The Acquisition of Syntactic Categories in Malay / Indonesian

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Malay / Indonesian

1

What is Malay / Indonesian?

- ✯ A family of colloquial languages with as much internal diversity as Romance or Slavonic; plus also a single standard language with two closely related variants, Standard Malay and Standard Indonesian
- ✯ This paper focusses on a single variety of Malay / Indonesian, namely Jakarta Indonesian.
- ✯ However, the main results are probably valid for most of the Malay / Indonesian varieties spoken in the western archipelago and Malay peninsula, including Kuala Lumpur Malay.

What is Jakarta Indonesian?

- ✯ Jakarta Indonesian is the general colloquial language of Jakarta, used in most everyday contexts for inter-ethnic and ethnically-neutral communication, and increasingly also for intra-ethnic communication; it is acquired naturally and completely at a young age by most children growing up in Jakarta. In addition, Jakarta Indonesian is beginning to gain currency as a colloquial koiné in other parts of Indonesia, alongside other regional varieties of Indonesian.
- ✯ Jakarta Indonesian is not:
  - Standard Indonesian, used in more formal contexts in Jakarta and throughout Indonesia; acquired by children at a later age, often "imperfectly", largely from the media and via conscious schooling;
  - Betawi Malay, the native dialect of the indigenous ethnic community of Jakarta, now a small minority of the total the population of Jakarta.
- ✯ However, there exists a continuum of language varieties between Jakarta Indonesian and Standard Indonesian, and between Jakarta Indonesian and Betawi Malay.

2

Superficial similarities ...

JAKARTA INDONESIAN	Arip Arip	baca read			buku book	hijau green		di LOC		rumah house		Bowok Bowok	
	|	|			/ |	|		|		|		|
	S	V			O	N	A	Prep		N		G	
	|	|			\ |	|		|		|		|
FRENCH	Alain	lisait	le		livre	vert		dans	la	maison	de	Bertrand	
	Alain	read-IMPF:3SG	DEF:SGM		book	green-SGM		in	DEF:SGF	house	of	Bertrand	

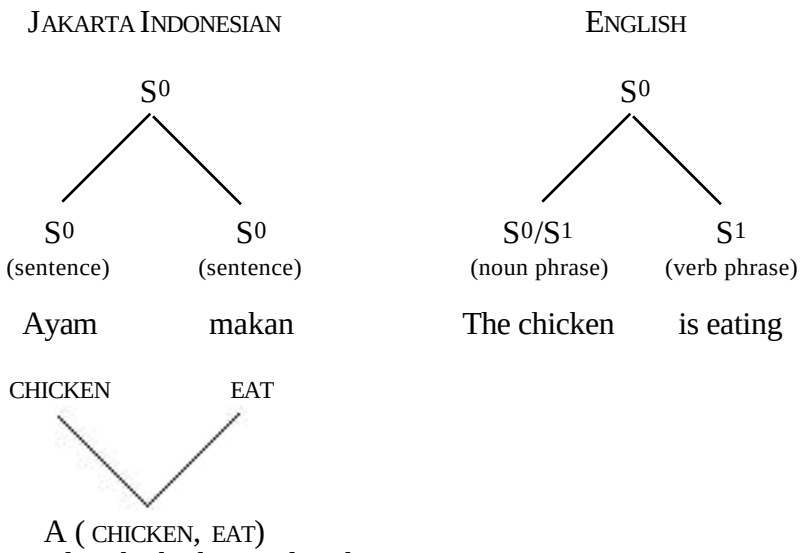
'Allan was reading the green book in Bill's house'

3

...conceal deeper differences ...

	JAKARTA INDONESIAN	ENGLISH
	Ayam makan	The chicken is eating
FORM		
symmetry	symmetric	asymmetric: agreement: The chicken → is government: is → -ing
MEANING		
number (on CHICKEN)	unmarked: also ... 'The chickens are eating'	marked: singular
definiteness (on CHICKEN)	unmarked: also ... 'A chicken is eating'	marked: definite
tense (on EAT)	unmarked: also ... 'The chicken was eating' 'The chicken will be eating'	marked: present
aspect (on EAT)	unmarked: also ... 'The chicken eats' 'The chicken has eaten'	marked: progressive
thematic role (on CHICKEN)	unmarked: also ... 'Someone is eating the chicken' 'Someone is eating for the chicken' 'Someone is eating with the chicken'	marked: agent
ontological type (on CHICKEN EAT)	unmarked: also ... 'The chicken that is eating' 'Where the chicken is eating' 'When the chicken is eating'	marked: activity

...which suggest the following analyses ...



Syntactic Categories and Universal Grammar

[following Gil (2000a)]

(1) *Syntactic Categories: Basic Properties*

(a) Syntactic categories are defined exclusively in terms of syntactic properties;
(b) Syntactic categories consist of words and of larger constituents;
(c) Syntactic category membership is defined in terms of prototypes;
(d) Syntactic categories exhibit different degrees of productivity.

(2) *Syntactic Categories: Categorial-Grammar*

Syntactic categories are of two types, primitive and derived. Derived categories are obtained by the application of category-formation operators to other (primitive or derived) categories. Resulting is a "family tree" of syntactic categories [such as in box 5 below].

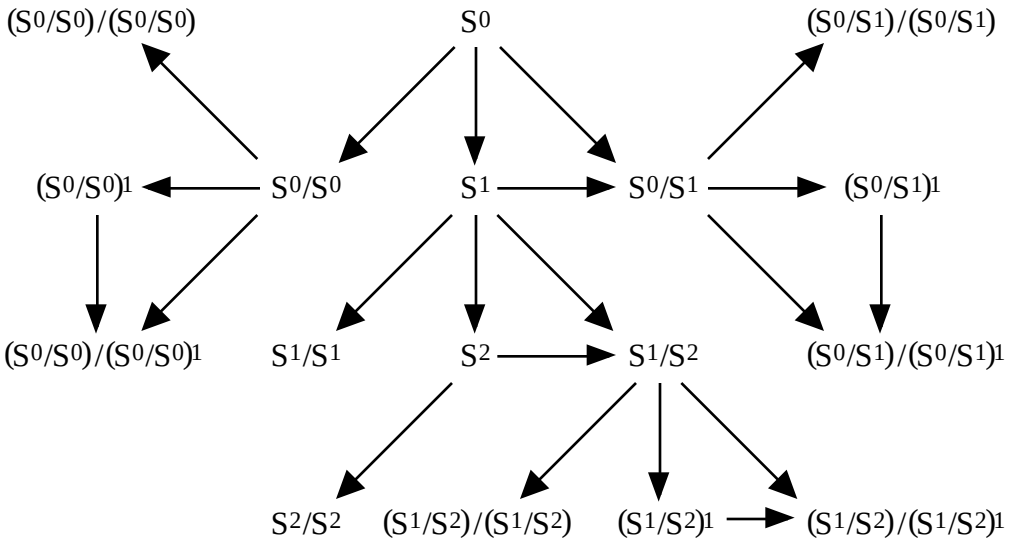
(3) *Category Formation (Paradigmatic)*

(a) One primitive category, S^0, corresponding roughly to the intuitive pre-theoretical category of Sentence.
(b) Two category formation operators:
  (i) Slash Operator:
  For any two categories X and Y, X/Y is a category, called "X slash Y".
  (ii) Kernel Operator:
  For any category X^n, X^{n+1} is a category, called "the kernel category of X^n".

(4) *Category Combination (Syntagmatic)*

(a) Identity Combination: $X \leftrightarrow [X, X, X \ldots]$
(b) Slash Combination: $X \leftrightarrow [Y, X/Y, X/Y \ldots]$

A Syntactic Category Tree



(5) *Ancestor categories:*

For any syntactic category, all of the categories that dominate it in the syntactic category tree are its ancestor categories. If Y is an ancestor of X, Y is simpler than X.

(6) *Three empirical consequences of the Syntactic Category Tree:*

(a) *Typological / Cross-Linguistic:* [Gil (2000a)]
If a language has a certain syntactic category, it has all of its ancestor categories.
(Categories higher on the tree are more cross-linguistically widespread.)

(b) *Evolutionary:* [Gil (2000b)]
If a stage in the evolution of language has a certain syntactic category, it has all of its ancestor categories.
(Categories higher on the tree evolved earlier.)

(c) *Acquisitional:* **[this paper]**
If a stage in the first-language acquisition of language has a certain syntactic category, it has all of its ancestor categories.
(Categories higher on the tree are acquired earlier.)

Syntactic Categories in Jakarta Indonesian

[following Gil (1994, 2000a, 2001) for Riau Indonesian]

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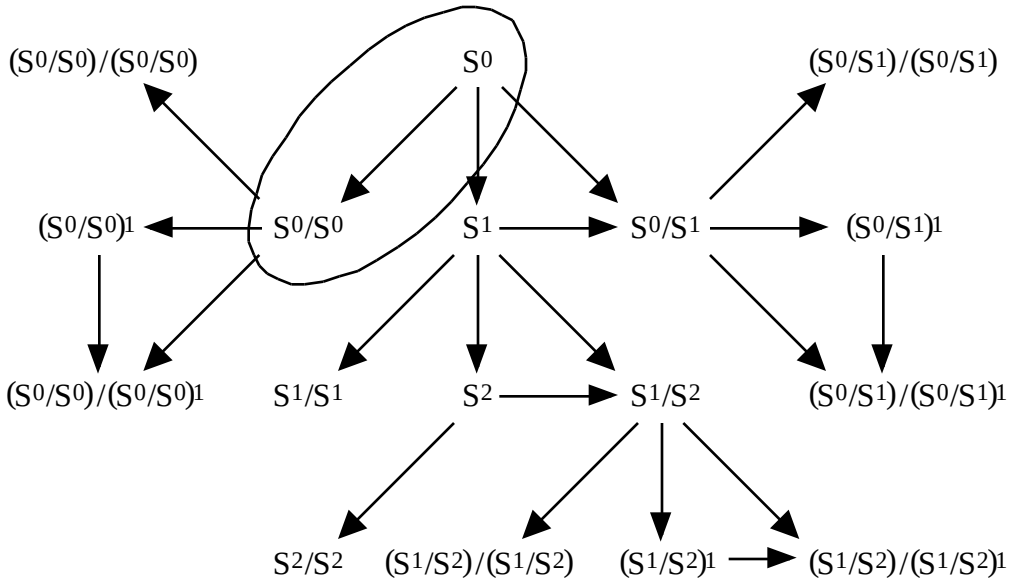
Jakarta Indonesian on the Syntactic Category Tree



(7) *Syntactic Categories in Jakarta Indonesian*

(a) *S^0*

An open category, containing all multi-word expressions and almost all single-word expressions.

S^0 expressions may stand on their own as complete non-elliptical sentences.

(b) *S^0/S^0*

A closed category, containing a small, finite set of single-word expressions.

S^0/S^0 words cannot stand on their own as complete non-elliptical sentences. Rather, they combine with S^0 expressions to yield S^0 expressions. S^0/S^0 words belong to two subtypes, those which occur before their S^0 arguments, and those which occur after their S^0 arguments.

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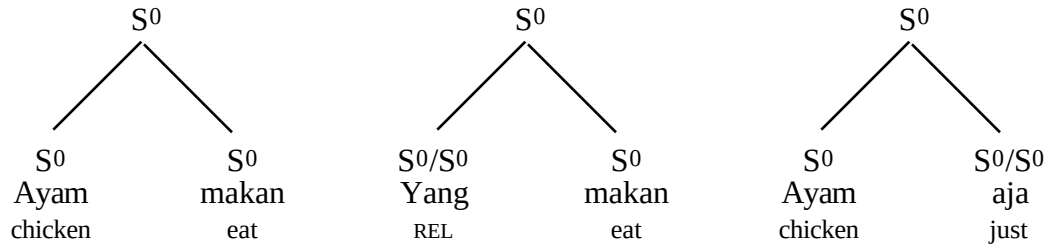
The three basic constructions of Jakarta Indonesian



(8) *A Partial Lexicon of Jakarta Indonesian: S^0 words*

a.	ayam chicken	b.	buku book	c.	rumah house
d.	ijo green	e.	gede big	f.	lapar hungry
g.	lari run	h.	makan eat	i.	kasi give
j.	Pian [name of person]	k.	Mangga Besar [name of place]	l.	Lebaran [name of holiday]
m.	abang elder.brother	n.	gue 1:SG	o.	ini DEM:PROX
p.	gini like-DEM:PROX	q.	sini LOC-DEM:PROX	r.	tadi PAST:PROX
s.	tiga three	t.	semua all	u.	lain other
v.	apa what	w.	mana where / which	x.	kapan when
y.	ada exist	z.	punya have	aa.	bisa can
bb.	udah PFCT	cc.	paling SUPERL	dd.	nggak NEG
ee.	lagi also / more / again / next / FUT / CONTR	ff.	sendiri only / alone / SUPERL / REFL / CONTR	gg.	sama with / and / same / NON.ABS

(9) *A Partial Lexicon of Jakarta Indonesian: S^0/S^0 words*

Preceding

a.	kayak like	b.	untuk for	c.	buat for
d.	di LOC	e.	ke to	f.	dari from
g.	dengan with / and / by	h.	tentang about	i.	gara-gara because:ADVRS
j.	tiap every	k.	pada PL	l.	ato or
m.	yang REL	n.	si PERS	o.	kalo TOP

Following

p.	doang only	q.	aja just	r	juga also, then
s.	kek UNCRT	t.	diri REFL	u.	dong EMPH

Predictions for Acquisition

8

Prediction

Since S^0 is the ancestor category of S^0/S^0, S^0 should be acquired before S^0/S^0.

Subsidiary prediction

After S^0/S^0 is acquired, specific words belonging to S^0/S^0 will first be assigned to S^0, and then subsequently reassigned to S^0/S^0.

9

Testing the prediction through errors of overgeneralization

If the prediction is true, we would expect to find errors of overgeneralization: instances of S^0/S^0 words behaving like S^0 words.

Type A overgeneralization:
S^0/S^0 words occurring on their own as complete non-elliptical sentences.

Type B overgeneralization:
S^0/S^0 words occurring in larger constructions, but without their S^0 arguments.

Type C overgeneralization:
S^0/S^0 words occurring in construction with their S^0 arguments, but in the wrong order.

Type D overgeneralization:
S^0/S^0 words functioning as arguments of other S^0/S^0 words.

10

Syntactic categories and the acquisition of utterance length

- Maximal utterance length imposes logical constraints on syntactic category inventories:
  - One-word stage: maximal inventory: S^0
  - Two-word stage: maximal inventory: S^0, S^0/S^0, S^1, S^0/S^1
- A corollary of (6c) is that the first syntactic category to be acquired is S^0.
  Thus, (6c) is consistent with the existence of a one-word stage in early language acquisition.
- However, (6c) does not entail the existence of a one-word stage, since one could imagine a hypothetical language-acquisition scenario in which the child began with multi-word utterances consisting entirely of S^0 expressions.
  Rather, the occurrence of one- and two-word stages in language acquisition most probably reflects the development of syntagmatic rather than paradigmatic competence.
- Thus, in order to test the prediction, it is necessary to examine the development of syntactic categories at two- or multi-word stages of development, where the effect of utterance length on syntactic category inventories can be factored out.

The MPI Jakarta Corpus

[Cole et al (2001, to appear), Gil (to appear), Taylor and Gil (this conference)]

Target Child	*Date of Birth*	*Age at First Recording*	*Age at Last Recording*	11 *Utterances Coded to Date*
Timothy	28.8.98	1;06	5;02 (projected)	17,858
Hizkia	6.9.97	1;07	6;01 (projected)	23,401
Riska	24.7.97	1;08	6;03 (projected)	31,606
Michael	22.2.98	2;00	3;11	17,692
Priska	30.7.97	2;07	6;03 (projected)	26,817
Larissa	16.4.97	2;10	6;06 (projected)	19,476
Ido	1.1.96	3;04	6;06	30,699
Pipit	30.11.94	4;04	8;11 (projected)	24,372
TOTAL: Target children				191,921
Other children				65,899
TOTAL: all children				257,820
TOTAL: all adults				282,793
TOTAL				540,613

Type A Overgeneralizations

(10) *Context:* Older brother Timo is drawing in a book; experimenter, mother and grandmother are giving him advice, while Ari is off to one side echoing Timo's speech.

(-5) Nih aku cuman coret-coret. *older brother*
DEM:PROX 1:SG only DISTR-scribble
'See, I can only make scratches.'

(-4) Jangan pake ... *grandmother*
NEG:IMP use
'Don't use ...'

(-3) Cuman begitu doang. *older brother*
only like-DEM:PROX only
'It's only like this.'

(-2) Tangan kiri, dong! *mother*
hand left EMPH
'Use your left hand!'

(-1) Nih Tante pegangin. *experimenter*
DEM:PROX aunt hold-END.POINT
'Here, let me hold it for you.'

☞ (0) ***Doang*** [Ari 1;10]
only
'Only.'

(1) Timo gambar yang bener! *experimenter*
Timo picture REL right
'Draw it right.'

(2) Bagus. *experimenter*
good
'Good.'

(3) Pake tangan mana? *mother*
use hand which
'Which hand are you using?'

(-3') Ah, nggak bisa ini. *older brother*
EXCL NEG can DEM:PROX
'I can't do this.'

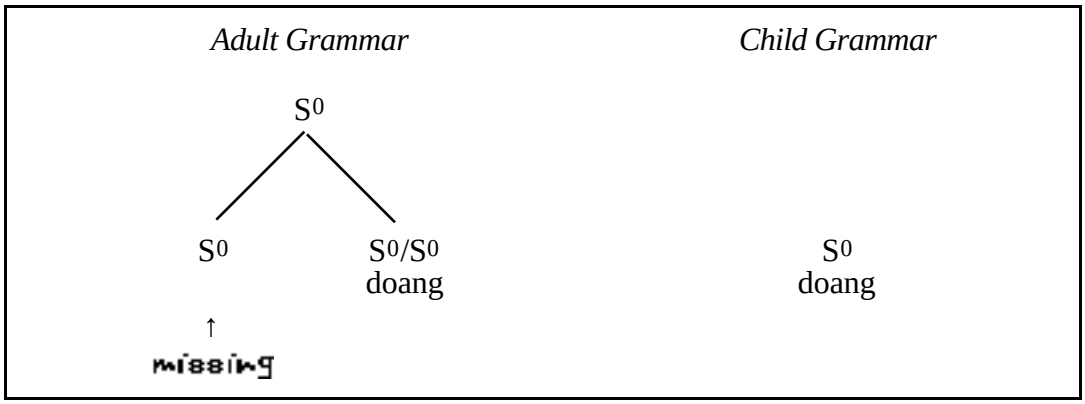
(-2') Bisa. *experimenter*
can
'Yes you can.'

(-1') Masa nggak bisa udah segede gini? *experimenter*
SURPR NEG can PFCT one-big like-DEM:PROX
'How come a big boy like you can't do it?'

☞ (0') ***Doang.*** [Ari 1;10]
only
'Only."

(1') Aku cuman begini doang. *older brother*
1:SG only like-DEN:PROX only
'I can only do it like this.'

(2') Heh... *grandmother*
EXCL



(11) *Context*: Experimenter notices that Ari's hands are dirty.

(-6) Kotor 'kan tanganmu, 'kan? *experimenter*
dirty Q hand-2 Q
'You're hands are dirty, aren't they?'

(-5) Cuci, cuci! *experimenter*
wash wash
'Wash them, wash them.'

(-4) Dicuci? *experimenter*
PAT-wash
'Will you wash them?'

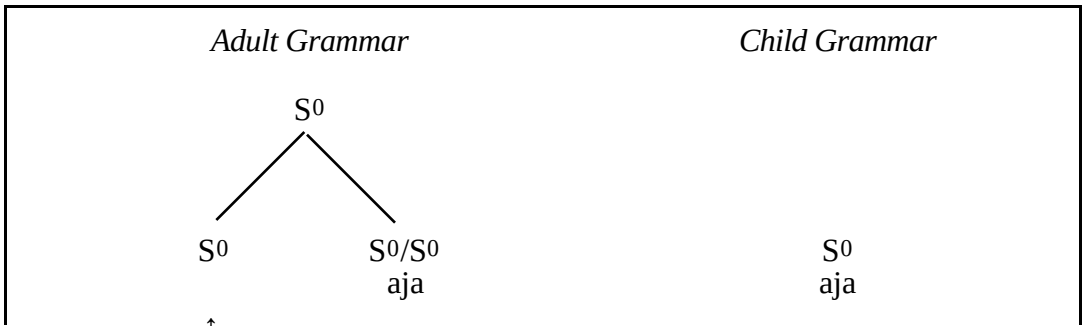
(-3) Mo cuci? *experimenter*
want wash
'Do you want to wash them?'

(-2) Nih, tanganku juga. *experimenter*
DEM:PROX hand-1:SG also
'Here, my hand as well.'

(-1) Mo dicuci? *experimenter*
want PAT-wash
'Do you want to wash it?'

☞ (0) ***Aja.*** [Ari 1;08]
just
'Just.'

(1) Nanti, ya? *experimenter*
FUT:PROX yes
'Later, right?'



(12) *Context*: Experimenter is holding doll without any hair on its head; Michael, who also has very short hair, tries to stick something on the doll's head; experimenter pretends to speak for the doll.

(-5) Heh, kamu ape? [Michael 2;08]
EXCL 2 what
'Hey, what's with you?'

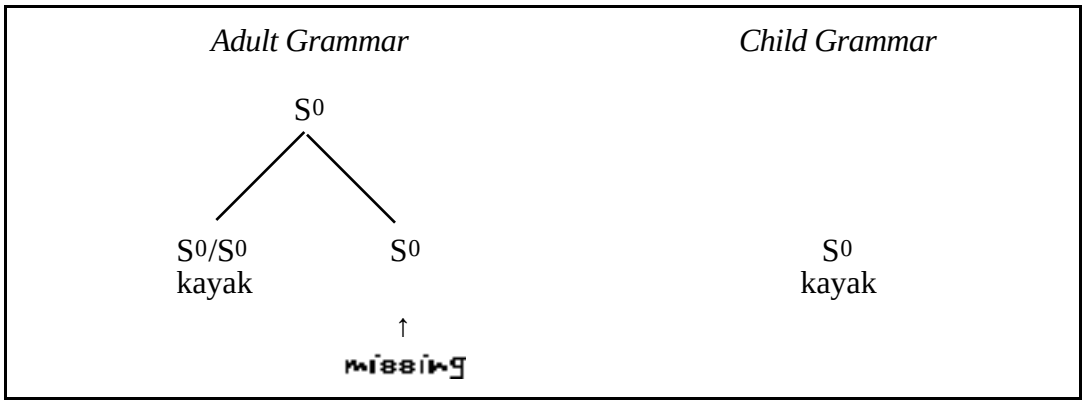
(-4) Hmm... [Michael 2;08]
EXCL
'Here.'

(-3) "Eh, jangan taro di kepalaku, dong." *experimenter*
EXCL NEG:IMP put LOC head-1:SG EMPH
'"Hey, don't put that on my head."'

(-2) "Kepalaku 'kan botak." *experimenter*
head-1:SG Q bald
'"My head's bald."'

(-1) "Kayak kepala kamu, nggak?" *experimenter*
like head 2 NEG
'"Like your head, right?"'

☞ (0) ***Kayak.*** [Michael 2;08]
like
'Right.'



Cf. hypothetical grammatical paraphrase with S0/S0 expression *kayak* 'like' replaced by S0 expression *mirip* 'resemble':

Mirip kepala kamu, nggak?
Mirip.

(13) *Context*: Priska, older child and experimenter playing with hand puppets; Priska is Teddy Bear, older child is Winnie the Pooh, and experimenter is Mr. Elephant.

(-5) "Winnie de Pooh, kamu udah umur berapa?" *experimenter*
Winnie the Pooh 2 PFCT age how.much
'"Winnie the Pooh, how old are you?"'

(-4) "Empat tahun." *older child*
four year
'"Four."'

(-3) Ini apaan ini? [Priska 3;02]
DEM:PROX what-AUG DEM:PROX
'What's this?'

(-2) Trompet, pret. *older child*
trumpet IMIT
'A trumpet, *pret*.'

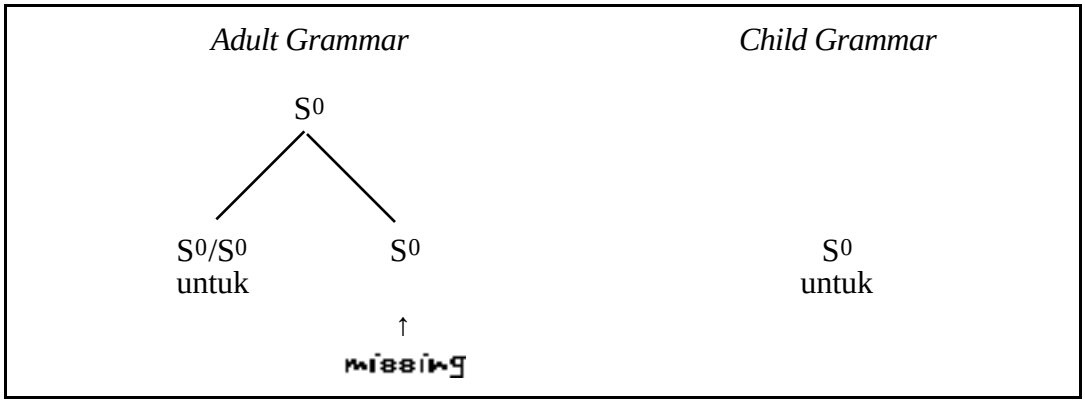
(-1) "Kalo kamu Teddy Bear, umur berapa?" *experimenter*
TOP 2 Teddy Bear age how.much
'"What about you, Teddy Bear, how old are you?"'

☞ (0) ***Untuk.*** [Priska 3;02]
for
'For.'

(1) "Tiga tahun." *older child*
three year
'"Three."'

(2) "Tiga tahun." [Priska 3;02]
three year
'"Three."'

(3) Oh. *experimenter*
EXCL
'Oh.'



(14) *Context*: Larissa, older sister and experimenter sitting in front of the computer.

(-2) Awas! *older sister*
watch.out
'Move over!'

(-1) Kak(ak) mo minum dulu, ah. *older sister*
elder.sibling want drink first EXCL
'I want to get something to drink.'

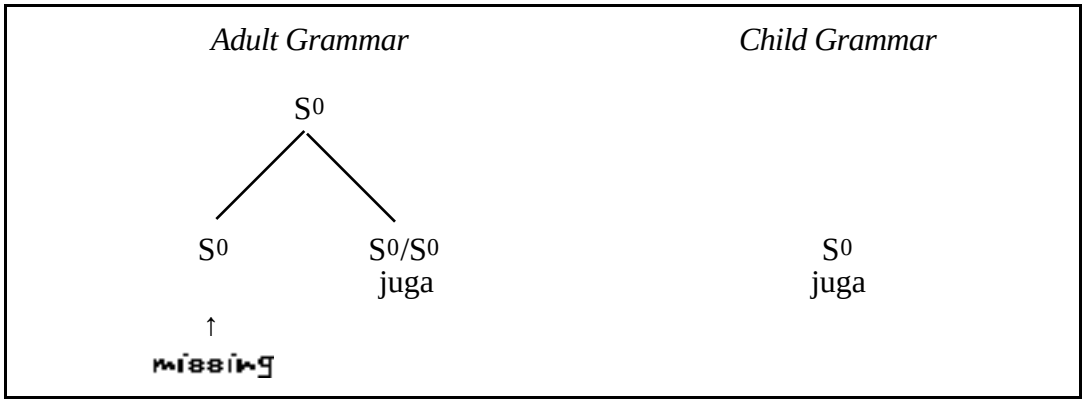
☞ (0) ***Juga.*** [Larissa 4;10]
also
'Too.'

(1) Juga. *experimenter*
also
'Too.'

(2) He-em. [Larissa 4;10]
EXCL
'Uh-huh.'

(3) Om juga. *experimenter*
uncle also
'Me too.'

(4) Tunggu. *older sister*
wait
'Wait a minute.'



Type B Overgeneralizations

(15) *Context*: Larissa and her older sister have been drawing; older sister has just completed a drawing, and the experimenter turns her attention to Larissa.

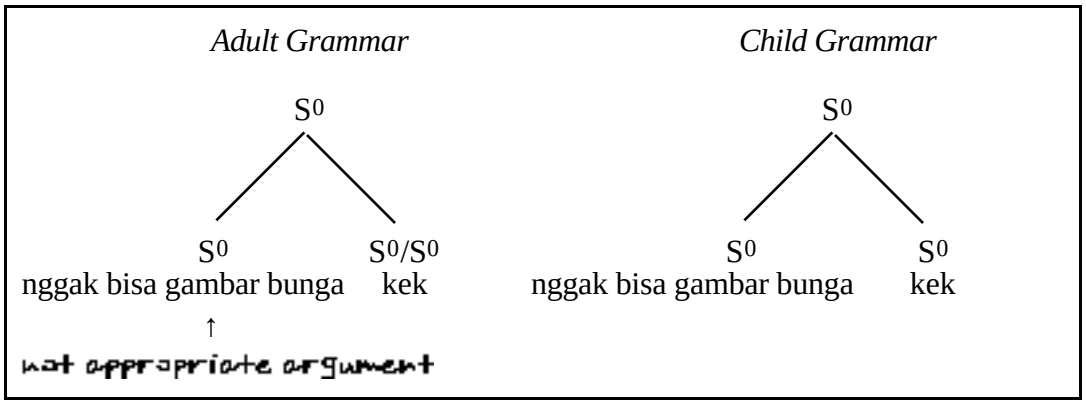
(-1) Nah. *experimenter*
PRES
'There.'

☞ (0) Sekarang, kok, aku kok, [Larissa 4;06]
now why:EMPH 1:SG why:EMPH
nggak bisa gambar bunga, ***kek***?
NEG can picture flower UNCERT
'Now me, how come I can't seem to draw flowers?'

(1) Bisanya bikin pohon doang. [Larissa 4;06]
can-ASSOC make tree only
'I can only do trees.'

(2) Ya udah, bikin pohon! *experimenter*
yes PFCT make tree
'Fine, make trees then.'

(3) Nggak pa-pa. *experimenter*
NEG DISTR-what
'It doesn't matter.'



Type C Overgeneralizations

(16) *Context*: Michael examining a toy first aid kit.

(-9) Apa ini? [Michael 2;10]
what DEM:PROX
'What's this?'

(-8) Ini apa ini? [Michael 2;10]
DEM:PROX what DEM:PROX
'What's this?'

(-7) Ini apa ini? [Michael 2;10]
DEM:PROX what DEM:PROX
'What's this?'

(-6) Ini namanya... *experimenter*
DEM:PROX name-ASSOC
'This is called ...'

(-5) Ini yang me(rah)-merah apa? [Michael 2;10]
DEM:PROX REL DISTR-red what
'What's this red thing?'

(-4) Palang merah. *experimenter*
cross red
'A red cross.'

(-3) Yang merah-me(rah). [Michael 2;10]
REL DISTR-red
'The red thing.'

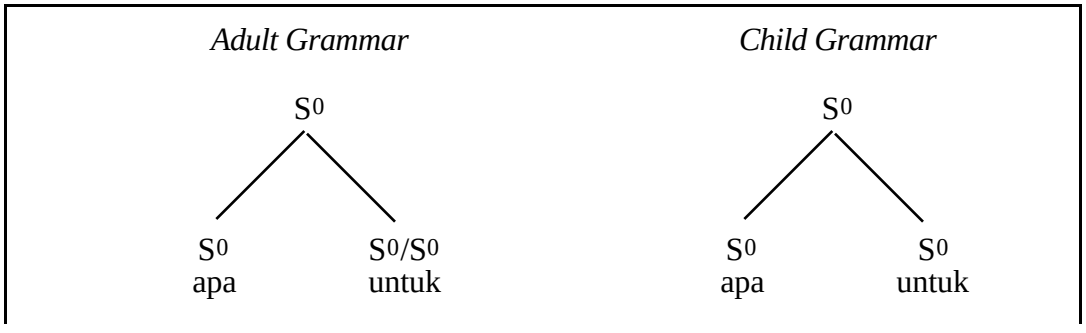
(-2) Palang merah apa? [Michael 2;10]
cross red what
'What's a red cross?'

(-1) Hmm? *experimenter*
EXCL
'Huh?'

☞ (0) Palang merah *apa* ***untuk***? [Michael 2;10]
cross red what for
'What's the red cross for?'

(1) Palang merah ini. *experimenter*
cross red DEM:PROX
'This is a red cross.'

(2) Bantuan untuk orang sakit. *experimenter*
help-AUG for person sick
'It's for helping sick people.'



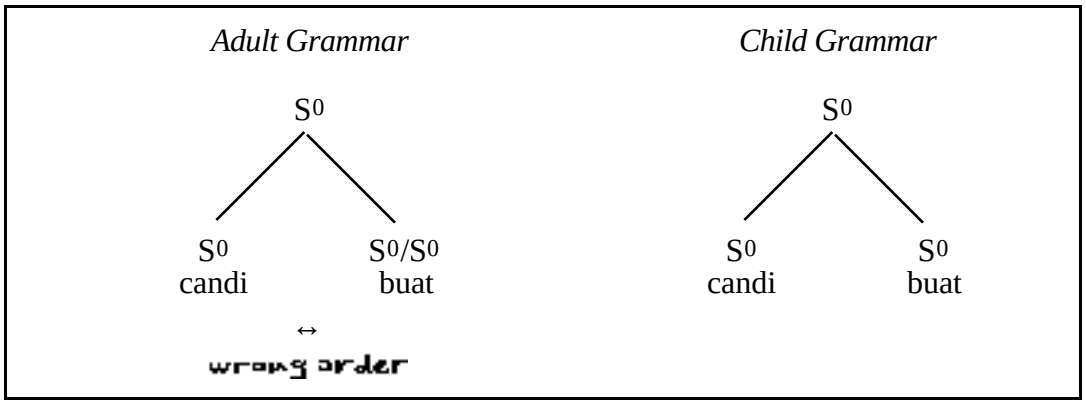
(17) *Context*: Michael, playing with a construction kit, smashes his creation and plans to begin afresh and build a temple.

(-2) Yah, rusak lagi, deh. *experimenter*
EXCL broken.down again EXCL
'Oh no, it's broken again.'

(-1) Eh, Kel, kemaren Michael ke mana, sih? *experimenter*
EXCL FAM-Michael yesterday Michael to which EXCL
'Hey, Michael, where did you go yesterday?'

☞ (0) *Candi* ***buat***. [Michael 2;06]
temple for
'For a temple.'

(1) Hah? *experimenter*
EXCL
'Huh?'



(18) *Context*: Michael pretending to be a cook.

(-4) Maunya mi goreng? [Michael 2;09]
want-ASSOC noodles fry
'Do you want fried noodles?'

(-3) Sapi aja. *mother*
cow just
'I want beef.'

(-2) Mau mi goreng. [Michael 2;09]
want noodles fry
'Fried noodles.'

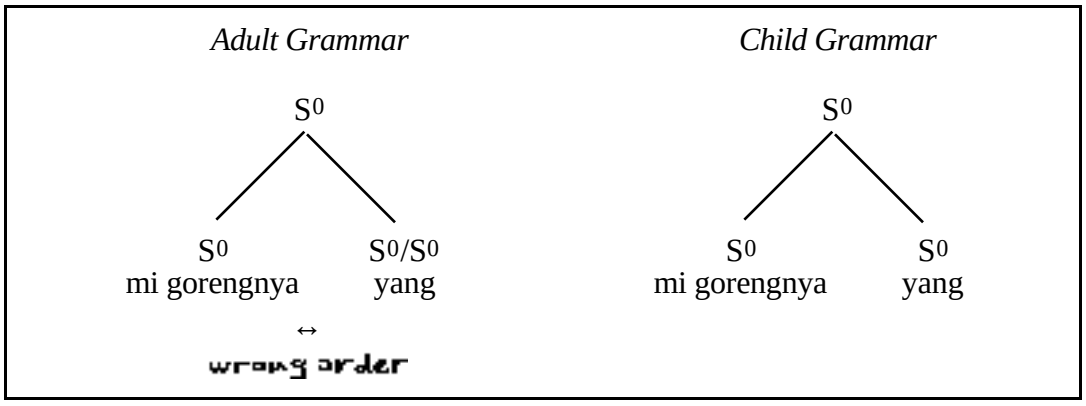
(-1) Oh, iya, mi goreng, deh. *mother*
EXCL yes noodles fry EXCL
'Oh alright, fried noodles then.'

☞ (0) *Mi gorengnya* ***yang*** berapa? [Michael 2;09]
noodles fry-ASSOC REL how.much
'How many fried noodles?'

(1) Tiga. *mother*
three
'Three.'

(2) Tiga. [Michael 2;09]
three
'Three.'

(3) He-em. *mother*
EXCL
'Uh-huh.'



(19) *Context*: Priska is playing with coloured stickers, and has a little squabble with her mother over a pair of small toy bags.

(-4) Mana? [Priska 4;03]
which
'Where is it?'

(-3) 'Tasnya buat kamu?' *mother*
bag-ASSOC for 2
'Is the bag for you?'

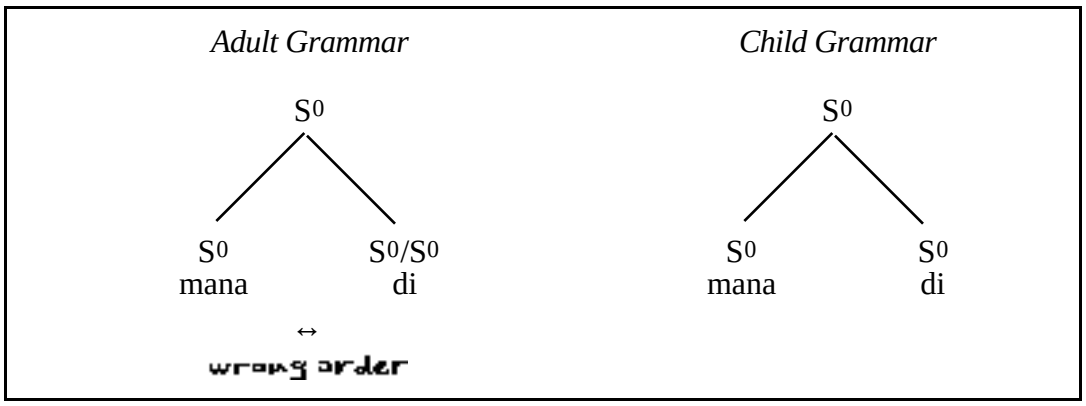
(-2) 'He… ya.' [Priska 4;03]
EXCL yes
'Yeah.'

(-1) 'Tasnya yang buat kamu?' *mother*
bag-ASSOC REL for 2
'Is this the bag that's for you?'

☞ (0) *Mana* ***di*** warna kuningnya? [Priska 4;03]
which LOC colour yellow-ASSOC
'Where's the yellow?'

(1) Lha? *mother*
EXCL
'Huh?'

(2) Hi hi hi, ni dia. *mother*
EXCL DEM:PROX 3
'Hee hee hee, here it is.'



(20) *Context*: Discussing ghosts.

(-7) Berarti ada berapa? *experimenter*
MED-meaning exist how.much
'So how many are there?'

(-6) Satu, dua, tiga, empat, lima. [Pipit 4;04]
one two three four five
'One, two, three, four, five.'

(-5) Banyak banget, takut aku! *experimenter*
much very afraid 1:SG
'So many, I'm scared.'

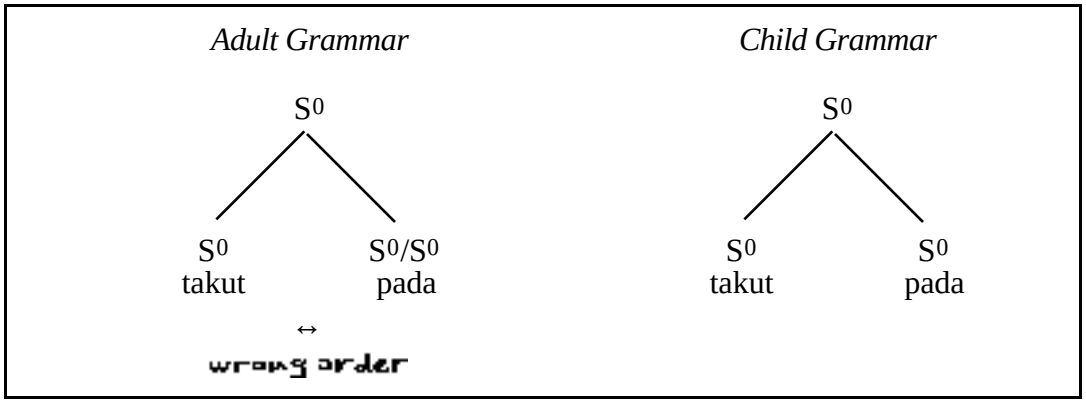
(-4) Pipit takut, nggak? *experimenter*
Pipit afraid NEG
'Are you scared?'

(-3) Takut. [Pipit 4;04]
afraid
'Yes.'

(-2) Tapi kalo berdoa, hantunya takut, nggak? *experimenter*
but TOP MED-pray ghost-ASSOC afraid NEG
'But if you pray, the ghosts are afraid, aren't they?'

(-1) Kalo berdoa hantunya turun. [Pipit 4;04]
TOP MED-pray ghost-ASSOC descend
'If you pray, the ghosts will come down.'

☞ (0) Mo pulang, *takut* ***pada***. [Pipit 4;04]
want go.home afraid PL
'They'll go home, they're scared.'

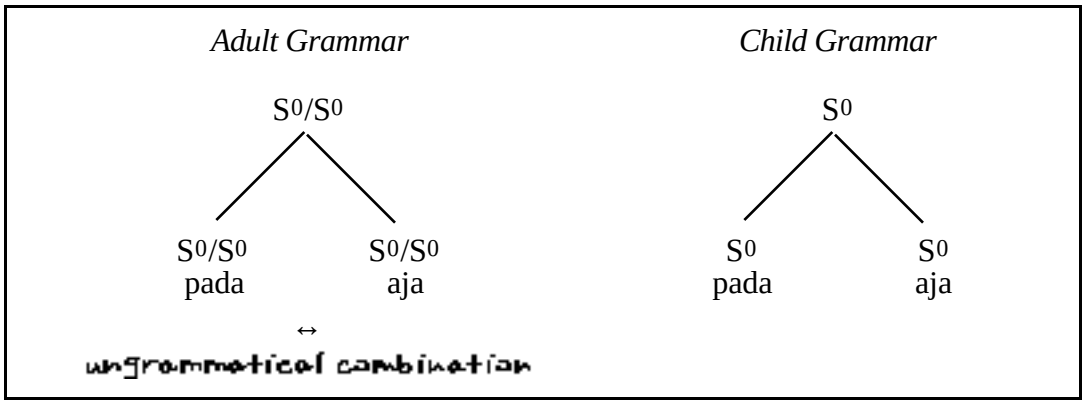


Type D Overgeneralizations

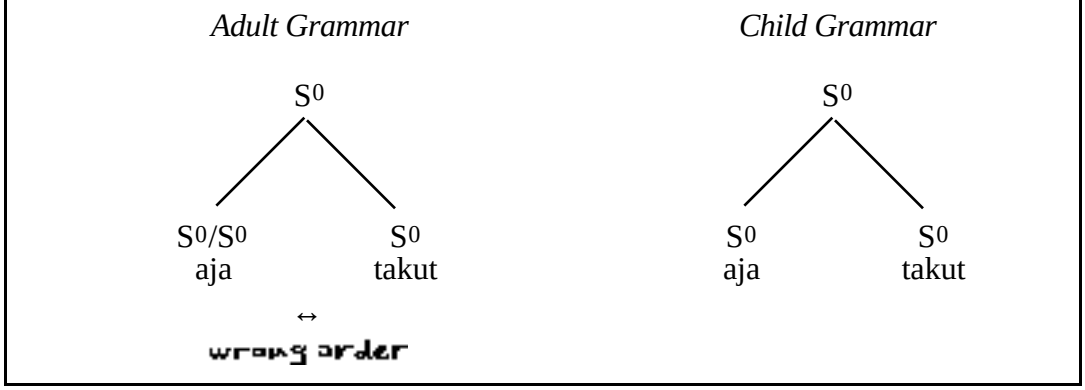
(21) *Context*: Playing with a doll house.

(-1) C(er)itanya udah... udah malem. [Pipit 5;04]
story-ASSOC PFCT PFCT night
'Suppose it's already, already night.'

☞ (0) Eh, kacanya ***pada aja*** ditutup! [Pipit 5;04]
EXCL glass-ASSOC PL just PAT-close
'Hey, let's just close all the windows.'



Alternative constituency would suggest analysis as Type C overgeneralization:



Conclusions

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As predicted, S^0 is acquired before S^0/S^0 in Jakarta Indonesian.

Further support is thereby obtained for the universal theory of syntactic categories, and for the specific analysis of Jakarta Indonesian as possessing just two syntactic categories, S^0 and S^0/S^0.

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Further empirical questions:

- ✯ At what stage of language acquisition is the category S^0/S^0 acquired?
- ✯ At what stages and in what order are individual words assigned to the category S^0/S^0?

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Further theoretical question:

On the basis of what evidence does the child assign individual words to the category S^0/S^0?

A possible answer:

- ✯ Negative indirect evidence (Pinker 1981, 1984, Goldberg 1995).
- ✯ If the child observes that in certain contexts an otherwise preferred construction is repeatedly avoided, s/he may accordingly infer that, in the contexts in question, this construction is disallowed.
- ✯ In the case at hand, the Jakarta Indonesian child observes that in certain contexts members of S occur by themselves as complete utterances; however, when, in similar contexts, a certain expression occurs over again and again in construction with another expression, s/he may conclude that the expression in question belongs to the closed syntactic category S^0/S^0.

... which raises yet another theoretical question:

Is the child predisposed by an innate universal grammar to assign words with certain meanings (eg. more abstract ones) to certain syntactic categories (eg. more complex ones)?

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