Usage of Indonesian possessive verbal predicates: a statistical analysis based on questionnaire and storytelling surveys

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The scope of discussion

- **Indonesian**: high and low varieties

- **Possessive verbal predicates**: 'have-constructions' (Heine 1997)

- synchronic study

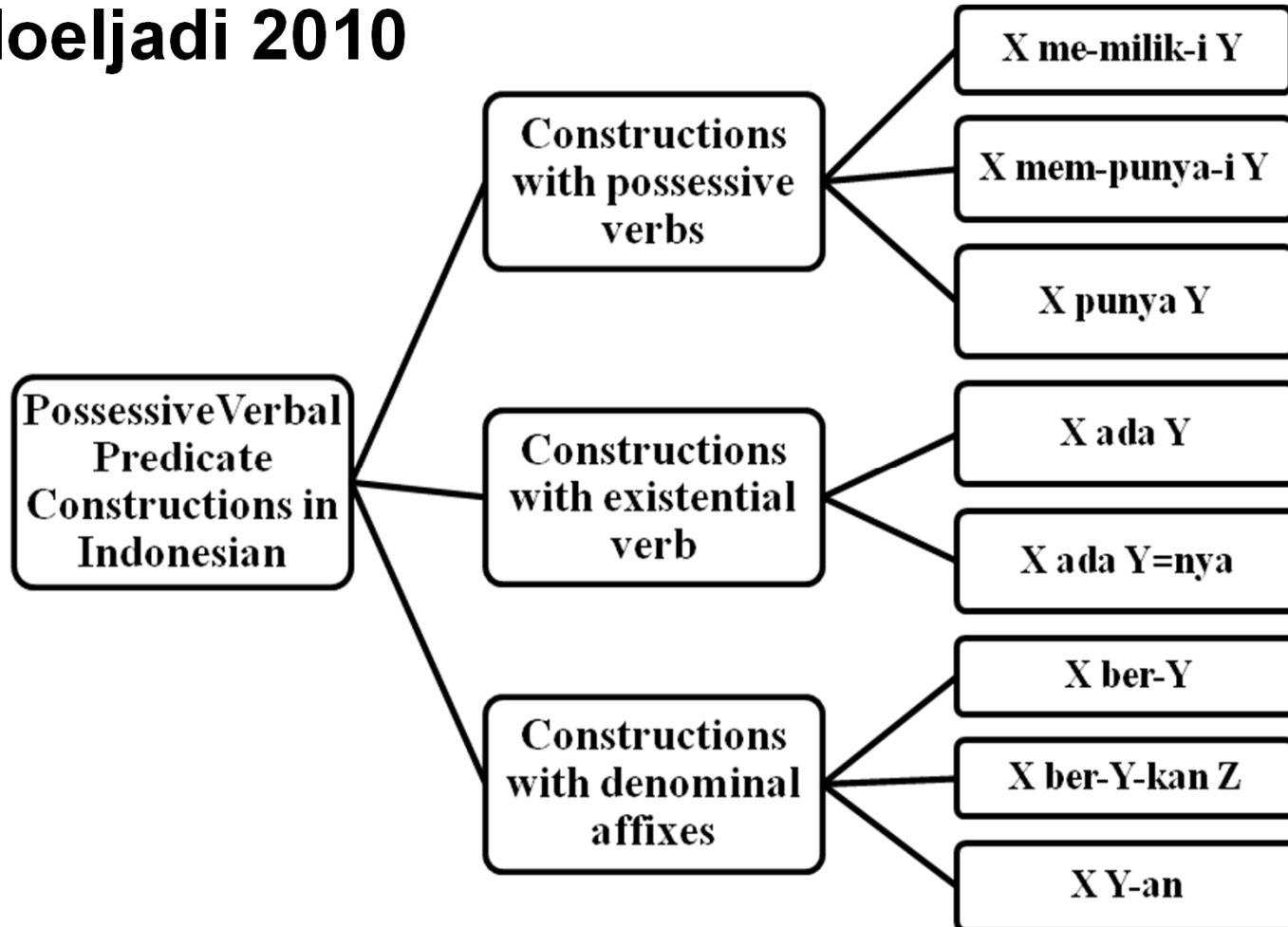# Previous studies (1)

1. Hopper 1972: 137-140

mempunyai, punya, ada (?)

2. Alieva 1992: 15-19

(mem)-punyai, (me)-miliki, punya,

ada, ada ...=nya, ber-, ber-...-kan

Previous studies (2)

3. Moeljadi 2010

X=possessor, Y=possessee, Z=complement

Questions

1. Which possessive verbal predicates can be considered as the real possessive verbal predicates in Indonesian?

2. Does the encoding of possessor and/or possessee play role in the encoding process of possessive verbal predicates?

3. Can we group those possessive verbal predicates?

4. Are there possessive verbal predicates which are commonly used in the high variety and which are often used in the low variety?

5. Is there any special characteristics of possessive verbal predicates in the high and low varieties?

Methodology

1. Questionnaires (interviews)

-> Calculating the degree of similarity between constructions

-> Clustering/classifying

* Cluster analysis

2. Storytelling

-> Gathering spoken and written data

-> Calculating the frequency of usage for each possessive verbal predicate

* Correlation technique etc.

Overview of possessive verbal predicates in Indonesian

1. memiliki, mempunyai, punya

see examples (4-1)~(4-9)

2. ada, ada ...=nya

see examples (3-1), (3-3), (4-10)~(4-12)

3. ber-, ber...-kan, -an

see examples (3-2), (4-13)~(4-18)

Questionnaire survey (1)

Time and place:

(1) June 2010 in Tokyo

(2) September 2010 in Malang

(3) March 2011 in Jakarta

Consultants: 18 persons (see Table 3)

What to do: Judge the acceptability of possessive verbal predicates in combination with various possessees and possessors

Questionnaire survey (2)

- **1968 sentences:**

  6 possessors: 1, 2, 3 SG/PL

  8 possessive verbal predicates (Moeljadi 2010)

  41 possessees

- **Examples:** saya '1SG' **memiliki** buku 'book', Anda '2SG' **memiliki** buku, dia '3SG' **memiliki** buku, ... mereka '3PL' **memiliki** buku, saya **mempunyai** buku, ... mereka **mempunyai** buku, aku '1SG' **punya** buku, ... kalian '2PL' **punya** buku, ... aku **ada** buku, ... dia **ada** buku**nya**, ... mereka **ber**buku ...

Cluster analysis

- **3 choices of judgment:**

  (1) usual and acceptable (1 point)

  (2) slightly unusual but still acceptable (0.5 points)

  (3) unusual and unacceptable (zero)

- **Example:**

  saya **memiliki** teman 'friend' (acceptable -> 1 point)

  aku **punya** teman (unacceptable -> 0 point)

  saya **memiliki** buku (acceptable -> 1 point)

  aku **punya** buku (acceptable -> 1 point)

  The Euclidean distance between **memiliki** and **punya** is

  $$\sqrt{(1-0)^2 + (1-1)^2} = 1$$

Cluster analysis
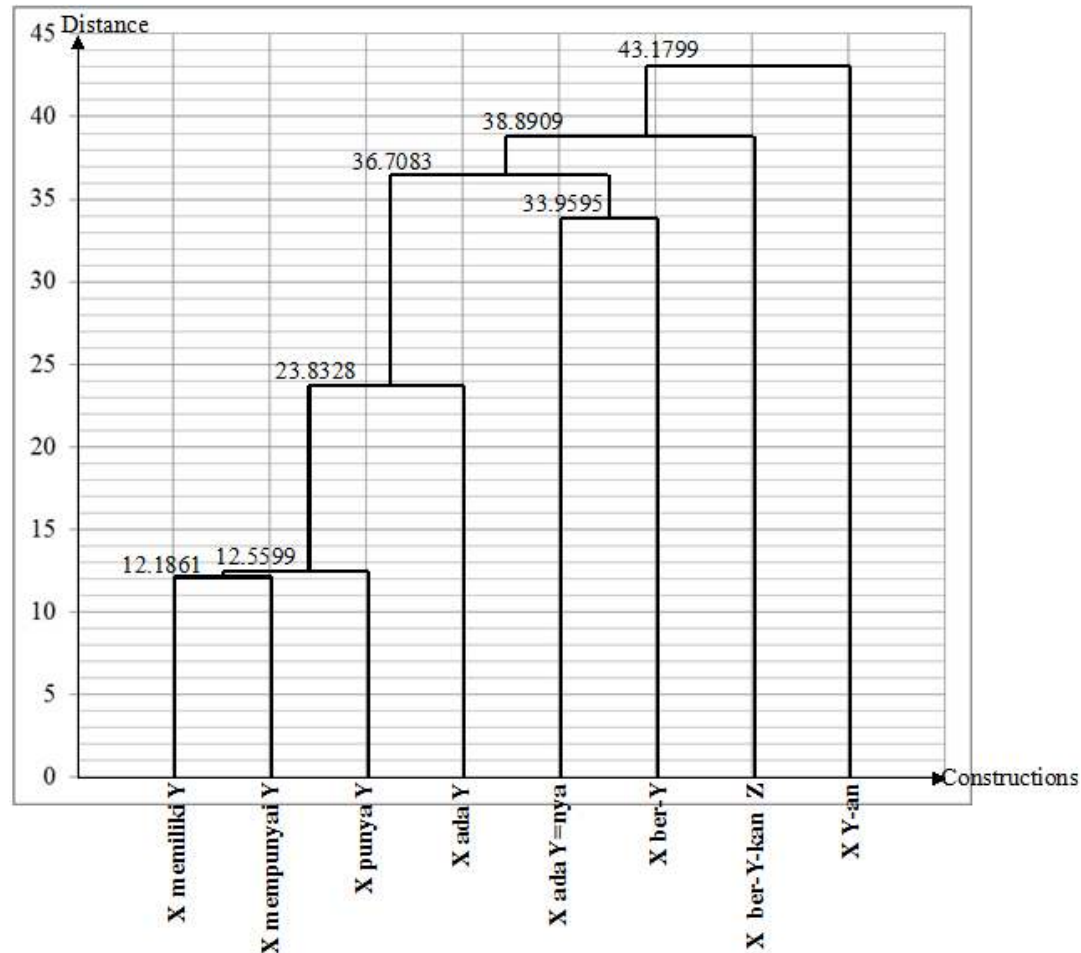
Figure 1. A dendrogram illustrating the clustering of possessive verbal predicates

ada and ada ...=nya

- **Group 1**

  (5-1) Dia **ada** buku. 'S/he has a book'

  (5-2) Dia **ada** buku**=nya**. 'S/he has the book'

- **Group 2**

  (5-3) Gue udah **ada** istri. 'I already have a wife'

  (5-4) Gue udah **ada** istri**nya**. 'I already have a wife'

- **Group 3**

  (5-5) Mereka **ada** rapat. 'They have a meeting'

  (5-6) * Mereka **ada** rapat**nya**.

ber- and ber-...-kan, -an

- Comparing with ber-Y, the number of nouns which are considered to be acceptable to fill the Y position in ber-Y-kan Z is very few.

- ber-Y-kan Z requires an extra argument in addition to a possessee.

- -an only accepts very few nouns (jenggot-an, jerawat-an, uban-an, karat-an) which have the meaning related to possession.

- ber-...-kan and -an are peripheral to the domain of possessives in Indonesian.
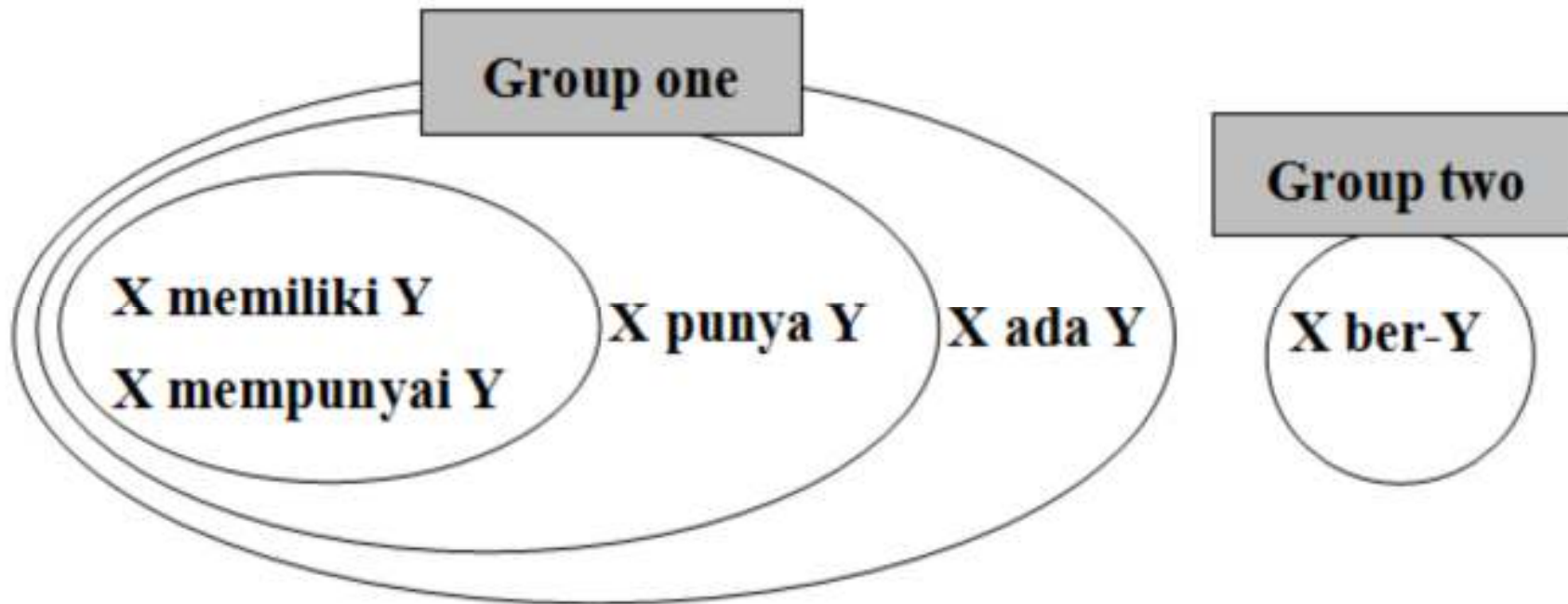
Figure 5. The clustering of memiliki, mempunyai, punya, ada, and ber-

Storytelling survey

Time and place:
   (1) August 2011 in Malang
   (2) Sept-Oct 2011 in Tokyo

Consultants: 24 persons (speaking: 13 + writing: 11) (see Table 5)

What to do: Tell a story by either 'speaking' or 'writing' based on 28 pictures

Spoken Data

ya bahagia lah.

4. Trus dia itu, o: *ada* lagi namanya si e: Anton, Anton, Anton, nah si Anton ini miskin, orang miskin, dia tuh, e: apa, dia itu rumahnya cuman dari atap seng sama kayak dari bambu gitu dindingnya. Trus dah gitu, dia itu punya sepeda pun udah **berkarat**, udah jelek, trus punya bajunya compang-camping, trus apa, ditambal-tambal gitu, trus nggak punya duit.

5. E: dia itu anak tunggal, cuman papa mamanya udah meninggal, jadi hidup sama neneknya yang sakit, yang punya sakit bronchitis. Trus nggak punya kakak, nggak punya adik, tapi dia punya

13. Terus gitu, si Budinya kan karena anak orang kaya ya, dia punya apa, maunya punya segalanya gitu, harus punya, jadinya tu, dia mau punya, punya si kodok ini e: tapi si Antonnya itu nggak kasih. Si Antonnya bilang, "Ini *punya* saya, bukan *punya* kamu."

14. Terus uda kayak gitu, mereka tarik-tarikan, tarik-tarikan, e: toplesnya jatuh, kebuka tutupnya, e: dia keluar deh si kodoknya.

15. E: dia nemplok di atas kepala gurunya. Ternyata gurunya tu botak tapi dia pake wig gitu.

16. Trus udah kayak gitu, apa, si kodoknya ini e: loncat sambil bawa wignya. Trus si gurunya itu

Written Data

1. Di suatu tempat hiduplah dua orang remaja. Yang **bernama** si kaya dan si miskin.

2. Si kaya ini memakai kacamata dan **berjerawat**, tetapi dia sangat kaya. Di rumahnya dia **memiliki** kolam renang dan sangat banyak baju, celana dan juga sepatu. Dia **memiliki** mobil dan juga sopir yang siap mengantarkannya ke mana saja.

3. Si kaya ini adalah anak tunggal, dia tidak **memiliki** adik dan kakak, kakek dan neneknya pun telah meninggal dia hanya tinggal **bersama** ayah dan ibunya, tetapi dia **memiliki** banyak teman di sekitarnya sehingga dia tidak pernah merasa kesepian.

yang mengidap penyakit bronchitis, dia juga anak tunggal. Ayah dan ibunya telah tiada dan dia tidak **memiliki** kakak maupun adik. Yang membuat dia tidak kesepian adalah binatang peliharaannya dan ia pun **memiliki** banyak teman.

6. Si miskin **memiliki** dua binatang peliharaan yaitu seekor anjing dan seekor katak, tetapi katak ini **memiliki** keanehan, ekornya sangat panjang dan matanya sangat besar.

7. Suatu pagi saat si miskin **berangkat** ke sekolah dia **bertemu** dengan si kaya yang juga akan ke sekolah.

8. Saat di kelas si miskin **bertanya** kepada si kaya,

Quantitative study of variables

- Counting tokens of each variable of the low variety in the indirect and direct narration of each spoken and written data

Table 8. The number of word tokens and the low variety's tokens in the spoken data (L: Low variety, In: Indirect narration, Dn: Direct narration)

Consultant	Number of word tokens	Number of L tokens	L variables																			
			diphthong (1)	schwa (2)	initial s (3)	N-/ngo- (4)	ke- (5)	-in (6)	NEG (7)	bsaat (8)	suma-anm (9)	apaan (12)	barget (13)	bilung (14)	btw (15)	bikin (16)	curhat (18)	doang (19)	duit (20)	gimana (22)	kali (23)	beuth-kani (24)
AL (In)	796	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AL (Dn)	109	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AL (In+Dn)	905	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B (In)	1049	41	1	1	0	1	0	0	2	0	0	0	0	7	0	0	0	1	0	0	1	1
B (Dn)	496	94	1	6	5	1	1	5	9	1	3	0	0	0	0	1	1	0	0	0	0	1
B (In+Dn)	1545	135	2	7	5	2	1	5	11	1	3	0	0	7	0	1	1	1	0	0	1	2
BEW (In)	719	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BEW (Dn)	92	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BEW (In+Dn)	811	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CWS (In)	672	41	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
CWS (Dn)	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CWS (In+Dn)	674	41	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
EW (In)	1654	254	12	7	0	7	3	0	17	0	6	0	0	1	0	0	0	0	1	0	0	0
EW (Dn)	228	47	3	1	1	2	2	0	10	0	2	0	0	0	0	0	0	0	0	1	0	0
EW (In+Dn)	1882	301	15	8	1	9	5	0	27	0	8	0	0	1	0	0	0	0	1	1	0	0
JC (In)	1785	83	0	0	1	0	0	1	2	0	2	0	0	0	0	0	0	0	0	0	0	0

Table 10. The number of possessive verbal predicates' tokens and their percentages in the spoken data (L: Low variety, In: Indirect narration, Dn: Direct narration)

| Consultant	Percentage of word tokens (see Table 8)	Percentage of L tokens (see Table 8)	memiliki		mempunyai		punya		ada		ada ...=nya		ber-		ber-...-kan		
			Tokens	Percentage	Tokens	Percentage	Tokens	Percentage	Tokens	Percentage	Tokens	Percentage	Tokens	Percentage	Tokens	Percentage	Tok
AL (In)	87.96%	0.75%	6	0.75%	1	0.13%	3	0.38%	2	0.25%	1	0.13%	6	0.75%	0	0.00%	
AL (Dn)	12.04%	0.92%	0	0.00%	1	0.92%	1	0.92%	0	0.00%	0	0.00%	1	0.92%	0	0.00%	
AL (In+Dn)	100.00%	0.77%	6	0.66%	2	0.22%	4	0.44%	2	0.22%	1	0.11%	7	0.77%	0	0.00%	
B (In)	67.90%	3.91%	5	0.48%	3	0.29%	5	0.48%	0	0.00%	0	0.00%	3	0.29%	0	0.00%	
B (Dn)	32.10%	18.95%	1	0.20%	0	0.00%	3	0.60%	0	0.00%	0	0.00%	5	1.01%	0	0.00%	
B (In+Dn)	100.00%	8.74%	6	0.39%	3	0.19%	8	0.52%	0	0.00%	0	0.00%	8	0.52%	0	0.00%	
BEW (In)	88.66%	6.26%	14	1.95%	3	0.42%	3	0.42%	0	0.00%	0	0.00%	5	0.70%	1	0.14%	
BEW (Dn)	11.34%	6.52%	4	4.35%	1	1.09%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	
BEW (In+Dn)	100.00%	6.29%	18	2.22%	4	0.49%	3	0.37%	0	0.00%	0	0.00%	5	0.62%	1	0.12%	
CWS (In)	99.70%	6.10%	1	0.15%	10	1.49%	5	0.74%	0	0.00%	1	0.15%	4	0.60%	0	0.00%	
CWS (Dn)	0.30%	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	
CWS (In+Dn)	100.00%	6.08%	1	0.15%	10	1.48%	5	0.74%	0	0.00%	1	0.15%	4	0.59%	0	0.00%	
EW (In)	87.89%	15.36%	0	0.00%	1	0.06%	27	1.63%	0	0.00%	3	0.18%	5	0.30%	0	0.00%	
EW (Dn)	12.11%	20.61%	1	0.44%	0	0.00%	7	3.07%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	
EW (In+Dn)	100.00%	15.99%	1	0.05%	1	0.05%	34	1.81%	0	0.00%	3	0.16%	5	0.27%	0	0.00%	
JC (In)	86.57%	4.65%	1	0.06%	0	0.00%	26	1.46%	0	0.00%	0	0.00%	2	0.11%	0	0.00%	
JC (Dn)	13.43%	4.33%	0	0.00%	0	0.00%	1	0.36%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	
JC (In+Dn)	100.00%	4.61%	1	0.05%	0	0.00%	27	1.31%	0	0.00%	0	0.00%	2	0.10%	0	0.00%	
KA (In)	89.30%	8.04%	0	0.00%	3	0.44%	13	1.90%	0	0.00%	0	0.00%	14	2.05%	0	0.00%	
KA (Dn)	10.70%	7.32%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	
KA (In+Dn)	100.00%	7.96%	0	0.00%	3	0.39%	13	1.70%	0	0.00%	0	0.00%	14	1.83%	0	0.00%	
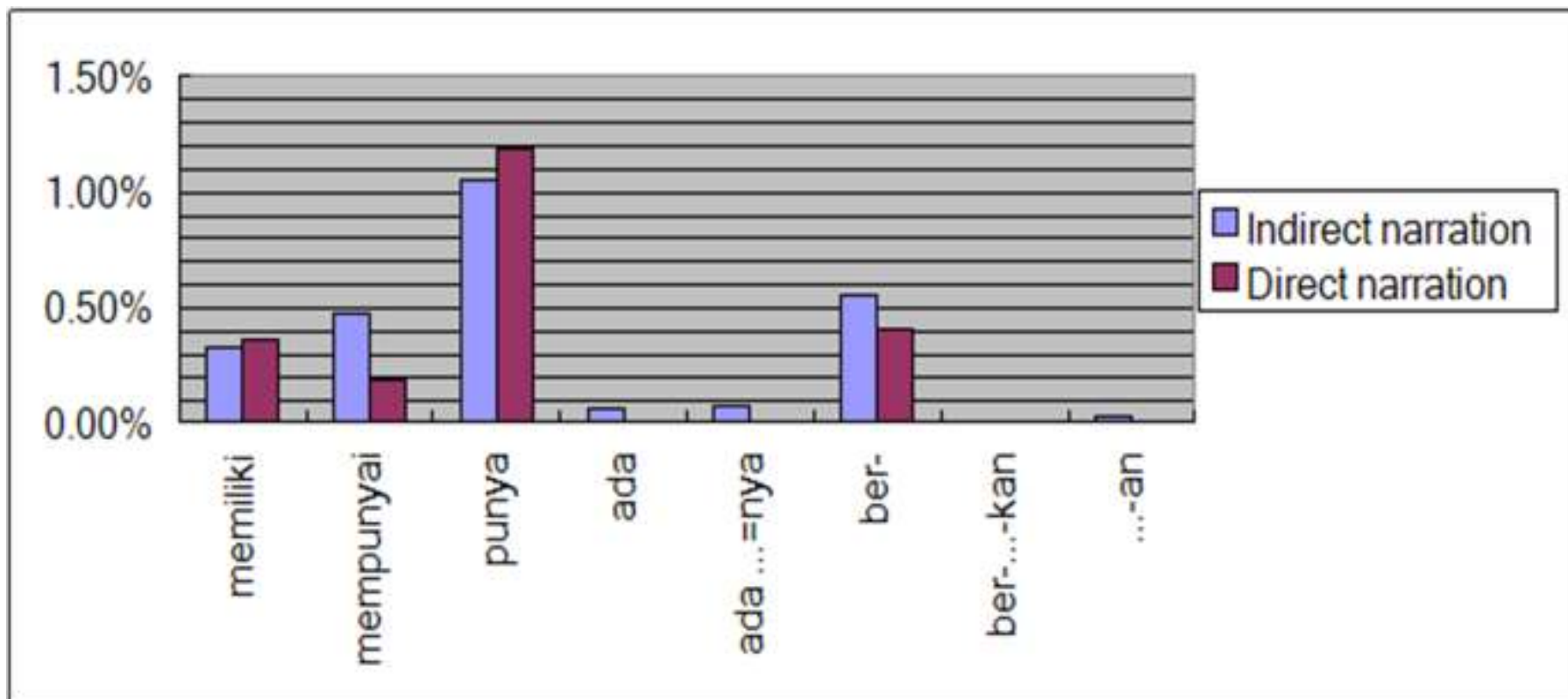
Figure 8. The percentages of eight possessive verbal predicates in the indirect and direct narrations of the spoken data
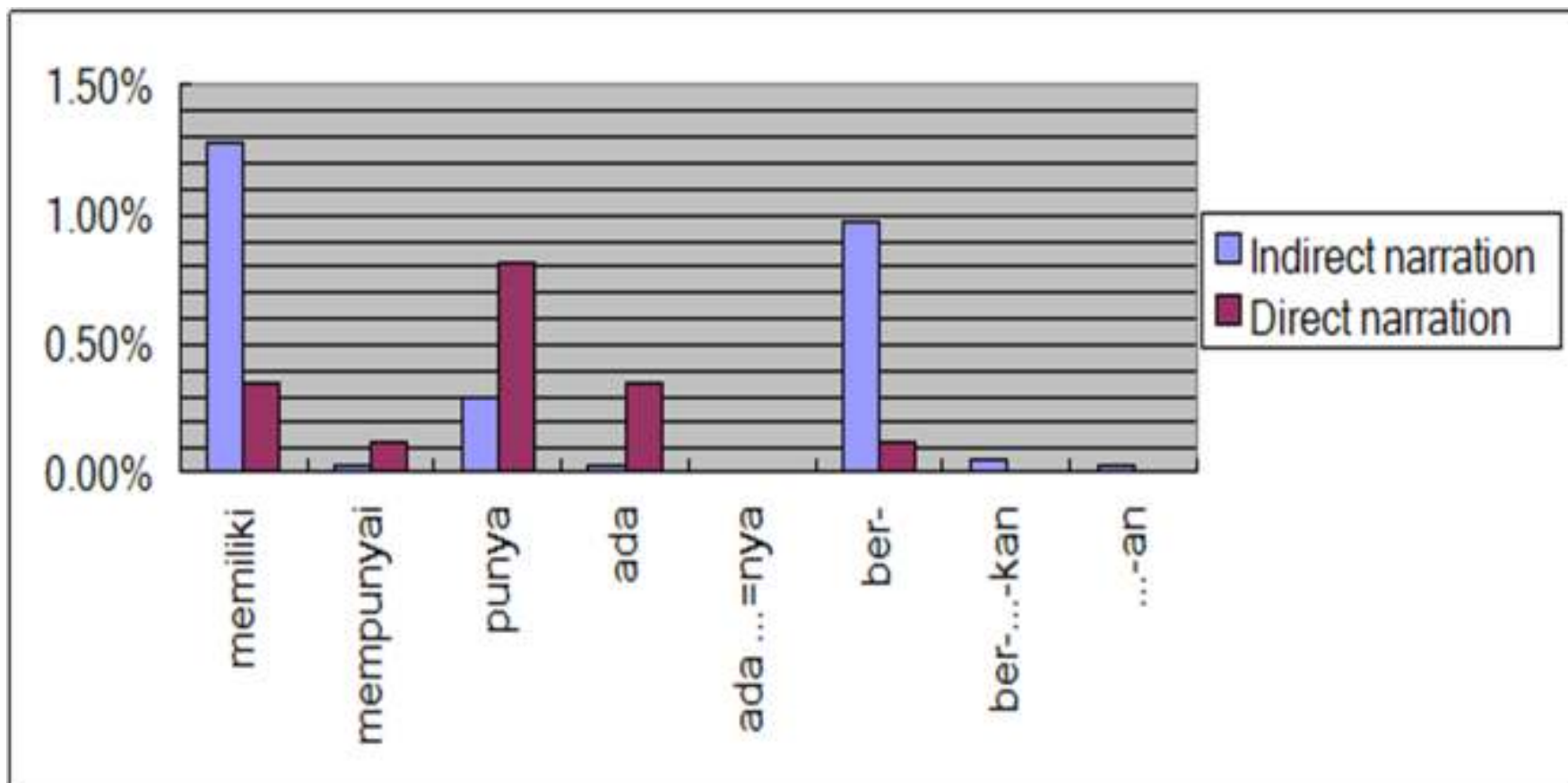
Figure 9. The percentages of eight possessive verbal predicates in the indirect and direct narrations of the written data

Correlation technique

C16   ⓐ   *fx*   =CORREL(B2:B14,C2:C14)

	A	B	C	D	E
1	Consultant	Number of L tokens	memiliki	mempunyai	punya
2	AL	7	6	2	4
3	B	135	6	3	8
4	BEW	51	18	4	3
5	CWS	41	1	10	5
6	EW	301	1	1	34
7	JC	95	1	0	27
8	KA	61	0	3	13
9	NDL	36	0	9	1
10	P	257	0	0	25
11	PL	72	9	0	1
12	PN	69	5	10	2
13	SS	287	0	0	19
14	YOK	139	0	19	9
15			memiliki	mempunyai	punya
16			−0.379919909	−0.306156921	0.780375003

Pearson's correlation coefficient

-1 <---------------- 0 ----------------> +1

as one variable   correlation   both variables

increases, the other   gets   increase/decrease

decreases, vice versa   weaker   together

Table 7. The Pearson's correlation coefficients between the low variety's tokens and each possessive verbal predicate's tokens in the spoken, written, and overall data

Spoken		Written		Overall	
memiliki	-0.38	memiliki	-0.53	memiliki	-0.57
mempunyai	-0.31	ber-	-0.26	ber-...-kan	-0.29
ber-...-kan	-0.21	ber-...-kan	-0.06	ber-	-0.12
ber-	-0.03	mempunyai	0.11	mempunyai	0.06
ada	0.25	punya	0.25	ada	0.25
ada ...=nya	0.30	-an	0.25	ada ...=nya	0.46
punya	0.78	ada	0.56	-an	0.63
-an	0.93	(ada ...=nya is absent)		punya	0.82

Table 8. The summary of the relationship between possessive verbal predicates and the register

Possessive verbal predicate	Register			
	Hopper (1972)	Alieva (1992)	Moeljadi (2010)	2011 Survey
memiliki		High	High	High
mempunyai	High	High	High	High, Low
punya	Low	Low	Low	Low
ada	-	-	Low	Low
ada ...=nya		-	Low	Low
ber-		-	High	High, Low
ber-...-kan		-	High	High, Low
-an			Low	Low

Some special characteristics of possessive verbal predicates in the corpus

- **memiliki**:

  - OK with almost all types of possessee

  - appears in passive form: (6-1)

  - especially tends to be used when the speaker wants to express her/his intention to possess something: (6-2)

  - may take an inanimate possessor and indicates that the inanimate possessor has something as its part: (6-3)

Some special characteristics of possessive verbal predicates in the corpus

- **mempunyai:**

  - OK with almost all types of possessee

  - appears only once in passive form: (6-4)

- **punya:**

  - may be used without possessor/possessee: (6-5), (6-6)

  - possessee may precede **punya**: (6-7)

  - inanimate possessor: (6-8)

Some special characteristics of possessive verbal predicates in the corpus

- **ada**
  - OK with almost all types of possessee
  - may appear without possessee: (6-9), (6-10)
  - may take an inanimate possessor: (6-11)
- **ada... =nya**
  - only in the spoken data
  - inanimate possessor: (6-12)
  - animate possessor: (6-14), (6-15)
  - inalienable possessee

Some special characteristics of possessive verbal predicates in the corpus

- **ber-**

  - body part or part of a whole as possessee -> inalienable

- **ber-...-kan**

  - only occurs 5 times with *atap* 'roof': (6-16)

- **-an**

  - only with *karat* 'rust' and *jerawat* 'pimples': (6-17), (6-18)

Questions

1. Which possessive verbal predicates can be considered as the real possessive verbal predicates in Indonesian?
2. Does the encoding of possessor and/or possessee play role in the encoding process of possessive verbal predicates?
3. Can we group those possessive verbal predicates?
4. Are there possessive verbal predicates which are commonly used in the high variety and which are often used in the low variety?
5. Is there any special characteristics of possessive verbal predicates in the high and low varieties?

Answers

1. memiliki, mempunyai, punya, ada, and ber- are in the central domain of Indonesian possessive verbal predicates.

2. The encoding of the possessee (not the possessor) affects the acceptability of possessive verbal predicates.

3. Group 1: memiliki, mempunyai, punya, ada

   Group 2: ber-

4. High variety: memiliki, mempunyai, ber-

   Low variety: punya, ada, mempunyai, ber-

5. punya, ada: may occur without a possessor and/or a possessee

   punya: the possessee may precede the verb