Non-agreeing resumptive pronouns and partial Copy Deletion[*]

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1 Introduction

The study of resumption has been important in understanding the nature of movement dependencies and their interaction with locality constraints since early generative works (e.g. Ross 1967, Koopman 1983, McCloskey 1990). Resumptive pronouns (RPs) are pronominal elements that appear in a position in which syntactic gaps might have occurred, and they usually agree with the antecedent in *phi*-features (e.g. person, number, gender, or even animacy), as illustrated in (1). A non-agreeing RP like third person singular inanimate *it* is banned in (1) (modified from McCloskey 2017:1).

(1)   There are guests$_i$ **who**$_i$ I am curious about what { ***it**$_i$ is/ **they**$_i$ are} going to say.

Non-agreeing RPs, however, are attested in natural languages. In Cantonese, a non-agreeing RP third person singular *keoi* can occur in the post-verbal object position with the fronted *plural* object as the antecedent, as shown in (2a). In Akan, similarly, a non-agreeing RP third person singular inanimate *ɛ* may occur in the subject position with the *plural animate* subject before a temporal adjunct as the antecedent, as in (2b).[1]

(2)   Non-agreeing resumptive pronouns (RPs) in Cantonese and Akan

    a.   Nei jiu   zoeng **di**   **syu**$_i$ tai-jyun   **keoi**$_i$ (Object non-agreeing RP)
           2SG must DISP   CL.PL book read-finish 3SG
           'You must finish reading the books.'   [C(antonese)]

    b.   **M-mofrai no**$_i$ ɛnora   **ɛ**$_i$ tu-u   ndwom   (Subject non-agreeing RP)
           PL-child   DET yesterday 3SG.IN sing-PST song
           'The children sang yesterday.'   [A(kan)]

Non-agreeing RPs are robust in other languages as well, and have been recently studied in Dinka (van Urk 2018), Igbo (Scott 2021), and Swahili (Georgi and Amaechi 2022).[2] Following this line of research, we investigate non-agreeing RPs in two typologically unrelated languages Cantonese and Akan (Asante Twi). We first show that non-agreeing RPs systematically differ from agreeing RPs in movement properties: non-agreeing RPs resemble movement traces, whereas agreeing RPs behave like base-generated pronouns. Assuming Late Insertion in Distributed Morphology (Halle and Marantz 1993 *et seq.*), we then propose Copy Deletion applies partially to lower copies of movement chains (after Bošković 2001, Nunes 2004, van Urk 2018, *i.a.*), whose residue is realized as a default, non-agreeing RP. The findings not only shed light on how movement chains may be linearized, but also show that both movement strategy and base-generated anaphora strategy of resumption are available within the same languages, supporting a non-uniform treatment of resumption.

The rest of this paper is organized as follows. Section 2 introduces the pronoun inventories and non-agreeing RPs in Cantonese and Akan. Section 3 examines the distribution of non-agreeing RPs in movement dependencies as compared to gaps and agreeing RPs. Section 4 proposes a partial Copy Deletion account and discusses a prediction on ATB-movement. Section 5 concludes.

[1]Abbreviations: 1,2,3=first, second, third person respectively; ALSO=additive quantifier; ALL=universal quantifier; AN/IN=animate/inanimate; DET=determiner; DISP=disposal marker; CD=clausal determiner; CL=classifier; COMP=complementizer; MOD=modification marker; PL=plural; PST=past tense marker; REL=relative marker; SFP=sentence-final particle; SG=singular; TOP=topic marker.

[2]See also Boeckx (2003) and references therein.

2 Non-agreeing RPs in Cantonese and Akan

Cantonese pronouns distinguish between person and number features. The inventory is provided in Table 1. The third person singular (3SG) *keoi* is used as a non-agreeing RP (as called "dummy pronoun" in Cheung 1992, Man 1998). *Keoi* may show mismatches in both person and number with the antecedent, such as the mismatch with the fronted first person plural (1PL) object in (3). Note that *keoi* is the only choice of non-agreeing RPs - partial mismatch, for example, 1SG *ngo* (number-only mismatch) or 3PL *keoidei* (person-only mismatch), would not be allowed in (3).

(3)   Mismatch in phi-features of RPs in Cantonese

 Aaming wui zoeng **ngodei geigoi**$_i$ dou saat-saai $\boxed{\textbf{keoi}_i}$ gaa3! (NUM & PERS, *cf. ngodei*)
 Ming   will DISP   1PL   several ALL kill-ALL   3SG   SFP
 '(Don't go!) Ming will kill us (lit.: we several people) all!'   [C]

It is also instructive to note that the non-agreeing RP only occurs in *object* positions. In subject positions, the RP must match in phi-features with the antecedent. The same patterns are attested in other Sinitic languages like Shanghainese and Mandarin Chinese (Xu 1999).

	SG	PL
1	*ngo*	*ngodei*
2	*nei*	*neidei*
3	**keoi**	*keoidei*

Table 1: Pronouns in Cantonese

	SG	PL
1	*me*	*yɛn*
2	*wo*	*mo*
3.AN	ɔ	*wɔ*
3.IN	**ɛ**	ɛ

Table 2: Pronouns in Akan (nominative)

In Akan, pronouns additionally distinguish between animacy features apart from person and number. The inventory of subject pronouns is given in Table 2. The third person inanimate (3SG/PL.IN) *ɛ* is used as a non-agreeing RP (Korsah 2016), as illustrated in (4). It shows a full mismatch in phi-features with the first person plural animate (1PL.AN) antecedent subject.[3] Again, *ɛ* is the only non-agreeing RP: partial mismatch like 1SG *me* or 3PL.AN *wɔ* would be disallowed.

(4)   Mismatch in phi-features of RPs in Akan

 Yɛn miensa$_i$ $\boxed{\boldsymbol{\varepsilon}_i}$ tu-u   ndwom   (PERS & ANIM, *cf. yɛn*)
 1PL three   3SG.IN sing-PST song
 'We three sang.'   [A]

Note that unlike Cantonese, Akan non-agreeing RPs only occur in subject positions.[4] Also, this use is restricted to the Asante Twi dialect of Akan, and is not found in the Fante dialect (Korsah 2016).

3 Non-agreeing RPs in movement dependencies

Having seen the morphological forms of non-agreeing RPs, we now examine their syntactic properties: distribution in movement dependencies in §3.1, and sensitivity to movement diagnostics in §3.2.

3.1 Types of movement dependencies

The non-agreeing RPs in the two languages manifest in both A- and A'-movement dependencies. Consider A-movement first. As exemplified in (5) in Cantonese, an object may move locally to a pre-verbal position with a disposal marker *zoeng*, comparable to object shift from VP to a *v*P-internal position (Travis 2010). In the base position, crucially, non-agreeing *keoi* may alternate with a gap, but the agreeing plural RP *keoidei* is banned.

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[3]Since *ɛ* is number-neutral, only the mismatch in person and animacy features can be observed. We follow the convention in Akan linguistics and gloss *ɛ* as 3SG.IN.

[4]For object RPs in Akan, see Korsah and Murphy (2019).

(5)   Local A-movement of objects from VP to vP in Cantonese[5]

    a.   Nei jiu   [$_{v\text{P}}$ tai-jyun$_k$ [$_{\text{VP}}$ t_k di   syu   ]]   (baseline)
        2SG must   read-finish   CL.PL book
        'You must finish reading the books.'   [C]

    b.   Nei jiu   [$_{v\text{P}}$ zoeng **di**   **syu**$_i$ tai-jyun$_k$ [$_{\text{VP}}$ t_k {$_i$/ **keoi**$_i$ / ***keoidei**$_i$}]]
        2SG must   DISP CL.PL book read-finish   _   3SG   3PL
        'You must finish reading the books.'   [C]

In Akan, the subject A-moves from the edge of vP to the edge of TP, as illustrated in (6). Again, like Cantonese, only non-agreeing ε may alternate with a gap, but not the agreeing plural animate $w\text{ɔ}$.[6]

(6)   Local A-movement of subjects from vP to TP in Akan

    a.   [$_{\text{TP}}$ ɛnora   [$_{v\text{P}}$ **A-sukuu-foɔ** **no** tu-u   ndwom]]   (baseline)
        yesterday   PL-student-PL DET sing-PST song
        'The students sang yesterday.'   [A]

    b.   [$_{\text{TP}}$ **A-sukuu-foɔ** **no**$_i$ ɛnora   [$_{v\text{P}}$ {$_i$/ **ɛ**$_i$ / ***wɔ**$_i$} tu-u   ndwom]]
        PL-student-PL DET yesterday   _   3SG.IN 3PL.AN sing-PST song
        'The students sang yesterday.'   [A]

The contrast in local A-movement in (5b) and (6b) points to an important property of non-agreeing RPs. Unlike pronouns, non-agreeing RPs can occur with their antecedents in the local binding domain, namely TP. The exemption from Binding Principle B is striking and suggests that non-agreeing RPs are more trace-like than pronoun-like, in contrast to agreeing RPs.[7]

Now consider A'-movement. As exemplified by Cantonese in (7), a local (monoclausal) A'-movement such as relativization allows both gaps and non-agreeing RPs. Different from local A-movement, non-agreeing RPs may also participate in A'-movement dependencies.

(7)   Local A'-movement in Cantonese (relativization)

    Godi [$_{\text{CP}}$ ngodei jiu   zikhak laai-saai   {$_i$/ **keoi**$_i$ / keoidei$_i$}] ge   **taamgun**$_i$
    those   1PL   must immed. arrest-ALL   _   3SG   3PL   MOD corrupt.official
    'Those corrupt officials who we must arrest immediately'   [C]

As for long-distance A'-movement, both types of RPs are also allowed, as shown in Akan (8) again with relativization. However, note that Akan A'-dependencies ban gaps for independent reasons (Korsah 2016), hence the alternation with gaps cannot be observed.[8]

(8)   Long-distance A'-movement in Akan (relativization)

    M-mofrai no$_i$ [$_{\text{CP}}$ aa   me dwene [$_{\text{CP}}$ sɛ   {*$_i$/ **ɛ**$_i$ / **wɔ**$_i$}] kɔ-ɔ   sukuu no]]
    PL-child   DET   REL 1SG think   C.   _   3SG.IN 3PL.AN go-PST school CD
    'The children who I think went to school'   [A]

The distribution of gaps and RPs in movement dependencies are summarized in Table 3.

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[5]Note that non-agreeing *keoi* may also occur with post-verbal objects, where no apparent gap is found, as in (i). We argue that (i) indeed has the structure in (ii), where the object does undergo object shift, followed by verb movement to a higher position, thus neutralizing the word order change. This analysis is supported by a telic restriction on verbs and a definite restriction on objects (aligning with object shift, Travis 2010).

(i)   Nei jiu   tai-jyun   **di**   **syu**$_i$ {$_i$/ **keoi**$_i$ / ***keoidei**$_i$}
    2SG must read-finish CL.PL book   _   3SG   3PL
    'You must finish reading the books.'   [C]

(ii) [$_{\text{AspP}}$ Asp-v-V$_k$ [$_{v\text{P}}$ Obj$_i$ [$_{\text{VP}}$ t_k <Obj>$_i$=*keoi*]]]

[6]The alternation of non-agreeing RPs with gaps in (6b) also suggests that they are not a last resort strategy for satisfying EPP requirements, which has been proposed for Yoruba non-agreeing RPs (Adesola 2010).

[7]One may wonder how RPs behave in long-distance A-movement. Relevant configurations are however unavailable in both languages. Cantonese does not have cross-clausal long passive (for objects), neither does Akan have hyperraising (for subjects).

[8]For space reasons, we only illustrate local A'-movement in Cantonese and long-distance A'-movement in Akan, but the patterns hold across both languages.

| | Gaps | | Non-agreeing RPs | Agreeing RPs |
	Cantonese	Akan	(both langauges)	(both langauges)
Local A-mvt.	YES	YES	YES	NO
Local A'-mvt.	YES	NO	YES	YES
Long-dist. A'-mvt.	YES	NO	YES	YES

Table 3: Distribution of gaps and resumptive pronouns by movement types

3.2 Diagnostics for movement properties

In the following, we will show that only non-agreeing RPs, but not agreeing RPs, pattern with gaps in showing movement properties. We recruit four movement diagnostics: (i) idiom preservation; (ii) island sensitivity; (iii) strong crossover effects; and (iv) weak crossover effects.

3.2.1 Idiom preservation

First, when part of a idiom is displaced, the idiomatic meaning is preserved with gaps and non-agreeing RPs only, as shown by (9) in Cantonese and (10) in Akan. With agreeing RPs, only the literal reading is available. Assuming idioms form a constituent, idiom preservation suggests that the displaced objects/subjects were part of the idioms in an early derivational stage. Only non-agreeing RPs allow the displaced parts to reconstruct back for idiomatic interpretation, indicating movement.

(9) Non-agreeing RPs preserve idiomatic readings in Cantonese

Di   seoi$_i$ nei jinggoi ceoi-maai {_$_i$/ |**keoi**$_i$|/ **keoidei**$_i$} sin.
CL.PL water 2SG should blow-ALSO   _   3SG   3PL   SFP
Literal: 'As for that (lit. those) water, you should blow them first.' (gap, *keoi*, *keoidei*)
Idiomatic: 'As for those chit-chats, you should finish them first.' (gap, *keoi*)   [C]

(10) Non-agreeing RPs preserve idiomatic readings in Akan

Me   pɔnkɔ$_i$ dabiara {_$_i$/ |**ɛ**$_i$|/ **ɔ**$_i$} pɛntem.
POSS horse   daily   _ 3SG.IN 3SG.AN want
Literal: 'My horse is always eager.' (gap, ɛ, wɔ)
Idiomatic: 'I am always in a hurry.' (gap, ɛ)   [A]

3.2.2 Island sensitivity

Second, non-agreeing RPs and gaps cannot occur in islands in Cantonese (e.g. adjunct islands in (11)) and Akan (e.g. complex NP islands in (12)), in contrast to agreeing RPs which ameliorate island violations. Note that gaps in Akan are also independently banned in A'-dependencies (§3.1).

(11) Non-agreeing RPs are banned in adjunct islands in Cantonese (relativization)

Go di   [$_{CP}$ [$_{Adjunct}$ jyugwo ngodei laai-saai {*_$_i$/ |***keoi**$_i$|/ **keoidei**$_i$}] daaigaa
that CL.PL   if   1PL   arrest-ALL   _   3SG   3PL   everyone
  zau wui hou hoisam] ge **taamgun**$_i$.
  then will very happy MOD corrupt.official
'Those corrupt officials$_i$ who if we arrested them$_i$ all everyone will be very happy'   [C]

(12) Non-agreeing RPs are banned in complex NP islands in Akan (relativization)

M-mofra no$_i$ [$_{CP}$ aa me te-e   [$_{NP}$ n-konkonsa fa-a   wɔn   ho [$_{CP}$
PL-child DET   REL 1SG hear-PST   PL-rumor take-PST 3PL.POSS body
  sɛ   {*_$_i$/ |***ɛ**$_i$|/ **wɔ**$_i$} fa-a   pen no]]].
  COMP _ 3SG.IN 3PL.AN take-PST pen DET
'The children$_i$ who I heard a rumor about them$_i$ that they$_i$ took the pen'   [A]

3.2.3 Strong crossover effects

Third, consider the strong crossover (SCO) configuration where a phrase moves across an intervening co-referential pronoun ([**XP**$_i$ ... pronoun$_i$ ... <**XP**>$_i$]). SCO is generally disallowed due to the obligatory reconstruction nature of A'-movement, which leads to Principle C violation. In (13)-(14), non-agreeing RPs and gaps in both languages display SCO effects in A'-dependencies (topicalization & *wh*-movement), but not agreeing RPs, suggesting a contrast in availability of reconstruction.

(13)   Non-agreeing RPs are subject to SCO effects in Cantonese (topicalization)

    Go di taamgun$_i$ ne,   Aaming tengman [CP keoidei$_i$ gokdak [CP daaigaa
    that CL.PL corrupt.official TOP Ming   hear   3PL   think   everyone

      dou soeng laai-saai   {*_$_i$/ *keoi$_i$ / keoidei$_i$}]].
      all   want arrest-ALL   _   3SG   3PL

      'As for those corrupt officials$_i$, M heard they$_i$ think everyone wants to arrest them$_i$ all.'   [C]

(14)   Non-agreeing RPs are subject to SCO effects in Akan (*wh*-movement)

    Politicians ben$_i$ na   Ama te-e   [CP sɛ   wɔ$_i$ dwene [CP sɛ   {*_$_i$/ *ɛ$_i$ /
    Politicians which FOC Ama hear-PST   COMP 3PL think   COMP   _   3SG.IN

      wɔ$_i$}   bɛ   di nkonim]].
      3PL.AN will eat victory

      'Which politicians$_i$ did Ama hear that they$_i$ think that they$_i$ will win?'   [A]

3.2.4 Weak crossover effects

Fourth, a similar pattern is found in weak crossover (WCO) effects, where a phrase cannot A'-move across a *non*-commanding co-referential pronoun ([**XP**$_i$ ... [YP ... pronoun$_i$ ...] ... <**XP**>$_i$]). As in (15)-(16), while gaps and non-agreeing RPs in both languages are banned in WCO, agreeing RPs are not. This again suggests movement with non-agreeing RPs but not with agreeing RPs.

(15)   Non-agreeing RPs are subject to WCO effects in Cantonese (topicalization)

    Go di sailou$_i$ ne, Aaming gokdak [CP [DP keoidei$_i$ aamaa] jinggoi gaauhou
    that CL.PL child   TOP Ming   think   3PL.POSS mum   should teach.well

      {*_$_i$/ *keoi$_i$ / keoidei$_i$}].
      _   3SG   3PL

      'As for those kids$_i$, Ming thinks that their$_i$ mum should teach them$_i$ to behave well.'   [C]

(16)   Non-agreeing RPs are subject to WCO effects in Akan (*wh*-movement)

    Asukuufoɔ ben$_i$ na   Ama te-e   [CP sɛ   [DP wɔn$_i$ tikya] dwene [CP
    Student.PL which FOC Ama hear-PST   COMP   3PL.POSS teacher think

      sɛ   {*_$_i$/ *ɛ$_i$ / wɔ$_i$}   bɛ   di nkonim]].
      COMP   _   3SG.IN 3PL.AN will eat victory

      'Which students$_i$ did Ama hear that their$_i$ teacher thinks that they$_i$ will win?'   [A]

The results of the above four movement tests are summarized in Table 4.

	Gaps		Non-agreeing RPs	Agreeing RPs
	Cantonese	Akan	(both langauges)	(both langauges)
Idiom preservation	YES	YES	YES	NO
Island sensitivity	YES	N/A	YES	NO
Strong crossover effects	YES	N/A	YES	NO
Weak crossover effects	YES	N/A	YES	NO

Table 4: Movement properties of gaps and resumptive pronouns

4 Proposal: partial Copy Deletion

In the previous sections, we have seen three empirical properties of non-agreeing RPs that set them apart from canonical pronouns and agreeing RPs:

(17)   a.   Featural mismatch (morphological forms);
       b.   Movement properties (syntactic distribution);
       c.   Exemption from Binding Principle B (in local A movement) (syntactic distribution).

We propose a partial Copy Deletion account to capture these empirical patterns. We first introduce two theoretical assumptions in §4.1, then lay out our core proposal in §4.2, and finally discuss a prediction on across-the-board (ATB) movement in §4.3.

4.1 Theoretical background

First, we assume the Copy Theory of Movement (Chomsky 1995, 2000, Nunes 2004, *i.a.*), where movement is formulated as copying the features of the moved item and merging them to a higher position. In other words, movement creates two copies in Narrow Syntax: the higher copy (at the landing site) and the lower copy (at the launching site).

    Second, we assume within a Distributed Morphology framework (Halle and Marantz 1993, *et seq.*) that functional elements like pronouns are spelled out through Vocabulary Insertion in the Phonological Form (PF). That is, they have no phonological features in the lexicon/syntax. (18) gives the featural compositions of the pronouns in Cantonese and Akan (cf. Table 1 & 2). Under the Subset Principle (Halle 1997), more specified items will be inserted first. As a result, the least specified [D] is pronounced as 3SG *keoi* in Cantonese and as 3SG.IN ε in Akan. They can be understood as default pronouns.

(18)   Vocabulary Items of pronouns[9]

	a. *Cantonese*				b. *Akan*		
	[D,+author]	$\leftrightarrow$	*ngo*		[D,+author,+pl]	$\leftrightarrow$	*yɛn*
	[D,+addressee]	$\leftrightarrow$	*nei*		[D,+addressee,+pl]	$\leftrightarrow$	*mo*
	[D,+pl]	$\leftrightarrow$	*dei*		[D,+animate,+pl]	$\leftrightarrow$	*wɔ*
	[D]	$\leftrightarrow$	***keoi***		[D,+author]	$\leftrightarrow$	*me*
					[D,+addressee]	$\leftrightarrow$	*wo*
					[D,+animate]	$\leftrightarrow$	*ɔ*
					[D]	$\leftrightarrow$	**ɛ**

4.2 Non-agreeing RPs as a result of partial Copy Deletion

With the above assumptions, we can now provide an account for non-agreeing RPs in Cantonese and Akan. The standard treatment of movement chains in the PF is to apply Copy Deletion to the lower copy (e.g. Chomsky 2000, Nunes 2004, Bošković and Nunes 2007). Thus, the lower copy is not pronounced, giving rise to a gap position.[10] Along the same line with van Urk (2018), Scott (2021), Georgi and Amaechi (2022), we propose that Copy Deletion may apply *partially* and only deletes a subset of the features on the lower copy. In the case of non-agreeing RPs, a DP is moved and all the features other than [D] on the lower copy are deleted, as schematized in (19). [D] is then realized as the default pronoun via Vocabulary Insertion.[11]

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[9]While it is not represented in (18), [+author] and [+addressee] presumably entail [+animate].

[10]It should be noted that "deletion" only renders features invisible to the sensorimotor interface (and hence not pronounced), but it is not erasure of features. See Nunes (2004) for arguments against deletion as erasure.

[11] The privilege of [D] over other features may be language-specific. In Cantonese, only DPs can undergo object shift (i.e. *v*P-internal object movement), and NPs such as bare nouns are banned. In Akan, subjects must be DPs, and a determiner is obligatory for clausal subjects. Other languages such as Swahili and Igbo, allow [Num] and/or [Pers] to "survive" Copy Deletion, giving rise to partial featural mismatch of RPs (i.e. matching in number but not person), or even no mismatch (cf. Scott 2021, Georgi and Amaechi 2022).

(19) Partial and Full Copy Deletion (CD)

Syntax: $\alpha_{[D],[\phi],...}$ ... $\beta_{[D],[\phi],...}$; where (α, β) is a chain created by movement
PF: (i) *Full CD* $\alpha_{[D],[\phi],...}$ ... $\beta_{\text{[D],[}\phi\text{],...}}$; surface string = α
      (ii) *Partial CD* $\alpha_{[D],[\phi],...}$ ... $\beta_{[D],\text{[}\phi\text{],...}}$; surface string = α ... exponent of [D]

That Copy Deletion may have partial application is not a novel idea and is also not restricted to resumption. Similar proposals have been made in a variety of empirical domains involving distributed/scattered deletion (clitics as in Bošković 2001; left branch extraction as in Fanselow and Cavar 2002; predicate fronting as in van Urk 2022; discontinuous predicates as in Chan et al. 2022; see also Lee 2021, 2022 for Copy Deletion suspension). What is special about resumption is that the partial lower copy is realized as a default pronoun (instead of part of the strings identical/complementary to the higher copy) *modulo* Vocabulary Insertion. In the following, we demonstrate how the proposed account captures the empirical properties of non-agreeing RPs.

4.2.1 Deriving non-agreeing RPs

We implement the proposal in Cantonese first. To derive the non-agreeing RP *keoi* in (20), the plural object moves from VP to Spec *v*P, creating two copies at both positions in Narrow Syntax (=21a-b). In the PF, Copy Deletion applies partially on the lower copy to delete the plural feature, categorical feature *n* and the root, leaving [D] intact (=21c). Finally, [D] is realized as the third person singular *keoi* by Vocabulary Insertion (=21d).

(20) Nei jiu   [$_{v\text{P}}$ zoeng **di**   **syu**$_i$ tai-jyun$_k$ [$_{\text{VP}}$ t_k $\boxed{\textbf{keoi}_i}$]]   (=2a)
      2SG must   DISP CL.PL book read-finish   3SG
      'You must finish reading the books.'   [C]

(21) The derivation of Cantonese non-agreeing RP *keoi* in (20)

      a. Baseline (Syn.) [$_{v\text{P}}$ *zoeng*   *v*-V [$_{\text{VP}}$ *di syu*$_{[\textbf{D},+\text{pl},n,\sqrt{book}]}$ ...]]
      b. Obj. mvt. (Syn.) [$_{v\text{P}}$ *zoeng di syu*$_{[\textbf{D},+\text{pl},n,\sqrt{book}]}$ *v*-V [$_{\text{VP}}$ <*di syu*$_{[\textbf{D},+\text{pl},n,\sqrt{book}]}$> ...]]
      c. Partial CD (PF) [$_{v\text{P}}$ *zoeng di syu*$_{[\textbf{D},+\text{pl},n,\sqrt{book}]}$ *v*-V [$_{\text{VP}}$ <*di syu*$_{[\text{D},+\text{pl},n,\sqrt{book}]}$> ...]]
      d. VI   (PF) [$_{v\text{P}}$ *zoeng di syu*$_{[\textbf{D},+\text{pl},n,\sqrt{book}]}$ *v*-V [$_{\text{VP}}$ <***keoi***$_{[\textbf{D}]}$>   ...]]

Now we implement the proposal in Akan. To derive the non-agreeing RP ε in (22), the plural animate subject moves from Spec *v*P to Spec TP, resulting in two copies at both positions in Narrow Syntax (=23a-b). Partial Copy Deletion applies in the PF, deleting the plural, animate, categorical features and the root (=23c). [D] survives the deletion and is pronounced as the third person inanimate ε via Vocabulary Insertion (=23d).

(22) [$_{\text{TP}}$ **M-mofrai no**$_i$ ɛnora   [$_{v\text{P}}$ $\boxed{\boldsymbol{\varepsilon}_i}$ tu-u   ndwom]]   (=2b)
      PL-child   DET yesterday   3SG.IN sing-PST song
      'The children sang yesterday.'   [A]

(23) The derivation of Akan non-agreeing RP ε in (22)

      a. Baseline   (Syn.) [$_{\text{TP}}$ T [$_{v\text{P}}$ *mmofra no*$_{[\textbf{D},+\text{pl},+\text{an},n,\sqrt{child}]}$ ...]]
      b. Subj. mvt. (Syn.) [$_{\text{TP}}$ *mmofra no*$_{[\textbf{D},+\text{pl},+\text{an},n,\sqrt{child}]}$ T [$_{v\text{P}}$ <*mmofra no*$_{[\textbf{D},+\text{pl},+\text{an},n,\sqrt{child}]}$> ...]]
      c. Partial CD (PF) [$_{\text{TP}}$ *mmofra no*$_{[\textbf{D},+\text{pl},+\text{an},n,\sqrt{child}]}$ T [$_{v\text{P}}$ <*mmofra no*$_{[\text{D},+\text{pl},+\text{an},n,\sqrt{child}]}$> ...]]
      d. VI   (PF) [$_{\text{TP}}$ *mmofra no*$_{[\textbf{D},+\text{pl},+\text{an},n,\sqrt{child}]}$ T [$_{v\text{P}}$ <$\boldsymbol{\varepsilon}_{[\textbf{D}]}$>   ...]]

The proposed account captures the three empirical properties of non-agreeing RPs. First, since phi-features do not survive Copy Deletion, only [D] is realized as the default pronoun, leading to featural mismatches in person, number and/or animacy. Second, non-agreeing RPs are the (partial) realization of the lower copy of movement chains, and exhibit movement properties just as gaps. Third, because non-agreeing RPs are not genuine (base-generated) pronouns that establish anaphoric dependencies with the antecedent, they are not subject to Binding Principle B. Thus, they may occur with the antecedent (=the higher copy) in a local binding domain such as TP or *v*P.

It is also worth noting that the proposed analysis has merits in restricting the range of possible resumption strategies by Copy Deletion. To begin with, since no phi-features survive partial Copy

Deletion, other forms with partial mismatch are not allowed (but see footnote 11 for language variations). Further, it requires the lower copy to have identical features to the higher copy (before deletion). This predicts that any resumption strategy that does not share the same set of features with the antecedents cannot be used to replace non-agreeing RPs, such as epithet DPs (e.g. *that poor guy* in *[The prisoner]$_i$ who we couldn't even figure out why [that poor guy]$_i$ was in jail*, modified from McCloskey 2017:2), which often have different features on the head (e.g. demonstratives with an additional [Dem]/[Deictic] feature besides [D]) and on the complement (e.g. a different noun phrase describing the referent). Last but not least, the antecedents of non-agreeing RPs are predicted to be limited to only DPs, but not phrases that are not headed by [D] such as NPs, PPs, CPs, etc.[12]

4.2.2 Deriving agreeing RPs

As for agreeing RPs, we propose that they are base-generated pronouns. When they occur, the antecedents are also base-generated at the surface position. In other words, there is only anaphoric relation, but not movement dependency, between the antecedents and the agreeing RPs.

(24) Agreeing RPs as base-generated pronouns
      Syntax: [antecedent$_{[D],[\phi],...}$ ... [pronoun$_{[D],[\phi]}$ ...]] (base-generation)
      PF: [antecedent$_{[D],[\phi],...}$ ... [agreeing RPs   ...]] (Vocabulary Insertion)

That agreeing RPs are base-generated captures their contrast with non-agreeing RPs (cf. §2-3). First, agreeing RPs are pronouns born with phi-features, which observe the general matching requirement with their antecedents. Second, they are base-generated and do not show movement properties. Third, they establish anaphoric/pronominal dependencies with their antecedent, and cannot be bound in the local binding domain (e.g. TP) due to Binding Principle B. Thus, agreeing RPs cannot participate in local A movement configurations, as opposed to non-agreeing RPs.[13]

4.3 A prediction on ATB-movement

The proposed account not only derives the contrast between non-agreeing RPs and agreeing RPs, but also makes a prediction on whether they are compatible with each other in ATB-movement configurations. Assuming that the dependencies between the antecedent and RPs in each of the conjuncts must be the same (e.g. both are movement dependencies), a non-agreeing RP in one conjunct is predicted to be *in*compatible with an agreeing RP in another conjunct, due to a mix of movement and base-generation dependencies. Non-agreeing RPs are predicted to be only compatible with non-agreeing RPs or gaps. The predictions are schematized in (25).[14]

(25) a. Non-agreeing RPs are predicted to be compatible with gaps/non-agreeing RPs
          i. Antecedent$_j$ ... [... *non-agreeing RPs$_j$*]   & [... {$_j$ / *non-agreeing RPs$_j$*}]
          ii. Antecedent$_j$ ... [... {$_j$ / *non-agreeing RPs$_j$*}] & [... *non-agreeing RPs$_j$*]
      b. Agreeing RPs are predicted to be not compatible with gaps/non-agreeing RPs
          i. *Antecedent$_j$ ... [... *agreeing RPs$_j$*]   & [... {$_j$ / *non-agreeing RPs$_j$*}]
          ii. *Antecedent$_j$ ... [... {$_j$ / *non-agreeing RPs$_j$*}] & [... *agreeing RPs$_j$*]

The predictions are borne out in Cantonese and Akan. In (26), while non-agreeing 3SG *keoi* in the first conjunct is compatible with the gap or another *keoi*, the agreeing 3PL *keoidei* cannot be used in the second conjunct. The patterns flip for agreeing *keoidei*: it is only compatible with another *keoidei*, but not gaps or non-agreeing *keoi*.

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[12]While space limits us to provide relevant examples, these predictions are borne out in both languages.

[13]Agreeing RPs are allowed in local/mono-clausal A'-movement configurations, where the antecedents are base-generated at the left periphery (e.g. Spec CP). We follow Bošković (2016) and assume that the phasal edge belongs to the higher binding domain. Thus, the antecedents are outside the binding domain TP and are able to bind agreeing RPs without violating Principle B. As a result, the Highest Subject Restriction (McCloskey 2017) does not apply in both languages.

[14]We thank Martin Salzmann for drawing our attention to ATB-movement. Note that the patterns here differ from Zurich German, where gaps and base-generated RPs can be "mixed" in ATB-movement (Salzmann 2012).

(26)   Non-agreeing RPs pair with gaps but not agreeing RPs in ATB-movement in Cantonese

   a.   *Non-agreeing RPs ... ^{OK}gaps/^{OK}non-agreeing RPs/*agreeing RPs*

   Godi [ngo gokdak [Aaming soeng zikhak   laai-saai   **keoi**$_k$]] ji [Aafan
   those I think   Ming   want immediately arrest-ALL 3SG   and Fan
     m-soeng zikhak   laai-saai   {_$_k$/ **keoi**$_k$ / *keoidei$_k$}]] ge **taamgun**$_k$.
     not-want immediately arrest-ALL _   3SG   3PL   MOD corrupt.officials
   'Those corrupt officials$_k$ who I think [Ming wants to arrest them$_k$ all immediately] and
   [Fan doesn't want to arrest them$_k$ all immediately]'   [C]

   b.   *Agreeing RPs ... *gaps/$^{??}$non-agreeing RPs/^{OK}agreeing RPs*

   Godi [ngo gokdak [Aaming soeng zikhak laai-saai **keoidei**$_k$] ji [Aafan
   those I think   Ming   want immed. arrest-ALL 3PL   and Fan
     m-soeng zikhak laai-saai   {*_$_k$/ $^{??}$**keoi**$_k$ / **keoidei**$_k$}]] ge **taamgun**$_k$.
     not-want immed. arrest-ALL _   3SG   3PL   MOD corrupt.officials

   The same patterns are found in Akan, with the caution that Akan A'-movement does not permit gaps. Hence, only agreeing RPs and non-agreeing RPs are tested. In (27), the non-agreeing RP ε can only pair with another non-agreeing ε, but not with the agreeing *wɔ*.

(27)   Non-agreeing RPs do not pair with agreeing RPs in ATB-movement in Akan

   a.   *Non-agreeing RPs ... ^{OK}non-agreeing RPs/*agreeing RPs*
   A-sukuufoɔ   nok$_k$ [aa me dwene sɛ   [**ɛ**$_k$ kɔ-ɔ   sukuu] na [{ **ɛ**$_k$ /
   PL-student.PL DET   REL 1SG think COMP 3SG.IN go-PST school and   3SG.IN
     ****wɔ**$_k$} bɛ   ba   ahyia   no]]
   3PL.AN FUT come afternoon DET
   'The children$_k$ who I think [_$_k$ went to school] and [_$_k$ will be back in the aftn.]'   [A]

   b.   *Agreeing RPs ... *non-agreeing RPs/^{OK}agreeing RPs*
   A-sukuufoɔ   nok$_k$ [aa me dwene sɛ   [**wɔ**$_k$ kɔ-ɔ   sukuu] na [{ *****ɛ**$_k$ /
   PL-student.PL DET   REL 1SG think COMP 3PL.AN go-PST school and   3SG.IN
     wɔ$_k$} bɛ   ba   ahyia   no]]
   3PL.AN FUT come afternoon DET

5   Concluding remarks

To conclude, resumption comes in two strategies in Cantonese and Akan (Asante Twi), with distinct morphological forms: (i) non-agreeing and (ii) agreeing RPs. We showed that they differ in both pronominal properties (Binding Principle B exemption vs. obedience) and movement properties (movement vs. base-generation). We proposed a partial Copy Deletion account where [D] feature on the lower copy of a movement chain may survive Copy Deletion (hence *partial*), and be realized as a default, non-agreeing pronoun (3SG *keoi* in Cantonese, 3SG.IN ε in Akan). The proposed account captures the distinction between non-agreeing and agreeing RPs, as summarized in Table 5.

   The findings have two implications. First, we provided cross-linguistic support for partial Copy Deletion from resumption, on a par with recent discoveries (van Urk 2018, Scott 2021, Georgi and Amaechi 2022). This furthers our understanding of how movement chains may be linearized (cf. Nunes 2004). Second, RPs often show a dual nature, being trace-like or pronoun-like (McCloskey 2017). The dual nature is manifested as two distinct strategies in Cantonese and Akan reflected by morphological forms, suggesting that resumption should receive a non-uniform treatment.

	Derived by	**Features**	**Relation with the antecedent**
Non-agreeing RPs	Partial Copy Deletion	[D]	Movement dependency
Agreeing RPs	Base-generation	[D] + [phi]	Pronominal dependency

Table 5: Two types of resumption in Cantonese and Akan

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