Grounding Valuation in Minimalism: The Case of Ostensible Complementizers in Arabic

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This study proposes a syntactic integration of non-peripheral discourse markers, specifically: ostensible complementizers in Arabic, by assuming a link between a peripheral grounding phrase and a lower adjoined discourse marker phrase. The study adopts a Ground Projection at the left periphery from Wiltschko and Heim (2016). This architecture is contextualized by a discussion of recent attempts of syntactizing common ground management. The feature checking mechanism between the position in GroundP and the lower position utilizes Pesetsky and Torrego's (2007) and Bayer and Obenauer's (2011) refined model for the left periphery. Supporting data for a wider application of the proposed mechanism is offered from Emai and Iraqi Arabian particles, which are ascribed grounding properties and display non-peripheral and bi-peripheral distribution, respectively. The study points to a need for a mechanism that can both explain the ordering effects of stacked discourse markers and allow a non-peripheral distribution. Thoma's (2016) model provides the basic ingredients for this model. Nevertheless, this study offers a way to account for the linearization of non-peripheral grounding markers, which is left unexplored in previous accounts of common ground management.

1. Introduction

The traditional categorization system of the Arabic language operates upon three major categories: noun (*ism*), verb (*fiaʿil*), and particle (*ḥarf*) (Ibn Malik's description, cited in Weiss (1976)). This system defines those categories based on grammatical or semantic criteria. However, this categorization system leaves parts of speech that emerge in language use without adequate description; that is, this system does not account for discourse markers. This part of speech "is often used to refer to words (or phrases) that appear to have no grammatical or semantic function, such as *you know*, *like*, *oh*, *well*, *I mean*, *actually*, *basically*, *ok* as well as connectives like *because*, *so*, *and*, *but* and *or*" (Baker and Ellece 2011: 34).

The current study accounts for the distribution of non-peripheral discourse markers that fulfill a grounding function as peripheral ones with standard syntactic machinery. The study builds the model on complementizers that function as discourse markers in the Arabic language. This study refers to these parts of speech as *ostensible complementizers* because they show a surface form that differs from their actual use. This use appears in spoken varieties of the Arabic language. The examples in (1) illustrate this pattern in Jordanian Arabic and Lebanese Arabic.

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(1)

a. *ʾinnū ʾiḏā bid-ak tījī taʿāl.*
DM if want-2SG come come[1]
'If you want to come, come.' (But it is not recommended.) (Jordanian Arabic)

b. *yaʿani ktir surit ʾinnū mnih bi-l-faransi.*
PART much became.1SG DM good in-DEF-French
'I became good in French.' (Lebanese Arabic)

c. *laʾ bas alʾ-injlīzī ʾinnū alʿarbī ʿādī.*
no only DEF-English DM DEF-Arabic normal
'No, only English DM Arabic, it is normal.' (Lebanese Arabic)

d. *ʾinnū al-wāḥad zay mā taqūl ṣār ʾinnū māšī ḥālluh.*
DM DEF-one as PART say.2SG became DM okay himself
'One (the speaker), as you can see, became good.' (But, he is not that good.) (Jordanian Arabic)

This class of words is overlooked in all previous syntactic treatments. The study proposes a syntactic integration of ostensible complementizers by assuming a link between a peripheral grounding phrase and a lower adjoined discourse marker phrase. The study adopts a Ground Projection at the left periphery from Wiltschko and Heim (2016). This architecture is contextualized by a discussion of recent attempts of syntactizing common ground management. The feature checking mechanism between the position in GroundP and the lower position utilizes Pesetsky and Torrego's (2007) and Bayer and Obenauer's (2011) refined model for the left periphery.

The paper is organized as follows. §2 provides a theoretical background. This section aims to solidify the term *ostensible complementizers* to describe complementizers that function as discourse markers. The section introduces grammatical complementizers and discourse markers to understand the function of ostensible complementizers as grounding units. §3 introduces the syntax-pragmatics interface. This section introduces pragmatic theories on speech acts (Searle 1969) and common ground management (Clark 1996). Additionally, the section introduces the Minimalist Program (Chomsky 1995) and its extension at the syntax-pragmatic interface (Speas and Tenny 2003). Moreover, this section presents earlier functional models on common ground management (Thoma 2016; Heim et al. 2016). §4 presents how the data of the study is collected and analyzed. §5 introduces the grounding valuation model. This section builds this model by introducing Pesetsky and Torrego's (2007) feature sharing model and showing its suitability for discourse particles (Bayer and Obenauer 2011). §6 presents the implications of the current proposal on stacked

[1] 1= First person, 2= Second person, 3= Third person, ACC = Accusative, COMP= Complementizer, DEF= Definite, DET = Determiner, DM=Discourse marker, F=Feminine, IND=Indicative, M=Masculine, NOM=Nominative, NVIR=Nonvirile, OBV = Obviative, OC= Ostensible category, PART= Particle, PAST= Past, PRP=Particle defaulf, PL=Plural, PRES = Present, Q = Question particle, SG = Singular, VIR= Virile, VNT = Venitive

attitudinal particles in Iraqi Arabic, non-peripheral confirmationals in Emai, a language spoken by a group of people that live in a large part of Afenmai land in the northwest Edo state of Nigeria, and other common ground management patterns. §7 concludes the study.

2. Background

2.1. Grammatical Complementizers

The study of syntactic structures shows that languages have a part of speech that "makes a clause[, a sentence,] become an embedded clause" (Koeneman and Zeijlstra 2017: 282); that is, languages have "an item that marks a subordinate clause as a complement, such as *that* in English" (Luraghi and Parodi 2008: 84). Researchers (Koeneman and Zeijlstra 2017; Radford 2009; Luraghi and Parodi 2008) refer to this part of speech as a complementizer. The following examples illustrate this part of speech.

(2)

a. Elizabeth regretted that she had met Wickham.
b. That Anne was in conversation with Mr Elliott dismayed Captain Wentworth.
(Miller 2016: 63)

(3) *Je me rappelle que je t'ai rencontré au marché.*
I PRES remember that I PAST meet at.the market
'I remember that I met you at the market.' (French; Baunz 2018: 150)

(4) *Wiem, że wygrali-śmy/ły-śmy.*
know.1SG that win.PART.VIR.PL-1PL/PART.NVIR.PL-1PL
'I know that we won.' (Polish; Citko 2018: 2)

(5) *Pomnja, če te sreštnax na pazara.*
remember1.SG that you meet.PAST.PART on the.market
'I remember that I met you at the market.' (Bulgarian; Baunz 2018: 150)

In English, for example, *that*, in (2a), marks the subordinate clause *she had met Wickham* as the object of the verb *regretted*. In (2b), *that* marks the subordinate clause *Anne was in conversation with Mr Elliott* as the subject of the verb phrase *dismayed Captain Wentworth*. A similar case appears in French (3), Polish (4), Bulgarian (5), and other languages. In those languages, the complementizers mark the subordinate clauses as objects.

According to Fassi Fehri (2012), among others, there are three complementizers in Standard Arabic: *ʾinna, ʾanna,* and *ʾan*[2]. Those complementizers are in complementary distribution; that is, if one complementizer is used in a specific context, the other complementizers must not appear in intersecting environments.

[2] According to Fessi Fehri (2012: 240) and Persson (2002), *ʾan* is a complementizer. However, not all researchers agrees on this (e.g., Habib 2009). This study does not deal with this problem and refrains from presenting examples in favor of this complementizer.

(6)

a. *qāla-t* *l-ī* *al-fatāt-u* *ʾinn-ī* *ʾu-ḥib-u-ka.*
said-F to-me the-girl-NOM that-I I-like-IND-you
'The girl said to me that she likes me.'

b. *ʾaḵbara-t-nī* *al-fatāt-u* *ʾann-hā* *tu-ḥib-u-nī.*
informed-F-me the-girl-NOM that-her F-like-IND-me
'The girl informed me that she likes me.'

(Standard Arabic; Fassi Fehri 2012: 237)

Notice that in (6a) *ʾinna* 'that' marks the subordinate clause *ʾuḥibuka* 'I like you' as an object of the verb *qāla* 'said'. In (6b), *ʾann* 'that' marks the subordinate clause '*tuḥibunī'* 'she likes me' as an object of the verb *ʾaḵbara* 'informed'. This shows that *inna* 'that' occurs in sentences which contain forms of the verb *ʾaqulu* 'say'. Ross (1970: 245) adds that "*ʾinna* 'that' occurs not only in sentences which contain forms of the verb *ʾaqulu* 'say' explicitly, but also optionally at the beginning of almost all declarative sentences" on the condition that there is an implicit form of the verb *ʾaqulu* 'say'.

2.2. Discourse Markers

Discourse markers "refer to words or phrases that appear to have no grammatical or semantic function" (Baker and Ellece 2011: 34). The term discourse marker covers a wide array of linguistic and nonlinguistic phenomena. For instance, in speech, a pitch can serve as a discourse marker if it marks a topic. Additionally, in textual analysis, this term can include "visual elements like paragraph spaces" (2011: 34). Aijmer (2014) classifies discourse markers as local markers, words (or phrases) that tag structures within the same topic, such as *I mean*, and global markers, words that mark a shift across different topics, such as *anyway*. Jucker and Ziv (1998: 17) categorize discourse markers into either: reception markers, elements that signpost a speaker's response to information such as *yeah*, *oh*, *eh*, *ok* and others; and presentation markers, elements that change information such as *you know*.

Schiffrin (1987: 49) argues that discourse markers can create coherence in conversations. He illustrates how the discourse marker *y'know,* in English, helps speakers in expressing their experiences to manage their conversations.

(7)

a. I believe in that. Whatever's gonna happen is gonna happen.
b. I believe…that…*y'know* it's fate.
c. It really is. (Schiffrin 1987: 49)

The use of this discourse marker "justifies the truth of the statement [(*it's fate*)] or the speaker's commitment toward that truth" (Schiffrin 1987: 49); that is, the speaker states that she believes in fate and supports this by the discourse marker *y'know*. This brings both the hearer and the speaker into the same line of reasoning.

2.3. Ostensible Complementizers

In Lebanese Arabic, Germanos (2013:187) observes that in language use, or naturally occurring language, some complementizers do not function as subordinators: "they do not

connect a dependent clause to a main one." Germanos (2013) classifies such complementizers as discourse markers. Because those forms are opaque under traditional categorization systems, I call them *ostensible complementizers*. This term captures those discourse markers that utilize forms that appear normally as markers of subordination in written texts (or textual discourse). However, in conversational exchanges (or conversational discourse), those forms overlap with discourse markers. This makes the surface form of such complementizers opaque because of their pragmaticalization.

(8) *ʾinnū* *yaʿnī* *ṣurit* *manīḥ* *bi-l-faransī.*
DM PART became good in-the-French
'You became good in French.' (The speaker is unconfident.) (Lebanese Arabic)

(9) *ʾinnū* *ʾiḏā* *bid-ak* *tījī* *taʿāl.*
DM if want-2SG come come
'If you want to come, come.' (But, it is not recommended.) (Jordanian Arabic)

Germanos (2013:187) does not provide a syntactic analysis for ostensible complementizers because there "seems to be no apparent syntactical reason for [their] occurrence". Andersen (1998), however, shows that some discourse markers show specific patterns that impact syntax; that is, "discourse markers do adhere to grammatical and functional restrictions and cannot simply occur anywhere in an utterance" (Baker and Ellece 2011: 34). This study aims to bridge such gaps.

3. The Syntax-Pragmatics Interface

The analysis of discourse markers is part of understanding categories that undergo pragmaticalization. This category captures "how speakers and hearers jointly integrate forms, meanings and actions to make overall sense out of what is said" (Schiffrin 1987:49). Within this general domain, there are recent findings that show a necessity to integrate those joint actions into syntax through the syntax-pragmatics interface. This interface operates upon major pragmatic theories, such as the speech act theory (Searle 1969), the politeness theory (Levinson and Brown 1987), and the joint action theory (Clark 1996). Those theories constitute the pragmatic component of this interface. The syntactic component builds upon Ross' (1970) performative hypothesis in grammar. I introduce those theories briefly. Then, I present the syntax-pragmatics interface (Haegeman and Hill 2013; Hill 2007; Thoma 2016) and highlight its current gaps.

3.1. Speech Acts

In his book *How to do things with words*[3], Austin (1962) sets the foundation of speech acts. Searle (1969) systemizes Austin's (1962) ideas and highlights that speech act theory is a theory that views "uttering a sentence is, or is part of, an action within the framework of social institutions and conventions" (Huang 2006: 1000). That is, speech acts are actions performed by utterances.

The theory of speech acts distinguishes between statements (constative utterances) and utterances that make actions (performative utterances).

[3] This book compiles Austin's lectures given in 1955 at Harvard University.

(10) Constative utterances
   a. My daughter is called Elizabeth.
   b. A freshly baked loaf doesn't cut easily. (Huang 2006: 1000)

(11) Performative utterances
   a. I name this ship the Princess Elizabeth.
   b. I now pronounce you man/husband and wife. (Huang 2006: 1000)

The examples in (10) can be either true or false because they state something. The theory of speech acts operates upon the examples in (11).

Performative utterances show actions that have specific properties. The most notable property is that those utterances utilize specific class of verbs called performative verbs, such as *name* in (11a) and *pronounce* in (11b). Those acts have three components: locutionary act, the linguistic medium of delivering the action (such as words), illocutionary act, the action intended by the speaker (establishing a marriage), and perlocutionary act, the effect of the utterance on the hearer (the hearers change their marital status). Additionally, notice that (11b) will make sense only if it is said by a person in charge (a child, for example, cannot pronounce them husband and wife.) and at the right place and time (in a church, at a wedding ceremony); that is, those utterances have felicity conditions. If those conditions are not met, a performative utterance becomes inappropriate and this leads to different interpretations (such as irony, humor, and others).

3.2. Common Ground

Clark (1996) highlights the significance of prior information in communication. He refers to such knowledge as *common ground*. This technical concept builds upon Clark et. al's (1983) work, '*Grounding in communication*'. The basic idea is that language use is a joint action between speakers and their hearers. That is, interlocutors must use strategies to establish a shared knowledge and take this knowledge for granted, and they must look for cues "to assess and reassess their common ground, and to do that, they need […] two main categories: community membership [(communal common ground)] and personal experiences [(personal common ground)]" (Clark 2006: 116). Such cues are needed because it is impossible to access thoughts and intentions. These cues provide signals which reflect this shared knowledge.

Communal common ground is information that speakers have by sharing a community, a group of people who live in the same region and share culture or practices such as Muslims, a community based on shared beliefs; Newfoundlanders, a community based on shared region; and linguists, a community based on shared practices. Once speakers/writers establish that their hearers/readers belong to a certain community, they can anticipate that their hearers/readers have some information that is related to their community. For instance, if this paper addresses pragmaticians, it will not introduce pragmatics as a field of study because pragmaticians take those concepts for granted. This is more efficient for communication.

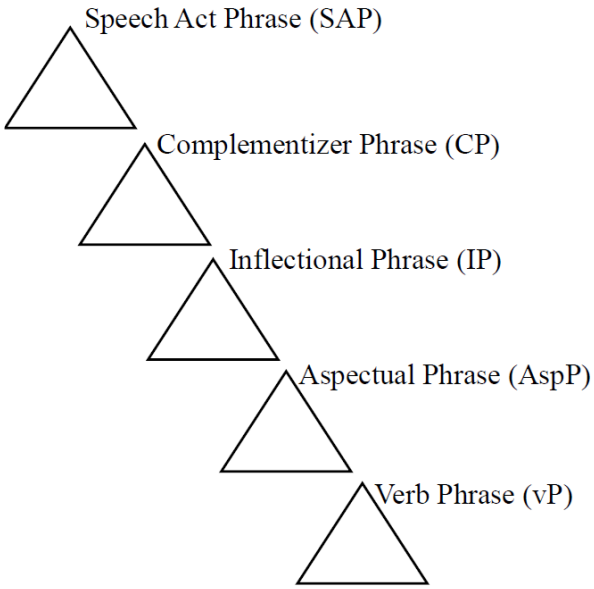
The basic block in personal common ground is "joint experiences, which may be perceptual" (Clark 2006: 117). That is, this type of knowledge occurs when speakers and hearers share the same environment. For example, if a speaker and a hearer are in a room that has one door. The speaker takes for granted that the hearer knows that the room has a

door because the door is visible to both of them. Clark (2006: 117) illustrates a linguistic joint experience by saying that if a speaker utters '*George arrived yesterday*', and the hearer is present at the time of the utterance, the speaker assumes that the reference of the deictic adverb *yesterday* is not ambiguous to his hearer. This is because the deictic reference is grounded.

3.3. Syntax and Speech Acts

Ross' (1970) *performative hypothesis*, that all syntactic structures must have a hidden performative verb, creates a foundation for the syntax-pragmatics interface. Speas and Tenny (2003) revive Ross' (1970) idea and posit that "at the highest level of the [Complementizer Phrase] (CP), there is a speech act phrase [(SAP)]" (Gutzmann 2019: 62).

(12)



SAPs have two shells that are headed by functional heads (big *SA* and little *sa*). Those heads have pragmatic roles (P-roles) as their arguments (SPEAKER and HEARER). Those roles are comparable to thematic roles, but they depict discourse participants. Speas and Tenny (2003: 320) posit that those roles "are defined in terms of structural position." Hill (2007) and Haegeman and Hill (2013) modify this proposal. They show that utterance content is c-commanded by the hearer. Note that those approaches utilize the Minimalist Program and its theories (Chomsky 1995).

3.4. Syntax and Grounding

Clark (2006) argues that communal common ground accounts for syntactic principles. That is, "speakers try to use syntactic constructions, or rules, that they share with their addressees" (2006: 118). He illustrates this by noting that word order changes by conventions. In English, for example, speakers mention place before time (13a), but in Dutch, they mention time before place (13b).

(13)

a. George is going to London tomorrow.

b.

Pim	*gaat*	*morgen*	*naar*	*London.*
Pim	go.3SG	tomorrow	to	London

'Pim goes tomorrow to London.' (Dutch; Clark 2006: 118)

The general implication of this proposal is to posit that "many rules of syntax are tied to specific words in a communal lexicon, and these vary from one community to the next" (ibid).

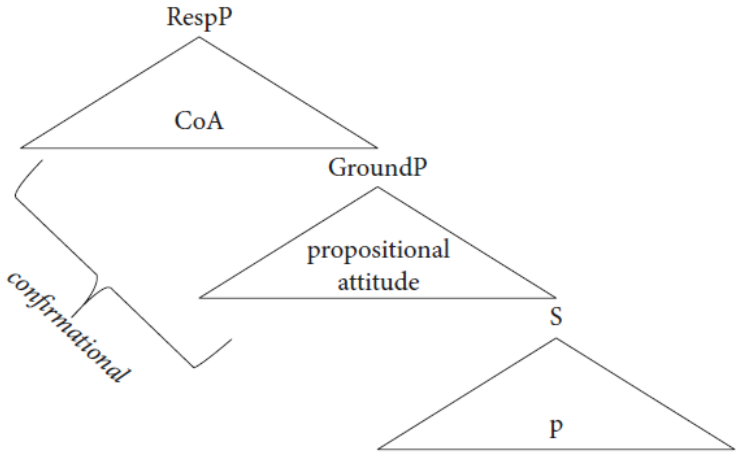
The personal common ground affects syntax through its process of *grounding*. This process represents how speakers utilize language to assess their common ground. A speaker may use a linguistic expression to elicit a response confirming that his hearer understands what the speaker is talking about. The hearer is expected to signal his understanding. This process utilizes back-channel expressions or particles such as *yeah* and *eh* or non-linguistic expressions such as head nod or a smile. This process shows up in confirmationals, illustrated in the following examples.

(14) You have a new dog, eh? (Canadian English; Wiltschko and Heim 2016: 306)

(15) Speaker 1: That's a hell of a lot of people.
Speaker 2: It is a lot, innit.
Speaker 3: Yes. (British English; Krug 1998 cited in Tubau 2014: 54)

The Universal Spine Model and grounding. Wiltschko's (2014) posits that grammatical categories get their identity because of a functional spine (see Wiltschko 2014, for further details). Wiltschko and Heim (2016) decompose confirmationals into two functional layers; a layer that targets grounding information (a Ground Phrase (GroundP)), and a layer that targets a call on addressee (CoA) for a response (a Response Phrase (RespP)). They posit that this layer is above GroundP. The following tree is representative.

(16)



(Wiltschko and Heim 2016: 329)

Based on cross-linguistic data, Wiltschko and Heim (2016) show that languages vary in their use of confirmationals; in Canadian English, using confirmationals to ground information can be realized by using *eh*, and the CoA is usually realized by intonation. The same function is expressed by particles in other languages, as can be seen in the following example.

(17) *kʉla* *u* *ɣʉ* *вʉ* *swə* *a*?
PART 2SG have dog new Q
'You have a new dog, eh?' (Medumba; Wiltschko and Heim 2016: 333)

In (17), two particles are used to express and request confirmation: *kʉla* and *a*. According to Wiltschko and Heim (2016: 333), *kʉla* marks the speaker's "attitude toward the proposition '*you have a new dog*,' and *a* marks how the speaker requests his addressee to respond.

Thoma (2016) adds a grounding function to Wiltschko's (2014) spine. Thoma (2016) posits that discourse particles in Miesbach Bavarian, a language spoken in Germany, are syntactic constructs and function as grounding units; they can ground information on the part of the speaker (speaker-oriented particles), the addressee (addressee-oriented particles) or other discourse participants (other-oriented particles). The following example illustrates a speaker-oriented discourse particle.

(18) Context: I say to my partner, who is sitting next to me shivering:
Di *frierts* *ja…*
you freezes.it PART
ziag *da* *liawa* *a* *Joppn* *oo.*
pull you rather DET jacket on
'You're cold…you had better put a jacket on.'
'[I believe that] you're cold… you better put a jacket on.' (Thoma 2016: 141)

Based on her orientation tests, Thoma (2016: 141) argues *ja* is a speaker-oriented particle, whereas other particles such as *Doch* and *Fei* are addressee-oriented particles.

Thoma's (2016) study is significant. It confirms which features make up a discourse particle. From a pragmatic perspective, discourse particles are non-truth conditional; in some contexts, they are optional, they express epistemicity, and they cannot be translated. From a syntactic perspective, the study provides some tools to account for the distribution of particles within and above a clause, and it draws a path to delimit the various functions of such particles. However, Thoma (2016) does not account for the linear order of discourse particles, nor does she define what sort of features should undergo agreement and/or valuation.

The current paper develops a mechanism that expands on the literature reviewed above. This mechanism is more efficient because it does not require external syntactic machineries (viz., a spine). The mechanism has implications on extending grounding to linguistic signals that are proposed by Clark et al. (1983) and captures the linear order of grounding markers.

4. Data of the Study

This study is based on data from spoken Arabic varieties. The data come from two sources: Germanos (2013) and Abdelhady (2013).

The first and primary source comes from Germanos' (2013) data. Her data constitutes 217 tokens collected by recording face-to-face interviews with seven speakers in Beirut in January 2003. All interviews were conducted in Lebanese Arabic. Only one interview involves code switching to French. Every interview lasts for 20 minutes and includes an average of 15,166 words. The second source comes from Abdelhady (2013). This corpus consists of 120 exchanges of invitations that were collected by interviews and direct observation.

Data analysis assumes Germanos' (2013) initial distinction between three types of *ʾinnū*: a subordinator, a compound conjunction, and a discourse marker. This study only deals with the third function (156 tokens out of 217 ones) which constitutes 71.89% of her total data set. The analysis of Abdelhady's (2013) data follows the same pattern. I depend on his glosses and on his description of the use of complementizers as equivocal and hedging markers that express speakers' lack of commitment.

5. Grounding Valuation

The grounding valuation model deals with common ground management as a chain of a single grounding feature. This model builds upon Pesetsky and Torrego's (2007) machinery of feature sharing. This section introduces their model briefly and shows its applicability to discourse. Then, it builds the grounding model.

5.1. Feature Sharing

Pesetsky and Torrego (2007) build their model of feature sharing on a modified version of Chomsky's (1995) AGREE mechanism. They illustrate this mechanism in (19).

(19)

a. *Ha-ec* *puell-a* *Roman-a*
this-NOM.FEM.SG girl-NOM.FEM.SG Roman-NOM.FEM.SG
ambul-at.
walks-3SG

b. *Ha-e* *puell-ae* *Roman-ae*
these-NOM.FEM.PL girls-NOM.FEM.PL Roman-NOM.FEM.PL
ambul-ant.
walk-3.PL

(Latin; Pesetsky and Torrego 2007: 263)

The example in (19a) shows that the determiner *Haec*, the noun *puella*, and the adjective *Roman* has a feminine mark (feature). The source of this feature is the noun because determiners and adjectives come from the lexicon without this value; that is, the gender feature is valued and interpretable for nouns, but it is unvalued and uninterpretable for determiners and adjectives. The unvalued features of determiners and adjectives get their value by agreement with the valued feature of the noun. The same pattern appears in (19b). This captures the process of AGREE which operates upon valued/unvalued and interpretable/uninterpretable features.

In Pesetsky and Torrego's (2007) model, AGREE is about feature sharing.

(20) AGREE (Feature sharing version)

a. An unvalued feature F (a probe) on a head H at syntactic location α (Fα) scans its c-command domain for another instance of F (a goal) at location β (Fβ) with which to agree.

b. Replace Fα with Fβ, so that the same feature is present in both locations.

(Pesetsky and Torrego 2007: 268)

Their mechanism of AGREE shows that a probe with an unvalued feature looks for a goal to agree with, as proposed by Chomsky (1995). It differs, however, in that, instead of deleting the matching features, both the probe and the goal end up sharing the same feature. The valued feature on the probe "may now serve as the goal for some later operation of AGREE triggered by an unvalued, higher instance of this feature serving as a new probe" (Pesetsky and Torrego 2007: 268). This means that copies of the same feature can appear in different positions. This proposal also adds that feature values and interpretability are distinct. That is, "lexical items come from the lexicon with features that display two combinations of properties: (a) uninterpretable but valued; and (b) interpretable but unvalued" (Pesetsky and Torrego 2007: 269). This proposal accounts for tense valuation on verbs and wh-questions (in their analysis of *wh* valuation in English, Pesetsky and Torrego (2007) use the following notations: IQ[ ] represents an interpretable but unvalued feature for wh-questions in C. An uninterpretable although valued interrogative feature, Q-feature, is represented as [UQ+INTERROGATIVE]).

Bayer and Obenauer (2011) utilize Pesetsky and Torrego's (2007) mechanism to account for modal particles (called *Abtönungspartikeln*), in German. The study focuses on those particles because they modify utterances and express speakers' attitudes. They illustrate those particles as follows.

(21)

a. *Wo* *wohnst* *du?*
where live you
'Where do you live?'

b. *Wo* *whonst* *du* *denn?*
where live you PART
'Where do you live?' (I am wondering)

(German; Bayer and Obenauer 2011: 450)

Bayer and Obenauer (2011) show that (21a) is an information seeking question. But, (21b) modifies this question and includes the speaker's attitude; that is, the utterance seems friendlier. This remark highlights that those particles have access to Force in syntax. However, because those "particles usually occur in what is known as the *middle field*" (22) (Bayer and Obenauer 2011:451), they cannot be generated in the specifier position of Force.

(22)

a. *Wo* *hast* *du* *den* *meine* *Schlüssel* *hingelegt?*
where have you PART my keys put-down
'Where did you put my keys? (I am wondering)'

b. *Wer* *zahlt* *schon* *gerne* *Steuern?*
who pays PART gladly taxes
'Who likes paying taxes? (Nobody)'(German; Bayer and Obenauer 2011: 454)

As those particles appear in questions, Bayer and Obenauer (2011: 461) attempt to answer a question on "how the grammar takes care of the relation between Force and those particles." Their answer to this question comes from Pesetsky and Torrego's (2007) feature sharing model.They assign "to [those particles] the feature [QFORCE]. [QFORCE] is an unvalued uninterpretable feature which is valued by IQFORCE. IQFORCE is associated with the force/fin-head" (2011: 463). Note here that this analysis accounts for modifying an utterance and its restrictions on clause type (interrogative), but the analysis does not account for the grounding property of those particles; that is, it does not provide an answer on how speech act projections impact those particles.

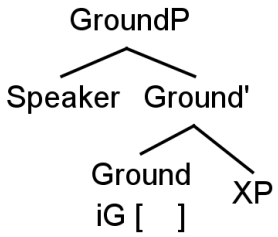
5.2. The Grounding Model

The idea of grounding valuation rises from the behavior of discourse markers in spoken Arabic varieties (1). This model posits that grounding is a feature. This is a point of departure from earlier accounts that syntactize common ground management (Heim et al. 2016; Wiltschko and Heim 2016; Thoma 2016; Tubau 2014).This model has implications not only on particles but also on other functional and lexical categories. Recall that Clark (2006: 117) relates deictic expressions like the adverb *yesterday* in '*George arrived yesterday'* to common ground if the hearer is present at the time of the utterance. This is because the adverb is grounded; that is, the speaker and the hearer know the point of time that the speaker is referring to. Note also that speakers use definiteness to mark a grounded noun. That is, a definite article like '*the*' means that a hearer has knowledge about what the speaker is referring to. Earlier models do not account for this because their analysis focuses only on discourse markers. I take this as a starting point to build this model.

To link a high grounding function with a low generated discourse marker, I adopt Pesetsky and Torrego's (2007) model of feature sharing and Bayer and Obenauer's (2011) views on establishing agreement relation between high FORCE heads and illocutionary force modifying particles that are generated away from FORCE. I assume that there is a link between GroundP and discourse markers. The link ensures that discourse markers are elements that reflect a process of grounding. If grounding is syntactically governed, this process will target any element in a structure, even if it is far away from GroundP. With that in mind, it becomes possible to account for non-peripheral grounding parts of speech, *grounding shades*; the term introduces adjuncts that have grounding impact without being based in grounding heads.

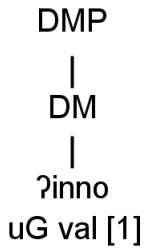
This model operates upon the idea that non-peripheral grounding elements can share features with grounding peripheral heads.

(23)



I further assume that each discourse marker projects into a phrase, DMP. I argue that marker phrases have valued uninterpretable ground feature. The ground head in the ground phrase probes for a goal. Following the mechanism of feature sharing, the probe and the goal share the same feature of grounding. In that sense, information centered markers are linked with the grounding head.

(24)



Those markers are optional, and their omission does not make a structure ungrammatical. This is, they are pragmatically motivated, like pragmatic markers in German (21). Note that in German the pragmatic marker *denn* is not required for information seeking questions (21b). The process of valuation is not limited to one discourse marker. The process targets subsequent markers (stacked markers) in the same way.

5.3. Generating Ostensible Complementizers

The first step in generating ostensible complementizers in Arabic (1), repeated here as (25), is to determine their syntactic function. The second step is to correlate their forms with their distribution. The focus here is on ostensible complementizers. Note that to qualify for a complementizer, a part of speech must pattern with grammatical complementizers (§2.1), and to qualify for ostensible complementizers, a part of speech must behave like discourse markers (§2.2). I leave aside the intricacies of those steps for the time being.

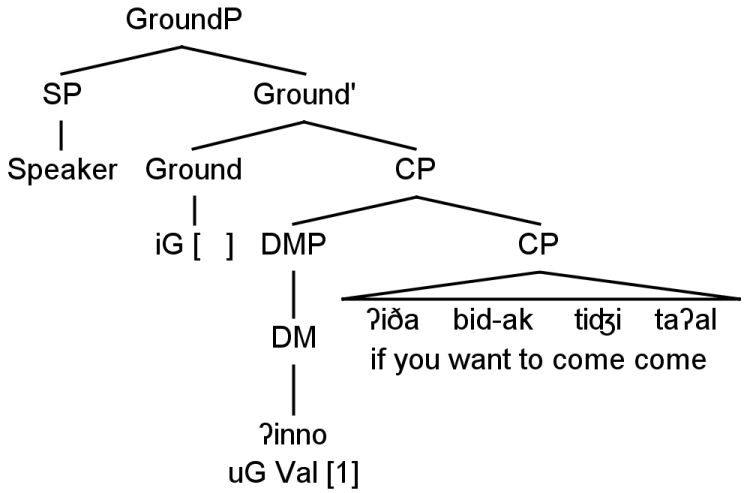
(25)

a. *ʾinnū ʾiḏā bid-ak tījī taʿāl.*
DM if want-2SG come come
'If you want to come, come.' (The speaker does not recommend that.)

b. *yaʿani ktir ʂurit ʾinnū mniħ bi-l-faransi.*
PART much became.1SG DM good in-DEF-French
'I became good in French.' (repeated)

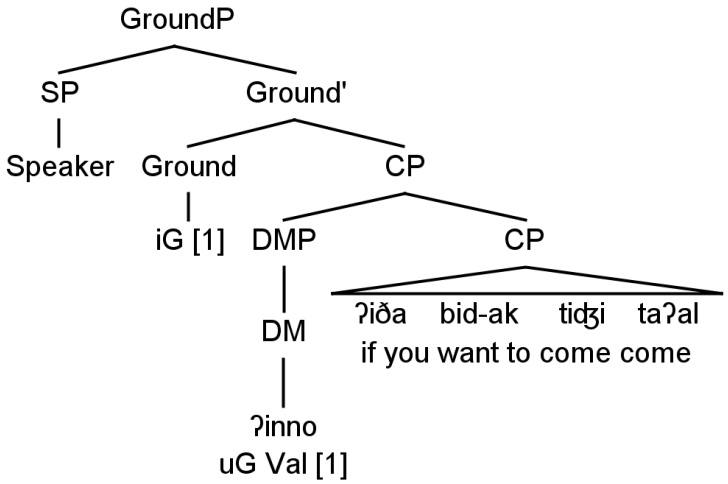
From a pragmatic perspective, grounding elements are, for the most part, signals that are injected in speech for a continuous assessment of common ground. Thus, from a syntactic perspective, they should behave like adjuncts. Utilizing the grounding model, I present the derivation of (25a) as follows.

(26)



The mechanism of generating a non-peripheral DMP that expresses speakers' attitudes about the whole proposition begins with assuming that there is a link between the grounding head and the discourse marker. The grounding head has an unvalued interpretable grounding feature. The head probes for a matching goal with a valued grounding feature. Since the discourse marker *ʾinnū* is c-commanded by the grounding head, the grounding feature of the head is valued. Following Bayer and Obenauer (2011) and Pesetsky and Torrego (2007), by the valuation of interpretable features, the head and the goal share the same valued feature. Thus, grounding is actualized on the grounding shade through its association with the grounding head. The ultimate derivation of feature valuation is depicted by corresponding indices on the probe and its goal. (27) represents this process.

(27)



The analysis provides prediction toward the status of non-peripheral grounding phrases (25b). Grounding signals can appear away from grounding heads. That is, grounding signals themselves can represent speakers' attitudes without being grounding heads by themselves. Note that this feature sharing of the grounding feature is concurrent and iterative; that this, it can apply again to target multiple markers. This iteration can target cases such those in (1d).

6. Implications

The grounding model has both theoretical and empirical outcomes. Those outcomes range from enhancing models on categorization to accounting for empirical data that is related to stacked markers, definiteness, phrasal grounding, and other phenomena. This section is devoted to exploring such patterns.

The process of valuation is not limited to discourse markers. Schaefer (2019)[4] examines a group of deictic confirmatory particles in Emai, a spoken variety in Nigeria. Those particles are sensitive to discourse participants within the verb domain; that is, they occupy non-peripheral positions.

(28) A non-peripheral confirmatory particle

a. *ólí ómò búú mè ré.*
DEF baby PRP.approach me VNT
'The baby approached me.' (here where I am)

b. **ólí ómò búú é ré.*
DEF baby PRP.approach you VNT
'The baby approached you.'

[4] In response to my question whether *ré* could be part of the right periphery. Ronald Schaefer (personal communication, November 18, 2019) pointed out that they are part of the verb itself, which is evident in the examples above. The particle *ré* is not separated by a pause. In addition, the argument of the verb restricts its distribution.

c. *ólí ómò búú óì/ ólì òkpòsò ré.
DEF baby PRP.approach her the woman VNT
'The baby approached her/ the woman.' (Emai; Schaefer 2019)

Note that *ré* in (28) confirms the utterance on the condition that there is a direct association with a first person (28a) (not with a second (28b) or a third person (28c). Current models that analyze confirmatory particles (e.g., Tubau 2014; Wiltschko and Heim 2016) will not capture the linear order of this particle because such models are designed to account for peripheral confirmationals only (Tubau 2014) or their functions (not their linear order) (Wiltschko and Heim 2016). The grounding model, however, can relate this particle to a grounding head despite its distance through grounding valuation.

Additionally, the grounding model accounts for stacked discourse markers. Recall that Bayer and Obenauer (2011) observe that pragmatic particles in German have a relation with common ground. However, they do not offer a mechanism that links those particles with a grounding projection. Because of my limited knowledge in German, I present how the grounding model accounts for stacked discourse markers in Iraqi Arabic (Qasim 2016) instead. In South Iraqi Arabic, speakers deploy a group of pragmaticalized particles to express their attitudes.

(29)

a. *jā ha ʧa ɣer ḍarab axu-h
PART PART PART PART hit.PST.3SG brother-3SG.M
il-barḥa.
DET-yesterday
'He hit his brother yesterday.' (The speaker feels very bad.)

b. *ha jā ʧa ɣer ḍarab axu-h
PART PART PART PART hit.PST.3SG brother-3SG.M
il-barḥa.
DET-yesterday
'He hit his brother yesterday.' (The speaker feels very bad.)

c. *ɣer jā ʧa ha ḍarab axu-h
PART PART PART PART hit.PST.3SG brother-3SG.M
il-barḥa.
DET-yesterday
'He hit his brother yesterday.' (The speaker feels very bad.)
(South Iraqi Arabic; Qasim 2016)

The particles in (29) are stacked; that is, they follow a strict order pattern. Changing this order leads to ungrammatical patterns (29b-c). This means that the grounding mechanism operates by connecting these heads together.

Furthermore, the grounding model captures instances where typical parts of speech are grounded. Recall that Clark (2006) marks information as grounded if this information is part of the speakers context. That is, if this information is known to speakers and hearers. He shows this pattern in deictic expressions such as the adverb *yesterday* in this example.

(30) Context: the hearer is present at the time of the utterance.
'George arrived yesterday.' (Clark 2006: 117)

The remarkable thing about this adverb is that its reference shifts based on context. That is, if this utterance is said on the 28th, the reference of *yesterday* will be the 27th. If the same utterance is said on the 27th, *yesterday* shifts its reference to the 26th. However, if the hearer knows the point of time that the speaker is referring to, then this adverb is part of the speakers' common ground. That is, the adverb is grounded. Earlier syntactic models do not cover this pattern because it is not within the scope of discourse markers (signals). The grounding model, however, has access to this adverb. This makes this model more accurate than other models in capturing how our brains process grounded parts of speech.

The grounding model predicts definiteness. That is, the model accounts for cases that mark nominals as definite expressions. Abdel-Hady and Branigan (2020: 13) show instances of lexical items that select only definite nominals. They attribute this to speech situation. This means that when nominals are grounded, speakers will refer to such nominals by the definite article (note that using a definite article in English marks nominals as old information in discourse). This model captures this behavior. The model here then looks at those words that share the definite article as instances of grounding.

(31)

a. *hāk* *ʔal-kitāb.*
take.OC:2SG DEF-book
'Take the book.'

b. **hāk* *kitāb.*
take.2M.SG book
'Take a book.' (Abdel-Hady and Branigan 2020: 13)

This view has wider implications on definiteness in languages in which the definite article appears as instances; that is, the model accounts for cases in which the definite article appears on nouns, adjectives, demonstratives in one go. Assiri (2011) has a basis for this proposal. This paper extends his observation and departs from his view in that it relates definiteness to grounding. This outcome has a foundation in models that relate speech act projections to nominals (e.g., Ritter and Wiltschko 2019).

The last area that this model enhances is a theoretical one. Wiltschko (2014) has proposed that the association of grammatical categories in one of the functional layers of the Universal Spine defines that category. Her proposal is based on defining one function at a time – a single one-to-one correspondence between functions and layers. If the proposal at hand is right, we could think of a core layer, through which an element can associate, and a subfunction, which the element inherits from higher functional layers. In other words, if a complementizer heads a complementizer phrase, it shows an association with LINKING (a technical layer in the spine that relates an utterance to discourse). At the same time, a complementizer can acquire an additional function from c-commanding layers through establishing a link with GROUND (a technical layer in the spine that relates an utterance to discourse participants). In that sense, a grammatical category is defined based on a core function and a sub-function.

7. Conclusion

The research introduces a model on grounding valuation in Minimalism. The study begins with the observation that current grounding models do not explain the linear order of grounding particles (Thoma 2016; Wiltschko and Heim 2016) though they give adequate reasoning of peripheral particles. This leads to a question on grounding particles, such ostensible complementizers in spoken Arabic varieties, that appear in non-peripheral positions. The study utilizes Thoma's (2016) views on syntactizing grounding functions in Wiltschko's (2014) Universal Spine and Pesetsky and Torrego's (2007) model on feature sharing and proposes that grounding is a feature that resembles the FORCE feature in Bayer and Obenauer's (2011) model.

This simple mechanism is efficient and effective. It is efficient in that it does not require external machineries to account for common ground management. That is, it fits well in the Minimalist Program (Chomsky 1995). This mechanism is effective because it captures grounded expressions and phrases (such as deictic grounded phrases) and accounts for grounding signals in both peripheral and non-peripheral positions (such as confirmatory particles in Emai). Future research can test the applicability of this mechanism on understanding conventions that are part of the communal common ground. This has the potential to address fundamental questions related to word order variation across languages.

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