The Clausal Shell of Hebrew ‘shel’

On relational noun predicates, reflexive pronouns and the attributive preposition ‘shel’ in Hebrew

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1. Introduction

This paper discusses the manifestation in Hebrew of syntactic properties of the relationship between relational nouns such as ‘xaver’, ‘ax’, ‘maasik’ (friend, brother, employer) and the nouns they thematically relate to, a relationship typically conveyed in Hebrew by the preposition ‘shel’ (of), like any other attributive relationship between two nouns. This preposition creates a maximal projection embedding the thematically related noun, which can occupy a position within the NP projected by the noun it relates to.

Unlike non-relational nouns, whose attributive relationship with another noun is claimed to always be of the type head-adjunct, relational nouns may relate to other nouns in a head-complement relationship. It will be claimed, however, that a head-complement relationship, and the assignment of a thematic role, characterizes only relational nominal predicates (i.e. when the relational noun is the predicate of a verb-less sentence), and that, when a relational nouns is an argument of a verb, the attributive relationship to other nouns is executed via adjunction, and without the assignment of thematic role in the strict sense. This structural difference is manifested by the A’-movement behaviours of the thematically related noun.

Yet the main claim refers not to the structural properties of the thematically related noun, but to the structural properties of the attributive preposition ‘shel’. It will be shown that the differences between relational and non-relational nominal predicates, taken together with the differences between predicate and argument status of a non-relational noun, require that ‘shel’ be split to two separate entities, one is a ‘bare-shel’, projecting a PP only, while the other is a ‘clausal-shell-shel’, projecting a CP encapsulating the PP. The bare preposition always appears with relational nominal predicates, while the clausal-shelled preposition appears with non-relational nominal predicates and with nominal arguments. The presence vs. absence of the
clausal shell of ‘shel’ explains the differences in properties of local binding of a pronoun embedded in the PP, which, it will be shown, cannot be explained by the syntactic position the pronoun occupies. Direct overt evidence for the difference between the two types of ‘shel’ is provided in the form of ‘asher le’, a clausal variant of ‘shel’, which is compatible only with the adjunct type of ‘shel’.

2. Assumptions
The following (rather minimal) assumptions are made:

Nominal head movement: It is generally assumed that, in Hebrew, the head of an NP moves to a functional projection (probably spec-DP). This explains post nominal adjectives in Hebrew, as well as the intrusion of nominal adjectives between the nominal head and all other constituents within the NP. This assumption remains implicit throughout the paper and adjectival adjuncts are excluded from the data and receive no attention. The reader should simply assume that an adjective can intrude between the raised nominal head and the other, NP-internal constituents, without any effect on the analysis.

Lexical specification of clausal complements: It is assumed that clausal complements are licensed only by positive lexical specification, characterizing only a specific class of lexical entities such as the verb say or the noun claim. Other lexical entries cannot take a clausal complement and as a result cannot assign a thematic argument to a clausal complement.

CP as a barrier for local binding: It is assumed that, in Hebrew, all CPs are barriers for local binding. For this purpose, the reader may simply assume that CPs lacking an overt subject have a PRO in spec-TP position, and that every CP contains a TP, thus the top-most binding element within a CP is always the element in spec-TP. For display purposes, however, this latter elaboration is ignored.

3. Relational Nouns in Hebrew

3.1 Survey of Properties of Relational Nouns

3.1.1 Scope
Hebrew has several types of verb-less sentences, including, among others (optional copulas are in parentheses):

(1) a. Subject-less: (ze) {tov/layla/lifney shmone} axshav
    (it) {good/night/before eight} now
    = It is {good/night/before eight} now.
b. Equative: moshe katsav (hu) nesi ha-medina
Moshe Katsav (he) president the state
=Moshe Katsav is the president of the state.

c. Predicative: dana (hi) mehandeset/shmena/bli oto
Dana (she) {engineerFem/fatFem/without a car}
=Dana is {an engineer/fat/without a car}

Such sentences are interpreted as referring to the present. Past and future interpretations require inflected forms of the auxiliary verb lihyot (to be):

(2) a. {haya/ihye} tov axshav
{was3SgMasc/will-be3SgMasc} good now
=It {was/will-be} good now.

b. moshe katsav haya/ihye nesi ha-medina
Moshe Katsav {was3SgMasc/will-be3SgMasc} president the state
=Moshe Katsav {was/will be} the president of the state.

c. dana hayta/tihye mehandeset
Dana was3SgFem/will-be3SgFem engineerFem
Dana was an engineer

This paper deals with a sub-type of the latter, namely predicative verb-less sentences with a relational nominal predicate that may take an internal argument. The model sentence will be:

(3) dan xaver shel tal
Dan friend of Tal
=Dan is a friend of Tal / Dan is Tal’s friend

3.1.2 Relational vs. Non-relational Nouns

First, it should be established that the syntactic argument of the attributive preposition ‘shel’ (of) is indeed a thematic argument of the relational nominal predicate ‘xaver’ (friend). There are sentences whose surface form seem identical, where the attributed noun is essentially the possessor, or owner, of the (non-relational) nominal predicate:

(4) dan kelev/zamar shel tal
Dan dog/singer of Tal
=Dan is Tal’s dog/singer.

There seems to be an obvious difference, however, between the two types of nominal predicates, regarding the obligatory presence of the attributive PP:

(5) a. #dan xaver
#Dan friend
=Dan is a friend
b. dan kelev/zamar
    Dan dog/singer
    = Dan is a dog/singer

Thus, the attributive PP is rather obligatory with a relational nominal predicate but entirely optional with a non-relational one. The difference between these two types of sentences surfaces also when the attributive PP undergoes A’-movements for a WH-question or focus purposes:

(6) a. [shel mi]i dan xaver ti?
    [of whom]i Dan friend ti
    = Whose friend is Dan?

b. *[shel mi]i dan kelev/zamar ti?
    *[of whom]i Dan dog/singer ti
    = Whose dog/singer is Dan?

c. aval [shel tal]i dan (axen) xaver ti
    but [of Tal]i Dan (indeed) friend ti
    = But of Tal’s Dan is a friend (indeed)

d. *aval [shel tal]i dan (axen) kelev/zamar ti?
    *but [of Tal]i Dan (indeed) dog/singer ti
    = But of Tal’s Dan is a dog/singer (indeed)

In order to inquire about the attributive PP of the non-relational noun, the predicate must be pied-piped or, alternatively, the WH-phrase may remain in-situ. Both options are well-formed with the relational noun as well:

(7) a. [xaver shel mi]i dan ti? | dan xaver shel mi?
    [friend of whom]i Dan ti | Dan friend of whom
    = Whose friend is Dan?

b. [kelev/zamar shel mi]i dan ti? | dan kelev/zamar shel mi?
    [dog/singer of whom]i Dan ti | Dan dog/singer of whom
    = Whose dog/singer is Dan?

Partial or full WH-movement of the attributive PP is possible, in the case of the relational nominal predicate, from within an embedded clause:

(8) a. [shel mi]i dan omer [cp she- tal xaver/~kelev ti]?
    [of whom]i Dan says [cp that Tal friend/~dog ti]
    Whose friend/dog does Dan say that Tal is?

b. dan tohe [cp [shel mi]i tal xaver/~kelev ti]
    Dan wonders [cp [of whom]i Tal friend/~dog ti]
    Dan wonders whose friend/dog Tal is.

All these A’-movements are well-formed, in the case of the relational nominal predicate, when an auxiliary verb is added:
To summarize, relational nouns differ from non-relational nouns with regard to the behaviour of accompanying attributive PPs. The strict difference in the well-formedness of A’-movement of the attributive PP is essentially structural, that is, something in the syntactic structure of a non-relational noun accompanied by an attributive PP shells the attributive PP in an island-like manner, which is not true for an attributive PP accompanying a relational noun. As an initial intuition, the fact that the A’-moveable attributive PP is a rather obligatory accompaniment for a relational nominal predicate, while the non-A’-moveable attributive PP is optional with a non-relational nominal predicate seem to point to a complement vs. adjunct status of the attributive PP in the two difference contexts.

3.1.3 Relational Nouns in Predicate vs. Argument Status

The behaviour of a relational noun changes as a function of its status as predicate or argument. When a relational noun is an argument it assumes certain behaviours of non-relational nouns. Thus, the A’-movements of the attributive PP just demonstrated are ill formed when the relational noun is an. Intuitively, it seems that when this relational noun is a verbal argument and not a predicate, its attributive PP does not behave like its internal argument. Notice the correlation between the behaviour in (10b,10c,10d) below and (6b,6c,7b) above:

(10) a. dan pagash xaver shel tal
    Dan met friend of Tal
    =Dan met a friend of Tal

b. *[shel mi], dan pagash xaver t_i ?
   *[of whom], Dan met friend t_i
   =Whose friend did Dan meet?

c. *aval [shel tal], dan axen pagash xaver t_i
   *but [of Tal], Dan indeed met friend t_i
   =But of Tal’s Dan met a friend indeed
Interestingly, this difference between argument vs. predicate status of the relational noun is also manifested in the grammatical status of a reflexive pronoun as the complement of the attributive PP. Reflexive pronoun is licensed with the relational nominal predicate:

(11) a. dan xaver shel atsmo
    Dan friend of himself
    =Dan is a friend of himself

(12) ??dan pagash xaver shel atsmo
    Dan met friend of himself
    =Dan met a friend of himself

In (13a), it is reported that Dan met a friend of Dan’s, while according to (13b), Dan met a person who is characterized by self-friendliness. While none of these readings is categorically ill-formed, the first one is severely awkward, while in the second one it is doubtful whether awkwardness is syntactic or semantic-pragmatic. Indeed, substituting ‘xaver’ with ‘maasik’ does not change the status of the first reading, while the second, where Dan is reported to have met a person characterized by self-employment, seems to the author to be well-formed:

(14) a. ??dan x pagash maasik shel atsmo

In order to render the reading of (13a,14a) well-formed, the complement inside the PP must be a pronominal, rather than referential, NP. The reading of (13b,14b) disappears of course:

(15) a. dan_p xaver/maasik x shelo_p
    =Dan met a friend / an employer of his

Not surprisingly, co-reference between this pronominal NP and the subject is ill-formed when the sentence has a nominal predicate:

(16) *dan (haya) xaver shelo
    =Dan is a friend of his

Given these pronoun-binding-related contrasts, it seems that the difference between predicate vs. argument status of the relational noun has structural correlates. Thus, in sentences (11a,b) and (16), where there is a nominal predicate, the subject locally binds the complement of the attributive preposition ‘shel’, while in sentences (12-15), where the predicate is a verb, the subject fails to locally bind the complement of ‘shel’.

3.1.4 Relational Nouns - Summary

To summarize, two systematic dichotomies characteristic of relational nouns have been demonstrated, one between relational and non-relational nominal predicates, and the other between predicate vs. argument status of relational nouns. The former dichotomy is rather trivial, or at least predictable, given the difference in inherent argument structure of relational vs. non-relational noun. Yet the latter dichotomy is not so straightforward, in particular as certain behaviours of relational nouns as arguments seem to mimic those of non-relational noun, alluding to a common structural difference between these two on one side and relational nominal predicates on the other. The discussion that follows aims at exploring this structural difference.
3.2 Potential Structural Correlates of the Predicate vs. Argument Status of Relational Nouns

3.2.1 Position of the Head Noun

Some kind of structural difference is apparent when an intrusive temporal adverb is added. Consider the following sentences, taking into account that, if the adverbs were placed at the beginning or the end of the sentences or immediately after the subject, they would all be equally perfectly well-formed:

(17) a. dan xaver hayom shel tal
   Dan friend today of Tal
   =Today Dan is a friend of Tal

b. *dan zamar hayom shel tal
   *Dan singer today of Tal
   =Today Dan is a tenant of Tal

c. ??dan haya xaver etmol shel tal
   ??Dan was friend yesterday of Tal
   =Yesterday Dan was a friend of Tal

d. dan haya etmol xaver shel tal
   Dan was yesterday friend of Tal
   =Yesterday Dan was a friend of Tal

e. *dan pagash xaver etmol shel tal
   *Dan met friend yesterday of Tal
   =Yesterday Dan met a friend of Tal

f. dan pagash etmol xaver shel tal
   Dan met yesterday friend of Tal
   =Yesterday Dan met a friend of Tal

The well-formedness of (17a), compared to the ill-formedness of (17b,e) indicates that, when a sentence has a nominal predicate, this noun moves to a higher position, similar to a verbal head movement, but remains in-situ when it is an argument of a verbal predicate. The awkwardness, perhaps ungrammaticality, of (17c), indicates that the nominal predicate does involve movement, which is probably blocked by the presence of the auxiliary. However, it is not clear why this structural difference accompanying the predicate vs. argument position of the relational noun as illustrated by the grammaticality difference between (17a) and (17b,e), motivates the differences in reflexive vs. pronominal licensing demonstrated in sentences (11-16). Moreover, when sentences (11b), (16) and (13a) are modified by the introduction of an intrusive temporal adverb, to match the structure of (17d,f), their grammatical status remains the same:

(18) a. dan haya etmol xaver shel atsmo
Dan was yesterday friend of himself
=Yesterday Dan was a friend of himself

b. *dan, haya etmol xaver shelo
*Dan, was yesterday friend of him
=Yesterday Dan, was a friend of his

c. ??dan, pagash etmol xaver shel atsto
??Dan, met yesterday friend of himself
=Yesterday Dan, met a friend of himself

This implies that the dichotomy of presence vs. absence of local pronoun binding into the
attributive PP, which licenses, respectively, the reflexive and pronominal complements of ‘shel’, is
independent of and unrelated to the structural position of the relational noun. Hence the structural
correlate of the predicate vs. argument status of the relational noun must be sought elsewhere.

3.2.2 Position of the Attributive PP

The immediate, and intuitively more plausible, alternative would be the conjecture that there is
a structural difference in the position of the attributive PP. This intuition is supported by the
difference between the behaviour of the attributive PP with regard A’-movement in the two
constructions, as illustrated by sentences (6a), (6b) and (10b) repeated here:

(19) a. [shel mi], dan xaver t_i
[of whom], Dan friend t_i
=Whose friend is Dan?

b. [shel mi], dan *kelev/*zamar t_i
[of whom], Dan *dog/*singer t_i
=Whose dog/singer is Dan?

c. *[shel mi], dan pagash xaver t_i
*[of whom], Dan met friend t_i
=Whose friend did Dan meet?

Yet this conjecture, which might be true, nevertheless proves irrelevant, given the somewhat
surprising fact that the mere substitution of the reflexive pronoun inside the attributive PP by a
reciprocal pronoun flips the grammaticality judgment of certain constructions. Notice the
difference between (20c) and (20d), and between (20e) and (20f):

(20) a. dan ve-tal xaverim shel atsmam
Dan and Tal friends of themselves
=Dan and Tal are friends of themselves

b. dan ve-tal xaverim ze shel ze (or: …exad shel ha-sheni)
Dan and Tal friends this of this (or: … one of the second)
Dan and Tal are friends of each other (or:...of one another)

c. *[dan ve-tal] \(x\) pagshu xaverim shel atsmam\(x\)  
\(\Rightarrow [Dan and Tal]_x \) met friends of themselves\(x\)

d. [dan ve-tal] \(x\) pagshu xaverim [ze shel ze]\(x\) (or: ...[exad shel ha-sheni]\(x\))  
[Dan and Tal] \(x\) met friends [this of this]\(x\) (or: ...[one of the second]\(x\))  
\(\Rightarrow [Dan and Tal]_x \) met friends of [each other]\(x\) (or:...of [one another]\(x\))

e. *[dan ve-tal] \(x\) pagshu zamarim shel atsmam\(x\)  
\(\Rightarrow [Dan and Tal]_x \) met singers of themselves\(x\)

f. [dan ve-tal] \(x\) pagshu zamarim [ze shel ze]\(x\) (or: ...[exad shel ha-sheni]\(x\))  
[Dan and Tal] \(x\) met singers [this of this]\(x\) (or: ...[one of the second]\(x\))  
\(\Rightarrow [Dan and Tal]_x \) met singers of [each other]\(x\) (or:...of [one another]\(x\))

If the mere substitution of a reflexive by a reciprocal pronoun, precisely in the same syntactic position, changes the grammaticality status of the sentence from ill-formed to well-formed, as in sentences (20c,d) or (20e,f), the only implications one may draw are:

- In all cases, regardless of the predicate vs. argument status of the noun, the complement of ‘shel’ is locally bound by the subject, or otherwise the reciprocal wouldn’t have been licensed.
- The reason why the reflexive complement of ‘shel’ cannot co-refer with the subject must be a property of the attributive PP itself. This attributive PP (‘shel atsmam’ of themselves in sentence 20c), must be structurally different from the reciprocal (‘ze shel ze’ or ‘exad shel ha-sheni’ of each other in sentence 20d), such that the former blocks local binding while the latter doesn’t.

Yet the second implication is rather disturbing: If indeed it is the structure of the attributive PP that blocks local binding in sentences (20c,e), how come this local binding is licensed in sentence (20a), which contains the same PP? If it is established that what blocks local binding into the attributive PP is a structural configuration, then this structural configuration cannot be in place when local binding is permitted, with the same PP. The inevitable conclusion is that what seems to be the same PP in fact involves two different structures. Yet this conclusion is undoubtedly an undesired consequence, unless it is independently motivated elsewhere. The following section elaborates on the conjecture that the Hebrew attributive preposition ‘shel’ has two distinct structural behaviours, and shows that this conjecture is externally motivated and has overt correlates, and hence it is indeed reasonable.
3.3 Two Distinct Behaviours of ‘shel’

3.3.1 The Origin of Hebrew ‘shel’

The answer, again somewhat surprising, is that, despite surface identity, the structure of the PP in (20a) and the structure of the PP in (20c,e) are different from one another, and this structural difference in fact has overt manifestation. The overt manifestation of this difference is the presence vs. absence of ‘asher le’, a literary, clausal alternative of ‘shel’.

Historically, the preposition ‘shel’ developed as a compound of two particles: the subordinate complementizer ‘she’ (that) together with the directive preposition ‘le’ (to):

‘she’ that + ‘le’ to → ‘she le’ that to → ‘shel’ of.

In Hebrew, the complementizer particle ‘she’, just like English that, has two subordinative functions, one to license a relative clause, and the other to license a sentential complement. The former, but not the latter, has an archaic alternative, but nevertheless acceptable (and quite common in literary language), ‘asher’. Notice the difference between (21b,d) and (21f):

(21) a. dan pagash ish she-ba elav
    Dan met man that-came to-him
    =Dan met a man that came to him

b. dan pagash ish asher ba elav
    Dan met man that came to-him
    =Dan met a man that came to him

c. dan pagash ish she-tal ra’a
    Dan met man that-Tal saw
    =Dan met a man that Tal saw

d. dan pagash ish asher tal ra’a
    Dan met man that Tal saw
    =Dan met a man that Tal saw

e. dan amar she-tal ba elav
    Dan said that-Tal came to him
    =Dan said that Tal came to him

f. *dan amar asher tal ba elav
    *Dan said that Tal came to him
    =Dan said that Tal came to him

The attributive preposition ‘shel’, which had originally been ‘she le’ that to, undoubtedly developed from the first type of ‘she’, as indicated by the existence of ‘asher le’, the somewhat archaic, literary alternative of ‘shel’, demonstrated here:

(22) a. dan ba-bait shel tal
Dan in-the-house of Tal
=Dan is in Tal’s house.

b. dan ba-bait asher le-tal
Dan in-the-house that to Tal
=Dan is in Tal’s house.

c. dan[\text{x}] ba-bait shelo[\text{(x)}]
Dan[\text{x}] in-the-house of him[\text{(x)}]
=Dan[\text{x}] is in his[\text{(x)}] house.

d. dan[\text{x}] ba-bait asher lo[\text{(x)}]
Dan[\text{x}] in-the-house that to him[\text{(x)}]
=Dan[\text{x}] is in his[\text{(x)}] house.

e. dan pagash xaver shel tal
Dan met friend of Tal
=Dan met a friend of Tal

f. dan pagash xaver asher le-tal
Dan met friend that to Tal
=Dan met a friend of Tal

Notice that co-reference with the subject is permitted in (22d). Indeed, sentence (15a), repeated here, also has the following literary alternative with possible co-reference to the subject:

(23) a. dan[\text{x}] pagash xaver shelo[\text{(x)}]
Dan[\text{x}] met friend of him[\text{(x)}]
=Dan[\text{x}] met a friend of his[\text{(x)}] (Dan[\text{x}] met his[\text{(x)}] friend)

b. dan[\text{x}] pagash xaver asher lo[\text{(x)}]
Dan[\text{x}] met friend that to him[\text{(x)}]
=Dan[\text{x}] met a friend of his[\text{(x)}] (Dan[\text{x}] met his[\text{(x)}] friend)

There is hardly any doubt that the archaic particle ‘asher’ is always a complementizer, that is, it introduces a CP. First, it doesn’t have any other function in the language. Second, following condition A of the Binding Theory, it is predicted that the reflexive attributive construction ‘asher le-atsmo’ (Lit. that to himself) would be ill-formed. Indeed, this construction does not exist in Hebrew at all:

(24) *dan[\text{x}] pagash xaver [\text{CP asher le-atsmo[\text{(x)}]}]
*Dan[\text{x}] met friend [\text{CP that to himself[\text{(x)}]}]
=Dan[\text{x}] met a friend of himself[\text{(x)}]

Thus, it is safely assumed that ‘asher le’ is a clausal alternative of ‘shel’.

3.3.2 Incompatibility of ‘asher le’ with Relational Nominal Predicates
Now notice the next crucial data, which are meant to be the literary variants of sentences (3), (16), (6a) and (4):

(25) a. *dan (haya) xaver [CP asher le-tal]  
    *Dan (was) friend [CP that to tal]  
    =Dan is(was) a friend of Tal

b. *dan_x (haya) xaver [CP asher lo_x/y]  
    *Dan_x (was) friend [CP that to him_x/y]  
    =Dan_x is(was) his friend_x/y

c. *[CP asher le-mi] dan xaver t_i ?  
    *[CP that to whom] Dan friend t_i  
    =Whose friend is Dan?

d. dan (haya) kelev/zamar [CP asher le-tal]  
    Dan (was) dog/singer [CP that to tal]  
    =Dan is(was) Tal’s dog/singer.

For some reason, a relational nominal predicate, and a relational nominal predicate only, as demonstrated by sentences (25a-c), does not allow the literary, clausal variant ‘asher le’ of the attributive preposition ‘shel’. It is suggested that the reason is a combination of a strict requirement on realization of a predicate’s argument (exhaustion of the lexically specified thematic grid), together with the ill-formedness of clausal complements of nouns (or any other lexical item) that are not positively specified to realize their arguments as clauses. It is rather well established that the small class of lexical items that take clausal complements, like the noun *rumour or the verb *say, are lexically specified as such (by means of a feature). There is hardly any doubt that relational nouns such as *friend do not have this specification, so they cannot take clausal complements. When relational nouns have a predicate status, however, they are compelled to realize their internal argument, as demonstrated earlier by sentence (5a). Since an internal argument must be realized in a head-complement syntactic configuration, a clausal realization of the internal argument would result in a clausal complement, which is ill-formed.

3.4 The Analysis: Bare-‘shel’ vs. ‘shel’ with a Clausal-Shell

It thus has been shown that ‘shel’ has the clausal variant ‘asher le’, but this clausal variant is compatible only with some, but not all, of the contexts where ‘shel’ appears. This partial compatibility is interpreted here as an overt manifestation of two different structures associated with ‘shel’. It is therefore suggested that there are two types of ‘shel’, as follows
• The first ‘shel’ surfacing typically with relational nominal predicates, is a bare preposition, whose structure is: \[ \text{PP} [\text{shel} \text{DP}] \]

• The second ‘shel’, surfacing in most other contexts, is not a bare preposition, and is embedded in a clausal shell, which can indeed surface as a clausal variant, with an overt complementizer. The structure of this ‘shel’, which is the same as that of its clausal variant is: ‘shel’: \[ \text{CP} [\text{C'} \text{asher} \cdots \text{PP} [\text{P'} \text{shel} \text{DP}]] \]

\[ \text{‘asher le’}: [\text{CP} [\text{C'} \text{asher} \cdots [\text{PP} [\text{P'} \text{le} \text{DP}]]] \]

The distinction between these two types of ‘shel’ has immediately appealing consequences: The bare ‘shel’, like all prepositions, is not a barrier for local binding, hence allowing a reflexive pronoun as its complement. Moreover, its maximal projection, the PP, can occupy a complement position of the relational noun, and can therefore undergo pied-piped A’-movement. The clausal ‘shel’, on the other hand, is embedded within a CP-shell, which is a natural barrier for local binding, disallowing a reflexive pronoun as a complement of the preposition. The CP-shell, which is incompatible as a complement of a relational noun, is essentially an adjunct to NP, and as such it cannot undergo A’-movement.⁴

It is worth noting that condition A of the Binding Theory implies that all the reflexive and reciprocal attributive PPs, ‘shel atsmo’ (of himself) and ‘ze shel ze / exad shel ha-sheni’ (of each other / of one another) are of the bare ‘shel’ type, which is in agreement with the fact that their hypothetical, literary, overtly clausal alternatives simply do not exist in Hebrew (*‘asher

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⁴ One may feel doubtful about this account, which assumes that the same attributive preposition ‘shel’ is in fact two different prepositions. However, one should remember that Modern Hebrew is essentially a unique kind of a Creole-like language, whose grammar is a hybrid of various types of ancient Hebrew, together with Yiddish and some Slavonic languages (in particular Russian, Ukrainian and Polish), and of course additional developments of the last century. This might be crucially relevant in the case of ‘shel’. For example, there is no doubt that the system of reciprocal pronouns in Modern Hebrew is a new one, totally unrelated to reciprocal forms in ancient Hebrew, and essentially fulfilling semantic needs (and perhaps also cast in morphological forms) of Yiddish and/or Slavonic languages. It is therefore not surprising that, in the reciprocals, ‘asher’-based morphological variants do not exist. Likewise, there is no doubt that the ancient ‘asher’ variant of ‘she’, and the ‘asher le’ variant of the preposition ‘shel’, were well known to the ‘revivers’ of Hebrew. It is precisely the fact that ‘asher’ has been established in Modern Hebrew as a literary variant that shows that the language ‘revivers’ did try to incorporate it into the new living language, but it fell outside of the immediate grammatical needs of the speakers. It would not be surprising, for example, if the speech community, which relexified from languages that distinguish a genitive Case from an attributive preposition with the meaning ‘of/from’, needed two morphological equivalents in the newly acquired Hebrew lexicon, but found only one, ‘shel’. Nevertheless, despite the morpho-lexical merger, the two different grammatical entities persisted, so when the speakers marginally acquired the ‘asher le’ literary variant of one of them, they did not applying it to the other. If this is indeed the case, and if it so happens that, in Yiddish and/or Slavonic languages, a nominal predicate marks its argument by case and not by a preposition (“John is Mary’s friend”), whereas a nominal argument of a verbal predicate is attributed to another NP via a preposition (“John met a friend of Mary”), then the whole paradox of the origin of the dual behaviour of Hebrew ‘shel’ becomes straightforward.
(26) a. dan<sub>x</sub> haya xaver<sub>x</sub> shel atsmo<sub>x</sub>  
Dan<sub>x</sub> was friend<sub>x</sub> of himself<sub>x</sub>  
=Dan<sub>x</sub> was a friend<sub>x</sub> of himself<sub>x</sub>  
b. ??dan<sub>x</sub> pagash xaver<sub>y</sub> shel atsmo<sub>x</sub>  
??Dan<sub>x</sub> met friend<sub>y</sub> of himself<sub>x</sub>  
=Dan<sub>x</sub> met a friend<sub>y</sub> of himself<sub>x</sub>  
c. #dan<sub>x</sub> pagash xaver<sub>y</sub> shel atsmo<sub>y</sub>  
#Dan<sub>x</sub> met friend<sub>y</sub> of himself<sub>y</sub>  
=Dan<sub>x</sub> met a friend<sub>y</sub> of himself<sub>y</sub>  
d. [dan ve-tal]<sub>x</sub> hayu xaverim<sub>x</sub> [ze shel ze]<sub>x</sub>  
[Dan and Tal]<sub>x</sub> were friends<sub>x</sub> [this of this]<sub>x</sub>  
=[Dan and Tal]<sub>x</sub> were friends<sub>x</sub> of [each other]<sub>x</sub>  
e. [dan ve-tal]<sub>x</sub> pagshu xaverim<sub>y</sub> [ze shel ze]<sub>x</sub>  
[Dan and Tal]<sub>x</sub> met friends<sub>y</sub> [this of this]<sub>x</sub>  
=[Dan and Tal]<sub>x</sub> met friends<sub>y</sub> of [each other]<sub>x</sub>  
f. #[dan ve-tal]<sub)x</sub> pagshu xaverim<sub>y</sub> [ze shel ze]<sub>y</sub>  
#[Dan and Tal]<sub>x</sub> met friends<sub>y</sub> [this of this]<sub>y</sub>  
=[Dan and Tal]<sub>x</sub> met friends<sub>y</sub> of [each other]<sub>y</sub>  

In sentences (26a) and (26d), containing the relational noun as their predicate, this noun clearly takes the reflexive/reciprocal pronoun as its argument. The pragmatically peculiar co-reference relationship in (26c) and (26f), together with the syntactically-licensed reflexive/reciprocal pronoun, entail that, in these two sentences, the reflexive/reciprocal pronoun is the relational noun’s argument as well.  

In sentences (26b) and (26e), on the other hand, the reflexive/reciprocal pronoun is in adjunct position. Yet there is a crucial difference in the grammatical status of the two: Sentence (26b) is bad, whereas sentence (26e) is perfectly well-formed. This paradox, however, is resolved easily, if it is assumed that the reciprocal construction ‘ze shel ze’ is a DP and not a PP. Given the linear order of its internal morphemes, this is in fact rather intuitive. Thus, while in both (26b) and (26e) the reflexive/reciprocal pronoun is in the same, adjunct position, in (26b) this...

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<sup>2</sup> In both (26a) and (26c) the relational noun is a predicate that takes one argument and not two, that is, it is a complex function characterizing an individual as self-friendly (=\textsc{friend}(x,x)(y)), and not a simple function on pair of (incidentally identical) individuals characterizing them as friends of each other. Thus, the co-reference between the subject and the reflexive is indirect: it is an artifact of the transitive, double co-reference between the subject and the relational noun and between the relational noun and the reflexive.
pronoun is embedded in a clausal-shelled PP, essentially a barrier for binding by the subject, while in (26e) this pronoun is a DP, and hence can be bound by the subject.

Another appealing implication of this analysis is that, while the reciprocal pronouns in sentences (26d) and (26e) have the same internal structure, their positions in the syntactic tree differ, as the former is a complement of the relational noun while the latter is an adjunct. Again, this is borne out by the difference in grammaticality of WH-movement, or A’-movement in general, as illustrated by the following WH-question and focus constructions:

(27) a. *[shel mi], Dan ve-tal pagshu xaverim ti?
   *[of whom], Dan and Tal met friends ti
   =Whose friends did Dan and Tal meet?

b. *[shel mi], Dan ve-tal hayu xaverim ti?
   *[of whom], Dan and Tal were friends ti
   =Whose friends were Dan and Tal?

c. aval [ze shel ze], Dan ve-tal axen hayu xaverim ti?
   but [this of this], Dan and Tal indeed were friends ti
   =But friends of each other Dan and Tal were indeed

d. *aval [ze shel ze], Dan ve-tal axen pagshu xaverim ti?
   *but [this of this], Dan and Tal indeed met friends ti
   =But friends of each other Dan and Tal met indeed

The remaining question is as follows: Why is there a difference between the thematic realization of a relational noun in a predicate vs. argument status? If a relational noun is not compelled to exhaust its thematic grid when it is an argument, why is it compelled to do so when it is a predicate? In other words, why is sentence (28a) well-formed while (28b) ill-formed?

(28) a. dan pagash xaver asher le-tal
   Dan met friend that to Tal
   =Dan met a friend of Tal

b. *dan (haya) xaver asher le-tal
   *Dan (was) friend that to tal
   =Dan is(was) a friend of Tal

It is beyond the scope of this paper to provide a thorough answer to this question, but it seems to be generally valid that the effect of the Thematic Criterion on predicates is substantially stricter than on (internal or external) arguments, as is demonstrated by the following English sentences (whose equivalents in Hebrew, and probably other languages are the same):

(29) a. ??John is tormenting / ??John seems to torment

b. Tormenting makes one cruel / To torment is cruel
John hates tormenting / John hates to torment

Only in (29a), where the forms of the verb ‘torment’ are predicative, are the sentences problematic as a result of non-exhaustive assignment of thematic roles of the verb. Non-predicative status of the verb results in greater lenience regarding exhaustion of the thematic grid. It is perfectly reasonable, and probably even more likely, that in relational nouns this generalization holds as well.

To summarize, it is suggested that the Hebrew attributive preposition ‘shel’ projects two distinct structures, one is a bare-PP and the other is a clausal shell (CP) containing the PP. The PP projected by the bare ‘shel’ is not a barrier for local binding, and can also occupy an A-position, i.e. a syntactic complement, when it embeds an argument of a relational noun. In such circumstances it can also undergo A’-movement. As a possible argument of a relational noun, its embedded noun exhausts the thematic grid of the relational noun when the relational noun is the sentential predicate. The clausal-shelled ‘shel’, which can be substituted by the overt clausal configuration ‘asher le’, projects a CP, which is a barrier for local binding, and is also incompatible as an argument of a relational noun, because while such a noun is thematically specified for arguments, it is not syntactically specified for clausal complements. As such, the CP shell of this type of ‘shel’ must occupy an adjunct position of a relational noun, thus functioning like a relative clause, transforming the noun into a complex DP, and it can never undergo A’-movement. This adjunct position of clausal-shelled ‘shel’ implies that its embedded noun cannot be a thematic argument of a relational noun. As a result, a sentence with a relational nominal as its predicate accompanied by a clausal-shelled ‘shel’ construction is ill-formed, because the thematic grid of the predicate is not exhausted.

3.5 Argument Nouns Licensing Reflexive Arguments – An Open Issue

It is not true that, in Hebrew, all nominal arguments fail to license reflexive pronouns without precise identity between the noun and the reflexive. Certain semantic configurations, in which the noun denotes the whole or the integral part of the binding noun, like image, body, hand, guts, among others, do allow reflexive pronouns attributed to them. This denotation is not necessarily visual, and can be otherwise physical (e.g. voice) or even abstract:

(30) a. dan_x ra’a tsiyur shel atsmo_x
           =Dan_x saw drawing of himself_x

b. Dan_x saw a drawing of himself_x
b. Dan saw veins of himself in the ultrasound
=Dan saw his own veins in the ultrasound (imaging machine).

c. Dan heard echo of himself
=Dan heard his own echo.

d. The organization believes in its own way.

Such nouns behave differently from relational nouns. As expected, substitution of ‘shel atsmo’ (of himself) by ‘asher le-atsmo’ (that to himself) is never possible in these sentences. Substitution by ‘shelo’ (of him), on the other hand, is always possible, and by ‘asher lo’ (that to him) is possible in (30b,d) but not in (30a,c). A’-movement of the attributive PP is possible with none. Time and space do not allow further elaboration about the properties of these constructions here, which are essentially different, semantically, from those of relational nouns. An important observation to notice, however, is that an attributive PP may, in principle occupy any structural position relative to the head noun, be it the complement, the specifier or an adjunct position. This is illustrated, for example, by the word ‘tsiyur’ drawing. The following sentence has three different, equally accessible, meanings:

(31) Dan removed drawing of him
=Dan removed his drawing

This sentence can be interpreted as if (a) Dan’s portrait is no longer displayed, (b) a drawing Dan made is no longer displayed, (c) a drawing Dan owns is no longer displayed. Yet the first and third interpretations have two unambiguous alternatives:

(32) a. Dan removed a drawing of his own image
=Dan removed a drawing he owns

The semantic interpretation of these unambiguous constructions implies that they correspond to the ambiguous one in precisely the same manner established earlier for relational nouns: The internal argument (the drawn person) can be realized as a reflexive, whereas the adjunct (the owner) can be realized clausally. The fact that neither of these alternatives is compatible with
the external argument (the drawer) probably indicates that (a) the external argument is embedded in a bare-‘shel’ PP, or otherwise it would have allowed the clausal alternative, and (b) reflexive binding is not done by the matrix subject, but by the ‘denoting’ noun itself, or else the subject should have been able to bind the external argument, which the same individual as the subject but not as the ‘denoting’ noun. Further investigation is needed, however, in order to fully understand the properties of an external argument expressed by a ‘shel’-construction. Likewise, it is not clear how come the internal argument can be both a reflexive and a pronominal in the same syntactic configuration.

Further complications arise when more than one possible interpretations is realized simultaneously. Interestingly, when all three possible interpretations are realized, implying that the same individual is both the owner, the drawer and the one displayed, a context which is essentially unambiguous, use of the disambiguating variants seems necessary:

(33)  a. *dan hesir tsiyur shelo shelo shelo  
      b. dan hesir tsiyur shelo shel atsmo asher lo  
      =Dan removed his self-made portrait he owns.

Thus, the syntactic properties of the preposition ‘shel’, whose non-trivial nature involving structural duality has been established here, appear to be crucially relevant not only for relational predicates, but for a unified theory of all inter-nominal relationships in Hebrew as well.