



## Article

# The *That*-Trace Effect—A Surface or a Deep Island Phenomenon? Evidence from Resumption and Prolepsis in Igbo

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**Abstract:** In many languages, a subject/non-subject  $\bar{A}$ -extraction asymmetry can be observed: While non-subject extraction is unproblematic, long extraction of the subject requires repair strategies. This phenomenon is known as the *that*-trace effect. Two broad types of approaches to this effect have been proposed in the literature: (a) structural accounts that prohibit subject extraction in the syntax; (b) surface-oriented PF accounts according to which nothing blocks long subject movement in the syntax, but a surface filter prohibits the output string where a trace follows the complementizer. In this paper, we argue for a syntactic cause of the effect in Igbo (Benue–Congo, Nigeria). The empirical evidence centers around the distribution of resumptive pronouns in the language. We show that Igbo has all the ingredients required for a PF approach to the *that*-trace effect (viz., long  $\bar{A}$ -movement and trace spell-out); nevertheless, it does not apply them to enable long subject extraction but rather resorts to prolepsis (among other strategies). Further evidence against a PF account comes from the impossibility of short subject extraction. Finally, we provide evidence from subextraction from subjects for an antilocality component underlying the subject extraction restriction in Igbo.

**Keywords:** *that*-trace effect; resumption; prolepsis; anti-locality; reflexes of movement; Igbo



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## 1. Introduction

Many languages exhibit a subject/non-subject asymmetry under subextraction from finite embedded clauses containing an overt complementizer: While long extraction of non-subjects is unproblematic, long subject extraction cannot be formed in an equivalent manner and requires repairs. This phenomenon is known as the *that*-trace effect (TTE in what follows, see [Bresnan 1977](#); [Perlmutter 1971, 1968](#)). (1) illustrates the TTE in English for constituent question formation: Wh-movement of a direct object (DO) and wh-adjunct (ADJ) across the overt declarative complementizer *that* is possible (see (1-a,b)), but subject (SU) extraction requires the complementizer to be silent, see (1-c).

- (1) The TTE in English ([Perlmutter 1968](#), p. 214):
- |    |  |                                   |
|----|--|-----------------------------------|
| a. | What did he say that Laura hid ___?              | <i>long DO question</i>           |
| b. | When did he say that Laura hid the rutabaga ___? | <i>long ADJ question</i>          |
| c. | Who did he say (*that) ___ hid the rutabaga?     | <i>long SU question, *overt C</i> |

Various accounts of the TTE have been proposed in the literature; they can be classified into two broad types, following [Pesetsky \(2017\)](#): (a) structural analyses and (b) surface-oriented PF accounts. The former rely, e.g., on the blocking of a binding/government relation between the embedded subject trace and its antecedent (see [Chomsky's 1980](#) Nominative Island Condition and subsequent version thereof; ECP accounts along the lines of [Chomsky 1981](#)) or on the high pre-extraction position of the subject, viz., SpecT, from which movement is blocked either because it is a criterial position (see [Rizzi and Shlonsky 2007](#)), or because it is too close to the landing site in the CP-domain (see anti-locality accounts as proposed, e.g., in [Erlewine 2020](#)). Surface-oriented accounts, on the other hand,

postulate a ban on PF-sequences of the elements involved. For example, [Perlmutter's \(1968\)](#) constraint and [Chomsky and Lasnik's \(1977\)](#) *that-trace filter* ban finite CPs with an overt complementizer followed by a gap in SpecTP.<sup>1</sup> [Salzmann et al. \(2013\)](#) suggests that linear adjacency between the complementizer and the finite verb is blocked in general (in certain types of languages); this adjacency can arise, e.g., by extraction of a previously intervening element like the subject DP. Finally, [Bruening \(2009\)](#); [Chene \(2000\)](#); [Kandybowicz \(2006\)](#); [Sato and Dobashi \(2016\)](#) stress the role of prosodic conditions on the (non-)occurrence of the TTE. Despite decades of research on the *that-trace* effect, it is still unclear what the most promising approach is, and whether we need different accounts for different languages. [Pesetsky \(2017, p. 10\)](#) summarizes the state-of-the-art as follows:

“Even at a relatively broad level of generality, it has proven frustratingly hard to determine just what kind of phenomenon the complementizer-trace effect is. [...] [T]he correct account of complementizer-trace effects has become something of a Hilbert problem for researchers in the field.”

In this paper we present novel data from Igbo (Benue-Congo, Nigeria) that argue for a syntactic source of the *that-trace* effect in the language. The evidence crucially involves the distribution of resumptive pronouns. In particular, we will investigate the strategies that Igbo provides to enable long subject extraction, especially the resumption strategy, in which the embedding complementizer is followed by a resumptive pronoun. (2) illustrates this strategy in pseudo-English (where *he* resumes *who*).

- (2) Resumption strategy to enable a long subject  $\bar{A}$ -dependency (Pseudo-English):  
Who did Susan say that **he** hid the rutabaga?

A common PF-account of this amelioration effect of resumption goes as follows: The string in (2) is derived by long  $\bar{A}$ -movement of the subject in the syntax. This operation results in the surface string C-gap in the embedded clause, which is not tolerated at PF (e.g., by [Perlmutter's](#) constraint). As a repair, the trace of the moved subject is realized overtly (by a pronoun). There is evidence for such a derivation in various languages, e.g., for Nupe ([Kandybowicz 2008](#)), which is closely related to Igbo. We will show, however, that this is not the derivation underlying the resumption strategy for long subject dependencies in Igbo. The Igbo equivalent of (2) rather involves prolepsis. This is surprising in light of the fact that the language provides all the ingredients for this kind of PF-account: (a) It in principle allows cross-clausal  $\bar{A}$ -movement of subjects and non-subjects (in the latter case even across the overt complementizer), and (b) there is trace spell-out by resumption (for prosodic reasons) in other contexts in the language. Nevertheless, Igbo cannot apply the combination of (a) and (b) to enable long subject extraction. We take this to indicate a syntactic rather than a PF source of the extraction restriction. Put differently, embedded finite clauses in Igbo do not constitute ‘surface islands’ in [Phillips's \(2013\)](#) terms, but rather ‘deep islands’. Furthermore, the blocking of short and long subject  $\bar{A}$ -movement and the possibility of short and long subextraction from subjects point towards an anti-locality condition on  $\bar{A}$ -movement as the source of the *that-trace* effect in Igbo. On a more general level, the Igbo data provide further evidence that surface-identical repairs of the *that-trace* effect such as the resumption strategy in (2) can have different underlying structures across languages (e.g., long movement + trace spell-out, base-generation, prolepsis); this in turn suggests potentially multiple sources (syntactic ones and PF ones) for the restriction on subject extraction cross-linguistically.

The paper is structured as follows: In [Section 2](#), we provide an overview of the basic grammatical properties of Igbo and of the formation of clause-bound  $\bar{A}$ -dependencies, including the distribution of gaps and resumptive pronouns in those dependencies. [Section 3](#) introduces the *that-trace* effect in long  $\bar{A}$ -dependencies in Igbo as well as the strategies the language offers to enable long subject dependencies. [Section 4](#) shows that the two ingredients for a PF-account of the resumption strategy are available in Igbo, viz., long  $\bar{A}$ -movement and trace-spell for prosodic reasons. [Section 5](#) then argues that the resump-

tion strategy does not involve long subject movement and that the resumptive there can thus not pronounce a trace; we will also address potential counter-evidence from ellipsis. In Section 6 we argue that the construction underlying the resumption strategy in Igbo is prolepsis with short  $\bar{A}$ -movement of the proleptic object. Section 7 addresses the syntactic constraint blocking subject extraction and provides evidence from subextraction from subjects for an anti-locality condition on  $\bar{A}$ -movement. Section 8 concludes. All Igbo data without references come from the native speaker co-author, Mary Amaechi.

## 2. Short $\bar{A}$ -Dependencies in Igbo

This section provides an overview of the morphosyntactic properties of Igbo that will be relevant for the investigation (see also the grammars by [Emenanjo 2015](#); [Green and Igwe 1963](#); [Manfredi 1991](#); [Mbah 2006](#); [Uwalaka 1997](#)). The overview includes basic grammatical properties of the language (Section 2.1), a summary of the syntax of clause-bound  $\bar{A}$ -dependencies (Section 2.2), as well as a description of the distribution of gaps vs. resumptive pronouns in these dependencies (Section 2.3).

### 2.1. Basic Grammatical Properties

The word order in an all-new sentence in Igbo is SVO, with adjuncts occurring in the clause-final position, see (3). The word order can only be changed to express categories of information structure (topic, focus).

- (3) Ézè hù-rù Àdá n'-áhíá  
 Eze see-rV Ada P-market  
 "Eze saw Ada at the market." *declarative*

Igbo is a tone language, that distinguishes high tone (á) and low tone (à), and also exhibits a downstep (‘á) in sequences of two high tones associated with different tone-bearing units (TBUs, [Clark 1990](#)). Vowels come in [ $\pm$ ATR] pairs; the [-ATR] ones (except for /a/) are indicated by subdots. Verbs can bear a number of affixes to express, e.g., TAM categories and derivation. Most of our examples contain the suffix *-rV* (where V is a vowel that assimilates in quality and tone to the vowel of the verb stem). Its meaning is debated (see, e.g., [Déchaine 1993](#); [Emenanjo 2015](#); [Uwalaka 1988](#)); we, therefore, use the abstract string ‘rV’ as a gloss. One interpretation the suffix can have in an example like (3) is past tense, hence the English translations. There is neither agreement nor case morphology in Igbo; the language also does not have pro-drop. The structure of a simple declarative clause as in (3) is illustrated in (4) (without the adjunct), see [Amaechi \(2020\)](#); [Amaechi and Georgi \(2019\)](#). Heads precede their complements, specifiers are linearized to the left of their sister. The language has an obligatory EPP on T that attracts the structurally closest vP-internal argument to SpecTP. The finite verb moves to a higher head in its extended projection, which we take to be T here for the sake of concreteness (see [Amaechi 2020](#) for an overview of alternative views).

- (4) [<sub>CP</sub> C [<sub>TP</sub> DP<sub>ext</sub> [<sub>T'</sub> V+V+ASP+T [<sub>ASPP</sub> <ASP> [<sub>VP</sub> <DP<sub>ext</sub>> [<sub>v'</sub> <V> [<sub>VP</sub> <V> DP<sub>int</sub> ]]]]]]]]]

Since resumptive pronouns (RPs) will play a crucial role in what follows, we illustrate the paradigm of personal pronouns in (5). They inflect for person and number; furthermore, for 2sg and 3sg pronouns, we can distinguish a dependent (viz., clitic) form (glossed as DEP), which undergoes ATR-harmony with its host, and an independent (strong) form (glossed as INDEP), see [Emenanjo \(2015, p. 304\)](#). The choice of the dependent vs. the independent form is predictable from the syntactic context (see [Georgi and Amaechi 2023](#) and endnote 25). All pronouns except for the 1pl and 2pl ones also have a designated form when used as a possessor (glossed as POSS) in the associative construction.<sup>2</sup>

(5) Igbo personal pronouns:

	1sg	2sg	3sg	1pl	2pl	3pl
DEP	–	í	ó	–	–	–
INDEP	m̄	gí	yá	ànyí	ùnù	há
POSS	'm̄	'gí	'yá			'há

2.2. Clause-Bound  $\bar{A}$ -Dependencies

This subsection summarizes the results of our previous work on the formation of clause-bound (=short)  $\bar{A}$ -dependencies in Igbo (Amaechi 2020; Amaechi and Georgi 2019; Georgi and Amaechi 2023). The language has two strategies to create such dependencies: base-generation and movement. They are instantiated, e.g., by topicalization and ex-situ focus (called focus fronting in what follows), respectively.<sup>3</sup> (6-b) illustrates focus fronting, and (6-c) topicalization, of the direct object *Àdá* from the baseline in (6-a). Note that we indicate the focused constituent in small caps in the English translations and not by a cleft because these constructions are not clefts in Igbo (see Amaechi 2020).

- (6) a. Ézè hù-rù Àdá  
Eze see-rV Ada  
"Eze saw Ada." declarative
- b. Àdá kà Ézé hù-rù \_\_\_ / \*yá  
Ada FOC Eze see-rV 3SG.INDEP  
"Eze saw ADA." DO focus
- c. Àdá, Ézè hù-rù yá / \* \_\_\_  
Ada Eze see-rV 3SG.INDEP  
"As for Ada, Eze saw her." DO topic

An XP that undergoes focus fronting occurs in the sentence-initial position and is followed by the focus marker *kà* (unless it is the local subject, see Amaechi and Georgi 2019 and Section 7 for evidence). The usual post-verbal position of the focused DO remains empty (=gap, represented by an underscore in (6-b)); using an RP (here: the 3sg independent pronoun *yá*) is impossible in this context. Topicalization also forces the corresponding XP to surface in the sentence-initial position (not followed by a morphological flag), and in addition, a resumptive pronoun is required in the position where the topic is interpreted in terms of its thematic role. Applying a number of classic as well as Language-Specific Movement Diagnostics (abbreviated as LSMDs below), summarized in Table 1 from Georgi and Amaechi (2023, p. 966), we argued that ex-situ focus is the result of  $\bar{A}$ -movement of the focus XP from the gap site to its surface position, while the topic XP is base-generated in the sentence-initial position, and the associated RP is merged as the thematic argument of the predicate: The formation of ex-situ focus is blocked by islands, it licenses parasitic gaps (p<sub>gs</sub>), triggers language-specific  $\bar{A}$ -movement effects, and the focused XP reconstructs into its thematic base position (e.g., for strong cross-over and variable binding). Topicalization does not exhibit any of these properties. We cannot reproduce all the relevant examples here. In what follows, we will illustrate only the language-specific effects since they will be particularly useful in determining the derivation underlying long  $\bar{A}$ -dependencies. Some other diagnostics, such as islandhood, will also be illustrated later in the discussion.

Table 1. Movement diagnostics: summary of results.

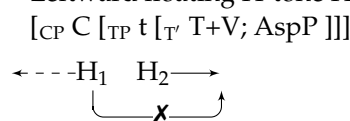
	Island-Sensitivity	Reconstruction	p <sub>g</sub> -Licensing	LSMDs	Bottom
focus	✓	✓	✓	✓	gap
topical.	*	*	*	*	RP

There are three language-specific movement diagnostics in Igbo: (a) the final H-tone on subjects (Manfredi 2018; Robinson 1974; Tada 1995), (b) the *ná*-particle under

sentential negation (Amaechi 2020; Goldsmith 1976; Green and Igwe 1963; Nwachukwu 1976), and (c) perfective islands (Amaechi 2020; Nwachukwu 1976). (a) and (b) are morpho-phonological cues that mark the path of  $\bar{A}$ -movement, (c) blocks  $\bar{A}$ -movement altogether.

Starting with (a), we observe that when a non-subject XP  $\bar{A}$ -moves across a subject DP, the rightmost tone-bearing unit of this subject DP must be associated with a high tone (H), i.e., the H-tone overwrites the underlying tone of the final TBU of the subject. We can see this effect in (6): The subject *Ézè* in (6-a) underlyingly ends in a low tone. When the DO is focus fronted across it as in (6-b), *Ézè* has to surface with a final H-tone (bold-faced). Amaechi (2020, ch. 4.5) argues that this H-tone originates in the left-peripheral head that merges with TP whenever an XP undergoes  $\bar{A}$ -movement. At PF, the tone floats to the right (by default) and docks onto the right edge of the linearly closest overt element. When a non-subject undergoes  $\bar{A}$ -movement, the closest overt element to the right of this head is the subject DP in SpecTP, hence we see the tone-overwriting effect there. When a subject DP (SU) undergoes  $\bar{A}$ -movement, however, the tonal effect manifests itself differently (see Amaechi 2020). The H-tone ( $H_1$  in (7)) is not visible on the moving subject itself. This is because the tone is associated at PF, but SpecTP is empty at this stage (due to the subject moving to a higher position), so there is nothing in SpecTP it could associate with (copies are apparently invisible for this process). Furthermore, an emptied SpecTP position is itself realized by a (different) floating H-tone ( $H_2$  in (7)), which attaches to the finite verb on its right. Under subject extraction, the H-tone originating in the emptied SpecTP,  $H_2$ , blocks the additionally triggered  $\bar{A}$ -movement-induced H-tone  $H_1$  in the C-domain from floating rightwards, as it usually would, see (7). As a consequence, the  $\bar{A}$ -movement-inducing H-tone  $H_1$  originating in C changes its direction and now floats to the left (indicated by the dashed line in (7)), looking for the closest overt material there to attach to.<sup>4</sup>

(7) Leftward floating H-tone  $H_1$  under subject extraction:



We cannot illustrate this effect with local subject focus, however, since subjects cannot undergo local  $\bar{A}$ -movement (see Section 7). But we can study the relevant tonal effects for long subject  $\bar{A}$ -movement, an example of which is given in (8-b), based on (8-a) (see Section 4.1.2 for arguments that (8-b) indeed results from cross-clausal subject extraction). The H-tone that is triggered by  $\bar{A}$ -movement in the embedded clause floats leftwards (because the additional H-tone originating in the emptied SpecTP blocks it from floating rightwards) and surfaces on the final TBU of the matrix verb (=the -rV-suffix in (8-b)), as this is the next overt element it encounters. Thus, in the end, both the  $\bar{A}$ -movement induced H-tone triggered in the matrix clause and the one triggered in the embedded clause under long subject  $\bar{A}$ -movement surface in the matrix clause: one on the matrix subject (originating in the matrix C-domain), the other one (triggered in the embedded clause) on the matrix verb. Moreover, the resulting linear adjacency of the H-tone on the matrix verb and the H-tone on the embedded verb, which is caused by the floating H in SpecTP, results in a downstep on the embedded verb on the surface.

- (8) a. *Úchè chè-rè nà Ézè hù-rù Àdá*  
 Uche think-rV C Eze see-rV Ada  
 “Uche thought that Eze saw Ada.” *declarative*
- b. *Ézè kà **Úché chè-ré** — **hù-rù** Àdá*  
 Eze FOC Uche think-rV — see-rV Ada  
 “Uche thought that EZE saw Ada.” *long SU focus*

To summarize, the final H-tone effect surfaces (i) on the final TBU of a crossed subject when a non-subject undergoes  $\bar{A}$ -movement, or (ii) when an embedded subject is extracted, on the linearly closest overt element to the left of C as well as on the embedded verb (as a downstep). That the final H-tone effect on subjects (or on the matrix verb under long

subject extraction) indicates the presence of an  $\bar{A}$ -movement dependency is supported by the following observations (Amaechi 2020): Tone overwriting does not occur in base-generation  $\bar{A}$ -dependencies, see the DO topicalization example in (6-c), where the subject *Ézè* surfaces with the underlying low tone on its rightmost TBU. Furthermore, the final H-tone on the subject is not triggered by focus in situ. This can be illustrated by the string in (6-a), which can also be the answer to an object question ('Who did Eze see?') with the DO focused in situ (see Amaechi and Georgi 2022). A-movement does not cause it either (see EPP-movement of the subject in the baseline declarative).

The second morpho-phonological cue (b) that tracks the path of  $\bar{A}$ -movement in Igbo is the particle *ná*. It obligatorily surfaces in front of the finite verb in clauses with sentential negation that also contain an  $\bar{A}$ -movement dependency; the grammatical function of the  $\bar{A}$ -moved XP (subject or non-subject) is irrelevant. (9-b) exemplifies the occurrence of *ná* for the ex-situ focus of a direct object (based on (9-a), which is the negative equivalent of the affirmative baseline in (6-a)).<sup>5</sup> That *ná* signals an  $\bar{A}$ -movement dependency in the minimal clause is supported by the following observations: The particle surface neither in negative declaratives (see (9-a)), nor in clauses with sentential negation that result from base-generation (see the object topicalization example in (9-c)); it is not triggered by A-movement (such as EPP-movement of the agent DP in (9-a)) and the particle cannot surface with focus in situ, see (9-d).

- (9) The *ná*-particle in negative clauses:
- a. *Ézè á-<sup>h</sup>hú-ghí Àdá*  
Eze PFX-see-NEG Ada  
"Eze did not see Ada." *declarative*
  - b. *Àdá kà Ézè (\*ná) <sup>h</sup>á-hú-ghí* —  
Ada FOC Eze PRT PFX-see-NEG  
"Eze did not see ADA." *DO focus, ex-situ*
  - c. *Àdá, Ézè (\*ná) á-<sup>h</sup>hú-ghí yá*  
Ada Eze PRT PFX-see-NEG 3SG.INDEP  
"As for Ada, Eze did not see her." *DO topic*
  - d. *Ézè (\*ná) á-<sup>h</sup>hú-ghí sòsò Àdá*  
Eze PRT PFX-see-NEG only Ada  
"Eze did not see only ADA." *DO focus, in situ*

Note, that H-tone overwriting is absent on the crossed-over subject in (9-b). This does not falsify our description of the distribution of the floating H-tone, however: It has long been noted that the final H-tone on crossed-over subjects and the *ná*-particle are in complementary distribution in Igbo (Goldsmith 1976; Green and Igwe 1963): The final H-tone surfaces only in affirmative clauses with  $\bar{A}$ -movement, whereas the *ná*-particle occurs only in negative clauses with  $\bar{A}$ -movement. Based on this complementary distribution, Amaechi (2020, ch. 4) proposes that the two elements (floating H-tone, *ná*) realize the same functional head in the left periphery; its spell-out as either H or *ná* is sensitive to the polarity value of the clause in which  $\bar{A}$ -movement takes place (=contextual allomorphy).

Finally, we turn to the language-specific movement diagnostic (c), which we will henceforth call a perfective island. The observation is that  $\bar{A}$ -movement is blocked for XPs of any grammatical function from clauses with perfective aspect. Morphologically, the perfective is a complex form that consists of a nominalizing prefix and up to two suffixes: the perfective suffix *lá*, and in some cases also the so called open vowel suffix (OVS), whose exact meaning is debated (Amaechi 2020, ch. 4.6), see the baseline in (10-a) (in which the OVS is silent). (10-b) illustrates the attempt to focus front the direct object, which is impossible. The perfective thus creates an island for subextraction. This blocking effect does not arise in any other tenses/aspects in Igbo.<sup>6</sup>

- (10) Perfective island:<sup>7</sup>
- a. Ézè à-hù-lá Àdá  
Eze NMLZ-see-PFV Ada  
“Eze has seen Ada.” *declarative*
  - b. \*Àdá kà Ézé à-hù-lá —  
Ada FOC Eze NMLZ-see-PFV —  
“Eze has seen ADA.” *DO focus*
  - c. Àdá, Ézè à-hù-lá 'yá  
Ada Eze NMLZ-see-PFV 3SG.POSS  
“As for Ada, Eze has seen her.” *DO topic*

The perfective island effect indicates an  $\bar{A}$ -movement dependency because it arises neither under A-movement (EPP-movement of the agent in (10-a) is possible), nor in base-generation  $\bar{A}$ -dependencies (see object topicalization in (10-c)). Furthermore, it does not occur with focus in situ: (10-a) can also be the answer to the question ‘What has Eze eaten?’ and would thus have the direct object focused in situ.

To summarize this overview of the three language-specific movement diagnostics in Igbo, the presence of  $\bar{A}$ -movement is signaled by (a) H-tone overwriting in affirmative clauses, (b) the presence of the *ná*-particle in clauses with sentential negation, and (c) the impossibility to form this dependency in the perfective. We will use these diagnostics to probe into the structure of long  $\bar{A}$ -dependencies in Igbo in subsequent sections.

### 2.3. The Distribution of Gaps vs. Resumptives in Igbo

As shown in (6),  $\bar{A}$ -dependencies in Igbo can in principle terminate either in a gap or in a resumptive pronoun, but these strategies are always in complementary distribution (for an apparent exception, see Section 6.1). Since resumption will play an important role in this paper, we will briefly summarize the basic distribution of gaps and RPs as described in Georgi and Amaechi (2023). We will add important qualifications in Section 4.2, though.

As for short  $\bar{A}$ -dependencies, we showed in (6-c) that topicalization (a base-generation dependency) of a verbal argument requires resumption at the bottom of the dependency. In contrast, ex-situ focus (and other  $\bar{A}$ -movement dependencies in Igbo such as relativization and *wh*-movement) of a verbal argument can only host a gap in the base-position of the focused XP, as shown for object focus fronting in (6-b). However, focus fronting (and other  $\bar{A}$ -movement dependencies) of XPs that are not arguments of a verb also require resumption in Igbo. This is the case when (i) the complement of a preposition, (ii) a possessor in the associative construction, (iii) a DP conjunct, or (iv) a focus associate is focused ex-situ (see Georgi and Amaechi 2023; Goldsmith 1981b). (11) illustrates this for focus fronting of the complement of a preposition, and (12) exemplifies focus fronting of an entire conjunct; both are only possible with an RP at the bottom of the dependency.

- (11) Focus fronting of the complement of P:
- a. Ézè kwè-rè [PP nà Àdá ]  
Eze believe-rV P Ada  
“Eze believed in Ada.” *baseline*
  - b. Àdá kà Ézé kwè-rè [PP nà yá / \* \_\_ ]  
Ada FOC Eze believe-rV P 3SG.INDEP  
“Eze believed in ADA.” *complement of P focus*
- (12) Focus fronting of a conjunct:
- a. Ézè hù-rù [&P Àdá nà Òbí ]  
Eze see-rV Ada and Obi  
“Eze saw Ada and Obi.” *baseline*
  - b. Àdá kà Ézé hù-rù [&P yá / \* \_\_ nà Òbí ]  
Ada FOC Eze see-rV 3SG.INDEP and Obi  
“Eze saw ADA and Obi.” *conjunct focus*

Crucially, an ex-situ focus dependency that terminates in an RP, like the ones in (11-b) and (12-b), is still the result of  $\bar{A}$ -movement: It behaves exactly like focus fronting that leaves a gap for all the movement diagnostics summarized in Table 1. Note, for example, the presence of the final H-tone effect on the subjects in (11-b) and in (12-b). We can thus add a third line for focus fronting that leaves an RP to our table, see Table 2 (Georgi and Amaechi 2023, p. 975):

**Table 2.** Movement diagnostics: summary of results.

	Island-Sensitivity	Reconstruction	<i>pg</i> -Licensing	LSMDs	Bottom
focus	✓	✓	✓	✓	gap
topical.	*	*	*	*	RP
focus	✓	✓	✓	✓	RP

We can draw the following conclusions from Table 2 (see Georgi and Amaechi 2023): (a) Igbo exhibits two types of RPs, namely RPs in base-generation dependencies and RPs in  $\bar{A}$ -movement dependencies. This in turn means that we cannot read off the  $\bar{A}$ -dependency type involved in a clause of the presence of an RP; we always have to run diagnostics of the kind summarized in Table 2 to decide between movement and base-generation. (b) RPs in focus fronting constructions that are the result of  $\bar{A}$ -movement (partially) realize the trace/lowest copy of the chain. (c) Since (clause-bound) focus fronting that leaves an RP involves movement, PPs, DPs and &Ps are not absolute islands in Igbo.<sup>8</sup>

There is, in fact, further morphological evidence for the presence of two distinct types of RPs in Igbo that will be crucial in subsequent sections: The two RP types behave differently with respect to phi-inflection (Georgi and Amaechi 2023) and their interchangeability with epithets. RPs in base-generation dependencies always fully match their antecedent in person and number, see the example in (13-a) with a 2pl independent pronoun topic, which has to be resumed by the identical 2pl RP; neither a partially nor a fully mismatching (3sg default) RP is possible in this case. Furthermore, RPs resuming base-generated antecedents can be replaced by epithets (such as ‘the idiot’), see (13-b). We exemplify this with an  $\bar{A}$ -dependency that involves the complement of a preposition because we want to compare RPs in base-generation vs. movement dependencies, but the latter only surface in a few contexts, among them complements of prepositions.

(13) Topicalization—the morphological form of the resuming element:

- a.  $\acute{U}n\grave{u}$ ,  $\acute{E}z\grave{e}$  kw\`e-r\`e [PP n\`a  $\acute{u}n\grave{u}$  / \*g\`i / \*h\`a /  
 2PL.INDEP Eze believe-rV P 2PL.INDEP / 2SG.INDEP / 3PL.INDEP /  
 \*y\`a ]  
 3SG.INDEP  
 “As for you(pl), Eze believed in you(pl).” 2pl topic, phi-match
- b.  $\acute{A}d\`a$ ,  $\acute{E}z\grave{e}$  kw\`e-r\`e [PP n\`a y\`a /  $\acute{o}f\grave{e}k\grave{e}$  ]  
 Ada Eze believe-rV P 3SG.INDEP idiot  
 “As for Ada<sub>i</sub>, Eze believed in her<sub>i</sub> / the idiot<sub>i</sub>.” ✓ RP, ✓ epithet

RPs that terminate (short)  $\bar{A}$ -movement dependencies, however, obligatorily show a phi-mismatch if their antecedent is a personal pronoun: in this case, the resumptive has to surface in its 3sg form, full or partial matching is excluded, see (14-a) for an example with ex-situ focus of a 2pl pronoun. Moreover, these RPs cannot be replaced by epithets, see (14-b).<sup>9</sup>

(14)  $\bar{A}$ -movement—the morphological form of the resuming element:

- a.  $\acute{U}n\grave{u}$  k\`a  $\acute{E}z\grave{e}$  kw\`e-r\`e [PP n\`a \* $\acute{u}n\grave{u}$  / \*g\`i / \*h\`a  
 2PL.INDEP FOC Eze believe-rV in 2PL.INDEP / 2SG.INDEP / 3PL.INDEP  
 / y\`a ]  
 / 3SG.INDEP  
 “Eze believed in YOU(pl).” 2pl focus, phi-mismatch



- b. Àdá kà Ézé kwè-rè [PP nà yá / \*òfèkè ]  
 Ada FOC Eze believe-rV P 3SG.INDEP idiot  
 "Eze believed in ADA." ✓RP, \*epithet

We will also use these morphological criteria in the following discussion to determine the underlying syntax of long  $\bar{A}$ -dependencies in Igbo.

### 3. Long $\bar{A}$ -Dependencies in Igbo: Introducing the *That-Trace Effect*

We now turn to the main topic of the present paper, i.e., the formation of cross-clausal (long)  $\bar{A}$ -dependencies in Igbo. We will concentrate on focus fronting, a dependency that exhibits the *that*-trace effect. We will first illustrate strategies that Igbo exhibits to circumvent the effect and then summarize what a typical PF account of one of these strategies, which involves resumption, looks like.

#### 3.1. How to Circumvent the *That-Trace Effect* in Igbo

We start with the surface form of embedded clauses in Igbo. Finite embedded declarative clauses must be introduced by an overt complementizer (glossed as C), i.e., the complementizer cannot be absent (represented as  $\emptyset$ , glossed as  $C^\emptyset$ ). The generally available declarative complementizer in Igbo is *nà*. It is also possible—though with some areal and dialectal variation in frequency and markedness—to use the element *sí* (also glossed as C) instead (Nwachukwu 1987; Uwalaka 1991), see the baseline in (15).<sup>10</sup> Apart from the presence of an overt C element, there are no further morphosyntactic differences between declarative matrix and embedded clauses: they have the same word order and the verbs in both clause types inflect for the same features.

- (15) Úchè chè-rè [CP nà / sí / \* $\emptyset$  Ézè hù-rù Àdá n’-áhíá ]  
 Uche think-rV C / C /  $C^\emptyset$  Eze see-rV Ada P-market  
 "Uche thought that Eze saw Ada at the market." declarative

In general, it is possible to form long  $\bar{A}$ -dependencies with elements that originate in an embedded declarative in Igbo. But long focus fronting (just like the long movement of *wh*-pronouns) exhibits a subject/non-subject asymmetry (Uwalaka 1991): Long ex-situ focus of an embedded non-subject is formed in the expected manner, see (16-a) for long direct object focus: The focused object surfaces in sentence-initial position is followed by the focus marker, and leaves a gap in its thematic position (as expected, since we are extracting a verbal argument). Note, that the set of (un)available complementizers under long non-subject focus is the same as in the baseline in (15). The same pattern holds for long indirect object and long adjunct focus (not illustrated here). Long subject focus, however, does not proceed in a parallel fashion: It is impossible to have a gap in the embedded subject position following the complementizer *nà*, see (16-b).<sup>11,12</sup>

- (16) Long focus fronting: direct object vs. subject
- a. Àdá kà Úché chè-rè nà / sí / \* $\emptyset$  Ézé hù-rù \_\_\_  
 Ada FOC Uche think-rV C / C /  $C^\emptyset$  Eze see-rV  
 "Uche thought that Eze saw ADA." long DO focus
- b. \*Ézè kà Úché chè-rè nà \_\_\_ <sup>1</sup>hù-<sup>1</sup>rù Àdá n’-áhíá  
 Eze FOC Uche think-rV C \_\_\_ see-rV Ada P-market  
 "Uche thought that EZE saw Ada at the market." long SU focus

Similar subject/non-subject asymmetries under long  $\bar{A}$ -extraction can be found in a number of unrelated languages and are known as the *that*-trace effect, first described in Perlmutter (1971, 1968), see Pesetsky (2017) for an overview. In English, for example, the *wh*-movement of an embedded object is grammatical, while the *wh*-movement of the embedded subject is impossible across the overt embedding complementizer, as was illustrated in (1). The offending subject extraction configuration in (1-c) in English is repaired by dropping the complementizer. The same repair is available, e.g., in Levantine Arabic (Kenstowicz 1989)

and in varieties of Scandinavian languages (Lohndal 2009). Levantine Arabic has a second repair strategy: the use of a resumptive pronoun in the embedded subject position (attached as a clitic to the complementizer), see (17). Kandybowicz (2006, 2008) reports the same surface repair for Nupe. More generally, obligatory resumption has been described for local and long subject  $\bar{A}$ -dependencies in a number of other languages, see Boeckx (2003) and Salzmänn (2017b, p. 240ff.) for overviews. Another attested repair strategy is the use of a different (often phonologically reduced) form of the complementizer to enable long subject extraction (e.g., the famous *que-qui* alternation in French, see Perlmutter 1971, 1968, or C-reduction in Nupe, see Kandybowicz 2006). Other languages apply clausal pied-piping or extraction of the subject from a postverbal position to circumvent a *that*-trace violation (see Rizzi and Shlonsky 2007).

- (17) RP repair for long subject extraction (Kenstowicz 1989, p. 264):
- a. \*ʔayy bint Fariid kaal innu \_ ištarat l-fuṣṭaan  
 which girl Fariid say C \_ bought DEF-dress  
 Lit. “Which girl did Fariid say that bought the dress?”
  - b. ʔayy bint<sub>i</sub> Fariid kaal inn-ha<sub>i</sub> ištarat l-fuṣṭaan  
 which girl Fariid say C-3SG.FEM bought DEF-dress  
 Lit. “Which girl did Fariid say that she bought the dress?”

Igbo has three strategies to express long subject focus (Goldsmith 1981b; Uwalaka 1991): (i) the  $\emptyset$ -form of the complementizer is used, i.e., C is not overtly realized (which also leads to a shift from low to high tone on the -rV-suffix of the matrix verb), see (18-a); (ii) the alternative C-element *sí* is used instead of *nà*, see (18-b); (iii) the *nà*-complementizer is present but followed by a pronoun that resumes the focused XP, see (18-c).<sup>13</sup>

- (18) Igbo—three strategies to express ex-situ focus of an embedded subject:
- a. Ézè kà Úché ch̀è-ré  $\emptyset$  — ʰjú-ʰrù Àdá n’-áhíá  
 Eze FOC Uche think-rV C $\emptyset$  see-rV Ada P-market  
 “Uche thought that EZE saw Ada at the market.” zero-C
  - b. Ézè kà Úché ch̀è-rè sí — ʰjú-ʰrù Àdá n’-áhíá  
 Eze FOC Uche think-rV C see-rV Ada P-market  
 “Uche thought that EZE saw Ada at the market.” special C
  - c. Ézè kà Úché ch̀è-rè nà ó h̀ù-rù Àdá n’-áhíá  
 Eze FOC Uche think-rV C 3SG.DEP see-rV Ada P-market  
 “Uche thought that EZE saw Ada at the market.” C + RP

(18-a) is the equivalent of the English repair; (18-b) could be analogous to the French *que-qui* alternation if *sí* is indeed a complementizer (see endnote 10); finally, (18-c) corresponds to the repair illustrated for Levantine Arabic in (17-b) (at least on the surface).<sup>14</sup> In what follows, the main subject of our investigation will be (18-c), which we will refer to as the **resumption strategy** to circumvent the *that*-trace effect. Nevertheless, we will also investigate the basic syntax underlying the two other strategies (see Section 4.1) to compare them to (18-c).

### 3.2. Resumptives as PF-Repair: Background

The resumption strategy is a common way in languages with the *that*-trace effect to enable the formation of long (and sometimes also short) subject  $\bar{A}$ -dependencies (see Boeckx 2003; Klein 2016; Salzmänn 2017b). For many of them it has been argued that the effect is not syntactic in nature, but rather has a PF-source: Movement of the embedded subject across a clause boundary as such is unproblematic, i.e., nothing blocks the formation of this dependency in the syntax; but the trace (low copy) it leaves in the extraction site cannot be silent and must be pronounced (as a minimal nominal unit, viz., a pronoun, see Pesetsky 1998) to fulfill PF-requirements. A prominent PF-account bans linear adjacency of the overt embedding complementizer C and a gap/trace (t) (see Chomsky and Lasnik 1977; Perlmutter 1968 and also, in spirit, Bresnan 1972, 1977), e.g., with a filter along the lines of

(19). The presence of the resumptive avoids a gap after C, and thereby repairs the offending string. Other ideas include phonological EPPs (in SpecT, see, e.g., [Salzmann et al. 2013](#) on German, [Adesola 2010](#) on Yoruba) and prosodic phrasing (see [Chene 2000](#); [Kandybowicz 2006, 2009](#); [Sato and Dobashi 2016](#)).<sup>15</sup>

(19) \* <C,t>

Languages with the resumption strategy for which it has been argued that the embedded subject indeed undergoes long  $\bar{A}$ -movement in the syntax include, among others, Vata ([Koopman and Sportiche 1982, 1986](#), evidence from WCO effects), Swedish ([Engdahl 1985](#); [Zaenen et al. 1981](#), evidence from WCO and reconstruction for Principle A, but see [Asudeh 2012](#) for critical discussion), Nupe ([Kandybowicz 2006, 2008](#), evidence from island-sensitivity and phi-mismatches), Mende ([Smith 2024](#), evidence from stranding, reconstruction for Principle A), Shupamem ([Schurr et al. 2024](#), evidence from quantifier float, cross-over effects, reconstruction), Akan (non-agreeing RPs, [Korsah and Murphy 2024](#); [Yip and Ahenkorah 2023](#), evidence from reconstruction for idiom interpretation, island-sensitivity), and Osanyin ([Amaechi and Otaru 2024](#), evidence from island-sensitivity, reconstruction). Against this background, we first need to consider a PF account with long subject movement plus trace spell-out for the resumption strategy in Igbo (see (18-c)), too.

#### 4. Ingredients for a PF-Account of the *That-Trace* Effect in Igbo

In this section, we show that Igbo provides the necessary ingredients for the PF-account sketched above: (i) There is long  $\bar{A}$ -movement, both for subjects and non-subjects (Section 4.1). (ii) Some resumptives in Igbo realize traces (Section 4.2). In Section 5 we will then argue that the resumption strategy in (18-c) is nevertheless not derived by long subject movement with a pronounced trace in Igbo, which casts doubts on a PF-source of the extraction asymmetry in the language.

##### 4.1. Evidence for Long $\bar{A}$ -Movement in Igbo

If the resumption strategy in (18-c) in Igbo is to involve trace spell-out, we first have to make sure that Igbo allows for cross-clausal  $\bar{A}$ -movement at all, and that (indicative, finite) CPs are not islands (at least for focus fronting), as they seem to be in some languages (see, e.g., [Stepanov 2006](#) on Russian and Polish, [Aremu et al. 2022](#) on Mabia languages, and [Andersson and Kvam 1984](#); [Featherston 2005](#) on German). We will show that CPs are not islands in Igbo. Both long non-subject focus as well long subject focus with salvation strategies other than resumption indeed result from long  $\bar{A}$ -movement.

##### 4.1.1. Long Non-SU Focus

We will first examine the derivation underlying long direct object focus, which is possible across the complementizer *nà*, see (16-a), repeated in (20). The same facts hold for long ex-situ focus of indirect objects and adjuncts (not illustrated here).

(20) Àdá kà **Úché** chè-rè nà **Ézé** hù-rù \_\_\_\_  
 Ada FOC Uche think-rV C Eze see-rV \_\_\_\_  
 "Uche thought that Eze saw ADA." *long DO focus*

Recall from Section 2.2 that Igbo exhibits three language-specific effects of  $\bar{A}$ -movement: the final H-tone on crossed-over subjects, the *ná*-particle under sentential negation, and perfective islands. If long object focus fronting results from movement, we should find these effects in each of the CPs that the dependency spans. This is indeed the case. As highlighted in (20), the (bold-faced) subjects of both CPs, which underlyingly end in a low tone, exhibit the final H-tone reflex under long object focus. Furthermore, if any of the verbs is negated, the presence of the *ná*-particle in the respective clause is obligatory, see (21) for negation of the embedded clause, and (22) for negation of the matrix clause. (Recall that the final H-tone on crossed-over subjects is in complementary distribution with the *ná*-particle and thus absent in the clauses that host negation in (21-b) and (22-b).)

- (21) Negation in the embedded clause:
- a. Úchè chère-rè nà / sí Ézè á-<sup>1</sup>hù-ghí Àdá  
Uche think-rV C / C Eze PFX-see-NEG Ada  
“Uche thought that Eze did not see Ada.” *declarative*
  - b. Àdá kà Úché chère-rè nà / sí Ézè \*(ná) <sup>1</sup>á-hù-ghí —  
Ada FOC Uche think C C Eze PRT PFX-see-NEG —  
“Uche thought that Eze did not see ADA.” *long DO focus*
- (22) Negation in the matrix clause:
- a. Úchè é-chè-ghí nà / sí Ézè hù-rù Àdá  
Uche PFX-think-NEG C / C Eze see-rV Ada  
“Uche does not think that Eze saw Ada.” *declarative*
  - b. Àdá kà Úchè \*(ná) é-chè-ghí nà / sí Ézé hù-rù —  
Ada FOC Uche PRT PFX-think-NEG C C Eze see-rV —  
“Uche does not think that Eze saw ADA at the market.” *long DO focus*

Moreover, if the verb in either of the two clauses is in perfective aspect, long ex-situ non-subject focus becomes ungrammatical, see (23) and (24) (the latter with a different matrix verb to make the use of the perfective more plausible).

- (23) Perfective island in the embedded clause:
- a. Úchè chère-rè nà / sí Ézè à-hù-lá Àdá  
Uche think-rV C / C Eze NMLZ-see-PFV Ada  
“Uche thought that Eze had seen Ada.” *declarative*
  - b. \*Àdá kà Úché chère-rè nà / sí Ézé à-hù-lá —  
Ada FOC Uche think-rV C C Eze NMLZ-see-PFV —  
“Uche thought that Eze had seen ADA.” *long DO focus*
- (24) Perfective island in the matrix clause:
- a. Úchè à-mà-rà-lá nà / sí Ézè hù-rù Àdá  
Uche NMLZ-know-OVS-PFV C / C Eze see-rV Ada  
“Uche has known that Eze saw Ada.” *declarative*
  - b. \*Àdá kà Úché à-mà-rà-lá nà / sí Ézé hù-rù —  
Ada FOC Uche NMLZ-know-OVS-PFV C C Eze see-rV —  
“Uche has known that Eze saw ADA.” *long DO focus*

These facts show that both the embedded and the matrix clause in (20) are affected by movement. However, this does not mean that movement crosses the embedded clause; we could be dealing with an instance of clause-bound movement within each CP (a kind of iterative prolepsis, see Boeckx 2008; Bošković 2007 for such derivations). We can test this by putting an island in between the two clauses. As illustrated in (25), a Complex NP island blocks the formation of the dependency (see Georgi and Amaechi 2020 on the islandhood of Complex NPs in Igbo). This excludes the iterative prolepsis alternative.

- (25) Island-sensitivity of the dependency (complex NP island):
- a. Úchè chère-rè nà / sí Àdá nà Òbí mà [DP úmụá<sup>1</sup>ká [CP OP<sub>i</sub> i <sup>1</sup>hù-<sup>1</sup>rù Ézè ]]  
Uche think-rV C C Ada and Obi know children see-rV Eze  
“Uche thought that Ada and Obi knew the children that saw Eze.” *declarative*
  - b. \*Ézè<sub>j</sub> kà Úché chère-rè nà / sí Àdá nà Òbí mà [DP úmụá<sup>1</sup>ká [CP OP<sub>i</sub> i  
Eze FOC Uche think-rV C C Ada and Obi know children  
<sup>1</sup>hù-<sup>1</sup>rù j ] ]  
see-rV  
“Uche thought that Ada and Obi knew the children that saw EZE.” *long DO focus*

Moreover, a long focus fronted object reconstructs into the embedded clause for idiom interpretation, which also indicates its origin in the lower clause. We illustrate this for the string ‘to hit the spoon at the teeth’ in Igbo, which has the idiomatic interpretation ‘to eat’, see (26-a). When the direct object ‘spoon’ undergoes short  $\bar{A}$ -movement, the idiomatic reading is preserved, see (26-b). If this element occurs in a base-generation dependency,

however, the idiomatic reading is lost, see (26-c), where ‘spoon’ is topicalized.<sup>16</sup> Crucially, when ‘spoon’ undergoes long focus fronting, the idiomatic reading is still possible in the embedded clause, see (27).

- (26) Short focus fronting of an idiom part (Georgi and Amaechi 2023, ex. (9)):
- a. Há nà-à-kú ñgàjì n’ézè  
3PL.INDEP IPFV-NMLZ-hit spoon P-teeth  
✓“They are eating.” *declarative, idiomatic*  
✓“They are hitting the spoon at the teeth.” *declarative, literal*
  - b. Ñgàjì kà há nà-à-kú n’ézè  
spoon FOC 3PL.INDEP IPFV-NMLZ-hit P-teeth  
“They are EATING.” *DO focus, idiomatic*  
“They are hitting THE SPOON at the teeth.” *DO focus, literal*
  - c. Ñgàjì, há nà-à-kú <sup>!</sup>yá n’ézè  
spoon 3PL.INDEP IPFV-NMLZ-hit 3SG.POSS P-teeth  
\*“As for eating, they are doing it.” *DO topic, idiomatic*  
✓“As for the spoon, they are hitting it at the teeth.” *DO topic, literal*
- (27) Long focus fronting of an idiom part:
- a. Úché chère nà / sí há nà-à-kú ñgàjì n’ézè  
Uche think-rV C C 3PL.INDEP IPFV-NMLZ-hit spoon P-teeth  
✓“Uche thought that they were eating.” *declarative, idiomatic*  
✓“Uche thought that they were hitting the spoon at the teeth.” *declarative, lit.*
  - b. Ñgàjì kà Úché chère nà / sí há nà-à-kú n’ézè  
spoon FOC Uche think-rV C C 3PL.INDEP IPFV-NMLZ-hit P-teeth  
“Uche thought that they were EATING.” *focus, idiomatic*  
“Uche thought that they were hitting THE SPOON at the teeth.” *focus, literal*

We can conclude from the evidence above that long non-subject focus results from cross-clausal (presumably successive-cyclic)  $\bar{A}$ -movement in Igbo.

#### 4.1.2. Long Subject Extraction: Two Further Repair Strategies

As shown in Section 3, Igbo has two further strategies in addition to the resumption strategy to express long subject focus: dropping the complementizer and replacing it by *sí*, see (28). In this subsection, we will show that these sentences are derived by long movement, too, just like long non-subject focus.

- (28) Zero-C and *sí*-C strategies to enable long subject focus:
- a. Ézè kà Úché chère Ø <sup>!</sup>hù-<sup>!</sup>rú Àdá n’-áhíá  
Eze FOC Uche think-rV C<sup>Ø</sup> see-rV Ada P-market  
“Uche thought that EZE saw Ada at the market.”
  - b. Ézè kà Úché chère sí <sup>!</sup>hù-<sup>!</sup>rú Àdá n’-áhíá  
Eze FOC Uche think-rV C see-rV Ada P-market  
“Uche thought that EZE saw Ada at the market.”

First, we observe that the three language-specific  $\bar{A}$ -movement effects surface in each of the clauses the dependency affects, regardless of whether we drop C or replace it by *sí*: (29) shows that the *ná*-particle has to surface in the embedded and the matrix clause, respectively, if their verbs are negated (the baselines for these sentences are (21-a), (22-a)). Note, that with zero-C we also see the H-tone effect on the final suffix of the matrix verb.

#### (29) Negation + long subject focus with Ø-/*sí*-C:

- a. Ézè kà Úché { chère Ø } / { chère sí } \***(ná)** <sup>!</sup>á-hù-ghí Àdá  
Eze FOC Uche think-rV C<sup>Ø</sup> / think-rV C PRT PFX-see-NEG Ada  
“Uche thought that EZE did not see Ada.” *embedded NEG*
- b. Ézè kà Úché \***(ná)** { <sup>!</sup>é-chère-ghí Ø } / { <sup>!</sup>é-chère-ghí sí } <sup>!</sup>hù-<sup>!</sup>rú Àdá  
Eze FOC Uche PRT PFX-think-NEG C<sup>Ø</sup> / PFX-think-NEG C see-rV Ada  
“Uche does not think that EZE saw Ada.” *matrix NEG*

(30) illustrates that the presence of a perfective verb in any of the clauses leads to ungrammaticality, both with the zero-C and the *sí*-C (the baselines for these sentences are (23-a) and (24-a)). We are using a different matrix verb in (30-b) as it is more natural in the perfective.

(30) Perfective islands + long subject focus with  $\emptyset$ -/*sí*-C:

- a. \*Ézè kà Úché chè-rè  $\emptyset$  / *sí* à-hù-lá Àdá  
 Eze FOC Uche think-rV C $\emptyset$  / C NMLZ-see-PFV Ada  
 "Uche thought that EZE had seen Ada." *embedded perfective*
- b. \*Ézè kà Úché à-mà-rà-lá  $\emptyset$  / *sí* 'hù-'rú Àdá  
 Eze FOC Uche NMLZ-know-OVS-PFV C $\emptyset$  / C see-rV Ada  
 "Uche has known that EZE saw Ada." *matrix perfective*

Finally, we can see in (28) and in (29-a) that the matrix clause subject *Uche* exhibits the final H-tone effect that indicates that an XP has moved across it. We cannot see the effect in (29-b) because the final H-tone and the *ná*-particle are in complementary distribution (see Section 2.3). Since the perfective examples with long subject extraction are ungrammatical for independent reasons, we do not know whether the same effect would be found on their matrix subjects, too, but we would expect them to surface there. We also find the final H-tone effect in the embedded clauses in (28) and in (29-b), though in a different form: Recall from Section 2.2 that in case of subject extraction the floating H-tone travels leftwards and attaches to the next overt element on its left. This is either the complementizer *sí* (e.g., in (28-a)), which already bears a lexical H-tone, or when C is zero, the matrix verb (e.g., in (28-b)). In addition, this H-tone together with another floating H-tone that originates in the emptied embedded SpecTP (and associates with the finite verb on its right) causes a downstep on the embedded verb, see, e.g., (28). This downstep does not arise in (29-a), however, because of the presence of the *ná*-particle. All three language-specific  $\bar{A}$ -movement effects thus suggest that long subject focus with the zero-C and the *sí*-C involves  $\bar{A}$ -movement. (31) shows that the dependency is also sensitive to islands:

(31) A complex NP blocks long subject focus:<sup>17</sup>

- a. Úché chè-rè nà / *sí* Àdá nà Òbí mà [DP úmụá'ká [CP OP<sub>i</sub> Ézè hù-rù  
 Uche think-rV C / C Ada and Obi know children Eze see-rV  
 \_\_<sub>i</sub> n'-áhíá ]]  
 P-market  
 "Uche thought that Ada and Obi knew the children who Eze saw at the market."  
*declarative*
- b. \*Ézè<sub>j</sub> kà Úché chè-rè  $\emptyset$  / *sí* Àdá nà Òbí mà [DP úmụá'ká [CP OP<sub>i</sub> \_\_<sub>j</sub>  
 Eze FOC Uche think-rV C $\emptyset$  / C Ada and Obi know children  
 'hù-'rù \_\_<sub>i</sub> n'-áhíá ]]  
 see-rV P-market  
 "Uche thought that Ada and Obi knew the children who EZE saw at the market."  
*long SU focus*

When the embedded subject is part of an idiom (such as 'heads will fall', meaning someone will be punished) and undergoes focus fronting with a zero-C (inducing an H-tone on the -rV-suffix of the matrix verb) or *sí*-C (with a low tone on the matrix -rV-suffix), the idiomatic reading is preserved (see (32)), suggesting that the focused XP reconstructs into the embedded subject position. Taken together, these facts indicate that long subject focus with zero-C or *sí*-C results from cross-clausal  $\bar{A}$ -movement, just like long non-subject focus.

- (32) a. Úché chè-rè nà / *sí* ísí gà-ádà  
 Uche think-rV C / C head FUT-fall  
 "Uche thought that heads would fall/someone would be punished."  
✓ literal, ✓ idiomatic

- b. Ísì kà Úché { ch̀è-ré Ø } / { ch̀è-rè sí } \_ gá-áda  
 head FOC Uche think-rV C<sup>∅</sup> / think-rV C FUT-fall  
 “Uche thought that HEADS would fall / that SOMEONE would be punished.”  
*✓ literal, ✓ idiomatic*

#### 4.2. PF-Resumptives in Igbo

Having established that Igbo allows long  $\bar{A}$ -movement, we now proceed to show that traces of  $\bar{A}$ -movement can be pronounced (by a pronoun) in the language. This is a further necessary ingredient for a PF account of the resumption strategy for long subject focus.

Recall from Section 2.3 that gaps and RPs are in complementary distribution in Igbo: base-generation dependencies such as topicalization always require an RP at the bottom of the dependency, while short focus fronting (like other  $\bar{A}$ -movement dependencies) terminates in a gap—unless the extractee is the complement of a preposition, a conjunct, a focus associate, or a possessor, then focus fronting also terminates in an RP. This raises the question of what determines whether (short) focus fronting terminates in a gap or in an RP. In Georgi and Amaechi (2023) we excluded a number of explanations that have been provided in the literature for RPs in the same syntactic positions because these accounts could not capture the four contexts where Igbo requires an RP under short focus fronting in a uniform way; in some cases, there was also language-internal counter-evidence. These explanations included minimal word requirements, affix/host requirements, a phonological EPP, overtiness of the oblique case, and anti-locality-based approaches. Based on this result, we hypothesized that the most likely reason behind the occurrence of RPs under short focus fronting is prosodic in nature: the positions in questions are prosodically prominent, viz., they are associated with a pronunciation requirement that forces them to be overt. There is some evidence from cross-linguistic variation for such a requirement for these positions. Consider, for example, the fact that RPs are required for conjunct extraction in Igbo (and other languages): Even in languages that have *pro*-drop, pronominal conjuncts cannot be dropped (even in contexts that otherwise license *pro*-drop). This could be linked to a need for the overt realization of conjuncts. In languages with a weak/strong pronoun distinction, we tend to find the strong(er) form of the pronoun in the positions in question (e.g., in the complement of a preposition, see Cardinaletti and Starke 1996). Finally, Beaver and Clark (2008) argue that the associate of a focus-sensitive particle must be prosodically prominent, which would account for RPs with focus fronted focus associates in Igbo. We would now like to add new evidence for a prosodic requirement underlying the occurrence of RPs in short-focus fronting dependencies in Igbo. Crucially, this evidence is not just based on cross-linguistic comparison but involves Igbo-internal facts. We will use conjunct extraction to illustrate the reasoning.

Let us start with resumption under topicalization first. So far we said that topicalization of any XP requires an RP at the bottom of the dependency. Consider the DO-topicalization example from (6-c) again, repeated in (33): the 3sg dependent pronoun is obligatory in the post-verbal DO-position, a gap is ungrammatical.

- (33) Àdá, Ézè hù-rù yá / \* \_  
 Ada Eze see-rV 3SG.INDEP  
 “As for Ada, Eze saw her.” *DO topic*

However, this is an oversimplification. Topicalization tolerates the absence of an RP after all if no *pro*-form is available in the language for the topic XP. This is the case if the topic is, e.g., a PP. Consider the locative PP-topic in (34-b), based on (34-a). Igbo does not have a locative pronoun such as English *there* to resume this PP. The absence of an RP (which should surface at the end of the clause) does not lead to ungrammaticality in (34-b) but is tolerated, even though topicalization usually requires an RP. A more accurate description of the facts is thus that RPs must be used in positions and constructions that require them *if available* (i.e., if a *pro*-form exists for the antecedent).

- (34) PP topics without an RP:
- a. Ézè hù-rù Àdá n’-áhíá  
Eze see-rV Ada P-market  
“Eze saw Ada at the market.” *declarative*
  - b. [<sub>PP</sub> n’-áhíá ], Ézè hù-rù Àdá  
P-market Eze see-rV Ada  
“As for the market, Eze saw Ada there.” *PP topic*

Crucially, however, this loosening of the condition on otherwise obligatory RPs does not hold for all positions. In some, the absence of an RP that is due to the lack of a corresponding pro-form is *not* tolerated after all, unlike in (34-b). An example of such a position is a conjunct. (35-a) illustrates the coordination of two PPs. When the first PP-conjunct is topicalized (see (35-b)), there cannot be an RP inside the coordination because there is no pro-form for this PP in Igbo. This time, however, the result is not well-formed—(35-b) is ungrammatical with a gap (as it would be if we used the usual DP-resuming pronoun). This suggests that there is indeed a requirement to pronounce the position in question because as we have seen above, RPs are in principle tolerated to be absent under topicalization when no pro-form exists for the antecedent.

- (35) a. Ézè hù-rù Àdá [<sub>&P</sub> [<sub>PP</sub> n’-áhíá ] nà [<sub>PP</sub> n’úìlò ákwú<sup>1</sup>kwó ]]  
Eze see-rV Ada P-market and P-house book  
“Eze saw Ada at the market and at school.”
- b. \*<sub>[PP</sub> N’-áhíá ], Ézè hù-rù Àdá [<sub>&P</sub> [<sub>PP</sub> (yá) ] nà [<sub>PP</sub> n’úìlò ákwú<sup>1</sup>kwó ]]  
P-market Eze see-rV Ada 3SG.INDEP and P-house book  
“As for the market, Eze saw Ada there and at school.”

The same facts hold for focus fronting. Focus fronting of a PP is fine if the extraction site does not require resumption, see (36-b) for fronting of a PP-adjunct. But if the focus fronted PP is a conjunct, the absence of a pronoun is not tolerated, see (37) (derived from (35-a)):

- (36) a. Ézè hù-rù Àdá n’-áhíá  
Eze see-rV Ada P-market  
“Eze saw Ada at the market.”
- b. [<sub>PP</sub> n’-áhíá ] kà Ézé hù-rù Àdá  
P-market FOC Eze see-rV Ada  
“Eze saw Ada AT THE MARKET.” *PP adjunct focus*
- (37) \*<sub>[PP</sub> N’-áhíá ] kà Ézé hù-rù Àdá [<sub>&P</sub> (yá) nà [<sub>PP</sub> n’úìlò ákwú<sup>1</sup>kwó ]]  
P-market FOC Eze see-rV Ada 3SG.INDEP and P-house book  
“Eze saw Ada AT THE MARKET and at school.”

This intolerance of the exceptional lack of an RP for PP-antecedents also holds for other positions that require an RP under short focus fronting in Igbo, e.g., for focus associates. A focus associate can be contrastively focused ex-situ as long as an RP is realized in the base position, see (38). If, however, the associate is a PP and there is thus no pro-form available, the result is ungrammatical—with a gap and also with the DP-RP *yá*—see (39).

- (38) a. Ézè hù-rù sòsò Àdá  
Eze see-rV only Ada  
“Eze saw only Ada.”
- b. Àdá kà Ézé hù-rù sòsò \*(yá)  
Ada FOC Eze see-rV only 3SG.INDEP  
“Eze saw only ADA.”
- (39) a. Ézè hù-rù Àdá sòsò n’-áhíá  
Eze see-rV Ada only P-market  
“Eze saw Ada only at the market.”



- b. \*[<sub>PP</sub> N'-áhíá ] kà Ézé hù-rù Àdá sòsò (yá)  
 P-market FOC Eze see-rV Ada only 3SG.INDEP  
 "Eze saw Ada only AT THE MARKET."

We cannot test the same scenario for the two other contexts that require an RP under short (DP) focus fronting in Igbo (extraction of possessors and the complement of a preposition) since we can neither have PP-possessors nor stack Ps. But the fact that RP-requiring extraction sites (under short DP focus fronting) coincide with the positions that are exempt from RP-drop when no pro-form is available is probably not a coincidence and supports the view that these RPs surface because the positions in question are associated with a pronunciation requirement. Thus, they are a surface phenomenon in the sense that there are no deeper syntactic reasons for their presence.

To summarize this section, we have shown that Igbo provides the two necessary ingredients for a PF-account of the resumption strategy for long subject focus: It exhibits long  $\bar{A}$ -movement of subjects and non-subjects (the latter also across the complementizer *nà*), and (some) traces in  $\bar{A}$ -movement dependencies such as focus fronting have to be pronounced (by a pronoun), presumably for prosodic reasons. It would thus in principle be possible that the resumption strategy in (18-c) is the result of long subject  $\bar{A}$ -movement coupled with spell-out of the trace (to fulfill a PF-filter such as, e.g., (19)). We will now investigate whether this is indeed the derivation that underlies (18-c).

### 5. The RP in the Resumption Strategy Does Not Realize a Trace

As outlined in Section 3.2, it has been shown for several languages with the resumption repair for long subject extraction (the Igbo example of which we repeat in (40)) that the *that*-trace effect is not syntactic in nature because there is evidence for long  $\bar{A}$ -movement in the construction. The resumptive is rather a response to a PF filter that requires certain positions to be overt.

- (40) The Igbo resumption strategy for long subject focus:  
 Ézè kà Úché chè-rè nà ó hù-rù Àdá n'-áhíá  
 Eze FOC Uche think-rV C 3SG.DEP see-rV Ada P-market  
 "Uche thinks that EZE saw Ada at the market."

Igbo has all the tools available for such a derivation of (40), as argued in Section 4. Nevertheless, as we will show in this section—based on general and language-specific movement diagnostics—the string is *not* created by long  $\bar{A}$ -movement (and also not by base-generation, Section 5.1). The fact that Igbo resorts to a completely different derivation to enable long subject focus—even though it allows long  $\bar{A}$ -movement and trace spell-out—points towards a syntactic component underlying the *that*-trace effect. We also address potential evidence from the ellipsis for the nature of the effect (Section 5.2).

#### 5.1. Resumption Strategy: Movement Diagnostics

##### 5.1.1. The Distribution of the Language-Specific $\bar{A}$ -Movement Effects

To find out whether (40) is derived by long subject  $\bar{A}$ -movement we will first consider the distribution of the language-specific effects of  $\bar{A}$ -movement introduced in Section 4.1. We start with sentential negation, which triggers the particle *ná* in a clause in which an XP undergoes  $\bar{A}$ -movement. We negate the embedded verb in (41) and the matrix verb in (42); the a.-examples provide the declaratives, and the b.-examples illustrate long subject focus with resumption.<sup>18</sup> The examples show that the *ná*-particle cannot surface in the embedded clause of the dependency, while it must be present in the matrix clause. This indicates that there is  $\bar{A}$ -movement in the matrix clause but not in the embedded clause.<sup>19</sup>

- (41) Negated embedded verb, long subject focus + resumption:

- a. Úché chè-rè nà Ézè á-hù-ghí Àdá  
 Uche think-rV C Eze PFX-see-NEG Ada  
 "Uche thought that Eze did not see Ada."

*declarative*

- b. Ézè kà Úché chère-rè nà ọ (\*ná) hụ-ghị Àdá  
Eze FOC Uche think-rV C 3SG.DEP PRT see-NEG Ada  
“Uche thought that EZE did not see Ada.” *long SU focus*
- (42) Negated matrix verb, long subject focus + resumption:
- a. Úchè é-chè-ghì nà Ézè hụ-rụ Àdá  
Uche PFX-think-NEG C Eze see-rV Ada  
“Uche did not think that Eze saw Ada.” *declarative*
- b. Ézè kà Úchè \*(ná) é-chè-ghì nà ọ hụ-rụ Àdá  
Eze FOC Uche PRT PFX-think-NEG C 3SG.DEP see-rV Ada  
“Uche did not think that Eze saw Ada.” *long SU focus*

The same picture emerges when we consider perfective islands. A perfective embedded verb does not block the formation of the dependency, see (43); a perfective matrix verb does, however, see (44). Thus, only the matrix clause seems to be affected by  $\bar{A}$ -movement.

- (43) Embedded perfective verb, long subject focus + resumption:
- a. Úchè chère-rè nà Ézè à-hụ-lá Àdá  
Uche think-rV C Eze NMLZ-see-PFV Ada  
“Uche thought that Eze had seen Ada.” *declarative*
- b. Ézè kà Úché chère-rè nà ọ hụ-lá Àdá  
Eze FOC Uche think-rV C 3SG.DEP see-PFV Ada  
“Uche thought that EZE had seen Ada.” *long SU focus*
- (44) Matrix perfective verb, long subject focus + resumption:
- a. Úchè à-mà-rà-lá nà Ézè hụ-rụ Àdá  
Uche NMLZ-know-OVS-PFV C Eze see-rV Ada  
“Uche has known that Eze saw Ada.” *declarative*
- b. \*Ézè kà Úché à-mà-rà-lá nà ọ hụ-rụ Àdá  
Eze FOC Uche NMLZ-know-OVS-PFV C 3SG.DEP see-rV Ada  
“Uche has known that EZE saw Ada.” *long SU focus*

Further (limited) support for this conclusion comes from the final H-tone reflex of  $\bar{A}$ -movement: The matrix subject *Úchè*, which ends in a low tone in the baseline examples above, must surface with a final H-tone in (41-b) and (43-b), indicating  $\bar{A}$ -movement in the matrix clause. We cannot tell whether the final H-tone would be present on *Úchè* in (44-b) since this sentence is ungrammatical for independent reasons, and in (42-b) the final H-tone is absent because of its complementary distribution with the *ná*-particle. Unfortunately, the final H-tone diagnostic cannot be applied to the embedded clauses in the b-sentences in (41) to (44). Recall that the tone surfaces, i.e., as a downstep on the verb when a subject undergoes  $\bar{A}$ -movement—but only when SpecTP is also empty (since an empty SpecTP causes another floating H; together the two H-tones result in a downstep), see Amaechi (2020). But SpecTP is not empty in the b.-examples above: it is filled by a resumptive. The final H-tone effect is thus uninformative regarding the presence of  $\bar{A}$ -movement in the embedded clause.

Combining the results of the three language-specific diagnostics, we can conclude that the derivation for the resumption strategy in (40) involves  $\bar{A}$ -movement in the matrix clause only. These findings argue against (a) long  $\bar{A}$ -movement, and (b) a base-generation analysis of this string (under (b) we would not expect reflexes of  $\bar{A}$ -movement in any CP).

### 5.1.2. Island Insensitivity

If there is  $\bar{A}$ -movement only in the matrix clause in (40), we predict that the dependency should be insensitive to an island in between the (lower end of) the matrix clause and the resumptive pronoun in the embedded subject position. As shown in (45), a Complex NP island does indeed not block the formation of the dependency.<sup>20</sup>

- (45) Long subject focus + resumption are insensitive to Complex NP islands:
- a. **Ézè** kà **Úché** chè-rè nà **Àdá** nà **Òbí** mà [DP **úmá'**ká [CP **OP<sub>i</sub>** **ó**  
Eze FOC Uche think-rV C Ada and Obi know children 3SG.DEP  
hù-rù **\_\_<sub>i</sub>** n'-**áhíá** ]  
see-rV P-market  
"Uche thought that Ada and Obi knew the children who EZE saw at the market."  
*relative clause*
  - b. **Ézè** kà **Úché** chè-rè nà [DP **ákúkò** [CP nà **ó** jìdè-rè **ónyéó'**rí áhù  
Eze FOC Uche think-rV C rumour C 3SG.DEP catch-rV thief the  
bù **àsí** ]  
is lie  
"Uche thought that the rumour that EZE caught the thief was false."  
*noun complement clause*

### 5.1.3. Scope Interactions

Further evidence for the absence of cross-clausal subject  $\bar{A}$ -movement from the position of the resumptive to its antecedent comes from the lack of scope interactions between the ex-situ focused subject DP and elements in the embedded clause. Such interactions would be expected under long subject  $\bar{A}$ -movement because this movement should reconstruct. Consider first the baseline in (46-a) in which the two scopes taking XPs 'two students' and 'every exam' are arguments of the embedded verb 'to pass'. Note, that 'to pass' is an inherent complement verb in Igbo, which combines a meaning-deprived verb (glossed as ICV) with an inherent nominal complement, which means 'the eagle's feather' in this case. The sentence in (46-a) is ambiguous: It can either mean that there are two students (among the group of all contextually relevant students) that will pass every exam, the others might pass no or only one exam (surface scope,  $2 > \forall$ ); it can also mean that for each exam there are two (potentially different) students who will pass it (inverse scope,  $\forall > 2$ ). The inverse scope reading can be achieved, e.g., by quantifier raising (QR) of the embedded object to the edge of the embedded clause. (46-b) shows that the same ambiguity holds if the embedded subject 'two students' undergoes long-distance focus fronting with the zero-C repair strategy, which involves long  $\bar{A}$ -movement (as we argued in Section 4.1.2). This is expected since  $\bar{A}$ -movement reconstructs.<sup>21</sup> Crucially, in (46-c), where long subject focus is enabled by a resumptive in the embedded subject position, the ambiguity breaks down: This sentence only has the surface scope reading. This follows if 'two students' does not originate in the position of the resumptive but, e.g., in the matrix clause: QR of the  $\forall$ -DP from the embedded clause to a position above 'two students' in the matrix clause is impossible because QR is clause-bound.

- (46) a. È-kwè-rè m nà **úmù** ákwúkwò **ábúó** gà-ètú-rú  
PFX-believe-rV 1SG.INDEP C children book two FUT-ICV-rV  
ùgò nà ùlé òbùlà  
eagle's.feather P exam every  
"I believed that two students would pass every exam."  $\checkmark 2 > \forall, \forall > 2$
- b. **Úmù** ákwúkwò **ábúó** kà m kwè-ré Ø **gà-ètú-rú**  
children book two FOC 1SG.INDEP believe-rV C<sup>∅</sup> FUT-ICV-rV  
ùgò nà ùlé òbùlà  
eagles's.feather P exam every  
"I believed that TWO STUDENTS would pass every exam."  $\checkmark 2 > \forall, \forall > 2$
- c. **Úmù** ákwúkwò **ábúó** kà m kwè-rè nà **há**  
children book two FOC 1SG.INDEP believe-rV C 3PL.INDEP  
gà-ètú-rú ùgò nà ùlé òbùlà  
FUT-ICV-rV eagle's.feather P exam every  
"I believed that TWO STUDENTS would pass every exam."  $\checkmark 2 > \forall, * \forall > 2$   
Lit: (It's) TWO STUDENTS (that) I believe that they will pass every exam.

### 5.1.4. Epithets and Phi-Mismatches

Recall from Section 2.3 that RPs that pronounce traces in Igbo (under short focus fronting of, e.g., a conjunct) cannot be replaced by an epithet and exhibit a phi-mismatch with pronominal antecedents: whatever the phi-features of the personal pronoun antecedent, the resuming pronoun surfaces in its 3sg form. RPs that are only anaphorically linked to their antecedent (such as topics) in a base-generation dependency show the opposite behavior: they can be replaced by an epithet and fully match their antecedent in phi-features. If the resumptive in the resumption strategy in (40) is not the realization of a trace, as suggested by the previous diagnostics, then it should behave like an RP linked, e.g., to a topic. This is indeed the case: The resumptive in question can be replaced by an epithet, see (47), and with a non-3sg pronominal antecedent we cannot have a (partial or complete) phi-mismatch, see (48).<sup>22</sup>

- (47) RP or epithet in the embedded subject position:  
 Ézè kà Úché chè-rè nà ọ́ / òfèkè hù-rù Àdá n'-áhíá  
 Eze FOC Uche think-rV C 3SG.DEP idiot see-rV Ada P-market  
 "Uche thought that EZE saw Ada at the market."  
 Lit.: "(It's) Eze<sub>i</sub> (that) Uche thought that he<sub>i</sub>/the idiot<sub>i</sub> saw Ada at the market."
- (48) No phi-mismatch with a pronominal antecedent:  
 a. Úché chè-rè nà ụ́nụ́ hù-rù Àdá  
 Uche think-rV C 2PL.INDEP see-rV Ada  
 "Uche thought that you(pl) saw Ada."  
 b. Ụ́nụ́ kà Úché chè-rè nà ụ́nụ́ / \*gí / \*há /  
 2PL.INDEP FOC Uche think-rV C 2PL.INDEP 2SG.INDEP 3PL.INDEP  
 \*yá hù-rù Àdá  
 3SG.INDEP see-rV Ada  
 "Uche thought that YOU(PL) saw Ada."

### 5.1.5. Interim Summary

To summarize, the evidence collected in this subsection suggests that the RP in the resumption strategy for long subject focus does not realize a trace in a long movement dependency, and it also does not involve base-generation of the focused subject.<sup>23</sup> In fact, we can strengthen the conclusion further: This construction actually *cannot* be the result of movement. One could imagine that the surface string in (40) can be derived in different ways, namely either by long subject  $\bar{A}$ -movement (+ trace spell-out) or by a different mechanism that derives, e.g., the island-insensitivity of the construction illustrated in Section 5.1.2 (on the identity of this mechanism, see Section 6). Indeed, the island facts only show that a non-movement derivation is available in the language, but not that long subject  $\bar{A}$ -movement is excluded as a source of the string; speakers may simply resort to the non-movement derivation when faced with an intervening island. Crucially, the other diagnostics reported in this subsection show that a long  $\bar{A}$ -movement derivation is impossible: The dependency lacks scope interactions between the focused subject and elements in the embedded clause, the reflexes of  $\bar{A}$ -movement are obligatorily absent in the embedded clause, and phi-mismatches between the RP and its antecedent are excluded. If long  $\bar{A}$ -movement were an alternative option to derive the string in (40), all of these effects should be optional rather than absolute.<sup>24</sup> That there is no syntactic link between the resumptive and its ex-situ focused antecedent in (40) is surprising in light of the fact that Igbo in principle allows long  $\bar{A}$ -movement plus trace spell-out (see Section 4). This in turn casts doubts on the claim—made for a number of other languages with the same surface resumption strategy—that the restriction on long subject extraction (the *that*-trace effect) is a pure PF effect in Igbo. Apparently, something does block long subject movement (when *nà* is present) in the syntax after all. We will address the potential syntactic source of the restriction in Section 7, but we will first report on potential further insights into the nature of the *that*-trace effect from ellipsis.<sup>25</sup>

5.2. Evidence from Ellipsis for the Nature of the That-Trace Effect?

One piece of evidence often brought forward for the hypothesis that the *that*-trace effect is a PF phenomenon comes from the observation that it can be repaired by ellipsis in many languages (see, among others, Chung et al. 1995; Kandybowicz 2009; Mendes and Kandybowicz 2023; Merchant 2001; Perlmutter 1971). If the effect were purely syntactic in nature, it is unclear why it can be ameliorated by a PF-operation. Moreover, clear syntactic constraints such as strong islands cannot be salvaged by ellipsis, at least in some languages. In Nupe for example, sluicing cannot repair adjunct or complex NP islands, but the same operation does repair the *that*-trace effect (Mendes and Kandybowicz 2023).<sup>26</sup> We can thus use salvation by deletion as a diagnostic for whether a constraint has a PF source or a syntactic source.<sup>27</sup>

Our main claim is that the *that*-trace effect in Igbo is due to a syntactic constraint. We thus predict that it should not be possible to repair it by ellipsis. We will test this with sluicing. (49-a) illustrates the equivalent of English sluicing in Igbo with a direct object indefinite (based on ex. (35) from Amaechi 2024).

- (49) Úchè zùrù íhé, màná àmá-gh'í m íhé ó bù  
 Uche buy-rV thing but know-NEG 1SG.INDEP thing 3SG.DEP COP  
 "Uche bought something, but I don't know what."

(50-a) shows the crucial example with an indefinite in the embedded subject position plus (the Igbo equivalent of) sluicing. This sentence is grammatical; if it were derived from the equivalent of (50-b) with long *wh*-subject movement across the embedded complementizer in the sluice site, this would favor a PF approach to the *that*-trace effect in Igbo.

- (50) a. Úchè chè-rè nà m̀mádù hù-rù Àdá n'-áhíá, màná àmá-gh'í  
 Uche think-rV C someone see-rV Ada P-market but know-NEG  
 m̀ ónyé ó bù  
 1SG.INDEP person 3SG.DEP COP  
 "Uche thought that someone saw Ada at the market, but I don't know who."  
 b. Uche thought that someone saw Ada at the market, but I don't know who  
 Uche thought that = saw Ada at the market.

However, (50-a) is not informative as a diagnostic: Amaechi (2024) argues that the sluicing-like construction in Igbo does not result from long *wh*-movement + TP-ellipsis, unlike its English counterpart. It is rather derived from an embedded predicational copular clause (see (51-a) for (49)) in which the complement of the copula moves to the embedded SpecCP (see (51-b)); in fact, nothing is elided in this structure. (50-a) thus literally translates to: 'Uche thought that someone saw Ada at the market, but I don't know the person it was.'

- (51) a. Ó bù íhé  
 3SG.DEP COP thing  
 'It is a thing.'  
 b. (... màná àmá-gh'í m̀) [CP íhé<sub>i</sub> Ø<sub>C</sub> [TP ó bù   <sub>i</sub>]] (Amaechi 2024, ex. (41))

Evidence for the analysis in (51) comes from the presence of the 3sg (non-expletive pronoun) *ó* 'it' and the copula *bù* in the remnant, which are also found in predicational copular clauses in the language. Furthermore, the remnant that best translates into English as a *wh*-pronoun is in fact not a *wh*-word in Igbo, but rather an indefinite pronoun ((some)thing, (some) person, etc.).<sup>28</sup> This analysis also explains why strong islands such as complex NP and adjunct islands can apparently be 'repaired' by the Igbo equivalent of sluicing (see Amaechi 2024, p. 20f. for examples): There is no island in the putative sluicing site to begin with, but rather a copular clause.<sup>29</sup> Since there is neither long subject extraction nor ellipsis involved in the derivation of (50-a), its grammaticality does not tell us anything about the nature of the *that*-trace effect (PF or syntax); the facts are compatible with a syntactic account.

## 6. The Syntax of the Resumption Strategy

If the resumption strategy for long subject focus in Igbo, repeated in (52), is derived neither by long  $\bar{A}$ -movement of the embedded subject (+ trace spell-out) nor by base-generation (+ binding of the pronoun, which is the argument of the embedded verb), then what is the syntax underlying this construction? In this section, we argue that (52) results from a prolepsis construction combined with short  $\bar{A}$ -movement of the (DP-subpart) of the proleptic object (Section 6.1). We will also discuss an alternative derivation (Section 6.2).

- (52) **Ézè** kà **Úché** chè-rè nà **ó** hù-rù Àdá n'-áhíá  
 Eze FOC Uche think-rV C 3SG.DEP see-rV Ada P-market  
 "Uche thought that EZE saw Ada at the market."

### 6.1. Evidence for Prolepsis

A derivation that is compatible with the observation that we obtain  $\bar{A}$ -movement effects only in the matrix clause in (52) (see Section 5.1.1) is prolepsis. In a prolepsis construction such as the one in (53) from English, a DP in the matrix clause (called the proleptic object, underlined), which is often introduced by a preposition, is semantically related to a coreferential pronoun (bold-faced) in the embedded clause. Crucially, the positions occupied by the pronoun and by the proleptic object are not related via movement. The proleptic object can undergo various syntactic processes; for example, it can undergo  $\bar{A}$ -movement, see (53-b) for short wh-movement (based on (53-a)).<sup>30</sup>

- (53) a. Danny knows about Nova<sub>i</sub> that **she<sub>i</sub>** likes salad. (Lohninger et al. 2022, p. 4)  
 b. About whom<sub>i</sub> does Danny know \_\_\_ that **she<sub>i</sub>** likes salad?

What we propose is that (52), viz., the resumption strategy for long subject focus in Igbo, is the syntactic equivalent of (53-b), the only difference being that the preposition that introduces the proleptic DP is lost under  $\bar{A}$ -movement in Igbo but not in English. For this to be plausible, Igbo should have the prolepsis baseline equivalent of (53-a). This is indeed the case, see (54). The proleptic object in Igbo is introduced by the preposition *màkà*; the pronoun in the embedded clause obligatorily refers back to the proleptic DP (it cannot refer to a third party or to any other phi-compatible DP, e.g., the matrix subject, in this sentence).

- (54) **Úché** chè-rè *màkà* **Ézè** nà **ó** hù-rù Àdá  
 Uche think-rV about Eze C 3SG.DEP see-rV Ada  
 "Uche thought about Eze<sub>i</sub> that he<sub>i</sub> saw Ada."

There is evidence from adverb placement that the proleptic PP in (54) is part of the matrix clause and not located at the edge of the embedded CP: Recall that adjuncts in Igbo that modify a constituent in the extended verbal projection of a given CP are confined to the linearly final position in this CP.

- (55) a. **Ézè** hù-rù Àdá n'-áhíá / nà m̀gbèdè / ...  
 Eze see-rV Ada P-market P evening  
 "Eze saw Ada at the market / in the evening."  
 b. **Ézè** nà-à-hù Àdá m̀gbè òbùl̀à  
 Eze IPFV-PFX-see Ada time every  
 "Eze always sees Ada."

If we add an adjunct modifying the matrix verb to the prolepsis baseline in (54), the adjunct must follow the proleptic object *màkà DP*, showing that it belongs to the matrix CP, see (56).

- (56) **Úché** nà-éché (\*m̀gbè òbùl̀à) *màkà* **Ézè** (m̀gbè òbùl̀à) nà **ó** hù-rù Àdá  
 Uche IPFV-think time every about Eze time every C 3SG.DEP see-rV Ada  
 "Uche is always thinking about Eze<sub>i</sub> that he<sub>i</sub> saw Ada."

We claim that the resumption strategy in (52) is derived from (54) by short focus fronting of the proleptic object *Ézè*; the preposition introducing *Ézè* in the baseline is lost under  $\bar{A}$ -movement. This is schematically represented in (57). We remain agnostic here about the exact position and manner in which the proleptic object is base-merged in the matrix clause as this is irrelevant for our purposes, see [den Dikken \(2017\)](#); [Gluckman \(2024\)](#); [Lohninger et al. \(2022\)](#); [Major \(2023\)](#); [Salzmann \(2006, 2017a\)](#); [Zyman \(2021\)](#) for proposals.

(57) [CP  $\mathbf{XP}_i$  FOC ... [VP V ...  $\_\_\_\_\_\_$ XP [CP ... [TP  $\mathbf{pro}_i$  [VP ... ]]]]]

This derivation would explain the facts listed in Section 5.1: We only find  $\bar{A}$ -movement effects in the matrix clause, an island between the base-position of the proleptic object and the RP does not block the dependency, there are no scope interactions between the focused XP and elements in the embedded clause, and the RP behaves like a bound pronoun (not like a trace) for interchangeability with epithets and the possibility of phi-mismatches. In fact, the prolepsis baseline in (54) shares the latter three properties, as one would expect if it underlies (52), see (58) to (60).

(58) Island insensitivity:

- a. *Úchè chère-rè màkà Ézè nà Àdá nà Òbí mà* [DP *úmúá'ká* [CP *OP<sub>i</sub> ó*  
Uche think-rV P Eze C Ada and Obi know children 3SG.DEP  
*hù-rù  $\_\_\_\_\_\_$  *n'-áhíá* ]]  
see-rV P-market  
"Uche thought about Eze<sub>i</sub> that Ada and Obi know the children that he<sub>i</sub> saw at the market." *relative clause**
- b. *Úchè chère-rè màkà Ézè nà* [DP *ákúkò* [CP *nà ó jidè-rè ónyéó'rí áhù bù àsí* ]]  
Uche think-rV about Eze C rumour C he catch-rV thief the is lie  
"Uche thought about Eze<sub>i</sub> that the rumour that he<sub>i</sub> caught the thief is false."  
*noun complement clause*

(59) No scope interaction between the proleptic object and embedded material:

*M kwè-rè màkà ùmù ákwúkwo ábúò nà há gà-ètú-rú*  
1SG.INDEP believe-rV P children book two C 3PL.INDEP FUT-ICV-rV  
*ùgò nà ùlé òbùlà*  
eagles's.feather P exam every  
"I believed of two students<sub>i</sub> that they<sub>i</sub> would pass every exam."  $\checkmark 2 \succ \forall, * \forall \succ 2$

(60) Epithets possible, phi-mismatch impossible:

- a. *Úchè chère-rè màkà Ézè nà ó / òfèkè* *hù-rù Àdá n'-áhíá*  
Uche think-rV about Eze C 3SG.DEP idiot see-rV Ada P-market  
"Uche thought about Eze<sub>i</sub> that he<sub>i</sub>/the idiot<sub>i</sub> saw Ada at the market."
- b. *Úchè chère-rè màkà ùnú nà ùnú / \*yá* *hù-rù Àdá*  
Uche think-rV P 2PL.INDEP C 2PL.INDEP / 3SG.INDEP see-rV Ada  
"Uche thought about you(pl) that you(pl) saw Ada."

Moreover, there are no language-specific  $\bar{A}$ -movement effects in any clause of the prolepsis baseline since nothing undergoes  $\bar{A}$ -movement; in particular, there is no movement from the position of the embedded resumptive to the proleptic DP, which we illustrate in (61) with the absence of the *ná*-particle under sentential negation, as well as with the lack of perfective island effects in the embedded clause.

(61) No  $\bar{A}$ -movement reflexes in the embedded clause:<sup>31</sup>

- a. *Úchè chère-rè màkà Ézè nà ó (\*ná) hù-ghí Àdá*  
Uche think-rV about Eze C 3SG.DEP PRT see-NEG Ada  
"Uche thought about Eze<sub>i</sub> that he<sub>i</sub> did not see Ada."
- b. *Úchè chère-rè màkà Ézè nà ó à-hù-lá Àdá*  
Uche think-rV about Eze C 3SG.DEP NMLZ-see-PFV Ada  
"Uche thought about Eze<sub>i</sub> that he<sub>i</sub> had seen Ada."

Finally, prolepsis is subject to lexical restrictions in the languages of the world (Zyman 2021). In Igbo there are also predicates that take clausal complements but are incompatible with a proleptic object, e.g., *nụ* ‘to hear’, *kpọ asi* ‘to hate’, *chefu* ‘to forget’, *cheta* ‘to remember’, *chọ* ‘to want’, and *dị ka* ‘to seem’ cannot have a proleptic object; replacing the matrix verb in (54) with any of these leads to ungrammaticality.<sup>32</sup>

More evidence for a prolepsis derivation underlying the resumption strategy in (52) comes from the observation that the construction exhibits further properties that are cross-linguistically characteristic of prolepsis (see Aremu et al. 2022; Davies 2005; Deal 2018; Lohninger et al. 2022; Salzmann 2006, 2017a; Takano 2003). First, the element in the embedded clause that resumes the proleptic object can have any grammatical function (GF), it is not restricted to the subject function, see the prolepsis examples from English in (62) (Lohninger et al. 2022, p. 4):

- (62) English prolepsis with varying grammatical functions of the resumptive:
- |    |   |                        |
|----|---|------------------------|
| a. | Danny knows about Nova that <b>she</b> likes salad.       | <i>subject</i>         |
| b. | Danny knows about Nova that <b>her</b> owner likes salad. | <i>possessor</i>       |
| c. | Danny knows about Nova that Leo adores <b>her</b> .       | <i>direct object</i>   |
| d. | Danny knows about Nova that Leo gave <b>her</b> salad.    | <i>indirect object</i> |

The prolepsis baseline in Igbo also exhibits this flexibility, see (63-a) for an example with the RP in direct object function, and (64-a) for one in indirect object function. Note, that we use a plural proleptic object to ensure that the RP in the embedded clause refers to this object. Crucially, the same flexibility with respect to the GF of the resumptive applies to long focus fronting. So far, we concentrated on long subject focus as in (52); but it is in fact possible to form long non-subject focus in the same way, i.e., with a resumptive at the bottom of the dependency, see (63-b) and (64-b) for long direct and indirect object focus, respectively.<sup>33</sup>

- (63) Igbo prolepsis with the RP in direct object function:
- |    |  |  |
|----|--|--|
| a. | Úché chère-rè màkà Àdá nà Òbí nà Ézè hù-rù <b>há</b>                               |  |
|    | Uche think-rV about Ada and Obi C Eze see-rV 3PL.INDEP                             |  |
|    | “Uche thought about [ Ada and Obi ] <sub>i</sub> that Eze saw them <sub>i</sub> .” | <i>prolepsis declarative</i>                     |
| b. | Àdá nà Òbí kà Úché chère-rè — nà Ézè hù-rù <b>há</b>                               |  |
|    | Ada and Obi FOC Uche think-rV — C Eze see-rV 3PL.INDEP                             |  |
|    | “Uche thought about [ ADA AND OBI ] <sub>i</sub> that Eze saw them <sub>i</sub> .” | <i>prolepsis + <math>\bar{A}</math>-movement</i> |

- (64) Igbo prolepsis with the RP in indirect object function:
- |    |   |  |
|----|---|--|
| a. | Úché chère-rè màkà Àdá nà Òbí nà Ézè gòsì-rì <b>há</b> Ùgò  |  |
|    | Uche think-rV about Ada and Obi that Eze show-rV 3PL.INDEP Ugo  |  |
|    | “Uche thought about [ Ada and Obi ] <sub>i</sub> that Eze showed them <sub>i</sub> Ugo (in the picture).” | <i>prolepsis declarative</i>                     |
| b. | Àdá nà Òbí kà Úché chère-rè — nà Ézè gòsì-rì <b>há</b> Ùgò  |  |
|    | Ada and Obi FOC Uche think-rV — that Eze show-rV 3PL.INDEP Ugo  |  |
|    | “Uche thought about [ ADA AND OBI ] <sub>i</sub> that Eze showed them <sub>i</sub> Ugo (in the picture).” | <i>prolepsis + <math>\bar{A}</math>-movement</i> |

Thus, the resumption strategy is available in general to form a long ex-situ focus in Igbo, not just for a long subject focus. For long non-subject focus, it thus co-exists with long  $\bar{A}$ -movement (which leaves a gap, see the examples in Section 4.1). Compare, e.g., long object focus with a gap in (20) and the same sentence with a resumptive pronoun in (65):

- (65) Àdá kà Úché chère-rè nà Ézè hù-rù **yá**  
 Ada FOC Uche think-rV C Eze see-rV 3SG.INDEP  
 “Uche thought that Eze saw ADA.”





- b. Ísí kà Úché chère-rè nà ó gà-áda  
 head FOC Uche think-rV C 3SG.DEP FUT-fall  
 ✓“Uche thought that HEADS would fall.” *literal*  
 \*“Uche thought that SOMEONE would be punished.” *idiomatic*

Despite all the supporting evidence, there is one challenge for the proposed prolepsis-based account of (52): We need to explain the absence of the preposition that introduces the proleptic object in the baseline (see (54)) when this object undergoes  $\bar{A}$ -movement. Note, that the preposition can neither be pied-piped nor stranded (with a resumption in the extraction site), see (69). This is surprising because both pied-piping and stranding + resumption are available in the language for  $\bar{A}$ -movement dependencies involving the complement of a preposition when the PP is not a proleptic object (Georgi and Amaechi 2023).

- (69) a. \*Màkà Ézè kà Úché chère-rè nà ó hù-rù Àdá n’-áhía  
 P Eze FOC Uche think-rV C 3SG.DEP see-rV Ada P-market  
 “Uche thought that EZE saw Ada at the market.” *pied-piping*  
 b. \*Ézè kà Úché chère-rè màkà yá nà ó hù-rù Àdá n’-áhía  
 Eze FOC Uche think-rV P 3SG.INDEP C 3SG.DEP see-rV Ada P-market  
 “Uche thought that EZE saw Ada at the market.” *P-stranding + RP*

We cannot offer a deep explanation for the loss of the preposition under  $\bar{A}$ -movement of the proleptic object at this stage. But two observations make the assumption of P-drop less stipulative: First, dropping the preposition under  $\bar{A}$ -movement of a PP is also an option outside prolepsis. If, for example, the PP-adjunct from our baseline in (3) is questioned (in a construction that has the same syntax as focus fronting, see Amaechi 2020; Amaechi and Georgi 2019), the preposition becomes optional, see (70), even though it is obligatory in the baseline:

- (70) (N’)-èbé’è kà Ézé hù-rù Àdá \_  
 (P-)where FOC Eze see-rV Ada \_  
 “Where did Eze saw Ada?”

Second, similar facts have been reported for other languages. For example, van Urk (2015, p. 105) shows that  $\bar{A}$ -moved PPs must lose their preposition in Dinka (Nilotic); he hypothesizes that this may be due to incorporation of the preposition into C. See Espirito Santo (2024) for more examples of P-drop in  $\bar{A}$ -dependencies in various other languages.<sup>34</sup>

### 6.2. An Alternative Derivation

A reviewer points out that the facts presented in Section 6.1 are also compatible with a different derivation of the string in (52), schematically represented in (71): The focused XP *Ézè* is base-merged at the left edge of the embedded clause from where it binds the resumptive in the embedded SpecTP; the resumptive is the thematic argument of the embedded verb. *Ézè* then undergoes movement to its surface position, viz., matrix SpecCP.

- (71) [CP □ kà Úché chère [CP *Ézè*<sub>i</sub> nà ó<sub>i</sub> hù-rù Àdá n’-áhía ]]  
 ↑ movement

Such a derivation has been proposed, e.g., for hybrid chains in Irish (McCloskey 2002), and for long-distance clefting in Bikol (Erlewine and Lim 2023). (71) would explain why we only see the effects of  $\bar{A}$ -movement in the matrix clause for the resumption strategy, that the resumptive does not behave like a trace with respect to phi-mismatches, and potentially also the insensitivity to islands as exemplified in (45) (if *Ézè* is base-merged above the XP that constitutes the island).<sup>35</sup> An advantage of this alternative analysis over the prolepsis account is that it explains why we do not see a preposition introducing the focused XP in (52): this DP is not introduced as the complement of a preposition in the baseline.

However, there are two facts that are challenging for the alternative account: First, the postulated baseline for (71) before  $\bar{A}$ -movement of *Ézè* is not attested in Igbo. We illustrate this in (72-a). We use the adverb *mgbè òbùlà* ‘often’ here to modify the matrix

verb; this ensures that *Ézè* is in the embedded clause and not in the matrix clause (recall that adverbs are the rightmost elements in the clause in which they modify something). Moreover, *Ézè* precedes the complementizer, which shows that it is at the very left edge of the embedded clause. But the string is ungrammatical.<sup>36</sup> (72-b) illustrates that it is fine without *Ézè* at the edge of the embedded clause, showing that it is this element that causes the ungrammaticality. More generally, (72-a) is problematic because Igbo does not allow for embedded topicalization (Amaechi 2020). The prolepsis baseline, on the other hand, is available in the language, as shown in (54).

- (72) a. \**Úchè chère-rè m̀gbè ̀b̀b̀l̀à Ézè nà ̀ ̀ h̀r̀r̀ Àdá*  
 Uche think-rV time every Eze C 3SG.DEP see-rV Ada  
 b. *Úchè chère-rè m̀gbè ̀b̀b̀l̀à nà ̀ ̀ h̀r̀r̀ Àdá*  
 Uche think-rV time every C 3SG.DEP see-rV Ada  
 “Uche often thinks that he (Eze) saw Ada.”

A potential argument in favor of the alternative derivation in (71) involves multiple prolepsis. Consider the prolepsis baseline in (73-a), in which the proleptic DP is resumed by a pronoun in the direct object function. We can now try to focus front the embedded subject *Ézè* in (73-a) with the resumption strategy. This is possible, see (73-b).

- (73) a. *Úchè chère-rè màkà Àdá nà Ézè h̀r̀r̀ yá*  
 Uche think-rV about Ada C Eze see-rV 3SG.INDEP  
 “Uche thought about Ada<sub>i</sub> that Eze saw her<sub>i</sub>.”  
 b. *Ézè kà Úché chère-rè màkà Àdá nà ̀ ̀ h̀r̀r̀ yá*  
 Eze FOC Uche think-rV about Ada C 3SG.DEP see-rV 3SG.INDEP  
 Lit.: “(It is) Eze<sub>j</sub> (that) Uche thought about Ada<sub>j</sub> that he<sub>j</sub> saw her<sub>i</sub>.”

The reviewer who proposes the alternative account for the resumption strategy points out that the grammaticality of (73-b) is surprising under a prolepsis-based account of the construction because it would require multiple proleptic objects in the matrix clause along the lines of (74), something that is impossible in English. Under the alternative account in (71), however, the grammaticality of (73-b) is expected since we do not need more than one proleptic object in the clause, viz. ‘about Ada’; the focus fronted subject would originate as a DP at the edge of the embedded clause.

- (74) \*Uche thinks about Ada<sub>i</sub> about Eze<sub>j</sub> that he<sub>i</sub> saw her<sub>j</sub>.

However, unlike English, Igbo does allow sentences with multiple proleptic objects, i.e., the Igbo equivalent of (74) is grammatical, see (75). Thus, (73-b) can be derived by a baseline with double prolepsis. The grammaticality of this string thus does not allow us to choose between the two derivational options under discussion for the resumption strategy.

- (75) *Úchè chère-rè màkà Àdá màkà Ézè nà ̀ ̀ h̀r̀r̀ yá*  
 Uche think-rV about Ada about Eze C 3SG.DEP see-rV 3SG.INDEP  
 Lit.: “Uche thought about Ada<sub>i</sub> about Eze<sub>j</sub> that he<sub>j</sub> saw her<sub>i</sub>.”

Nevertheless, we can actually make an argument in favor of prolepsis involving the context in (73-b) (with prolepsis and long subject focus + resumption). Recall that there are in principle three ways to realize long subject focus in Igbo, as shown in (18): Next to the resumption strategy, there is also the possibility to drop the embedding C or to use a different form of C, viz., *sí*; both combine with a gap in the embedded subject position. Interestingly, in the context in (73-b) this optionality breaks down: When long subject focus is formed on a proleptic baseline as in (73-a), only the resumption strategy is available. The two other options are out, see (76):

- (76) \**Ézè kà Úché chère-rè màkà Àdá Ø / sí — h̀r̀r̀ yá*  
 Eze FOC Uche think-rV about Ada C<sup>Ø</sup> / C see-rV 3SG.INDEP  
 “Uche thought about Ada<sub>j</sub> that EZE saw her<sub>i</sub>.”

We argued in Section 4.1 that the zero-C and the *sí*-C strategy both result from long  $\bar{A}$ -movement of the embedded subject, unlike the resumption strategy (see Section 5.1). It has been shown for other languages that complement clauses of matrix predicates with a proleptic object are islands for subextraction, presumably because of the presence of a base-generated operator at the left edge of these clauses that turns them into predicates (see, e.g., Lohninger et al. 2022; Salzmann 2017a). The embedded clause in a prolepsis construction is an island in Igbo, too, see (77), where we try to subextract the embedded direct object:

- (77) a. Úchè ch̀è-r̀è màkà Ézè nà ọ̀ h̀ù-r̀ù Àdà  
 Uche think-rV about Eze C 3SG.DEP see-rV Ada  
 ‘‘Uche thought about Eze<sub>i</sub> that he<sub>i</sub> saw Ada.’’  
 b. \*Àdà kà Úché ch̀è-r̀è màkà Ézè nà ọ̀ h̀ù-r̀ù —  
 Ada FOC Uche think-rV about Eze C 3SG.DEP see-rV —  
 ‘‘Uche thought about Eze<sub>i</sub> that he<sub>i</sub> saw ADA.’’

The ungrammaticality of (76) (and (77-b)) is thus an island effect, since the embedded clause blocks subextraction from it. The resumption strategy is still available in the presence of a proleptic object in the matrix clause, however, see (73-b). This follows if the focus fronting of the embedded subject involves prolepsis since there is no extraction of any element from the embedded clause (recall that the dependency is not sensitive to islands, in general, see Section 5.1.2). Under the alternative derivation for long subject focus + resumption in (71), the DP that is to be focused would have to move out of the embedded clause, which is impossible given that it is an island. The fact that the resumption strategy is possible on top of prolepsis thus argues against the alternative derivation in (71).

However, there is a further data point that challenges the prolepsis account. Recall from the previous subsection that some verbs in Igbo that can take a clausal complement cannot combine with a proleptic object, e.g., *nu* ‘to hear’, see (78-a). We predict that it is impossible to form ex-situ focus of the embedded subject in (78-a) with the resumption strategy because this would require a prolepsis baseline according to our analysis, but this baseline does not exist.<sup>37</sup> The corresponding string with the resumption strategy is grammatical, however, see (78-b). This is indeed a challenge for the prolepsis account, and we cannot explain it at this point. But note that the alternative account in (71) cannot capture the grammaticality of (78-b) either for the very same reason: the baseline postulated is not independently attested in Igbo. This data point thus does not help us to make a choice between the prolepsis account and the alternative derivation.

- (78) a. Úchè ǹù-r̀ù ( \*m̀akà Ézè ) nà ọ̀ h̀ù-r̀ù Àdà  
 Uche hear-rV about Eze C 3SG.DEP see-rV Ada  
 ‘‘Uche heard about Eze<sub>i</sub> that he<sub>i</sub> saw Ada.’’  
 b. Ézè kà Úché ǹù-r̀ù nà ọ̀ h̀ù-r̀ù Àdà  
 Eze FOC Uche hear-rV C 3SG.DEP see-rV Ada  
 ‘‘Uche heard that EZE saw Ada.’’

To summarize, both the prolepsis account and the alternative derivation in (71) for the resumption strategy of long subject focus are confronted with challenges. The prolepsis account lacks an explanation for the absence of the preposition that introduces the proleptic object in the baseline. The alternative analysis has to postulate a baseline that is not independently attested in Igbo and—in a context where prolepsis combines with long subject focus plus resumption—requires movement out of a CP that is otherwise an island. Both accounts do not expect (78-b) to be grammatical. The problems for the alternative account seem to us to be more severe, we thus favor the prolepsis derivation. In any case, it is clear that the resumption strategy is not derived by long  $\bar{A}$ -movement, and this is what is crucial for our discussion of the nature of the *that*-trace effect in Igbo.

### 7. A Syntactic Account of the *That-Trace* Effect: Evidence for Spec-to-Spec Antilocality

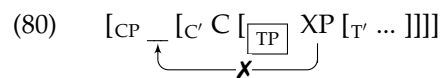
To take stock, we have argued so far that the resumption strategy to form long subject focus in Igbo (see (52)) is not derived by long subject  $\bar{A}$ -movement, but rather results from a prolepsis baseline with short  $\bar{A}$ -movement of the proleptic DP. The fact that long  $\bar{A}$ -movement of the embedded subject + spell-out of the trace (for PF-reasons) is impossible to derive the string in (52)—even though Igbo exhibits both of the necessary processes independently—suggests that there is a deeper syntactic reason behind the *that-trace* restriction. In this section, we address the nature of this syntactic constraint. We argue that it involves antilocality, viz., a lower limit on the length of  $\bar{A}$ -movement. Evidence comes from the impossibility of short subject focus fronting in Igbo, which also provides another argument against the PF account of the *that-trace* effect, and the possibility of short and long subextraction from subjects. The discussion here summarizes the arguments in Georgi and Amaechi (2024) to which the reader is referred for further details and data.

#### 7.1. Proposal: Spec-to-Spec Antilocality

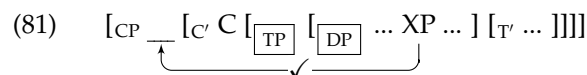
We propose that the restriction on long subject extraction across *nà* in Igbo, illustrated in (16-b), is due to the fact that the intermediate movement step of the embedded subject from SpecTP to the local SpecCP (enforced by the Phase Impenetrability Condition, Chomsky 2000) is blocked because it is too short. For concreteness, we adopt the Spec-to-Spec antilocality constraint from Erlewine (2016, p. 431) in (79) (see Amaechi and Georgi 2019; Branan 2023; Brillman and Hirsch 2016; Deal 2019; Douglas 2017 for further applications of (79)).<sup>38</sup>

(79) Spec-to-Spec Antilocality:  $\bar{A}$ -movement of a phrase from the Specifier of XP must cross a maximal projection other than XP.

(80) illustrates that movement of the subject DP from SpecTP to SpecCP in the embedded clause violates Spec-to-Spec antilocality because it only crosses the XP in whose specifier the DP starts out, viz., TP.



Unlike many other definitions of antilocality in the literature (see Richards 2001 for an overview), Spec-to-Spec antilocality makes two predictions that we will show to be borne out in Igbo: (a) The dependency in (80) is also blocked when the  $\bar{A}$ -movement step in question is a terminal one (rather than an intermediate one), viz., clause-bound  $\bar{A}$ -movement of subjects is impossible, too. (b) Short and long subextraction from the subject DP is possible because this dependency crosses the subject DP in addition to TP, see (81).



We provide evidence for (a) and (b) below. The fact that short subject  $\bar{A}$ -movement is blocked as well is a further argument against the PF approach to the *that-trace* effect.

#### 7.2. Evidence I: No Local Subject $\bar{A}$ -Movement

Consider (82), a simple clause whose subject is focused (made explicit by the presence of a focus-sensitive particle because, without it, the string would be identical to an all-new declarative). It has proven difficult in SVO languages to determine whether subjects with  $\bar{A}$ -features have undergone short  $\bar{A}$ -movement or whether stay in SpecTP because the movement would be string-vacuous in many cases.

(82) Sòósò Èzè hụ-rù Àdà  
 only Eze see-rV Ada  
 “Only Eze saw Ada.”

Thanks to the language-specific  $\bar{A}$ -movement reflexes in Igbo (Section 2.2) we can show that the focused subject in (82) has to remain in SpecTP: We do not obtain the *ná*-particle in the sentence when it is negated (see (83-a)), perfective aspect does not block subject focus (see (83-b)), and having a downstep on the verb (which would be the manifestation of the final H-tone under subject extraction) is not possible either (see (83-c)).<sup>39</sup>

- (83) a. Sòòsò Ézè (\*ná) á-<sup>1</sup>hù-ghí Àdá  
 only Eze PRT PFX-see-NEG Ada  
 “Only Eze did not see Ada.”  
 b. Sòòsò Ézè à-hù-lá Àdá  
 only Eze NMLZ-see-PFV Ada  
 “Only Eze has seen Ada.”  
 c. \*Sòòsò Ézè <sup>1</sup>hù-<sup>1</sup>rù Àdá.  
 only Eze see-rV Ada  
 “Only Eze saw Ada.”

Note, further that all DPs are obligatorily followed by the focus marker *kà* in Igbo (viz., short and long-distance focused non-subjects as well as long-distances focused subjects, see the previous sections for examples). Only local subject focus is incompatible with this marker: Adding *kà* after the subject DP in (82) leads to ungrammaticality. Amaechi and Georgi (2019) claim that *kà* realizes the head of the left-peripheral projection to which the focused DP moves, but only if this DP is pronounced. The absence of the focus marker in sentences with local subject focus thus further supports the claim that the subject DP is not in the specifier of this left-peripheral projection (and its head thus remains silent).

The fact that both short and long subject  $\bar{A}$ -movement are blocked in Igbo (the latter at least without further repairs such as C-drop) is expected under various syntactic accounts of the *that*-trace effect (e.g., under antilocality andriterial Freezing, Rizzi and Shlonsky 2007), but not under the PF-account sketched in Section 3.2. The reason is that the PF account prohibits a sequence where a gap follows an overt complementizer. But in Igbo, as in many other languages, there are no overt complementizers in matrix clauses. The cause for the lack of short  $\bar{A}$ -movement thus cannot be that it would lead to a violation of \* $\langle C, t \rangle$ . Under a syntactic account, however, it is expected that subject  $\bar{A}$ -movement is blocked, in general, if short  $\bar{A}$ -movement and intermediate movement steps to the edge of an embedded clause target the same position.

### 7.3. Evidence II: Subextraction from Subjects

According to Spec-to-Spec antilocality subextraction from a subject should be possible because it is not too local. This can usually not be tested since subjects are islands in most languages. In Igbo, they are not, however, (see Georgi and Amaechi 2023), and subextraction from subjects is indeed possible. Evidence for this claim comes from the language-specific  $\bar{A}$ -movement effects, and from phi-mismatches.

Let us start with short subextraction from a subject. We illustrate this here for the extraction of the first conjunct of a coordinated subject. This construction is felicitous when the ex-situ conjunct expresses contrastive focus. Conjunct subextraction requires resumption in the base position. Our baseline is (84-a). (84-b) illustrates that first conjunct focus fronting triggers the final H-tone effect on the final TBU of the subject, viz., the final syllable of the second conjunct *Íbè* (which surfaces as *Íbé* here). (84-c) exemplifies that the dependency is sensitive to the perfective island, and (84-d) shows that the *ná*-particle is triggered when (84-b) is negated. When the focused 1st conjunct is a non-3sg pronoun, the resuming pronoun has to be the default 3sg pronoun, we thus obtain a phi-mismatch (see (84-e)), indicating that the RP pronounces a trace. Note, also that the ex-situ first conjunct must be followed by the focus marker, which further indicates that the conjunct has reached a left-peripheral specifier position.

- (84) a. [<sub>&P</sub> Ézè nà Íbè ] hù-rù Àdá.  
 Eze and Ibe see-rV Ada  
 “Eze and Ibe saw Ada.”

*declarative*

- b. Ézè **kà** [<sub>&P</sub> yá            nà **Íbé** ] hù-rù Àdá.  
Eze FOC    3SG.INDEP and Ibe    see-rV Ada  
“EZE and Ibe saw Ada.” *1st conjunct focus*
- c. \*Ézè **kà** [<sub>&P</sub> yá            nà **Íbé** ] à-hù-lá            Àdá.  
Eze FOC    3SG.INDEP and Ibe    NMLZ-see-PVF Ada  
“EZE and Ibe have seen Ada.” *1st conjunct focus + perfective*
- d. Ézè **kà** [<sub>&P</sub> yá            nà **Íbè** ] \*(**ná**) á-<sup>h</sup>hù-ghí            Àdá.  
Eze FOC    3SG.INDEP and Ibe    PRT PFX-see-NEG Ada  
“EZE and Ibe did not see Ada.” *1st conjunct focus + NEG*
- e. **Únù**        **kà** [<sub>DP</sub> sòsò yá            / \***únù**            ] hù-rù Àdá.  
2PL.INDEP FOC    only 3SG.INDEP    2PL.INDEP    see-rV Ada  
“Only YOU(PL) saw Ada.” *1st conjunct focus + phi-mismatch*

Evidence for the availability of long subextraction from a subject is provided in (85). This example exhibits ex-situ focus of a focus associate (which independently requires resumption) that originates in the embedded subject DP. Recall that long focus fronting of non-subjects in Igbo can be achieved by long  $\bar{A}$ -movement of by prolepsis (Section 6.1). We are interested in whether long  $\bar{A}$ -movement is an option in this case. To enforce this derivation, we use a local person focus associate combined with a 3sg resumptive, which is possible, see (85) (recall that phi-mismatches are only possible for spelled-out traces). In addition, the embedded clause in (85) is negated and the *ná*-particle must precede the negated verb. These facts show that long subextraction from an embedded subject is possible in Igbo, too.<sup>40</sup>

- (85) **Únù**        **kà** **Úché** chè-rè    nà [<sub>DP</sub> sòsò yá            ] \*(**ná**) á-<sup>h</sup>hù-ghí            Àdá  
2PL.INDEP FOC Uche think-rV C    only 3SG.INDEP    PRT PFX-see-NEG Ada  
“Uche thought that only YOU(PL) had not seen Ada.”

We have shown that both predictions of the Spec-to-Spec antilocality condition on  $\bar{A}$ -movement are borne out in Igbo: short  $\bar{A}$ -movement is blocked as well, and short and long subextraction from subjects is possible. We thus take this condition to be a promising candidate for the syntactic restriction that underlies the *that*-trace effect in the language.<sup>41</sup> Nevertheless, in the future, we need to study the structure of the other two strategies that Igbo exhibits to enable long subject focus, viz., the use of a zero-C or *sí*-C, in particular the left peripheries of the respective embedded clauses, to find out whether they are compatible with a Spec-to-Spec antilocality approach. What also needs to be taken into account in future research involving antilocality—in Igbo and more generally—is how it can be reconciled with a split CP, for which there is some evidence in Igbo (Amaechi 2020).

### 8. Conclusions and Consequences

The source of the *that*-trace effect, a widespread subject/non-subject asymmetry that arises under long extraction, is still debated: There are structural accounts and PF accounts. The former postulate a restriction on subject movement in the syntax; a prominent instance of the latter states that there is nothing wrong with long subject movement, but the resulting string with the embedding complementizer linearly adjacent to a gap is banned at PF (\*C-t). A common strategy to enable long subject  $\bar{A}$ -dependencies in the languages of the world is the use of a resumptive in the embedded subject position. It has been argued for several languages with this repair that it involves long  $\bar{A}$ -movement of the subject plus the overt realization of its trace, which favors a PF account to the *that*-trace effect.

In this paper, we studied the *that*-trace effect in Igbo and, in particular, the resumption strategy that circumvents it. We argued that it favors a syntactic account for the following reasons: (i) the resumption repair does not (and, in fact, cannot) result in the long  $\bar{A}$ -movement (as suggested by general as well as language-specific  $\bar{A}$ -movement diagnostics), unlike in other languages with the same surface repair; (ii) this is remarkable since the language in principle allows long  $\bar{A}$ -movement (also of subjects) as well as the spell-out of traces; and (iii) local subject  $\bar{A}$ -movement is also blocked, which cannot be explained by

\*C-t since C is silent in matrix clauses in Igbo. We proposed that Spec-to-Spec antilocality is what underlies the restriction on subject extraction in the language; further evidence for this claim comes from the observation that short and long subextraction from subjects is possible. We would like to emphasize that we do not make claims beyond Igbo; in particular, we do not intend to suggest that the *that*-trace effect has a syntactic source in all languages that instantiate it. There are convincing arguments for a PF account of the effect in other languages, but the Igbo facts point in a different direction.

More generally, the Igbo facts presented in this paper provide further evidence that the resumption strategy that enables long subject  $\bar{A}$ -dependencies has different underlying derivations across languages: prolepsis (e.g., in Igbo), long  $\bar{A}$ -movement (e.g., in Nupe, Kandybowicz 2009), or base-generation (e.g., in Dagbani, Issah and Smith 2020). This also makes it plausible that the effect may have different causes across languages (e.g., a syntactic one vs. PF-based one). Linguists tend to prefer uniform analyses for widely attested phenomena for conceptual reasons, but we can only draw conclusions based on empirical evidence; the present paper adds to this discussion by proving new data points from a lesser-studied language.

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## Abbreviations

The following glosses and abbreviations are used in this manuscript: 1/2/3 = 1st/2nd/3rd person; ADJ = adjunct; C = complementizer;  $C^{\emptyset}$  = zero complementizer; CompP = complement of a preposition; COP = copula; DEF = definite; DEP = dependent (weak/clitic) pronoun; DO = direct object; FEM = feminine; FOC = focus marker; FUT = future, ICV = inherent complement verb; INDEP = independent (strong) pronoun; IPFV = imperfective; IO = indirect object; LSMD = language-specific movement diagnostic; LOC = location; NEG = negation; NMLZ = nominalizer; OVS = open vowel suffix; P = preposition; PFV = perfective; PFX = prefix; PL = plural; POSS = possessive form of nominals (used in possessor function); PRT = particle; RP = resumptive pronoun; -rV = verbal suffix consisting of /r/ + a vowel that assimilates to the preceding vowel; SG = singular; SU = subject.

## Notes

- <sup>1</sup> Bresnan (1972, 1977) formulates a very similar idea in her *Fixed Subject Condition*. This condition is not a surface constraint, though, but rather a restriction on movement in the syntax (no subject NP movement across an adjacent complementizer).
- <sup>2</sup> In previous work (Georgi and Amaechi 2023), we had initially hypothesized that the alternation between the dependent and independent forms of the 2sg and 3sg subject clitics reflects morphological case, viz., nominative vs. accusative, in line with some of the literature. However, we argued in this paper that the alternation is rather structurally conditioned allomorphy (see also Goldsmith 1976) and does not reflect abstract structural case. For concreteness, the dependent form of the subject pronouns can only be used if the pronoun is the sister of T'. For this reason, we are not using case labels for the alternation anymore; this also holds for the possessive form, which we used to call genitive in previous work.



3 The  $\bar{A}$ -movement-related properties we are reporting here for focus fronting also hold for a number of other  $\bar{A}$ -constructions in Igbo, e.g., constituent questions with wh-pronouns, relativization (which involves empty operator movement), and clefts containing relative clauses or focus fronting structures, see [Amaechi \(2020\)](#) for an in-depth study of the syntax of these constructions.

4 This shift of the floating direction of a tone (when its default direction is blocked) is also attested in the nominal domain in Igbo, viz., in the associative construction, see [Clark \(1990\)](#). That the H-tone triggered by  $\bar{A}$ -movement ends up on the matrix verb can also be observed under long subject relativization, since there is no overt relative complementizer and no overt relative pronoun in Igbo; the next overt element to the left of the H-tone originating in the relative clause C-domain is thus the matrix verb. See [Amaechi \(2020\)](#) for examples.

5 Sentential negation is expressed by two affixes that attach to the finite verb in Igbo: a high tone prefix, glossed as PFX, and the suffix *ghi*. Both affixes undergo ATR-harmony with the vowels in the verb stem; the suffix in addition copies the tone of the verb stem (see [Déchaine 1993](#); [Emenanjo 1978](#); [Green and Igwe 1963](#)).

6 [Amaechi \(2020\)](#) studies the morphosyntax of the perfective and other aspects in Igbo. She finds that the perfective differs from other aspects in the language in that it contains two nominal layers, a high one, marked by the prefix, and a lower one, marked by the OVS suffix. Other aspects such as the imperfective, which introduce only one nominal layer, do not create islands for extraction. [Amaechi \(2020\)](#) thus hypothesizes that the perfective island effect is essentially a subjacency effect (see [Chomsky 1973](#)): crossing one nominal layer is tolerated, but crossing two is too much.

7 Note that the resumptive pronoun in (10-c) surfaces in its possessive form (i.e., with a downstep rather than a high tone). This is because the perfective induces nominalization of the verb, which in turn results in ‘nominal’ morphology on its dependents. In fact, the object *Àdá* in (10-a) technically also has the possessive form; this form just happens to be syncretic with the basic / unmarked form of the noun, so one cannot see it (and we thus did not gloss it as such).

8 [Korsah and Murphy \(2024\)](#); [Schurr et al. \(2024\)](#); [Smith \(2024\)](#) provide examples from other African languages in which typical (Indo-European) islands are transparent for extraction. Igbo thus does not behave exceptionally in this respect.

9 See [Demirdache and Percus \(2011\)](#) for the observation epithets cannot attach to traces but only to pronouns, which is further supported by the Igbo data.

10 Given the linear position of the element *sí* in (15) and the fact that it seems to replace the complementizer *nà*, it is plausible to consider the two markers to be allomorphs occupying C, and for concreteness sake this is what we are doing throughout this paper. But the syntactic status of *sí* certainly requires further investigation. In fact, there is reason to question the view that *sí* is just an allomorph of *nà*: For some speakers, *sí* and *nà* can co-occur in a declarative sentence, showing that they may not occupy the same structural position after all.

11 We indicate the final H-tone reflex on the matrix subject as well as the downstep on the embedded verb in (16-b) as these effects would be expected to arise given our understanding of these processes. One might probably also expect the H-tone effect on the complementizer *nà* as it is the closest overt element to the right of the position in which the floating H originates. Crucially, the example in (16-b) is ungrammatical regardless of whether these tone changes surface or not, it is an unacceptable string in both cases.

12 We do not observe a subject/non-subject asymmetry for long topicalization in Igbo, see (86). This is expected since it is derived by base-generation, not by  $\bar{A}$ -movement.

(86) Long topicalization:

a. Ézè, Úchè chè-rè **nà** / **sí** / \*Ø ó hù-rù Àdá  
Eze Uche think-rV C / C / C<sup>∅</sup> 3SG.DEP see-rV Ada

“As for Eze, Uche thought that he saw Ada.”

*long SU topic*

b. Àdá, Úchè chè-rè **nà** / **sí** / \*Ø Ézè hù-rù yà  
Ada Uche think-rV C / C / C<sup>∅</sup> Eze see-rV 3SG.INDEP

“As for Ada, Uche thought that Eze saw her.”

*long DO topic*

13 Nupe, a closely related language spoken in Nigeria, is also rich in strategies to avoid a *that*-trace violation, but the strategies in the two languages overlap only partially. [Kandybowicz \(2006, 2009\)](#) reports that the *that*-trace effect in Nupe can be circumvented by resumption (as in Igbo), but also by a phonologically reduced C, by overt tense morphemes, and by TP-adjoined adverbials. On the other hand, dropping the subordinating C is not an option in Nupe, unlike in Igbo. See also [Amaechi and Oturu \(2024\)](#) for another closely related language, Osanyin, in which the syntax underlying long subject extraction and its repairs (including resumption) are very similar to what we find in Igbo.

14 Among the three strategies that Igbo exhibits to express long subject focus (see (18)), only the zero complementizer is a true repair: C has to be overt in embedded declaratives and under long non-subject extraction, it can only remain silent in order to enable long ex-situ subject focus. The alternative element *sí* can also be used in declaratives, and is thus not a repair strategy in the strict sense. Furthermore, we will show in Section 6.1 that the resumption strategy is always available to form long  $\bar{A}$ -dependencies in Igbo: it is not restricted to embedded subjects but also available for other grammatical functions.

- 15 According to [Chene \(2000\)](#); [Kandybowicz \(2006, 2009\)](#), the *that*-trace effect is suspended when there is a prosodic boundary between C and the trace in the embedded subject position; [Sato and Dobashi \(2016\)](#) claim that C cannot form a prosodic phrase on its own, as it would when a gap follows it. We have not studied the prosody of Igbo in detail and thus cannot properly evaluate to what extent these accounts could be applied to Igbo, too. At least, we do not find supporting evidence of the kind that is reported in this literature: The phonetic shortening of the complementizer avoids the *that*-trace effect in English, see (87) ([Kandybowicz 2006](#), p. 222), and also, e.g., in Nupe. But such shortening of C-elements is impossible in Igbo, in general, and also in declaratives.
- (87) The author that the editor predicts \*that/√?th't \_ will be adored.
- 16 Note that we translate this idiom a bit differently than in our previous work. In [Georgi and Amaechi \(2023\)](#) we translated it as 'to hit the teeth with the spoon'. We now chose to use 'to hit the spoon at the teeth' as this is structurally closer to the Igbo idiom in the sense that 'spoon' is syntactically the direct object of the verb 'to hit' and 'teeth' is introduced by a preposition.
- 17 Note that (30-a) and (31-b) are still ungrammatical with the zero complementizer if the -rV-suffix of the matrix verb bears high tones—which it usually does under long subject focus with the zero-C, see, e.g., (8-b). Since these two sentences are ungrammatical anyway, we did not indicate this fine tonal distinction on the matrix verb (low tones with *sí*-C, final high tone with zero-C).
- 18 Note that the negated embedded verb has a high-toned vowel prefix in (41-a) but not in (41-b). The distribution of this vowel is regulated by independent principles active in the language, and the effect is also observed with other verb forms, e.g., with perfective verbs (see (43) for an example). The vowel (harmonizing in ATR with the following vowel) precedes these verbs when they have a full DP subject (including proper names) or a subject that is an independent pronoun. It is absent, however, with clitic (dependent) pronominal subjects, see [Amaechi \(2020\)](#).
- 19 The tone of the 3sg subject pronoun /o/ that occurs in the embedded clause in most examples of the resumption strategy (and elsewhere) in this paper is determined by the syntactic context. The pronoun inherently has a high tone. This tone is overwritten by a (usually rightward floating) low tone, however, in the following two contexts: in yes-no-questions and in clauses with sentential negation, see [Amaechi \(2020\)](#) for details.
- 20 Relative clauses in Igbo are introduced neither by an overt relative pronoun nor by an overt complementizer. [Amaechi \(2020\)](#) provides evidence for an empty operator movement approach to relativization in the language, hence the OP-element in the examples. We use a coordinated (i.e., plural) subject for the predicate 'know' in the complex NP examples in order to avoid unintended coreference options between the RP and preceding DPs.
- 21 Note that the 1sg independent subject pronoun *mí* can optionally appear either before or after the finite verb in matrix declarative clauses in Igbo. If it follows the verb, a dummy vowel (here: *é*) must precede the verb (see [Eze 1995](#); [Goldsmith 1981a](#) on this vowel). This inversion effect is visible, e.g., in example (46-a), but it does not interact with the scope relations under discussion.
- 22 Crucially, RPs in this construction cannot be replaced by just any DP; the DP in question must be anaphorically bound by the ex-situ focused DP. An example like (88) in which the RP is replaced by the DP 'the children', is ungrammatical:
- (88) \*Úchè chè-rè màkà Ézè nà úmuá'ká áhù kwèsiri í-nò n'úlò òngbè àmùmà nà-àmá.  
 Uche think-rV about Eze C children the should INF-be.LOC P-house time storm IPFV-be.storm  
 "Uche thought about Eze that the children should stay at home during the storm."
- 23 See [Issah and Smith \(2020\)](#) for evidence that the resumption strategy for long subject extraction in Dagbani (Gur, Ghana) is the result of base-generation.
- 24 We thank an anonymous reviewer for pointing out the different qualities of the diagnostics we are applying here, viz., those that support a non-movement derivation but do not exclude a long movement alternative vs. those that exclude long  $\bar{A}$ -movement.
- 25 An anonymous reviewer asks whether there could be an independent factor that explains why the embedded subject position in Igbo cannot be a pronounced trace: The clear cases of spelled-out traces under short focus fronting (e.g., of a conjunct or the complement of a preposition) result in independent (viz., strong) pronouns, while most of our examples of the resumption strategy for long subject focus contain the dependent (viz., clitic) pronoun *ó*. If, for some reason, trace spell-out can only produce strong pronouns (see [Hewett 2023](#)) but the embedded subject position requires a weak pronoun under long subject focus, trace spell-out is not an option there to begin with. However, this reasoning cannot explain the absence of a long movement + trace spell-out derivation for long subject focus in Igbo: In fact, the resumptive in the embedded subject position (under long subject focus and, in general) does not have to be a clitic, it can also be a strong (independent) pronoun. We can see this in examples in which the antecedent is not 2sg or 3sg, e.g., in (46-c) and (48-b), in which a 2pl and 3pl subject XP, respectively, undergoes long focus fronting and is resumed by the corresponding strong pronoun. Crucially, these sentences are also not derived by long  $\bar{A}$ -movement, just like their counterparts with a 3sg antecedent (for example, it is possible to use perfective aspect in the embedded clauses of these examples, showing that nothing  $\bar{A}$ -moves in these clauses). Recall that in Igbo only the 2sg and the 3sg personal pronouns have a clitic form, and this form is only used when these pronouns are used as subjects (or, more technically, when they are sisters of T'). All other pronouns only have strong forms to begin with (see (5) for the personal pronoun paradigm). Thus, the impression that there is a fundamental difference between spelled-out traces under short focus fronting (which are

always strong pronouns because they are not subjects) and the RP in the embedded subject position under long subject focus (which can be a clitic, but only with a 2sg or 3sg antecedent) results from the fact that most of our examples of this construction contain a 3sg focused DP.

26 In some languages ellipsis can repair strong islands. Ross (1969) noted that the sluiced counterparts of English sentences with, e.g., a complex NP island or a coordination island are at least more acceptable than their non-sluiced counterparts. This fact has later been taken to show that a surface (PF) constraint is responsible for the island effect, i.e., nothing blocks movement across an island in the syntax, but the resulting string violates a surface filter, see, e.g., Chomsky (1972), and Mendes (2020) for an overview and a critical discussion of surface filter approaches to island violations, including the *that*-trace effect.

27 We thank an anonymous reviewer for bringing the relevance of ellipsis for our main claim to our attention.

28 In fact, Igbo does not have embedded constituent questions; the corresponding meaning is expressed by a relative clause (Amaechi 2020; Goldsmith 1981b). See also Schurr et al. (2024) for the argument that sluicing is not a suitable diagnostic for movement in Shupamem because the sluice site has a syntax different from the English one, viz., *wh*-in situ.

29 Even in languages in which sluicing involves the English-style derivation, viz., long  $\bar{A}$ -movement of the (wh)-remnant + TP-ellipsis, the absence of the *that*-trace effect under sluicing cannot immediately be taken as evidence that the effect has a PF-source. There is a confound in this argumentation that is rarely addressed in the literature: One first has to ensure that none of the (non-ellipsis) repairs of the *that*-trace effect has applied in the ellipsis site, e.g., C-deletion as in (89), the equivalent of (50-b), but with a zero embedding complementizer in the ellipsis site:

(89) Uche thought that someone saw Ada at the market, but I don't know who ~~Uche thought  $\emptyset$  saw Ada at the market.~~

If any such repair applied in the ellipsis site, it would repair the violation; we then cannot tell if ellipsis would have had an ameliorating effect as well. Mendes and Kandybowicz (2023) partially address this issue for Nupe. They argue that the resumption repair of the *that*-trace effect in the language (equivalent to the Igbo repair in (52)) can be excluded to apply in the elided part of a grammatical sluicing construction involving long subject extraction. However, it is unclear to us how one can exclude the application of other cross-linguistically common repairs such as C-drop or the use of alternative C-elements in the sluice site.

30 While the sentence in (53-b), derived from the baseline in (53-a), is acceptable, Andrew Murphy (p.c.) informs us that the most natural English examples with an  $\bar{A}$ -moved proleptic object contain the matrix verb 'to say (of)', e.g., 'Of whom does Danny say that she likes salad?'

31 We also do not find effects of  $\bar{A}$ -movement in the matrix clause (in the relevant contexts) since it contains no  $\bar{A}$ -dependency to begin with.

32 Many of these verbs are inherent complement verbs, e.g., 'to hate'. It could be that the presence of the inherent complement is the reason why a proleptic object is blocked; but this reasoning does not apply to verbs like 'to hear', which do not require an inherent complement.

33 That we are indeed dealing with prolepsis in the b-sentences in (63) and (64) is supported by the fact that they behave like prolepsis involving the embedded subject for the language-specific  $\bar{A}$ -movement effects and island-sensitivity: The  $\bar{A}$ -movement effects are only triggered in the matrix, but not in the embedded clause, and it is possible to put an island in between the embedded RP and the proleptic object along the lines of (58). We do not illustrate this here, though, for reasons of space.

34 One might consider an explanation for P-drop in Igbo that involves incorporation of the preposition into the matrix verb; this might even enable subextraction of the complement of P in the spirit of Baker (1988). In a sense, the former complement of P would then become an applied argument of the matrix verb. An argument against this hypothesis is that Igbo has applicative morphology, but we do not find an applicative morpheme on the matrix verb in the construction under discussion.

35 A prediction that both the prolepsis account and the alternative account make about the resumption strategy for long ex-situ focus is the following: (52) is derived by (relatively) short  $\bar{A}$ -movement of the focused subject, either within the matrix clause (according to the prolepsis account) or from the left edge of the embedded clause (under the alternative account). Since focus fronting in Igbo can in principle apply long-distance (see Section 4.1), it should be possible for the focused XP to move long-distance, too. This is indeed the case, see (90), where we illustrate this based on a prolepsis baseline, but the logic is the same for the alternative account. In (90-b), based on (90-a), the proleptic object *Ézè* starts out in the center CP (from where it binds the RP in the most deeply embedded CP) and then undergoes long focus fronting to the left periphery of the topmost clause.

- (90) a. Ùgò kwè-rè nà Úchè chè-rè màkà Ézè nà ọ hụ-rụ Àdá  
 Ugo believe-rV that Uche think-rV about Eze that 3SG.DEP see-rV Ada  
 "Ugo believed that Uche thought about Eze; that he; saw Ada."  
 b. Ézè kà Ùgò kwè-rè nà Úché chè-rè nà ọ hụ-rụ Àdá  
 Eze FOC Ugo believe-rV that Uche think-rV C 3SG.DEP see-rV Ada  
 "Ugo believed that Uche thought about EZE; that he; saw Ada."

As expected, we find the language-specific effects of  $\bar{A}$ -movement in the topmost and the center CP of (90), but not in the most deeply embedded clause. We exemplify this with the distribution of the *ná*-particle under negation in (91): The particle is

obligatory in the matrix CP and the center CP, but prohibited in the most deeply embedded CP. Note, also the final H-tone effect on the subjects of the two upper clauses, *Ùgò* and *Úchè*, in (90-b).

(91) Long focus of the proleptic object + negation:

- a. *Ézè kà Ùgò \*(ná) 'é-kwé-ghí nà Úché chè-rè nà ọ hụ-rụ Àdá*  
Eze FOC Ugo PRT PFX-believe-NEG that Uche think-rV C 3SG.DEP see-rV Ada  
“Ugo did not believe that Uche thought about EZE<sub>i</sub> that he<sub>i</sub> saw Ada.” NEG in upper CP
- b. *Ézè kà Úgó kwè-rè nà Úchè \*(ná) é-chè-ghì nà ọ hụ-rụ Àdá*  
Eze FOC Ugo believe-rV that Uche PRT PFX-think-NEG C 3SG.DEP see-rV Ada  
“Ugo believed that Uche did not think about EZE<sub>i</sub> that he<sub>i</sub> saw Ada.” NEG in center CP
- c. *Ézè kà Úgó kwè-rè nà Úché chè-rè nà ọ (\*ná) hụ-ghí Àdá*  
Eze FOC Ugo believe-rV that Uche think-rV C 3SG.DEP PRT see-NEG Ada  
“Ugo believed that Uche thought about EZE<sub>i</sub> that he<sub>i</sub> did not see Ada.” NEG in bottom CP

36 The string is also ungrammatical if *Ézè* occupies not the outermost edge of the left periphery of the embedded clause, but is base-merged in a slightly lower position, i.e., below the complementizer but above the resumptive in SpecTP, giving rise to the sequence: \*[<sub>CP</sub> ... nà *Ézè* ọ ... ].

37 We thank an anonymous reviewer for pointing out this prediction.

38 For an overview and critique of other syntactic accounts of the *that*-trace effect see [Erlewine \(2020\)](#); [Kandybowicz \(2009\)](#); [Pesetsky \(2017\)](#).

39 It is not entirely clear whether we would expect a downstep in (83-c) at all, even if the focused subject underwent local  $\bar{A}$ -movement. The reason is that the downstep requires the presence of two adjacent H-tones, see Section 2.2: the one triggered in the emptied SpecTP, and the one in C caused by  $\bar{A}$ -movement. The latter should float to the left in this context, but in a simple matrix clause, there is nothing overt on its left it could attach to. Either the tone remains floating or it is deleted as a last resort. If it is deleted, it cannot cause a downstep on the verb together with the H-tone originating in SpecTP. Nevertheless, we would at least expect the H-tone in SpecTP to overwrite the low tones on the verb. But this is also not grammatical:

- (92) *\*Sòòsò Ézè hụ-rụ Àdá.*  
only Eze see-rV Ada  
“Only Eze saw Ada.”

40 A prolepsis alternative for ex-situ focus of a focus associate of the embedded subject is an option, too, but it would host a fully matching RP rather than the default one, and the *ná*-particle could not occur when the embedded clause is negated.

41 A further diagnostic for the nature of the *that*-trace effect often discussed in the literature is the adverb effect, where a TP-adverb (intervening between C and the subject in SpecTP) ameliorates long subject extraction ([Bresnan 1977](#); [Culicover 1993](#); [Kandybowicz 2006](#)). This effect is attested in several unrelated languages; (93) provides an example from English.

(93) The adverb effect in English ([Culicover 1993](#), p. 557):

Robin met the man **who**<sub>i</sub> Leslie said that for all intents and purposes   <sub>i</sub> was the mayor of the city.

The adverb effect has been used as an argument for both PF-accounts (since C and the subject gap are no longer linearly adjacent, see, e.g., [Kandybowicz 2006](#)) and syntactic accounts (e.g., antilocality accounts, since the adverb increases the structural distance between SpecTP and the landing site of the subject in SpecCP, see, e.g., [Erlewine 2020](#)) of the *that*-trace effect. It is thus not a diagnostic that easily allows us to distinguish between these types of approaches. Nevertheless, we will briefly report on the effect in Igbo here because our antilocality account predicts that we should find it in the language. In general, it is very hard to test the effect of a TP-adverb in Igbo because adjuncts do not naturally occur in this position, they rather surface in clause-final position. The only constituent that we could find so far that is marginally acceptable in between C and the embedded subject (with significant pauses before and after) is *n'úchè nkè 'yá*, ‘in one’s opinion’, see (94-a). If the embedded subject in this sentence undergoes long focus fronting, it can do so across the complementizer *nà*, in fact, *nà* cannot be dropped in this context, i.e., there is no *that*-trace effect anymore, see (94-b). This is the Igbo equivalent of the adverb effect. We do not want to base our analysis of the *that*-trace effect solely on this data point, however, since having the adverb in this high position is marked. Nevertheless, (94-b) is in line with the predictions of our syntactic analysis of the *that*-trace effect.

- (94) a. *Úchè chè-rè nà, n'úchè nkè 'yá, Ézè hụ-rụ Àdá.*  
Uche think-rV C P-mind the.one 3SG.POSS Eze see-rV Ada  
“Uche thought that, in his opinion, Eze saw Ada.”
- b. *Ézè kà Úché chè-rè nà / \*Ø, n'úchè nkè 'yá, hụ-rụ Àdá.*  
Eze FOC Uche think-rV C / C<sup>Ø</sup> P-mind the.one 3SG.POSS see-rV Ada  
“Uche thought that, in his opinion, EZE saw Ada.”

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