1. Introduction

- In English, the high position of complementizers in the subordinate/embedded clause corresponds to their initial position in linear order

(1) [CP1 The meteorologist predicts [CP2 that it will be sunny all weekend]]
(2) [CP1 The dog [CP2 that chased the ducks in the park] wagged its tail]

- The Linear Correspondence Axiom (LCA; Kayne, 1994) captures the relation between underlying hierarchical structure and linear order

(3) Linear Correspondence Axiom (simplified)
   If A asymmetrically c-commands B, A will precede B in the linear surface string.

- Some head-initial languages have final complementizers, indicating that, according to the LCA, the TP should asymmetrically c-command C

(4) Taiwanese (Simpson & Wu, 2002:68)
   A-hui liau-chun A-sin si tai-pak lang kong
   Ahui think Asin is Taipei person C
   ‘Ahui thought that Asin is from Taipei.’

- Some languages have two complementizers in the same clause, raising questions about the status and linearization of the C-like elements

(5) Medumba¹
   á bhóó ndà númerí 3úù 3ú lá
   3SG be.good C Numí eat thing C
   ‘It is good that Numí ate something.’

¹ I thank Hermann Keupdjio for judgments of the Medumba data. Part of the data was elicited during the Winter 2017/18 Field Methods course at UBC Vancouver, Canada, supervised by Rose-Marie Déchaïne, and presented at ACAL 49 (cf. Gatchalian, Lee & Tyrchan, 2018)
According to Kayne (1994), head-finality is derived from underlying Spec-Head-Complement order via movement of the complement.

Rules out right-adjunction approaches to final complementizers: drawing a tree to the right does not change c-command relations.

Final complementizers in head-initial languages also potentially challenge FOFC.

(7) The Final-over-Final Condition (Biberauer, Holmberg & Roberts, 2014:171)
A head-final phrase αP cannot dominate a head-initial phrase βP, where α and β are heads in the same extended projection.

Roadmap:
- Problem A: Linearizing final or multiple complementizers
  - The Medumba C-system and final particles
  - Linearization of final or multiple complementizers in other languages
  - Which approach accounts best for the Medumba data?
- Problem B: Do final complementizers of the Medumba kind violate FOFC?
- Conclusion and Further Questions

2. The final complementizer in Medumba

- Medumba is an SVO Grassfields Bantu language spoken in Western Cameroon
- Tone language: distinguishes two level (H, L) and two contour tones, rising (LH) and falling (HL); tone can also be grammatical (often floating H tone)
- Four clause-initial Cs: mbù (C.L), mbùù (C.LH), mbùù (C.HL), and ndà
  - mbùù (C.HL) and ndà obligatorily co-occur with clause-final C (lá)
- Relative clauses also require clause-final lá (8e)

(8) a. mù lèn mbù nzi kʰùʔù tʃʰɛɛt ndʒè nùmí (*lá)
   1SG know C.L envy taro PRES hurt Numi (*C)
   Lit. I know that the envy of taro hurts Numi
   ‘I know that Numi is hungry’

b. nùmí ↓ tʃùp mbùù bù bʰùm-↓ ndà (*lá)
   Numi say C.LH 3PL meet-RECIP (*C)
   ‘Numi said that they should meet.’
c. mù lèn mbúù nži kʰúʔú tʃʰɛɛt ndʒɛ nùmí *(↓lá)
1SG know C.HL envy taro PRES hurt Numí *(C)
Lit. I know if the envy of taro hurts Numi.
‘I know whether Numi is hungry or not’
d. á bʰòó ndà nùmí zùù zù *↓lá)
3SG be.good C Numí eat thing *(C)
‘It is good that Numi ate something.’
e. mbʰú zò nùmí zwünk *↓lá) bàbò
dog REL Numí buy *(C) bark
‘The dog that Numi bought barked’

- the initial Cs can be omitted, but clause-final lá must remain overt
  - when C.LH (mbúù) is omitted, the H tone persists (9a-a’), indicating that it is a floating grammatical tone introducing deontic modality
  - in contrast, the polarity reading of C.HL (8c) cannot not be recovered when mbúù is omitted (9b), and the polarity H tone cannot be added elsewhere in the structure (9b’)

9) a. á bhò mbúù nùmí tʃüp nú↓nùnò
3.SG be.good C.LH Numí say truth
lit. It is good that Numi says the truth.
‘Numi should say the truth.’
a’. á bhòó nùmí tʃüp nú↓nùnò
3.SG be.good.H Numí say truth
lit. It is good that Numi says the truth.
‘Numi should say the truth.’
b. mù lèn nži kʰúʔú tʃʰɛɛt ndʒɛ nùmí ↓lá
1SG know envy taro PRES hurt Numí C
Lit. I know the envy of taro hurts Numi (I have not forgotten).
‘I know that Numi is hungry.’
b’. *mù leën nži kʰúʔú tʃʰɛɛt ndʒɛ nùmí ↓lá
1SG know.H envy taro PRES hurt Numí C
Intended: ‘I know whether Numi is hungry or not.’

- Clause-final lá can also be found in sentences with ex-situ focus

10) a. á nùgə wàtɛt nɔʔʔ n-swɛɛn lá (ex-situ focus)
FOC Nuga Watat AGR.AUX N-AGR.sell LA
‘NUGA Watat betrayed’
b. wàtɛt nɔʔ swɛɛn á nùgə *lá (in-situ focus)
Watat AUX sell FOC Nuga
‘Watat betrayed NUGA’
• Does not indicate that lá can be found outside subordinate clauses, as underlying cleft structure shows

(11) à bú á tʃɔŋŋ zɔ mú tjɛ̀ɛt m-fàà wù lá
  it BE FOC food.H REL 1.SG.SBJ PRES N-give 2.SG.OBJ C
  ‘It is the food that I give you’

• Medumba also has final and bipartite Q-particles, indicating unbiased yes/no-questions (kì), negatively biased questions (áá), positively biased questions (kù...á; kùlà...á; ...; kùlà ...; ...kù) (Keupdjio & Wiltschko, 2015, 2016), and wh-questions (a, copies tone from preceding syllable (Danis, Barnes & O’Connor, 2012))

(12) a. ú yûù ↓mbhù kí [Keupdjio & Wiltschko 2016:1]
  2SG have dog Q
  ‘Do you have a dog?’ (unbiased question)
b. ú yûù ↓mbhù áá
  2SG have dog Q
  ‘Do you have a dog?’ (negatively biased question)
c. ú yûù ↓mbhù kù
  2SG have dog Q
  ‘Do you have a dog?’ (positively biased question)
d. ú yûù ↓mbhù á
  2SG have dog Q
  ‘Do you have a dog?’ (positively biased question)
e. kù ú yûù ↓mbhù á
  Q 2SG have dog Q
  ‘Do you have a dog?’ (positively biased question)
f. kùlà ú yûù ↓mbhù á
  Q 2SG have dog Q
  ‘Do you have a dog?’ (positively biased question)
g. kùlà ú yûù ↓mbhù
  Q 2SG have dog
  ‘Do you have a dog?’ (positively biased question)
h. á wù wàtɛ́ɛt nòs? nɔ́ɛ́ɛn á [Keupdjio 2020:1]
  FOC who Watat AUX sell Q
  ‘Who did Watat betray?’
• Complementizer *lā* and the Q-particles seem to be two different types of elements:
  o *lā* only in subordination context and clause-final position (cf. relative clause in 8e)
  o Q-particles combine with simple clauses (12), have matrix scope (13a) and combine with clause-initial Cs that *lā* never co-occurs with (13b)

(13) a. ú lèn mbúū nùmí yùù ↓mbhù lā á
   2SG know C.HL Numi have dog C Q
   ‘Do you know whether Numi has a dog?’

b. ú kwèdò mbù nzi kúʔu tʃwɛt’t ndʒɛt nùmí kí
   2.SG think C.L envy taro PRES N-hurt Numi Q
   lit. Do you think that the envy of taro hurts Numi?
   ‘Do you think that Numi is hungry?’

• Keupdjio & Wiltschko locate the Q-particles in the sentence-peripheral speech-act domain, associated with speaker-hearer interaction (Resp(onse)P) and speaker attitude (GroundP)

(14)

• C.L (*mbù*) can embed clauses with Q-particle(s), C.HL (*mbúū*) can only co-occur with them if they are sentence-peripheral

(15) a. mú bëttò mbù kùlà ú yùù ↓mbhù á [K&W 2016]
   1SG ask C.L Prt 2SG have dog Q
   ‘I ask: Do you have a dog?’

b. kùlà mú bëttò mbù ú yùù ↓mbhù á
   Q 1SG ask C.L 2SG have dog Q
   ‘Did I ask whether you have a dog?’

c. *mú bëttò mbúū kùlà ú yùù ↓mbhù á
   1SG ask C.HL Q 2SG have dog Q
   Lit: ‘I ask whether do you have a dog’

d. kùlà mú bëttò mbúū ú yùù ↓mbhù á
   Q 1SG ask C.HL 2SG have dog Q
   ‘Did I ask whether you have a dog’
these facts suggest a division of the clause-initial complementizers into two groups:
  o C.L (mbù) and C.LH (mbùù), which select a root CP incl. its own SA structure
  o C.HL (mbùù) and ndà, which introduce subordinate clauses and select a TP

(16) a. \[\text{SA-structureP} \ [\text{CP}1 \ldots V \ [\text{mbù}/\text{mbùù} \ [\text{SA-structureP} \ [\text{CProot} \ldots]]]]\]
b. \[\text{SA-structureP} \ [\text{CP}1 \ldots V \ [\text{CPhon-root} \ [C^° \text{mbùù}/\text{ndà} \ [\text{TP} \ldots \text{lá}]])]\]

As predicted by (16a), sentences with a clause introduced by C.L (mbù) can accommodate two questions

(17) \[\text{kùlá} \ [\text{mü bëttó} \ [\text{mbù} \ [\text{kùlá} \ [\text{ýùù} \ [\text{mbù} \ [\text{lá}] \ [\text{rá}]\]}}}\]
Q 1SG ask C.L Q 2SG have dog Q Q
‘Did I ask: Do you have a dog?’

Complementizer lá is homophonous with the copula, and the near-listener demonstrative, which is a common pattern across languages (for the latter case, compare e.g. English that)

(18) a. \[\text{nzì kùzù lá nùùm nùmí} \]
envy taro COP.BE PREP Numi
lit. The envy of taro is on Numi
‘Numi wants to eat’
b. \[\text{mü lën mbúù á lègegbò [bùñwàní lá] lá} \]
1SG know C.HL 3SG forget book DEM C
‘I know if he forgot that book’

láDEM and lác behave similarly: CP and DP are delineated by two elements, the initial one can be omitted, the final one (lá) must be overt
  o Kouankem (2013) proposes a DP-peripheral position for lán DEM, as it is the only element in the DP that does not agree with N

(19) \[\text{[y-ùn tùntsò ] lá } ] \]
AGR-D calabash there
‘that calabash’
3. How to make complementizers clause-final

3.1 Linearization of final or multiple complementizers in other languages

- Taiwanese *kong* must be C°, and TP raises to Spec,CP after Spell-Out for two reasons (Simpson & Wu, 2002):
  - V+V (e.g. think say) was grammaticalized to V+C (e.g. think that), as observed in numerous other languages (e.g. Thai, Ewe, some other varieties of Chinese)
  - Tone sandhi (•) does not apply to final elements, but it applies to *kong* → apply phonological rules when C-TP is spelled-out, only then move TP

(20) a. A•-hui siong• kong• A•-sin m• lai
    A-hui think say/C A-sin NEG come
    ‘A-hui thought that A-sin was not coming.’

   b. A•-hui siong• A•-sin m• lai kong•
      A-hui think A-sin NEG come C
      ‘A-hui thought that A-sin was not coming.’

- Less straightforward when there are multiple C-elements, as e.g. known from complementizer doubling and doubly-filled Cs

(21) a. Ligurian (Paoli, 2007:1058)

    A Teeja a credda che a Maria ch’ a parta
    the Teresa SCL believe.3SG that the Mary that SCL leave.3SG
    ‘Teresa believes that Mary is leaving.’

   b. Colloquial Dutch (Barbiers, 2008:15)
    Weet jij of dat Jan komt
    know you if that Jan comes
    ‘Do you know whether Jan will come?’

   c. Tyrolian (Alber, 2008:142)
    I kenn es Haus des vos du glapsch des vos
    I know the house REL C.REL you think REL C.REL
    die Maria gekaaf hot
    the Maria bought have
    ‘I know the house, which you think Maria bought.’

- Paoli (2007), Munaro (2016), and others take the complementizers in examples like (20a) as Force° and Fin° in a Split-CP (Rizzi, 1997), the DP moves to TopP or FocP

(22) [ForceP [Force° che […] [FinP [Fin° ch’a …]]]

- The complementizers in the Dutch example (21b) have different properties, Bayer (2004) analyses them as a disjunctive and a subordinating C
Franco (2012) argues that there is an abstract head $\lambda$ with nominal features above C, which can accommodate a second complementizer/relative pronoun:
o nominal elements like demonstratives grammaticalized as clausal linkers, marking clause boundary

The Split-CP analysis was also applied to Cantonese (Law, 2002) and Mandarin Chinese (Paul, 2014), which can have multiple sentence-final particles (SFPs):
o each SFP has distinct properties and is located in a different head
o both proposals require a differently labelled projection in the CP (SFP2, C(low)) that does not equal TopP/FocP/FinP
o Paul (2014) additionally locates one of the SFPs in AttitudeP, which dominates ForceP

Cantonese (Law, 2002:382)

a. nei heoi zo Baalei zaa3 me1 you go ASP Paris SFP2 SFP1
Did you only go to Paris?’

b. Cantonese Split-CP (Law, 2002:379)
[Force(SFP1) [TopP [SFP2 [FocP [TopP [TP]]]]]]

Mandarin Chinese (Paul, 2014:93)

a. Tā dào nár qù le ne (*le)
3SG to where go Clow FORCE (*Clow)
‘So whom have you asked?’

b. kuài zǒu b’ou [=ba + ou] /*ou ba
c. fast go PART (fusion) FORCE+ATT /*ATT FORCE
‘Hurry up and go!’

Mandarin Chinese Split-CP (Paul, 2014:94)
Attitude > Force > C_low > TP
• Erlewine (2017) agrees that one type of Chinese SFPs should occupy Attitude, but takes the lowest one to be the head of the lower phase

(27) Chinese SFP structure according to Erlewine (2017)

```
                        AttitudeP
                         
                        CP
                         
                        Attitude
                         
                        SFP3
                         
                        CP
                         
                        TP
                         
                        Spec,TP
                         
                        T
                         
                        T'
                         
                        SFP1P
                         
                        SFP2
                         
                        SFP1
                         
                        vP
```

• Erlewine (following Hsieh & Sybesma, 2011) derives the SFPs’ final position from their status as phase heads as follows:
  o a spelled-out phase remains as an atom in the structure, and according to Max Spell-Out (Hsieh & Sybesma, 2011:69), this includes the phase edge
  o the atom and the head merged next are symmetric, as the inner structure of the spelled-out phase is neither visible nor accessible anymore
  o the atomic SFPP moves to break symmetry (Dynamic Antisymmetry, Moro, 2000)
  o In Hsieh & Sybesma’s original analysis, the SFPs are all C°s in different CPs

(28) Symmetry-Breaking and CP+CP structure (following Hsieh & Sybesma, 2011:13)

```
            CP1
             
            x
             
            CP1
             
            C1
             
            t_x
             
            (CP2)
```

• Hsieh & Sybesma’s proposal for motivating movement of the complement does not hold without Max Spell-Out, as C1 and C2 would already be asymmetric (29), and cannot be applied to SFPs that are not phase heads
3.2 Towards an analysis of Medumba clause-final lá

- Can the Split-CP analysis account for the Medumba subordinate clause?
  - (10) and (11) showed that Medumba does not move focused phrases to FocP
  - Material between initial and final C has neither focus nor topic character like e.g. the DP between the doubled complementizers in Italo-Romance
  - Unclear which of the two Cs would correspond to lower projection, but neither seem to be associated with finiteness → extra projection as assumed by Law (2002) or Paul (2014)?
  - Analysis does not explain why lá is obligatory while the intial Cs can be omitted
• CP+CP (roughly in Hsieh & Sybesma’s sense) can solve some of these problems
  o lá would be treated as the subordinating complementizer, selecting CP headed by mbùù/ndà → explains why lá is obligatory in subordinate clauses

(31)

(32) a. \([_{\text{CP1}} \ldots \text{PAV} \ [_{\text{mbùùP}} \ [_{\text{mbùùP}} \ [_{\text{CProot \ldots}}] \]]]$$
   b. \([_{\text{CP1}} \ldots \text{PAV} \ [_{\text{láP}} \ [_{\text{láP}} \ [_{\text{CPnon-root \ldots}} \ [_{\text{mbùùP}} \ [_{\text{mbùùP}} \ [_{\text{CP3 \ldots}}] \]]] \]]$$

  o but: does not explain why lá requires a filled specifier and mbùù does not,
  o and CP+CP terminology should be refined, as higher CP is probably not a CP (no evidence for covert/elided material between lá and CP, and category should not be repeated)
  o instead of labelling the phrase that accommodates lá and mbùù as another CP, it is more likely that they are of a different category, such as conjunctions, similar to the multiple Cs in Dutch (21b), or clausal linkers in Franco’s (2012) sense (although mbùù does not seem to have a nominal origin)

• What about the homophony of láDEM and lác?
  o Not uncommon for complementizers to be multifunctional, e.g. Vietnamese la can either be copula or subordinating conjunction; takes on the function of the position that it occupies (Duffield, 2013)

(33) Vietnamese (Duffield, 2013:15)

Tôi không thể nói lá tôi là người tốt hơn tốt nhất
I NEG can say C I COP person good C good SUP
‘I can’t say that I’m the better person, or the best person.’
The positions that Medumba lá_{DEM} and lá_{C} occupy might thus have some abstract property in common, that allows multifunctional/underspecified lá to occur in either position.

4. Final Complementizers and FOFC

- Final complementizers in otherwise head-initial languages such as Medumba or Chinese possibly challenge FOFC
- In order to evaluate how exactly Medumba and Chinese do or do not violate FOFC, a more refined definition is necessary (34):
  - FOFC applies in domains with the same specification of [±V]
  - Head-final orders are derived from Spec-Head-Complement order (Kayne, 1994), if the movement-triggering diacritic ^ (caret) is passed on with [±V]

(34) The Final-over-Final Condition (Biberauer, Holmberg & Roberts, 2014:210)
If a head α_i in the extended projection EP of a lexical head L, EP(L), has ^ associated with its [±V]-feature, then so does α_{i+1}, where α_{i+1} is c-selected by α_i in EP(L).

Why are final Cs dominating a head-initial TP allowed?
- Option 1: the head-final phrase is in a different domain than the head-initial phrase
  - Erlewine (2017) argues that FOFC domains should equal Spell-Out domains: if the spelled-out phase is inaccessible and the inner structure invisible, information about directionality should not be accessible either
    - but: not all SFPs are phase heads, and phase head is part of same extended projection as its complement and should thus inherit [±V] and possibly ^
  - Franco’s (2012) abstract head λ has nominal features, other than the CP that it selects
    - essentially creates a separate FOFC domain, as λP should be specified as [-V] and CP is [+V]
    - a new domain should also allow the introduction of the ^
- Option 2: the final element is acategorial and thus not subject to FOFC (cf. Biberauer, Newton & Sheehan 2009; Biberauer, Holmberg & Roberts 2014; Biberauer 2017)
  - Seems to apply to Medumba lá: can be used in nominal and verbal domain, so it cannot be specified for either category
    - but: should inherit [+V] and no roll-up movement triggering ^, leaves question how head-final order is derived
  - Paul & Pan (2017) argue against this: Chinese SFPs must have categorial feature to derive their specific distribution

- What about SFPs in Attitude/SA-structure?
  - Is it really an extension of the verbal domain?
  - Elements in it neither seem to have verbal nor nominal properties
5. Conclusion

- SFPs can be found in the same kinds of positions across languages: Attitude/SA-Domain, Force\(^{\circ}/C^{\circ}\), somewhere below Force\(^{\circ}/C^{\circ}\) (analysis-dependent)
- Depending on the kind of SFP/doubled element a language has, either a Split-CP analysis (Romance, Chinese) or the ‘stacking’ approach (Germanic, Medumba) is preferable
  - Is it meaningful how the languages group together here?
- Final complementizers and SFPs across languages seem to have in common that
  - they usually are in a high position, dominating the material that they later follow in linear order
  - this position is often peripheral
    - What does it tell us that it is only the CP- and DP-peripheral element that behaves differently than the rest of the phrase in Medumba?
    - the different kinds of particles have distinct properties, dividing them into different types; only one of them may be subordinating/indicating Force
- not entirely clear if final Cs can trigger movement of their complement or if there is another reason why they end up in final position
  - Why do some head-initial languages allow final Cs and others do not?
  - How can we account for the fact that Medumba lá requires a filled specifier, but its ‘counterpart’ mbù does not?
- Acategorial/Multifunctional elements like Medumba lá might not violate FOFC, but this argument does not necessarily hold for all kinds of SFPs (Paul & Pan, 2017)
  - Are final Cs over initial TPs allowed for other reasons than their potentially acategorial nature?

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