1. Cross-Linguistic Variation in the Acquisition of Voice Morphology

- Languages with early acquisition of passives:
  - Zulu (Suzman 1985)
  - Sesotho (Demuth 1989, 1990)
  - Inuktitut (Allen and Crago 1966)
  - Quiche (Pye and Quixtan Poz 1988)

2. Jakarta Indonesian in Sociolinguistic Context

- 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; described by Wouk (1989,1999).

- 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 population of Jakarta — described by Kähler (1966), Abdul Chaer (1976), Ikranagara (1980), Muhadjir (1981), Grijns (1991) and others.

- However, there exists a continuum of language varieties between Jakarta Indonesian and Standard Indonesian, and between Jakarta Indonesian and Betawi Malay.

- Jakarta Indonesian is acquired naturally and completely at a young age by most children growing up in Jakarta.

- Standard Indonesian is acquired by children at a later age, often 'imperfectly', largely from the media and via conscious schooling.
3. Voice Morphology in Standard Indonesian

(1) (a) ?* Adi pukul Bowo
Adi hit Bowo
"Adi hit Bowo"
(b) Adi dipukul Bowo
Adi di-hit Bowo
"Adi was hit by Bowo"
(c) Adi memukul Bowo
Adi meN-hit Bowo
"Adi hit Bowo"
(d) ** Adi dimemukul Bowo
Adi di-meN-hit Bowo
"Adi was hit by Bowo" / "Adi hit Bowo"

✯ Some ways in which Standard Indonesian passives and actives differ from those of Standard Average European:
• Passive and active both derived from a basic stem unmarked for voice
• Passive and active clauses of similar formal complexity
• Passive clauses more highly transitive (in the sense of Hopper and Thompson 1980), used to express foregrounded events in narratives
• Passive clauses more frequent than active ones

4. Voice Morphology in Jakarta Indonesian

(2) (a) Adi pukul Bowo
Adi hit Bowo
(i) "Adi hit Bowo"
(ii) "Bowo hit Adi" [infrequent]
(b) Adi dipukul Bowo
Adi di-hit Bowo
(i) "Adi hit Bowo" [infrequent]
(ii) "Bowo hit Adi"
(c) Adi mukul Bowo
Adi N-hit Bowo
(i) "Adi hit Bowo"
(ii) "Bowo hit Adi" [infrequent]
(d) Adi dimukul Bowo
Adi di-N-hit Bowo
(i) "Adi hit Bowo" [infrequent]
(ii) "Bowo hit Adi" [infrequent]
Characteristics of di- and N- in Jakarta Indonesian:

- di- and N- have no grammatical functions.
- In particular, di- and N- do not select a particular argument of the word to which they are attached and associate that argument with morphosyntactic properties such as linear order.
- As a result, arguments of a word to which di- or N- are attached are unmarked with respect to thematic roles and the agent/patient distinction: (2), (3) - (8).
- The function of di- and N- is purely semantic: marking the host word as having a patient or an agent in its argument structure: (9) - (11). (Thus, attaching di- or N- to a word is like adding an attributive adjective to a noun: the semantics of the NP is enriched, but its grammatical role in the clause remains unchanged.)
- Whereas di- is very productive, the distribution of N- is constrained by arbitrary lexical factors: (12)

Adult utterances from naturalistic corpora

(3) Nanti dokternya dipereksa \textit{di-X preceded by non-patient}
\textsc{fut:prox} doctor-\textsc{assoc} di-examine
[Playing with toy animals, experimenter talking to child]  
"The doctor will examine them"

(4) Ntar ya, Tante dibikinin ya? \textit{N-X preceded by non-agent}
\textsc{fut:prox} yes aunt di-prepare-\textsc{appl} yes
[Child wants to eat noodles, experimenter says to him]  
"Wait a little bit, I'll make you some"

(5) Plastiknya ditaro dulu yuk plastic.bag-\textsc{assoc} di-put before \textsc{exhrt}
[Mother talking to child while cooking]  
"And now let's put it into the plastic bag"

(6) Mama nibanin kaki aja sakit mother N-fall.on-\textsc{appl} foot just hurt  
[Mother warning son who is playing with a heavy object]  
"If that drops on my foot it's going to hurt"

(7) Lho, rambutnye motong, ye hair-\textsc{assoc} N-cut yes  
[Speaker, with two of his friends, encounters another friend]  
"Hey, he had his hair cut"

(8) Ini megang DEM\textsc{prox} N-hold  
[Speaker massaging friend, extends his hand and asks friend to hold it while he massages it with his other hand]  
"Hold this"
(9) Kandangnya dikunci  
stable-ASSOC di-key  
[Experimenter to child playing with toy animals]  
"Lock the stable"

(10) Sekarang ayah ngopi  
now father N-coffee  
[Grandfather telling child to offer her father some coffee]  
"Daddy wants some coffee now"

(11) Diminggirin dulu rambutnya  
di-N-edge-APPL before hair-ASSOC  
[Experimenter talking to child]  
"Move your hair aside"

(12) Distribution of N-: The cycle of lexicalization

<table>
<thead>
<tr>
<th>stage</th>
<th>stem</th>
<th>N-stem</th>
<th>gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>non-existent</td>
<td>(a)</td>
<td>* mergi</td>
<td>'go'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* nidur</td>
<td>'sleep'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* nyusu</td>
<td>'milk'</td>
</tr>
<tr>
<td>rare</td>
<td>(b)</td>
<td>R nali</td>
<td>'string'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R mutih</td>
<td>'white'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R ngeteh</td>
<td>'tea'</td>
</tr>
<tr>
<td>common</td>
<td>(c)</td>
<td>liat</td>
<td>ngeliat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>semir</td>
<td>nyemir</td>
</tr>
<tr>
<td></td>
<td></td>
<td>kopi</td>
<td>ngopi</td>
</tr>
<tr>
<td>usual</td>
<td>(d)</td>
<td>R intip</td>
<td>R ngintip</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R ompol</td>
<td>R ngompol</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R sangkut</td>
<td>R nyangkut</td>
</tr>
<tr>
<td>reanalyzed</td>
<td>(e)</td>
<td>nonton</td>
<td>(Standard Indonesian: tonton)</td>
</tr>
<tr>
<td>and therefore</td>
<td></td>
<td>nangis</td>
<td>(Standard Indonesian: tangis)</td>
</tr>
<tr>
<td>non-existent</td>
<td>(f)</td>
<td>makan</td>
<td>(Tagalog: kain)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>minum</td>
<td>(Tagalog: inum)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>masuk</td>
<td>(Tagalog: pasok)</td>
</tr>
<tr>
<td>non-existent</td>
<td>(g)</td>
<td>maling</td>
<td>(Proto-Malayo-Polynesian: maling)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>nyamuk</td>
<td>(Proto-Malayo-Polynesian: ñamuk)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>mata</td>
<td>(Proto-Malayo-Polynesian: mata)</td>
</tr>
</tbody>
</table>
5. Some Previous Studies of the Acquisition of Malay and Indonesian

- Jakarta Indonesian: Soenjono (2000)
- Lampung Indonesian: Patuan Raja (2000)
- Singapore Malay: Norhaida (1999)

6. The MPI Jakarta Project

<table>
<thead>
<tr>
<th>Name</th>
<th>Date of Birth</th>
<th>Age first recorded</th>
<th>Projected age at end of project</th>
<th>Utterances to date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timothy</td>
<td>28.08.1998</td>
<td>1;6</td>
<td>5;2</td>
<td>9907</td>
</tr>
<tr>
<td>Hizkia</td>
<td>06.09.1997</td>
<td>1;7</td>
<td>6;1</td>
<td>15859</td>
</tr>
<tr>
<td>Riska</td>
<td>24.07.1997</td>
<td>1;8</td>
<td>6;3</td>
<td>20499</td>
</tr>
<tr>
<td>Michael</td>
<td>22.02.1998</td>
<td>2;0</td>
<td>5;8</td>
<td>9166</td>
</tr>
<tr>
<td>Priska</td>
<td>30.07.1997</td>
<td>2;7</td>
<td>6;3</td>
<td>15756</td>
</tr>
<tr>
<td>Larissa</td>
<td>16.04.1997</td>
<td>2;10</td>
<td>6;6</td>
<td>14617</td>
</tr>
<tr>
<td>Ido</td>
<td>01.01.1996</td>
<td>3;4</td>
<td>7;9</td>
<td>21518</td>
</tr>
<tr>
<td>Pipit</td>
<td>30.11.1994</td>
<td>4;4</td>
<td>8;11</td>
<td>16680</td>
</tr>
<tr>
<td>Total (target kids)</td>
<td></td>
<td></td>
<td></td>
<td>124002</td>
</tr>
<tr>
<td>Other kids</td>
<td></td>
<td></td>
<td></td>
<td>34357</td>
</tr>
<tr>
<td>Total kids</td>
<td></td>
<td></td>
<td></td>
<td>158359</td>
</tr>
<tr>
<td>Adults</td>
<td></td>
<td></td>
<td></td>
<td>165906</td>
</tr>
<tr>
<td>Grand total</td>
<td></td>
<td></td>
<td></td>
<td>324265</td>
</tr>
</tbody>
</table>

Table 1: The MPI Jakarta Project data

## 7. The Acquisition of Voice Morphology in Jakarta Indonesian

<table>
<thead>
<tr>
<th>age</th>
<th>total</th>
<th>di-</th>
<th>N-</th>
<th>di- (%)</th>
<th>N- (%)</th>
<th>di-/N-</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1;5</td>
<td>328</td>
<td>0</td>
<td>0</td>
<td>0%</td>
<td>0%</td>
<td>NA</td>
</tr>
<tr>
<td>1;6-1;11</td>
<td>6307</td>
<td>29</td>
<td>11</td>
<td>0.46</td>
<td>0.17</td>
<td>2.6</td>
</tr>
<tr>
<td>2;0-2;5</td>
<td>17816</td>
<td>165</td>
<td>88</td>
<td>0.93</td>
<td>0.49</td>
<td>1.9</td>
</tr>
<tr>
<td>2;6-2;11</td>
<td>33471</td>
<td>645</td>
<td>282</td>
<td>1.9</td>
<td>0.84</td>
<td>2.3</td>
</tr>
<tr>
<td>3;0-3;5</td>
<td>22973</td>
<td>577</td>
<td>328</td>
<td>2.5</td>
<td>1.4</td>
<td>1.8</td>
</tr>
<tr>
<td>3;6-3;11</td>
<td>18286</td>
<td>575</td>
<td>438</td>
<td>3.1</td>
<td>2.4</td>
<td>1.3</td>
</tr>
<tr>
<td>4;0-4;5</td>
<td>11242</td>
<td>414</td>
<td>307</td>
<td>3.7</td>
<td>2.7</td>
<td>1.3</td>
</tr>
<tr>
<td>4;6-4;11</td>
<td>13177</td>
<td>616</td>
<td>338</td>
<td>4.7</td>
<td>2.6</td>
<td>1.8</td>
</tr>
<tr>
<td>5;0-9;11</td>
<td>34759</td>
<td>1307</td>
<td>761</td>
<td>3.8</td>
<td>2.2</td>
<td>1.7</td>
</tr>
<tr>
<td>10-</td>
<td>165906</td>
<td>8017</td>
<td>4512</td>
<td>4.8</td>
<td>2.7</td>
<td>1.8</td>
</tr>
<tr>
<td>total</td>
<td>324265</td>
<td>12345</td>
<td>7065</td>
<td>3.8</td>
<td>2.2</td>
<td>1.7</td>
</tr>
</tbody>
</table>

Table 2: Frequency of Occurrence of di- and N- in Naturalistic Corpus

★ di- and N- are used productively from a very young age, between 1;6 and 2;0.  
★ The frequency of di- and N- increases until around 3;6 - 4;0, when it attains adult frequency.  
★ di- occurs more frequently than N- from the beginning.
Child utterances from naturalistic corpus, illustrating PRODUCTIVE use of the two affixes

(13) Dibuka
di-open
[Asking mother to open picture poster]
"Open it"

cf. Buka
open
[Asking mother to open door]
"Open it"

(14) Buang aja. Dibuang
throw just di-throw
[Playing with the microphone]
"Just throw it away. Throw it away"

(15) Ditumpahin
di-spill-APPL
[Seeing another child dropping crackers from a bag]
"She's dropping them"

cf. Bedak tumpah
powder spill
[About some face powder]
"The powder's spilt"

fasten di-fasten
[Watching experimenter set the camera up on the tripod; experimenter utters the bare form pasang, the child repeats and then adds the prefix di-]
"Setting it up. Setting it up"

(17) Mbuka
N-open
[Asking mother to take his shirt off]
"Take it off"

cf. Buka
open
[Asking mother to open door]
"Open it"

(18) xx ngeliat xx
xx N-see xx
[Asking to see something (unclear)]
"See"

cf. liat xx
see xx
[Asking to see something (unclear)]
"See"
(19) Apa, lagi ngapain
what PROG N-what-APPL
[About a picture in a book]
"What's he doing?"

Riska 2:0

(20) Ngambil buah
N-take fruit
[Looking at a picture book with mother; mother points to a giraffe and asks what he's doing]
"Taking fruit"

cf. Ica ambil
Ica take
[Asking for a pen that her mother is holding]
"I want to take it"

Riska 2:1

(21) Eh, kasurnya pengen, pengen dinyuci dulu,
EXCL mattress-ASSOC want want di-N- wash before
pengen dicuci
want di-wash
[Playing with toy animals in a farm]
"I want to, want to wash the mattress first, to wash it"

Riska 2:10

(22) Dek Ido mo ke kantor di-,
TRU-younger.sibling Ido want to office di-
dinabrakin ini, xx ah bom
di-N-collide-APPL DEMPROX xx EXCL EXCL
[Playing with toy car]
"I want to go to the office, it crashed, ah, boom"

cf. Wah, tabrakan, we
EXCL collide-AUG EXCL
[Playing with toy car]
"Wah, crash, yay"

Ido 3:11

Ido 3:4
8. Why Are di- and N- Acquired So Early in Jakarta Indonesian?

- The prefixes *di-* and *N-* in Jakarta Indonesian are acquired early because they occur with high frequency in the adult language.
- The prefixes *di-* and *N-* in Jakarta Indonesian are acquired early because they are simple, being associated with a single semantic function, without any grammatical consequences.

- The greater frequency of the prefix *di-* (relative to *N-*) in the child data reflects its greater frequency in the adult data.

*Diagram 1: The Prefixes *di-* and *N-* in Malay/Indonesian Dialects*
References


Acknowledgements

Jakarta Field Station coordinator Uri Tadmor; IT manager Brad Taylor; Data editors Liana Husain, Betty Litamahuputty, Antonia Soriente; Research assistants Dalan Mehuli, Dini Andarini, Erni Farida Sri Ulina Ginting, Ferdinand Okki Kurniawan, Lanny Hidayat, Regina Yanti, Widya Setiabudi, Yokebed Triwigati.