subject markers. Many of Sesotho-speaking children's early utterances use first person singular present tense subject marker *kea* or *ke* 'I'm' or 'I', and this is probably where the phonological shape of the first shadow subject markers is derived. Sesotho and Zulu caregivers, when using 'baby-talk' with children, also tend to use the shadow vowel /a/ in place of the subject marker. By around 2;4-2;5 years, in both Sesotho and Siswati, children begin to use the first phonologically appropriately subject markers, though there continue to be inconsistencies, even within consecutive utterances. Consistent use of phonologically well formed subject markers appears somewhat before 3 years, about the same time as the marking of noun class prefixes, though instances of *ta* or *tea* < *kea*

'I'm' are still found. In general, however, the subject marker and the tense/aspect marker are more consistently differentiated by 3 years.

Kunene (1979) found that three Siswati-speaking children aged 4;6-5;9 performed remarkably well on experimental tasks involving the production of subject markers: There were no overgeneralizations of the type reported for singular/plural noun class pairing tasks. The one overgeneralization made was in story tasks with human referents that were assigned to non-human classes. Once the lexical noun and corresponding subject marker where initially used, children's sentences would undergo pro-drop and they would switch to class 1/2 (the 'human' class) subject markers. Once these older children deleted the head noun, semantics - at least for the human class, may have begun to play a role.

Like subject markers, object markers are generally phonologically related to the noun class of their head noun. However, unlike subject markers, which are always obligatory except in imperatives, object markers occur only when the lexical object is omitted or extraposed (see section 1.2.3).

Furthermore, unlike subject markers, which occur at the beginning of the VP, object markers are infixed between the subject marker (and tense/aspect marker if present), and the verb. We might therefore predict that they would be less perceptually salient for young language learners and would be acquired later. The only context where they are VP initial is in imperatives (OBJ-Verb), where there is no subject marker nor tense/aspect marking. We might therefore predict that object markers would show up first in imperative contexts, and this is indeed the case. On both perceptual saliency grounds, as well as for frequency reasons (subject markers are obligatory and therefore more frequent) we might also expect the acquisition of object markers to be later than that of subject markers. This is also the case.

Like the rest of the agreement system, the development of object markers exhibits the familiar pattern of

No marking > shadow vowel > appropriate marking

The first object markers start being marked between around 2;6 years in Sesotho (Demuth 1988:313) and somewhat later (2;10-3 years) in Siswati (Kunene 1979). Demuth (1988) notes that the first object markers are nasals (primarily 1st person singular), and they are especially noticeable in imperative constructions (e.g. *m-phé* '1sOBJ-give'(=give me).

In an experimental study of Siswati-speaking 4;6-5;11 year olds Kunene (1979) found that children used class 1 object marker *m-* instead of class 3 *wu-* (the prefixes on the corresponding nouns are both *umu-*) and class 5 *li-* instead of class 11 *lu-*. Once again, it appears that the Siswati-speaking children, under experimental conditions, are making consistent phonologically based generalizations about the noun class and agreement system of their language, collapsing classes 11 and 3 with phonologically similar classes 5 and 1 respectively.

2.2.2 Subject Markers, Pro-drop, Subject Inversion and Topicalization

Suzman (1982) notes that a low percentage of Zulu-speaking children's sentences contained lexical subjects: 1;11 yrs. - 26%, 2 yrs. - 9%, 2.2 yrs. - 14%, and 2;6 yrs. - 11%. A cursory examination of present tense constructions in Sesotho also shows a low use of lexical subjects. In keeping with the 'here and now' tendency reported for children's subjects crosslinguistically, approximately 70% percent of Sesotho-speaking children's subjects at 2;1 years were 1st or 2nd person pronouns, where no lexical subject can be used. This decreases to approximately 60% by 2;6-3 years. Of the subjects that can take lexical NPs, approximately three quarters show pro-drop at 2;1 years, and approximately half show pro-drop at 2;6 and 3 years. Thus, there is an increase in both CONTEXTS for lexical subject use, and in ACTUAL use of lexical subjects by 2;6 years.

Subject inversion comes in strongly about the time that lexical subjects begin to be more frequently used, around 2;6 years (Demuth 1987b). In Demuth (1988b) I suggest that it is about this time that Sesotho-speaking children realized their language is a pro-drop language, that lexical subjects are optional, and that they can also be inverted.

(93) (2;6 yrs.)
éá-tsamay-a koloi yá:ka
(éá-tsamay-a kolói yá:ka)
9SM-go-M 9car 9POSS-my
It's going, my car.

While there are a few cases of topicalization, or use of independent pronouns with 1st and 2nd person subject markers (*nna ke-batla....* 'Me I want ...') at 2;1 years, and more at 2;6 years, they feature much more prominently by 3 years, perhaps showing an increased ability of the child to handle contrastive focus, although it often seems to be used in contexts not requiring contrastive focus. Occasionally, especially before 2;6 years, the independent pronoun will be used to the exclusion of the subject marker itself (**nna batla...* 'Me

want...'). More frequently the overuse of independent pronouns seems to be marking the highly definite and topical status of the subject. Recall that Sesotho has a constraint on subjects that prohibits question words and other non-given, non-topical referents as subjects. It is possible that children's overuse of independent pronouns around 3 years is an attempt to overtly mark the topical status of the subject.

The Sesotho data seem to be in accord with findings on the acquisition of Italian and the extraposition of subjects. What is interesting, however, is that Sesotho also has expletive constructions, bringing the pro-drop parameter as initially proposed by Hyams (1986) into question. This will be discussed in greater detail in section 2.2.9.

2.2.3 Object markers, Extraposition, and Reflexives

The consistent and phonologically appropriate production of Sesotho object markers comes in a few months after that of subject markers, around 3 years (section 2.2.1). Likewise, the use of extraposed lexical objects increases once object markers are consistently used (Demuth 1987b:101).

(94) (3 yrs.)
n-ná kea-e-batl-a buka yá:-ka
(n-ná kea-e-bátl-a búka yá:-ka)
1s-PN 1sSM-9OBJ-want-M 9book 9POSS-my
'Me, I want it, my book'

As in the case of subject markers and lexical subjects, it would appear that flexibility in the placement of lexical object NPs requires the prior acquisition of the object marker.

Though there has been no exhaustive investigation of reflexives, acquisition of reflexives appears to follow a similar course of development, with 7 productive uses found in the spontaneous speech of on 3-year-old, all grammatically coindexed with the subject, as in (95).

(95) (3 yrs.)
ke-i-kéth-ê:ts-e+
(ke-i-khéth-ets-e)
1sSM-RF-choose-APL:PERF-M
'I chose for myself'

Once object markers and reflexives are both consistently recognizable there is no evidence of both being used in the same construction, though this is grammatical in Setswana. Nor is there any evidence of attempts to use two object markers, again ungrammatical for Sesotho, but acceptable for closely related Setswana (Cole 1955:233). It is not clear how and when children learn the different parametric settings for what can and cannot be pronominalized. Further comparative work in this area, particularly of an experimental nature, would most illuminating.

2.2.4 Pronominalization, Word Order, and Double Object Constructions

As noted in the foregoing sections, Sesotho speaking children tend to use a basic (S)V(O) word order prior to 2;6 years. Even in cases of misunderstanding, where a switch to a different word order might facilitate communication, children apparently have few word order possibilities available to them (Demuth 1987b:98).

Subject inversion begins about 2;6 years once subject markers have been more fully acquired, and children presumably know that they are learning a pro-drop language. Topicalized subjects, especially in the form of independent pronouns, are frequently used, and often over used, between 2;6-3 years. It is also around 2;6 years that cleft constructions start being produced, especially with questions (e.g. *Ke mang ya*.....? 'Its who that .....?') (Demuth 1984a, 1984b, 1987b). It might be that, once subject markers have been acquired, and the child has figured out that Sesotho is a pro-drop language, s/he also begins to realize that subjects must be highly topical, and starts to over use topicalization, clefts and passives in an effort to emphasize that topicality.

As discussed in section 2.2.3, postposed objects begin to be produced a few months after postposed subjects and, coincidentally, about the same time that object markers are beginning to be more consistently produced. Object extraposition, either as topicalization or as postposing, becomes more prominent between 2;6-3 years once object markers are more firmly in place. Preposed, or topicalized objects seem to become increasingly common in the speech of one older children, around 4;6-5 years (Demuth 1987b:102).

(96) (4;6 yrs.)
tó:ch ya-haó ke-e-tímm-e
(tó:che yá-háo ke-e-tímm-e+)
9flashlight 9POSS-your 1sSM-9OBJ-turn off:PERF-M
'Your flashlight, I turned it off'

Most of Sesotho-speaking 2-3 year olds' double object constructions include one animate and one non-animate argument. In spontaneous speech, there were few cases of double object constructions were both arguments were lexical; the animate argument is usually pronominalized. However, in a preliminary survey of data from older children, the animate NP was nearest the verb, in accord with the Sesotho animacy hierarchy (section 1.2.1).

(97) (4;1 yrs.)
Mmé hakéré o-ta-rek-él-á Nnéuoe ma-sale ála[15]
(Mmé hakéré o-tla-rék-él-a Nnéuoe ma-salé ála)
mother not-so 2sSM-FUT-buy-APL-M 1N 6-earrings 6DEM
'Mother, isn't it true that you're going to buy 'Neuoe those earrings?'

Animacy restrictions were also observed in embedded clauses, though again the animate object was generally pronominalized.

(98) (4;1 yrs.)
...áo o-no-n-rek-éts-é oná
(áo ó-né-ng ó-n-rék-éts-é oná)
...6REL 2sSM-PAST/CONT-RL 2sSM-1sOBJ-buy-APL:PERF 6DEM
...'(those)/that you bought me (them)'

Further research in other languages will have to determine if pronominalization of the animate objects is a more universal characteristic of child language, or if it indicates that children have learned about the Sesotho double-object animacy constraint.

Table 7. summarizes results from the preliminary investigation of Sesotho word order development (Demuth 1987b:104).

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[15] The parentheses around the (l) in the child's utterance indicate that it has been omitted, i.e. the child's utterance was *ta*, while the adult equivalent is *tla*.

Construction								
Preposed Objects			- - -	-- - -	xxxx	xxxx		
Postposed Objects		- - -	xxxx	- - -	-- - -	-- - -	-	- - - occasional use
								xxxxx frequent use
Postposed Subjects		- - x	xxxx	- - -	-- - -	-- - -	-	
Clefts		- - x	xxxx	- - -	-- - -	-- - -	-	
Cleft Questions	- - xx	xxxx	xxxx	xxxx	xxxx	xxxx		
Gesture, Repetition	xxxx	- - -	- -					
& Amplitude								
	2	2;6	3	4	5	Adult		
			Age					

Table 7. Development of Sesotho Word Order

2.2.5 Causatives and Applicatives

The study of how Sesotho verbal extensions are acquired is still in its infancy. It is evident that some verb forms are not analyzed as Verb + Extension initially, but are rather acquired as a lexical wholes, and probably even treated as such buy adults (e.g. *tl-is-a* > come + CAUS + M = 'bring', *ch-es-a* > burn + CAUS + M = 'cause to burn'). I suggest that this may be particularly true of causatives, though this needs further investigation, from both a syntactic and semantic point of view. On the other hand, benefactive/applicative constructions seem to be both more frequent and include more cases that are not rote learned. A cursory examination of three speech samples of the spontaneous speech of one child shows the following verbs in use with the causative (Table 8.) and the applicative (Table 9.), where (L) indicates possible lexicalized forms).

			AGE	
		2;1	2;6	3
VERB	MEANING < STEM			
chesa (L)	'cause something to burn' < 'burn'	x	x	
tlisa (L)	'bring' < 'come'	x	x	x
rwesa	'dress someone' < 'put on'	x		
dudisa	'sit someone down' < 'sit down'	x		
kenya	'put in' < 'enter'	x	x	x
kukisa	'pick something/someone up' < 'pick up'		x	
rahisa	'kick something' < 'kick'		x	
lwantsa	'cause someone to fight' < 'fight someone'		x	
palamisa	'cause someone to mount' < 'mount'		x	
lelekisa	'cause to follow' < 'follow'		x	
bidikisa	'cause something to turn about' < 'turn about'		x	x
tiisa (L?)	'strengthen' < 'become firm'		x	x
bontsa (L?)	'show' < 'see'			x
tlotsa	'anoint' < 'anoint oneself with'			x
lokisa	'cause to fix' < 'fix'			x
tsamaisa	'cause to travel' < 'walk'			x
mathisa	'cause to run' < 'run'			x
tsetisa	'weaken' < 'become thin'			x
takalatsa	'stretch out legs' < 'bestride'			x
khantsela	'enlighten for' < 'englighten' < 'be bright'			x

Table 8. Sample of Sesotho Causative Verbs from speech of one child

Research on the acquisition of causatives in English has indicated that the productivity of this construction is questionable, and many overgeneralizations are found (see Bowerman 1974; Maratsos, Gudeman, Gerard-Ngo & deHart 1987). Even in Sesotho, where the causative is morphologically identifiable, the derived meaning of causatives is not always immediately transparent. Use of the causative by 3 years seems somewhat restricted, and experimental work may be needed to determine when the causative becomes truly productive. The preliminary survey indicates that the causatives that are used appear to be well formed, generally adding an argument, many of them surfacing as imperatives (e.g. *ngrwese* 'cause me to wear (shoes)' - i.e. 'put my shoes on me' (2;1 yrs.)). However, there may well be some individual variation in the acquisition of these forms; the study of a second Sesotho-speaking child at these same ages is currently underway.

			AGE	
		2;1	2;6	3
VERB	MEANING < STEM			
fihlela	'reach' < 'arrive'	x		
timela	'refuse someone' < 'refuse'	x		
ngwathela	'feed someone' < 'feed'	x		
tebela	'send away' < 'send'	x		x
etsetsa	'make/do for' < 'make/do'	x		x
wela (L)	'fall on' < 'fall'	x	x	x
tselela	'pour for' < 'pour'	x	x	x
tella	'give up for' < 'give up'		x	
mathela	'run to' < 'run'		x	
latella	'follow closely' < 'fetch'		x	
rwalla	'carry/wear for' < 'carry/wear'		x	
qetsolella	'give someone part of' < 'give part of'		x	
tswarela (L	'seize for (excuse)' < 'seize'		x	
tipela	'dip for' < 'dip'		x	
jelela	'eat for' < 'eat'		x	
nyela	'excrete' < 'defecate'		x	
lisetsa	'herd for' < 'herd'		x	
tlela	'come with' < 'come'		x	x
bulela	'open for' < 'open'		x	x
chakela (L?)	visit someone' < 'visit'		x	x
khethela	'chose something' < 'chose'		x	x
tlohela	'leave for' < 'leave'			x
chopola	'let go of something' < 'get loose'			x
ngolla	'write someone' < 'write'			x
dihela'	'throw into' < 'throw down'			x
tlisetsa	'bring to/for' < 'bring' < 'come'			x
rotela	'urinate on' < 'urinate'			x
ntsela	'take out for' < 'take out'			x
siela	'leave someone' < 'leave'			x
felela	'be finish (empty) of' < 'be finished'			x
khantsela	'enlighten for < 'enlighten' < 'be bright'			x
binela	'sing for' < 'sing'			x
balehella	'flee from/to' < 'flee'			x
kakallela	'lie on back for' < 'lie on back'			x
thibela	'prevent' < 'stop, halt'			x

Table 9. Sample of Sesotho Applicative Verbs from speech of one child

Applicatives seem to be more productive than causatives, both in frequency of use and in the number of different verbs used. Some applicatives occur in the context of locative referents (*o-rotela hona moo?* 'Are you urinating right here?' (3 yrs.)), while others were used to form 'why' questions (*ke-o-sielang?* 'Why am I leaving you? (3 yrs.); *o-n-timelang?* 'Why are you refusing me (it)? (2;1 yrs.)). It was in this 'why' question context that one verb showing both the causative and applicative extension was found, but this was with the lexicalized form *tlisa* 'bring'.

(99) (3 yrs.)
o-tl-ís-ets-/á-ng peré mo+?
(o-tl-is-ets-a-n‰g pere moo?)
2sSM come-CAUS-APL-M-what 9horse LOC
'Why are you bringing the horse here?

However, another case at 3 years shows the productive use of both causative and applicative extensions as well as perfect aspect with the verb *khanya* 'be bright' while playing with a *toch* 'flashlight'.

(100) (3 yrs.)
á khantsedítsé ...
(ke-khán-ts-éd-íts-é ...)
1sSM-bright-CAUS-APL-PERF-M ...
'I lit up ...'

At earlier stages of acquisition morphophonological 'errors' occasionally occur; when the causative or applicative is used in conjunction with other extensions such as the perfect aspect marker or the passive, one or more extensions are sometimes omitted. Example (101) is the child's use of a commonly heard question routine in adult speech, so it is possible to determine the target form that was intended.

(101) (2;4 yrs.)
a rekélá é máng?
(o-e-rék-éts-w-e+ ké mang?)
1sSM-9OBJ-buy-APL:PERF-M by who
'Who bought it for you?' (lit. 'You were bought it by who?')

While the adult form *rek-ets-w-e* is derived from *rek + el + il + w + e*, (where the applicative *-el-* and the perfect *-il-* undergo a phonological process to produce *-ets-*), the child was able to extract the stripped down form *rek-el-a*, omitting both aspectual and passive morphology. This might indicate that the child does have some idea that the applicative marker is needed (i.e. that the situation requires two internal verbal arguments). Such difficulties in the phonological realization of multiple verbal extensions are frequent at 2-3 years, with occasional phonological deviations persisting to around 5 years. There are also a few cases of the applicative *-el-* being overgenerated with verb forms already ending in *-la*. Two such forms include *tselela* < *tsella* 'pour for' at 2;1 yrs. and *ngolela* < *ngolla* 'write to someone' at 3 yrs.

Many causatives and applicatives were used with lexical or pronominalized objects, and a few applicatives were used with the passive. A preliminary investigation indicates that these are well formed, but this will have to be studied further. The use the applicative/benefactive marker also increases the transitivity of the verb to two arguments, and would therefore be one of the contexts where we would expect to find double object constructions. However, as noted in section 2.2.4, Sesotho-speaking children generally use an object marker for the human argument.

The data presented here address briefly some of the important questions regarding the use of causative and applicative constructions. As Machobane (1989) notes, even the correct ordering of causative and applicative suffixes must entail, eventually, an understanding of case roles (see discussion in section 1.2.4). To date there has been no thorough study of what children do when presented with both a causative and applicative suffix, nor how they become aware of the different object and passivization properties of these two constructions. The data presented here suggest that they approach this issue conservatively, but further research is needed to fully understand how children deal with these transitivity and argument structure relations.

2.2.6 Passives

As noted in section 1.2.5, the grammatical structure of Sesotho passives closely resembles that of English passives. The main difference is that Sesotho can passivize both dative and accusative arguments as well as many stative verbs, and that Sesotho does not have adjectival (lexical) passives or use an auxiliary verb It is therefore interesting to compare the acquisition of passives in Sesotho and English.

An examination of Brown's (1973) spontaneous corpus shows virtually no use of passives before that age of 3;3 years (Pinker, Lebeaux & Frost 1987), and experimental studies have shown problems in the comprehension and production of English passive at even 4-5 years (Maratsos, Kuczaj, Fox, & Chalkley 1979) or later. Because of the low instance of spontaneous passives and the apparent difficulty with producing passives in experimental situations, it has long been assumed that passive constructions are grammatically difficult to acquire for speakers of English, and perhaps for speakers of all languages. This has led to the development of theoretical perspectives such as the Maturation Hypothesis (Borer & Wexler 1987) where it has been proposed that certain grammatical principles, such as A-chain formation, are not initially available to the child, but 'mature' in due course. Once a grammatical principle has 'matured', the child can then produce the grammatical

constructions that depend on that particular grammatical principle. Thus, once the grammatical principle governing A-chain formation has matured, children should be able to comprehend and produce syntactic passives. The implicit assumption of this view would be that grammatical principles would 'mature' at more or less the same time for all children (given room for some individual variation), and that we should therefore expect to find syntactic passives emerging at relatively the same time across languages.

With these crosslinguistic considerations in mind, the acquisition of passives in Sesotho is of particular interest. Before 2;8 years one finds occasional passive constructions being used in spontaneous speech. Some are no doubt rote learned and rote produced, but others seem to be productive. Certainly, there is ample evidence from interactive discourse situations that children younger than 2;8 years comprehend passives that are directed to them. While the passive morpheme *-w-* is not always in place in children's earliest productions (though note [w]'s palatalization effect ([ts] > [tj]) in (102)), the the word order of the utterance, along with the marking of the by-phrase, suggests that even very young children may have access to passive formation.

(102) (2;1 yrs.)
bitja.....e mme
(oa-bíts-w-a+ ké mme)
2sSM-call-PASS-M by 1amother
'You are being called by mother'

It should be noted that young Sesotho-speaking children's difficulty with consistently producing the labio-velar glide [w] appears to be a general articulatory problem until around 3 years: Many glides are also omitted in non-passive, and indeed non-morphemic contexts (e.g. *naná* < *ngwana* 'child').

Around 2;8 years there is an increase in both the total number and percentage of passives produced, as well as an increase in the creative (non-rote) use of passives, many of which employ by-phrases, some of these with non-animate agents (103) (Demuth 1989a, 1990).

(103) (2;8 yrs.)
o-tla-hlaj-uw-a ke tshehlo
(o-tla-hlaj-uw-a ke tshehlo)
2sSM-FUT-stab-PASS-M by 9thorn
'You'll be stabbed by a thorn'

It would therefore appear that Sesotho speaking children have access to the grammatical phenomena that control the formation of syntactic passives by at least 2;8 years if not earlier, some 7-8 months prior to that reported for English (Pinker,et al. 1987). The following tables (from Demuth 1989a) show the total number of utterances (Table 10.) and the types of passive constructions (Table 11.) found in the spontaneous Sesotho corpus.

Age (y/m)	2;1-2;3	2;4-2;.6	2;7-2;9	2;10-3;2	3;9-3;10	4;0-4;1	caregivers
n of Utterances	1704	2925	3307	3159	1520	1603	386
n/% of Passives	6/.4	11/.4	33/1.0	27/.9	32/2.1	30/1.9	23/6.0

Table 10. Development of Spontaneous use of Sesotho Passives

Notice that the percentage of passives in children's speech increases over time, and that caregiver speech is very rich in the use of passives.

Age (y/m)	2;1-2;3	2;4-2;6	2;7-2;9	2;10-3;2	3;9-3;10	4;0-4;1	caregivers
n of Passives	6	11	33	27	32	30	23
Full	2/33.3	5/45.5	8/24.2	7/25.9	5/15.6	4/13.3	13/56.5
Short	4/66.7	6/54.5	14/42.4	17/63.0	17/53.1	17/56.7	7/30.4
Impersonal	0	0	11/33.3	3/11.1	10/31.3	9/30.0	3/13.0

Table 11. Development of Different Types of Sesotho Passive Constructions

Contrary to reports that full, or by-phrase passives pose a problem for language learners (Horgan 1978), by-phrases compose a greater percentage of younger children's passives than they do for the older child (3;9-4;1 years). They are also well represented in caregiver input (56.5 %), Note, however, the delayed onset in the acquisition of impersonal passives. These will be discussed further in section 2.2.9.

In keeping with findings from English on the acquisition of different verb types (Maratsos, Fox, Becker, & Chalkley 1985; Pinker et al. 1987), the majority of the passive verbs that Sesotho-speaking children spontaneously produced were activity verbs that passivize most easily. Even reversible passives of activity verbs presented no apparent comprehension nor production problem.

(104) (2;9 yrs.)
yena o-ne a-pep-uw-a ke nkhono
(enwa o-ne a-pep-uw-a ke nkhono)
1PN 1SM-PAST/CONT 1SM-carry-PASS-M by 1agrandmother
'That one, he was carried by grandmother'

The only error found was with a non-activity verb, where an older child (3;10 years) repeatedly reversed the animate arguments of the passive verb *fetwa* 'to be surpassed' (Demuth 1990).

There are two possible explanations for why passives appear more productively in earlier in Sesotho spontaneous speech than they do in English. First, Sesotho can passivize both accusative and dative arguments, as well as many stative verbs. Passivization in Sesotho is therefore more productive than it is in English, and would presumably give learners more opportunities for both hearing and constructing passives. Indeed, a sample of Sesotho-speaking caregivers' interactions with a 2;1 year-old shows that 6% (n=23) of the 386 verbs used were passives (Demuth 1990). Much of Sesotho caregiver speech consists of either imperatives or questions. Recall from section 1.2.6 that Sesotho does not allow wh-extraction from subject position; a passive or cleft must be used to question subjects. Of the caregiver questions, 73% were passives, most of them subject questions like that in (105), directed to a 2;6 year-old (from Demuth 1987b:97).

(105) o-n'o-shátj-w-á ké nkhono máng?
(o-ne ó-shátj-w-a+ ké nkhónó mang?)
2sSM-PAST/CONT 2sSM-lash-PASS-M by 1agrandmother who
'Which old lady lashed you?' (lit. 'You were lashed by which old lady?')

While only a very few of children's early passives are questions, the question-passive input no doubt provides them with early and ample practice with comprehension of passive constructions. Thus, a rich input of passives, which is a result of 1) the productivity of the construction in the language, and combined with 2) the discourse role it plays in caregiver speech, may facilitate children's own future production of passives.

While input undoubtedly plays an important role in the acquisition of grammatical structure, it is generally accepted that the child also imposes some organization on his or her developing grammar. Again we return to the difference between Topic and Subject oriented languages. While most languages tend to place topical information in subject position and new information in object position, some languages have stronger constraints towards

subjects being topical than do others. Given the option of keeping either an Agent or a Topic in subject position, English will normally select the Agent, while Sesotho and many other Bantu languages will select the Topic (see section 1.2.2). This division of languages into those that take Topic oriented subjects and those that take Agent oriented subjects may be considered a type of parametric variation. We have already seen that languages that take Topic oriented subjects will resort to the use of both passive and cleft constructions to form subject questions, and there may be other grammatical implications of this grammatical distinction that go beyond the scope of the present discussion. The importance of the Topic vs. Agent distinction is that constructions like the passive will not be 'marked' in languages where subjects are Topic oriented, while they will be the 'marked' case in languages like English that have more Agent oriented subjects. Thus, while the passive in languages like English is used for certain pragmatic purposes of demoting agency, the passive in languages like Sesotho is used to maintain the topicality of subjects. It is not clear when and how children learn about the orientation of subjects in their particular language, but it would appear to be fairly early. The use of passive in a Topic oriented language will follow by automatically, while the production of passives in an Agent oriented language will be more marked.

What are the implications of the Sesotho data for the status of the Maturation Hypothesis? Obviously the acquisition of language must be determined by maturation in some way. However, the Maturation Hypothesis was invoked to explanation the late acquisition of passives in English, and as a justification for positing that the earliest reported passives in English must necessarily be adjectival (lexical) rather than true verbal passives. The Sesotho data show that the acquisition of verbal passives need not be as late as initially thought, and that children as young as 2;8 years, and perhaps even younger, may have access to the grammatical principles governing the formation of passive constructions. The Sesotho evidence therefore provides independent support for reports arguing that, given the appropriate pragmatic context, English speaking children, and indeed children learning any language, have the grammatical ability to produce verbal passives much earlier than originally thought (Crain & Fodor, in press). This means that, if the maturation of grammatical principles is needed to form constructions like the passive, it must take place much earlier than initially thought. That English-speaking children may infrequently use verbal passives in spontaneous speech may therefore have more to do with language specific factors of how the construction functions in the language rather than the fact that prerequisite grammatical principles principles have not yet matured.

I therefore suggest that, for young Sesotho speakers, syntactic passive is a highly salient, canonical construction that presents much less of a problem for comprehension or production than it does for learners of languages where passives are the marked case. If this is so, we would predict the spontaneous use of passives in languages with Topic oriented subject to be earlier and more robust than in languages that are Agent oriented. Preliminary findings support this prediction: The spontaneous use of passives in Zulu, another Topic oriented language, patterns with findings from Sesotho (Suzman 1985, 1987). This is not to say that children acquiring Agent oriented languages cannot also produces passives at an early age, but rather that the grammatical contexts required for their use will be few and far between. Obviously, more crosslinguistic research is needed to fully evaluate these proposals. Perhaps, however, that the discussion presented here will help to clarify some of the apparently conflicting views on the acquisition of passive in English, and will stimulate further research on the acquisition of the passive in other languages.

2.2.7 Question Formation

Unlike English, auxiliaries do not play a role in the formation of Sesotho questions, nor is there movement in the formation of either yes/no or information questions at the clausal level. We might therefore predict that the acquisition of questions in Sesotho would be error free and perhaps earlier than that reported for English. Table 12. provides a preliminary view of the development of question formation in Sesotho.

			AGE	
		2;1	**2;6**	**3**
QUESTION	**SESOTHO FORM**			
yes/no		6	18	24
yes/no (subjunctive - permissive)			1	13
yes/no with question marker	*na◊:*		1	3
what	*Verb + ng*	2	5	2
where	*kae*	3	3	4
who (clefted subject)	*ke mang*	2	2	1
why	*Verb + el + ng*	1		2
who (object)	*mang*	1		
when	*neng*		1	
with what (instrumental)	*kang*			2
how	*jwang*			1
whose/of who (possessive)	*ya mang*			1
Total number of verbal utterances examined		242	489	581

Table 12. Sample of Sesotho Question formation from one child

As in English, Sesotho-speaking 2 year-olds seem to have acquired much of the distinctive intonational pattern of yes/no questions, i.e. higher initial pitch register, with no declination nor penultimate lengthening. Their use of permissive questions (*ke-e-lahle+?* 'Should I throw it out?'), which uses subjunctive morphology and tone, has greatly increased by 3 years, while the optional question marker *na◊:*, is still rare at this time. Straight yes/no questions are the most commonly used questions by far.

'What' and 'where' questions are in use by 2;1 years, as are clefted subject questions (e.g. *ka mang ya jeleeng poone?* 'It is who that ate the corn?') (see section 2.2.8). There is also a 'why' question appearing at 2;1 years, though this form was modeled in the preceding discourse (*o-n-timelang?* 'Why are you refusing me (it) - where another child has some corn on a cob and won't share it). The 'why' forms found at 3 years seem to be productive (e.g. *o-tlisetstang pere ka moo?* 'Why are you bringing the horse in here?). 'When', 'how', 'with what', and 'whose' questions are infrequent, occurring more often around 3 years of age.

While yes/no and information questions involve no movement, we might expect later acquisition or errors in the acquisition of cleft questions, where an NP has been extracted. This has yet to be investigated. However, cleft questions come in very strongly for at least some children by 2;5 years and appear to be well formed (see section 2.2.8). As noted in section 1.2.6, Sesotho disallows question words in subject position. One might expect to find early errors where children used question words in subject position. While this might occur in early Sesotho, there were no examples of this phenomena from 2;1 years onwards. Both cleft constructions and passives are used to question would-be subjects, thus many of children's 'who' (*mang*) questions take the form of passives or clefts. It is not clear how and when young Sesotho-speakers learn that their language permits only Topical subjects. Though there is no evidence of overgeneralization at these early stages, we might expect to find it later. Alternatively, it is possible that the parametric setting for Topical subjects is set early on, and the expected overgeneralization never occurs (see discussion of passives in 2.2.6).

2.2.8 Relative Clauses and Clefts

Research on the acquisition of English relative clauses is characterized by conflicting results concerning how and when these constructions develop (see de Villiers & de Villiers 1985 for a review). Goodluck & Tavakolian (1982) and Solan & Roeper (1978) conclude that

children's use of relative clauses is well developed from an early age, and that children are cognizant of the structural properties of the construction. Flynn & Lust (1980) and de Villiers, Tager-Flusberg, Hakuta & Cohen (1979) emphasize the incomplete nature of children's knowledge and use of relative clauses before the age of 6. Hamburger & Crain (1984), on the other hand, maintain that rudimentary relative clauses are present around the age of 2, but that children pass through various stages on their way to complete acquisition of relative constructions. Once again the acquisition of Sesotho is of interest in that it points to the early comprehension and production of relative clauses in spontaneous speech. Recall that the formation of Sesotho relative clauses differs somewhat from that of English: Sesotho has only restrictive relative clauses, has different relative markers for subject and object/oblique relatives, and takes obligatorily resumptive pronouns in object/oblique relatives.

A few attempts at relative clauses were found in the spontaneous speech of Sesotho-speaking children between 2;1-2;4 years, but relatives become more productive around 2;5 years, as do cleft constructions (Demuth 1984a). Subject relative markers are generally present, while object relative markers are frequently absent, or a demonstrative pronoun is used instead. Locative relative markers also frequently take the form of a demonstrative (*mane* 'there', *monana* ' over there', *mona* 'here') rather than the locative relative marker *móo* 'where'. However, adults are also somewhat inconsistent in their use of either relative or demonstrative locative forms. The invariant verbal relative suffix *-ng* is more consistently produced by 3 years, though older children and adults occasionally omit it. The difficulty here may be in determining where to put the suffix; most tense/aspect markers take *-ng*, but those of motion do not (e.g. *tla* 'come' [future marker]). Main verbs are more consistently marked with the verbal relative marker than tense/aspect forms, by both children and adults.

Much of the English acquisition literature on relative clauses has focussed on which types of relatives (object-subject, subject-subject, object-object, or subject-object: OS, SS, OO & SO respectively) children comprehend and produce best. There has been much controversy over the results: Sheldon (1974) has argued for ease of processing in 'parallel functions' (SS and OO), while others have argued for OS and SS (de Villiers et al. 1979). In spontaneous Sesotho the two 2-3 year-old children overwhelmingly used OS constructions (57-69 percent of the relatives), and 32-41% have lexical heads (Demuth 1984a). Only 14-20% of relatives had pronouns as heads, or were headless, the head noun generally having been used in the previous discourse (106).

(106)

(5;5 yrs.) eá tsamay-a pere éno, yéno
(éá tsamay-a pere éno, yéno)
9SM-walk-M 9horse 9DEM 9DEM
'It's walking, this horse, that one'

(2;9 yrs.) **é** khanélwé**ng**?
(**é** qhanéh-íl-w-é-**ng**)
9REL saddle-PERF-PASS-M-**RL**
'(The one) that has been saddled?'

There are a few abstract nouns used as heads, but most head nouns are concrete nouns, *ntho* 'thing', or demonstrative pronouns. While most relatives are OS, there are also a few OO relatives at this time (107): Note that the verbal relative marker *-ng* is used, but that the relative marker marker *leo* is missing.

(107) (2;9 yrs.)
tli-á le-bokos lâ:-ka ke-le-f-u-w-é-**ng**
(tl-is-á le-bókosé lá-ka **léo** ké-lé-f-il-w-é-**ng**)
come-CAUS-M 5-box 5POSS-my **5RE**L 1sSM-5OBJ-give-PERF-PASS-M-**RL**
'Bring my box that I was given (it)'

In contrast, approximately a third of a 3;8-4;7 year-old's relatives were OO, perhaps showing an increased ability to handle fully embedded clauses (108c). There was also an increase in the use of multiple embeddings, as in (108):

(108) (4;1 yrs.)
a) Mmé hakéré o-ta-rek-él-á Nnéuoe ma-sale ála
(Mmé hakéré o-tla-rék-él-a Nnéuoe ma-salé ála)
mother not-so 2sSM-FUT-buy-APL-M N 6-earrings 6DEM
'Mother, isn't it true you're going to buy 'Neuoe those earrings

b) **á** tshwán-a-**ng** lé ále á-ka
(**á** tshwán-á-**ng** le ale á-ka)
6REL like-M-**RL** CONJ 6DEM 6POSS-my
that are like those of mine

c) **áo** o-no-n-rek-éts-é oná
(**áo** ó-né-**ng** ó-n-rék-éts-é oná)
6REL 2sSM-PAST/CONT-**RL** 2sSM-1sOBJ-buy-APL:PERF 6DEM
that you bought me (them)

d) mohláng re-il-é ká noka-né-ng?
(mo-hlá-ng **óo** ré-il-é-**ng** ká nok-an-eng)
3-day-loc **3REL** 1pSM-go:PERF-M-**RL** to river-DIM-LOC
on the day when we went to the river?'

Note here the omission of the *-ng* verbal relative suffix in (108) c) and d), and the lack of relative marker in d) (all marked in bold). It is not clear whether the elision of relative clause markers indicates a lack of differentiation between head and complementizer on the part of the child, as suggested by Flynn & Lust (1982) for English, or whether it is simply a reflection of similar underspecified patterns in adult speech, though it would appear to reflect the latter.

Independent evidence in support of the claim that Sesotho-speaking children do have access to the structural properties of relative clauses comes from their use of cleft constructions. Like many languages, Sesotho cleft constructions incorporate a relative clause. If children are producing well-formed cleft constructions, we would hypothesize that they should also have access to the structural properties of relative clause formation. The first cleft construction (a question) was recorded for one child at 2;1 years (109), with a burst in the use of cleft constructions at 2;5 years (110), many of them as cleft questions.

(109) (2;1 yrs.)
e má: **e** ketílé póone?
(ké máng **yá** qet-íl-é-**ng** póone?)
COP who **1REL** finish-PERF-M-**RL** corn
It's who that finished the corn?

(110) (2;5 yrs.)
ké: nthéo ka moo ké fuwá**ng**?
(ké éng nthó éo ká móo **yéo** ké-e-fúdú-á-**ng**?)
COP what 9thing 9DEM PREP here **9REL** 1sSM-9OBJ-stir-M-**RL**
'What is this thing in here that I'm stirring?'

Once again there is underspecification of relative markers in (109) and (110), of the verbal relative marker (109), and of the resumptive object pronoun (110), similar to the underspecification found in relative clauses. Otherwise the construction is well formed, indicating that Sesotho-speaking children may have access to the structural properties of both relative clauses and cleft constructions by 2;5 years. This would be in keeping with claims made for the acquisition of English relative clauses by Goodluck & Tavakolian (1982) and Solan & Roeper (1978). There is, however, no evidence at this point that children can handle multiple embeddings. Perhaps one can accommodate the piecemeal proposal of Hamburger and Crain (1984) by suggesting that structural knowledge for multiple embeddings develops somewhat later.

It is not clear why there are so few relative clauses reported in English-speaking children's early spontaneous speech. Studies of acquisition have generally assumed that a child's most complex grammatical productions would occur during discourse interaction with adults, and mother-child interaction was studied as a source of information about children's linguistic capabilities. However, the study of Sesotho, where interactions were recorded with peers as well as adults, shows a higher percentage of relative clauses and clefts occurring not during adult-child discourse, but rather during peer interactions. It is in these less 'accommodating', more confrontational discourse contexts, where there is often more than one referent, that focussing constructions like relative clauses and clefts appear most naturally, as in (111) (Demuth 1984a).

(111) (2;8 yrs.)
kó óná **o** tabwilé**ng**!
(ké we-ná **yá** e-tábó-ts-é-**ng**)
COP 2s-PN **1REL** 9OBJ-tear-PERF-M-**RL**
'It's you who tore it!'

Having collected data from these types of less accommodating discourse contexts probably increased the number of relative clause and cleft constructions found in the Sesotho spontaneous speech corpus. It could be that more spontaneous use of English relative

clauses would also be found in such contexts. Interestingly, experimental work reported in Crain, McKee and Emiliani (forthcoming) confirms this suspicion; under appropriate discourse contexts English-speaking children of 3 years can produce relative clauses with little difficulty.

2.2.9 Locatives and Impersonal/Expletive/Existential Constructions

Most of the cross-linguistic work on the acquisition of locatives has been couched in terms of OPs and the acquisition of suffixes as opposed to prefixes (Connelly 1984:92, Kunene 1979:92-96). Connelly (1984) shows that the Sesotho locative suffix *-ng* is acquired as early as 1;7 months and with little apparent difficulty.

(112) teping/peping < khefi-ng 'café/shop-LOC'

There has been no study to date of how the locative suffix -ng is acquired relative to the locative prepositions *ka* 'into' and the class 17 locative marker *ho* 'to someone's place', nor the use of locative adverbs or demonstrative pronouns.

Recall that the locative class marker 17 *ho-* can function as a subject marker, that it occurs with non-verbal constructions (existentials and copula constructions), as well as with both passive (transitive) and active (unaccusative and motion) verbs (see section 1.2.8). Sesotho-speaking children's first uses of *ho* between 2;1-2;8 years are in existential constructions (*ho-na-le dijo* 'there is food') (113), copula constructions (*hoa-bata* 'it's cold') (114), and in idioms (*ho-thwe*... 'it's said (that)...') (115).

(113) (2;6 yrs.)
hó mo-sí mo-lló-ng
17ho 3-smoke 3-fire-LOC
'There's smoke near the fire'

(114) (2;6 yrs.)
a bata
(hóa-báta+)
17SM-cold
'It's cold'

(115) (2;6 yrs.)
hó-th-w-e se-sépa
(hó-th-w-e se-sépa+)
17SM-say-PASS-M 7-soap
'It's said "soap"'

The first uses of *ho-* with verbs occur around 2;8 years, as shown in (116) and (117).

(116) (2;8 yrs.)
ho-tla-shap-uw-a Dineo enwa
17SM-FUT-lash-PASS-M 1L. 1DEM
'There will be lashed Lineo, this one'

(117) (2;8 yrs.)
hoa-tsama-uw-a
17SM-leave-PASS-M
'There is leaving'

Only a very few examples of impersonal actives are found before 3;2 years. It is only by around 3;10, when spontaneous longitudinal data was again available, that more examples of *hó-* used in the active are found.

(118) (3;10 yrs.)
hó-ken-a ká ho-na
(hó-kén-a ká ho-na)
17SM-enter-M PREP 17-DEM
'One enters in here'

(119) (3;10 yrs.)
hóa-qhum-is-a
(hóá-qhum-is-a)
17SM-jump-CAUS-M
'They are being made to jump'

Demuth (1988b) suggests that *ho-* is a 'defective' subject marker in that it does not agree in noun class with its logical subject, nor allow fronting of that subject. Children apparently do not have access to using *ho-* with verbs until they have acquired subject markers, begin to produce subject inversion constructions, and have presumably learned that Sesotho is a pro-

drop language. Note, however, that scenario proposed here runs counter to that offered in Hyams (1986). Here I am suggesting that access to expletive constructions is only available to the language learner once they have already set the pro-drop values for their language. Only then, and once they have access to passivization (see section 2.2.6), can they produce impersonal passive constructions. If it is the case that Sesotho has two different types of subjects, or, according to Machobane (1987), two different types of INFL, then it would appear that the grammatical properties of the more canonical construction (with subject-verb 'agreement' possibilities) must be learned before the child has access to the less canonical (non-agreement) type.

It is not clear how the acquisition of Sesotho impersonal constructions might relate to the acquisition of similar expletive/existential/impersonal constructions in Germanic and other languages. Certainly, even among English, Icelandic, Swedish, Dutch and German there is parametric variation in the grammatical phenomena which characterize these constructions (e.g. Platzack 1983). Further acquisition work on these languages should prove to be of interest for language acquisition theory. For example, if it is the case that languages have more 'core' subject properties, like those of INFL 1, and other, perhaps 'less core' properties, like those of the less canonical INFL 2, then we should predict that the more core properties of a language should be acquired before those that are closer to the periphery. While our understanding of Universal Grammar is still in its infancy, and our conceptualization of 'core' and 'periphery' is still to be more precisely defined, it is possible that work on impersonal and related constructions might be helpful in developing these notions.

2.2.10 Tense and Aspect

Bantu languages are known for their highly complex tense/aspect systems. To date there has been no systematic study of the how the tense/aspect system of Sesotho is acquired, however preliminary findings based on the spontaneous productions of one child show that present, perfect and futures are being used at 2;1 years, and that the tense/aspect system continues to develop over time. Table 13. provides some indication of the tense/aspect forms children begin to use between the ages of 2 and 3.

		AGE								
Tense/Aspect	Form	2;1	2;2	2;4	2;5	2;6	2;7	2;9	2;11	3;0
present	*-(a)*	x	x	x	x	x	x	x	x	x
perfect	*-il-*	x	x	x	x	x	x	x	x	x
future1	*tla*	x	x	x	x	x	x	x	x	x
future 2	*tl'o/tlilo*	x	x	x	x	x	x	x	x	x
future 3	*il'o*	x	x	x	x	x	x	x	x	x
continuous	*ntse*				x	x	x	x	x	x
past continuous	*ne*				x	x	x	x	x	x
recent past	*tsoa*				x	x	x	x	x	x
potential	*ka*				x	x	x	x	x	x
hortative	*ere*				x	x	x	x	x	x
copula	*ba*					x	x	x	x	x
narrative past	*-a*					x	x	x	x	x
persistive	*sa*							x	x	x
past	*ile*									x
conclusive	*se*									x

Table 13. Acquisition of Sesotho Tense/Aspect

We do know that, until the age of 3 or 4, children have difficulty producing the appropriate shape of the perfect tense/aspect infix, especially when it interacts with other verbal extensions. However, there has been no study of how children use the various different future or past tense markers, nor how the use of tense interacts with that of aspect. Each of the tense/aspect forms has its own negative form also, but little is known about how negation in this language is acquire ((though see Chimombo 1981, 1987 on Chichewa).

2.2.11 Summary

In sum, passives, clefts, relative clauses, various question forms and extraposition of subjects and objects are all productive in spontaneous Sesotho before the age of three. The Topic orientation of Sesotho subjects may make passives constructions especially accessible to learners of Sesotho, and the taping of peer interactions probably contributed to the robust evidence of clefts and relative clauses in the spontaneous Sesotho data. Impersonal constructions are acquired around 2;8 years, presumably after the pro-drop and subject inversion characteristics of the language have been learned. While subject inversion is the first word order variant to be acquired, other word orders begin to be produced gradually over the next few years. Topicalization, especially with independent pronouns, is greatly over used during the period between 2;6-3 years.

Even so, there is much more that we do not know about the acquisition of Sesotho. Little is known about the acquisition of transitivity relations or argument structure, and even less is known about the acquisition of the tense/aspect system. And, perhaps more importantly, work in the area of binding and anaphora, anaphoric reference, complementation and other complex sentence structures is needed to most effectively address some of the issues raised in the current theoretical acquisition literature. It is hoped that the foregoing discussion will stimulate further research on these and other relevant issues.

I move now to a discussion of the Sesotho phonological system and its acquisition.

2.3 The Sound System

There has been little formal study on the acquisition of the Sesotho phonological system, and work is only beginning on the acquisition of tone (Demuth 1989a). My comments will therefore be general and brief, but will hopefully lead the way for further research.

2.3.1 Clicks

Connelly (1984:132-135) is the only source that specifically discusses the acquisition of Sesotho clicks. He found that a 10 month-old child could imitate all three Sesotho clicks, plus several Zulu clicks, but that 3;3 year-olds were still producing /k/ instead of /q/ in spontaneous speech (e.g. **Kuthing* < *Quthing* - the name of a town in Lesotho). Connelly (1984) reports that the first attempted clicks for another child were recorded at 3;9 years, and were produced correctly (*diqo* ... 'corn cobs', *nna kea-qosoma/qothoma*... 'me, I'm hopping', *ha a-tswa moqomong* 'when she comes out of the tank'). Demuth's (1984a) corpus confirms these general findings, though the timing is somewhat earlier: Children produced clicks in isolation before they produced them in lexical items. One 2;1-3;2 year-old child in particular would use the palatal alveolar click *Q!* as an emphatic interjection long before she began to use it actual speech. /k/ was substituted in place of /q/, though aspiration was often preserved. Clicks began to emerge on a more regular basis by around the age of 3 years. Connelly's somewhat later reporting of the emergence of clicks in one child may be due to individual variation, or too small a sample size and the relatively infrequent occurrence of clicks in the Sesotho lexicon (though there are high frequency words - e.g. *qala* 'begin', *qeta* 'finish').

2.3.2 Tone

The acquisition of tone and prosodic systems in general is a particularly exciting and uncharted area for theoretical research. Studies of English indicate that at least some aspects of the intonation system may be acquired by 2 years, though the system is not completely acquired several years later. Research on the acquisition of lexical tone in Chinese (Tse 1978) and Thai (Tuaycharoen 1977) shows that lexical tones are acquired by around the age of 1;11 - 2;2 years, either before, or in conjunction with segments, while tone sandhi rules may not be acquired until around 5 years (see discussion in Clumeck 1980, Crystal 1986). The acquisition of tone in languages like Sesotho, with underlying tone, lexical tone rules, and phrasal tone phenomena, presents a complex test case for universals in the acquisition of tone: By examining how children learn a more complex tonal system, with pitch assigned at various levels of representation, it should be possible to learn more about the problems that children face when learning prosodic systems. In particular, it should be possible to determine how children gain access to the prosodic system of the language they happen to be learning, to determine if they make alternative 'default' assumptions along the way, and how they go about distinguishing lexical from postlexical tonological processes. And, as has happened in phonological theory itself, it is hoped that the study of the acquisition of tonal and intonational systems may shed further light on the acquisition of phonological processes in general.

The acquisition of Sesotho tone draws on the original Demuth (1984a) corpus, most specifically on 3 sessions drawn from one child at 2;1, 2;6 and 3;0 years, and is reported in Demuth (1989b). Data from another child at the same ages is currently being coded, but has yet to be analyzed. The longitudinal data is supplemented with an experimental cross-sectional study of 12 working class children from the environs of the National University of Lesotho, 3 in each of 4 age groups approximating 3;0, 3;6, 4 and 5 years of age. In this experiment children were introduced to two hand puppets. They were told that the puppets came from Botswana and were learning Sesotho, such that they sometimes spoke 'correctly', and sometimes not. The children were then presented with two utterances, each emitting from one of the speakers (puppets), one of which used 'correct' tone, the other which violated the tonal rule being tested. The children were asked to identify the puppet that spoke correctly, and then to repeat what that puppet had said. While the discrimination task was not effective (some children fixated on one puppet and said that one was always correct), it served as a destractor so that the child appeared to produce their own underlying representations of the utterance in the delayed elicited imitation task (i.e. there was no correlation between the puppet the child chose and what the child actually said). It is these

elicited imitations that are reported on in the experimental study (Demuth 1989d). It should be noted that, as with other acquisition studies of syntax and morphology, the Sesotho experimental data show somewhat later development than that found in the study of spontaneous speech.

The study of the acquisition of the Sesotho tonal system has concentrated to date on the verbal complex, where subject markers and verbs are the carriers of tone. Recall that Sesotho can be analyzed as having H(igh) versus Ø tone, where syllables still specified as Ø at the postlexical level will be assigned a default L(ow) value.

In a preliminary study of one Sesotho-speaking child's tonal productions in spontaneous speech it was found that the majority of verbs are marked with H tone Demuth (1989b).

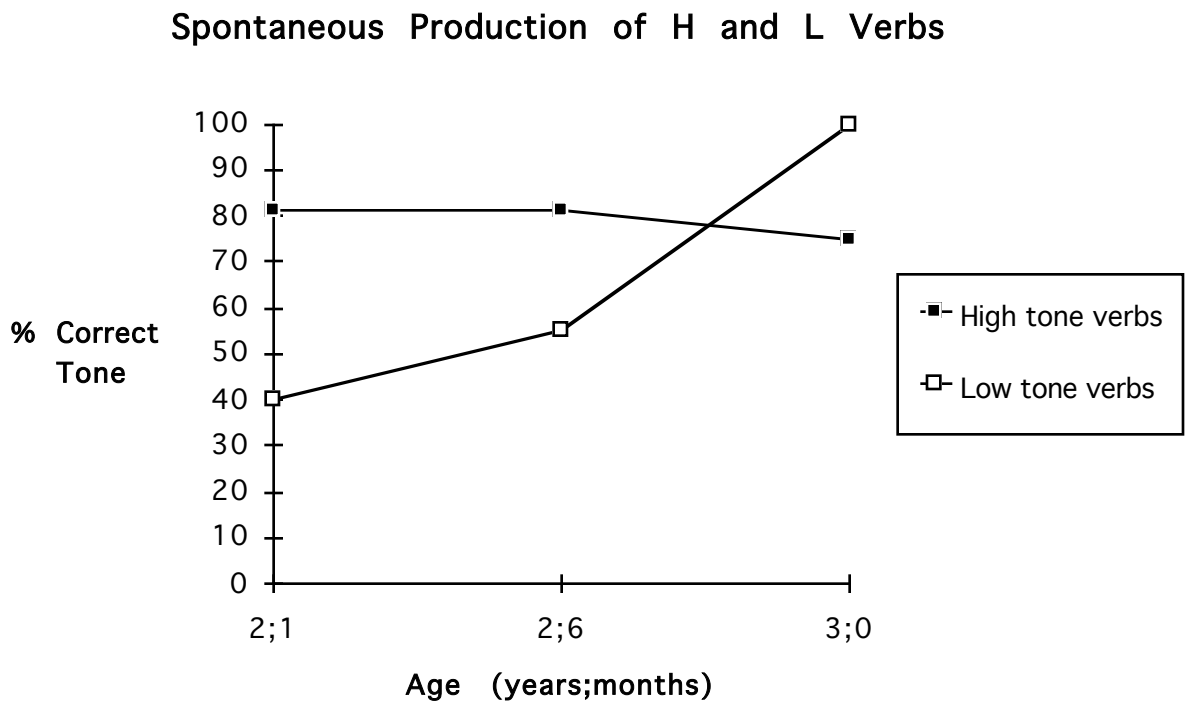

Figure 2.
Spontaneous Production of Sesotho H and L Verbs by one Child

The following examples provide an idea of what the data looks like. In each case the data was drawn from contexts where the verb had a Low toned subject marker, where is should exert no tonal influence on the following verb.

(120a) (2;1 yrs.)
tea hána
(kea-hán-a+)
1sSM-refuse-M
'I refuse'

(120b) (2;1 yrs.)
a-kúla
(oa-kul-a)
2sSM-sick-M'
‘you are sick'

(121a) (3;0 yrs.)
o-ngo‰lá lengolo?
(o-ngo‰l-á le-ngo‰lo)
2sSM-write-M 5-letter
'Are you writing a letter?'

(121b) (3;0 yrs.)
ke-kopa motoho
(ke-kop-a mo-toho‰)
1sSM-ask-M 3-porridge
‘I'm asking for porridge'

The a) examples are underlyingly H tone verbs, and the child produces them both correctly as H. However, the b) examples are underlyingly Ø tone verbs and should surface as L; at 3 years (121b) the verb is produced correctly as L, while at 2;1 years (120b) the verb is incorrectly produced as H. It is not clear why there should be this early tendency to produce verbs as H, nor is it clear if this is a general pattern in Sesotho acquisition, more widely found in other languages with similar tonal systems, or merely an artifact of this child’s particular grammar. The acquisition of tone is an area where, as in the rest of the phonological system, we would expect a certain amount of individual variation. The examination of a second child’s utterances at the same ages is currently in progress and should shed further light on this issue.

In the meantime, an experimental study was conducted to investigate this early preference for marking verbs as H (Demuth 1989d). Children were provided tonal minimal pairs, where the tone on the first syllable of the verb (in bold in (122)) was varied.

(122)

H Tone Verbs	kea-r**é**ka+	kea-r**e**ka	‘I’m buying’
Ø/L Tone Verbs	kea-l**e**ma	kea-l**é**ma+	‘I’m plowing’

They were then asked to choose which production of the verb was ‘good Sesotho’ and were asked to repeat that utterance. Interestingly, the tendency to mark verbs with H tone was confirmed in the experimental study, the results of which are given in Figure 3 below.

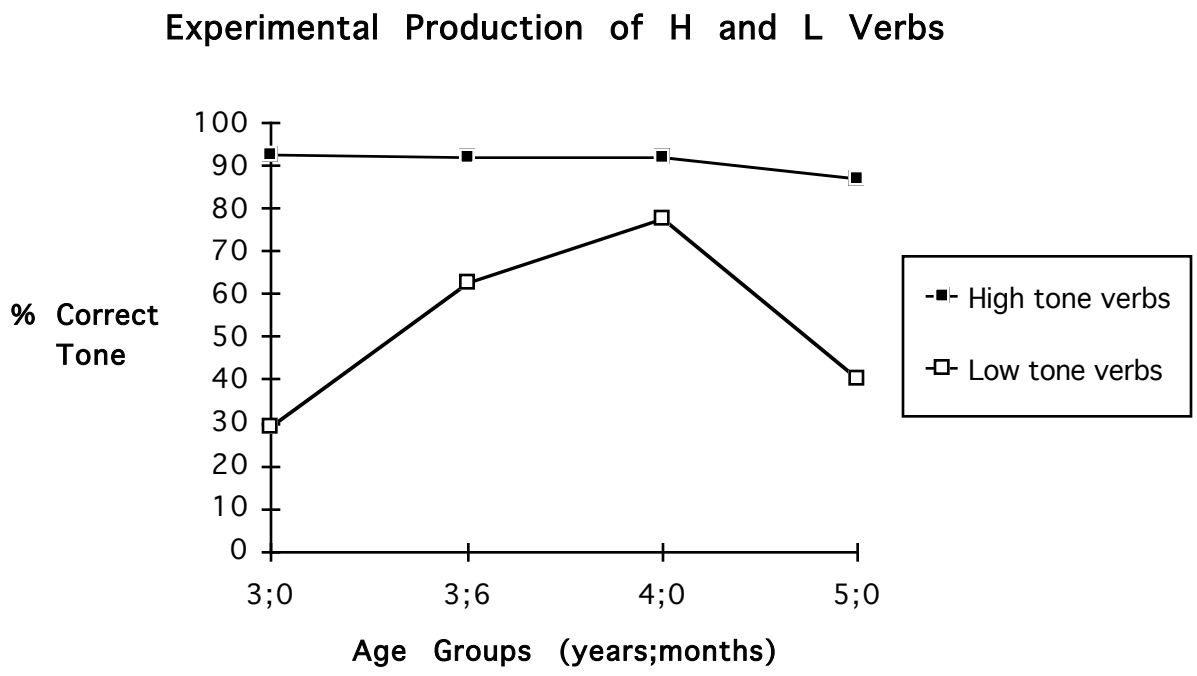

Figure 3. Experimental Production of H and L Verbs

Like the longitudinal data in Figure 2., the production of H verbs as H was consistently H for all groups tested in the experimental task, but the production of L verbs as L was poor at earlier stages, improving over time. Note that 5-year-olds started to do worse on both H, but especially L toned verbs. As we will see later, two of the three 5-year-olds were overgeneralizing tonal rules at this time, and this may have had an effect on the underlying representations of some of their verb tones as well. Further research is in progress to investigate this possible connection. In any event, when all the data is pooled, there is a significant difference of $p<.01$ between the production of H and L verbs.

Some have suggested that the early preference for H tone on verbs is consistent with the proposal by Clements & Goldsmith's (1984) and others that children learning Bantu tonal systems might initially adopt an Accentual rather than a Tonal analysis, like that found in many Bantu languages (e.g. Tonga - Goldsmith 1984). However, the early preference for H tone on verbs is also consistent with an initial "Default High Hypothesis" Demuth (1990), i.e. when in doubt of a verb's tone, assign it a H tone. This would also appear to be consistent with the H tone that adult Sesotho-speakers assign to novel verbs such as those borrowed into Sesotho from other languages (e.g. *púsha* 'push' < English), or with a situation where underlying lexical representations may be seriously underspecified, the H

tone reflecting a tendency to organize the grammar according to the tonal patterns that can be extracted from surface representations.. Further research on the development of tonal rules and the acquisition of tone in the nominal system is currently in progress and should shed further light on this issue.

By 3 years the tone on verbs has largely been differentiated in the longitudinal data, indicating that High and Ø toned verbs in use have been successfully identified by this time. Accuracy in the marking of verb tone in the experimental data also increases over time, with some individual variation. Interestingly, the data from spontaneous speech show that there is much more accurate marking of tonal distinctions on the subject markers than on verbs. It may be that the child is associating tones with subject markers in the lexicon, but deriving tone on verbs in a later part of the grammar.

At the phrasal level, lowering initially occurs at the end of the utterance rather than at the end of the verb phrase at 2;1 years. By three years, however, lowering is much more consistently marking the end of the verb phrase. Like English-speaking children, Sesotho-speaking children in spontaneous speech appear to have a utterance level (intonational?) analysis of Sesotho at 2 years, but by 3 years have modified it to a phrasal analysis (Demuth 1989b). The experimental data show a similar, though more complex development. At 3 years one finds the utterance level analysis. Some speakers then determine that the rule applies at the end of the verb, even if that verb is not in phrase final position. Finally, the 5 year olds have arrived at the appropriate lowering rule that applies when the verb is in phrase final position.

While both underlying lexical tones and phrasal tone rules are fairly consistently and appropriately marked in spontaneous speech by 3 years, evidence regarding the acquisition of lexical tone rules and the different grammatical tone melodies is less clear. At three years it appears that the three different verbal melodies are just beginning to be distinguished, with Melody I indicatives being differentiated from Melody II imperatives and negatives. The acquisition of tonal rules, including H tone doubling on verbs and subject markers, and effects of the Obligatory Contour Principle (OCP), are still under investigation. Both H Tone Doubling and the OCP affect High tone subject markers. The one piece of evidence that shows children are aware of these tonal phenomena is that, at 3 years, H tone subject markers are less consistently marked as H than they were at 2 years. This would indicate that children may be in the process of figuring out just how lexical tone rules and the OCP apply (Demuth 1989b). Further research on OCP effect is currently in progress (Demuth, in preparation).

The acquisition of different tonal melodies appears to take place gradually beginning around 2;6 years. If there is any melody present in the 2;1 year old's spontaneous Sesotho it is a pattern that appears to be iteratively High (with utterance final lowering) (Demuth 1989a). This is demonstrated by the prevelance of H tone in examples of Ø toned verbs in (123) where (123a) is in the present affirmative, (123b-c) are in the final perfect (all Melody I - BL*), and (123d) is in the imperative (Melody II - BH*).

(123) (2;1 yrs.)

a) a se‰la‰ ka‰ mo
(kea-seh-a ka moo)
1sSM-cut-M PEPR here
'I'm cutting here'

b) a ta‰be‰tse
(ke-e-te‰b-ets-e)[16]
1sSM-9OBJ-send away-PERF-M
'I sent it away'

c) a e‰ti‰me+
(ke-jethem-il-e)
1sSM-jump down-PERF-M
'I am jumping down'

d) ti‰sa‰ n‰tho‰: (e‰)na
(tlis-a‰ ntho‰ ena)
bring-M 9thing 9DEM
'bring that thing'

At 2;1 years the most consistent markings are L on L subject markers, L on the final syllable of the utterance, and H's inbetween, frequently resulting in a LH*L 'melody', or an Iterative High melody.

The picture is much less cohesive by 2;6 years with some Ø verbs being correctly produced with L tone (the (a) examples in (124) - (121)), but others still overgenerating an Iterative

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16 The object marker places a H on this otherwise L toned verb stem.

High melody (the (b) examples in (124) - (121)) and variation sometimes found in consecutive utterances with the same verb (121a-b). It appears that the beginnings of tonal melody differentiation have begun by this time.

(124) (2;6 yrs.) [Future & Present affirmative - Melody I (BL*)]

a) e t(l)a feta
(ke-tla-fet-a)
1sSM-FUT-pass-M
'I will pass by'

b) wena‰ a‰ ma‰the‰la‰ / ma‰::::ne Chabadi‰machetse kwana
(wena‰ o-math-el-a ma◊:ne‰ Chabadi‰maketse kwana)
2sPN 2sSM-run-APL-M there Ch. there
'you're running WA:Y over there at Chabadimaketse, far away'

(120) (2;6 yrs.) [Perfect final - Melody I (BL*)]

a) ÷a‰ buleile
(le‰-bul-eh-il-w-e)
5SM-open-NT-PERF-PASS-M
'it got opened'

b) e ta‰bo‰tse!
(o-e-ta‰bo-ts-e)
1sSM-9OBJ-tear-PERF-M
'you tore it!'

(121) (2;6 yrs.) [Imperative - Melody II (BH*)]

a) tsiyaÂ
(tlis-a‰)
bring-M
'bring (it)'

b) tsi‰a
(tlis-a‰)
bring-M
'bring (it)'

By 2;6 years there is significant expansion in the types of tense/aspect/mood constructions in use (see Table 13.), but the different tonal melodies are not yet consistently applied. This may have to do with the fact that Ø toned verbs are still produced approximately fifty percent of the time with H tone rather than L tone, and that many of the child's verb stems at this point are still primarily disyllabic, thereby neutralizing many of the different tonal melody distinctions which are more readily apparent in trisyllabic and quadrisyllabic stems. However, the beginnings of tonal melody differentiation are discernable, especially in Melody II forms like the imperative (61), where even disyllabic forms are differentiated for both tone class and melody.

Thus, it appears that Sesotho-speaking children start with a fixed Iterative H melody, and begin to differentiate Melody II and III from Melody I around 2;6 years with an increased proficiency at handling different tense/aspect/mood constructions and longer verb stems. At the same time H and Ø verb stems become increasingly differentiated in the lexicon. The initial state is therefore apparently underspecified for tonal melodies (Demuth 1990).

The acquisition of Sesotho tone is consistent with findings from other languages in that, while aspects of lexical tone (e.g. subject markers) are acquired by 2 years, as for many South East Asian languages, tonal sandhi phenomena (lexical rules and morphological tone melodies) have not been learned by age 3, and are still being overgeneralized by the age of 5.

2.3.3 Summary of Phonological Development

To summarize, the palatal-alveolar click /q/, initially represented as /k/ becomes more consistently produced in context around 3 years. Intonational and some lexical aspects of the tonal system are evident by 2;1 years, though verbs are initially analyzed as High tone. By 3 years verbs in spontaneous speech are more accurately produced as High or Low, and some of the verbal tone melody system is being worked out, along with application and possible over application of some OCP effects. The experimental data confirm these findings, but indicate a Default High Hypothesis for verbs and the overgeneralization of OCP effects by some 4 and 5-year-olds. The acquisition of tonal rules is currently under study, as is the possibility that Sesotho-speaking children start initially with an underspecified tonal system. What emerges from both sets of data is the interaction between tone and morphology in this language, where the acquisition of the tense/aspect system in particular appears to proceed hand in hand with the acquisition of different grammatical tone melodies. In this sense the tonal acquisition problem in a morphologically

rich language with grammatical as well as lexical use of tone is somewhat more complex than that of learning lexical tone and even tone sandhi rules in a language like Mandarin Chinese, and may take somewhat longer to be completely acquired.

2.4. Overall Course of Development for Bantu Languages

According to Connelly (1984:113), young Sesotho-speaking children are more grammatically advanced than their English speaking peers. Connelly calculates, using mean length of utterance (MLU) measures (based on the number of morphemes produced) that Sesotho-speaking children are 6-10 months in advance of the English-speaking children of Brown's (1973) study. One might expect children acquiring an agglutinative language to use more morphemes than children acquiring a more isolating language like English, and indeed there may be a problem with accurate assessment of what an MLU measure means when applied to such typologically different languages. However, the Sesotho-speaking children do appear to be more advanced in the acquisition of various aspects of the grammar than that reported for English speakers. For example, they are spontaneously and creatively using cleft constructions, relative clauses and passives all before the age of three.

Connelly (1984:112) proposes that African children, or at least Sesotho-speaking children, exhibit greater early cognitive development than their English-speaking peers. He suggests that the typical Sesotho-speaking child, who is part of everyday social and verbal interactions from birth onwards (Blair & Gay 1980), are in an optimal environment for early cognitive and linguistic development. As support for this claim Connelly (1984:125) notes 2;1 year olds' sophisticated use of caregiver speech directed toward younger children, complete with the exaggerated use of pitch, phonological simplification and shorter length of utterance. Indeed, there is ample evidence of the rich verbal environment of Basotho children, with the extensive use of question and prompting routines directed at even pre-verbal infants (Demuth 1984a, 1987a), and this might facilitate the acquisition of certain aspects of the grammar. But there are probably more principled linguistic explanations for the acquisition patterns presented here. In the following section I will address some of these possibilities and discuss areas for further research.

III. Conclusions and Areas for Further Research

As evidenced by the foregoing discussion, there is much work remaining to be done, both on the linguistic analysis of the Sesotho language, as well on its acquisition. In discussing the work that has been done, the work that has not been done becomes all the more

apparent. In this remaining section I attempt to identify some of the issues that would be most interesting to pursue in future research.

3.1 The Nominal System

Study of the Sesotho nominal system is of potential interest for (at least) three reasons: First, it supplies evidence for children's abilities to organize their nominal agreement system on the basis of phonology and morphology as opposed to semantics. Secondly, by utilizing the tools of metrical, lexical and prosodic phonology, it may provide insight into the early acquisition of words. And thirdly, it may furnish further information on the acquisition of phrase structure.

Current linguistic theory assumes that X' representations are part of Universal Grammar. We would therefore expect the child to show early access to phrase structure. The acquisition of Sesotho noun class and agreement marking therefore takes on added theoretical interest: The fact that well formed agreement markers develop before well formed noun class prefixes indicates that the child must have some notion of Noun Phrase and head of a phrase, as well as access to noun class 'features' within the lexicon. The study of how the noun class prefix and nominal agreement systems are learned in languages like Sesotho therefore has much to tell us not only about both universal and language particular constraints regarding the acquisition of words, but also about how and when the notion of Noun Phrase and 'head of a phrase' develops.

There is no evidence from the Sesotho data, nor from the other studies mentioned, that children learning Bantu languages rely on semantics to help them into the noun class and agreement system. Rather, there is support for the fact that they rely on phonological information. In Demuth (1988a) I propose that this holds up cross-linguistically: access to the semantics of the system becomes available only at later stages of development, while early overgeneralizations are normally of a phonological nature. One could conduct further study, using experimental procedures carefully controlled for phonological factors, syllable structure, penultimate lengthening and tone, on the acquisition of the noun class and agreement system. To further investigate these issues it would also be interesting to study how and when Sesotho-speaking children do acquire access to the semantics of the noun class system, such as productively deriving human nouns from non-human nouns.

3.2 The Verbal and Grammatical System

The study of how Sesotho grammar is acquired is interesting in several different respects. First, Sesotho, and the other Bantu languages reported here, are head-marking pro-drop languages which make use of subject, object and reflexive clitics. It would appear that both subject inversion and object extraposition become more prominent once the morphophonological marking of subject and object markers becomes more consistent. Facility with the use of different word orders increases between 3-5 years. Further research is needed to determine how and why these different word orders, including the over-topicalization of independent pronouns around 3 years, are used.

Secondly, Sesotho-speaking children show early acquisition of certain movement and embedding constructions including passives, clefts and relative clauses, all of which are creatively used in spontaneous speech before 3 years of age. This raises questions about the reported later acquisition of these constructions in many Indo-European languages, where cognitive, grammatical or maturational explanations for later development have been proposed. I suggest that the earlier acquisition of these constructions in Sesotho may be due to the fact that Sesotho is a Topic oriented language where subjects can not be new or non-thematic information. All else being equal, we would predict the earlier acquisition of passives and clefts in other languages with a similar constraint on subjects, and this appears to be true for passives in Zulu. Further crosslinguistic research is needed to explore this issue more fully.

A third area that has intrigued researchers of child language has been that of binding and control, extraction and anaphoric relations, and there has been little work in this area, neither on acquisition nor on the Sesotho language itself. We do know that Sesotho appears to form questions in situ (though see Lasnik & Saito 1984), except for subject questions where the subject must be moved to the object of a passive by-phrase or the object of a cleft before it can be questioned. Sesotho is therefore like some languages that form questions in situ, but unlike those that allow subjects to be questioned in situ. We might predict that in situ questions would appear earlier and be more error-free across languages. However, both passive and cleft questions are in use by Sesotho-speaking children by around 2;6 years, and investigations of spontaneous speech samples show no attempts to overgeneralize and question subjects in situ. This is an area where future experimental work of a crosslinguistic nature would be most illuminating.

Another topic which is in serious need of research is that of verbs and argument structure. There has been no systematic study of the acquisition of verbal extensions which change transitivity relations, nor of the verb classes with which verbal extensions can co-occur. It would also be interesting to conduct a comparative acquisition study of Setswana to determine how and when children learn that more than one object clitic is allowed.

A fifth area where there has been no systematic study is that of the tense/aspect system. Sesotho has a complex tense/aspect/mood system, each with its own negative form yet, apart from the tentative findings given in section 2.2.10, we know little about how any of this system is acquired. We might expect there to be, among other problems, numerous errors and overgeneralizations in the area of negation, where there is a different negative form for every tense/aspect marker. There is room for much more extensive work in this area with implications not only for cognitive linguistic development, but also for how the acquisition of these grammatical constructions interact with the acquisition of corresponding tonal melodies.

Of related interest is the acquisition of temporal and spatial adverbs. It would appear that Sesotho-speaking children are similar to reports for English; at 3 years there are problems with the ordering of temporal sequences, with answers for 'when did you go' given as *hosane* 'tomorrow'. Even by 4 years of age there are still mistakes with the use of temporal adverbs, with spatial adverbs like *koana* 'over there' being used in conjunction with temporal adverbs like *khale* 'long ago'.

There has also been no research on the acquisition of complex sentence structures such as infinitival complements, complementizers and conditionals. Again, preliminary findings indicate that infinitival complements are in use by some children at 2;6 years, especially with the verbs *batla* 'want', *tseba* 'know' and *hana* 'refuse'. While the infinitival marker *ho-* is generally used (e.g. *ke-hana* ***ho****-dula* 'I refuse to sit (down)'), one child between 2;8 and 3 years apparently went through a stage of analyzing an infinitival complement as a conjoined main clause (e.g. *ke-hana* ***ke****-dula* 'I refuse I sit-down'). The same child, however, was using some conditionals at the same time (*ke-tla-o-shap-a* ***ha*** *o-chatl-a lemati wena* 'I'll lash you if you break the door, you'). Consecutive constructions are in use by 2;6 years (*o-tla-tla o-m-ph-a*? 'will you come give (it) to me?'), while there are only a very few complementizers present at 3 years (e.g. ke-tseb-a **hore** ba-tla-fihl-a 'I know that they will arrive'). Obviously much more work is needed on the acquisition of subordination and complementation.

3.3 Phonological Rules

There are many interesting questions to be asked concerning the acquisition of Sesotho phonology. Firstly, Sesotho has a wide range of stops, affricates and fricatives, and the study of how these consonants are acquired could well address issues of universal and particular in the acquisition of the phonemic inventory. It was noted in section 2.3 that the palatal alveolar click /q/ is produced in isolation long before it is produced in context at around 3 years, and that attempts to produce it in context before that time have it surfacing as /k/. We also know that between 2-3 years some affricates are simplified to stops (e.g. /tl/> /t/). There are also productive processes of both progressive and regressive consonant harmony e.g. /Tlokweng/ > /Kokeng/ 'name of a town' and /ke-tla-etsa/ > /tsa-etsa/ 'I will do (it)'..

Secondly, Sesotho is rich in several phonological processes that cause children problems until at least 3 years and probably beyond. Among the Sesotho phonological processes labial palatalization (as noted in the derivation of some passives - e.g. *shapa* > *sha**tj**wa* 'lash > be lashed') and 'strengthening' are some of the more interesting. Strengthening takes place in the environment of a nasal, such as with the first person singular object marker N, and with the reflexive *i-* that has an underlying nasal associated with it. In both cases, voiced plosives become ejective (b>mp', d,l >nt') and fricatives become aspirated (f>mph, r>nth, s>ntsh, etc.) (Doke & Mofokeng 1957:25; see Schaeffer (1982) for discussion of similar phenomena in Setswana). Some of these forms, especially some frequent imperatives like *mphe* [< n + fa] 'give me' (lit. 'me-give') are learned early as a lexical unit, while the productivity of such forms is not completely evident at 3 years of age.

Sesotho does not have the phoneme /d/; it occurs only as an allophone of /l/ after high vowels. Children between the ages of 2-3 years do not consistently produce the allophone [d] before high vowels, whether in initial or medial position. Further study would want to discover the contexts where [d] is used and when the process /l/ > [d]/ __ +hi vowel becomes learned. Sesotho also has a system of vowel harmony raising (mid vowels are raised in certain environments). It would be very interesting to find out when Sesotho-speaking children acquire these phonological rules governing vowel harmony.

Finally, we have noted that initial sentence level prosodic contours may be marking the utterance rather than the phrase. At the same time there is a tendency to mark the majority of verbs with High tone on the first syllable. Further cross-linguistic investigation will have to determine if this tendency is more widespread, or if this may be influenced by the fact

that Sesotho verbs can be analyzed as having H and Ø tone as opposed to a H/L distinction. We might expect a parametric difference in the acquisition of verbal tones in a language that posited a H/Ø versus a H/L underlying distinction for verbs, and certainly further research would want to investigate this possibility. The early H tone preference for marking of Sesotho verbs could be an indication that children are using an Accentual analysis, or it could signal the implementation of a 'Default High Hypothesis'. Further investigation of the acquisition of tonal rules should shed some light on this matter, and may contribute to a fuller understanding of the possible parametric settings which may be available for facilitating the acquisition of prosodic systems in general.

Preliminary investigations of the status of the OCP in children's grammars indicates that it may be initially applied very conservatively, and only overgeneralized to other contexts at later stages of development. This would suggest that the OCP is learned like any other phonological rule rather than serving as a grammatical principle that serves to organize the grammar. Again, further research is needed to more fully evaluate this hypothesis.

In sum, the study of Sesotho acquisition has only begun. It is hoped that future research on the acquisition of this morphologically rich language, with its intricate agreement and tonal phenomena, will continue to enhance our understanding of how this language, and all languages, are acquired.

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