

Javanese discourse particles: interlocutor perspective is in the syntax, kok!

1. Introduction

Discourse particles in Javanese conversation, including mixed Javanese-Indonesian utterances, are ubiquitous. Our focus of this paper is the syntax and prosody of the oft-described particle *kok*, from the *ngoko* (informal) register of Javanese, which has not yet been formally analysed. We propose a structure whereby the discourse particle *kok* is merged in one high-left peripheral position, and that different linear positions are derived by movement of propositional material into high information structural positions above *kok*. This analysis unifies the previous descriptions on Javanese and argues against a separate treatment of *kok* as multiple discourse particles. Our analysis is also in line with recent and current work on discourse particles outside Austronesian, whereby particles are analysed as being merged in a discourse-related speech act layer (Haegeman and Hill 2013, Haegeman 2014, Wiltschko and Heim 2016, Woods 2021, among others) or in an Agree relationship with that layer (Bayer and Obenauer 2011, Thoma 2016, among others). The paper therefore serves to broaden the formal literature on discourse particles typologically, reinforces speech act analyses of the left-periphery and demonstrates the importance of taking prosody into account when analysing discourse-linked material (Davis 2011, Heim 2019).

2. Brief background on Javanese

2.1. Word order

Javanese, spoken primarily on the central and eastern parts of Java Island, Indonesia, is part of the Malayo-Polynesian subgroup of the Austronesian language family. Within Malayo-Polynesian, Javanese is a primary branch of the Western Indonesian subgroup; among its close relatives are Malay/Indonesian (Smith 2017). Like most of the languages in this subgroup, Javanese has basic subject-verb-object (SVO) word order, but unlike the majority of Austronesian languages outside of Western Indonesian, which are verb-initial. The external argument, which we will call the subject, can be different thematic roles, and this difference is marked by verbal morphology: actor voice (AV), patient voice (PV), or the passive (i.a. Sudaryanto 1991; Robson 2002).^{1,2}

Actor voice, indicated by a homorganic nasal prefix, marks that the subject is the agent of the predicate; see (1).³ PV (or the bare passive) also indicates that the theme is the subject, but agents are not adjuncts: In Standard Javanese, agents must be first or second person pronominal clitics strictly left adjacent to the bare verb stem, as shown in (2). The passive, similarly to English, marks that the subject is a theme of the predicate (in Javanese with the *di-* prefix on the predicate), with the agent

¹ Others have argued that the external argument is always a topic (Cole et al. 2002; Sato 2010; Patrianto & Chen 2023). We maintain that subjects are distinct from topics, following Davies (1993) and Vander Klok (2024), although some dialects may be different; see especially Patrianto & Chen (2023). Section 2.3 outlines our assumptions on the left periphery of Javanese, showing distinct subject and topic positions.

² Javanese also has applicative constructions, and in conjunction with PV or the passive, peripheral thematic roles such as beneficiaries, instruments, or recipients/goals/locations, can also be the subject (see Sofwan 2010; Nurhayani 2014; Vander Klok 2024).

³ Glosses follow the Leipzig Glossing Rules. In addition, we also have used the following: AV 'Actor Voice', PV 'Patient Voice'. Note that the glosses have been added by one of the authors for all references, except Widhyasmaramurti (2008). We have retained the original free translations in all cases except those marked (and explained) with a footnote. Where the original free translations are in a language other than English, we have included these in square brackets and provided the English free translations ourselves. We have also included citations from previous literature in the original language and in English free translation. In the case of Indonesian, the authors provide the free translation. In the case of Dutch, we used DeepL translation and checked/amended the result as appropriate.

represented as an adjunct or not at all (but with an implicit agent interpretation; (3)). Javanese dialects vary in the person restrictions of the agent in the passive and PV (e.g., either extending or further restrictions) (cf. Nomoto 2021). What is important to note for our understanding of the syntax of *kok* is that in each example in (1)-(3), the subject is clause-initial and constitutes a separate constituent from the verbal predicate.

(1) Actor Voice

{Aku / Kowe}	ngancing	lawang-e.	
1 / 2	AV.lock	door-DEF	
“I/you locked the door.”			Sudaryanto 1991: 145

(2) Patient Voice

Lawang-e	{tak/kok}=kancing.	
door-DEF	1/ 2=lock	
“I/you locked the door.”		Sudaryanto 1991: 145

(3) Passive

Lawang-e	di-kancing	(dening	pakdhe).
door-DEF	PASS-lock	by	Mister
“The door was locked by the man.”			adapted from Sudaryanto 1991: 145

2.2. Prosody

Like many (Western) Indonesian languages, Javanese seems to be an intonation-only language without lexical stress (Kaufman & Himmelmann *to appear*). Earlier analyses of Javanese as a language with word stress on the penultimate syllable are possibly confounding lexical stress with prominence introduced at the phrasal level (Himmelmann & Kaufman 2020). We therefore follow Stoel (2006a) in assuming no pitch accents for Javanese, with far-reaching consequences for prosodic analysis.

We assume intonational phrasing to be structured by boundary tones marking phonological or accentual phrases, which combine into a single intonational phrase. Each intonational phrase contains at least one nuclear accentual phrase and potentially several pre- and post-nuclear accentual phrases with smaller acoustic prominence. Stoel (2006a) further observes that accentual phrases in Banyumas Javanese begin with a low boundary tone (L%). Prenuclear accentual phrases end in a high tone (H%), nuclear accentual phrases end in the bitone HL% or LH%, and the enclitic postnuclear accentual phrases ends in a copy of the right tone of the nuclear accentual phrases. These bitones have elsewhere been described as floating boundary tones because they don’t seem to strictly align with individual syllables (Maskikit-Essed & Gussenhoven 2016 for Ambonese Malay).

So, prosodic phrasing in Indonesian languages spoken in and around Java can be clearly determined, augmented by a fairly rigid basic word order, short phrases, and boundary tones on each accentual phrase periphery—despite the absence of clear lexical stress (particularly among L1 speakers of Javanese) (van Heuven & van Zanten 2006). The predicate is often in a separate accentual phrase, following whatever information precedes it (Stoel 2006a). Particularly relevant for our own analysis is Stoel’s observation that discourse particles often form a separate accentual phrase.

2.3. Information structure

We assume that there are dedicated positions in the structure of the left periphery in Javanese that relate to information structural notions. That is, we take the left periphery to include at least one Topic projection, which dominates a Focus projection, above CP, following Vander Kloek (2024):

(4) [TopP [FocP [CP [MoodP [TP ...]]]

(Vander Klok 2024)

Vander Klok (2024) provides evidence for a high topic and focus position from the structure of polar question answers. The high focus position is based on evidence from the position of a TAM (tense, aspect, modal) auxiliary. The discourse context as an answer licenses focus movement of a TAM auxiliary, located in a position above an evidential or modal adverb (which itself is located above TP, see Vander Klok (2012)). This structure is illustrated in A1 of (5), as a possible answer to the question (Q). This TAM word order is otherwise not licensed; elsewhere the TAM word order in Javanese has a strict relative ordering (Vander Klok 2012). Moreover, evidence for a high topic position is from the location of the external argument above the high focused TAM auxiliary, as in A2 of (5). For further independent evidence for these information structural positions in Javanese, see Vander Klok (2024).

(5) Q: Wong Indonesia kudu nggowo paspor reng bandera toh?
person Indonesia ROOT.NEC AV.bring passport to airport FOC
'Do Indonesians have to bring their passport to the airport?'

A1: [_{FocP} **kudu** [_{MoodP} **ketok-e** [_{TP} wong Indonesia [_{VoiceP} nggowo paspor]]]].
ROOT.NEC DIR.EVID-E person Indonesia AV.bring passport
'Indonesians must, it seems, bring their passport.'

A2: [_{TopP} Wong Indonesia_i [_{FocP} **kudu** [_{MoodP} **ketok-e** [_{TP} t_i [_{VoiceP} nggowo paspor]]]].
person Indonesia ROOT.NEC DIR.EVID-E AV.bring passport
'Indonesians must, it seems, bring their passport.'

Vander Klok 2024

In our investigation of the syntax-semantics and prosody of the discourse particle *kok*, we will build on this initial structure of the left periphery in Javanese. Sentence-medial and -final positions of *kok* will be derived via movement of constituents or the whole proposition to the left periphery, respectively.

Concerning the prosodic features of indicating focus, the nuclear accentual phrases also are said to contain the focus, which tends to fall on the final syntactic phrase (Stoel 2006a). Postnuclear deaccenting or compression as well as prosodic marking of narrow focus seem to be absent in Javanese, like in many other Austronesian languages. Narrow focus seems to require morphosyntactic means, such as the particle *toh/ta/to* (Vander Klok 2018) or clefting (Travis & Vander Klok 2018).

3. Key data on *kok*

3.1. Data provenance

The data presented in this paper are based on various sources, including grammars (Robson 2002; Arps et al. 2000; Wedhawati et al. 2006) and several publications, which have all previously described the particle *kok* on Standard Javanese (spoken in Yogyakarta and Surakarta, Central Java), and Surabayan Javanese (East Java). We also draw on elicited data from a Surakarta speaker and a Pematang speaker (both Central Javanese) as well as recorded conversations or speech (Paciran, East Javanese). Despite considerable lexical, morphosyntactic, and phonological variation, these dialects share core syntax-prosody properties (Stoel 2016, Krauß 2017, Kaufman & Himmelmann *to appear*), which warrants a cross-dialectal analysis of *kok*. Because of the broad data sample from several Javanese varieties and from different methodologies, we suggest that the data are representative of the Javanese language, and not specific to a certain dialect. We also include some examples of Indonesian as spoken on Java, as it is common for otherwise Indonesian utterances to

contain Javanese discourse particles such as *kok*. In numbered examples, Javanese will be represented in normal script and Indonesian in italics.

3.2. Homophony with second-person clitic pronoun

We first want to put aside a homophonous use of *kok* as a second-person clitic pronoun in some Javanese dialects (see also Widhyasmaramurti 2008). There seems to be little evidence to build a diachronic case, but others have speculated about a relationship between the discourse particle *kok* and the second-person clitic pronoun: “The origin of *kok*- is most probably the Old Javanese (OJ) unbound pronoun *ko* “you (SG)” with the same glottal paragoge as *tak* from OJ (*ki*)*ta*.” (Krauße 2017: 36, see also Nurhayani 2014: 126).

Synchronically, these two uses differ in terms of their syntactic distribution, meaning, and co-occurrence. First, the clitic pronoun *kok* occurs as a proclitic to the verb stem in Patient Voice (or Object Voice) and refers only to a 2nd person singular agent (Robson 2002; Wedhawati et al 2006), as shown in ((6)b) (see also (2)). Further, the proclitic *kok* can co-occur with particle *kok* (in any position; Widhyasmaramurti 2008), as illustrated in (1).

- (6) a. **Actor Voice**
Kowe ng-gawa klambi-ne ibu menyang penjahit
 2.SG ACT-take clothes-POSS mother to tailor
 ‘You take mother’s clothes to a tailor.’
- b. **Patient Voice**
 Klambi-ne ibu **kok**=gawa menyang penjahit
 clothes-POSS mother 2.SG=take to tailor
 ‘Mother’s clothes were taken to a tailor by you.’ Widhyasmaramurti 2008: 34
- (7) (**Kok**) ibu-mu (**kok**) **kok**=ter-ake mulih maneh (**kok**)
 PRT mother-2POSS PRT 2SG=take.s.o.to-BEN go.home again PRT
 “(Why did) you return your mother to the home again?!” Widhyasmaramurti 2008: 55-56

Moreover, they have differing morpho-phonological variations across dialects. The proclitic *kok* has various forms across Javanese dialects, including *mbok*, *mok*, and *pok*, while the discourse particle *kok* has phonological shortening (loss of glottal stop (Pemalang Javanese)). We thus put aside the proclitic use of *kok*.

3.3. Semantic contribution of *kok*, crossed with clausal position

There appear to be three different positions that *kok* can occupy within the clause: clause-initially, -medially or -finally, as shown in (8)-(10) (Errington 1998; Arps et al. 2000; Wedhawati et al. 2006; Widhyasmaramurti 2008).

- (8) **Kok** isa-isa-né ng-lako-ni urip be-bareng-an karo wong kasar
 PRT RED-can-DEF AV-happen-APPL live RED-together-NMLZ with people coarse
 “(It’s surprising that) he can come to live together with rude people.”
 [Ind: “Mengherankan (ia) dapat hidup dengan orang yang kasar.”]
 Wedhawati et al. 2006:407
- (9) Iki **kok** larang
 DEM PRT expensive

“This is (surprisingly) expensive!”⁴

Errington 1998: 40

(10) Dhèwèké ora turu, **kok**.

3 NEG sleep PRT

“He/She is (actually) not asleep”.

[Ind: ‘Ia (sebenarnya) tidak tidur.’]

Wedhawati et al. 2006: 406

These positions of *kok* are not equal in meaning, prosody, or compatibility with different types of clauses. We examine meaning in the rest of this section, followed by prosody in section 3.4 and clause-type relationships in section 3.5.

3.3.1. Clause-initial and -medial *kok*

Arps et al (2000: 136) argue that *kok* precedes the element of the sentence about which the speaker is surprised. When *kok* appears “aan het begin van de zin” [at the beginning of the sentence] it can occur with subject-predicate orders, in which case the surprise meaning of *kok* “heeft [...] betrekking op de inhoud van de gehele zin” [relates to the content of the entire sentence]. It can also occur initially in utterances where the topic has been right-dislocated, as in (11).

(11) Kok lunga, Slamet!

PRT go Slamet

“(I’m surprised -) he went, Slamet did.”

[Dut: Hoezo gaat hij weg, Slamet?!]

Arps et al 2000: 136

When *kok* occurs medially, Arps et al (2000: 136) note that it can be preceded by an argument (as in (12)), but not by a predicate, as shown in (13):

(12) Slamet kok lunga!

Slamet PRT go

“(I’m surprised -) Slamet went!”

[Dut: Hoezo gaat Slamet weg?!]

Arps et al 2000: 136

(13)*Lunga kok Slamet.

We will refer in what follows to clause-initial *kok* (e.g., (8)) and clause-medial *kok* (e.g., (9)-(12)), where clause-medial means, more precisely, predicate-initial. We will see in Section 3.5 that there is a distinction between clause-initial and -medial *kok* in non-declarative clause types. However, in their discussion of declarative clauses, Arps et al (2000:136) suggest that clause-initial and clause-medial *kok* contribute the same meaning – “als blijkt van verbazing [...] soms zelfs ongeloof” [as an expression of surprise, sometimes even disbelief]. Widhyasmaramurti similarly claims that clause-initial and -medial *kok* “express surprise toward an unexpected circumstance” (Widhyasmaramurti 2008: 55), and Wedhawati et al (2006: 407) state that clause-initial *kok* expresses “arti ketidakpercayaan atau keheranan” [meaning of astonishment or disbelief] (Wedhawati et al 2006: 407).

The expression of surprise conveyed by *kok* appears to have many potential uses in context. For instance, Arps et al (2000:136-137) variously describe how *kok* can be used rhetorically to feign surprise but also to express more “afgezwakt” [toned down] surprise at an observation.

⁴ Errington’s original (1998) translation is “Why, this is expensive!”

However, Wedhawati et al (2006) also suggest that *kok* may have some information-structural properties, saying that “[s]ecara mendasar ‘kok’ menyatakan arti kontradiktif” [In a way, *kok* basically expresses contradiction] (Wedhawati et al 2006: 407). This exact characterisation of *kok* is not found in other grammars and discussions of *kok* of which we are aware.

A final note on the syntax of clause-initial and clause-medial *kok*. It is possible that some “clause-initial” examples like (11) are in fact derived from clause-medial cases like (12). While we wouldn’t expect a change of meaning, the scope of the effect of *kok* changes (as reflected in the English and Dutch translations), as the name *Slamet* is no longer pronounced within the same syntactic or prosodic constituent as the predicate *lunga*. We will ultimately claim (to briefly tease section 4) that clause-initial and -medial *kok* are the same element in the same syntactic position, with linearisation differences arising from movement of non-predicate material to a position above *kok*.

3.3.2. Clause-final *kok*

Kok can also occur clause- or utterance-finally, in which case descriptive accounts often treat it as expressing a different meaning from clause-initial or -medial *kok*. Errington asserts that final *kok* “emphasizes a speaker’s [...] concern that [a state of affair’s] truth or relevance be recognized by the addressee” (Errington 1998: 102, also Arps et al 2000: 137) or in the terms from Robson & Wibisono’s (2002) Javanese-English dictionary, “remind[s] the hearer of [something] they should know”. Arps et al (2000: 137) suggest that final *kok* is “licht verontwaardigd van toon” [slightly indignant in tone]. Only final *kok* appears to be grammatical in answers to questions. The Javanese-Indonesian dialogue on the subject of the menstrual cycle in (14) reflects these descriptions of clause-final *kok*:

- | | |
|--|---|
| (14)EN: Lha kok isá <i>mempengaruhi seluruh badan?</i> | EN: So how can it affect the entire body? |
| S: Ha isá no, lha <i>kontraksi kok</i> . | S: Huh, it can, well, contractions, y'know . |
| EN: <i>Kontraksi?</i> | EN: Contractions? |
| S: <i>Kontraksi dinding rahim kok</i> . | S: Contractions in the wall of the uterus,
y'know Errington 1998: 110 |

Wedhawati et al (2006: 407) extend their claim that *kok* expresses contradiction to final *kok*. Clause-final *kok* may be reduced to *ok* in fast speech contexts (Arps et al 2000: 137).⁵

3.4. Prosody of *kok*

Wedhawati et al (2006) note that *kok* can distribute across different parts of an utterance’s prosodic structure, and that the type of constituent (termed *gatra* ‘semantic unit’⁶) in which it occurs affects its interpretation. In this section, we present Wedhawati et al’s analyses alongside acoustic data we have elicited from a Surakarta Javanese speaker and a pair of siblings speaking Pemalangan Javanese. We first examine *kok* in declarative clauses, then in interrogative clauses, to show that the distribution of *kok* affects the shape of the sentence-wide contour irrespective of clause-type specific prosody.

⁵ We are not aware of whether this phonological reduction is extended to clause-initial or clause-medial positions. We do note, however, that Semarang Javanese is known for the discourse particles *ok* [oʔ] and *ik* [iʔ], but which is different from *kok*, the particle under study here.

⁶ A ‘*gatra*’ is a unit of melody in Gamelan music (the smallest unit of a gamelan composition). It can also mean a ‘sense-unit’ in poetry or a clause (Robson & Wibisono 2002). We keep this term from Wedhawati et al (2006) to descriptively refer to a syntax-semantic constituent.

3.4.1. *Kok* in declarative clauses

3.4.1.1. *Clause-initial kok*

In Wedhawati et al's (2006) analysis, clause-initial *kok* can introduce a rise-fall contour that marks the 'contradictory meaning' they identify, noting that, "[a]rti kontradiktif dapat terjadi pada 'kok' sebagai pembentuk gatra utama maupun gatra pelengkap" [the contradictory meaning [of *kok*] can occur when *kok* marks the main gatra as well as when it forms the complementary/supplementary gatra] (p. 407). Consider the following two examples of clause-initial *kok* where the particle occurs within or before the acoustically most prominent prosodic phrase, marked here by the rise-fall contour.⁷ In (15) the high tone on *kok* is the most prominent intonational element and the associated meaning is that of 'contradiction'. In (16), the acoustic high point occurs after *kok*, creating a separate prosodic phrase. The interpretational effect of this, Wedhawati et al. argue, is astonishment/disbelief.

(15) -**Kok** LUCU⁻ [bocah wani karo wong.tuwa-né_{Deaccented}]
PRT cute child brave with parent-DEF
'It's funny/cute how brave a child is to their parents.' Wedhawati et al 2006: 407

(16) ↗**Kok** kober-kober-é ↗nliti gawé-yan-é murid-murid kabèh.↘
PRT RED-opportunity-DEF AV.examine work-NOM-DEF RED-student all
"('I'm surprised he has) the time to examine the work of all of his students."
[Ind: "Sempat-semapatnya mengoreksi pekerjaan semua murid."] Wedhawati et al. 2006: 407

Our own prosodic elicitations produced by a Surakarta Javanese speaker support the phrasing pattern emerging from Wedhawati et al (2006), albeit with a very notable break after *locu* 'cute' in (15) (see Figure 1). Note, however, that *locu* 'cute' ends in a high tone, thereby breaking the widespread rhythm of a central high tone into two separate prosodic phrases.

⁷ Wedhawati et al (2006) use curved lines to imitate the intonational contours, which we represent with arrows that show the onset and offset of these lines. The lines do not straightforwardly map onto the boundary tones used in other treatments of Javanese intonation. We therefore include contours recorded from a Surakarta Javanese speaker who was asked to read out the sentences using naturalistic intonation.

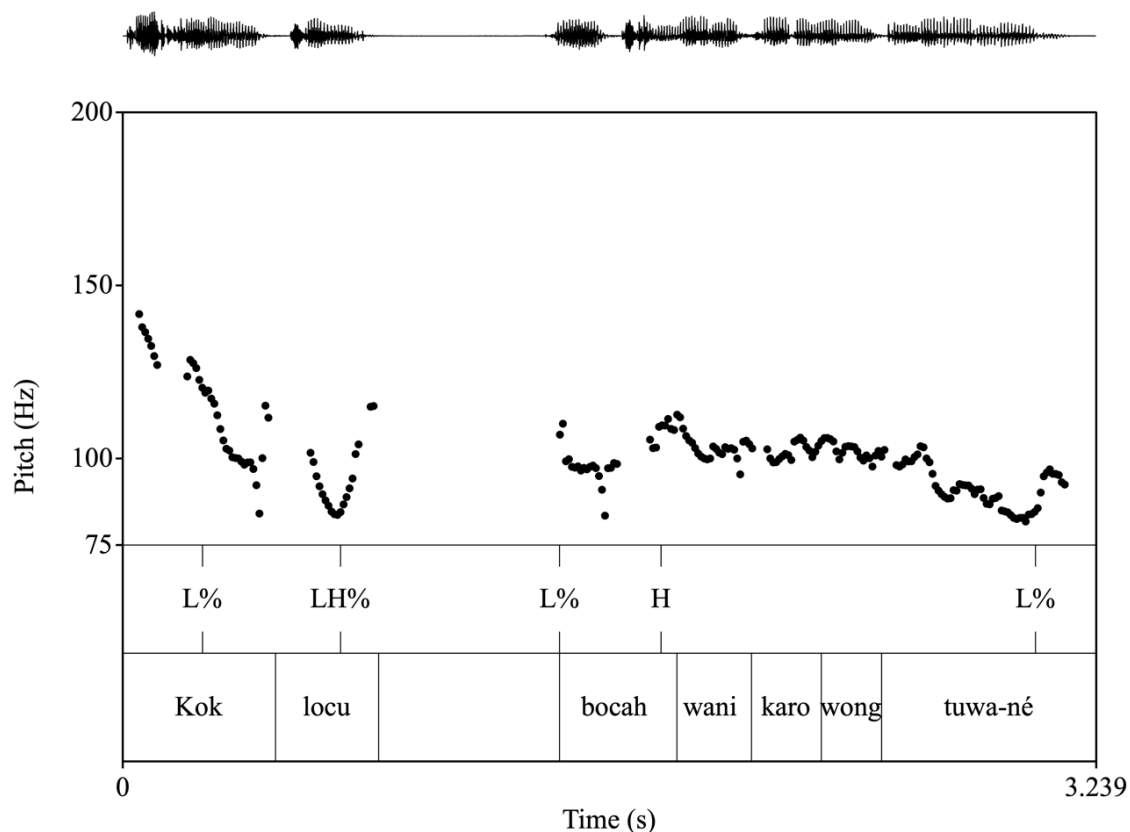


Figure 1: Clause-initial *kok* with a contrastive reading produced by a Surakarta Javanese speaker

The break disappears in (16) (see Figure 2) and the acoustically most prominent element seems to fall right in the middle of what Wedhawati et al represent as a phrase boundary: the rise of low part of the bitone falls on the last syllable of *kober-koberé*; the high part on *nliti*. The alternative phrasing in (16) lacks the contrastive reading of example (15). Instead, the placement in the preceding phrase brings about an astonishment/disbelief meaning that *kok* can express. Stoel's (2006a) generalisation that post-nuclear accentual phrases copy the nuclear accentual phrase (see section 2.2) is difficult to reconcile with the data presented here; it is also not supported by examples with a shorter post-nuclear accentual phrase, as will be seen in our discussion of clause-final *kok*. His observation may therefore be specific to the central Banyumas dialect of Javanese. The alignment differences of this bitone in (15) and (16) support his suggestion of their floating nature (cf. Maskikit-Essed & Gussenhoven 2016).

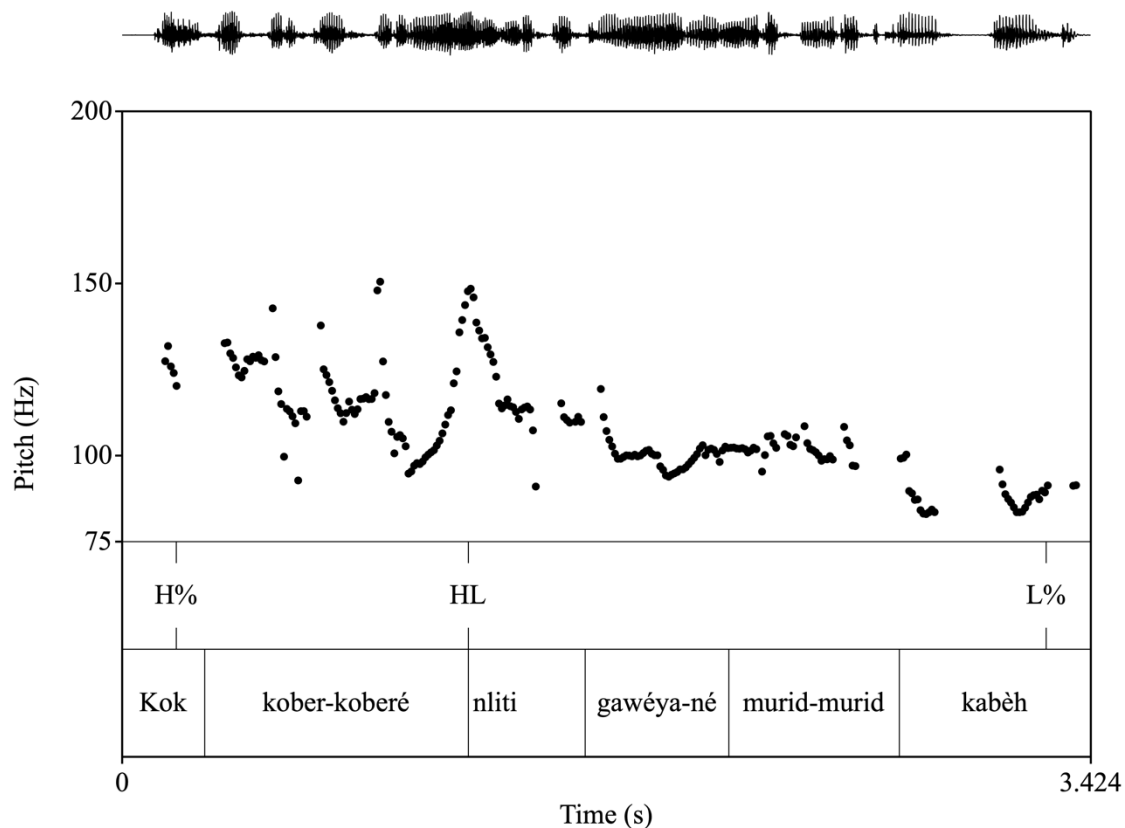


Figure 2: Clause-initial *kok* with a disbelief reading produced by a Surakarta Javanese speaker

3.4.1.2. Clause-medial *kok*

Wedhawati et al (2006) do not discuss clause-medial *kok* (in our sense, where a subject or topic precedes *kok*, which is then followed by the predicate).⁸ Vander Klok (2018) reports a medial instance of *kok* in a focus-particle-marked polar question in (17) to have the pitch contour in Figure 3. We observe a similar break after *kok* as in the clause-initial variant with the contrastive reading in (15), suggesting that here, too, there is a break between the main accentual and the post-nuclear phrase. Our own data also reveal a falling contour on medial *kok*, this time in a declarative clause (see (18), and Figure 4). Here, too, we find a break between the two phrases; but the main accentual phrase seems to follow the phrase containing *kok*. In analogy to initial *kok*, there may be two different functions of medial *kok*, too.

- (17) Sampeyan kok isek menangi toh?
 2 PRT still AV.experience FOC
 ‘You still do it, don’t you?’

Paciran (East Java), Vander Klok 2018: 16

⁸ Wedhawati et al discuss examples that they call medial *kok*, but these examples are in fact clause-initial and rather utterance-medial. They are as such examples of initial *kok* for our purposes and are discussed here as such.

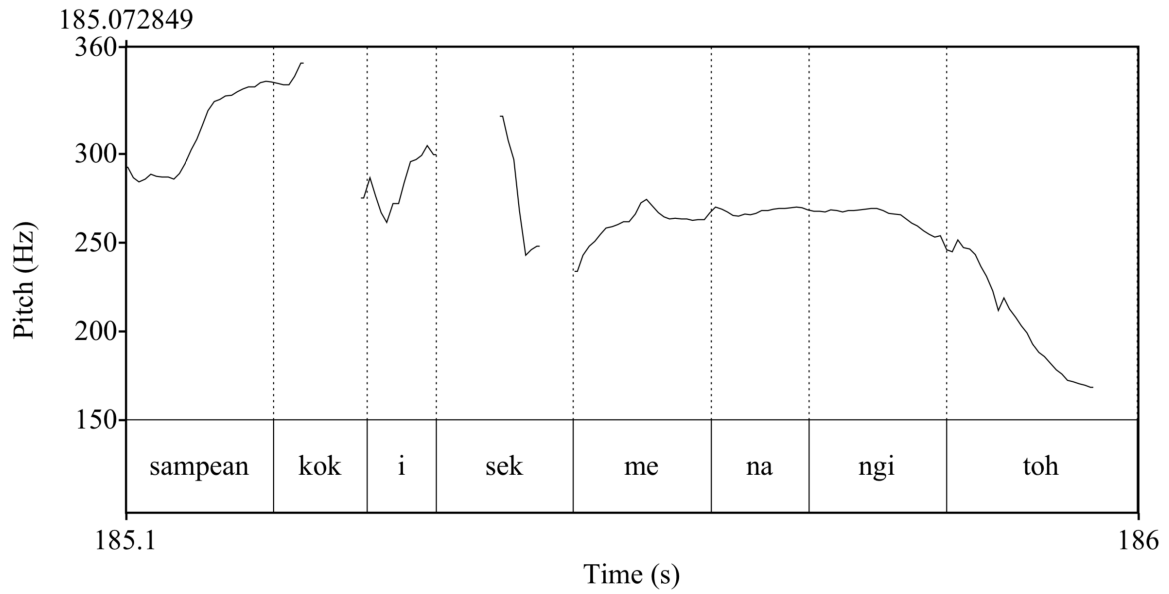


Figure 3: Clause-medial kok produced by a Paciran (East Java) speaker (from Vander Klok 2018: 17)

(18) Deké kok gorong teko
 3 PRT not.yet come
 'He/She hasn't arrived yet.'

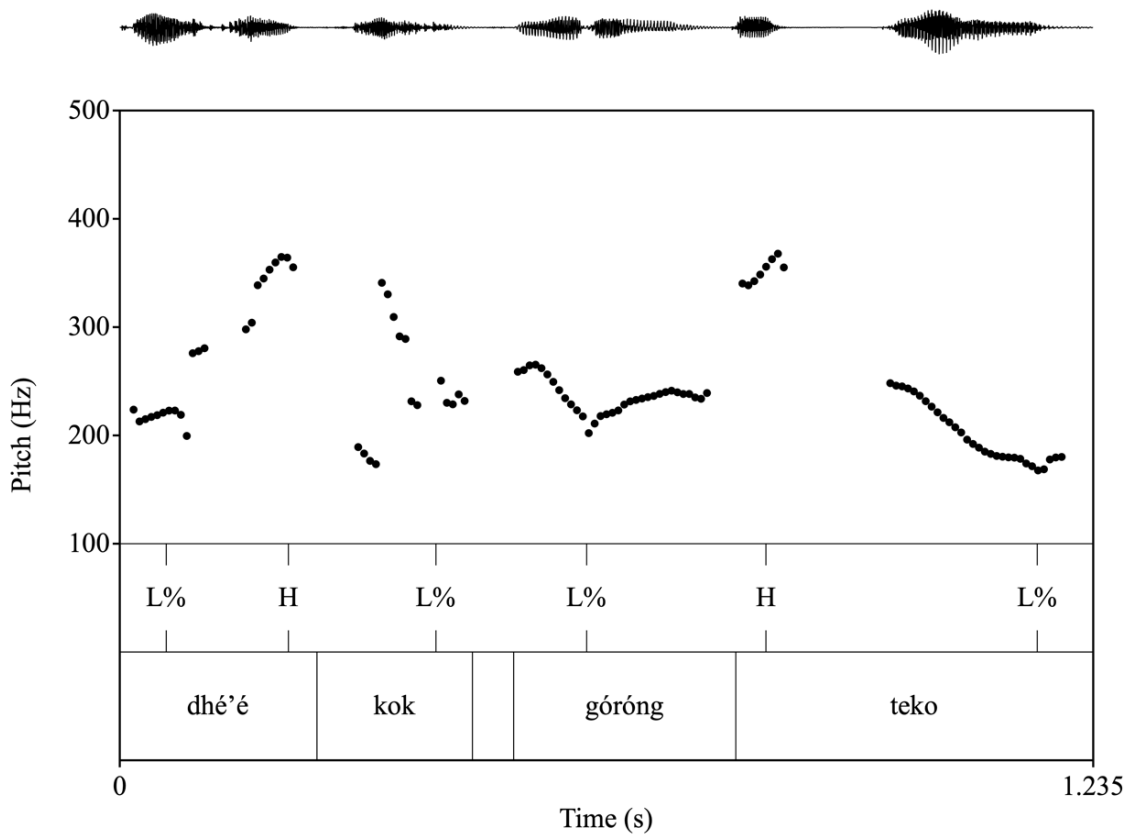


Figure 4: Clause-medial *kok* produced by a Surakarta speaker

For sentence-medial *kok*, then, it seems plausible to assume that it is contained in a separate prosodic phrase distinct from the one following it. In Figure 3, the particle is inside the prosodically most prominent phrase; in Figure 4, it precedes that phrase. Following Wedhawati et al (2006), the question arises as to whether this prosodic difference maps into different functions, which is a question which we must leave to future research. Initial elicitations suggest that there is further variation as to where medial *kok* can occur. For these reasons we will remain agnostic about its exact meaning and distribution here.

3.4.1.3. Clause-final *kok*

Wedhawati et al (2006) suggest that clause-final *kok* forms a ‘supplementary’ gatra, or postnuclear accentual phrase, often on its own, which follows the ‘focal’ gatra (p. 406), or main accentual phrase, and this receives a ‘contradictory’ meaning. It is unclear how this differs from a contrastive reading.

(19) ↗Sing teka Simin, ↑ya durung↓ suwé →kok.

REL come Simin PRT.yes not.yet long PRT

‘Simin’s arrival is also soon (lit. not long yet).’

[Ind: Datangnya Simin juga belum lama.]

Wedhawati et al 2006 : 407

Our own recordings for final *kok* of the declarative clause in (XX) supports Wedhawati et al’s characterisation of its prosody, as shown in Figure 5. The particle seems to form its own prosodic phrase with a completely flat contour. Note that for final *kok* only, the particle occurs in isolation. Initial and medial *kok* also formed their separate prosodic phrases above, but always in combination with another constituent.

(20) Dhèwèké ora turu kok.

3 NEG sleep PRT

‘He’s not sleep!?’

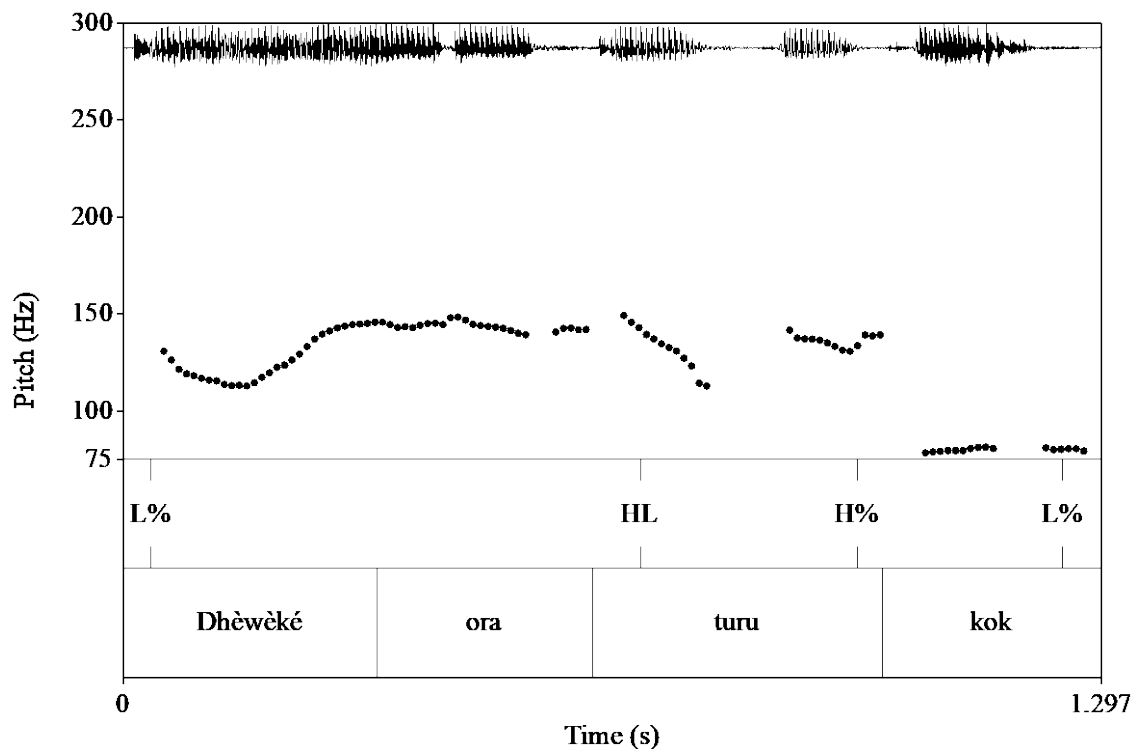


Figure 5: Clause-final *kok* produced by a Surakarta speaker

This deaccenting, for a lack of a better word, and the separate phrasing of final discourse particles appears to be a common strategy in Javanese, as this is also noted with particles like *ya* (≈‘yes’) in examples like (21) from Wedhawati et al (note the initial *kok* in the main *gatra*):

- (21) [Kok ora teka-teka_{AP}] [ya_{AP}].
 PRT NEG RED-come PRT.yes
 ‘(I’m surprised -) haven’t you come yet, huh?’
 [Ind: “Kenapa belum datang-datang juga ya?”] Wedhawati et al 2006: 406

3.4.2. *Kok* in questions

To test whether the prosodic patterns observed above holds across clause-types, we elicited wh-interrogatives from two Peralangan speakers. Wh-interrogatives seem to have a stable sentence-wide contour (cf. Rahyono 2006), but whose alignment changes with the addition of particles like *kok*. Consider first the contour of wh-questions including clause-medial *kok* (Figure 7) and the variant without *kok* (Figure 6): clause-medial *kok* slightly prolongs the continuously high section of the hat contour. Sentence-initial *kok* adds a high boundary tone (Figure 8) and adding a sentence-final *kok* significantly prolongs the trailing prosodic phrase (Figure 9). Unlike what we saw for declaratives, there don’t seem to be any breaks separating phrases containing *kok* from other prosodic phrases.

- (22) (**Kok**) Nang apa (**kok**) kowe pindah mareng Jerman (**kok**)?
 PRT when what PRT 2sg move to Germany PRT
 ‘When did you move to Germany?’

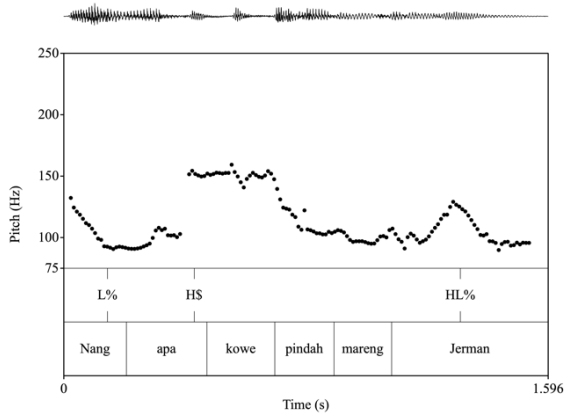


Figure 6: Wh-question produced by a Pemalangan speaker

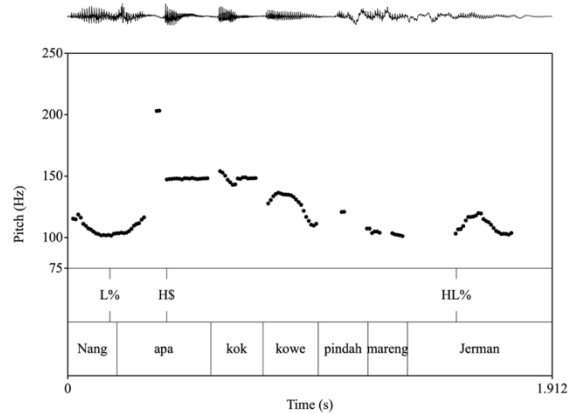


Figure 7: Wh-question with medial kok

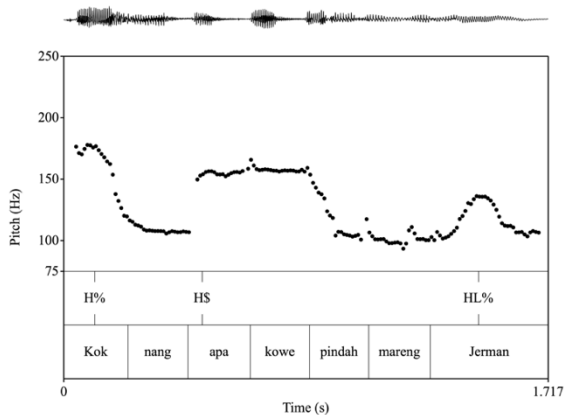


Figure 8: Wh-question with initial kok

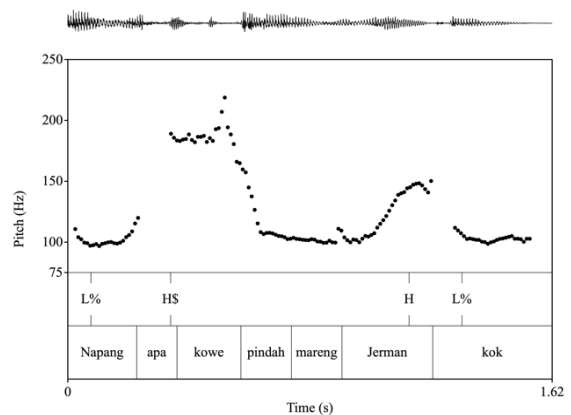


Figure 9: Wh-question with final kok

3.4.3. Summary of prosodic data with *kok*

We see in the data from the literature and our own recordings that clause-initial and -final *kok* occur at the left edge of an accentual phrase. For declaratives, this prosodic phrase is independent; for interrogatives, it isn't. Clause-initial *kok* can introduce the nuclear accentual phrase or it can be included in a prenuclear phrase. This difference in phrasing seems to map onto a difference in meaning, initially observed by Wedhawati et al (2006). This may also apply for medial *kok*, although differences in meaning are not discussed here. Clause-final *kok*, in contrast, forms its own accentual phrase which is never the nuclear phrase. Interrogatives show a similar pattern in that the final variant is attached to the final part of the phrase with a flat contour resembling what we found in declaratives.

The observed prosodic patterns raise some interesting questions about the relation of focus and prosodic phrasing. Stoel (2006b) observed that in Manado Malay, another Malayo-Polynesian language spoken in Sulawesi (northeast of Java), discourse particles can never bear the nuclear accent. While this certainly holds for final *kok* in Javanese, the clause-initial and -medial variants appear to coincide with acoustic prominence sometimes, and interestingly these instances were associated with information-structural meaning.

3.5. Clause-type distribution

Kok occurs across a variety of clause types, including declaratives, imperatives, and interrogatives. The examples of *kok* in (8)-(12) above demonstrate its use in declaratives. Another example is given in (23).

(23) Kucing-e ora ng-gondhol ikan neng mulut-e **kok**
 Cat-DEF NEG ACT-carry.by.mouth fish at mouth-POSS PRT
 'The cat did not carry a fish in its mouth!' (and you are supposed to know that!)

Widhyasmaramurti 2008: 58

Kok can also occur in imperatives. The example in (24) is from a recorded speech of an elderly female Islamic leader (Ustadzah) preaching at a women's religious gathering from an East Javanese dialect, spoken in Paciran, Lamongan, East Java.

(24)Context: She says: My intention is to do it. My intention is *adhang*. I hope for my family to be strong in worship...[Jav: Nggeh niku niate di toto. Aku niat adhang. Mugo-mugo kanggo keluargaku iso kuat ibadah.]
 Ojok **kok** jek wareg!
 NEG.IMP PRT still full
 'Don't be satisfied (how could you think of being otherwise)!' Paciran (East Java) dialect

Some speakers of Javanese, specifically in Central Java (Surakarta dialect) allow only final *kok* in imperatives, while others disallow *kok* in imperatives altogether. This observation is based on the elicited example in (25) across different speakers from the Surakarta dialect.

(25)(***Kok**) antem-en aku (***kok**) yen pancen kowe wani (%**kok**)!
 PRT punch-IMP 1SG PRT if certainly 2 brave PRT
 "Hit me if you dare (I'm so angry with you!)" Surakarta dialect, Norwanto, p.c.

Finally, *kok* can appear in both wh- and polar interrogatives, yet it is not a question marker. (26)-(28) demonstrate *kok*'s co-occurrence with wh-phrases.

(26) Malang Javanese
 Opo'-o arèk megel-no iku **kok** yo órép? Opo'-o **kok** gak matèk aé?
 what-SBJV child AV.annoy-CAUS DEM PRT also live what-SBJV PRT NEG AV.die just
 Opo'-o **kok** gak ilang aé? Opo'-o **kok** gak mampós aé?
 what-SBJV PRT NEG disappear just what-SBJV PRT NEG croak just
 Opo'-o **kok** gak bongko aé?
 what-SBJV PRT NEG croak.SL just
 "Why does such an irritating kid live at all? Why doesn't he just die? Why doesn't he just vanish? Why doesn't he just croak? Why doesn't he just snuff it?" Kraußé 2017: 68-69

(27)Kenèng.apa **kok** aku ngomong ngono para sedulur?
 why PRT 1 AV.say like.this COLL sibling
 "Why *kok* did I say it like this to the brothers?" 1 Pétrus 2:19 JVN
 (<https://www.bible.com/es/bible/250/1PE.2.19.JVN>, [accessed 22 Apr 2024])

Note that when clause-medial *kok* appears in combination with wh-phrases like *opo'-o* (what-SBJV) the natural free translation of the utterance often contains 'why', as in Kraußé's translation of (24). However, *kok* is also compatible with the lexical items *keneng apa* and *ngapa* 'why', see (27)-(28), suggesting it does not formally contribute to a 'why' meaning.

(28) Ngapa **kok** Yésus Disebut Anaké Gusti Allah?

Why PRT Jesus call son lord God

“Why *kok* is Jesus called the Son of God?”

<https://wol.jw.org/jv/wol/d/r253/lp-ja/502019180> [accessed 22 Apr 2024]

Kok may also appear before a fronted wh-word, as in (29):

(29) Tablet ‘Ortofen’ – **Kok**, nalika cara=ne?

tablet Ortofen PRT when how=DEF

‘Ortofen tablets – but when and how?’

News article headline, n.d.⁹

In some cases of initial *kok* before questions, the question is interpreted as asking the original questioner for their motivations in asking the question (cf. metacommunicative *why* questions in many other languages discussed in Woods and Vicente 2021, Trinh and Bassi 2023):

(30) Kok sapa sing nulis tesis=e kowe?

PRT who REL AV.write thesis=DEF 2

“Why are you asking me who wrote your thesis?”

Pemalang dialect, R. Tarjuki, p.c.

Despite these similarities with *why*-type items, *kok* further differs from *why*-type items in that it can bring about a focus reading on wh- and non-wh-phrases when it immediately follows them. The examples in (31) differ in the position of the wh-word *kapan* (‘when’), but as *kok* follows *kapan* in both cases, they receive a similar interpretation where focus is placed on *when* you finished writing the thesis. In contrast, final *kok* in (32) results in focus being placed on the completion of *your thesis* (as opposed to some other project).¹⁰

(31)a. **Kapan kok** kowe rampung nulis tesis=e kowe?

when PRT 2 finish AV.write thesis=DEF 2

b. Kowe rampung nulis tesis=e **kapan kok**?

2 finish AV.write thesis=DEF when PRT

“When did you finish writing your thesis?”

(32) **Kapan** kowe rampung nulis tesis=e kowe **kok**?

when 2 finish AV.write thesis=DEF 2 PRT

“When did you finish writing *your thesis*?”

Relatedly, in conjunction with wh-quantifiers, *kok* contributes a meaning of looking to specify a particular member of a set:

(33) Bocah sing endi kok sing bise masak sege goreng?

child REL where PRT REL can AV.cook rice fried

“Which child *exactly* can cook fried rice?”

More evidence that *kok* does not restrict the discourse in the same way as a wh-word or rhetorical question marker is that it is compatible with imperatives as in (24)-(25), with information-seeking

⁹ <https://jw.delachieve.com/tablet-ortofen-kok-nalika-carane/> [last accessed 10 June 2024]

¹⁰ Rikasih Tarjuni explains that a natural discourse context in cases like (26) is where the person asking you the question assumes that you’re writing multiple documents, but is focusing in their question on the thesis.

question acts such as (34)-(36), and with statements that are then followed up by non-*kok*-containing questions (37).

(34) *Lha kok isá mempengaruhi seluruh badan?*
 PRT PRT can affect whole body
 “So *kok* it can affect the whole body?” Errington 1998: 110

(35) *Kuwi piyé kok, Bu?*
 DEM how PRT Mrs
 ‘How is that (though), Bu?’ Errington 1998: 110

(36) *Lha nèk kuwi luar kandhungan ki istilahé piyé kok kuwi?*
 PRT if DEM outside womb DEM term=DEF how PRT DEM
 “So if it’s outside the womb, what’s the term for that?” Errington 1998: 111

(37) *Bojo=ne kok loro, kuwi piye?*
 spouse=DEF PRT two DEM how
 “He (surprisingly) has two wives – how about that?”
 [Dutch: Dat hij twee vrouwen heeft, hoe zit dat?] Arps et al 2001: 137

Arps et al (2000: 136) noted that *kok* is compatible with polar interrogatives. Polar interrogatives can be formed by intonation alone in Javanese (Rahyono 2006; Vander Klok 2018), and *kok* is compatible with strings that are otherwise interpreted as polar interrogatives due to their intonation, as shown in (38)-(39):

(38) *Kok mulih?*
 PRT AV.go.home
 ‘(I’m surprised), are you going home?’
 [Ind. ‘Kenapa pulang?’]¹¹ Wedhawati et al. 2006: 405

(39) Q: *Kok Slamet bojo=ne loro?* A: *Wong sugih [k]ok!*
 PRT Slamet spouse=DEF two person rich PRT
 ‘Wait, does Slamet have two wives?’ ‘He’s rich (you know)!’
 [Dutch: ‘Hoezo heeft Slamet twee vrouwen?’ ‘Hij is rijk (lett.: een rijkard) hoor!’]¹²
 Arps et al. 2000:137

Kok is also compatible with other morphological markers of polar questions, e.g. the focus particle *toh*:

(40) Context: Bu S. is discussing that she is house-sitting. Bu Z. Asks Bu S. about it. Bu S. replies
 ‘Aku isek menangi. Wong aku seng ngangsu kok!’/‘I still do it. I’m the one who brings the

¹¹ The Indonesian free translation literally translates as “Why go home?”. We are avoiding using ‘why’ in free translations of *kok* sentences to avoid the implication that it formally contributes to a ‘why’ meaning, as explained in reference to examples (6)-(8).

¹² The Dutch free translation literally translates as “Why does/how is it that Slamet has two wives?. The response suggests that ‘Kok Slamet bojone loro?’ is not treated as a neutral information-seeking polar question, but neither is it a rhetorical question in the sense of e.g. Biezma & Rawlins (2017). We therefore choose to translate it as a polar question with a marker ‘wait’ indicating surprise. The precise pragmatic role of *kok* in polar questions merits its own detailed study so we leave that for future work.

water from the well!’

Bu Z.: Sampeyan kok isek menangi toh?
2 PRT still AV.experience FOC
‘You still do it, don’t you?’

Paciran (East Java), Vander Klok 2018: 16

Despite its distribution across a wide range of clause types, *kok* can only refer to the root clause. That is, the contribution of *kok* seems to be a root-clause phenomenon, as is common with discourse particles across languages that engage the hearer. The example in (41) demonstrates that the particle *kok* can only have contribution about the matrix verb *ngucap* ‘say’ state-of-affairs, and not about the embedded eating state-of-affairs (*pangan* ‘eat’).

(41) Kowe ngucap kok=pangan pitik **kok**
2 AV.say 2SG=eat chicken PRT
“You really said chicken (#really) was eaten by you!”

Norwanto, p.c.

3.6. Summary of properties of *kok*

In sum, the discourse particle *kok*, as used in the low or informal speech level (*ngoko*), occurs across declaratives, imperatives (in some dialects), and interrogatives. It appears in clause-initial and -medial, and -final linear positions. Prosodic evidence suggests that clause-initial and -medial *kok* differ from clause-final *kok* in that the former show variation in meaning, depending on the prosodic phrasing, while the latter does not. Clause-final *kok* also shows very little prosodic prominence (if all). Semantic evidence suggests a slightly different two-way split as *kok* can mark narrow focus on the phrase that it follows. However, *kok* still appears to have a core interpretation as expressing surprise or rebuttal.

4. Proposal

4.1. Preview

We present here a unified analysis of *kok*, arguing that there is only one position in which the same lexical item *kok* is first merged, viz. to the left of CP, such that the different linearised positions and interpretations of *kok* are derived from this. The proposal not only captures the similarities between different linearisations of *kok* but also account for the differences and the restrictions on *kok*’s position that exist in different clause types and utterance acts. Crucially, the different interpretations of *kok* come in part from the interaction with the information structure of Javanese.

Precedents for this kind of analysis come principally from Indo-European, including analyses of discourse particles (Haegeman 2014 on West Flemish, Heim 2019 on Swabian, i.a.), vocatives (Hill 2013 on Romanian) and interrogative slifting (Haddican et al 2014 on English). Recent advances in our understanding of the left periphery of Javanese (Vander Klok 2024, section 2.3) allow us now to apply the same logic in the Austronesian language family.

4.2. Assumptions

We assume that, despite its adverb-like meaning, *kok* is a syntactic head, hence referring to it as a particle (PRT). Given *kok*’s likely emergence from a second-person pronoun (Krauße 2017:36; Nurhayani 2014:126), the diachronically well-attested trajectory from pronoun to particle seems more likely than a process of development from pronoun to adverb. Moreover, *kok* does not (and has never) shown adverb-like morphological behaviour; it cannot be reduplicated (**kok-kok*, **kok-ok*) and it is incompatible with the derivational suffix *-e* (**kok-e*).

We furthermore assume here that there is a basic core meaning of *kok* that is present regardless of its position in the clause. We claim (and will demonstrate) that *kok*'s core meaning marks that the speaker recognises a contradiction between a previous assumption and some new information that has become apparent, either in the discourse or in the broader context.

We will argue that *kok* is first merged in a low left-peripheral functional projection (FP) and that it associates with a higher projection in the left-periphery that expresses speaker perspective (PerspectiveP, or PerspP). This association can be at a distance¹³, in which case *kok* remains in its position of first merge, or by movement, in which case *kok* externally merges to PerspP. In the special case that *kok* is used metalinguistically, such as in (30), it may move even higher into a position where it scopes over the entire utterance (Call on Addressee or CoA as per Beyssade & Marandin 2007; compare analyses of metacommunicative *why* by Woods and Vicente 2021). The articulation of the left-periphery that we assume here combines a simplification¹⁴ of Vander Klok's (2024) analysis for Javanese with Woods's (2016, 2020) and Heim & Wiltschko's (2020) proposals for speech act projections in the syntax, applied to Indo-European data but also Indo-Aryan data (Dayal 2023).

(42) [CoA [PerspP [InfoStrP [FocP [FP [CP [MoodP [TP ...]]]]]]]]

Kok's association with PerspP is motivated by the fact that *kok* can occur with other discourse particles in Javanese and Indonesian which obligatorily precede it, regardless of the linearisation of *kok* relative to e.g. subjects, topics and predicates:

(43) A: *Lha kok isá mempengaruhi seluruh badan?* B: *Ha isá no, lha kontraksi kok.*
"So how can it affect the entire body?" Huh it can, well, contractions, y'know.
Errington 1998: 11

(44) *Seharusnya kan gitu. Cuman ini orang yang dimintain tolong itu ló kok pergi.*
"Well, it should be like that. But it's just that the person I asked for help just went away."
Krauße 2017: 4

Particles like *lha* and *ló* also have different meanings from *kok*; where *kok* comments on the interlocutors' relationship to the propositional content of the utterance, *lha/ló* comment on future utterances, e.g. expected responses, in the discourse to follow (Errington 1998). This patterns with other work on discourse particles which appear at the outermost edge of particle clusters in other languages (e.g. Lam 2014 on Cantonese sentence final particles, Wiltschko and Heim 2016 on Canadian English *eh*).

Given these preliminary assumptions, we now move to detail proposals for *kok*'s interaction with propositional material.

¹³ We are agnostic at this point as to how *kok* as a functional head and the Persp head associate. Agreement mechanisms have been proposed in the past for similar relationships: Bayer and Obernauer (2011) propose agreement via a Force feature for German 'middle field' discourse particles, which occur in amongst propositional material; Wiltschko (2021) proposes a 'coincidence' feature that links low-linearised discourse particles with the speech act projections in the left periphery. We leave this for future work.

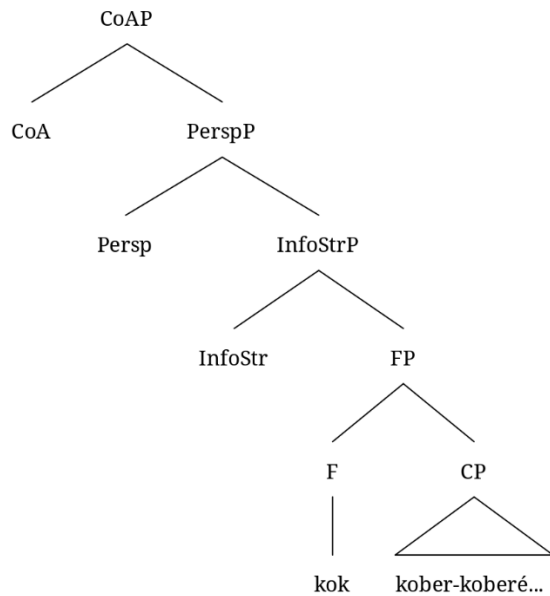
¹⁴ We do not differentiate in what follows between Topics and Foci, because we do not yet know enough about the interaction of Topic and Focus in Javanese with *kok* to accurately diagnose these. We will therefore refer to an Information Structural phrase (InfoStrP) above CP that represents Vander Klok's (2024) analysis, although it may well be the case that both are relevant positions given their necessity in the structure of polar answers.

4.3. Initial and medial kok

We propose that initial *kok* in declaratives typically arises from the merge of *kok* in FP without any information structural movement taking place out of CP, as shown in (45):

- (45) [_{CoAP} [_{CoA} [_{PerspP} [_{InfoStrP} [_{FP} [_F *kok*] [_{CP} *kober-koberé nлити gawéyané murid-murid kabèh.*]]]]]]]
 “(I’m surprised he has) the time to examine the work of all of his students.”

Wedhawati et al. 2006: 407

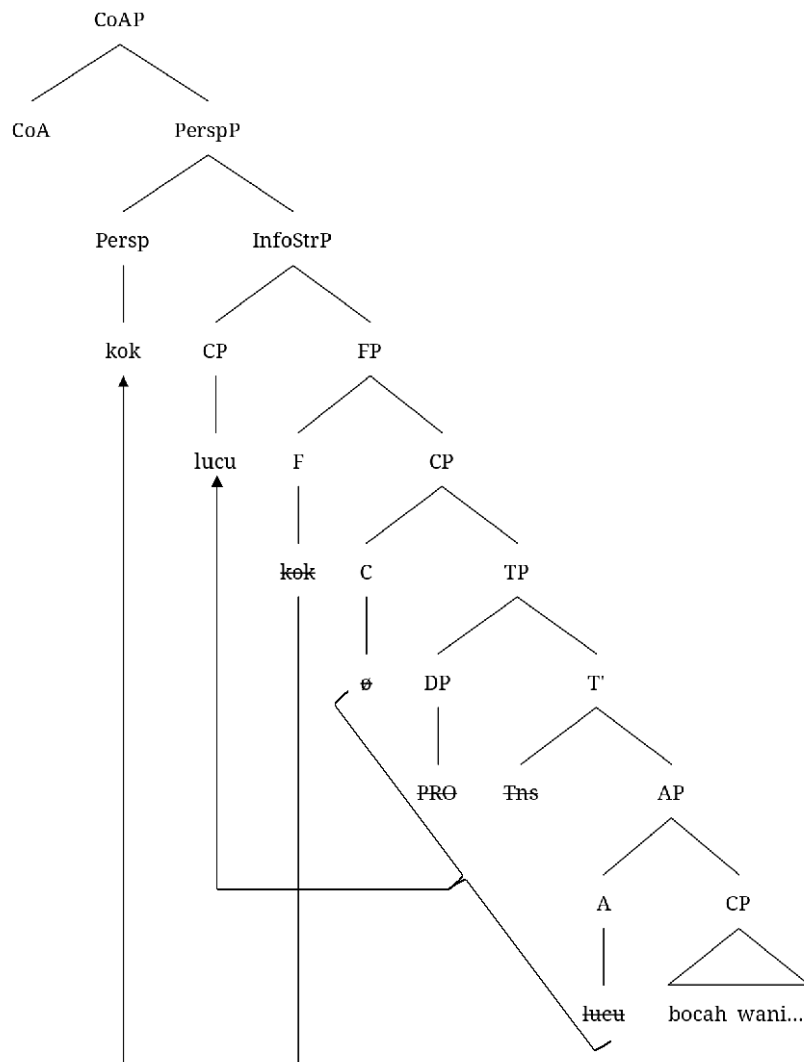


Initial *kok* may also arise from movement of *kok* to PerspP following some information structural movement out of CP:

- (46)a. [_{CoAP} [_{CoA} [_{PerspP} [_{Persp} *kok*][_{InfoStrP} [_{CP} *lucu*] [_{FP} [_F *kok*] [_{CP} [_C \emptyset][_{TP} [_{DP} *PRO*~][_T [_{Tns}] [_{AP} [_A *lucu*]]]]]]]]]]]
 ‘It’s funny/cute how brave a child is to their parents.’

Wedhawati et al 2006: 407

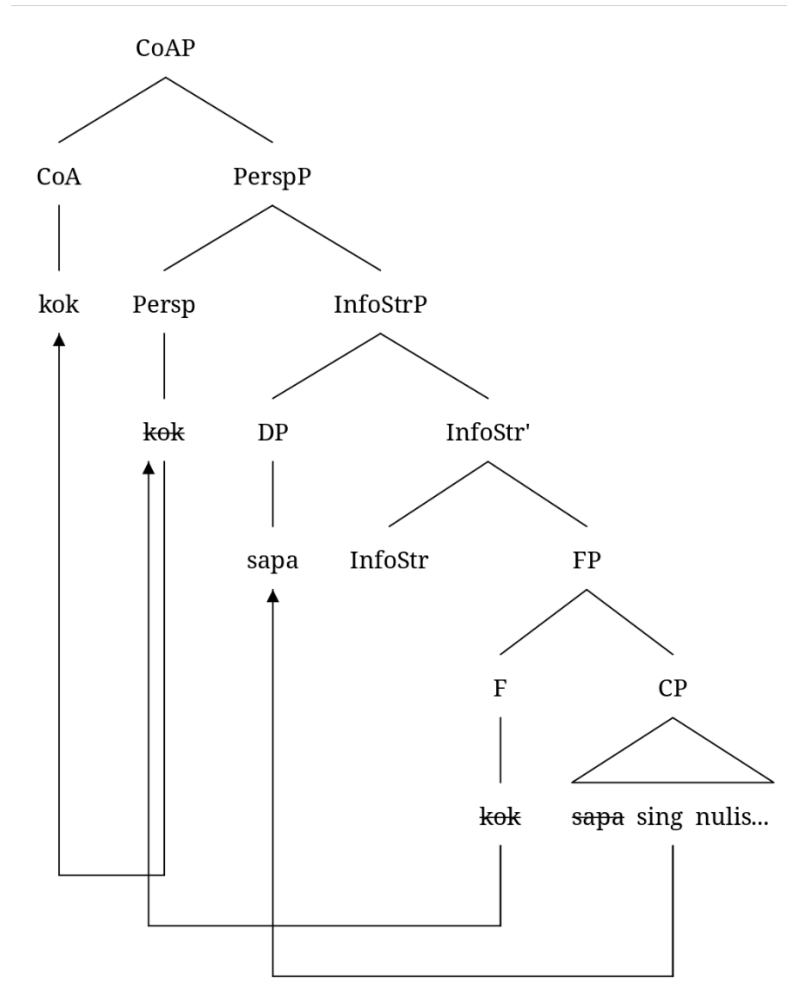
b.



Javanese makes use of leftward movement as an information-structural strategy (see e.g. Winkler 2011 for English). The ‘contrastive’ reading of initial-*kok* as noted by Wedhawati et al (2006) is therefore licensed by movement of some phrase to InfoStrP and the movement of *kok* to PerspP, immediately left of InfoStrP, which results in *kok* marking the left boundary of the nuclear accentual phrase. Any material following this phrase will be acoustically deaccented. Moreover, our movement analysis here is supported by the presence of a prosodic break between the material in the left-periphery and the material remaining in CP (see example (15)/Figure 1).

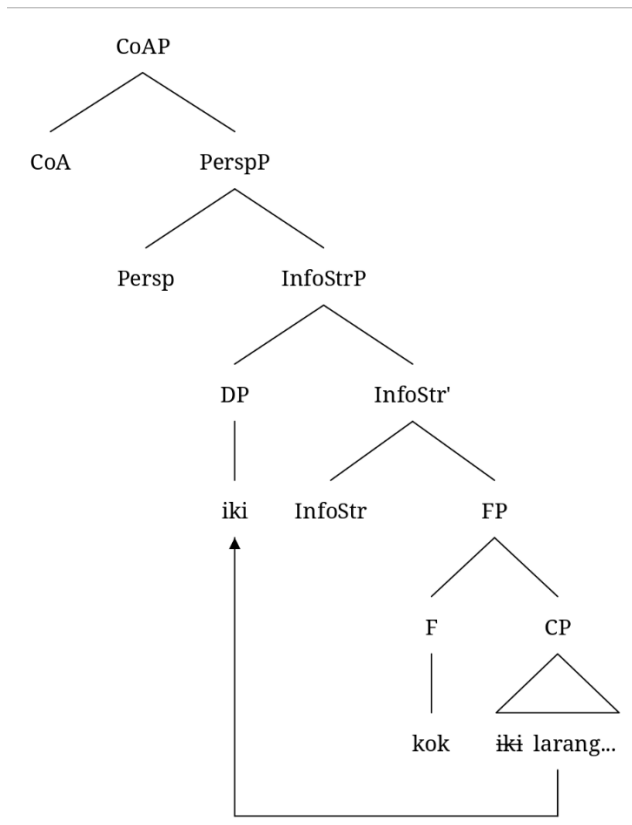
Finally, in cases of metacommunicative *kok*, *kok* passes through PerspP to CoA to take widest scope over the entire utterance (see (30), repeated below as (47)):

- (47) a. [_{CoAP} [_{Kok}] [_{PerspP} [_{Persp} **kok**] [_{InfoStrP} *sapa*] [_{FP} [_F **kok**] [_{CP} *sapa-sing nulis tesise kowe*]]]]?
 “Why are you asking me who wrote your thesis?” R. Tarjuki, p.c.
 b.



Medial *kok*, then, results from movement of some propositional argument to InfoStrP above the FP hosting *kok*, without the subsequent movement of *kok* to PerspP, as shown in (48). The initial propositional material, in this case *iki* “this”, is always information-structurally prominent when *kok* is medial.

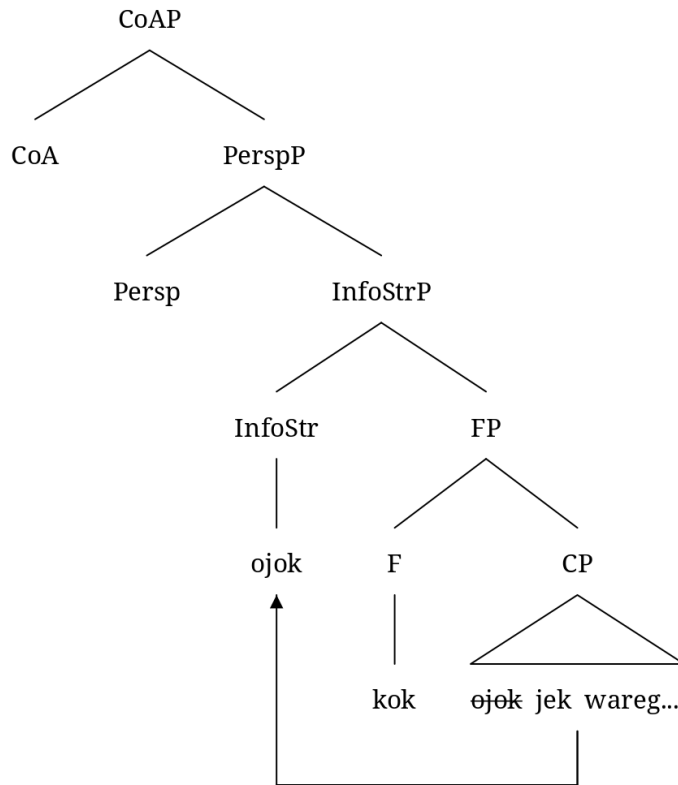
- (48)a. [_{CoAP} [_{CoA} [_{PerspP} [_{InfoStrP} *iki* [_{FP} [_F *kok*] [_{CP} *larang*]]]]]]
 b.



This analysis of medial *kok* illustrates how it and initial *kok* are typically treated as having the same interpretation, yet the analysis also captures the differences in the distribution of initial and final *kok*. Recall that initial *kok* is banned in imperatives, though clause-medial or -final *kok* is possible in imperatives (for other dialects beyond Surakarta, as far as we know). This is the one case in which medial and final *kok* pattern together. To preview our analysis for final *kok*, medial and final *kok* differ from initial *kok* in the presence of informationally more prominent material preceding *kok*.

We do not look to make strong claims about the structure of Javanese imperatives here, but if we analyse them as Koopman (2007) does Dutch imperatives, then the imperative-marked verb or negation moves to (or through) the head of InfoStrP, hence deriving the medial-*kok* order that we see in imperative examples like (24).

- (49)a. [_{CoAP} [_{PerspP} [_{InfoStrP} [_{InfoStr} *ojok*] [_{FP} [_F *kok*] [_{CP} *jek wareg*]]]]]]
 “Don’t be satisfied!”
 b.

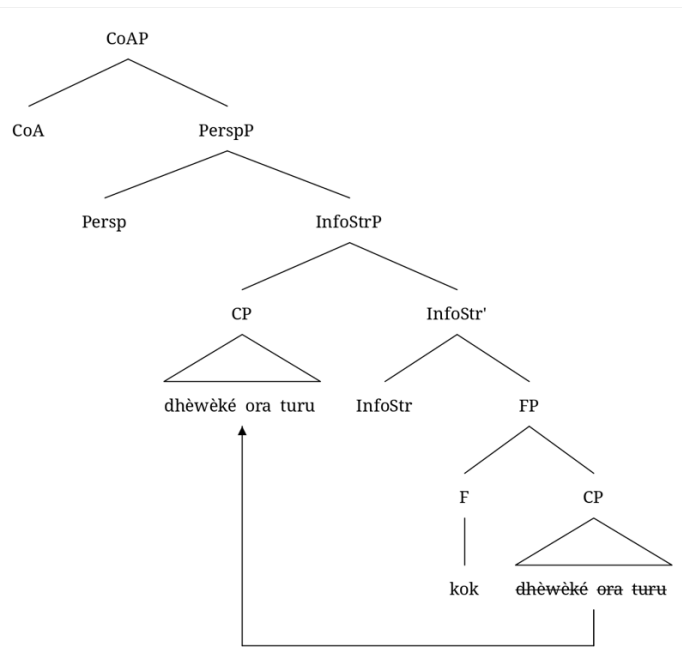


We claim that *kok* cannot be initial in imperatives because the movement of *kok* to initial position reinforces the speaker orientation of the surprise expressed by *kok* simply by being realised in this high leftward position. Given that imperatives require that the speaker believes the content of the imperative to be realisable (see Han 2019:233), the high position of *kok* is not compatible with the pragmatic requirements of imperatives. We leave for future research whether there are subtle differences in declaratives in the level or type of surprise indicated by high initial *kok* on the one hand and low-initial/medial *kok* on the other, which would require experimental research to determine. However, the fact that both initial and medial *kok* orient to the speaker may explain why, for some speakers, only final *kok* is available in imperatives (see (25)).

4.4. Final kok

The reader may have already intuited what we will propose for final *kok*; namely that the entire propositional content of the clause moves above (in Ross's 1973 terms, *slifts*) over *kok* in its first merge position:

- (50)a. [_{CoA} [_{PerspP} [_{InfoStrP} [_{CP} dhèwèké ora turu] [_{FP} [_F kok] [_{CP} dhèwèké ora turu]]]]]
 'S/he is not actually asleep.'
 b.



This proposal is motivated as follows. We have seen in section 3.4.1.3 that only final *kok* is permitted in the answer part of question-answer pairs. This is because the entire proposition must be focused in such cases. Moreover, movement of *kok* to PerspP is not motivated as the speaker must believe in the truth of the proposition they utter here (assuming that they are a reliable and cooperative conversationalist).

Moreover, based on the literature on slifting, we see that material that remains in situ is defocused and the speaker's epistemic commitment to the in situ material becomes weak (see Haddican et al 2014 on these effects on matrix clauses in English wh-slifting). This is mirrored by the subdued intonational movement observed in Section 3.4. Other scholars, too, have suggested that discourse particles that are linearised in final position work not to express speaker perspective, but rather to engage the addressee (Heim 2019), to "manipulate the addressee's consent" (Hill 2013: 11 on vocatives) and to 'bond' with the addressee (Haegeman 2014). In the case of *kok*, we have already seen how it does not express speaker surprise, but rather speakers use final *kok* to pre-empt and assuage expected surprise or disbelief on the part of the addressee – exactly in line with the kind of interpretation shift that the literature discussed above would predict. We therefore present final *kok* as another example of the same phenomenon, achieved by the process of slifting.

5. Conclusion and broader implications

Our main claim in this paper is that the ubiquitous Javanese discourse particle *kok*, despite appearing in a range of clausal positions and conveying some meaning of surprise, is in fact a unified position whose interpretation, position and compatibility with certain clause types arises as a result of its interaction with information-structurally driven movement by arguments or entire clauses. Moreover, we have supported this analysis with how *kok* interacts and is integrated with the syntax-prosody boundaries. We have demonstrated that the linearised position of *kok* and its associated interpretations patterns with other discourse particles or discourse-related phenomena as described in Indo-European and Sino-Tibetan languages. To account for this, we make use of recent proposals in 'speech act syntax', which represents the first application of speech act syntax to Austronesian languages that we are aware of.

With *kok*, we have added to the literature on prosody in Javanese, but recognise that more work is needed to understand the differences between different types of information structural movement to the left periphery. Additional avenues for future work include a formal semantic account of the lexical meaning of *kok*, and experimental work examining the prediction that high-initial *kok* may differ subtly in terms of the strength of speaker orientation compared with low-initial and medial *kok*. We furthermore call upon linguists to direct more formal attention to the rich array of discourse particles that are so integral to Javanese and its close relatives.

Acknowledgements

- To be added after peer review

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