Construct State Nominals as Semantic Predicates

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The Semitic construct state nominal (*idaafa* in Arabic\(^1\) or *smixoot* in Hebrew, henceforth "the construct") has received considerable attention in the syntactic literature and has recently regained popularity in the work of, e.g., Borer (2008), Choueiri (2008), and Danon (2008), with key contributions in semantic work by Dobrovie-Sorin (2000, 2002, 2005) and Heller (2002). An example of the construct appears in (1). It is a left-headed construction whose head composes with its non-head and assigns it genitive case (visible in Standard Arabic). The purpose of this paper is to propose a different semantics of the construct based on novel observations regarding its composition with quantifiers and adjectives in Lebanese Arabic, a dialect of Arabic in which the construct is still widely used.\(^2\)

1. *kteeb l-esteez*

   *book the-teacher*

   'The teacher's book'

Taking into account the known properties of the construct, I present in this paper a compositional analysis of the construct as a semantic predicate (of type \(<e,t>\)) composed of a relational head (of type \(<e,<e,t>>\)) and an individual denoting non-head (of type \(e\)). In the first section, I review what is known about the construct and, based on a partition of constructs by Borer (2008), narrow down the object of interest to the so called Individual construct (called R-constructs in Borer (op. cit.)). In section 2, I present the main empirical evidence for treating the construct as a predicate, showing (a) that adjectives cannot compose with the head of the construct alone, but must compose with the entire construct as a phrase and (b) that to get a restrictive reading of the

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\(^1\) This is a draft
possessive, cardinals and quantifiers cannot compose with the head prior to its composition with the non-head and must compose with the entire construct. In section 3, I go through the implications of these observations and show why the construct must be a predicate. In section 4, I review the foremost existing semantic treatment of the construct, proposed by Dobrovie-Sorin (op. cit.) and built upon by Heller (2002), which I refer to as the Individual approach. The Individual approach treats the construct as an individual denoting entity. I compare this approach to the current proposal it in light of the properties of the construct, taking into consideration the new observations. In section 5, I propose a syntactic explanation for the ban on the determiner on the head of the construct, which is a key property motivating the Individual approach.

1. The Construction of Interest

While various names have been used to refer to the two parts of the construct, in what follows, I use only the names head and non-head to refer to the head noun and the embedded DP, respectively. Example (1) is repeated below in (2), illustrating the head and the non-head.

2. kteib l-esteez
   book the-teacher
   Head Non-head
   'The teacher's book'

In discussing constructs and compounds, Borer (2008) sets apart two types of constructs in Hebrew: Individual constructs and Modificational constructs, a distinction which holds in Lebanese Arabic. In an Individual construct, such as (2), both the head and the non-head represent individuals. On the other hand, in a Modificational construct, such as (3), the non-head represents a property and modifies the head, conveying a type-reading. The Modificational construct in (3), which denotes a hat made to be suitable for cops, rather than a specific cop's hat.
3. *abboṣet* sherti

*hat* cop

'A cop's type of hat'

Besides interpretation, another diagnostic to distinguish Individual and Modificational constructs is that Individual constructs reliably have a free state genitive counterpart with roughly the same interpretation, whereas Modificational constructs do not. This is illustrated in (4) and (5).

4. Modificational construct:

   beit  l-xashab --> l-beit  taba?  l-xashab
   house  the-wood    the-house of  the-wood

   'The wooden house'  'The house that contains wood'

5. Individual construct:

   sayyaret  l-esteez --> l-sayyara  taba?  l-esteez
   car      the-teacher the-car of  the-teacher

   'The car of the teacher'  'The car of the teacher'

From here on, I take the partition between Individual and Modificational constructs as established. In what follows, I address only Individual constructs (sloppily using the term "the construct" to denote individual constructs).

Constructs have the following well known properties:

i. The head, normally occurring in a bound form, composes with the non-head, assigning it genitive case and resulting in the possessive-like interpretation.

ii. The definite determiner may never appear on the head (it may appear on the non-head and its definiteness may scope over the entire construct).

iii. All adjectives follow the entire construct state; those that agree in phi features
with the non-head precede those that agree with the head.

Furthermore, I show in this paper, that:

iv. Adjectives that agree with the head of the construct in phi features actually compose with the construct as a whole and cannot compose with the head alone.

v. Cardinals and quantifiers preceding the construct must compose with the construct as a whole and cannot compose with the head alone.

2. Empirical Observations Concerning Adjectives and Quantifiers in the Context of Constructs:

This section is composed of two parts. First, I show that adjectives do not compose with the head of a construct and must compose with the construct as a whole instead. Second, I show that in order to get a restrictive reading of the construction, cardinals and quantifiers preceding the head do not compose with the head, but only with the entire construct.

2.1. Adjectives modify the entire construct.

Let me first illustrate the interpretational distinction that results from two different orders of composition, using the English fragment in (6) and (7).

6. The (old book) of John

   Paraphrase: The book that is old (for a book in general) and belongs to John

7. The old (book of John)

   Paraphrase: The book that belongs to John and is old (for a book that belongs to John)

Suppose parentheses roughly denote the order of composition. Suppose also, following
Higginbotham (1985), that adjectives are interpreted relative to comparison-classes that are partly constrained by their syntactic modifiee. As an illustration, note that (6) requires the book to be old for a book in general, while (7) requires it to be old relative to John's other books. So if John's other books are all brand new, the referent of (7) needs to be old compared to his other books, so even a new book that is older than all his other books would qualify. When the adjective is modifying the noun alone, its comparison class is set by the noun, as in (6). When the adjective modifies the genitive phrase, its comparison class is set by the construction as a whole, as in (7).

Similarly, if the adjective adiim 'old' in (8) modified the head kteib 'book' alone, then the interpretation could be that the book is old for a book in general. If, on the other hand, the adjective adiim 'old' modifies the entire construct kteib Hanna 'John's book,' then the interpretation can be that the book is old relative to John's other books.

8. kteib Hanna l-adiim
   book Hanna the-old
   'John's old book'

In what follows, I show that only the latter interpretation is available and, thus, that the adjective must modify the construct as a whole. Assuming the scenario in (9), where Maryam owns only old books, calling the referent 'old' in general is felicitous, but calling it old compared to Maryam's other books is not, as most of her other books are even older. Note now, curiously, that (9a) is acceptable, but (9b) is not.

a. $\checkmark$ l-kteib l-adiim taba? maryam ken hon (Free state genitives)

   The-book the-old of Maryam was here

   'The old book of Maryam was here'

b. # kteib maryam l-adim ken hon (Construct)

   book Maryam the-old was here

   'Maryam’s old book'

In (9a), the book only needs to be old for a book, but not necessarily for a book of Maryam’s. In (9b), on the other hand, the book must be old relative to other books of Maryam’s. In more general terms, when the book is old for a book, but not so for a book of Maryam’s, the comparison class is determined by the head alone, and the free state genitive is acceptable, but the construct state genitive is not necessarily acceptable. When the book is not old for a book, but is old for a book of Maryam’s, the comparison class is set by the possessive construction as a whole, and the free state genitive is unacceptable, while the construct state genitive is acceptable.

The contrast in (9a) and (9b) shows that the construct as a whole must be able to set the comparison class for an adjective and, thus, must be able to compose with adjectives.

The contrast is also seen in places where the Free state genitive is unacceptable and the construct is acceptable. Consider the opposite scenario of that in (9). If Maryam owned only new books, the opposite felicity conditions would be predicted, as is indeed the case.
10. **Scenario 2:** Suppose Maryam owns only *new* books, most of which were printed this year.

She has a book that was printed 3 years ago, which is not particularly old for a book but is old relative to Maryam's other books. Sami has been talking about that book all morning.

a. # l-kteib l-adim taba3 Maryam ken hon
   
   the-book the-old of Maryam was here

   Maryam's old book was here (In this case, the book is understood to be old for a book)

b. v-kteib Maryam l-adim
   
   book Maryam the-old

   Maryam's old book was here (In this case, the book is understood to be old only for a book of Maryam)

Adjectives (typically of type \(<e,t>,<e,t>\)) compose only with predicates. This means that the construct as a whole must be of type \(<e,t>\), i.e., a predicate.

2.2. *Quantifiers and cardinals compose with the entire construct.*

While the construct cannot be preceded by definite determiners, other determiner-like things can precede it, including quantifiers, as in (11) and (12), and cardinals, as in (13) and (14). Note that while previous semantic work has observed that cardinals may compose with indefinite constructs, this is also true of definite constructs, as illustrated in (13).

11. kell/aghlab wleed jaaret-na Twaal

   all/most children neighbor-our tall

   'all of our neighbor’s children are tall'
12. kell wleed jaara men jiiraan-na Twaal
   all children neighbor of neighbor-our tall
   'all of a neighbor’s children are tall'

13. arbe?t mlee?eb l-madrasah kenou melyeniin
   four yards the-school were full
   'The four school yards were full'

14. tlat baneet jaara men jiraan-na marrou ?lay-na
   three daughters neighbors from neighbors-our passed on-us
   'Three neighbors’ daughters passed by us'

As pointed out by Partee (1976), in order to get a restrictive reading of the possessive or any complement, it is necessary for it to compose with the head directly and not with the head after its quantification. The type composition is shown in (15a) for the restrictive reading and in (15b) for the appositive reading (or uninterpretable composition).
15. (a) complement composing with head

Three <<e,t>><<e,t>,<e,t>,t>>
books of Mary
<e,t> from the library
that are green
<<e,t>,<e,t>> ➔ Restrictive reading

(b) complement/possessor composing with the quantified phrase

Three books that are green e or <<e,t>,t>>
<e,t> ➔ Either uninterpretable or appositive reading

This is illustrated in (16) for the constructs in (11)-(14). The illustration can be made clearest with a quantifier such as aghlab 'most,' which, if it composes as in (16b), would imply that most children are the neighbor's children, and they visited us, which is obviously not the intended reading. Rather, the intended reading is that most of the neighbor's children came to visit us (saying nothing about other children), which is the reading reached by the composition in (16a).
16. (a) complement composing with head

```
aghlab/arba?t/kell
most/four/all
<<e,t>,<<e,t>,t>>
wlreed
l-jaara  ➔ Restrictive reading
```

(b) complement/possessor composing with the quantified phrase

```
<<e,t>,t>

l-jaara

the-neighbor

kell/arba?t

wlreed  e or <<e,t>,t> or <<e,t>,<e,t>>

<<e,t>,<<e,t>,t>>  ➔ Uninterpretable or incorrect reading
```

It is therefore unmistakable that cardinals and quantifiers compose with the entire construct. This entails that the construct is a predicate, as cardinals (typically of type <<e,t>,<<e,t>,t>> or <<e,t>,<e,t>> and quantifiers (typically of type <<e,t>,<<e,t>,t>> ) compose with predicates. This is shown more elaborately in the next section,

3. Compositional Implications

In the previous section, I showed that the construct composes, as a whole, with adjectives, cardinals, and quantifiers. Adjectives, type-wise, can only compose with predicates. In fact, adjectives’ composing with anything but predicates results in either an appositive reading on the adjective or uninterpretability. To illustrate this, let us consider a single-word DP which cannot
be penetrated by an adjective—a proper name. Supposing a unique individual called John in (17a), the name alone denotes this unique individual and adding an adjective does not facilitate identification of the referent. This means that any adjective in the sentence has an appositive reading. In (17b), on the other hand, person (a predicate) does not refer to a unique individual. In this case, great does facilitate identifying the referent as a member of the set of of great individuals, and the definite determiner composes with the entire fragment great person.

17. a. Here comes John, the great.
   b. Here comes the great person.

18. a. Composition for (17a)   b. Composition for (17b)

Since constructs meaningfully compose with adjectives, they must be predicates and compose as shown in (18a). I propose that the construct is composed as follows: The head of the construct is a relational noun (of type <e,<e,t>>), and its non-head, a regular DP, is an individual of type e.
The two compose, resulting in a predicate (cf. Barker’s (1995) and Vikner & Jensen’s (2002) accounts of Saxon Genitives). The type composition is illustrated in (20) for the example in (19).

At this point, the question arises of how the head comes to acquire its relational status. One possibility is that the head of the construct, which typically appears in a bound form (sayyaret ‘car’ in (19), is the bound form of sayyarah ‘car’), is a lexical variant of the corresponding noun, along the lines of Heller (2002). Under this account, the lexicon would contain both the bound form sayyaret and the free form sayyarah, the former being a relational noun of type <e,<e,t>> and the latter a predicate of type <e,t>. Another possibility is that the construct head is syntactically modified, and the bound form of the head denotes not only the noun, but the noun of type <e,t> plus a semantic equivalent of ‘of’ (perhaps the bound function) of type <<e,t>,<e,<e,t>>>>, resulting in a relational noun denotation. While I prefer the syntactic option because of its compositional nature and the fact that it implies a lighter load on the lexicon, both are viable.

19. sayyaret l-esteez
   car the-teacher
   The teacher’s car

20. a. [[sayyaret]] = λx λy y is a car of x
    b. [[l-esteez]] = 1x. teacher(x)
    c. [[sayyaret l-esteez]] = λy. y is a car of the teacher
       (the predicate that is true of things that are cars of the teacher)
(21) illustrates the proposed type composition of the construct, showing its compatibility with adjectives.
21. Semantic composition of the construct with adjectives

\[
\begin{array}{c}
<e,t> \\
\end{array}
\]

\[
\begin{array}{c}
<e,t> <<e,t>,<e,t>> \\
\end{array}
\]

Construct \hspace{1cm} Adjective

\[
\begin{array}{c}
<e,<e,t>> e \\
\end{array}
\]

Head \hspace{1cm} Non-Head

sayyaret \hspace{1cm} l-esteez

Like adjectives, cardinals and quantifiers compose with type \(<e,t>\) predicates, regardless of whether cardinals are assumed to be modifiers (of type \(<<e,t>,<e,t>>\) or determiners (of type \(<<e,t>,e>\)). The proposed type composition is given in (22).

22. Semantic composition of construct with quantifiers and cardinals

\[
\begin{array}{c}
e \\
\end{array}
\]

\[
\begin{array}{c}
<<e,t>,e> or <e,t>,<e,t> <e,t> \\
\end{array}
\]

Quantifier or cardinal \hspace{1cm} Construct

\[
\begin{array}{c}
<e,<e,t>> e \\
\end{array}
\]

Head \hspace{1cm} Non-Head

sayyaret \hspace{1cm} l-esteez
Interim conclusion: In sections 2 and 3, I showed that the construct must compose with adjectives, cardinals, and quantifiers, and I have shown the implications of these facts on the semantics of the construct. I therefore proposed a semantics of the construct that allows for this and, furthermore, is compatible with the word order properties (property iii in section 1). In the following section, I provide an overview of the prevailing view on constructs, first proposed by Dobrovie-Sorin (2000, 2002, 2005) and elaborated upon by Heller (2002) and Danon (2008). As mentioned in the introduction, I refer to this view as the Individual account, because it proposes that the construct is an individual denoting phrase (rather than a predicate).

4. The Individual Account

One reason the Individual account has received such serious consideration is that it straightforwardly accounts for an outstanding and difficult property of the construct, namely, the ban on the definite determiner on the head of the construct (property ii in section 1). In order to account for this property, the Individual account (Dobrovie-Sorin, 2000, 2005; Heller 2002) notes that:

23. a. Determiners, of type $<<e,t>,<<e,t>\rangle$, compose with predicates.

   b. The construct, when definite, is interpreted as such without the presence of a definite determiner.

   c. The definite determiner can never precede the construct.

Thus the construct, often interpreted as definite, must already be individual-denoting at the point at which it would be expected to compose with determiners and, thus, it cannot compose with determiners. As a result, the Individual approach puts forth a semantics for the construct in which the head is a function of type $<e,e>$, which takes an individual of type $e$ (the non-head)
and returns an individual of type e (the construct as a whole). (24) gives the semantic denotations for the example in (19) under the Individual approach.

24. **Head:** \[\text{[[sayyaret]]} = \lambda x \, \eta y \, [R(x,y) \land \text{car}(y)] \quad (\text{car})\]

**Non-head:** \[\text{[[l-esteez]]} = \lambda x \, x \, \text{is the teacher} \quad (\text{the teacher})\]

**Construct:** \[\text{[[sayyaret l-esteez]]} = \lambda x \, \eta y \, [R(x,y) \land \text{car}(y)] \quad (\text{[[the-teacher]]})\]

\[= \eta y \, [R(\lambda x \, x \, \text{is the teacher}, y) \land \text{car}(y)]\]

The type mismatch which derives the determiner ban on the head of the construct [property ii in section 1] is illustrated in (25).

25. \[<<e,t>,e> \quad e\]

\[\begin{aligned}
&<<e,t>,e> && e \\
&Determiner &Construct \\
&<e,e> && e \\
&Head &Non-head \\
kteeb 'book' &l-esteez 'the-teacher'
\end{aligned}\]

It is worth noting that the Individual approach gives a different semantics for indefinite constructs, presenting them all as Modificational constructs, where the non-head is of type \[<<e,t>,<e,t>>\] and the head is of type \[<e,t>\]. One problem with assuming a different semantics for definite and indefinite constructs is that, as shown in Borer (2008), the distinction between
Modificational and Individual constructs is not related to definiteness, as both Individual and Modificational constructs have both definite and indefinite forms. Furthermore, while Dobrovie-Sorin (2005) notes that indefinite constructs compose with cardinals, the same is also true of definite cardinals, as shown in examples (11) and (13). An advantage of the predicate approach is that it unifies definite and indefinite Individual constructs, whereas the existing approach requires two different semantic explanations.

Furthermore, the predicate approach correctly predicts the adjective interpretation and the composition of cardinals and quantifiers with both definite and indefinite constructs, whereas the Individual account incorrectly predicts that acceptable fragments, such as those in (11) through (14), would be ruled out and that the correct interpretation of an adjective modifying the construct illustrated in (9) and (10) would be ruled out. This is illustrated in (26) for adjectives and (27) for cardinals and quantifiers.

26. Type composition of constructs and adjectives:

\[ a. \text{ Predicate Approach} \]

\[
\begin{align*}
\langle e,t \rangle & \langle e,t \rangle,\langle e,t \rangle \\
\text{Construct} & \text{Adjective}
\end{align*}
\]

\[
\begin{align*}
\langle e,\langle e,t \rangle \rangle & e \\
\text{Head} & \text{Non-head}
\end{align*}
\]

kteeb \( \rightarrow \) l-esteez

'book' \( \rightarrow \) 'the-teacher'

\[ b. \text{ Individual Approach} \]

\[
\begin{align*}
\langle e,t \rangle & \langle e,t \rangle,\langle e,t \rangle \\
\text{Construct} & \text{Adjective}
\end{align*}
\]

\[
\begin{align*}
\langle e,e \rangle & e \\
\text{Head} & \text{Non-head}
\end{align*}
\]

kteeb \( \rightarrow \) l-esteez

'book' \( \rightarrow \) 'the-teacher'
27. Type composition of constructs and cardinals and quantifiers

   a. Predicate Approach
      
      ◆
      
      \(<e,t>,e> \quad <e,t>\)
      
      Quantifier    Construct
      or cardinal
      ◆
      
      \(<e,<e,t>> \quad e\>
      
      Head    Non-head
      kteeb    _l-esteez_
      'book'    'the-teacher'

   b. Individual Approach
      
      ◆
      
      \(<e,t>,e> \quad e\>
      
      Quantifier    Construct
      or cardinal
      ◆
      
      \(<e,e> \quad e\>
      
      Head    Non-head
      kteeb    _l-esteez_
      'book'    'the-teacher'

(Note that even if cardinals are assumed to be modificational (i.e., of type \(<e,t>,<e,t>>\), they would still be incompatible with individuals and would require the construct to be a predicate)

Of course, it is not negligible that the individual approach accounts for the ban on the definite determiner (cf. (25)) whereas the predicate approach remains neutral about that property. Thus, while the individual approach rules out the predicted interpretation of adjectives and rules out acceptable fragments, the predicate approach predicts the correct adjective interpretation and the acceptable fragments, yet does not, in and of itself, explain the ban on definite determiners in the semantics. In what follows, I show that a syntactic explanation for the ban on the definite determiner can be provided. While the syntax can further constrain any over-generation by the Predicate approach, it cannot recover utterances that are compositionally ruled out in the
Individual approach. Thus, if a syntactic explanation can be provided, there is sufficient reason to prefer the Predicate approach.

5. A Syntactic Explanation for the Ban on the Definite Determiner What I propose in this section is a possible explanation for how the syntax may rule out the appearance of the definite determiner on the construct. There have been many such proposals in the literature. The purpose of the syntactic proposal below is not to challenge previous proposals, but to provide a simple syntactic explanation, showing that the ban on the definite determiner is an issue that can and should be resolved in the syntax.

My starting point is the basic DP structure from Borer (2005), augmented with a projection ΓP, which hosts a cardinal (cf. Borer & Ouwayda (2010) for motivations). In this structure, I assume, following Siloni (1996) and Borer (2005), that as a bound morpheme, the definite determiner in Arabic does not spell out unless a noun head moves to D. I further assume that in order for semantic definiteness to be checked, the noun or a phrase containing it must move to the D phrase, either through head movement to D or through phrasal movement to SpecD. Those assumptions taken, the basic structure for a Lebanese Arabic definite DP is illustrated in (28a). Note that in this DP, the noun moves to D to check definiteness and to allow pronunciation of the definite determiner. The structure for a typical indefinite DP is in (28b). In this structure, the noun moves to the head of the quantifier phrase to check for quantity (for agreement purposes) and stops there, rather than proceeding to D. (I do not commit to the presence or absence of a D projection in the case of indefinite DPs.) In these structures, head-to-head movement is assumed and not all copies are included.
28. Basic DP Structure

a. Definite DP (l-biseh 'The cat')

\[
D^{\text{max}}
\]

\[
[+\text{def}]
\]

l-biseh \# \Gamma_{\text{P}}^{\text{max}}

the-cat

\[
\Gamma \quad CL_{\text{max}}
\]

\[
CL \quad N_{\text{max}}
\]

biseh
cat
I propose, along similar lines to Shlonsky's (2004) remnant movement and Fassi-Fehri's (1999) phrasal movement account for constructs, that a phrasal movement analysis can account for the properties of constructs and specifically for the ban on the definite determiner appearing on the head. I therefore propose that a functional projection containing both head and non-head moves to the specifier of a higher functional projection (SpecD to check for definiteness in the case of definite constructs and Spec# to check for quantity in the case of indefinite constructs). As I show, this movement derives the properties of the construct.

To elaborate, I propose that the derivation of the definite construct is as in (29), where ΓP (cardinal phrase) moves to SpecD to check definiteness, thus accounting for the ban on the

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To elaborate, I propose that the derivation of the definite construct is as in (29), where ΓP (cardinal phrase) moves to SpecD to check definiteness, thus accounting for the ban on the
definite determiner. When phrasal movement occurs, no head has moved to D, semantic
definiteness is checked by ΓP, and there is no head in D, allowing any bound determiner to be
realized. Note that when a cardinal is present, it may either stay in ΓP, thus deriving the pre-
nominal word order in (30), or move to Spec# prior to the phrasal movement, thus deriving the
post-nominal word order in (31).

29. Definite construct

\[
D^{\text{max}}
\]

\[
\text{SpecD}\rightarrow D^{\text{#max}} [+\text{def}]
\]

\[
\text{Spec#}\rightarrow \Gamma^{\text{#max}}
\]

\[
\text{Spec}\Gamma \rightarrow \text{tlat} \rightarrow \Gamma \rightarrow \text{Cl}^{\text{max}} \rightarrow \text{N}^{\text{max}}
\]

\[
\text{cat.pl} \rightarrow \text{biseet} \rightarrow \text{biseet} \rightarrow \text{SpecN} \rightarrow \text{biseh}
\]

\[
\text{l-walad} \rightarrow \text{cat} \rightarrow \text{the-kid}
\]
30. tlat biseet l-walad
three cats the-kid
The three cats of the kid
31. biseet l-walad t-tleeteh
cats the-kid the-three
The three cats of the kid.

In indefinite constructs, on the other hand, ΓP undergoes phrasal movement to Spec#⁶ to check for quantity (and nothing moves to SpecDP, and it is not clear that the DP projection is needed at all). The structure would therefore be as in (32).
32. Indefinite construct

\[ D^{\text{max}} \]

\[ \text{Spec}^\# \]

\[ \Gamma^{\text{max}} \]

\[ tlat \]

\[ \text{spec} \]

\[ \text{cat.pl} \]

\[ \text{CL}^{\text{max}} \]

\[ \text{N}^{\text{max}} \]

\[ \text{biseet} \]

\[ \text{SpecN} \]

\[ \text{walad} \]

\[ \text{biseh} \]

\[ \text{kid} \]

\[ \text{cat} \]

A benefit of this movement is deriving the word order in which cardinals are pre-nominal and blocking the word order in which they are post-nominal. This, in fact, is consistent with the word order restrictions in Arabic, as shown by the fact that the pronominal cardinal *tlat* 'three' is grammatical in (33), the post-nominal cardinal *tleeteh* 'three' is ungrammatical in (34), and both are accepted with definite constructs, as illustrated in (30) and (31).
33. tlat ketob m'allmeh men m'allmeet l-math
   three books teacher among teachers the-math
   three books of a math teacher
34. ketob m'allmeh (*tleeteh) men m'allmeet l-math (*tleeteh)
   books teacher (*three) among teachers the-math (*three)
   three books of a math teacher

This syntactic skeleton and proposal thus explains the ban on the definite determiner while still deriving the word order and other syntactic properties of the construct given in section 1. This proposal is also consistent with any semantic proposal, including the Predicate approach.

We can now compare the two approaches:

<table>
<thead>
<tr>
<th></th>
<th>Predicate approach (proposed account)</th>
<th>Individual approach (existing account)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjective interpretation</td>
<td>✅ correct prediction</td>
<td>Incorrect prediction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(predicts type-mismatch)</td>
</tr>
<tr>
<td>Quantifier and cardinal composition</td>
<td>✅ correct prediction</td>
<td>Incorrect prediction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(predicts type-mismatch)</td>
</tr>
<tr>
<td>Ban on the definite determiner</td>
<td>Semantics: No prediction</td>
<td>✅ correct prediction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Syntactic explanation</td>
</tr>
</tbody>
</table>

**Table 1. Comparison between the Predicate approach and the Individual approach**

As the table above shows, while the Predicate approach remains neutral about the ban on the definite determiner, the syntax can account for this property. The Individual approach, on the
other hand, incorrectly rules out both adjectives' modifying the entire construct and cardinals' and quantifiers' composing with the entire construct. The syntax cannot recover utterances ruled out by type mismatch.

6. Conclusion

In this paper, I argued that construct state nominals are predicates (of type \( <e,t> \)) based on two empirical observations regarding their composition with adjectives, cardinals, and quantifiers. My main observation is that these modifiers and determiners compose with the construct as a whole. I also showed that while the Individual approach successfully accounts for the ban on the definite determiner through type mis-match, it encounters fundamental difficulties with constructs' composing with adjectives, cardinals, and quantifiers—difficulties that the predicate approach easily overcomes. I further showed that while the predicate approach remains neutral about the ban on the definite determiner, a syntactic explanation for this phenomenon can be provided. I therefore proposed a syntactic explanation assuming phrasal movement of a projection containing both Head and Non-Head to SpecD for definite phrases and to Spec# for indefinite phrases, positing that the definite determiner is not pronounced because no N-to-D head movement has taken place to allow the determiner to be realized.

Notes:

1- Unless otherwise specified, all examples are from Lebanese Arabic.

2- While it appears that the use of the construct is in decline in Hebrew and in some dialects of Arabic, this is not the case for Lebanese Arabic (Choueiri (2008)).

3- Borer (2008) also distinguishes the two types of constructs from compounds, which have the same form, but have different properties, including an opaque interpretation. The mapping of Borer's (op. cit.) partition to Lebanese
Arabic can be shown by translating the test examples to Arabic. For reasons of space, I will not do that. Instead, I establish the difference between the two types of constructs using one tell-tale diagnostic.

4- Heller's proposal is for a lexical variant that is a function of type \(<e,e>\), but it can easily be modified to accommodate the present proposal that the construct is of type \(<e,<e,t>>\).


6- Presumably, in the case of definite constructs, phrasal movement of \(\Gamma P\) to Spec\# occurs first to check for quantity, then it is \#P that moves to SpecD to check definiteness, rather than \(\Gamma P\) moving to SpecD immediately. I abstract over the details of the intermediate movements since, provided either of the two assumptions works, syntactic details are orthogonal to the (primarily semantic) purposes of this paper.

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