The Semantics of Yoruba Presupposition Triggers

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*There is a dearth of works on formal semantics study of African languages. Therefore, this paper investigates the semantic relation of presupposition in the light of relevant data from Yoruba language. It does not only identify Yoruba presupposition triggers but also investigates the extent to which they exhibit their triggering properties. The study shows that the negation of the set of propositions having the additive presupposition trigger, **náà**, cannot entail such propositions but their corresponding negations. It also shows that the interpretation of certain factive verbs in the language may result in presupposition failure in contexts where the experiencer referent in the main clause is not co-referential with the subject of the embedded complementizer (pé-)clause. It equally shows that the presupposition triggered by the preverbal item **sì** 'still, again' may be entailed or non-entailed; and survives under negation by entailing the negated form of the concerned proposition.*

Keywords: *semantics, presupposition, entailment, information content, Yoruba*

1 Introduction

The popular assumption in the literature is that all natural languages have presuppositions (Von Fintel & Matthewson 2008: 178; Zimmermann & Sternefeld 2013: 216). However, the extent and the level of involvement of particular languages is still a subject of research as all human languages appear to have mechanisms through which speakers express aspects of meaning that are not verbally asserted but somehow taken for granted by participants in verbal conversations. Part of the properties of presuppositions is that they are triggered by certain word/linguistic items (e.g., intonation) or syntactic constructions which may vary and behave differently in different languages. The research questions addressed in this paper are: is presupposition expressible in Yoruba? if yes, what are the items and contexts that trigger it and how are semantic judgments elicited for presuppositions and other related semantic relations in the language? These and other related questions are the focus of this article.

2 Theoretical approach

This study employs insights from formal semantics[1] which studies grammatical (mostly denotational) meaning of human language expressions via formal tools of philosophical logic and mathematics such as predicate/symbolic logic, set theory, etc. to create a system which accounts for the linguistic meaning of expressions (words/phrases/sentences) by supplying systematic explanation on how such expressions are either referenced (reference), structurally composed from the meanings of their component parts (compositionality) and/or by providing

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[1] Formal semantics today is more of an interdisciplinary field with incorporated ideas from philosophical and mathematical logic, computer science, and cognitive psychology. It is often regarded as a subfield of both philosophy of language and linguistics.

information about the contextual nature of the meaning of such expressions, i.e. the semantic relationship involved in the meaning of such expressions.

Two core concepts within the formal semantics approach relevant to this study are *truth conditionality* and *compositionality*. The former exists in the assumption that knowing the meaning of a proposition involves knowing the condition under which it would be true in the world(s) of human experience (real or imaginary). For instance, the Yoruba statement *Lágbájá ń fọn fèrè* 'Lagbaja is blowing the trumpet' would be considered true[2] if there is an individual called by that name and the person performs the act of blowing the trumpet in our world of experience; otherwise it would be false. It is pertinent to mention that the notion of truth conditionality in semantics has, over the years, been expanded in sub approaches like Inquisitive Semantics[3] (Ciardelli 2009; Groenendijk 2009; Ciardelli et al. 2019; etc.) to also cover issues that are thrown up or raised by a proposition in addition to the basic truth condition that it primarily conveys. For instance, 'Lagbaja blows the trumpet, but does he play drums?' raises the added issue of *whether Lagbaja plays drums*. However, discussions in this paper will be limited to those related to the basics of truth conditional semantics.

The concept of *compositionality*, in the words of von Fintel and Mathewson (2008: 1), consists in the idea that:

> Meanings of complex phrases and sentences arise compositionally from the meanings of their parts (down to the smallest meaning-bearing elements: morphemes). The compositional derivation of meanings depends systematically on the syntactic structure of the complex expressions.

This implies that the meaning of any complex expression is systematically calculated from the sum of the meanings of each of the components that made it up, and the semantic operation(s) that combine them in a relational order. For instance, if we consider the meaning of the Yoruba proposition *Adé sùn* 'Adé sleeps', we can calculate it from the denotations of: Ade = [|Adé|] meaning the flesh and blood individual who answers the name; *sùn* 'sleep' = [|sùn|] = {x: x sùn} 'the set of x such that x sleeps, i.e., the set of sleeping entities in w'; and the compositional operation that combines them, i.e. the *function application* which sees the verb *sùn* as a function that takes an individual argument (like the subject *Adé*) and returns the intensional value 1 (true) if Adé indeed sleeps in w or 0 (false), if otherwise. This can be formally stated thus:

[|Adé sùn|] = 1   iff   [|Adé|]$_w$ $\in$ [|sùn|]$_w$
'*Adé sùn* is true if and only if *Ade* is an element of *sùn*
 i.e. belongs to the set of sleeping entities in w.[4]'

We shall rely more on these two ideologies and other relevant ones, especially those that relate to set theory and felicity conditions of propositions (Austin 1962) in Yoruba presuppositional relations.

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[2] True statements simply mean 'self-evident' statements while axioms simply refer to a small set of principles assumed to be true (Partee, Meulen & Wall 1990: 89).

[3] see also Dynamic Semantics (Nowen et al. 2016; Goldstein 2017 & 2019) which adds that knowing the truth condition of a proposition also involves knowing how such an expression updates the context of information i.e., how it brings about change in the information state of the addressee.

[4] $\in$ = element of; w = world of experience; $\rightarrow$ = entail; ¬ = negation (/and not).

3 Presupposition

Presupposition is a part of context-dependent non-truth conditional meaning in that it does not really influence the truth or falsehood of a sentence/proposition but rather impacts on its felicity as to its appropriateness in the context of use. It is therefore that linguistically marked information taken for granted by the speaker and hearer as part of the mutual knowledge shared and brought into their conversation, i.e. part of the common ground (CG) considered to be true within the context of a conversational discourse (Stalnaker 1973; 1978). For instance, the English sentence in (1a) presupposes or is a presupposition of (2a) and (2b) respectively.

(1)   a.   SPEAKER A: John stopped smoking.
        b.   SPEAKER B: Oh! I see.

(2)   a.   There is an individual called John.
        b.   The person, John, used to smoke.

Note that while (2a&b) were not verbally expressed in (1), they formed part of the background information or mutual knowledge which the participants brought into the conversation and relied upon to decode the semantic interpretation of (1a) within the context of that conversation.
        Presupposition can also be considered as a semantic relation between two or more propositions such that the first of such propositions stands as an uncancellable background to the other. Therefore, given any two propositions, say A and B,

> A presupposes B iff A entails B and other members of the A Family entail B, where other members of the family of A include the affirmative and negative declarative, question, and antecedent of conditionals. (Dayal 2013:3)

This implies that A is an assumed background to B if A entails B and other possible constructions in the presuppositional context of A also entail B. At this juncture, we need to clarify the concept of entailment given its centrality to the understanding of presupposition. We also need to clarify by exemplifying the so-called 'family of A' in the adapted definition.

3.1 *The place of entailment in presupposition*

Entailment, like presupposition, is a semantic relation which holds between two expressions, say A and B, such that whenever A is true, B would also be true; but not necessarily vice versa. For instance, (3a) entails (3b) but (3b) does not entail (3a).

(3)   a.   Jimga is a brilliant cartoonist.
        b.   Jimga is a cartoonist.

Appeal to intuition and common sense as (L1/L2) speakers of English somehow ensures this semantic judgement, that the individual called Jimga primarily must have been a cartoonist before one could think of him being a brilliant cartoonist. However, there are tricky instances where such intuitions may fail. To get round this, semanticists have developed fool proof ways of ensuring the veracity of entailment judgements. One of such is cancellation test in which propositions in assumed entailment relation are negated, one against the other, to ascertain

whether there is contradiction in the semantic interpretation of the output. Contradiction (C) in the output amounts to entailment while lack of contradiction means there is no entailment. For instance, (3a) without (3b), as background truth is contradictory, as illustrated in the cancellation test in (4).

(4)   [3a Jimga is a brilliant cartoonist] **and it is false that** [3b Jimga is a cartoonist] = C

The contradiction in (4) is simple: Jimga cannot be a brilliant cartoonist if he is not a cartoonist ab-initio. This test simply confirms that our intuition-based judgement that (3a) entails (3b) is valid. However, if we turn the table round as done in (5), the result of the test shows there is no contradiction.

(5)   [3b Jimga is a cartoonist] **and it is false that** [3a Jimga is a brilliant cartoonist] ≠ C

The logic of (5) is in the fact that *Jimga is a cartoonist* does not imply in any way that *he is a brilliant cartoonist*. This explains why the idea of cancellation test is often built into the definition of entailment thus: A entails B iff A and not-B is a contradiction (i.e. A → B iff A & ¬B = C). We can therefore conclude that entailment is a semantic relation where the meaning of an expression, e.g. B, is included in the meaning of another, A[5]. This is rendered via set relations as B $\subseteq$ A, i.e. B is a subset of A. In other words, the interpretation of B is included in or predictable from A.

3.2 *The **family of A***

The idea of *the family of A* in Dayal (2013) adapted definition of presupposition in section 2 has to do with other tests that can be employed to verify the veracity of presupposition claims. Presupposition is known to survive under negation, interrogation, and to some extent, conditional clause embedding. The issue is that it is not enough sometimes just for A to entail B in order to presuppose B. In addition, the affirmation, negation, interrogation, and conditional embedding of A could also be tested to see if they entail B to further establish that semantic relation. For instance, if we consider presupposition in the context of (3), the following propositions in (6) would subsist:

(6)   a.   That Jimga is a brilliant cartoonist is good news.   (affirmation)
        b.   Jimga is not a brilliant cartoonist.   (negation)
        c.   Is Jimga a brilliant cartoonist?   (interrogation)
        d.   If Jimga is a brilliant cartoonist, he must be rich.   (conditional embedding)

Each of the propositions in (6a-d) entails (3b), i.e., *Jimga is a cartoonist*. These in conclusion establish that (3a), apart from entailing (3b), also presupposes it. On the other hand, we can simply say (3b) is a presupposition of (3a).

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[5] cf. hyponymy relation in lexical semantics.

4 Yoruba presupposition triggers

There is substantial evidence to show that presupposition with its relational semantics play crucial roles in the interpretation of propositional expressions in Yoruba verbal conversations and communicational discourses. In this section, we examine relevant Yoruba language data and contexts in which presuppositions are employed. We highlight the presupposition triggers and discuss how they exhibit the triggering properties ascribed to them. The triggers are grouped according to the phrasal domain in which they occur contextually.

4.1 *Nominal triggers*

There are three homophonous presupposition triggers in the Yoruba nominal domain homographically represented as *náà*. These function words broadly mark definite descriptions (cf. Ajiboye 2015) and trigger presuppositions which imply that their referents are both existential and GIVEN in conversational discourse. Though slightly different in semantic interpretations, the fact that the three are somehow related in definiteness makes them analysable as polysemous realisations of a single definiteness morpheme in the language.

4.1.1 *Definite presupposition*
The basic definiteness reading of *náà* is evident in contexts like (7).

(7) a. Ọmọ *náà*-án   wá.
         Child DEF-HTS[6]   come
         'The child came.'

     b. Oúnjẹ *náà*-án   pẹ́.
         Food   DEF-HTS   late
         'The food was late.'

Here, *náà* marks its referents *ọmọ* (7a) and *oúnjẹ* (7b) as definite, GIVEN, i.e. part of the already known or shared information that the participants brought into the discourse. Additionally, this item triggers an existential presupposition as it entails that the R-expression referent (ọmọ/oúnjẹ) exists. So, (7a) entails (8a) just as (7b) entails (8b) because 7a ¬8a = C; and 7b ¬8b = C.

(8) a. Ọmọ kan-án   wà/ńbẹ.
         Child one/certain-HTS   exist
         'There is (i.e. exists) a certain child.'

     b. Oúnjẹ kan-án   wà/ńbẹ.
         Food   one/certain-HTS   exist
         'There is (i.e. exists) a certain meal.'

Additionally, the affirmation, negation, interrogation, and conditional embedding of (7a), as illustrated in (9a-d), also entail (8a),

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[6] High tone syllable

(9) a. Pé [Ọmọ *náà*-án wá] dùn mí. (Affirmation)
         That child DEF-HTS come pain me
         'That the child came pained me.'

     b. Ọmọ *náà* kò wá. (Negation)
         child DEF NEG come
         'The child did not come.'

     c. Ṣé ọmọ *náà*-án wá? (Interrogation)
         INTER child DEF-HTS come
         'Did the child come?'

     d. Bí ọmọ *náà* bá wá, ẹ fún un ní ìwé yìí. (Cond. Embedding)
         If child DEF then come, 2PL give 3SG FOC book this
         'If the child comes, give him this book.'

What these entailment facts established is that 7a presupposes 8a just as 7b presupposes 8b, based on the entailment facts of (10a-d).

(10) a. Pé [oúnjẹ *náà*-án pẹ́] bí mi nínú.
          That food DEF-HTS late anger me LOC-stomach
          'That the food was late angered me.'

      b. Oúnjẹ *náà* kò pẹ́.
          Food DEF NEG late
          'The food was not late.'

      c. Ṣé oúnjẹ *náà*-án pẹ́ àbí kò pẹ́ ?
          INTER food DEF-HTS late or NEG late
          'Was the food late or not?'

      d. Bí oúnjẹ *náà*-án bá pẹ́, mi ò níí jẹ ẹ́.
          If food DEF-HTS then late, 1SG NEG FUT eat it
          'If the food is late, I will not eat it.'

4.1.2 *Specificity presupposition*
The definite-specific *náà* is evident in contexts like (11) where its referent *Akin* is both definite and specific.

(11) a. Akin *náà* nìyẹn.
          Akin SPEF FOC-that
          'This is THAT VERY AKIN.'

      b. Oúnjẹ tí mo jẹ *náà*-án dùn.
          Food that 1SG eat SPEF-HTS sweet
          'THAT VERY FOOD which I ate is sweet.'

First, *náà* is definite in (11) because its referents are not new information. It also marks the referents as uniquely different from every of their kind in the world. Therefore, the presupposition triggered by this specificity marker relates to the information that the speaker had earlier shared about its referent within the context of use. For instance, *Akin **náà*** in (11a) implies '*that very Akin* whom I had spoken of earlier' just as *Oúnje tí mo je **náà*** in (11b) implies '*that very food* I ate which I mentioned to you earlier'[7]. So, the presupposition in these contexts is not exclusively about the referents but the fact that the hearer had earlier been informed of the referents. If there is no specific person named Akin that the speaker had earlier mentioned to the hearer, (11a) would be infelicitous within that context to the point that the hearer may even ask: *Akin wo?* 'Which Akin?'

Therefore, by virtue of the reference of the specificity *náà*, (11a) presupposes (12) in that (11a) and its negation, interrogation, affirmation, and conditional embedding entail (12).

(12) Akin   tí   mo   so   fún   e   nipa   è   (télè)
      Akin   REL   1SG   speak for   you about   him (before)
      'That Akin whom I had mentioned to you earlier.'

(13) a.   Akin *náà* kó nìyen.   / Kì í se Akin *náà* nìyen
            'That is NOT THAT VERY AKIN.[8]'/ 'It is NOT THAT VERY AKIN.'

      b.   Sé Akin *náà* nìyen? 'Is it that VERY AKIN'

      c.   Mi ò tètè mò [pé Akin *náà* nìyen].
            'I did not know on time that that is the VERY AKIN.'

      d.   Bí Akin *náà* nìyen bí kì í se òun, a máa mò láìpé
            'If it is THAT VERY AKIN or not, we shall soon get to know.'

Facts from cancellation tests show that 11a ¬12 = contradiction. Similarly, the negation, interrogation, affirmation, and the conditional embedding of (11a) in (13a.c) entail (12). What these facts established is that (11a) presupposes (12).

In the same vein, (11b) presupposes (14) since the referent of *náà* in (11b) is not just 'the food' but, also, the fact that the speaker had earlier told the addressee about that very food. Therefore, 11a ¬14 = contradiction.

(14) Mo   je   oúnje kan   tí   mo   so   fún   e   nipa   è
      1SG   eat   food   certain REL 1SG   speak to   you about   it
      'I ate a certain meal which I had told you about.'

This fact is further reinforced by the fact that the negation, interrogation, affirmation, and conditional embedding of (11a) in (15a-d), also entail (14).

(15) a.   Oúnje tí mo je *náà* kò dùn.   (negation)
            'That very food which I ate is not sweet.'

b. Ṣé oúnjẹ tí mo jẹ *náà* dùn àbí kò dùn ?   (interrogation)
'Is that very food which I ate sweet or not?'

c. Pé oúnjẹ tí mo jẹ *náà* dùn wú mi lórí.
'That that very food which I ate is sweet impressed me.'   (affirmation)

d. Bí oúnjẹ tí mo jẹ *náà* bá dùn, màá mọ̀.   (conditional embedding)
'If that very food which I ate was sweet, I will know.'

In essence, (11b) or (15a-d) ¬ (14) is contradictory. The former is infelicitous in the context without (14) as GIVEN background, hence our submission that (11b) presupposes (14).

4.1.3 *Additive/Addendum presupposition*
The third *náà*, literally interpretable as 'too/also' in English or 'doch' in Dutch (Zeevat, 2002; 2003), is illustrated below in (16) where *àwa akẹ́kọ̀ọ́* 'we students' and *Ìyàwó mi* 'my wife' are not new information.

(16) a. Wọ́n   pe   àwa   akẹ́kọ̀ọ́   *náà*.
3PL-HTS   call   1PL   student   too
'They invited we students too/also.'
/'They called us the students.'

b. Ìyàwó mi   *náà*   wà   níbẹ̀.
wife 1SG   too   be   LOC-there
'My wife too was there.'

This trigger signals that its definite referent is mentioned as addendum to some other referent(s) within the context. For instance in (16a), the use of *náà* additionally implies that the students were invited in addition to some other persons. Ditto in the context of (16b) where the wife of the speaker was present in addition to some other person(s). The presupposition is therefore one in which the trigger *náà* exclusively references an argument x as the last added member of a set, say{y, q, r, and x also}. The occurrence of x is licensed by the occurrence of all other members of the set (van der Sandt & Geurts 2001). In other words, x ¬ (y, q, r) = C. For instance in the discourse context in (17), the last propositional part of (17b) *Ládìtí náà wá* featuring the additive *náà* entails the three propositions before it.

(17) a. Question: Àwọn wo ló wá sí patí ẹ?
'Who are those that came to your party?'

b. Answer: Ọ̀gá mi-í   wá;   Yínká   wá;   Múbọ̀-ọ́   wá;   Ládìtí *náà*-án wá.
Boss 1SG-HTS come; Yinka-HTS come; Mubo-HTS come; Laditi *too*-HTS come;
'My boss came; Yinka came; Mubọ came; Laditi *too* came.'

c. Answer: Ládìtí *náà*-án   wá.
Laditi *too*-HTS come
'Laditi *too* came.'

Though well-formed, (17c) in isolation is an inappropriate/infelicitous answer to (17a). This is because without the first three preceding propositions in (17b) as background, (17c) is pragmatically out of place within the context of that question-and-answer discourse (cf. Zeevat 2003:166). The examples in (18) additionally show that the affirmation, interrogation, and conditional embedding of (17c) entail the first three propositions in (17b).

(18) a. Pé   [Ládìtí *náà*-án   wá] dára.   (Affirmation)
          That Laditi too-HTS come good
          'That Laditi too came is good.'

      b. Ṣé   [Ládìtí *náà*-án   wá]?   (Interrogation)
          INTER Laditi too-HTS come
          'Did Laditi too come?'

      c. Bí [Ládìtí *náà*-án   bá wá], yóò   jẹun. (Conditional embedding)
          If- Laditi too-HTS -then come FUT eat
          'If Laditi too came, he would have eaten.'

Interestingly, the negation of (17c) does not appear to entail the propositions in (17b). Simply put, (19) below does not entail *Ọ̀gá mi-í wá, Yínká wá, Múbọ̀-ọ́ wá* 'My boss came, Yinka came, Mubọ came' in (17b).

(19) Ládìtí *náà*   kò   wá.   (Negation)
      Laditi too   NEG   come
      'Laditi too did not come.'

This fact, at a first glance, appears like an exception as the negation of (17c) should entail its preceding propositions in (17b) for it to presuppose them. A closer look however shows that what Yoruba seems to do is for the negation of the proposition containing the additive trigger to entail the corresponding negations of the preceding propositions. This is clear as (19) presupposes *Ọ̀gá mi kò wá, Yínká kò wá, Múbọ̀ kò wá* 'My boss did not come, Yinka did not come, Mubọ did not come', which are the negated forms of the preceding three propositions in (17b). So, the presupposition still holds.

4.2 *Verbal triggers*

The presupposition triggers in the verbal domain can be sub-divided into two given their syntactic functions and distribution. The first group consists of verbs while the other is made up of post-/pre-verbal adverbs.

4.2.1 *Verbs*
Factive experience verbs
These include verbs such as *mọ̀* '(to) know', *dùn* 'pained (emotionally)', *kábàámọ̀* '(to) regret', and *rántí* 'remember' which select pé-complementizer phrase as complement. While these verbs ordinarily trigger existential presuppositions in relation to their subcategorised complement, the presupposition is on the direct complement of *pé* such that, for an *[x **mọ̀** pé*

[z]] proposition, *z* is presupposed. (20) to (22) are examples of this type of presupposition in Yoruba.

(20)   a.   Akín*ᵢ*   *mọ̀*   [pé   [òun*ᵢ*   ò   gbọ́n]].
             Akin   know   that   3SG   NEG   be-wise
             'Akin knows that he is not wise.'

       b.   Akin/òun*ᵢ*   ò   gbọ́n.
             Akin/3SG   NEG   be-wise
             'Akin/he is not wise.'

       c.   Akin*ᵢ*   ò   *mọ̀*   [pé   [òun*ᵢ*   ò   gbọ́n]].
             Akin   NEG   know   that   3SG   NEG   be-wise
             'Akin does not know that he is not wise.'

(21)   a.   Ó   *dùn* mí   [pé [mo   tú   àṣírí yẹn]].
             3SG.HTS   pain 1SG.ACC   that 1SG.NOM   reveal   secret DEM
             'It pained me that I revealed that secret.'

       b.   Mo   tú   àṣírí   yẹn.
             1SG.NOM   reveal   secret DEM
             'I revealed that secret.'

       c.   Kò   *dùn* mí   [pé [mo   tú   àṣírí yẹn]].
             NEG   pain 1SG.ACC   that 1SG.NOM   reveal   secret DEM
             'It does not pain me that I revealed that secret.'

(22)   a.   Mo   *kábàámọ̀*   [pé   [mo   lọ]].
             1SG.NOM   regret   that   1SG.NOM   go
             'I regretted that I went.'

       b.   Mo   lọ.
             1SG.NOM   go
             'I went.'

       c.   Mi   ò   *kábàámọ̀*   [pé   [mo   lọ]].
             1SG.NOM   NEG   regret   that   1SG.NOM   go
             'I did not regret that I went.'

In these examples, the factive-V proposition presupposes the embedded simple proposition in the *pé*-clause. This is clear because each of the factive-V propositions and their negations entail the respective simple clauses within their embedded *pé*-clauses. For instance, 20a and its negation in 20c entail 20b just as 21a and 21c entail 21b. The same holds for 22a and 22c which entail 22b.

    One fact to note in Yoruba with the presupposition triggering abilities of factive verbs is that there may be presupposition failure if the subject of the simple proposition in the embedded pé-clause does not have the same referent with the experiencer in the matrix clause.

For example, in 23a below, the subject of the embedded clause *Yinka* is a 3SG r-expression which is referentially different from the 1SG.ACC experiencer argument of the V *dùn* in the matrix clause.

(23)   a.   Ó   *dùn* mí   [pé [Yinká   tú   àṣírí   yẹn]].
                 3SG.HTS pain 1SG.ACC   that Y.   reveal secret DEM
                 'It pained me that Yinka revealed that secret.'

        b.   Yinká tú   àṣírí yẹn.
                 Y.   reveal secret DEM
                 'Yinka revealed that secret.'

        c.   Kò *dùn*   mí   [pé [Yinká   tú   àṣírí yẹn]].
                 NEG pain   1SG.ACC   that Y.   reveal secret DEM
                 'It does not pain me that Yinka revealed that secret.'

Consequently, therefore, 23a and its negation in 23c may not necessarily entail 23b because it is possible that Yinka, in actual sense, did not reveal the secret but the speaker only erroneously assumed that he did based on misinformation from some quarters. Maybe the secret was even revealed by a third party! If that is the case, then it would be an instance of presupposition failure where the presupposition itself (i.e. the CG, the presupposed proposition, 23b) is questioned and successfully denied. Such failure may even be graver with the V *mọ̀* 'to know' in that such construction would run afoul of the Grice's (1975) cooperative principle that one must only say what one knows is true. For instance, if (24b) in the embedded pé-clause below is successfully denied for whatever reason in the context, then (24a) cannot presuppose (24b) because both (24a) and its negation (24c) will not entail (24b) within the context of that discourse. In other words, presupposition failure does not really affect the truth, but the felicity, condition of the presupposed by making it weird within the context of use (Zimmermann & Sternefeld 2013: 221).

(24)   a.   Mo   *mọ̀*   [pé   [wọ́n   lọ]].
                 1SG.NOM   know   that   3PL-HTS   go
                 'I know that they went.'

        b.   Wọ́n   lọ.
                 3PL-HTS   go
                 'They went.'

        c.   Mi   ò   *mọ̀*   [pé   [wọ́n   lọ]].
                 1SG.NOM   NEG know   that   3PL-HTS go
                    'I did not know that they went.'

It therefore appears that the caveat for the presupposition triggering abilities of Yoruba factive-experience verbs is such that the subject of the presupposed embedded proposition in their pé-clause must share the same referential properties with the experiencer argument in the main clause, otherwise, there may be presupposition failure.

Additive Verbs

Verbs in this group are *sí* 'add (more) to' which usually occurs as the second/final V in some serial verbs, e.g. *fẹ́..sí* 'want more', *mọ̀..sí* 'know more'[9], *gbà sí* 'take more', and *lọ sí*, as in *lọ lẹ́ẹ̀kan sí i* 'go once more, add one more trip to it'. The interpretation of this *sí* appears to be predicated on the structural form: *x wants/needs/knows (y) sí y^{(n)}*. This logically implies, as illustrated below in (25) and (26), that the subject of *sí* in the proposition simply wants/needs/knows more of *y* to be added to the one(s) they already had.

(25) a.   Mo   fẹ́   (owó$_i$)   *sí*   i$_i$
             1SG   want money add-to 3SG
             'I want more (money).'

      b.   Mi   ò   fẹ́   (owó$_i$) *sí*   i$_i$
             1SG NEG want money add-to 3SG
             'I do not want more (money).'

(26) gba   (oúnjẹ) díẹ̀ yìí *sí*   i.
      Take food   little this add-to 3SG
      'Take and add up this little (food) to it.'

(27) a.   Mo mọ̀   *sí*   i   lónìí
             1SG know more (added-to) 3SG LOC-today
             'I know more (added to what I already know) today.'

      b.   Mi   ò   mọ̀   *sí*   i   lónìí
             1SG NEG   know more (added to) 3SG LOC-today
             'I do not know more (added to what I already know) today.'

Similarly, *sí* in (27) presupposes that the experiencer subject already had some knowledge about *y* (referenced by its 3sg object complement) as no one can claim *to know more of something* for which they do not have any previous knowledge. These facts are the presuppositions (i.e. uncancellable truths) which underlie *sí* propositions. Interestingly, the presuppositions survive under negation as they and their negations entail the fact that the referent already had/owned/knew some quantity of *y* to which more is to be added. So, (25a & b) entail *I had some money beforehand*; (26) entail *the addressee already had some food*; and (27a & b) entail *I already had some knowledge* before uttering them.

The second verb in this group is *mọ́/kún* in the serial verb *fi...mọ́/kún* 'add...to'. The logical interpretation of this verbal compound is *fi x mọ́/kún y* 'add *x* to *y*'. Examples of contexts where this is used are as in (28).

(28) a.   Ẹ   *fi* owó yìí *mọ́/kún* (owó)   ti   ọwọ́ yín.
             2PL-NOM use money this add-to   (money) that-of hand 2PL.GEN

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[9] Note that this item is different from the one interpretated as 'to know about something', e.g. *Màámi mọ̀ sí ọ̀rọ̀ yẹn* 'my mother knows about that issue'. It is also different from the locative **sí** in propositions like *Mo lọ sí Ibadan* 'I went to Ibadan'.

           'Add this money to the one with you.'

b.   Ẹ   máà *fi* owó yìí *mọ́/kún* (owó) ti   ọwọ́ yín.
        2PL-NOM NEG use money this add-to (money) that-of hand 2PL.GEN
        'Do not add this money to the one with you.'

c.   Owó kan wà lọ́wọ́   yín   tẹ́lẹ̀.
        Money certain be LOC-hand 2PL.GEN   before
        'You have some money at hand previously.'

(28a & b) will be infelicitous in this context if (28c) was not part of the assumed shared/given information by the discourse participants. Therefore, since (29a) and its negation (29b) entail (29c), then 29a presupposes 29c; and the trigger of that presupposition is the verb *mọ́/kún*.

4.2.2 *Adverbs and adverbials*
These are verbal adjuncts in Yoruba which exhibit certain semantic properties that trigger presuppositions when employed in conversational discourse. Words in this category are *mọ́* 'any longer, again'; *tún* 'additionally, also'; *sì* 'still'; and *tẹ́lẹ̀* 'before'.

Mọ́
This item is a post-verbal adverb whose propositional occurrence is licensed by a c-commanding standard negation. This coupled with the fact that it can only occur in negative propositions strongly suggest it is a negative polarity item (cf. Ilọri 2018: 57 – 59). This explains why (29a) is well-formed and (29b) is adjudged ungrammatical.

(29) a.   Inú   ò   bí   mi   *mọ́*.
          stomach NEG churn 1SG any-longer
          'I am no longer angry.'

      b.   *Inú   bí   mi   *mọ́*.
          stomach   churn 1SG any-longer
          'I am no longer angry.'

      c.   Inú   bí   mi   tẹ́lẹ̀.
          stomach churn 1SG before
          'I was previously angry.'

On the presupposition triggering ability of *mọ́*, 30a entails 30c (i.e. the proposition that *I was previously angry*). In other words, 29a can only make discourse sense if 29c was conversationally available within the context of 29. By implication therefore, 29a – 29c is contradictory. Similarly, (30) which is the negation of (29a) also entails 29c.

(30) Kì   í   ṣe   pé   inú   ò   bí   mi   *mọ́*.
     NEG HTS be   that stomach NEG churn 1SG   again
     'It is not (the case) that I was no longer angry.'

This confirms that (29a) presupposes (29c). Additionally, the interrogation, conditional embedding, and affirmation of (29a) in (31 – 33) below also entail (29c).

(31) Şé   inú   ò   bí   mi   *mó̩*?   Irú   ìbéèrè   wo   nìye̩n?
      INTER   stomach   NEG   churn   1SG   again?   Kind   question   which   FOC-that
      'Am I no longer angry? What kind of question is that?'

(32) *Bí*   inú   ò   bá   bí   mi   *mó̩*,   wà   á   mò̩.
      If-   stomach   NEG   -then   churn   1SG   again,   2SG.NOM   will   know
      'If I am no longer angry, you will know.'

(33) *Pé*   inú   ò   bí   mi   *mó̩*   hàn   nínú   èsì   mi
      that   stomach   NEG   churn   1SG   again   show   inside   reply   2SG.GEN
      'That I am no longer angry showed in my reply.'

What these facts clearly prove is that (29a) truly presupposes (29c).

Tún
This is a preverbal adverb meaning 'again, also'. It triggers an *additive* presupposition in which an earlier action/event/state, whether negative or positive, is discourse linked to a newly uttered proposition. For instance, the use of *tún* in (34) will be infelicitous if there is no earlier discourse-linked proposition such as (35) in which some other action/event/state related to the one being reported had been mentioned.

(34)   a.   Èyí   tó   *tún*   s̩e̩lè̩   yìí   ní   agbára.
            This   REL-Pro-HTS   also   occur   this   has   power
            'This one that has also just happened is serious.'

        b.   Èyí   tó   *tún*   s̩e̩lè̩   yìí   kò   ní   agbára.
            This   REL-Pro-HTS   also   occur   this   NEG   have   power
            'This one that has also just happened is not serious.'

(35)   a.   Boko-haram jí èèyàn mé̩wàá gbé ní Kaduna.
            'Boko-haram sect kidnapped ten persons in Kaduna.'

        b.   Boko-haram pa o̩mo̩ ológun mé̩è̩é̩dógbò̩n.
            'Boko haram sect killed twenty-five soldiers.'

(36)   Ìs̩e̩lè̩   kan   ti   sè̩   té̩lè̩/s̩ááju.
      Incident   one/certain   PERF   occur   before
      'An incident has happened beforehand.'

So, if (35a) is the earlier mentioned proposition, and (35b) is the referent of the proximal *èyí* 'this' in (34); then, (34a) and its negation (34b) entail (36). This implies that (34a) presupposes (36).
      The 'again' interpretation of *tún* is visible in (37a – c) where 37a and its negation (37b) entail 37c. This implies 37a presupposes 37c.

(37) a.   Yinka *tún*   ti   jí   owó   mi .
             Yinka again PERF steal money 1SG-GEN
             'Yinka has again stolen my money.'

      b.   Yinka ò   *tún* tíî   jí   owó   mi   (láti ìgbà náà).
             Yinka NEG again PERF.NEG steal money 1SG-GEN (LOC time DET)
             'Yinka has again not stolen my money (since then).'

      c.   Yinka ti   jí   owó   mi   rí
             Yinka PERF steal money 1SG-GEN before
             'Yinka had stolen my money sometime(s) before.'

Sì

This preverbal item logically translates English 'still', i.e. perpetuation. Following ideas from studies like Zehr & Schwarz (2016), we can say that the kind of meaning it contributes to conversation comes in two ways: one is entailed while the other is non-entailed. Let us illustrate this with (38).

(38) a.   Obìnrin yẹn *sì* ń mu sìgá.
             'That woman still smokes.'

      b.   Obìnrin yẹn ń mu sìgá tẹ́lẹ̀. 'That woman used to smoke.'
             i. 'That woman used to smoke, but no longer does.'
             ii. 'That woman has been smoking before now, and she still does.'

      c.   Obìnrin yẹn kò tíî fi sìgá mímu sílẹ̀. (ó sì ń mu ún.)
             'That woman has not quit smoking.'

(39) a.   % Obìnrin yẹn kò *sì* ń mu sìgá.   OR
               'That woman does not *still* smoke.'

      b.   Obìnrin yẹn ò mu sìgá mọ́.

      c.   Obìnrin yẹn kò ń mu sìgá mọ́.
             'That woman does not smoke (cigarette) any longer.'

(40) Kì   í   ṣe pé [obìnrin yẹn *sì* ń   mu   sìgá].
      NEG HTS be that woman DEM still PROG smoke cigarette
      'It is not that that woman still smokes.'

A good look at the entailment relation in 38 shows that 38a entails both 38b, 38bii, and 38c. A simple cancellation test is enough to establish this. However, when one considers these entailed propositions of 38a in the light of its negation in (39) and (40), the relation becomes tricky as only (38bi) is entailed by the negations in (39c). None of the negation options in (39) entails (38bii) and (38c) which assign the possibility of the interpretation: *the woman is still smoking as at the time of speech* to (38b). So, that the woman had been smoking before does not rule

out the possibility of her still smoking as at the time of speech. This is an example of non-entailed presupposition. (40), a negative embedding of (38a), further established this fact as it also does not entail (38bii) and (38c) despite entailing (38bi). Therefore, it is logical to conclude that while 38a → 38bii and 38c; its negations in (39) and (40) do not entail (38bii) and (38c). Interestingly, the interrogation and conditional embedding of (38a) exemplified in (44) below behave the same way by entailing (38bi) and excluding (38bii) and (38c). The only exception is in the affirmation (41b) which does not exclude (38bii) and (38c) in its entailment.

(41) a. Ṣé [obìnrin yẹn *sì* ń mu sìgá]?   (Interrogation)
          'Does that woman still smoke?'

      b. Pé [obìnrin yẹn *sì* ń mu sìgá] burú.   (Affirmation)
          'That that woman still smokes is bad.'

      c. *Bí* obìnrin yẹn *bá sì* ń mu sìgá, a máa mọ̀. (Conditional embedding)
          'If that woman still smokes, we will know.'

The implication of this meaning disparity is that 38a presupposes only 38b and 38bi; it does not presuppose 38c. This behaviour of sì-presupposition when it comes to negation can also be verified in other examples such as (42).

(42) a. O   *sì*   lè   lọ.
          2PL   still   can   go.
          'You can still go.'

      b. O   lè   lọ.
          2PL   can   go.
          'You can go.'

      c. O   ò   tíì   lọ.
          2PL   NEG   still   go
          'You have not gone yet.'

42a entails both 42b and 42c given the use of cancellation, affirmation, interrogation, and conditional embedding tests. However, the negation of 42a, (43a below), behaves differently. Instead of relating directly with the set of declarative propositions in 42a & b, it only relates with its negations by entailing (42c) and the negation of (42b), which is (43b). This is similar to what happens with the examples in 38 to 40.

(43) a. O   ò   *sì*   lè   lọ.
          2PL   NEG   still   can   go.
          'You can still not go.'

      b. O   ò   lè   lọ.
          2PL   NEG   can   go.
          'You cannot go.'

These facts are interesting because they show that for the presupposition triggering ability of **sì** to survive under negation, it has to entail the negation of the concerned proposition, and not the proposition itself.

4.3 *Triggers within cp*

In the literature on presupposition, CP projections (Rizzi 1997; 2001) such as the relative clause function head, focus, and other focus-sensitive particles such as content interrogative heads are often seen as presupposing the propositional content of their complements or embedded propositions. We examine the projection of these non-basic constructions in this subsection to see how they trigger presuppositions in the Yoruba complementizer layer.

4.3.1 *Focus and interrogative heads*

Focus construction and content question appear to share the same syntax and semantic structure in Yoruba. This is evident in the fact that the answer to any basic wh-question in the language is predictably a focus construction with a parallel syntax. For instance, (44) and (45) have parallel syntax in which the subject of the embedded clause is the focus of interrogation.

(44)   Ta   *ni*   ó   jẹ   isu   mi?   (Wh-question)
        Wh   FOC   HTS   eat   yam   1SG.GEN
        'WHO ate my yam?'

(45)   Ayò   *ni*   ó   jẹ   isu   mi.   (Subject focus construction)
        Ayo   FOC   HTS   eat   yam   1SG.GEN
        'AYỌ ate my yam.'

(46)   X-ó   jẹ   isu   mi.
        X-HTS   eat   yam   1SG.GEN
        'Somebody ate my yam.'

(47)   X = {Akin, Ayò, Ire, …}
        'X is a set of alternatives ranging over the listed referents.' (Rooth 1992)

Focus and interrogative heads presuppose their propositional complements in their respective embedded clauses. Semantically, both the question and answer (44 & 45) entail the proposition in (46) *somebody ate my yam*! Similarly, the negations of the answer (48a & b below) also entail 46 (though they assert it is not Ayọ).

(48)   a.   Ayò   kọ́   *ni*   ó   jẹ   isu   mi.   (focus negation)
              Ayo   NEG   FOC   HTS   eat   yam   1SG.GEN
              'AYỌ is not the one who ate my yam.'

        b.   Kì   í   ṣe   Ayò   *ni*   ó   jẹ   isu   mi.   (cleft negation)
              NEG   HTS   be   Ayo   FOC   HTS   eat   yam   1SG.GEN
              'IT IS NOT AYỌ that ate my yam.'

These facts clearly prove that focus constructions (such as 45) in Yoruba do presuppose the embedded clause from which they are derived. Similarly, the negation of the focus sensitive wh-question in (44) illustrated below in (49a & b)[10] also affirms that the negation of Yoruba content questions entails the basic embedded clause from which they are derived.

(49) a.   Ta kọ́ *ni*   ó   jẹ isu mi.   (focus negation)
               who NEG FOC HTS eat yam 1SG.GEN
               'WHO IS NOT the one who ate my yam.'

      b.   Kì í   ṣe ta   *ni*   ó   jẹ isu mi!   (cleft negation)
               NEG HTS be who FOC HTS eat yam 1SG.GEN
               'IT IS NOT WHO that ate my yam.'

These conclusively imply that Yoruba content questions like (47) presuppose their embedded basic propositions, such as (46). In sum, therefore, the structural semantic facts of relevant constructions from Yoruba language support theoretical claims in the literature that propositions projected in the left periphery such as focus and questions presuppose their embedded basic propositions from which they are derived.

4.3.2 *Relative function head*
On its part, the Yoruba relative clause function head, **tí**, relates two propositions by embedding and subordinating one to the other to yield a complex proposition which presupposes both the subordinated and the main clause[11]. In other words, the two combined propositions are presuppositions of the derived complex clause triggered by the relative clause function head. Let us examine the propositions in 50 and 51 to illustrate this.

(50) Ẹni *tí*   mo rí   ga.
      Person REL 1SG see be-tall
      'The person who I saw is tall.'

      a.   Mo rí   ẹnìkan.   (embedded clause)
           1SG see   someone
           'I saw someone.'

      b.   Ẹnìkan-án   ga.   (matrix clause)
           Person-HTS be-tall
           'Someone is tall.'

(51) a.   Kì í   ṣe pé [ẹni *tí*   mo rí   ga   ].
           NEG HTS be that person REL 1SG see be-tall
           'It is not that the person (who) I saw is tall.'

___

[10] This kind of proposition is not the everyday type. It is used when the speaker is trying to express a sarcastic disagreement and/or frustration about issues in a conversation. For instance, if someone responds in disbelief to (48) and confronts the speaker with *Ta ni o sọ pé ó jẹ iṣu ẹ, Ayọ àbí ta ni ?* 'Who did you say ate your food, Ayo or who?', the speaker may reply sarcastically with (49) to show their disagreement.

[11] See Bamgbose (1975: 202) and Awobuluyi (1978: 33 − 34) for more information on relative clauses in Yoruba.

b. Ẹni *tí* mo rí kò ga.
    Person REL 1SG see NEG be-tall
    'The person (who) I saw is not tall.'

Semantically, 50 ¬ 50a/51b is contradictory. Likewise, the negations of 50 (i.e., 51) entail both the matrix and embedded propositions in 50a & b. Also, the interrogation and affirmative embeddings of 50, as evident in 52 equally entail 50a & b.

(52) a. Ṣé ẹni *tí* mo rí ga?
          INTER person REL 1SG see be-tall
          'Is the person I saw tall?'

      b. Pé ẹni *tí* mo rí ga tàbí kò ga …
          That person REL 1SG see be-tall or NEG be-tall
          'That the person (who) I saw is tall or not …'

The logical conclusion that can be drawn from these, therefore, is that 50a & b are presuppositions of 50, and the presupposition is constant under negation, interrogation, and affirmation.

4.3.2 *Core complementizers*

The Yoruba core complementizers are *pé* 'that' and *kí* 'for'. Beginning with *pé*, what appears to be verifiable in terms of presupposition is that the direct simple clause complement of *pé* is the presupposition that pé triggers in Yoruba. This is irrespective of whether the complement clause is positive as in (53) or negative as in (54) for the presupposition to hold.

(53) a. Mowà-á parí ẹ̀kọ́ ẹ̀.
          Mowa-HTS finish education 3SG.GEN
          'Mowa completed his education.'

      b. *Pé* [Mowà-á parí ẹ̀kọ́ ẹ̀]-ẹ́[12] dára.
          That Mowa-HTS finish education 3SG.GEN-HTS be-good
          'That Mowa completed his education is good.'

      c. -ó dára *pé* [Mowà parí ẹ̀kọ́ ẹ̀]
          3SG-HTS be-good that Mowa finish education 3SG.GEN
          'It is good that Mona completed his education.'

      d. Pé [Mowà-á parí ẹ̀kọ́ ẹ̀] kò dára.
          That Mowa-HTS finish education 3SG.GEN NEG be-good
          'That Mowa completed his education is not good.'

---

[12] Note that the shape of this HTS (which is canonically *ó*) results from assimilation influence from the pronoun (*rẹ̀)*, which immediately precedes it. Cf. *á* in the embedded pé-clause complement, *Mowa-á … …*

(53a) is the presupposition of (53b & c). The presupposition is constant under negation as (53d) which is the negation of (53b) presupposes (53a). Similarly, the simple negative clause in (54a) is the presupposition of the pé-construction in (54b & c).

(54) a. Mowà kò   parí èkọ́   è
          Mowa NEG finish education 3SG.GEN
          'Mowa did not complete his education.'

      b. *Pé* [Mowà kò   parí èkọ́   è   ] -ẹ́ dùn mí.
          That Mowa NEG finish education 3SG.GEN-HTS pain 1SG.ACC
          'That Mowa did not complete his education pained me.'

      c. -ó   dùn mí   *pé* [Mowà kò   parí èkọ́   è   ]
          3SG-HTS pain 1SG.ACC that Mowa NEG finish education 3SG.GEN
          'It pained me that Mona did not complete his education.'

Similarly, the negations of (54b & c) below in (55a & b) equally presuppose (54a) to, at least, show that this pé- presupposition survives negation.

(55) a. *Pé* [Mowà kò   parí èkọ́   è   ] kò   dùn mí.
          That Mowa NEG finish education 3SG.GEN NEG pain 1SG.ACC
          'That Mowa did not complete his education does not pain me.'

      b. Kò   dùn mí   *pé* [Mowà kò   parí èkọ́   è   ]
          NEG pain 1SG.ACC that Mowa NEG finish education 3SG.GEN
          'It does not pain me that Mowa did not complete his education.'

From our observations of relevant data, *kí*, as a complementiser, does not appear to trigger any form of presupposition in the Yoruba language.

    To wrap up the discussion in this section, it is pertinent to mention that the presupposition triggering abilities of Yoruba CP function heads are products of the interaction of the syntax and semantics of the complementizers, as the presuppositions do not seem to emanate solely from the semantics of the complementizers.

5 Conclusion

Though not possibly exhaustive, this paper has investigated words having presupposition triggering properties in Yoruba. It showed that Yoruba presupposition triggers operate within three phrasal domains – nominal, verbal, and complementiser. It submitted that the interpretation of some factive-experience verbs in the language can result in presupposition failure if the experiencer referent in the main clause is not coreferential with the subject of the embedded complementiser-clause. It also showed that presupposition in Yoruba is not blocked under negation, interrogation, and clause embedding. It equally established that the negation of propositions containing the additive presupposition trigger, *náà*, does not entail such propositions, but the corresponding negation of the propositions. This also happens with *sì*

presuppositions under negation. The study however did not offer any explanation on the behaviour of presupposition and its triggers under coordination. This is left for further studies.

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