

Abstract. Loma is a Mande language of West Africa spoken in Guinea and Liberia. The Mande languages are known for the typologically unique SOVX word order. Working within an Antisymmetric framework, we argue that underlyingly the Loma verb phrase is head-initial and that its surface OV word order is derived via leftward movement into a Case-licensing position. We show three contexts in which the verb’s theme or material associated with the theme occur in a post-verbal position, including stranded quantifiers, CP objects and CP modifiers of DP objects, as well as stranded coordinated DP objects. We further show that only DP direct objects occur in a pre-verbal position. This analysis contributes to the growing body of research arguing for a universal head-initial verb phrase and derived OV word order.

Keywords. Mande, Loma, word order, OV, antisymmetry, Case-licensing

1. Introduction Loma, a Mande language spoken in Guinea and Liberia, has canonical OV word order, as seen in (1).

- (1) Canonical Phrase
- | | | | |
|----------------|----------|----------|-----------|
| S | O | V | |
| zùnúlóngó-í-tí | {bòli-i} | wódí-à | {*bòli-i} |
| boy-DEF-PL | goat-DEF | sell-PFV | goat-DEF |
- ‘The boys sold the goat.’

This word order holds, regardless of negation, whether the phrase is a matrix or embedded, and across temporal-aspectual constructions.

- (2) a. Negation
- | | | | |
|----------------|-----|----------|--------------|
| S | | O | V |
| zùnúlóngó-í-tí | là | bòli-i | wódí-nì |
| boy-DEF-PL | NEG | goat-DEF | sell-PFV.NEG |
- ‘The boys did not sell the goats.’
- b. Embedded
- | | | | | |
|--------------|----------|--------------------|----------|----------|
| | S | | O | V |
| àzàlòpú-i-tì | mèni-gàà | [gá zùnúlóngó-í-tí | bòli-i | wódí-à] |
| girl-DEF-PL | hear-PFV | C boy-DEF-PL | goat-DEF | sell-PFV |
- ‘The girls heard that the boys sold the goat.’
- c. Prospective
- | | | | | |
|----------------|---------|-----------|----------|-----------|
| S | | | O | V |
| zùnúlóngó-í-tí | tá | và-zù | bòli-i | wódí-zù |
| boy-DEF-PL | 3PL.HAB | come-PROG | goat-DEF | sell-PROG |
- ‘The boys will (are going to) sell the goat.’

Following the analysis laid out for the Mande language Bambara (Koopman 1992), and more recently Mende (Smith 2022, 2024a) and Kono (Smith and Challay *To Appear*; Smith, Challay, and Jimissa *To Appear*), we argue that Loma’s surface OV word order is derived from

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an underlying head-initial verb phrase. We show three contexts in which material associated with the verb's theme occurs in a post-verbal position and argue that from this head-initial verb phrase, DP themes raise into a pre-verbal position. We propose that an Antisymmetric analysis (Kayne 1994) is able to account for all of these configurations and that the limitation on only DP themes occurring pre-verbally points to Case-driven movement.

The remainder of the paper is structured as follows. In Section 2 we briefly introduce the language and previous research on it. Section 3 lays out three contexts in which material associated with the verb's theme surfaces in a post-verbal position, and we demonstrate how these point to an antisymmetric analysis for the derivation of OV word order. Section 4 is a conclusion.

2. Language background The Mande languages are spoken throughout West Africa, ranging from Senegal to western Nigeria (Vydrin, Bergman, and Benjamin 2000), and are considered an early offshoot of the Niger-Congo family (Welmers 1971; Williamson and Blench 2000; Kastenholz 2003). Overviews of Mande languages include Welmers (1971) and more recently Vydrin (2018), who classifies Loma as a Central Southwest Mande language, closely related to Mende, Bandi, Loko, and Kpelle. He notes that there are two divergent dialects with different writing norms spoken in Macenta, Guinea (220,000 speakers), and Lofa County, Liberia (200,000 speakers). The research in this paper is based on the Loma spoken in Guinea, the lesser researched of the two dialects.¹

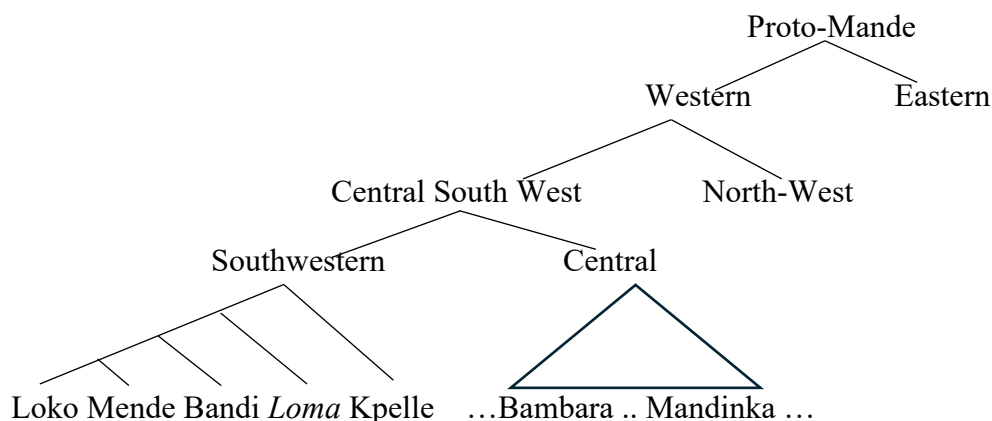


Figure 1 - Southwestern Mande Languages (adapted from Williamson and Blench 2000)

Research on the language include grammars and descriptive work by Sadler (1949), Prost (1967), Guilavougui (1976), Gangoura (1978), Dwyer (1981a), and Vydrin (1987). Dwyer (1981b) investigates tone in the language, while Weber (2024) considers consonant mutation. Research by Rude (1983) and Wilhoit (1999) investigates morphosyntactic questions. Notably, there is very little recent research on the morphosyntax of the language.

In proposing an Antisymmetric analysis for Loma, we hope to contribute to the growing body of research that argues for a universal head-initial verb phrase and derived OV word order. In addition to the Mande languages noted above, this type of analysis has also been developed for typologically diverse languages including the Gbe languages (Aboh 2003), Germanic languages (e.g. Dutch (Zwart 1997); German (Hinterhözl 2000); and West Flemish (Haegeman

¹The second author is a native Loma speaker from the Macenta region of Guinea.

2000, 2002)), and Farsi (Ahari 2025). Working within this framework, we assume that all XPs are head-initial and that movement is leftward (Kayne 1994). We also assume multiple functional phrases, according to the syntactic cartography approach (c.f. Rizzi, 1997, 2004; Cinque 1999, 2002, 2006; Belletti 2004).

3. Post-verbal thematic material In this section we show three contexts in which the theme or material related to the theme occurs in a post-verbal position. For each, we set out a proposed derivation.

We begin by looking at quantifier float, which is significant in showing the positions through which a DP has moved (Sportiche 1998; Fitzpatrick 2006). If a quantifier can be floated in position X, we can reasonably presume that the associated DP has moved through position X. The data in (3a) shows that the DP theme *boliiti* ‘the goats’ of the verb *wɔdi* ‘sell’ occurs in a pre-verbal position, while the quantifier *pɛ* ‘all’ can occur in either a pre- or post-verbal position. Interestingly, the third person plural pronoun *ti* obligatorily occurs with the quantifier in a post-verbal position, either above or below the temporal quantifier *wogi* ‘yesterday,’ further supporting our analysis that the plural DP has moved through these positions.² The data in (3b) shows that the DP cannot surface in a post-verbal position.

(3) Post-verbal Quantifier

- a. zùnúlóngó-í-tí bòlì-ì-tì {pɛ} wódí-à {tí pɛ} wogi {tí pɛ}
 boy-DEF-PL goat-DEF-PL all sell-PFV 3PL all yesterday 3PL all
 ‘The boys sold all of the goats yesterday.’
- b. *zùnúlóngó-í-tí wódí-à bòlì-ì-tì pɛ
 boy-DEF-PL sell-PFV goat-DEF-PL all
 ‘The boys sold all of the goats.’

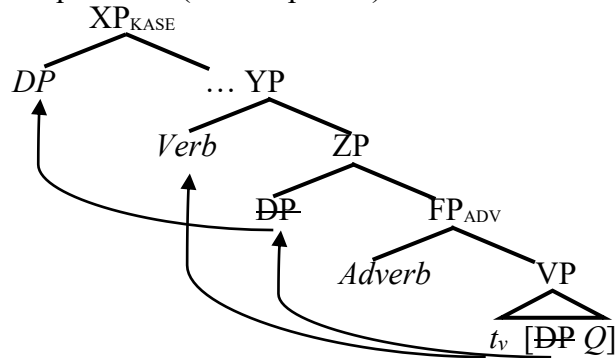
Based on the data in (3), we lay out the analysis in (4). Following Cinque (1999) we assume that the temporal adverb is in a fixed position above the verb phrase (labeled FP_{ADV}). As such, the presence of the quantifier and resumptive pronoun below (to the right of) the adverb suggests that the DP theme merged into a post-verbal position. Their optional occurrence between the verb and adverb suggests that they have raised out of the verb phrase into an intermediate post-verbal position, which we label as ZP. The quantifier can then either be stranded in the verb phrase (4a) or the intermediate position (4b), or it can be pied-piped with the DP into a pre-verbal position (4c). We label this position as XP_{KASE} (c.f. Smith (2024a) for a more detailed analysis of this type of construction in Mende).³ Implicit in this analysis is that the verb raises into a higher position, which we label as YP.⁴

² While it could conceivably be the case that the resumptive and quantifier have the meaning ‘all of them,’ as in ‘the boys sold the goats yesterday, all of them’, we rule this analysis out, as the same S – O – V – Q structure occurs in Mende and Loko but the resumptive does not occur in those constructions.

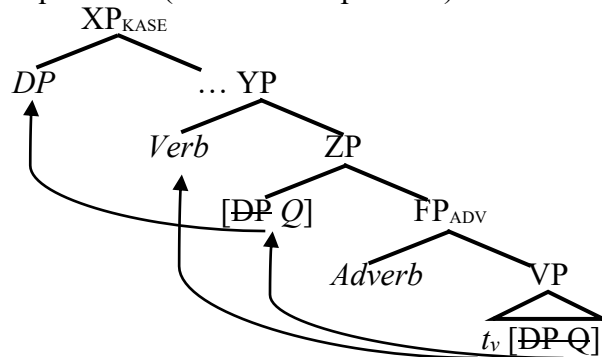
³ Mende languages do not overtly manifest case marking. Li (2022) notes that in languages without case marking, noun phrases subject to the Case filter occur in a specific position in relation to their case assigner. This type of analysis seems to fit well with the prohibition on any constituents intervening between the DP object and verb in Southwest Mende.

⁴ We do not make any claim in this paper as to the position into which the verb raises, apart from noting that it raises outside of the verb phrase. Further research is necessary to determine the position into which it raises. However, see Smith (2024a) for an argument on verb raising in Mende.

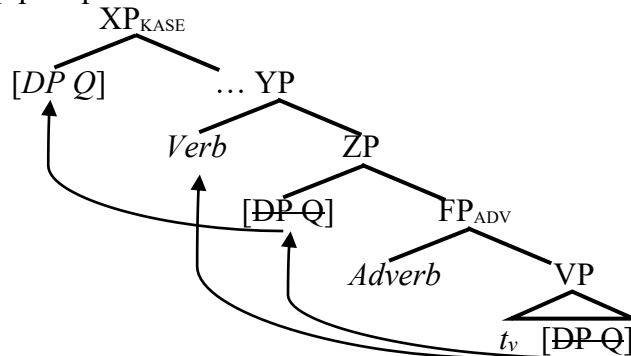
- (4) Quantifier Floating
 a. Stranded quantifier (in verb phrase)



- b. Stranded quantifier (intermediate position)



- c. Pied-piped quantifier



This analysis accounts for the three positions in which the quantifier can surface – below the temporal adverb, above the adverb, or immediately following the DP theme.

The second context in which we find a post-verbal direct object (or related material) is a CP object or CP modifier of a DP object. The data in (5) shows that the verb *meni* ‘hear’ takes its DP object *zɛɛiti* ‘the lies’ in a pre-verbal position. (6a) shows that the CP object *ga zunulongoiti bolii wɔdiya* ‘that the boys sold the goat’ must occur after the verb *meni*, while (6b) shows that it is ungrammatical for the CP object to surface in a pre-verbal position.

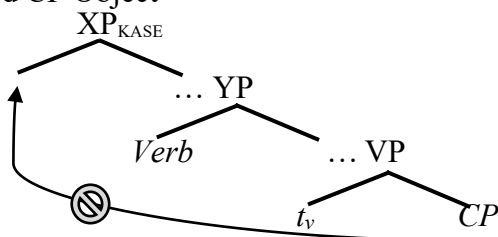
- (5) DP Object
 àzàlòpú-ì-tí { *mèni-gàà } zɛ̀ɛ̀-ì-tí { mèni-gàà }
 girl-DEF-PL hear-PFV lie-DEF-PL hear-PFV
 ‘The girls heard the lies.’

(6) CP Object

- a. àzàlòpú-ì-tì mènì-gàà [gá zùnúlóngó-ì-tí bòlì-ì wódí-à]
 girl-DEF-PL hear-PFV C boy-DEF-PL goat-DEF sell-PFV
 ‘The girls heard that the boys sold the goat.’
- b. *àzàlòpú-ì-tì [gá zùnúlóngó-ì-tí bòlì-ì wódí-yà] mènì-gàà
 girl-DEF-PL C boy-DEF-PL goat-DEF sell-PFV hear-PFV
 ‘The girls heard that the boys sold the goat.’

Our proposal for a head-initial verb phrase accommodates a post-verbal CP object (7), and we suggest that the distinction between DP and CP objects is driven by Case-licensing. If the DP object raises for Case, we would expect the CP object to remain post-verbal, as according to Stowell’s (1981) Case Resistance Principle, CPs do not raise into a Case-licensing position.

(7) Stranded CP Object



Further evidence for a derived OV word order can be found in CP modifiers of DP objects. Based on the data in (5) and (6), we would expect DP themes to occur in a pre-verbal position, while their CP modifier occur in a post-verbal position. This is, in fact, what we find with both noun clause complements (NCC) and relative clause (RC) modifiers of DP objects.

Consider first the NCC in (8), in which the complement of the verb *meni* ‘hear’ is *zèèti ga zunulongoiti boli wodiya* ‘the lies that the boys sold the goat.’ The data in (8a) shows that the DP object precedes the verb, while its CP modifier remains stranded in a post-verbal position. This is confirmed in (8b) in which the [DP+CP] can neither precede nor follow the verb as a constituent, as they must be split.⁵

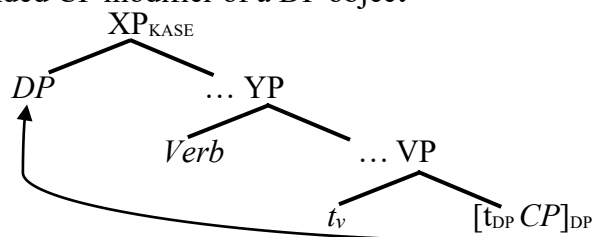
(8) Noun Clause Complement (NCC = CP modifier of DP)

- a. àzàlòpú-ì-tì zèè-ì-tí mènì-gàà [gá zùnúlóngó-ì-tí bòlì-ì wódí-à]
 girl-DEF-PL lie-DEF-PL hear-PFV C boy-DEF-PL goat-DEF sell-PFV
 ‘The girls heard the lies that the boys sold the goat.’
- b. *àzàlòpú-ì-tì {mènì-gàà} zèè-ì-tí
 girl-DEF-PL hear-PFV lie-DEF-PL
 [gá zùnúlóngó-ì-tí bòlì-ì wódí-à] {mènì-gàà}
 C boy-DEF-PL goat-DEF sell-PFV hear-PFV
 ‘The girls heard the lies that the boys sold the goat.’

As in our previous examples, this suggests that the DP raises out of the verb phrase into a Case-licensing position, stranding the CP in a post-verbal position (9).

⁵ We leave a detailed analysis of the DP+CP structure for future research.

(9) Stranded CP modifier of a DP object



We find a similar pattern with a relative clause modifier of a DP object. (10a) is a canonical Loma transitive clause, with the DP object *boliiti* ‘the goats’ preceding the verb *gã* ‘see.’ When the object heads a relative clause, only the DP raises into a pre-verbal position, while the RC modifier remains stranded in a post-verbal position (10b). The data in (10c) confirms that it is ungrammatical for the RC to surface in a pre-verbal position.

(10) RC Modifier of DP Object

- a. àzàlòpú-í-tì bòli-í-tì gã-à
 girl-DEF-PL goat-DEF-PL see-PFV
 ‘The girls saw the goats.’
- b. àzàlòpú-í-tì bòli-í-tì_i gã-à [zùnúlóngó-í-tì tí_i wódí-à]
 girl-DEF-PL goat-DEF-PL see-PFV boy-DEF-PL 3PL sell-PFV
 ‘The girls saw the goats the boys sold.’
- c. *àzàlòpú-í-tì bòli-í-tì_i [zùnúlóngó-í-tì tí_i wódí-à] gã-à
 girl-DEF-PL goat-DEF-PL boy-DEF-PL 3PL sell-PFV see-PFV
 ‘The girls saw the goats the boys sold.’

These data in (8) and (10), in which only the DP object can occur pre-verbally can be accounted for by positing a head-initial verb phrase from which the DP object raises for Case (c.f. Koopman (1992) for Bambara) while the CP object remain stranded (c.f. Stowell 1981). A head-final verb phrase would require the CP to move to the right, contra Stowell’s argument for CP movement and Kayne’s arguments for head-final XPs and rightward movement.

The final construction we consider in this paper concerns coordinated direct objects, in which we can optionally find a portion of the theme in a post-verbal position. This configuration is found in multiple other Mande languages including Mende (Smith 2024a), Kono (Smith and Challay *To Appear*; Smith, Challay, and Jimissa *To Appear*), and Susu (Smith, Sacko, Camara, and Bah *Under Review*).

We lay out the paradigm in (11) and (12) with the coordinated direct object *boliiti ta nikaiti* ‘the goats and the cows.’ In (11a) we see that the entire coordinated DP object can surface in a pre-verbal position, while (11b-c) show that the coordinator and second conjunct can also surface in a post-verbal position, either above or below the temporal adverb *wogi* ‘yesterday.’

(11) Coordinated Direct Objects

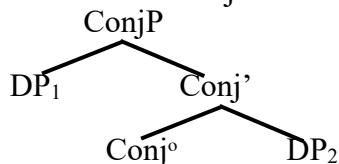
- a. zùnúlóngó-í-tí bòli-í-tì {tá níká-í-tì} wódí-à
 boy-DEF-PL goat-DEF-PL and cow-DEF-PL sell-PFV
 ‘The boys sold the goats and cows.’
- b. zùnúlóngó-í-tí bòli-í-tì wódí-à wogi tá níká-í-tì
 boy-DEF-PL goat-DEF-PL sell-PFV yesterday and cow-DEF-PL
 ‘The boys sold the goats and cows yesterday.’
- c. zùnúlóngó-í-tí bòli-í-tì wódí-à tá níká-í-tì wogi
 boy-DEF-PL goat-DEF-PL sell-PFV and cow-DEF-PL yesterday
 ‘The boys sold the goats and cows yesterday.’

(12a) shows that the first conjunct cannot occur to the right of the verb with the coordinator and second conjunct to its left, while (12b) indicates that the first conjunct and the coordinator cannot occur to the verb's left with the second conjunct to its right. In short, the coordinator and second conjunct must occur together. (12c) rules out the entire coordinated phrase occurring to the right of the verb.

- (12) a. *zùnúlóngó-í-tí tá níká-i-tì wódí-à {bòli-i-tì}
 boy-DEF-PL and cow-DEF-PL sell-PFV goat-DEF-PL
 'The boys sold the goats and cows.'
 b. *zùnúlóngó-í-tí bòli-i-tì tá wódí-à níká-i-tì
 boy-DEF-PL goat-DEF-PL and sell-PFV cow-DEF-PL
 'The boys sold the goats and cows.'
 c. *zùnúlóngó-í-tí wódí-à bòli-i-tì tá níká-i-tì
 boy-DEF-PL sell-PFV goat-DEF-PL and cow-DEF-PL
 'The boys sold the goats and cows.'

Analytically, we argue that the coordinated phrase is a ConjP, with the Conj^o *ta* 'and' with DP₁ in its specifier and DP₂ as its complement (Kayne 1994), as shown in (13).

(13) Coordinated Direct Object

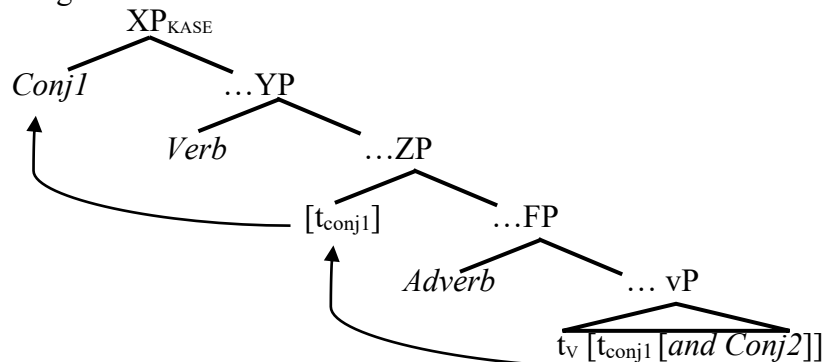


Crucially, this structure is compatible with the (un)grammaticality of each of the phrases in (11) and (12). In (11), DP₁ *boliiti* 'the goats' can raise from a specifier position into a higher Case-licensing position, either stranding or pied-piping with it the Conj^o and DP₂. The examples in (12) are also compatible under this structure but would require rightward movement, which we ruled out in the previous discussion of CP modifiers of DP objects.

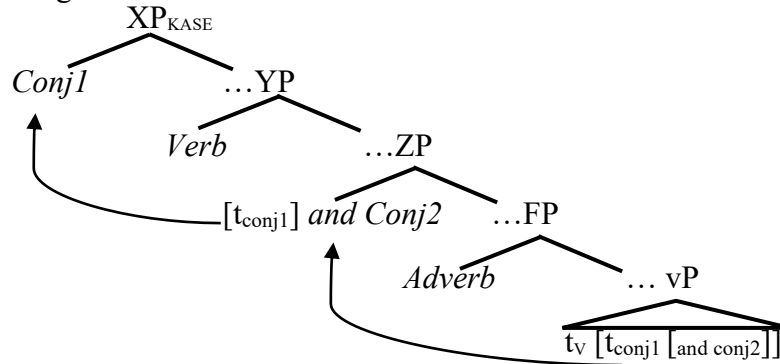
We show in (14) what these movements might look like under our analysis. (14a) exemplifies the coordinator and second conjunct stranded in the verb phrase. In this construction the coordinated direct object merges in a post-verbal position. From this position, the first conjunct can raise into an intermediate position (SpecZP), before raising into its surface position, which we argue is SpecXP_{KASE}, above the surface position of the verb. In both (14b) and (14c), the entire ConjP raises into the intermediate position SpecZP. In (14b) the first conjunct raises by itself into SpecXP_{KASE}, stranding the remainder of the phrase, while in (14c), it pied-pipes the rest of the phrase with it. This accounts for the three grammatical constructions in (11).

(14) Coordinated DP Object Stranding

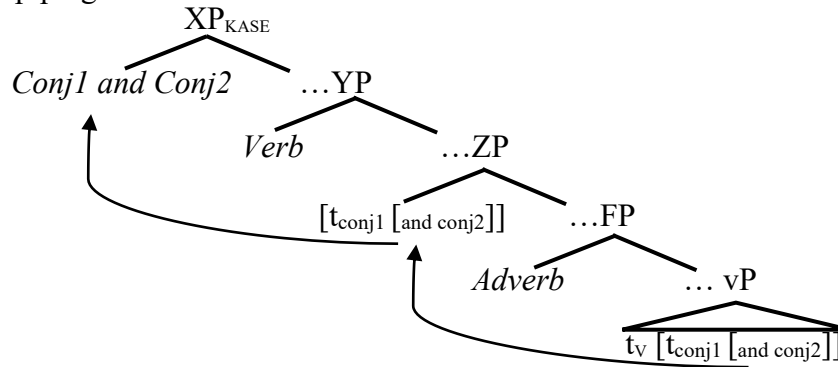
a. Stranding in VP



b. Stranding in Intermediate Position



c. Pied-piping



This analysis raises two important questions. First, it would seem that DP_1 in moving out of a coordinated structure, is violating the Coordinate Structure Constraint (Ross 1967). Second, we need to account for how DP_2 is Case-licensed. We offer a potential solution by turning our attention to the coordinator *ta*.

Kayne (1994: 64ff) in his discussion of coordination using ‘with’ and ‘and,’ notes that the first conjunct in *x and y* coordination can be Case-licensed when the whole phrase is Case-licensed. Under our analysis, that would require the entire phrase to occur in a pre-verbal position, but, as we have seen, coordinated DP object configurations can be grammatical when the coordinator and second conjunct are stranded. He notes that in *x with y* coordination that *y* is case-licensed by the preposition, necessitating that the first conjunct move into a case-licensing position.

Following Wilhoit (1999), we propose that in Loma *ta* can function as both ‘and’ and ‘with.’ In her discussion of the postposition *zɔŋɔzu* ‘between,’ she suggests that *ta* can be understood as the preposition ‘with’ based on the extractability of the coordinator and second conjunct in (15).⁶

- (15) Adapted from Wilhoit (1999: 30-31)
 koko-i {ta boŋa-i} zɔŋɔzu {ta boŋa-i}
 bowl-DEF and knife-DEF between and knife-DEF
 ‘between the bowl and the knife’

Under our analysis the coordinator and second conjunct are not a constituent and rightward movement is blocked. Instead, we propose the following. In (15) *ta* is coordinating two items in

⁶ Wilhoit (1999: 37-39) argues for rightward movement of the prepositional phrase *ta boŋa-i* ‘and the knife,’ adjoining to a postpositional phrase headed by *zɔŋɔzu* ‘between,’ creating a new postpositional phrase. Tone is not marked in the original.

a locative construction, with the preposition *zɔgɔzu* indicating the space ‘between’ them. In this construction, *ta* is most straightforwardly translated as ‘and.’

The meaning of *ta* in (16) seems to permit either an ‘and’ reading or a ‘with’ reading (we gloss with COORD to encode this ambiguity). While in (11) two DP objects are coordinated, in (16) we have coordinated DP subjects.

(16) Comitative

- a. Músá tà màsàgì-ì tí bálé-à
 Musa COORD chief-DEF 3PL work-PFV
 ‘Musa worked with the chief.’
 ‘Musa and the chief worked.’
- b. Músá bálé-à tà màsàgì-ì
 Musa work-PFV COORD chief-DEF
 ‘Musa worked with the chief.’
 ‘Musa and the chief worked.’

This suggests that in the stranding configuration the first conjunct moves into a Case-licensing position, while the second is case licensed by *ta* ‘with.’ Under this analysis movement of the first conjunct into a Case-licensing position would not be a CSC violation.

There is a basis for positing as that *ta* can function like a preposition. Though the Mande languages are primarily postpositional (Vydrin 2018), there are a small number of prepositions that are used, including *ga* in Lɔma, which among other functions introduces instrumental objects.

(17) Instrumental

- Músá bálé-à gá bòwà-ì
 Musa work-PFV COORD knife-DEF
 ‘Musa worked with the knife.’

Further research is necessary to develop this line of thought, but, for now, we simply indicate this as a potential analysis.

5. Conclusion In this paper we have argued that Lɔma’s surface OV word order is derived from an underlying head-initial verb phrase. We have shown three environments in which all or portion of the verb’s theme occurs in a post-verbal position: stranded quantifiers, CP objects, and stranded coordinated DP objects. Together, these suggest an underlying head-initial verb phrase, adding to the number of languages for which an Antisymmetric analysis has been developed.

We have argued that the DP object raises into a pre-verbal Case-licensing position, supporting the analysis first set out for Bambara in Koopman (1992) and further developed for Mende (Smith 2022, 2024a), Kono (Smith and Challay To Appear; Smith, Challay, and Jimissa To Appear), and Susu (Smith, Sacko, Camara, and Bah *Under Review*). We believe that this analysis will prove fruitful in analyses of the other Southwest Mande languages Kpelle, Bandi, and Loko.

More broadly, there is much to investigate in Lɔma and the other Southwest Mande languages, including a more fine-grained analysis of the structure of the Lɔma clause, as well as the structure of relative clauses and coordinate structures.

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