First Conjunct Clitic Doubling. Implications for Theories of the PCC and Approaches to First Conjunct Agreement

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1 Introduction

In this paper we introduce the phenomenon of first conjunct clitic doubling (FC CLD). We show that it provides evidence for Agree-based approaches to clitic doubling (CLD) and argues against approaches involving movement. Furthermore, we explore its implications for theories of the PCC and theories of first conjunct agreement (FCA). We show that most theories of the PCC are incompatible with our FC CLD data because they involve movement in the generation of the clitic/the implementation of the PCC. Finally, we show that PCC effects with coordination provide evidence for theories of FCA that are based on rule ordering.

2 Basic data
2.1 Background

Our focus throughout is on (object) clitic doubling as in (1-a), where the doubled DP *ton Jorɣo* occupies an argument position. This is to be distinguished from clitic-left dislocation (1-b), where the same DP occupies a left-peripheral position.

(1)   a.   I   Maria   **ton**   aɣapai   **ton**   **Jorɣo**.
          the.NOM Mary.NOM 3SG.M.ACC love.3SG the.ACC George.ACC
          'Mary loves George.'   CLD
      b.   **Ton**   **Jorɣo**,   i   Maria   **ton**   aɣapai.
          the.ACC George.ACC the.NOM Mary.NOM 3SG.M.ACC love.3SG
          'George, Mary loves him.'   CLLD

We will take it that, in CLD, the doubled DP occupies the same position as it would if it were not doubled. There is much evidence to this end from Greek and beyond, most recently in Angelopoulos (2019, 3).

Against this background, consider firstly the fact that Modern Greek shows first conjunct agreement (FCA) with postverbal subjects: this is seen in (2-a), where a coordination of a singular and a plural noun can yield not only resolved 1PL agreement on the finite verb, but also 2PL first conjunct agreement; compare (2-b), where the order of conjuncts is flipped and 2PL agreement is ungrammatical.

(2)   a.   { Ftasate   / ftasame   / *eftasa   } [esis
          arrive.PST.**2PL** arrive.PST.**1PL** arrive.PST.**1SG**   you.PL.NOM
          ke eɣo]   tin iðja mera.
          and I.NOM the same day
          'Y'all and I arrived the same day.'

b. { Eftasa   / ftasame   / *ftasate   } [eɣo   ke
      arrive.PST.**1SG** arrive.PST.**1PL**   arrive.PST.**2PL**   I.NOM and
    esis]   tin iðja mera.
     you.PL.NOM the same day
    'I and y'all arrived the same day.'

2.2 New data: FC CLD

The basic observation underlying this paper is that, alongside first conjunct agree-
ment, Greek also allows first conjunct clitic doubling. In (3-a), alongside the re-
solved features of the whole coordination (3PL and default M), clitic doubling can
pick up just the features of the first conjunct (3SG.M), but not of the last conjunct
(3SG.F). If we flip the order of conjuncts (3-b), the masculine singular clitic be-
comes ungrammatical, and the feminine clitic grammatical.[1]

(3)   a.   { Ton   / tus   / *tin   } iða   [to
             3SG.M.ACC **3PL.M**.ACC **3SG.F**.ACC see.PST.1SG the.ACC
           Jani   ke ti   Maria]   tin iðja mera.
           John.ACC and the.ACC Mary.ACC the same day
           'I saw John and Mary on the same day.'
       b.   { Tin   / tus   / *ton   } iða   [ti
             3SG.F.ACC **3PL.M**.ACC **3SG.M**.ACC see.PST.1SG the.ACC
           Maria   ke to   Jani]   tin iðja mera.
           Mary.ACC and the.ACC John.ACC the same day
           'I saw John and Mary on the same day.'

In the next section, we argue that first conjunct agreement (2) and first conjunct
clitic doubling (3) are two sides of the same coin: in Greek, first conjunct doubling
is, like agreement, derived by means of the operation Agree. Crucially, FC CLD
suggests that this Agree operation is not accompanied by movement.
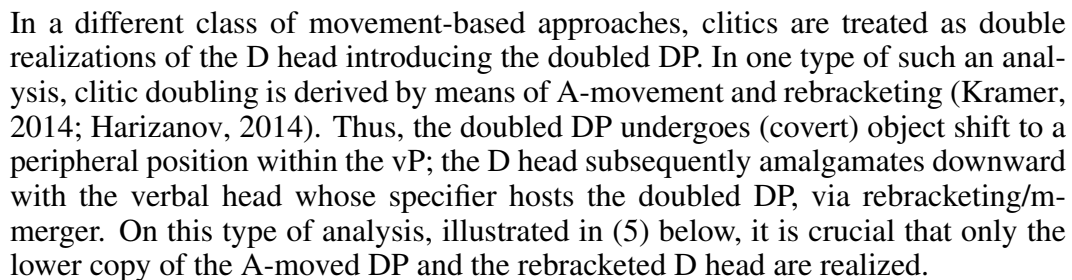
3   Implications for theories of CLD
3.1   Theories of clitic doubling

Clitic doubling poses a clear analytical challenge: the structure ostensibly contains
two elements, the clitic and the doubled DP, but only one locus of thematic interpre-
tation (and Case assignment). Of the two elements, then, one must be the primary
argument, while the other arises/is licensed in a different way. Theories of clitic
doubling are defined largely with respect to what they take this mechanism to be
(see Anagnostopoulou 2017a for a recent overview).

 In this section, we briefly summarize the three major classes of approaches to
clitic doubling, before arguing that FC CLD is only compatible with one of them,

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[1]See Paparounas & Salzmann (to appear) and Paparounas & Salzmann (in preparation) for evi-
dence that we are dealing with true DP-coordination and not comitative expressions or conjunction
reduction/stripping (which we rule out with expressions like *on the same day*). See those papers
also for more details on the judgments and a syntactic plurality requirement that constrains some
speakers' judgments.

namely, the family of pure Agree-based approaches. Throughout, we draw trees for the simple clitic doubling example in (1) to illustrate the different analyses.

In the big DP approach, the clitic and the doubled DP are taken to form a constituent in the base: the underlying intuition is that anaphoric dependencies are captured derivationally, such that the clitic and the doubled DP are referentially linked because they originate in the same DP constituent. While the details of the internal structure of the big DP may vary between individual approaches (e.g., Uriagereka, 1995; Nevins, 2011; Arregi & Nevins, 2012), they all uniformly postulate that the clitic strands the DP in the course of the derivation by moving to a verbal projection, see (4):

(4)

In a different class of movement-based approaches, clitics are treated as double realizations of the D head introducing the doubled DP. In one type of such an analysis, clitic doubling is derived by means of A-movement and rebracketing (Kramer, 2014; Harizanov, 2014). Thus, the doubled DP undergoes (covert) object shift to a peripheral position within the vP; the D head subsequently amalgamates downward with the verbal head whose specifier hosts the doubled DP, via rebracketing/m-merger. On this type of analysis, illustrated in (5) below, it is crucial that only the lower copy of the A-moved DP and the rebracketed D head are realized.
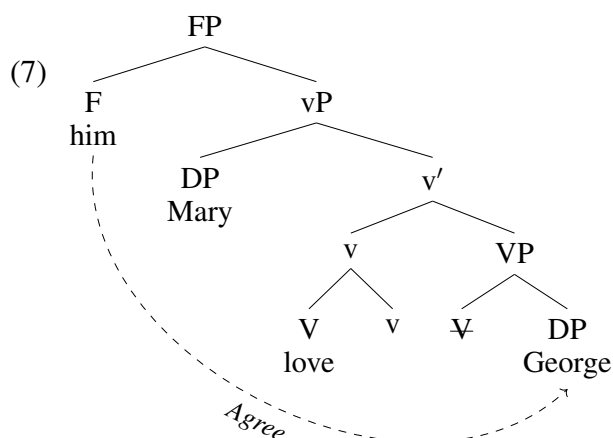
A second flavor of the movement-based approach to CLD takes the clitic to arise by means of long head movement (e.g., Preminger 2009, 2019). On this approach, an Agree dependency between v and the object DP triggers movement of the head of the DP to v; the clitic is then the realization of the moved D head (Kramer 2014, 617f., Preminger 2019, 31ff.). Under this analysis, doubling arises because both the moved D and the DP are realized at PF (Preminger, 2019, 20), see (6).

(5)   (6)
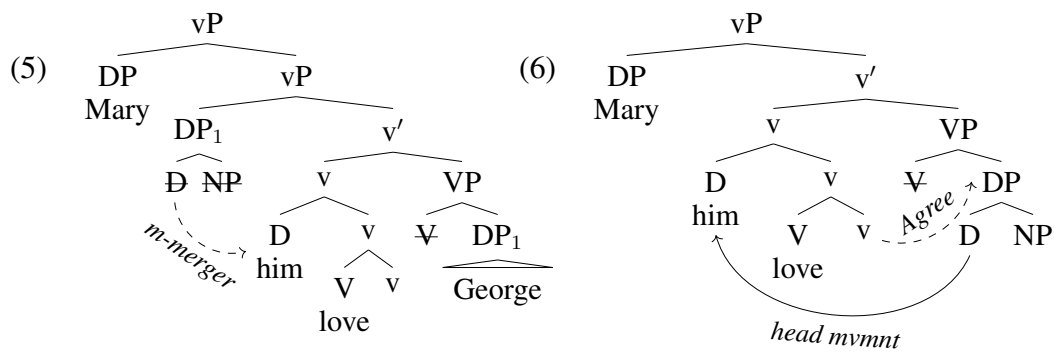
Despite important differences between them, the theories outlined thus far share *movement* as a crucial property.

The last type of approach treats clitic doubling as a type of object agreement. Since at least Sportiche (1996), clitics have been treated as independent functional heads in the extended projection of the verb, with the doubled DP moving to the specifier of the clitic head. In more recent implementations, this type of analysis has been recast to involve Agree between the functional clitic head and the doubled DP (Angelopoulos, 2019). On this approach, sketched in (7) below, the clitic is the spellout of the doubled DP's ϕ features, which have ended up on a higher functional head (call it F) via Agree. Crucially, this approach involves only feature copying (or sharing), but no movement.

(7)

```
                    FP
              ┌──────┴──────┐
              F             vP
             him      ┌──────┴──────┐
                      DP            v′
                     Mary      ┌────┴────┐
                               v         VP
                            ┌──┴──┐   ┌───┴───┐
                            V     v   V̶      DP
                           love           George
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Agree (F — George)

3.2   An Argument in favor of an Agree approach

We will now explore the implications of FC CLD for the different theories of clitic doubling. Crucially, in most approaches, FC CLD will lead to a violation of the Coordinate Structure Constraint (CSC, Ross 1967). Under the big DP analysis, where the clitic would be associated only with the first conjunct, movement of the clitic to the verb would involve subextraction from one conjunct and thus a CSC violation. Similarly, under A-movement + rebracketing, there would be asymmetric A-movement of the entire first conjunct to, e.g., Spec,vP, again in violation of the CSC. Finally, under the head-movement approach, there would be asymmetric head-movement of the D-head of the first conjunct to the verb, also in violation of the CSC. Importantly, this issue does not arise under an Agree-based approach, which only involves feature-copying and therefore is not subject to the CSC. Thus, FC CLD favors an Agree-based approach to Greek CLD since it is the only analysis compatible with the CSC.[2]

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[2]See Paparounas & Salzmann (to appear), Paparounas & Salzmann (in preparation) for a more detailed version of the argument outlined here. There, we show that *(i)* the CSC holds in the relevant environments in Greek; *(ii)* our argument holds also under alternative conceptions of the CSC (Bošković, 2019); *(iii)* Condition C data provides additional evidence against movement in Greek clitic doubling; and *(iv)* evidence previously adduced in favor of movement-based approaches to Greek can be reanalyzed.

4 FC CLD and the PCC

We will now explore how FC CLD interacts with the Person Case Constraint (PCC). This constraint (cf. Bonet 1991) restricts the person values when a verb takes two internal arguments (an indirect (IO) and a direct object (DO)) that are realized by phonologically weak elements, which includes agreement, clitics and weak pronouns (see Anagnostopoulou 2017b for a recent overview of the different types of the PCC). As shown in Anagnostopoulou (2003), the PCC in Greek is of the strong type, barring local person direct objects in the presence of an indirect object (*X>1/2). An example is given in (8):

(8)   *Tha tu   se   stilune.
       FUT 3SG.M.GEN 2SG.ACC send.3PL
       'They will send you to him.'   3>2

The PCC literature normally only focuses on cliticization, partly because not all PCC-obeying languages have clitic doubling and because DP arguments are often third person. Importantly, however, given that Greek allows the doubling of strong pronouns, the PCC can also be shown to be operative in a CLD context:

(9)   *Tha tu   se   stilune tu   Yiorɣu   **esena**.
       FUT 3SG.M.GEN 2SG.ACC send.3PL the.GEN George.GEN you.ACC
       'They will send you to George.'

Given that we have argued that clitic doubling in Greek cannot involve movement of the clitic/(part of) the doubled DP, we can deduce from (9) that the derivation of the PCC also cannot make reference to movement of the elements responsible for the generation of the clitics. One might object that since no coordination is involved in (9), one cannot be sure that movement is ruled out; we will therefore discuss the PCC in configurations that involve FC CLD.

More specifically, we will investigate configurations with a direct and an indirect object where the direct object is a coordination of a second and a third person argument, and test to what extent FC CLD or resolved CLD are possible in these configurations. We begin with (10), whose direct object is a coordination of second and third person ([2+3]). In this case, there is no grammatical output under clitic doubling. Both FC CLD (which results in 2SG) and resolved doubling (which results in 2PL) lead to ungrammaticality:

(10)   *Tis   { se   / sas   / ton   } sistisa
        3SG.F.GEN   **2SG.ACC 2PL.ACC 3SG.M.ACC** introduce.PST.1SG
        (tis   Marias)   [esena   ke   ton   Petro].
        the.GEN Mary.GEN you.ACC and the.ACC Peter.ACC
        'I introduced you and Peter to Mary.'   3>[2+3]

This is what we expect if the PCC is at work in coordination: once the DO is a local person, it will lead to a violation once a clitic IO is present as well.

Interestingly, if we switch the order of conjuncts ([3+2]), a different result obtains: FC CLD is grammatical (since it results in third person), while resolved CLD is not (as it yields a second person clitic):

(11) Tis { ton / *sas / *se } sistisa
3SG.F.GEN **3SG.M.ACC** **2PL.ACC** **2SG.ACC** introduce.PST.1SG

(tis Marias) [ton Petro ke esena].
the.GEN Mary.GEN the.ACC Peter.ACC and you.ACC

'I introduced Peter and you to Mary.'   3>[3+2]

We have examined the entire PCC paradigm and found that the configurations be-
have as expected: if the DO is [1/2+3], both FC CLD and resolved doubling lead
to ungrammaticality, as in (10). If the DO is [3+1/2], resolved doubling remains
ungrammatical, while FC CLD is grammatical (cf. (11)). This holds both for con-
figurations where the IO is third person (as above) and configurations where it is
first or second person. Finally, if the DO involves a coordination of first and second
person ([1/2+1/2]), both FC CLD and resolved CLD are ungrammatical. We thus
see that what matters is the make-up of the DO coordination, which is what we
expect if the PCC is at work.

    Conversely, in configurations where the PCC is not at stake, e.g., in (2>[3+3])
contexts, there can be either FC CLD or resolved CLD with the DO:

(12) Su { ton / tus } sistisa [ton
2SG.GEN **3SG.M.ACC** **3PL.M.ACC** introduce.PST.1SG the.ACC

Petro ke ti Maria].
Peter.ACC and the.ACC Mary.ACC

'I introduced Peter and Mary to you.'   2>3+3

Similarly, if the IO clitic is omitted (clitic doubling being largely optional), both FC
CLD and resolved doubling are possible even with a [3+2] (or [2+3]) DO:[3]

(13) { ton / sas } sistisa (tis Marias)
3SG.M.ACC **2PL.ACC** introduce.PST.1SG the.GEN Mary.GEN

[ton Petro ke esena].
the.ACC Peter.ACC and you.ACC

'I introduced Peter and you (to Mary).'   [3+2]

We have thus seen that the PCC is also at work when the DO involves a coordination
in that it restricts the possibilities of FC CLD or resolved CLD, depending on the
person value that each yields.

5   Implications for Theories of the PCC

In this section we will discuss the consequences of FC CLD for different implemen-
tations of the PCC. We will show that many approaches fail for our data because
the implementation of the PCC-restriction involves (i) movement of the arguments
and/or (ii) Agree operations that only partially copy features from the arguments,
and thus are insufficient to create fully specified clitics. It should be pointed out

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[3]This example sounds better with a PP dative, possibly owing to a garden path effect induced by
the case-syncretic 2PL clitic; this is orthogonal to our point here.

that many approaches to the PCC only focus on pure clitic combinations and do not discuss clitic doubling. In what follows, we will try to extend these approaches to clitic doubling to be able to assess the consequences for our discussion.

5.1 The problem of insufficient features and movement

A popular family of approaches treats the PCC as an intervention effect (Béjar & Řezáč 2003; Preminger 2009, 2019, *i.a.*). The general idea underlying these approaches is that one probe has to license two arguments, and given the limited features of the probe, not all person-number combinations are possible. Concretely, in these analyses, the probe on v is split into a person and a number probe; the higher indirect object blocks person Agree with the direct object. After person Agree between v and the IO (person agreement with the IO is usually thought to fail), the IO cliticizes, viz., head-moves to v. This removes the IO as an intervener and consequently, the number probe on v can target the direct object, which subsequently also undergoes head-movement to v. Given the *Person Licensing Condition*, which requires first and second person arguments to enter Agree, such direct objects will not be licensed in PCC configurations since the person probe on v has already been discharged. A third person object, however, is possible as a DO since its person feature does not require licensing.

Coon & Keine (to appear) use a similar framework with split probes. Here, too, X>3 configurations are grammatical because the person probe targets the indirect object, the IO cliticizes and is removed as an intervener, while the number probe targets the direct object. But the implementation of the PCC-constraint is different. In a 3>1/2 configuration, the PCC-violation obtains because the person probe agrees with both arguments and the required ensuing clitic-movement operation fails as it would have to involve both clitics moving simultaneously, which by assumption is ruled out in this work (cf. also the implementation in Arregi & Nevins 2012, 64ff.).

Note that in the approaches discussed thus far, the result of the Agree operation, namely the features copied unto v, remains unrealized. In fact, the features copied would not be sufficient to obtain fully specified clitics: at least with respect to the IO, it is usually assumed that either no features are copied from it (Béjar & Řezáč 2003, 54, Preminger 2009, 656f.) or only the person feature is (Coon & Keine to appear). Note further that clitics in Greek are also specified for [gender], which none of the PCC probes probe for.

v will thus lack the features necessary to generate (IO) clitics. The clitic must then arise in a different way; in a clitic doubling scenario, this would require one of the three movement-based approaches discussed above. This is obviously not compatible with the result obtained above, viz., that clitic doubling cannot involve movement. Note that even if Agree were to generate fully specified clitics in these approaches (e.g, by employing different/more complex probes), they would still not be compatible with our FC CLD data since movement of the IO is a crucial aspect of the intervention account.

The issue with insufficient features also arises in approaches where movement is not crucial in the implementation of the PCC, but movement is necessary to obtain clitic doubling. In Anagnostopoulou (2003, 286-291), the PCC arises because only person features are copied from the IO to v, while the DO undergoes Agree

in number with v.[4] Since Agree only involves partial feature copying, this will not be sufficient to generate the clitics. Rather, in a clitic doubling scenario, the clitics arise via feature movement, see Anagnostopoulou (2003, 211-215), which in modern terms would be recast as head-movement. Consequently, to obtain fully specified clitics, the approach crucially requires movement after all and is therefore also incompatible with our evidence against movement in clitic doubling.[5]

A similar problem arises in the approach by Pancheva & Zubizarreta (2018, 1299-1306). In this approach, the IO is introduced by Appl, which agrees in person with both the IO in its specifier and the DO within its VP complement. Appl has a valued interpretable person feature [proximate] which agrees with the IO; this feature encodes the fact that the IO must be a perspectival holder. In addition, Appl has an unvalued uninterpretable person feature that agrees with the DO. A constraint prevents the person features on Appl to be identical. Since the interpretable feature is [proximate], the uninterpretable features copied onto Appl must not contain [proximate]. This restricts the DO to (obviative) 3rd person arguments, which do not bear [proximate]. While the authors explicitly state (p. 1299) that their approach is compatible with the clitics either being the result of Agree or being present in the syntax already, in the latter case matching features on Appl, the fact that the [proximate] feature on Appl is valued and interpretable implies that it cannot copy more (person) features from the IO. Consequently, Agree will not be sufficient to generate fully specified clitics if the IO is 1st or 2nd person. Thus, the clitics have to arise in a different way in addition to Agree. In principle, all options discussed above are conceivable (Big-DP, head-movement or A-movement + rebracketing). Since all these options require movement, the approach is also incompatible with our FC CLD data.

A related problem obtains in the approach by Foley & Toosarvandani (2020, 35). Given its complexity, we will abstract away from details and focus on the aspect relevant for our discussion: the approach differs from previous accounts in that features are only copied from the first/IO argument. The restrictions on the DO are taken to be restrictions on cliticization: the DO can cliticize onto the probe only if it contains a subset of the probe's features. This is not the case in a X>1/2 configuration, but it is in a X>3 configuration because 3rd person matches the probe's values in a specific sense: it does not match any of them, but the empty set also qualifies as a subset of every set. Whatever the merits of these restrictions on cliticization, it should be clear that Agree will not be sufficient to generate fully specified clitics since there is no feature copying from the DO. Consequently, this approach will require an additional mechanism to obtain the clitic (Big-DP, head-movement, A-movement + rebracketing). These implementations all require movement and are thus incompatible with our FC CLD data.

Problems can also obtain in approaches where Agree is sufficient to generate fully specified clitics. In Baker (2011, 885), the PCC is implemented as follows. By assumption, agreement in person requires a spec-head relationship. In a double-object configuration, v has only one EPP-feature and therefore attracts the closest

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[4]Intervention is not an issue here because the IO is assumed not to have a number feature, which is why the number feature on v can target the DO across the IO.

[5]Since the approach does not address the PCC in the context of clitic doubling, the discussion is based on our interpretation of how the approach would have to be extended in this configuration.

goal, the IO, with which it can agree fully, viz., also in person. Subsequent Agree with the DO cannot be in person given the lack of a spec-head-relationship. Thus, v only agrees in number with the DO; hence, assuming that third person corresponds to the absence of person, DOs are limited to third person. The Agree operation here would be sufficient to generate fully specified clitics, and as such this analysis would require neither a Big-DP nor a derivational account. However, since the approach requires movement of the IO to Spec,vP for person agreement to be possible, it is not compatible with our FC CLD data after all.[6]

5.2 Compatible Agree approaches

Unlike the approaches discussed in the previous section, there are a few Agree-based approaches to the PCC that can generate fully specified clitics while not requiring movement. They are thus compatible with the FC CLD data.

Nevins (2007, 296) proposes a multiple Agree approach where the probe on v targets both objects. Probing for person is relativized to contrastive values of [author]. In (3>1/2) configurations, a violation obtains because a third person argument has a non-contrastive value for [author] (author is only contrastive in the context of [+participant]). It thus acts as an intervener and multiple Agree fails (given a stipulated condition on contiguous Agree).[7]

In Adger & Harbour (2007, 25f.), v agrees with the IO, while Appl agrees with the DO. Appl is specified to select an IO bearing [participant], which includes 1st and 2nd person arguments as well as animate 3rd person arguments (thus ruling out inanimate 3rd person IOs). A stipulation prevents Appl from probing for features that it requires for its specifier. Consequently, Appl cannot probe for [participant], but only for number. This limits DOs to 3rd person arguments (3rd person resulting from the absence of [participant]). If it were to probe for participant and agree with a local person DO, the IO would have to be inanimate, resulting in an uninterpretable structure.While the approach is discussed in the context of clitics only, it would be compatible with an Agree-only approach to clitic doubling since, having two phi-probes, it can generate fully specified (IO) clitics (the absence of [participant] on the DO-clitic will result in 3rd person) and does not involve movement.

Another approach that can generate fully specified clitics by means of Agree is that by Deal (2020). Here, the probe has an interaction condition for ϕ, which means it agrees with all objects bearing phi-features. Probing stops once its satisfaction condition is obtained. In the PCC-context, the probe is satisfied once it encounters the feature [participant]. The probe is located on Appl and first targets the DO

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[6]The PCC approach by Stegovec (2020) arguably cannot be applied to our data since it is incompatible with clitic doubling: Given that the clitics are taken to be independent syntactic elements, this would require a Big-DP-approach. However, since the clitics start out underspecified for person and are later valued by v, this does not seem compatible with the Big-DP approach after all.

[7]Number and gender agreement are not discussed in Nevins (2007). Nevins (2011, 965f.) discusses number Agree, which in the cases considered leads to omnivorous agreement, which will not suffice to generate number on both clitics. If a probe relativized to contrastive [author] only finds a 3rd person argument, probing fails and 3rd person is inserted as a default, see Nevins (2011, 964). While Nevins (2007, 291) explicitly states that the clitics are the spell-out of Agree with the internal arguments, Nevins (2011) adopts a Big-DP-approach to clitic doubling, which requires movement after all and is therefore not compatible with our FC CLD data.

within VP. Thereafter, the search space of Appl is extended to include the IO in its specifier (cf. the cyclic Agree approach by Béjar & Řezáč 2009). In a PCC-obeying context, e.g, 2>3, it will first copy the ϕ-features from the 3rd person DO. Since the probe is not yet satisfied, it continues to probe and targets the local person IO and copies the features from there, too. This results in fully specified phi-feature sets. A PCC-violation obtains if the DO already satisfies the probe, viz., if it contains [participant]. The probe is deactivated and no IO can be licensed (unless some repair kicks in). Since this approach does not involve movement, it is compatible with our FC CLD data.[8]

6 The PCC and implications for analyses of FCA/CCA

In this section, we will discuss how the movement-free theories of the PCC just discussed can handle our PCC data in coordination contexts, and explore the implications of FC CLD in PCC contexts for theories of FCA. More specifically, we will show that our data favors approaches to FCA based on rule ordering, while approaches based on equidistance undergenerate in most cases.

6.1 Analyses of FCA/CCA

We will briefly review two prominent approaches to FCA/CCA, the equidistance-based approach and the rule-ordering-based approach (see Nevins & Weisser 2019 for an overview). These approaches differ in the distribution of features within the &P, which, as we will see, has interesting implications in the context of the PCC.

We will start with approaches based on equidistance (e.g., van Koppen 2005). The crucial underlying assumption is that the first conjunct and &P are equidistant to the probe. As a consequence, in a structure such as (14), the probe can in principle agree with either of the two goals (in what follows, we use the star notation for Agree-probes that need to be discharged and bullet features for structure building).

(14)

```
              FP
             /  \
            F    &P
         [*φ*]  /  \
            ⤻ CJ1
           /  \
          &   CJ2
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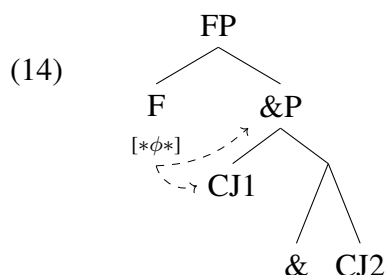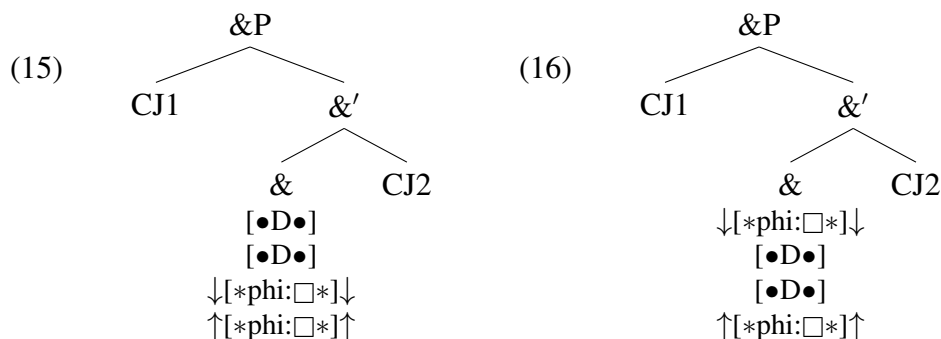
Things are rather different in the rule-ordering approach of Murphy & Puškar (2018), where only &P can be targeted by outside probes. Which features are found on &P depends on the ordering between Agree initiated by the coordination head and Merge of the two conjuncts. Resolved agreement obtains if both conjuncts are

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[8]To ensure the correct forms of the clitics, one has to assume that the case-values are copied along. Since the case values of both arguments, especially those of the DO, may not be determined until v enters the derivation, this probably requires a Case-checking approach. Depending on the location of the probe, this issue arises in the previous approaches as well.

merged before the phi-probes on the & head probe. There is both a downward Agree and an upward Agree probe. (15) illustrates the rule ordering needed for resolved agreement (the features on the stack below & are discharged top-down).

FCA/CCA, on the other hand, emerges as an illusion. It is not the case that the first conjunct is targeted by a probe. Rather, it results if Agree between & and CJ2 is bled, viz., if downward Agree precedes Merge of CJ2. CJ1 is then merged before & undergoes upward Agree. As a consequence, the features of the first conjunct are copied onto &, see (16):

(15)
```
            &P
          /    \
        CJ1     &′
               /   \
              &     CJ2
           [●D●]
           [●D●]
          ↓[∗phi:□∗]↓
          ↑[∗phi:□∗]↑
```

(16)
```
            &P
          /    \
        CJ1     &′
               /   \
              &     CJ2
          ↓[∗phi:□∗]↓
           [●D●]
           [●D●]
          ↑[∗phi:□∗]↑
```
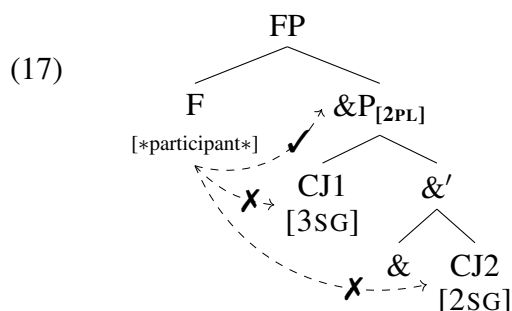
The crucial distinction between these two families of approaches is that under equidistance only one configuration is necessary for CCA and resolved agreement, while under rule ordering, the two agreement patterns correspond to two different derivations. We will see that this has important consequences in PCC-contexts.

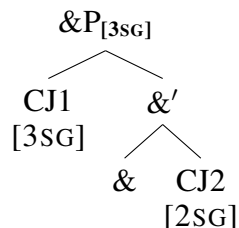## 6.2 Implications of FC CLD for theories of FCA/CCA

Accounts of the PCC restriction often involve relativized probing (e.g., for [participant]). Of the movement-free approaches reviewed in the last section, this holds for Nevins (2007) and Deal (2020) but not for Adger & Harbour (2007). We will now show that once relativized probing is adopted, the two types of theories of FCA/CCA make crucially different predictions.

Under equidistance-based approaches, the relativized probe will be able to access both the features on the first conjunct and on &P. However, because of relativized probing, the probe will always target the goal that bears a second person feature. Consequently, in a 3>[3+2] configuration, it will necessarily target the resolved [2PL] feature on &P, as shown in (17), which then leads to a violation of the PCC.
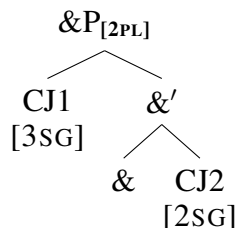
(17)
```
                    FP
                  /    \
                 F      ↗ &P[2PL]
         [∗participant∗]  ✓
                      ↙  /    \
                  ✗ →  CJ1    &′
                       [3SG]  /  \
                             &    CJ2
                          ✗---→  [2SG]
```

The approach thus undergenerates in that it fails to capture the grammatical FC CLD option in this configuration (recall (11) above).[9] Under the rule-ordering approach, the two agreement patterns (FC CLD, resolved doubling) imply different derivations with different features on &P:

(18)   *FC CLD*

&P[**3SG**]

CJ1   &′
[3SG]
          &   CJ2
               [2SG]

(19)   *Resolved CLD*

&P[**2PL**]

CJ1   &′
[3SG]
          &   CJ2
               [2SG]

Recall that under this approach, a probe can only access &P. This means that the two derivations will have different results: under the derivation resulting in resolved doubling in (19), the [2PL] will be copied and a violation of the PCC will obtain. In the derivation with FC CLD as in (18), however, only the [3SG] feature is accessible, which leads to a grammatical result. Thus, under the rule ordering approach, the grammatical version in 3>[3+2] with FC CLD can be accounted for. The rule ordering approach thus emerges as superior.[10, 11] Importantly, the argument for rule ordering only obtains once relativized probing is involved. In Adger & Harbour (2007), Appl probes for number only. There are therefore no problems accessing the 1st CJ under equidistance and the grammatical result can be derived as well.

7   Location of the clitic probe

The last challenge for approaches to the PCC comes from the surface position of the clitic and implications thereof for the location of the clitic probe. In many PCC languages, including Modern Greek, the clitics attach to the finite verb and thus surface in the T-region. Interestingly, most approaches to the PCC locate the probe involved in implementing the PCC-restriction low, either on Appl or v. To capture realization in the T-region, one may appeal to verb movement to T, dragging along the features of the clitic on v/Appl. However, this will not work in compound tenses, where the clitics attach to the auxiliary, which is not connected to the lexical verb and thus the putative location of the clitic probe via movement, see e.g., Angelopoulos & Sportiche (to appear, ex. 31a):

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[9]Recall that in Nevins (2007), the probe is specified for contrastive [author], not for [participant].

[10]Viewing the PCC as a syntactic phenomenon (cf., e.g., Preminger 2019), the data also argue against 2-step Agree approaches to FCA where it arises via copying from the linearly closest DP at PF as in Marušič *et al.* (2015).

[11]Another possible advantage of Murphy & Puškar (2018) is that it restricts the search space. This is relevant in a multiple Agree approach as in Nevins (2007). In equidistance approaches, one would probably expect Agree to target both &P and the first CJ. The PCC violation would arguably nevertheless obtain in that the features of the 3rd person IO would intervene for the 2pl feature of &P; the fact that the 1st CJ is involved in addition, will probably not affect this. Under Deal (2020), the probe relativized for participant will be satisfied once it encounters &P and will consequently stop. But in other configurations, one could imagine that the probe actually receives too many features under both approaches (e.g., if &P is [3+3]).

(20) An o   Petros   **to**   içe iði   ðjavasi [to
      if the.NOM Peter.NOM 3.SG.N.ACC had already read.3SG the.ACC
      vivlio]
      book.ACC
      'If Peter had already read the book ...'

Therefore, the surface position of the clitic remains unexplained in approaches with a low clitic probe; this rules out the approaches by Adger & Harbour (2007) and Deal (2020). In the former, Appl is crucially involved in probing since it also imposes restrictions on the IO through selection. This is not possible if the probe is in the T-region. The latter approach is designed in such a way that the DO has to be targeted first, but since the IO c-commands the DO in Modern Greek, a probe in the T-domain will first encounter the IO. This leaves us with the approach by Nevins (2007), where both objects are accessed simultaneously and nothing in principle rules out a probe in the T-region. Given the morphology (the clitic is outermost in the verbal complex), one may want to posit the probe above T (see Angelopoulos & Sportiche to appear). However, the fact that clitic doubling voids intervention effects in IO-nominative configurations in Modern Greek (Anagnostopoulou 2003, 45) implies that the clitic probe has to be discharged before the probe that implements subject agreement. We show in Paparounas & Salzmann (to appear) that the interaction can be accounted for if Agree between the clitic probe and the IO deactivates the IO so the subject-agreement probe can access the low nominative.

To implement this interaction, we assume that the clitic probe is a second (optional) probe on T and that the probes can be discharged in either order (but in certain configurations some orders of application may not lead to convergence). In addition, the clitic probe is case-discriminating in that it only targets oblique cases. While perhaps unusual, this assumption explains why there are no PCC effects in IO-nominative constructions, see Anagnostopoulou (2003, 90, ex. 133, 254): if the clitic probe could access the low nominative, a PCC-effect should obtain. The grammaticality of such structures suggests instead that the clitic probe only interacts with the dative, while the subject-agreement probe targets the nominative.

8 Conclusion

In this paper we have explored the implications of FC CLD for a range of phenomena. We have first shown that it argues in favor of Agree-based approaches to CLD and against approaches involving movement. Second, we have shown that the PCC also holds in CLD configurations with coordination. Given that FC CLD rules out movement-based approaches to CLD, approaches to the PCC that require movement for the generation of the clitic/the implementation of the PCC-restriction fail as well. Additionally, we have shown that our PCC-data in coordination also distinguish between different approaches to FCA/CCA in that they favor the rule ordering approach by Murphy & Puškar (2018) over equidistance-based approaches, at least when relativized probing is involved. Finally, once the surface position of the clitic in the T-region is taken seriously, even more approaches to the PCC must be ruled out given that they are not compatible with a high probe.

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