

Argument Representation in Lebanese Child

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Abstract

This paper discusses the influence of discourse pragmatics on the choice of referential form in early child language. It examines how grammatical roles and informativeness (Greenfield and Smith 1976; Allen 2000) affect the realization of arguments as null, pronominal, or lexical in the language of two 3-year-old children learning the Lebanese dialect of Arabic. Results provide additional crosslinguistic support for Du Bois' Preferred Argument Structure (1987, 2003), and suggest that Lebanese children rely on language-specific grammatical constraints on argument realization as well as the information status of referents in their choice of referential form. Moreover, another dimension of discourse, namely, the speaker's discourse style and temperament, is discussed as a likely important factor in determining argument structure.

Keywords: Preferred Argument Structure, Informativeness, Grammatical Roles, Lebanese Arabic, Child Language Acquisition.

I. Introduction

The term Preferred Argument Structure or PAS introduced by Du Bois (1987, 2003) refers to a discourse phenomenon based on the observation that a speaker's argument realization reflects universal statistical tendencies motivated by grammatical and pragmatic constraints. Du Bois stated that discourse universally is skewed towards an ergative-absolutive pattern of information flow where subjects of transitive verbs (A-role arguments), are often governed by constraints that do not apply to either subjects of intransitive verbs (S-role) or objects of transitive verbs (O-role)¹. Based on these constraints, Du Bois indicated that speakers crosslinguistically avoid using more than one new referent per verb; these new referents are typically introduced in S- or O-roles, rarely in A-roles where the highest percentage of ellipsis and pronominal forms occur. Du Bois explains that this is a universal cognitive constraint of attention management: a speaker can effectively process one new argument at a time as he or she is working simultaneously on advancing the story line and new information "monopolizes a speaker's verbalization capacities" in spoken discourse; (Du Bois 1987, 833-834).

Most of the research on PAS has focused on adult speech, but has also generated much interest among child language acquisition researchers (e.g. Allen 2000, Clancy 1993, 1997, Narasimhan, Budwig & Murty 2005). The question that is often investigated across languages is whether the language of young children is guided by similar constraints and principles modeled in child-directed adult

discourse. A number of developmental studies targeting children's argument realization in early childhood confirm the relationship between referential form and grammatical role. It has been noted for example that children as young as 2.5 years tend to use more elliptical and pronominal forms in A- role positions, and more lexical noun phrases (NP) in O-roles (e.g. Clancy 1980, Du Bois 1985, 1987). It has also been observed that the speech of young children exhibits sensitivity to the informativeness of verbal arguments (Allen 2000, Clancy 1997).

The principle of informativeness states that a speaker's choice of referential expression is guided by his or her assessment of the cognitive status of the referent in the hearer's frame of mind (Chafe, 1976). Thus, argument omission can be based on the assumption that the referent is already present in the interlocutor's consciousness and when grammar permits its elision, there is no real value in mentioning it. On the other hand, lexical NPs are the preferred referential form to introduce new referents or avoid ambiguity concerning the referent's identity. In addition to discourse pragmatic constraints, there are grammatical constraints that influence the allocation of referential forms; for instance, in some languages such as Arabic, A- and S-role arguments are optional and do not have to be overtly realized, while O-roles are obligatory.

This study investigates how discourse pragmatic and language-specific grammatical factors influence the choice of the referential form of arguments in the speech of two three-year old Lebanese children and their caregivers. Based on prior research, the hypothesis is that normally developing Lebanese children by age three or sooner, exhibit sensitivity to the informative value of the referents in their speech. They use this information value in the allocation of referential forms while generally adhering to the PAS principles within the grammatical and discourse-pragmatic constraints of Lebanese Arabic. Section II gives an overview of argument structure in Lebanese Arabic; Section III deals with four of the eight informativeness features proposed by Allen (2000), namely, NEWNESS, QUERY, CONTRAST, and 3rd PERSON;² section IV describes the methodology employed in analyzing argument realization in the children's and their mothers' discourse; in section V results are presented and discussed. The methodology was inspired by Allen's paper on argument realization in Inuktitut (2000), and the data are based on Ghada Khattab's final recordings of a longitudinal study involving Lebanese children ages 1 through 3 years.

II. Argument Structure in Lebanese Arabic

The analysis in this paper includes two very common types of Arabic sentences: verbal sentences in which the number of arguments and their roles are controlled by a verbal predicate, and nominal verbless sentences such as equational phrases with a topic and a predicate that are co-referential. Following is a morphological overview of the argument structures in the Lebanese dialect, which is the language variety spoken by the participants.

2.1 Verbal sentences

Arabic is a nominal/accusative language that exhibits a somewhat flexible word order. Both VSO and SVO constructions are frequent with arguably little difference in meaning. In Lebanese Arabic, the verb in both constructions is inflected for the person, number and gender of its subject and carries tense and

aspectual information (1).³ Therefore, dropped pronominal subjects are very common, and the use of independent personal pronouns in A- and S-roles is often redundant though not ungrammatical (2):

(1) *L- iwla:d ʕam-b-yi-lʕab-u barra*
 The-children PROG-IPFV3M.play-3MPL outside
 The children are playing outside.

(2) *ʕam-b-yi-lʕab-u barra*
 Ø PROG- IPFV-3M-play-3MPL outside
 [They] are playing outside.

O-role arguments are inflected for the person, number, and gender of their referent, and can be realized as either lexical arguments (3a), object pronouns cliticized to the verb (3b), or pronominal free morphemes (3c). In the following example, the little boy Omar got his finger caught in the door and he asked his father twice to hit the door, the first time using a lexical NP, and the second time, a pronoun. The independent pronoun in (3c) refers to the direct object of ditransitive verbs:

(3a) *baba, Dro:b il-ba:b*
 Dad, hit.IMP.2MS the-door
 Daddy, hit the door!

(3b) *Drob-u*
 Hit.IMP.2MS-him
 Hit it!

(3c) *ʕaTi-ni ya:ha*
 Give.IMP.2FS-me pr.3FS
 Give it to me.

Recipients of ditransitive verbs can be realized as pronouns suffixed to the verb (4a), or as pronominal or NP complements of prepositions in oblique (OBL) constructions (4b,c):

(4a) *ʕaTi-ni il-guitar*
 Give.IMP.2FS-me the-guitar
 Give me the guitar.

(4b) *ʔu:l il-ʔiSSa l-il-tante*
 Tell.IMP.MS the-story to-the-aunt
 Tell the story to autie.

(4c) *ʔil-l-a il-ʔiSSa*
 Tell. IMP.MS to-her the-story
 Tell her the story.

It is also natural for Lebanese speakers to use simultaneously a lexical NP and a pronoun both pointing to the same referent. In the following example (5), the pronoun /-a/ points forward to the NP ‘il-tante’, and both forms refer to the same entity:

(5) *xabbir-a il-ʔiSSa l-il-tante*

Tell. IMP.MS-**her** the-story to-**the-aunt**
 Tell auntie the story.

2.2 Nominal sentences

Nominal sentences include verbless equational or existential phrases with a topic (S) and a predicate (Prd-e) that are coreferential. Both can be realized as lexical NPs or pronouns, including demonstratives. Prd-es are often prepositional phrases with a pronoun (PP/pr) or an NP complement (PP/NP). Verbless sentences also include constructions that express ownership by means of the inflected preposition /ʕind/; the pronominal suffix agrees in number and gender with its referent (6):

- (6) *ʕind-un kta:b*
 at-3M.PL book
 They have a book.

In the nominal sentences expressing possession, the possessor (A) can be omitted but not the possessee (O) most frequently realized as a lexical NP.

While previous studies excluded nominal sentences (Allen, 2000), the decision to include them in the present analysis is motivated by three main reasons. (a) Nominal sentences are very frequent in child's language and their exclusion would result in a very impoverished data set. (b) Rapoport (1987) distinguishes between two constructions that appear to be the same in the surface structure. In the predicative construction, the predicate is an attribute of the topic (*Tom is an engineer; Tom is handsome; Tom is here*). Contrastively, the two constituents of an equational sentence are one and the same. For instance, in the sentence *That man over there is Tom*, Tom and the man both refer to the identity of the same referent. What concerns us in this article is Rapoport's claim that the post-verbal constituents in equational constructions are referential as opposed to the attributive predicates in predicative constructions. Because this study is about referential arguments, this distinction between the two nominal sentences has been adopted and only equational sentences were factored into the analysis. (c) Additionally, the copula has no semantic meaning but plays a structural role linking the topic to its predicate. Arabic equational sentences are equivalent semantically and pragmatically to similar sentences in other languages with an overt copula, but Arabic simply relies on a different device, namely definiteness, to express the same semantic relation between the topic and its predicate. For nominal sentences to be considered complete, only the topic, but not the predicate, is grammatically definite (7a,b):

- | | |
|---|--|
| <p>(7a) <i>hayda baby.</i>
 This.MS baby
 This is a baby.</p> | <p>*(7b) <i>hayda l-baby</i>
 this.3MS the-baby
 This baby</p> |
|---|--|

In (7a), the demonstrative *this* points to a known entity and *baby* is not grammatically definite; what prevents (7b) from being a complete sentence is the fact that the predicate *baby* is grammatically definite.

As previously mentioned, the allocation of referential forms is influenced by grammatical roles as well as discourse-pragmatic status of arguments, assessed

in this study via binary informativeness features (Allen, 2000). Informativeness is discussed in the following section.

III. Informativeness Features

In her study of Inuktitut child language, Allen (2000) examined 8 binary features characterizing informativeness. These features are considered ‘informative’ when the speaker feels the need to be more specific in the way he or she talks about the referent. Speakers can point to the referent to clearly identify it, or linguistically, realize the argument as a lexical NP. Four of the 8 features are discussed in this study and are summarized in Table 1:

Feature	Informative value	Uninformative value
NEWNESS	Referent new to discourse	Referent not new to discourse
QUERY	Referent subject of or answer to query	Referent not subject of or answer to query
CONTRAST	Contrast emphasized between potential referents	No contrast emphasized between potential referents
3 RD PERSON	3 rd person referent	1 st and 2 nd person referent

Table 1: Table of informativeness (taken from Shanley Allen, 2000)

NEWNESS: refers to a new referent estimated to be absent from hearer consciousness. Arguments were coded as new if they had not been mentioned in the last 20 discourse turns.

QUERY: refers to a non-identified referent that is the response to a question. The speaker is likely to refer to the queried object with a lexical argument or a deictic gesture such as pointing.

CONTRAST: refers to a referent contrasted with other potential referents present in the context of discourse. Contrast often reflects tension. For example, in our current data, there was often a conflict in one of the two dyads between the referent around which the mother wanted to center the conversation and the referent that monopolized the child’s attention.

3rd PERSON: typically in the context of most discourse, the number of first- and second- person referents is very limited compared to third-person entities that tend to have a much bigger search space, thus a less certain identity. For example, the pronoun ‘it’ in a request such as *give **it** to me* could refer to a great number of objects in the speaker/listener’s environment; the speaker is far more likely to obtain what he or she is requesting by using a lexical NP (*Give me **the guitar***).

IV. Methodology

Subjects

The data were extracted from the spontaneous speech of Omar, a Lebanese boy and Leila, a Lebanese girl (Omar and Leila are pseudonyms), one month after each turned 3 (3;1). Both children participated in a 2-year study and were videotaped for half hour once a month as they interacted primarily with their mothers. Omar and Leila were from upper middle class families and attended an English preschool. Even though both child input and output were characterized by a mixture of Arabic, English and some French, Arabic was the dominant language at the time of the recording⁴. The data in this paper was taken from the last half-hour videotaped sessions at the conclusion of the longitudinal study while each child interacted in the home environment with his or her mother looking at books and telling stories. All utterances were transcribed in IPA characters and unclear words or phrases were excluded. The data analysis included verbal arguments and arguments of nominal constructions as described above.

Coding

Table 2 provides a summary of all argument roles and their possible referential forms. Constituents were coded for the morphological form and grammatical role in which they appear. Referential forms of preverbal A and S arguments included ellipsis (Ø) (8), pronouns (pr) (9), or lexical NPs (10):

- (8) *Xils-it* S=Ø
Finish-PRF.3FS
She finished.
- (9) *ʔana baʕt-e la-hadan balloons* A=pr
I give.IPFV-1S to-someone balloons
I give balloons to somebody.
- (10) *Lina fiat-gi:b mitl-u hayd-a* A=NP
Lina FUT-bring.IMFV3F.S like-this one-3MS this one-3MS
Lina is going to bring one (a baby) like this one.

Post-verbal arguments, O- and E-roles⁵, were classified as pr, lexical NPs, PP/pr (11), PP/NP (12). E-roles refer to prepositional phrases that are necessary to complete the meaning of intransitive verbs:

- (11) *ʔamta bit-zeb-i-l-e bicycle zy:r?*
When IMFV-2FS-bring-2FS-to-me bicycle small
When will you get me a small bicycle?
- (12) *byaʕeml-u heke li-l-computer*
IMFV-3MPL-do-3MPI like this to-the-computer
They do like this to the computer.

Pronominal forms include personal and object pronouns as well as question words and demonstratives. Arguments such as in (5) that have two referential forms within the same phrase, an NP and a pronoun, were coded twice, once for each form.

In nominal sentences expressing ownership (6a,b above), the owner has been coded A, and the owned entity O. Topics of equative copular

constructions were coded S (Clancy,1997). In the case of one-word answer to queries, answers to transitive verbs were coded O, while A-arguments were coded null (Question: What is he eating? Answer: an apple); answers to questions eliciting a verb were coded depending on the valence of the verb (Question: What is he doing? Answer: eating an apple; A= Ø and O= NP).

All arguments were also coded for all four informativeness features discussed above. Question words were coded as informative depending on the answer they elicit. For example, interrogatives such as ‘who’ that begs for the identity of the referent, were considered prominent for 3rd-PERSON and NEWNESS. Demonstrative pronouns when used to point to new referents were also counted as informative. Example 13 provides an illustration of how arguments were coded. Mom is trying to relate sequentially the events of Dora story but all Omar wanted to talk about was Swiper the Wolf⁶:

- (13) Omar: *txabb-a hon Swiper.*
 Hide.PRF.3MS here Swiper
 Swiper hid here.

Swiper is an S argument and was coded as follow:

Form: NP
NEWNESS: uninformative (mentioned in the previous 20 utterances)
CONTRAST: informative (contrast between mom’s and Omar’s referent)
QUERY: uninformative (this was not an answer to a question)
3rd PERSON: informative

The following section reports patterns of argument realization in the speech of Leila’s mother (L-Mom), Omar’s mother (O-Mom), and the two children, based on the grammatical roles and the four informativeness features discussed above. Hundred and fifty verbal and nominal phrases were analyzed for each subject for a total of 600 phrases. In all cases, all tokens included almost all the exchanges uttered in the half hour during which the dyads were recorded. Unclear utterances as well as nominal sentences with adjectival or adverbial attributive predicates were discarded. Following Narasimhan et al.’s model (2005), an argument was considered informative if any of the 4 informativeness features applied. Conversely, the argument was not pragmatically prominent when it did not encode any of the targeted features. One prediction is that A-role arguments are more likely to be uninformative (i.e. not possessing ANY of the informativeness features) than S- or O-role arguments. A second prediction is that null and pronominal arguments are more likely to be uninformative than lexical arguments.

Analyzing the caregivers’ discourse was meant to help determine how well the children adhered to the pragmatic practices modeled in the input. Assuming that the discourse-pragmatic principles are derived from the input, a comparable relationship between informativeness and the form of realized arguments for both mother and child could be a confirmation of a young child’s awareness of the underlying pragmatic rules of his or her ambient language. To examine the relation between informativeness and choice of referential form in the two three-year old Lebanese children, the percentage of informative arguments realized as null, pronoun, or lexical NP was calculated for each participant; in an attempt to

make some generalizations, results were also pooled for both children and both mothers.

V. Results and Discussion

Figure 1 provides a comparison between mothers' and children's use of informative versus uninformative arguments for each grammatical role. The data supports the predictions regarding argument allocation. Following results are analyzed for A-, S-, and post-verbal arguments separately.

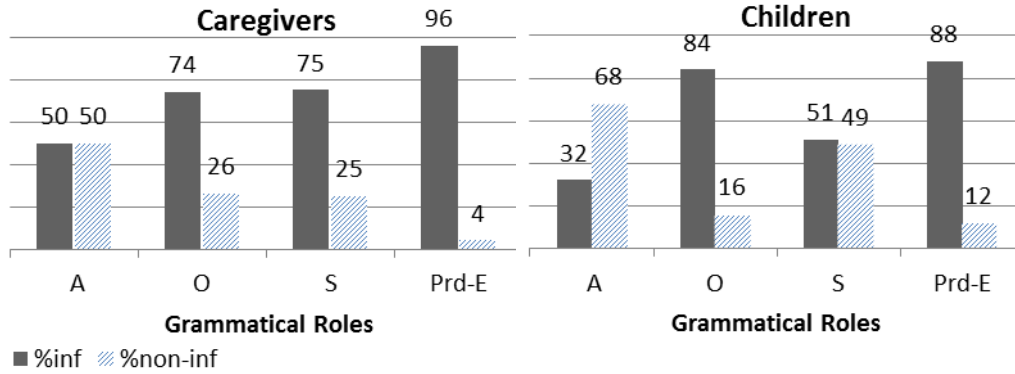


Figure 1: % informative vs. uninformative arguments for each grammatical role

A-roles

As predicted, A-role arguments have the highest occurrence of uninformative arguments compared to all the other grammatical roles; this tendency is even more pronounced for the children than their mothers'. Table 2 shows the distribution of A-role arguments across the four informativeness features in the discourse of adults and children. Based on the data, 47% of the mothers' informative A-roles and 45% of the children's, were informative for 3rd-PERSON and realized as null arguments. As discussed earlier, Arabic verbal morphology encodes gender and number information and the use of personal pronouns is optional and seems to be determined by discourse-pragmatic principles. Less than 11% of all new arguments were found in A-roles, and CONTRAST or QUERY were hardly ever encoded in A-roles.

A-Roles	Mothers n=79				Children n=43		
	Ø	pr	NP		Ø	pr	NP
3rd-PERSON	47%	11%	28%	3rd-PERSON	45%	19%	13%
NEWNESS	2%	3%	7%	NEWNESS	2%	5%	11%
CONTRAST	0	0	2%	CONTRAST	0	0	0
QUERY	0	0	0	QUERY	2%	0	2%

Table 2: Percentages of A-role arguments realized as null, pr, or NP for each informativeness feature.

S-Roles

Based on Figure 1, S-roles included more informative arguments than As, especially in the adults' discourse, and fewer argument elisions. As illustrated in Table 3, 3rd-PERSON is the most frequent feature. The fact that there are more new arguments in Ss than As suggests that in the absence of E-roles, Ss are the only core argument of intransitive verbs, thus the only possible receiving slot of new referents. What is puzzling though is the fact that more new S arguments are realized as pronouns than lexical NPs. A possible explanation pointing to an additional discourse-pragmatic dimension is suggested below. About 15% of all Ss were found to be informative for the feature CONTRAST that occurred primarily in Omar/O-Mom dyad.

S-Roles	Mothers n=109				Children n=84		
	Ø	pr	NP		Ø	Pr	NP
3rd-PERSON	14%	26%	30%	3rd-PERSON	11%	33%	15%
NEWNESS	0	14%	13%	NEWNESS	0	16%	8%
CONTRAST	0	0	2%	CONTRAST	0	8%	5%
QUERY	0	0	0	QUERY	3%	0	0

Table 3: Percentages of S-role arguments realized as null, pr, or NP for each informativeness feature.

Post-Verbal Arguments: O/Obl, E/Prd-e

Post-verbal arguments including Os and Obliques (recipients of ditransitive verbs), E-arguments of extended ditransitive constructions as well as Prd-e roles of equative sentences have been found to be important loci for the introduction of new information. Similar to Huang and Huang's findings (Hueij-ju Huang and Shuanfan Huang, 2009), E- and Prd-es turned out to be even more favored than O-roles as bearing sites of new information. This is not surprising since E-roles convey specific information most frequently concerning location and time. Therefore, an utterance such as *behind the tree* encodes location, and *tree* is informative for NEWNES, 3rd-PERSON, and likely QUERY if it provides the answer to a 'where' question. L-Mom discourse however, shows diverging patterns as will be discussed below. Table 4 shows the distribution of informative post-verbal arguments used in each grammatical role.

	Mothers			Children	
O%/Obl n= 160	Pr	NP	n = 130	Pr	NP
3rd Per	18	52		8	35
Newness	1	17		4	26
Contrast	0	11		3	7
Query	0	Pr		Np	13

E/Prd-e% n=74					
3rd Per	47	42	n = 103	3	41
Newness	7	1		0	30
Contrast	2	1		0	3
Query	0	0		1	22

Table 4: Percentages of S-role arguments realized as null, pr, or NP for each informativeness feature.

Chi-square analyses were conducted to explore the relationship between referential forms and informativeness of the features NEWNESS and 3rd-PERSON for both children. All Chi-Squares in Table 5 showed that the choice of referential forms for 3rd- PERSON vs. non-3rd PERSON, as well as for NEWNESS vs. old mentions were significantly different.

	3rd-PERSON	NEWNESS
A-Role	$\chi^2 (2) = 14.9, P < .001$	$\chi^2 (2) = 69.5, p < .001$
O-Role	$\chi^2 (3) = 67.8, p < .001$	$\chi^2 (3) = 51.6, p < .001$
S-Role	$\chi^2 (2) = 84.4, p < .001$	$\chi^2 (2) = 55.2, p < .001$

Table 5: Children's Chi-Square values showing interaction between referential form and features NEWNESS and 3rd-PERSON

QUERY and CONTRAST were the least frequent features. Out of all arguments in the data, 10% were informative for QUERY and primarily found in Leila's discourse, and 11% were informative for CONTRAST and occurred almost exclusively in the Omar/O-Mom dyad. Since QUERY and CONTRAST were informative in one child's discourse and not the other, they were analyzed separately and the Chi-Square values assessing the correlation between the two features and the allocation of grammatical roles were calculated for O- and S-roles (Table 6). There were no As informative for CONTRAST and QUERY, and over 90% of arguments encoding these two features were realized as lexical NPs or PP/NPs.

As illustrated in Table 6, Chi-Square analysis revealed QUERY was not a good predictor of referential forms for S-roles. One explanation could be that queried referents were characters of a story that were the focus of shared attention between mother and child, and Leila either used lexical NPs or relied on non-linguistic devices such as pointing.

	CONTRAST (Omar only)	QUERY (Leila only)
O-Role	$\chi^2 (3) = 8.4, p < .05$	$\chi^2 (2) = 6.74, P < 0.05$
S-Role	$\chi^2 (2) = 15.1, p = .001$	$\chi^2 (2) = 0.26, p = 0.88$

Table 6: Children's Chi-Square values showing interaction between referential form and features CONTRAST and QUERY

Chi-Square analysis showed a significance correlation between CONTRAST and referential forms. A plausible explanation could be related to other factors affecting referential form distribution as will be discussed below.

At the other end of the spectrum, for all informativeness features examined in this study, 3rd-PERSON was consistently the most significant feature predicting arguments referential forms. Out of 303 3rd-person referents in the corpus, 55% were NPs or PP/NPs and 87% had a 3rd-PERSON informativeness value. This is not surprising considering the nature of discourse in which the conversation between mother and child consisted of an exchange centered on a few story characters with 3rd-person referents.

NEWNESS was also found to be a robust discourse-pragmatic predictor that interacts with speaker's choice of referential forms. Figures 2 and 3 illustrate the participants' distribution of referential forms for the feature NEWNESS. The two graphs clearly reveal some general tendencies discussed above: O-roles are favored for receiving new arguments; in contrast, only 2% of all As were new mentions. This goes along with the principle of informativeness as defined by Allen (2000), and relates to the speaker's estimate of how informative he or she needs to be to facilitate the flow of communication. Since gender, number and person usually encoded in the grammatical subject are embedded in the Arabic verb, it is not surprising that out of all pooled A-arguments in the data, 70% were realized as null. This percentage in and by itself does not necessarily show what motivated these omissions: were they based on the participants' understanding of grammatical rules relative to argument elision, or were they based on pragmatic principles, or both? It is however very tempting to make the case that elisions of A-arguments as well as children's tendency to realize new arguments as lexical NPs points to their sensitivity to referent status: omitting an argument referring to a new character was likely to have been perceived as interfering with listener's comprehension. However, if NEWNESS is a robust discourse-pragmatic predictor that interacts with the speaker's choice of referential forms, how can we explain the 57 occurrences of pronouns prominent for NEWNESS, when pronouns are not semantically informative?

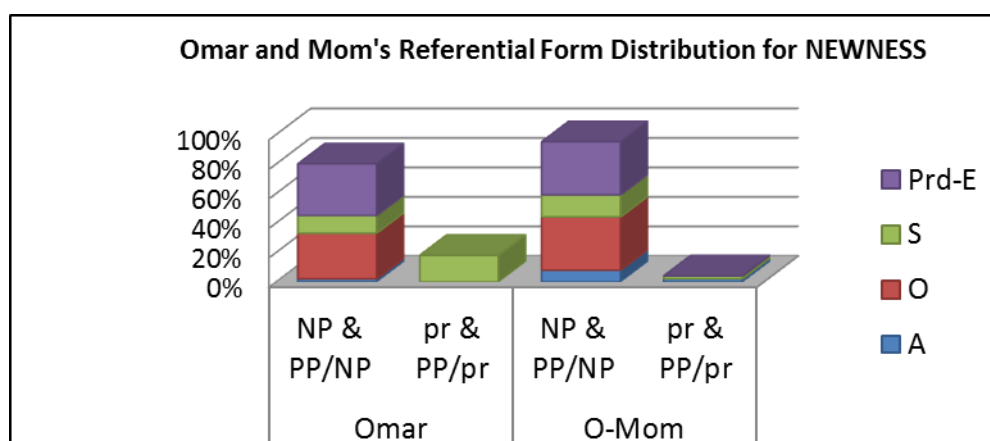


Figure 2

The frequency of informative pronouns can be explained by the frequency of demonstratives, especially prevalent in L-Mom's discourse. Demonstratives have more semantic weight than personal and object pronouns, and often refer to new entities, such as a new character on a new page of the story book. Since L-Mom was frequently eliciting labels (What is this?), over 95% of pronouns encoding NEWNESS were demonstratives informative for 3rd-PERSON.

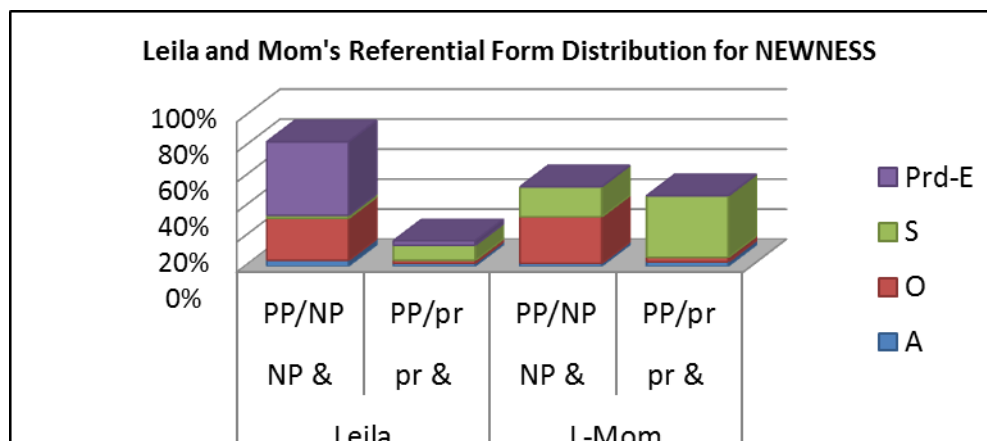


Figure 3

This final point leads us to a third dimension that seems to be correlated with the choice of referentials, namely discourse type as it relates to the participants' temperament and the role they assume in the communicative exchange. Going back to figures 2 and 3, we notice that the patterns of argument distributions for Omar and his mom were very similar. Their discourse included more uninformatives than informatives A-roles; their utterances comprised about 80% prominent O-roles, around 60% S-roles, and more than 80% Prd-e and E-roles. It would not be unreasonable to conclude that Omar was mimicking mom's speech and was sensitive to how argument status influenced the choice of referential forms across grammatical roles. However, looking at Figure 6, Leila's argument allocation patterns diverged from her mother's. 40% of Leila's new mentions were realized as O-role lexical NPs, about 50% were Prd-es, and only 30% were expressed as pronouns. In contrast, L-Mom's new mentions were primarily distributed between O- and S-roles. Unlike the other three participants, Leila's mom had very few new Prd-es and she used a disproportionately high percentage of pronouns. The question is then, how do we explain such discrepancy found in one dyad and not the other?

I would like to propose that the discourse style of the participants is an important factor linking argument status to referential forms and grammatical roles. In Leila-Mom dyad, the topic of conversation, usually a character in a book, had their shared attention, but the two participants generally assumed a different, well-defined role in the exchange: to elicit language, mom in her didactic style asked questions necessitating the use of wh-words and demonstratives with 3rd-person reference. Leila was very cooperative and assumed the role of the responder. In fact, there were a couple of instances when the little girl attempted to ask the questions, but her mother did not allow role switching. Her response was 'You tell me, what is this?' Leila's answers often consisted of a one word label in the Prd-e slot, typically realized as lexical NPs and informative for the features QUERY and NEWNESS. Example 14 illustrates a typical exchange Leila had with her mother:

(14)

Mom: What color is this?

Leila: orange

Mom: orange, OK. Ok, let's see; what's drawn here?

Leila: Kaaba (O-role)

Mom: Kaaba, how beautiful is the Kaaba! Tell me, Allahu ---

Leila: my God (Prd-e)

Mom: Mohammed –

Leila: my book (Prd-e)

Mom: Mohammed my book? Is this possible? Who is Mohammed? My pro-
(pause) my prophet! The Quran -? What? my _

Leila: my book. (Prd-e)

We notice that all of Leila's responses were short, prominent for the informativeness feature QUERY, in O-, or Prd-e positions, and realized as lexical NPs.

In contrast, the roles of the participants in the Omar/mother dyad were not as clearly defined and the exchange reflected tension. Mom was very sequential and needed to proceed with the narration in the order in which the events took place. Omar came across as a very obstinate and uncooperative child, frequently interrupting mom and jumping ahead to see the characters that interested him. Mom and Omar, from a pragmatic point of view were doing the same thing in trying to control the conversation. This may explain in part the similar patterns of argument structure shown in Figure 2. The frequency of the informativeness feature CONTRAST reflects this tension as illustrated in Example 15:

(15)

Mom: Come on Omar, come on, tell us the story, come on Omar, once upon a time

Omar: I want to see Swiper

Mom: Now we will see Swiper when we get to him.

Omar: Now we will get to him?

Mom: Mmm, now we will get to him; hold the book so that we tell the story

Omar: I want to see Swiper, where is Swiper?

Mom: Later, we finish with Leila, focus on Leila and we finish. Once upon (got interrupted again)

Example 15 is one of many where Omar and his mother were at odds, thus the frequency of the feature CONTRAST that contrasted the referent Omar wanted to talk about with the referent his mother wanted to focus on.

Conclusion

This discourse pragmatic account of 2 Lebanese children's allocation of referential forms provides additional crosslinguistic evidence to the PAS phenomenon emanating from a Semitic language with a complex morphology. It shows young children's understanding of argument status and their ability to use the information to facilitate the flow of conversation. Arabic grammar is very complex, yet 3-year old children are still able to abide by the discourse-pragmatic constraints without violating the grammatical constraints of Arabic. The discussion suggests that there are at least three interdependent dimensions that affect the allocation of arguments referential form: grammatical roles, informativeness, and the nature of the discourse that is often shaped by the personality of the participants and the role they assume in the conversation. It is possible that other variables such as gender affected choice of referential forms. As a follow-up step that would allow validating the results, it is important to replicate this study using more participants or more tokens in an experimental design that would allow isolating type of discourse and the effect of speakers' temperament on argument allocation.

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Footnotes:

¹ In this paper, labels such as A-, S-, and O-roles refer to the surface roles of arguments (Du Bois, 2003a:30) and are employed based on Dixon's taxonomy (1979, 1994).

² The other 4 informativeness features are INANIMACY, ABSENCE, DIFFERENTIATION IN DISCOURSE, DIFFERENTIATION IN CONTEXT. They were infrequent in this study.

³ The Leipzig glossing conventions have been adopted with left-aligned vertically interlinear glosses, word by word with the example. Segmental morphemes are separated by hyphens, and clitic boundaries are marked by an equal sign. Grammatical category labels are listed in the given list of abbreviations.

⁴ Some may argue that the argument structure of a bilingual child has been 'contaminated' by the second language. While there may be a cross-influence between the two languages, the reality is that in Lebanon true monolinguals are very hard to come by, and inserting foreign words often with Arabic morphology is a characteristic of the Lebanese dialect.

⁵ E-roles are non-peripheral constituents similar to what Dixon and Aikhenvald (2000:3) labeled E, which stands for 'extension to core'.

⁶ Dora and Swiper are two main characters of a popular American animated TV series *Dora the explorer*. They are very similar to the characters of the Red Riding Hood and the wolf.

List of abbreviations

IMFV: imperfective
 3rd-.: third person
 IMP: imperative
 Ø: omitted argument
 M masculine
 F: feminine
 S: singular
 Pl: plural
 A-role: subjects of transitive verbs
 O-role: objects of transitive verbs
 S-role: subjects of intransitive verbs, and topics of nominal sentences
 E-role: obliques or prepositional phrases that are extensions of ditransitive verbs
 NP: noun phrase
 Pr: pronoun
 PP/NP: prepositional phrase with an NP complement
 PP/pr: prepositional phrase with a pronominal complement
 Prd-e: predicates of equational sentences
 PAS: Preferred Argument Structure
 PROG: progressive aspect
 Asp: aspectual
 O-Mom: Omar's mother
 L-Mom: Leila's mother

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Appendix A: additional data

O-Mom					
A-role		informative		uninformative	
	total	no	%	no	%
Ø	50	15	30%	35	70%
pr	5	3	60%	2	40%
NP	20	16	80%	4	20%
Total	75	34	45%	41	55%
L-Mom					
A-role		informative		uninformative	
	total	no	%	no	%
Ø	51	27	53%	24	47%
pr	23	9	39%	14	61%
NP	10	9	90%	1	10%
Total	84	45	54%	39	46%
combined	159	79	50%	80	50%

Table 1: Status and distribution of caregivers A-role referential forms

O-Mom					
O-role, Obl		informative		uninformative	
	total	no	%	no	%
pr	33	12	36%	21	64%
NP	50	49	98%	1	2%
PP/NP	16	16	100%	0	0%
PP/pr	16	12	75%	4	25%
total	115	89	77%	26	23%
L-Mom					
O-role, Obl		informative		uninformative	
	total	no	%	no	%
pr	57	11	19%	46	81%
NP	44	43	98%	1	2%
PP/NP	15	14	93%	1	7%
PP/pr	6	3	50%	3	50%
total	122	71	58%	51	42%
combined	237	160	68%	77	32%

Table 2: Status and distribution of caregivers O-role and E

O-Mom					
S-role		informative		uninformative	
	total	no	%	no	%
Ø	34	13	38%	21	62%
pr	13	8	61%	5	39%
NP	27	25	93%	2	7%
Total	74	46	62%	28	38%
L-Mom					
S-role		informative		uninformative	
	total	no	%	no	%
Ø	12	8	67%	4	33%
pr	38	34	89%	4	11%
NP	22	21	95%	1	5%
Total	72	63	88%	9	12%
combined	146	109	75%	37	25%

Table 3: Status and distribution of caregivers S-roles

O-Mom					
Prd-e-role		informative		uninformative	
	total	no	%	no	%
pr	1	0	0%	1	100%
NP	4	4	100%	0	0%
PP/NP	26	26	100%	0	0%
PP/pr	6	5	83%	1	17%
total	37	35	95%	2	5%
L-Mom					
	total	no	%	no	%
pr	34	34	100%	0	0%
NP	2	2	100%	0	0%
PP/NP	2	2	100%	0	0%
PP/pr	1	1	100%	0	0%
total	39	39	100%	0	0%
combined	76	74	97%	2	3%

Table 4: Status and distribution of caregivers Prd-e roles

Omar					
A-Role		informative		uninformative	
	total	no	%	no	%
Ø	48	11	23%	37	77%
pr	11	6	54%	5	46%
NP	3	2	67%	1	33%
Total	62	19	31%	43	69%
Leila					
A-Role		informative		uninformative	
	total	no	%	no	%
Ø	58	13	22%	45	78%
pr	8	5	62%	3	38%
NP	7	6	86%	1	14%
Total	73	24	33%	49	67%
combined	135	43	32%	92	68%

Table 5: Status and distribution of children's A-roles

Omar					
O-Role		informative		uninformative	
	total	no	%	no	%
NP	39	39	100%	0	0%
PP/NP	5	5	100%	0	0%
pr	23	14	61%	9	39%
PP/pr	4	1	25%	3	75%
total	71	59	83%	12	17%
Leila					
O-Role		informative		uninformative	
	total	no	%	no	%
NP	40	40	100%	0	0%
PP/NP	12	12	100%	0	0%
pr	31	19	61%	12	39%
PP/pr	1	0	0%	1	100%
total	84	71	85%	13	15%
combined	155	130	84%	25	16%

Table 6: Status and distribution of children's O-roles

Omar					
S-role		informative		uninformative	
	total	no	%	no	%
Ø	35	7	20%	28	80%
pr	36	32	89%	4	11%
NP	18	18	100%	0	0%
Total	89	57	64%	32	56%
Leila					
		informative		uninformative	
		no	%	no	%
Ø	59	9	67%	50	33%
pr	16	16	100%	0	0%
NP	2	2	100%	0	5%
Total	77	27	35%	50	65%
combined	166	84	51%	82	49%

Table 7: Status and distribution of children's S-roles

Omar					
Prd-e/E		informative		uninformative	
	total	no	%	no	%
pr	15	5	33%	10	67%
NP	22	21	95%	1	5%
PP/NP	14	14	100%	0	0%
PP/pr	2	2	100%	0	0%
total	53	42	79%	11	21%
Leila					
	total	no	%	no	%
pr	9	6	100%	3	0%
NP	48	48	100%	0	0%
PP/NP	7	7	100%	0	0%
PP/pr	0	0	100%	0	0%
total	64	61	95%	3	5%
combined	117	103	88%	14	12%

Caregivers Chi-Squares:

	3rd-PERSON	NEWNESS	CONTRAST
A-Role	$\chi^2(2) = 18.6, p < .001$	$\chi^2(2) = 12.6, p < .05$	
O-/E- Role	$\chi^2(3) = 56.1, p < .001$	$\chi^2(3) = 21.2, p < .001$	$\chi^2(3) = 18.7, p < .001$
S-Role	$\chi^2(2) = 84.4, p < .001$	$\chi^2(2) = 55.2, p < .001$	
E and Prd-e	$\chi^2(3) = 4.22, p > .05$	$\chi^2(3) = 2.56, p > .05$	