

Javanese Noun Phrases

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Research Questions:

What is the DP structure of Javanese? What is the canonical word order of Javanese?

Introduction & Hypotheses

Javanese is a language mainly spoken on the island of Java in Indonesia. This paper aims to explore what the structure of the DP looks like, as well as the canonical word order. Looking at very basic data, it is easy to hypothesize that the DP may look similar to English, other than the fact that the head D may be head-final in the DP. However, I argue that the DP is not as simple as appears to be and may need different types of phrases for different determiners, such as a Demonstrative Phrase, Quantifier Phrase, as well as a DP which can also take possessiveness into account. Last of all, I will also hypothesize and argue that Javanese follows a strict SVO canonical order.

Some basic facts about Javanese

In Javanese, number is marked morphologically in two ways between neutral and plural. These examples are from (Sato, 2008).

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|---|---|
| <p>1. Jaran lagi mangan.
horse Prog eat
'A horse is eating./Horses are eating.'</p> <p>2. Jaran-jaran lagi mangan.
horse-RED Prog eat
'*A horse is eating./Horses are eating.'</p> <p>3. Callie lan Tisa kuwi kucing.
Callie and Tisa Cop cat
'Callie and Tisa are cats.'</p> | <p>4. Callie kucing
Callie cat
'Callie is a cat.'</p> <p>5. Esti tuku buku-buku.
Esti buy book-RED
'Esti bought books.'</p> <p>6. Esti nata meja-meja.
Esti arrange table-RED
'Esti arranged tables.'</p> |
|---|---|

From example (1), we can see that using one instance of a noun can be interpreted as both singular or plural. It would depend on the context to figure out the true interpretation. This is further shown in (3) and (4), where "kucing" can be interpreted as plural or singular depending on the situation. However, from (2), we can see that when a noun is reduplicated onto the head noun, it indicates that it takes on a plural meaning only. More examples of this are shown in (5) and (6). Singularity is never distinguished on its own. However, it is not only nouns that may be reduplicated to indicate plurality. Other parts of speech may also reduplicate to indicate that. These examples are from (Davies, 2005).

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|--|---|
| <p>7. sepuluh kucing-kucing soklat
10 cat-RED brown
'10 brown cats.'</p> | <p>8. sepuluh kucing soklat-soklat
10 cat brown-RED
'10 brown cats'</p> |
|--|---|

9. kucing-kucing sepuluh iku
 cat-RED 10 that
 'those 10 cats'

10. kucing sepuluh iku-iku
 cat 10 that-RED
 'the same 10 cats'

In (7) and (9) we see the earlier noun reduplication discussed about earlier. In (8) we see that the adjective is reduplicated instead of the noun, but it still gives the same meaning as (7) where the noun was reduplicated instead. However, in (10) we see evidence of the determiner being reduplicated. However, in this case, it does not give the same meaning as to if it was the noun being reduplicated, such as in (9). Therefore, reduplicating determiners does in fact indicate some kind of plurality, but also gives off a meaning of "same," so it is not a bare plurality. Therefore, we can say that reduplication of nouns and adjectives are the only parts of speech that can indicate pure plurality.

Throughout, my research of Javanese NPs, I have also come to the fact that there is no morphological system for classifying nouns in Javanese. There is also no sort of agreements between determiners and nouns, as well as none between adjectives and nouns.

Now that we have gotten these basics out of the way, let us dive into finding the phrase structure rules for the NP.

Phrase Structure Rules

Javanese does use optional definite/indefinite determiners and definite suffixes that can be used with both the plural and neutral interpretations. These examples are from (Davies, 2005).

11. Hasan tuku {sepuluh kucing / kucing sepuluh}
 Hasan buy 10 cat cat 10
 'Hasan bought ten cats.'

12. Siti mangan {sakabehane apel / apel sakabehane}
 Siti AV.eat all apple apple all
 'Siti ate all the apples.'

13. {Murid teka Kamal iku / Murid iku teka Kamal} maca buku.
 student from Kamal that student that from Kamal AV.read book
 'That student from Kamal read a book.'

14. Kucing-é nyolong iwak.
 cat-DEF AV.steal fish
 'The cat stole (some) fish.'

15. Murid-é Siti maca buku.
 student-DEF Siti AV.read book
 'Siti's student read a book.'

16. Siti tuku sepedah tuwa-mu.
 Siti buy bicycle old-2POSS
 'Siti bought your old bike.'

Such as in (11), numbers can be used as determiners. They may go before or after the Noun. {(D) N / N (D)}. The above (7) and (8) follow this as well. Distributives, such as in (12), follow the same pattern. I will group numbers and distributives together as quantifiers. There is no evidence of a quantifiers being using after another modifier, such as a PP.

In (13), a demonstrative determiner is used. It can go after the noun, or even after the PP after the noun. {N (PP) (D)/N (D) (PP)}. Looking back up to (9), we have evidence of the demonstrative determiner working with a plural noun, and it is also after the noun. However, we do not see evidence of demonstrative determiners going before the noun.

Javanese also uses suffixes to indicate definiteness (14), as well as possessiveness in (15) and (16). However, these are indicated morphologically.

From the above evidence, we can see that demonstratives are located in a syntactically different place from the quantifiers. Notice in (9), if both a quantifier and a demonstrative determiner are used, the demonstrative determiner is used after the quantifier. From this, we can infer that quantifiers can be used directly before or directly after the noun. If demonstrative determiners are used, they come after the N and the other optional quantifiers. As seen above, PP may optionally precede or proceed the demonstrative determiners. For the sake of clarity, I will notate all quantifiers to be Quant, and demonstrative determiners to be Dem. To sum up the rules we talked about:

NP → {(Quant) N / N (Quant)} {(Dem) (PP) / (PP) (Dem)}

Next, we will add adjectives and possessors into the mix. This example is from (Ewing, 2005).

17. Ngirim wong gesrik maning.

N-send person weed again

‘(I) sent (food) out again to the people weeding / the weeding people.’

In Javanese, adjectives always go after the N. These can be seen in the above examples (7), (8), (16), and well as here in (17). This example is from (Davies, 2005).

18. Hasan toko {kucing-é Atin soklat / kucing soklat-é Atin}.

Hasan buy cat-DEF Atin brown cat brown-DEF Atin

‘Hasan bought Atin’s brown cat.’

(18) shows that if a possessor N is present, the adjective can go before or after the possessor. Notice that with a possessor directly after the noun, the definite suffix is used on the noun, but if the adjective intervenes in the middle, the definite suffix appears on the adjective instead. However, it always belongs before the possessor noun. These examples are from (Davies 2005).

19. Murid-é Siti saka Kamal maca buku.
student-DEF S from K AV.read book
‘Siti’s student from Kamal read a book.’
*Murid saka Kamal-é Siti maca buku.

20. Hasan toko kucing-é Ali iku.
Hasan buy cat-DEF Ali that
‘Hasan bought Ali’s cat.’
(*kucing iku-né Ali)

21. mored penter dhari Batam rowa
student smart from Batam that
‘that smart student from Batam’
mored penter rowa dhari Batam

(21) is actually in Madurese, however (Davies 2005) continuously compares Madurese and Javanese as having the same syntax.

From (20) we can observe that a Dem may not intervene between a noun and a possessor. From (19) we can observe that a PP cannot intervene as well. From (21) we notice the same observation of the placement for determiners as in (13), that a demonstrative determiner may precede or proceed a PP after the noun-adjective-possessor bond. There is also no evidence of quantifiers ever intervening the noun-adjective-possessor bond as well.

It is widely accepted for multiple adjectives (over two), examples (22-24), conjunctions of adjectives, (25-26), and adjectives with adverb modifiers, (27), to be seen only in relative clauses. (Ishizuka, 2009). For simplicity of the phrase structure rules we will create, we will leave out relative clauses, as it will not be covered in LING 461 Syntax 1. This means in our phrase structure rules for Javanese, we will consider only the possibility of having at most two adjectives. Examples (22-26) are from (Ishizuka, 2009). Example (27) is from (Davies, 2005).

22. Aku ketemu wong Jawa tuwa-né.
 I ACCV.meet person Javanese old-DEF
 'I met the old Javanese person.'
23. Aku ketemu wong Jawa (*lanang) tuwa-né.
 I ACCV.meet person Javanese male old-DEF
 'I met the old Javanese person/ *male person.'
24. Aku ketemu wong Jawa lanang-é sing tuwa.
 I ACCV.meet person Javanese male-DEF REL old
 'I met the Javanese man (male person) who is OLD.'
25. Méja abang (*lan) bunder-è duwè-ku.
 table red and round-DEF possession-my
 'The round red table is mine.'
26. Aku ndelok méja-né sing bunder lan abang.
 I AT.see table-DEF REL round and red
 'I saw the table that was round and red.'
27. Siti ng-rasakké kopi-né Hasan sing pahit banget.
 Siti AV-taste coffee-DEF Hasan REL bitter very
 'Siti tasted Hasan's very bitter coffee.'
 *Siti ng-rasakké kopi pahit banget-é Hasan.

Due to limiting the number of adjectives in Javanese to at most two (without relative clauses), this means that an AdjP+ does not exist in the Javanese NP. Therefore, to account for the possibility of having one or two adjectives in the AdjP, the rule we can come up with is AdjP → Adj, where AdjP can possibly appear twice in a row in the NP.

Before we summarize up the rules for NP, let us take a quick look at the internal structure of the PP. Looking at examples (13), (19), and (21), we can see that the basic structure of the PP is PP → P N, as we have not yet seen evidence of it containing modifiers for the N to make it a NP. Also notice that throughout all the examples we have looked at, the possessor is in the form of N, or a part of the morphology. To summarize, the NP structure we are considering so far is:

NP → {(Quant) N ({(Poss) (AdjP) (AdjP) / (AdjP) (AdjP) (Poss)}) / N ({(Poss) (AdjP) (AdjP) / (AdjP) (AdjP) (Poss)}) (Quant)} {(Dem) (PP) / (PP) (Dem)}

Poss \rightarrow N

AdjP \rightarrow Adj

PP \rightarrow P N

X-bar theory in Javanese

Let us first look at the X-bar rules for the overall DP. Determiners can take the form of quantifiers, demonstratives, or a construct, possessive morphology, in Javanese. To view the NP rule from earlier more easily, let us take out the Possessors for now.

NP \rightarrow {(Quant) N (AdjP) (AdjP) / N (AdjP) (AdjP) (Quant)} {(Dem) (PP) / (PP) (Dem)}

Notice how both quantifiers and demonstratives can both break up the N-AdjP-PP. Therefore, we cannot exactly place N-AdjP-PP into a NP. Also notice that Quantifiers and Demonstratives are not in a complementary distribution, as seen in example (9). The best way to handle this is to create a DemP and a QuantP instead of allowing them inside the DP.

Let us start with the DemP. The DemP shall contain both the Dem and the PP. The QuantP will contain the rest.

DemP \rightarrow (QuantP) Dem'

Dem' \rightarrow Dem' (PP) or (PP) Dem'

Dem' \rightarrow Dem

Next, we shall come up with the QuantP. Let us put the possessor back into the mix. Taking out the PP and Dem, the NP rule we created earlier was:

NP \rightarrow {(Quant) N ({(Poss) (AdjP) (AdjP) / (AdjP) (AdjP) (Poss)}) / N ({(Poss) (AdjP) (AdjP) / (AdjP) (AdjP) (Poss)}) (Quant)}

Recall earlier how we discussed that the N-Adj-Poss bond where a Dem, Quant, and PP cannot intervene. Also remember how possessors are allowed to intervene between a N and an Adj, and the morphology for possession is always attached to the word directly before the possessor, whether it be a noun or an adjective. Since N-Adj-Poss are so closely tied, it makes sense that a PossP should be made. Also, notice in example (20) that a demonstrative and a possessor can possibly both appear at the same time. This means that they are not in complementary distribution, unlike how it is in English. However, also notice that in (14) a determiner suffix is used, and it is in complementary distribution with the morphology for the possessive. This is evidence that a DP should be made that considers the N-Adj-Poss bond. Now, with this information, let us dive into creating the rules for the QuantP.

QuantP \rightarrow Quant' (DP) or (DP) Quant'

Quant' \rightarrow Quant

Last of all, for the determiners, let us create the DP rules.

Taking out the Quant, Dem, and PPs, the NP rule we created earlier is:

NP \rightarrow N ({(Poss) (AdjP) (AdjP) / (AdjP) (AdjP) (Poss)})

Poss \rightarrow N

Considering that the Poss is an N, we have:

NP \rightarrow N ({(N) (AdjP) (AdjP) / (AdjP) (AdjP) (N)})

Since the DP is tricky to create, let us clearly list out all the possibilities. Let us consider that if there are two AdjP's directly after the N, they are actually considered a part of the NP, else the N by itself is an NP. We have not seen evidence of the Possessor being modified by an adjective or anything else, so we will continue to represent it with an N, instead of an NP/DemP/QuantP/DP.

DP \rightarrow NP-D (N)

DP \rightarrow NP-D (N) (AdjP)

DP \rightarrow NP-D (N) (AdjP) (AdjP)

Looking at the possibilities listed above, it may make sense for the AdjP to become an adjunct for the QuantP, just like how we had a PP adjunct with the DemP before. The updated rules for the QuantP are:

QuantP \rightarrow Quant' (DP) or (DP) Quant'

Quant' \rightarrow (AdjP) Quant'

Quant' \rightarrow Quant

The X-bar rules for the DP are:

DP \rightarrow D' (N)

D' \rightarrow (NP) D

Next, let us quickly run through the rules for NP, AdjP and PP. We so far have not seen evidence of adjuncts for AdjP, outside of relative clauses, as well as for PP. For NP, we have not yet seen evidence of complements. For PP, we have only seen evidence of N complements, none of NP or DemP.

NP \rightarrow N'

AdjP \rightarrow Adj'

PP \rightarrow P'

N' \rightarrow N' (AdjP)

Adj' \rightarrow Adj

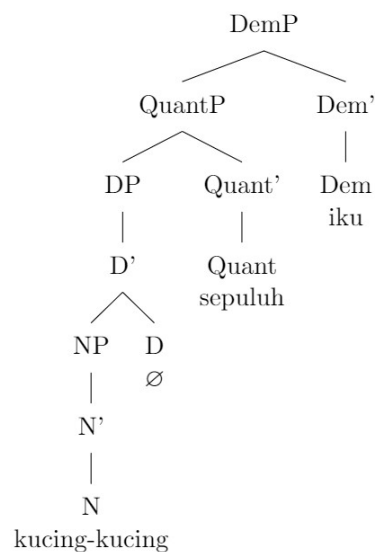
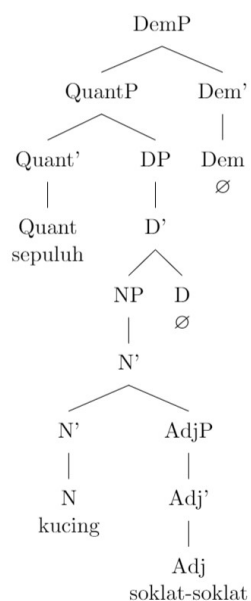
P' \rightarrow P (N)

N' \rightarrow N

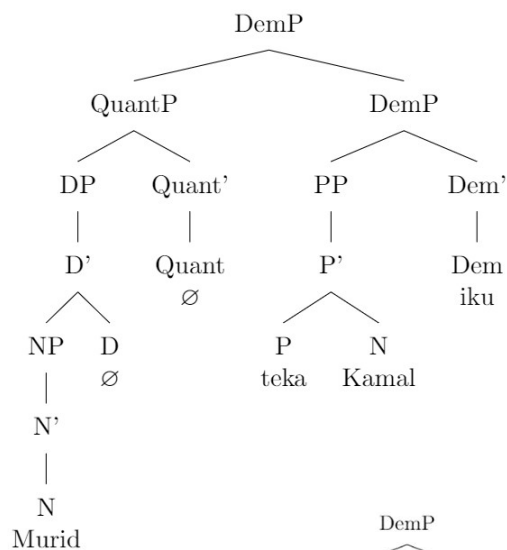
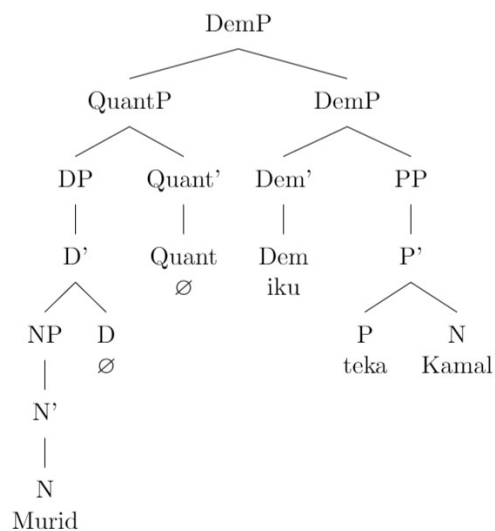
Let us look at a few syntax trees to demonstrate these rules. In particular, let us look at the previous examples: (8), (9), (13), (16), (18).

(8) sepuluh kucing coklat-soklat
 10 cat brown-RED
 '10 brown cats'

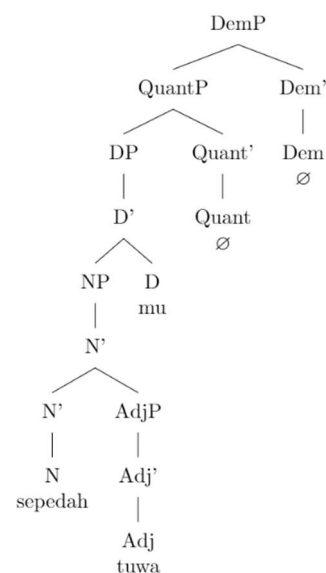
(9) kucing-kucing sepuluh iku
 cat-RED 10 that
 'those 10 cats'



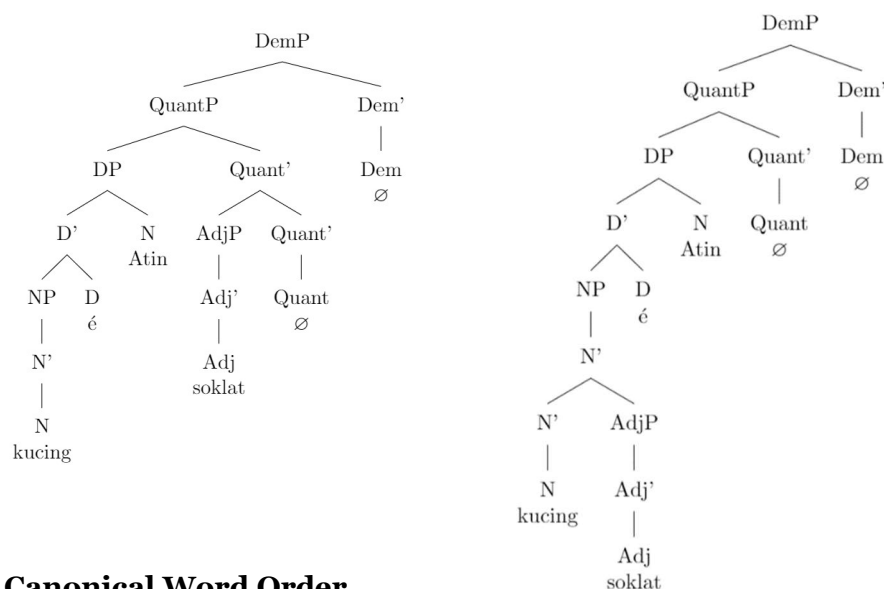
- (13) {Murid teka Kamal iku / Murid iku teka Kamal}
 student from Kamal that student that from Kamal
 'That student from Kamal'



- (16) sepedah tuwa-mu.
 bicycle old-2POSS
 'your old bike.'



- (18) {kucing-é Atin soklat / kucing soklat-é Atin}.
 cat-DEF Atin brown cat brown-DEF Atin
 'Atin's brown cat.'



Canonical Word Order

From all the examples above, we know that Javanese does have a VP constituent, in fact most of the nouns I have analyzed have been the object, which is a part of the VP constituent. We also consistently see proof of strict SVO order. However, all the sentences above are statements, and not questions, so more evidence is needed. Below I have provided some examples of wh-questions in Javanese. These examples are from (Mayasari 2020).

28. Opo omonge wong menko?

What say people later
'What people will say later?'

29. Kepriye carane kowe nggawe tahu?

How you make tofu?
'How do you make tofu?'

30. Dheweke asli soko ngendi?

He really from where
'Where does he really come from?'

31. Jajan iki digawe soko opo?

Snack this PASS-made from what
'What is this snack made from?'

In (28) and (29) we can see that there is some type of wh-movement, which moves the unknown modifier of the object to the front of the sentence, similar to English. Placing the wh-question as the head complementizer of the CP phrase would seem the most appropriate and keep the SVO canonical word order we had been previously seeing. Examples (30) and (31) show that the wh-question word remains in the same position, which in this case are unknown nouns, and does not move (in-situ), keeping SVO order and the head C as null with a question feature.

Examples of yes-no questions are shown below. Examples (32-34) are from (Klok 2017).

32. Apa kowé ngelih?

Q 2SG hungry
'Are you hungry?'

33. Apa buku-né wis di-waca?

Q book-DEF already PASS-read
'Has the book already been read?'

34. Entuk anak-e Pak Bambang m-(p)angan sing pedes-pedes?

allow child-DEF Mr. Bambang AV-eat REL spicy-RED
'May Mr. Bambang's child eat spicy food?'

Examples (32) and (33) show a question particle in the C of the CP position, and (34) shows something similar to a subject-auxiliary inversion seen in English, still maintaining an SVO order.

Overall, we can see that Javanese follows a strict SVO order.

Conclusion:

In conclusion, it is complicated for Javanese to have a simple DP structure as hypothesized, and instead it needs a DemP for demonstratives, QuantP for quantifiers, and a DP that can account for definitive and possessive morphology. As we have only looked at simple sentences in Javanese, we should expand to look at CPs/ relative clauses, that also make up part of the DP, and improve upon the phrase structure rules for the NP and X-bar theory rules for DP. This is important to examine as it seems very integral to the Javanese language, especially with how it connects with using multiple adjectives and use of adverbs. We should also investigate whether the possessor N and the N in the PP could possibly be a NP/ DP/ QuantP/ or DemP. As for the canonical word order, we have sufficient evidence that Javanese does in fact follow a strict SVO order. Observing the sample of wh-questions and yes-no questions, it may be worthwhile to come up with CP rules to address the order and wh-movement for a future paper.

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