

THE ADJECTIVAL CONSTRUCT IN HEBREW

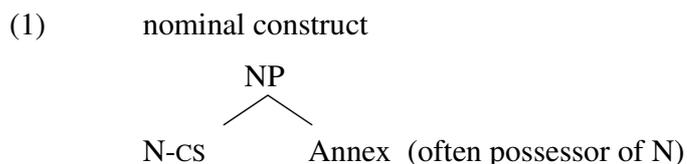
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1 Introduction

The paper proposes a semantic analysis of the adjectival construct in Hebrew, a construction which has received a great deal of attention in the theoretical literature. The challenge for an analysis of the adjectival construct is to integrate it into the analysis of the construct in general. The construct is usually viewed as a possessive construction, yet possession is a category of nouns rather than adjectives. How can an adjective head a possessive construction? I will show that this question results from a bracketing paradox within the adjectival construct. What heads the possessive construction within the adjectival construct is not an adjective, but a noun. There is no special semantics of adjectives within adjectival constructs. Once the bracketing paradox is resolved, the interpretation of the adjectival construct is computed by functional composition of the ordinary interpretation of the adjective with the ordinary interpretation of a nominal construct. The semantics of adjectival constructs thus directly reduces to that of nominal constructs.

The *construct* is a type of possessive construction found in the Semitic languages, consisting of a *Head* and an *Annex*. The head of the construct is marked by morphology, called the *construct state* (CS), as in (1). Typically, the head is a noun, the possessee, and the annex is the possessor. I will call a construct headed by a noun a *nominal construct*:¹



¹ When the annex is a lexical category, the construction may be a *compound*, and when the annex is a phrase, the construction is a *phrasal construct*. I will limit myself to phrasal constructs.

Construct state (CS) morphology contrasts both with *absolute state* morphology and with the definiteness marking prefix *ha-* (called *emphatic state*). For a semantic analysis of state inflection in general see Doron and Meir 2014.

I only discuss Hebrew examples in the present paper. In (2), the noun *dress*, of which the absolute-state form is *simla*, as in (2a), is shown in its construct-state form (with the feminine suffix *-t*) when it heads the construct in (2b):

- | | | | |
|--------|--|----|--|
| (2) a. | <i>simla</i>
dress

'a dress' | b. | <i>simlat iša</i>
dress-CS woman

'a woman's dress' |
|--------|--|----|--|

The annex *woman* appears inflected in its absolute-state form, *iša*, in (2b) above. It could instead be inflected in the emphatic state, *ha-iša* 'the woman', in (3a) below, or in the unmarked construct state form, *éšet* in (3b); the latter is what enables recursion of the construct:

- | | | | |
|--------|---|----|--|
| (3) a. | <i>simlat ha-iša</i>
dress-CS the-woman

'the woman's dress' | b. | <i>simlat éšet ha-šaxen</i>
dress-CS woman-CS the-neighbour

'the neighbour's wife's dress' |
|--------|---|----|--|

The Hebrew nominal construct has generated a host of theoretical issues discussed by Berman 1978; 1988; Borer 1984; 1988; 1996; 1999, 2009, Coffin and Bolotzky 2005; Danon 2001; 2008; 2010, Dobrovie-Sorin 2000, 2003; Doron and Meir 2014, Englehardt 1998; 2000, Glinert 1989; Faust 2011; Hazout 1991; 1995; Heller 2002, Meir and Doron 2013, Ravid and Schlesinger 1995; Ritter 1988, Rothstein 2009, Siloni 2001; 2003, Shlonsky 2004, and many others.

In the *adjectival construct*, the head is an adjective, as in (4). The adjective Adj can be related to the annex in various ways, the most intriguing one is **being predicated of the annex**, something which is never the case when a noun heads a construct.²

- (4) adjectival construct
- ```

 AP
 / \
 Adj-CS Annex (subject of A)

```

<sup>2</sup> Another type of adjectival construct, where the head A is not predicated of the annex, but of the noun modified by the adjectival construct, is simpler, and we return to it below. An adjective predicated of the modified noun is just what we would expect, and it does not raise the issues discussed in the text. In this case, A is a relational adjective, e.g. *soaked*, *abounding*, and the annex may be a complement/adjunct, parallel to the possessor annex in nominal constructs.

- |      |                                                                                                    |        |                                                                                                 |
|------|----------------------------------------------------------------------------------------------------|--------|-------------------------------------------------------------------------------------------------|
| (i)a | <i>mimxata sfugat dma'ot</i><br>handkerchief soaked-CS tears<br>'a handkerchief soaked with tears' | (ii)a. | <i>mišpaxa merubat yeladim</i><br>family abounding-CS children<br>'a family with many children' |
|------|----------------------------------------------------------------------------------------------------|--------|-------------------------------------------------------------------------------------------------|

The adjective in this type of construct, but not in the type discussed in the text, can be expressed in the unmarked absolute state, taking a prepositional complement/adjunct:

- |       |                                                                                                           |        |                                                                                                      |
|-------|-----------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------------------------------------------------------|
| (i)b. | <i>mimxata sfuga (be-) dma'ot</i><br>handkerchief soaked with tears<br>'a handkerchief soaked with tears' | (ii)b. | <i>mišpaxa meruba be- yeladim</i><br>family abounding with children<br>'a family with many children' |
|-------|-----------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------------------------------------------------------|



- (8) *yalda adumat simla/ xulca*  
 girl red-CS dress/ shirt  
 ‘a girl whose dress/shirt is red’
- (9) \* *yalda adumat simla qcara*  
 girl red-CS dress short  
 ‘a girl whose short dress is red’
- (10) \* *yalda adumat šarvuley xulca*  
 girl red-CS sleeves-CS shirt  
 ‘a girl whose shirt’s sleeves are red’

Some accounts (e.g., Gai 1977, Kremers 2005) analyze construct state adjectives as attributed directly to the noun they modify. In the above examples, this can be paraphrased as: ‘a girl who is long (of neck)’ in (5c), ‘a balcony which is round (of corners)’ in (6) or ‘rooms which are high (of ceiling)’ in (7). In (11) and (12) below, such a paraphrase would be problematic: #‘a boy who is torn (of shirt)’, #‘a leaping dancer who is frozen (of gaze)’, #‘a girls who is blue (of eyes)’, #‘a girls who is round (of glasses)’:

- (11) a. *yéled qrúa' xulca*  
 boy torn-CS shirt  
 ‘a boy whose shirt is torn’
- b. *raqdan meqapec qfu mabat*  
 dancer leaping frozen-CS gaze  
 ‘a leaping dancer whose gaze is frozen’
- (12) a. *yalda kxulat eynáyim*  
 girl blue-CS eyes  
 ‘a girl whose eyes are blue’
- b. *yalda agulat mišqafáyim*  
 girl round-CS glasses  
 ‘a girls whose glasses are round’

To complete the introduction, I mention that the head of the adjectival construct is restricted to non-suffixed adjectives. Derived adjectives such as *ga'avt-an* ‘arrogant’, *mamlaxt-i* ‘of the state (adj)’, *qtifat-i* ‘velvety’, cannot occur in this position (Glinert 1989). I suggest, though I discuss it no further here, that the lack of a CS form for suffixed adjectives may be due to the fact that the adjectival suffix (e.g. *-an* or *-i* here) is attached to a base noun which is already in the CS form (notice the CS suffix *-t* preceding the adjectival suffix).<sup>4</sup>

<sup>4</sup> It is not the morphological complexity *per se* of the adjective which is the source of the restriction, as shown by the following reduplicated and/or *-i* suffixed construct-state adjectives (attested on the net):

- |                                                                                          |                                                                                                   |                                                                                                      |
|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| (i) <i>gvarim afar-par-ey se'ar</i><br>men grey-REDUP-CS hair<br>‘men with grayish hair’ | (ii) <i>xatulim agmu-m-ey mabat</i><br>cats glum-REDUP-ADJ.CS gaze<br>‘cats whose gaze is gloomy’ | (iii) <i>xaluc it-i maxšava</i><br>striker slow-ADJ.CS thought<br>‘a striker whose thinking is slow’ |
|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|

Among adjectival constructs, as in the case of nominal constructs, it is possible to distinguish between the phrasal ones, which are fully productive and have compositional meaning, like the examples above, and idiomatic compounds, such as *qal raglayim* ‘light-legged’ meaning ‘fast’, *kvad mišqal* ‘heavy-weighted’ meaning ‘serious, important’, and *gvah lev* ‘high-hearted’ meaning ‘arrogant’. I am interested in the phrasal constructs.

## 2 Analysis of the adjectival construct

### 2.1 Heller's relational analysis of the nominal construct

The analysis I will develop for the adjectival construct treats it as a case of nominal construct, in spite of the differences between them. I start by presenting the semantics of the nominal construct proposed by Heller 2002. The interpretation given by Heller in (13) assumes that the nominal head of a construct denotes a relation  $N(x)(y)$ :

(13) Given  $N_{\langle e,et \rangle}$  and  $DP_e$ , the interpretation of the construct  $[N_{CS} DP]$  is as follows:

$$[N_{CS} DP]_e \sim \lambda y N(DP)(y)$$

In Heller's view, a CS noun is interpreted as relational (or more precisely functional<sup>5</sup>). The CS head of the construct, which is cohesively attached to the annex, is particularly suited to express a lexical relation (such as *daughter*, *wife*, *colour*) to the annex. In contrast, the less cohesive periphrastic possessive construction, where the possessor is separated from the head noun by a preposition (the preposition *šel* ‘of’), allows for a contextual association between the possessor and the possessee (Rosén 1957, Doron and Meir 2013, 2014):<sup>6</sup>

- |      |                                |                               |                                                                                                                                          |
|------|--------------------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| (14) | <i>bnot</i><br>girls-CS        | <i>ha-mora</i><br>the-teacher | <i>ha-banot šel ha-mora</i><br>the-girls of the-teacher                                                                                  |
|      | ‘the daughters of the teacher’ |                               | ‘the teacher's girls’<br>(not necessarily her daughters, maybe her students, or girls associated to her in any contextually salient way) |
| (15) | <i>éšet</i><br>woman-CS        | <i>ha-cayar</i><br>the-artist | <i>ha-iša šel ha-cayar</i><br>the-woman of the-artist                                                                                    |
|      | ‘the wife of the artist’       |                               | ‘the artist's woman’<br>(not necessarily his wife, could be the woman he painted)                                                        |

<sup>5</sup> The relation denoted by  $N_{CS}$  is *functional*, i.e. it relates a *unique*  $y$  to DPs in its domain. For example, the relation *colour* in (16) in the text below (which is the interpretation of *colour<sub>CS</sub>*) is functional, i.e. it denotes the unique colour of each individual in its domain. This uniqueness is part of the interpretation of CS nouns, independently of the definiteness of the possessor: both (i) and (ii) below denote a unique colour:

- |     |                            |                              |      |                          |                       |
|-----|----------------------------|------------------------------|------|--------------------------|-----------------------|
| (i) | <i>céva</i><br>colour-CS   | <i>ha-aron</i><br>the-closet | (ii) | <i>céva</i><br>colour-CS | <i>aron</i><br>closet |
|     | ‘the colour of the closet’ |                              |      | ‘the colour of a closet’ |                       |

<sup>6</sup> with the argument of the relational noun existentially bound, as it always is when the noun is in the absolute/emphatic state

- |      |                                                                                                                                              |                                                                                                                                                                                     |
|------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (16) | <i>céva</i> <i>ha-stav</i><br>colour-CS the-autumn<br><br>'the colour of autumn'<br>(the prevalent colour of nature<br>in that time of year) | <i>ha-céva</i> <i>šel ha-stav</i><br>the-colour of the-autumn<br><br>'autumn's colour'<br>(the colour associated with autumn, e.g. the<br>one in vogue in autumn fashion this year) |
|------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

The relation denoted by the CS noun can be coerced from a sortal noun by specifying one of particular qualia relations. This type of relational interpretation was suggested by Heller 2002 following Partee and Borschev 2001, 2003 and Vikner and Jansen 2002, as a means of coercing sortal nouns to a relational interpretation. Thus a noun such as *car*, or *gown*, which is basically sortal rather than relational, can be coerced to a relational interpretation which involves one of the qualia relations, such as *use*, *inclusion*, *authorship*, but it cannot be coerced to denote a relation which happens to be salient in the context, such as *betting on*, *placing an order for* etc. The latter can only be expressed by the less cohesive periphrastic possessive construction:

- |         |                                                                                                                |                                                                                                                                     |
|---------|----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| (17) a. | <i>mexonit ha-šaxen</i><br>car-CS the-neighbour<br><br>'the neighbour's car'<br>(the car he uses)              | b. <i>ha-mexonit šel ha-šaxen</i><br>the-car of the-neighbour<br><br>'the neighbour's car'<br>(could be the car he bet on)          |
| (18) a. | <i>glimat ha-me'acev</i><br>gown-CS the-designer<br><br>'the designers' gown'<br>(he wears it/ he designed it) | b. <i>ha-glima šel ha-me'acev</i><br>the-gown of the-designer<br><br>'the designer's gown'<br>(he may have ordered it for his wife) |

## 2.2 A relational analysis of the adjectival construct

### 2.2.1 Relational adjectives

The surprising characteristic of adjectival constructs discussed in section 1, i.e. the predication of the head to its annex, is found in adjectival constructs headed by *property adjectives*, adjectives which denote properties (one-place predicates) such as *long*, *round*, *high* etc. This characteristic is not found in adjectival constructs headed by *relational adjectives*, adjectives which denote relations (two-place predicates), mentioned in fn.2.

In the realm of nouns, I have assumed that the CS morpheme only attaches to relational nouns (including sortal nouns coerced to a relational interpretation). Let us now assume that this generalization holds of adjectives as well: the CS morpheme only attaches to relational adjectives. This easily accounts for relational adjectives, as as *soaked (with)* and *abound (with)* mentioned in fn.2:

- |         |                                                                                                        |                                                                                                        |
|---------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| (19) a. | <i>mimxata sfugat dma'ot</i><br>handkerchief soaked-CS tears<br><br>'a handkerchief soaked with tears' | b. <i>mišpaxa merubat yeladim</i><br>family abounding-CS children<br><br>'a family with many children' |
|---------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|

The adjective interpretation is applied to its complement/adjunct, yielding a property of the modified noun:

(20) Given  $\text{Adj}_{\langle e, et \rangle}$  and  $\text{DP}_e$ , the interpretation of the construct  $[\text{Adj}_{\text{CS}} \text{DP}]$  is as follows:

$$[\text{Adj}_{\text{CS}} \text{DP}]_{\text{et}} \sim \lambda y \text{Adj}(\text{DP})(y)$$

As was shown in footnotes 2 and 4 above, constructs headed by relational adjectives form ordinary adjectival predicates not restricted by the properties characteristic of constructs headed by property (non-relational) adjectives such as our original example in (5c), repeated below in (21):

- (21) *yalda arukat cavar*  
 girl long-CS neck  
 ‘a girl whose neck is long’

These two types of adjectival constructs are very different. Yet, as noted by Bliboim 2000, it happens that the same adjective can be used in the two different constructs, one where it has a relational interpretation and is predicated of the noun modified by the construct, and another where it is a property (non-relational) and is predicated of its annex. The minimal pairs in (22) – (25) were found on the net:<sup>7</sup>

- |          |                                                                                                                |    |                                                                                             |
|----------|----------------------------------------------------------------------------------------------------------------|----|---------------------------------------------------------------------------------------------|
| (22) a.  | <i>érec šesu'at milxamot</i><br>country split-CS wars<br>‘a country split by wars’                             | b. | <i>tinóqet šesu'at xex</i><br>baby split-CS palate<br>‘a baby with cleft palate’            |
| (23) a.  | <i>érec srufat eš</i><br>country burnt-CS fire<br>‘country burnt by fire’                                      | b. | <i>érec srufat děše</i><br>country burnt-CS grass<br>‘earth whose grass is burnt’           |
| (24) a.  | <i>yalda srutat cipornáyim</i><br>girl scratched-CS nails<br>‘girl scratched by nails’                         | b. | <i>yalda srutat birkáyim</i><br>girl scratched-CS knees<br>‘girl whose knees are scratched’ |
| (25) a.  | <i>sarim xavutey mexa'a</i><br>ministers hit-CS protest<br>‘ministers hit by protest’                          | b. | <i>rexavim xavutey šási</i><br>cars beaten-CS frame<br>‘cars whose frame is beaten’         |
| (25') a. | <i>sarim mele'ey xašivut acmit</i><br>ministers full-CS importance self<br>‘ministers full of self importance’ | b. | <i>sarim mele'ey guf</i><br>ministers full-CS body<br>‘overweight ministers’                |

<sup>7</sup> Examples can even be found where the same construct can be analysed both ways:

- (i) *paqax tisa mehir maxšava hinxit matos im hoda'ot teqst*  
 controller flight fast-CS thinking landed plane with messages text  
 ‘An air traffic controller who was quick to think/whose thinking was fast, landed an airplane by means of text messages.’
- (ii) *mila neditat šimuš*  
 word rare-CS use  
 ‘a word rare with regard to use/ whose use is rare.’

### 2.2.2 Property adjectives

Turning now to the construct-state interpretation of property (non relational) adjectives, I would like to make a proposal following Doron and Meir 2010. The semantics in (20) above does not apply to property adjectives such as *red*, *long*, *round*, etc, which are not relational. I make the additional assumption that property adjectives cannot be coerced to a relational reading. As a result, a derivation with a CS property adjective crashes. There is, though, a possible way of rescuing such a derivation. It can be rescued by a rebracketing which combines the CS morpheme with the annex rather than the adjectival head (requiring the annex to be a noun rather than a noun phrase, hence the lack of recursiveness of this construction):

$$(26) \quad \text{Given a property Adj CS-head and an annex N, then rebracket} \\ \llbracket [\text{Adj CS}] \text{ N} \rrbracket \Rightarrow \llbracket \text{Adj} [\text{CS N}] \rrbracket$$

Following the rebracketing in (26), the semantics interprets the CS morpheme as being attached to N. I repeat in (27) the interpretation of the nominal construct head based on (13) above, where N is (or is coerced to be) of the relational type  $e, et$ :

$$(27) \quad \llbracket \text{CS N}_{\langle e, et \rangle} \rrbracket_{\langle e, e \rangle} \sim \lambda z. \iota y \text{ N}(z)(y)$$

We can now combine the interpretations of  $\text{Adj}_{\langle e, t \rangle}$  and  $\llbracket \text{CS N} \rrbracket_{\langle e, e \rangle}$  to derive an AP of *et*, by using the ordinary rule of function composition  $\circ$ :<sup>8</sup>

$$(28) \quad \llbracket \text{Adj}_{\langle e, t \rangle} \circ \llbracket \text{CS N} \rrbracket_{\langle e, e \rangle} \rrbracket_{\langle e, t \rangle} \sim \lambda x. \text{Adj}_{\langle e, t \rangle} (\llbracket \text{CS N} \rrbracket (x)) \\ = \lambda x. \text{Adj}_{\langle e, t \rangle} (\iota y \text{ N}(x)(y))$$

The interpretation of the adjectival construct is derived by composing two functions: the ordinary interpretation  $\text{Adj}_{\langle e, t \rangle}$  of the adjective, together with the nominal construct interpretation  $\text{N}_{\langle e, e \rangle}$  of the adjective's annex N. As a result, the adjectival construct *arukat cavar* ‘long-CS neck’ in (21) holds of a girl iff *long* holds of the nominal construct *cvar ha-yalda* ‘neck-CS the-girl’ (the girls’ neck). This corresponds to our intuitive understanding of the adjectival construct.

The present analysis does not postulate a special metonymic interpretation of adjectives in the construct (as do Halevy 2007, Rothstein 2014), or any other special interpretation (Kim 2002), but rather assumes that adjectives are interpreted in the construct exactly as they are elsewhere. The only difference is that in constructs (both adjectival and nominal), the interpretation of the head is first combined with the interpretation of the annex. This straightforwardly follows from the fact that the head and the annex form a phrase.

I now show how the present analysis accounts for all the characteristics of adjectival constructs headed by a property adjective:

-- The annex cannot have complements or adjuncts, or be modified by adjectives, prepositional phrases and quantifiers (as shown in (9) and (10) above). Our account relies on the

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<sup>8</sup> *Function composition* is the pointwise application of one function to another to produce a third function. For instance, the functions  $f: X \rightarrow Y$  and  $g: Y \rightarrow Z$  can be *composed* to yield a function which maps  $x$  in  $X$  to  $g(f(x))$  in  $Z$ . The resulting *composite* function, notated  $g \circ f: X \rightarrow Z$  is defined by  $\lambda x. (g \circ f)(x) = \lambda x. g(f(x))$

relational nature of the annex, whereas these modifiers cannot combine with relational nouns unless those are first shifted to the sortal type *et* by existentially quantifying one argument.

-- The annex can nevertheless be complex, e.g. the conjunction of two nouns, as noted by Hazout. Our account relies on the fact that conjunction does not change the type of the conjuncts.

- (29) *ha-yalda šxorat ha-se'ar ve ha-eynayim*  
 the girl black-CS the hair and the eyes  
 'the girl whose hair and eyes are black' (Hazout 2000)

Moreover, modifiers which apply to the whole AP are possible.

- (30) *xašiva me'od arukat tvax*  
 thinking very long-CS term  
 'very long term thinking'

-- The relational noun in the annex is moreover interpreted as functional. For example, *neck* in *yalda arukat cavar* in e.g. (21) above is not only relational but functional: *long* is predicated of the unique neck of the girl. This definite interpretation of the annex is not merely a reflection of world knowledge regarding the uniqueness of an individual's neck. Rather it is part of the interpretation of the construct. Definiteness also holds for an annex where there is no *a priori* unique denotation, such as *dress* in (8) above. *yalda adumat simla* in (8) is interpreted as 'a girl whose dress is red', not as 'a girl who has a red dress', though it is the latter interpretation which is assigned by Rothstein 2014. Consider the example in (31) below. It is not enough for some of the girl's teeth to be white; rather all of her (salient) teeth must be white. The annex is always interpreted as definite. (32) is not a real counterexample, though it allows for only some of the bus windows to be broken. As noted by Yoon 1996, the truth conditions of definite plurals vary with what he calls the total vs. partial nature of their predicate: *The glasses are clean* requires all the glasses to be clean, whereas *The glasses are dirty* only requires some of the glasses to be dirty. The adjective *broken* is a partial predicate, like *dirty*, hence the partial interpretation of the definite annex in (32).

- (31) *yalda livnat šináyim*  
 girl white-CS teeth  
 'a girl whose teeth are white.'
- (32) *ótobus švur xalonot*  
 bus broken-CS windows  
 'a bus whose windows are broken.'

The definite (functional) interpretation of the annex is crucial for the interpretation of the adjectival construct in (28), as the adjective is predicated of an individual.

-- The present account allows the attested lexical variety of relational nouns in the annex (such as body/ spatial parts, abstract attributes, nominalizations) unlike Siloni 2002 and Rothstein 2014 whose accounts are limited to mereological part of the modified noun:

- |         |                                                                                       |    |                                                                          |
|---------|---------------------------------------------------------------------------------------|----|--------------------------------------------------------------------------|
| (33) a. | <i>til tlul maslul</i><br>missile steep-CS trajectory<br>'a steep-trajectory missile' | b. | <i>sxirut qicrat tvax</i><br>rental short-CS term<br>'short-term rental' |
|---------|---------------------------------------------------------------------------------------|----|--------------------------------------------------------------------------|

- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>c. <i>motívim behirey céva</i><br/>motifs light-CS color<br/>'light-color motifs'</p> <p>e. <i>adam rax dibur</i><br/>person soft-CS speech<br/>'a soft-spoken person'</p> <p>g. <i>yeynot mufrexey mexir</i><br/>wines outlandish-CS price<br/>'wines with outlandish price'</p> <p>i. <i>cofim gvohey cipyot</i><br/>spectators high-CS expectations<br/>'high-expectation spectators'</p> <p>k. <i>mesaper qal ktiva</i><br/>narrator easy-CS writing<br/>'a narrator whose writing is easy'</p> | <p>d. <i>sixot ramot déreg</i><br/>discussions high-CS echelon<br/>'high-echelon discussions'</p> <p>f. <i>adam qtan emuna</i><br/>person little-CS faith<br/>'a skeptical person'</p> <p>h. <i>ra'ayonot qaley bicúa'</i><br/>ideas easy-CS implementation<br/>'ideas easy to implement'</p> <p>j. <i>masax ópti mehir tguva</i><br/>screen optic fast-CS response<br/>'a fast-response optical screen'</p> <p>l. <i>medina prucat xoq</i><br/>state breached-CS law<br/>'state with breached law'</p> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

-- Nevertheless there are lexical restrictions on the annex. For example, the relation in the annex cannot be a kinship term (Glinert 1989). This is true even in case this relation is a function:

- (34) \* *yalda yefat em*  
girl pretty-CS mother  
'a girl whose mother is pretty'

I rely on the distinction introduced by Doron and Meir 2014 between inter-individual and intra-individual relations. Inter-individual relations are: kinship (mother, uncle...), socially defined (teacher, student), institutionally defined (captain (of a ship), capital (of a country)), telic/agentive qualia based (car/owner, picture/author). Intra-individual relations include part-whole, intrinsic properties, properties derived as nominalized verbs. Only the latter type of annex is found in adjectival constructs:

- (35) a. \* *ha-šaxen šxor ha-mexonit*  
the-neighbour.M black-CS the car  
'the neighbour whose car is black' (Hazout 2000)
- b. *ha-me'acev šxor ha-glima*  
the-designer black-CS the gown  
'the designer whose gown is black'  
(the one he wears, **not** one he designed, cf. 18a)

The composition of the two separate functions  $\text{Adj}_{\langle e,t \rangle}$  and  $\text{N}_{\langle e,e \rangle}$  within the interpretation of a single adjectival construct in (28) above accounts for the intra-individual restriction on the relation N, as this restriction enables both Adj and N to be defined on a single domain where the AP (the adjectival construct) is defined. Clearly, both a phrase and its head must have the same domain.

### 2.2.3 Nominal constructs with intra-individual relations

The restriction to intra-individual relations found in adjectival constructs may also account for a phenomenon observed by Borer 1984 regarding nominal constructs. Borer observed that some nominal constructs, but not others, allow the possessive affix of the annex to be rebracketed as the possessor of the construct as a whole:

- (36) a. *[signon ktivat]-o šel agnon*  
 style-CS writing-his of Agnon  
 ‘Agnon's style’ (though the suffix *-his* is attached to *writing* and not to *style*)
- b. *[curat guf]-o šel ha-dolfin*  
 curat-CS body-its of the-dolphin  
 ‘the dolphin's shape’  
 (though the suffix *-its* is attached to *body* and not to *shape*)

As far as I can tell, this is only possible for nominal constructs where the annex denotes an intra-individual relation. As in the case of adjectival constructs, nominal constructs with an intra-individual annex allow arguments of the annex to be treated as arguments of the whole construct. The derivation follows the same steps as that of the adjectival construct. The head of the construct, here a noun, composes with the function denoted by the relational annex, thus being able to postpone the annex's combination with the possessive pronoun *his*:

- (37) a.  $\text{signon-CS} \sim \lambda u. \iota z \text{ style } (u)(z)$   
 b.  $\text{ktivat-CS} \sim \lambda v. \iota y \text{ writing } (v)(y)$   
 c.  $[\text{N}_1\text{-CS} \circ \text{N}_2\text{-CS}] \sim \lambda x. \text{N}_1([\text{N}_2(x)])$   
 d.  $[\text{signon-CS} \circ \text{ktivat-CS}] \sim \lambda x. \iota z \text{ style } [(\iota y \text{ writing } (x)(y))] (z)$   
 e.  $[\text{signon-CS} \circ \text{ktivat-CS}] (\text{his}) \sim \iota z \text{ style } [(\iota y \text{ writing } (\text{his})(y))] (z)$

In examples where the annex is not an intra-individual relation, the possessive suffix of the annex can only be interpreted as the possessor of the annex alone, not of the entire construct:

- (38) a. *signon [beyt-o šel agnon]*  
 style-CS house-his of Agnon  
 ‘the style of Agnon's house’  
 (it is the house which is Agnon's, not the house's style)
- b. *mexir [sifriyat-o šel agnon]*  
 price-CS library-his of Agnon  
 ‘the price of Agnon's library’  
 (it is the library which is Agnon's, not the library's price)

The difference in structure between (36) and (38) is demonstrated by the difference in acceptability of (39) vs. (40). This difference shows that the constituent marked in the possessive noun phrase (36) is also found in the possessive sentence (39). There is no such constituent in (38), and the attempt to construct it in (40) results in unacceptability under the intended reading:

- (39) a. *yeš le-agnon [signon ktiva]*  
 is to-Agnon style-CS writing  
 ‘Agnon has a style (of his writing).’
- b. *yeš l-a-dolfin [curat guf]*  
 is to-the-dolphin shape-CS body  
 ‘The dolphin has a shape (of his body).’
- (40) a. # *yeš le-agnon [signon bayit]*  
 is to-Agnon style-CS house  
 ‘Agnon has a style (of his house).’
- b. # *yeš le-agnon [mexir sifriya]*  
 is to-Agnon price-CS library  
 ‘Agnon has a price (of his library).’

If the reinterpretation of the possessive pronoun is indeed conditioned by the intra-individual denotation of the annex, we predict this reinterpretation to be possible for all nominal constructs derived from adjectival constructs, since the relation denoted by the annex in adjectival constructs is always intra-individual. I illustrate with the nominalization of (33j):

- (41) *[mehirut tguvat]-o šel ha-masax*  
 speed-CS response-its of the screen  
 ‘the reaction speed of the screen’

I have shown that like in the case of adjectival constructs, nominal constructs with intra-individual annexes allow arguments of the annex to become arguments of the whole construct. This is true for many construct-state nouns not derived from adjectives, and cannot be reduced to a special metonymous interpretation of adjectives. Rather, it indicates that both in the domain of adjectives and of nouns, new predicates can be formed based on function composition of the head with an intra-individual relation. It thus lends support to the analysis of the adjectival construct proposed here.

### 3 A previous analysis of the adjectival construct

The only previous analysis I am aware of for the adjectival construct which also treats it as a sub-case of the nominal construct is that of Goldenberg 1995, 2002.

Goldenberg starts from the assumption that the interpretation of adjectives is more complex than that of nouns. Both nouns and adjectives denote individuals, yet adjectives do so indirectly, by naming their qualities. Adjectives are thus semantically complex, and their meaning consists of two parts. One part is an abstract noun naming a quality. The other part is an element which makes the abstract noun into an attribute. I will refer to this element as *of<sub>Attr</sub>* (Goldenberg calls it a pronoun). It is *of<sub>Attr</sub>* which allows the abstract noun naming a quality to actually apply to the individual that the adjective is attributed to. Instead of the more familiar interpretation (42a)

which treats *wise* as a basic property, Goldenberg suggests the interpretation in (42b), where *wise* is the property ‘has wisdom’ constructed by *of<sub>Attr</sub>* from the quality WISDOM.<sup>9</sup>

- (42) a. *xaxam* ‘wise’  $\sim\rightarrow \lambda x. x$  is wise  
 b. *xaxam* ‘wise’  $\approx$  *of<sub>Attr</sub>* WISDOM  $\sim\rightarrow \lambda x. x$  is of WISDOM

The adjective can be attributed to a noun, yielding ‘man who has wisdom’:

- (43) *iš xaxam* ‘wise man’  $\approx$  MAN [*of<sub>Attr</sub>* WISDOM]  $\sim\rightarrow \lambda x. x$  is MAN &  $x$  is of WISDOM

According to Goldenberg, attribution is not exclusive to adjectives. In exactly the same fashion as an adjective, the annex of a construct denotes an attribute of the CS noun:

- (44) [N<sub>CS</sub> NP]  $\approx$  [N *of<sub>Attr</sub>* NP]  $\sim\rightarrow \lambda x. x$  is N &  $x$  is of NP

To give one of Goldenberg's examples, we get the same interpretation for the construct *iš xoxma* ‘man-CS wisdom’ (man of wisdom) in (45) as for *iš xaxam* ‘wise man’ in (43) above:

- (45) *iš xoxma*  $\approx$   
 [MAN<sub>CS</sub> WISDOM]  $\approx$  [MAN *of<sub>Attr</sub>* WISDOM]  $\sim\rightarrow \lambda x. x$  is MAN &  $x$  is of WISDOM

We now turn to adjectival constructs, such as *yefe eynáyim* ‘whose eyes are beautiful’:

- (46) *yefe eynáyim* ‘beautiful-CS eyes’  $\approx$  [*of<sub>Attr</sub>* BEAUTY<sub>CS</sub>] EYES

Like the adjective *wise*, the adjective *beautiful* in (46) is a complex made up of *of<sub>Attr</sub>* and an abstract quality, now marked with CS morphology. But a CS adjective cannot be interpreted together with an annex, here *eyes*. A construct is interpreted as attribution, and is therefore only interpretable when headed by a noun. Nouns take attributes. Adjectives *are* attributes, and as such do not *take* attributes. Thus this system too is faced with a bracketing paradox. The morphology brackets the quality noun together with *of<sub>Attr</sub>*. Yet, in order for the construct to be interpreted, the quality noun must first be bracketed with the annex, as follows:

- (47) *yefe eynáyim* ‘beautiful-CS eyes’  $\approx$  [*of<sub>Attr</sub>* BEAUTY]<sub>CS</sub> EYES  
 $\Rightarrow$  *of<sub>Attr</sub>* [BEAUTY<sub>CS</sub> EYES]  
 $\approx$  *of<sub>Attr</sub>* [BEAUTY *of<sub>Attr</sub>* EYES]

As a result, *of<sub>Attr</sub>* actually turns into an attribute not just the quality *beauty*, but the complex quality *beauty of eyes*. We now attribute this complex property to the noun *man*:

- (48) *iš yefe eynáyim*  $\approx$  MAN [*of<sub>Attr</sub>* [BEAUTY *of<sub>Attr</sub>* EYES]]  
 $\sim\rightarrow \lambda x. x$  is MAN &  $x$  is of [BEAUTY *of<sub>Attr</sub>* EYES]  
 $\approx$  ‘man who has beauty of eyes’

To conform with our intuitive understanding of the adjectival construct, the noun phrase in (48) should have the same interpretation as *a man of beautiful eyes*. Let us calculate the interpretation of the latter:

- (49) *iš šel eynáyim yafot*  $\approx$  MAN [*of<sub>Attr</sub>* [EYES [*of<sub>Attr</sub>* BEAUTY]]]  
 $\sim\rightarrow \lambda x. x$  is MAN &  $x$  is of [EYES [*of<sub>Attr</sub>* BEAUTY]]

<sup>9</sup> As Goldenberg does not formalize his analysis, I do my best to find an accurate representation of his semantics.

≈ ‘man who has eyes of beauty’

It is not clear to me whether *having beauty of eyes* is indeed equivalent to *having eyes of beauty*. The system does not entail this equivalence. The system also does not entail that the eyes in question are those of the individual having the quality *beauty of eyes*. Neither does it account for the restrictions on the adjectival construct, such as the restriction that the annex cannot be recursive or modified (cf. (9) and (10) above), and must be interpreted as definite (cf. (31) above).

Yet the analysis raises interesting fundamental issues regarding modification. Unlike Goldenberg, I do not think that the construct has the semantics of adjectival modification, but rather of function application. Examples such as *iš xoxma* ‘man-CS wisdom’ (man of wisdom), meaning *wise man*, are very a-typical, and mostly depend on bleached heads like *iš*. Typically constructs are interpreted as in *sifrey xoxma* ‘books-CS wisdom’ (books of wisdom, not *wise books*), where the annex is an argument (*content* in this case) of the head.

Many adjectives denote stage-level predicates, whereas the construct largely denotes individual-level predicates. For example, *yeladim acuvim* ‘sad children’ may hold temporarily, whereas *yaldey écev* ‘children of sadness’, to the extent that it is grammatical, seems to involve a permanent situation:

- |         |                       |      |                       |
|---------|-----------------------|------|-----------------------|
| (50) a. | <i>yeladim acuvim</i> | b. ? | <i>yaldey écev</i>    |
|         | children sad          |      | children-CS sadness   |
|         | ‘sad children’        |      | ‘children of sadness’ |

Finally, there is in general no way of reducing adjectives to abstract qualities, which is why natural language encodes *a person's being wise* differently from *a person's wisdom*. Moreover, abstract qualities are not what most adjectives are about. A dry towel is not a towel which has dryness. An open door is not a door which has openness. A broken window is not a window which has brokenness. Yet it is true that an open door has an opening, and a broken window has a break, pointing perhaps to more concrete tropes for the analysis of stage level adjectives.

## 4 Conclusion

I have argued that the adjectival construct exemplifies the same construction as the nominal construct. Yet we encountered many differences between them:

- The nominal construct is headed by a relational noun, but there are many examples whereas the adjectival construct is not headed by a relational adjective.
- The head of the adjectival construct is often predicated of the annex, whereas the head of the nominal construct never is.
- The nominal construct is recursive, whereas the adjectival construct is not.
- The annex of the nominal construct is semantically unrestricted, whereas that of the adjectival construct is restricted to intra-individual relations.
- The annex of the adjectival construct is invariably definite irrespective of its state morphology, whereas the definiteness value of the annex of the nominal construct varies with its state.

These many differences have in the past discouraged a unified analysis of the adjectival and nominal construct. Instead, there have been approaches where the construct-state adjective was

viewed as an ordinary attribute of the noun modified by the construct, disregarding its special state morphology. Other analyses have taken into account the construct-state morphology of the adjective, yet have not related its interpretation to the construct in general. Rather, construct-state morphology of the adjective was interpreted as the marking of a special metonymic type of modification, unrelated to the semantics of construct-state morphology of the noun.

The present analysis has shown that it is possible to view the adjectival and nominal constructs as tokens of the same construction, and nevertheless to account for the differences between them. In both cases, construct-state morphology signals the relational nature of the head that it marks, be it noun or adjective. Beyond that, there is no special interpretation of construct-state morphology. But when the head of the construct cannot be coerced to a relational interpretation, there is morphological rebracketing of the construct-state morpheme from the head to its nominal annex. Semantically, this enables the interpretation of the construct through the functional composition of the head and the relational annex.

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## References

- Berman, Ruth A. 1978. *Modern Hebrew Structure*. Tel-Aviv: University Publishing Projects.
- . 1988. “Language knowledge and language use: Binominal constructions in Modern Hebrew”. *General Linguistics* 28: 261–285.
- Bliboim, Rivka. 2000. On adjectival annexion and alternative constructions in the different levels of Hebrew [in Hebrew]. *Leshonénu* 63: 81-105.
- Borer, Hagit. 1984. *Parametric syntax: Case studies in Semitic and Romance languages*. Dordrecht: Foris.
- . 1988. “On the morphological parallelism between compounds and constructs”. *Yearbook of Morphology 1*, ed. by G. Booij and J. van Marle, 45–65. Dordrecht: Foris.
- . 1996. “The construct in review”. *Studies in Afroasiatic grammar*, ed. by Jacqueline Lecarme, Jean Lowenstamm, and Ur Shlonsky, 30–61. The Hague: Holland Academic Graphics.
- . 1999. “Deconstructing the construct”. *Beyond principles and parameters*, ed. by Kyle Johnson and Ian Roberts, 43–98. Dordrecht: Kluwer.
- . 2009. “Compounds: The view from Hebrew”. *The Oxford handbook of compounding*, ed. by Rochelle Lieber and Pavol Štekauer, 491–511. Oxford: Oxford University Press.
- Coffin, Edna A. and Shmuel Bolozky. 2005. *A reference grammar of Modern Hebrew*. Cambridge: Cambridge University Press.
- Danon, Gabi. 2001. “Syntactic definiteness in the grammar of Modern Hebrew”. *Linguistics* 39:1071–1116.
- . 2008. “Definiteness spreading in the Hebrew construct state”. *Lingua* 118:872–906.

- . 2010. “The definiteness feature at the syntax-semantics interface”. *Features: Perspectives on a key notion in linguistics*, ed. by Anna Kibort and Greville G. Corbett, 143–165. Oxford: Oxford University Press.
- Dobrovie-Sorin, Carmen. 2000. (In)definiteness spread: from Romanian genitives to Hebrew construct state nominals. In Virginia Motapanyane (ed.) *Comparative Studies in Romanian Syntax*. Elsevier, Oxford. 177–226.
- . 2003. From DPs to NPs: A bare phrase structure account of genitives. In: Martine Coene and Yves D’hulst (eds.) *From NP to DP, volume 2: The Expression of Possession in Noun Phrases*. Amsterdam: John Benjamins. 75–120.
- Doron, Edit and Irit Meir. 2010. “Definiteness in standard and colloquial Hebrew”, talk at BAALL, University Paris 7.
- . 2013. “Construct State: Modern Hebrew”. In G. Khan (ed.) *The Encyclopedia of Hebrew Language and Linguistics*, Vol I, 581-9, Leiden: Brill.
- . 2014. “Amount definites”. *Recherches Linguistiques de Vincennes* 42, 139-165.
- Engelhardt, Miriam. 1998. “The syntax of nominalized properties”. PhD dissertation, The Hebrew University of Jerusalem.
- . 2000. “The projection of argument-taking nominals”. *Natural Language and Linguistic Theory* 18:41–88.
- Faust, Noam. 2011. “Forme et fonction dans la morphologie nominale de l’hébreu moderne”. PhD dissertation, Université Paris Diderot.
- Gai, Amikam. 1977. Adnominal attributes in Semitic languages. PhD dissertation, the Hebrew University of Jerusalem. [in Hebrew]
- Glinert, Lewis. 1989. *The grammar of Modern Hebrew*. Cambridge: Cambridge University Press.
- Goldenberg, Gideon. 1995. Attribution in Semitic Languages. *Langues Orientales Anciennes: Philologie et Linguistique*. n° 5-6: 1-20.
- Goldenberg, Gideon. 2002. Two Types of Phrase Adjectivization. in Werner Arnold and Hartmut Bobzin (eds.) *Festschrift für Otto Jastrow*. Wiesbaden: Harrassowitz Verlag. 193-208.
- Halevy, Rivka. 2007. 'iyun be herkevey to'ar aqifim uvxinat tifqudam be-ivirit shel yameynu' in A. Maman, S. Fassberg and Y. Breuer (eds.), *Sha'arei Lashon: Studies in Hebrew, Aramaic and Jewish Languages Presented to Moshe Bar-Asher, 2007*, Jerusalem: Bialik, Vol III.
- Hazout, Ilan. 1991. “Verbal nouns: Theta-theoretic studies in Hebrew and Arabic”. PhD dissertation, University of Massachusetts, Amherst.
- . 1995. “Action nominalization and the Lexicalist Hypothesis”. *Natural Language and Linguistic Theory* 13:355–404.
- . 2000. “Adjectival genitive constructions in Modern Hebrew”. *The Linguistic Review* 17:29–52.
- Heller, Daphna. 2002. “Possession as a lexical relation: Evidence from the Hebrew construct state. *Proceedings of WCCFL 21: Proceedings of the 21st West Coast Conference on Formal Linguistics*, ed. by Line Mikkelsen and Christopher Potts, 127–140. Somerville, Massachusetts: Cascadilla.
- Kim, Jiyung. 2002. “Adjectives in construct”. *Sinn und Bedeutung VI: Proceedings of the Sixth Annual Meeting of the Gesellschaft für Semantik*, ed. by Graham Katz, Sabine Reinhard, and Philip Reuter, 185–200. Osnabrück: University of Osnabrück.
- Kremers, Joost. 2005. “Adjectival constructs in Arabic”. *Linguistische Berichte* 203:331–348.

- Meir, Irit and Edit Doron. 2013. "Degrammaticalization as linguistic change: The case of the definite article in Modern Hebrew" (in Hebrew). *Leshonenu* 75.2-3, 317-358.
- Partee, Barbara H. and Vladimir Borschev. 2001. "Some puzzles of predicate possession". in Robert M. Harnish and István Kenesei (eds.) *Perspectives on Semantics, Pragmatics and Discourse: A Festschrift for Ferenc Kiefer*. Amsterdam: John Benjamins. 91-117.
- Partee, Barbara H. and Vladimir Borschev. 2003. "Genitives, relational nouns, and argument-modifier ambiguity". In E. Lang, C. Maienborn and C. Fabricius-Hansen (eds.): *Modifying Adjuncts (Interface Explorations 4)*. Berlin: Mouton de Gruyter. 67-112.
- Ravid, Dorit and Yitzhak Shlesinger. 1995. "Factors in the selection of compound-type in spoken and written Hebrew". *Language Sciences* 17:147-179.
- Ritter, Elizabeth. 1988. "A head movement approach to construct-state noun phrases". *Linguistics* 26:909-929.
- Rosén, Haiim. 1957. *ivrit tova: ivrit betaxbir*. Jerusalem: Kiryat Sefer.
- Rothstein, Susan. 2009. "Individuating and measure readings of classifier constructions: Evidence from Modern Hebrew". *Brill's annual of Afroasiatic languages and linguistics* 1:106-145.
- . 2014. "Adjectivally headed construct states and the semantics of metonymic predication". to appear in *Lingua*.
- Shlonsky, Ur. 2004. "The form of Semitic noun phrases". *Lingua* 114:1465-1526.
- Siloni, Tal. 2000. "Nonnominal constructs". *Research in Afroasiatic Grammar* 2, ed. by Jacqueline Lecarme, Jean Lowenstamm, and Ur Shlonsky, 301-323. Amsterdam: John Benjamins.
- . 2001. "Construct states at the PF interface". *Linguistic variation yearbook vol. 1*, ed. by Pierre Pica and Johan Rooryck, 229-266. Amsterdam: John Benjamins.
- . 2002. "Adjectival constructs and inalienable constructions". *Themes in Arabic and Hebrew syntax*, ed. by J. Ouhalla and U. Shlonsky, 161-187. Dordrecht: Kluwer.
- . 2003. "Prosodic case checking domain: The case of constructs". *Research in Afroasiatic Grammar* 2, ed. by Jacqueline Lecarme, 481-510. Amsterdam: John Benjamins.
- Vikner, Carl and Per Anker Jensen. 2002. "A semantic analysis of the English genitive. Interaction of lexical and formal semantics." *Studia Linguistica* 56: 191-226.
- Yoon, Youngeun. 1996. Total and partial predicates and the weak and strong interpretations. *Natural Language Semantics* 4: 217-236.