ADJECTIVAL PRESENT PARTICIPLES: AN ASPECTUAL CONSTRAINT[*]

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1 Introduction

The goal of this paper is to clarify the categorial status of present participles. Present participles cross-linguistically exhibit properties of both verbs and adjectives. Consider the Hebrew sentences in (1):

(1)   a. *kaniti sefer ha-me'anyen et   ha-yeladim.*
        I+bought book that-interests ACC the-children
        'I bought a book that interests the children.'
    b. *ha-sefer yihiye   me'anyen.*
        the-book will+be interesting
        'The book will be interesting'.

The Hebrew participial form *me'anyen* ('interesting') is clearly verbal in (1a), where it assigns accusative Case to its complement, while in (1b), the same form appears in an adjectival context (see 2.2.3 below), and is therefore adjectival.

Can all present participles indeed function in both ways? Based on numerous empirical tests, I will claim that while certain present participles are indeed ambiguous between a verbal and an adjectival reading, some of them can only function as verbs. I will then suggest that the class of adjectival present participles can be defined aspectually: only participles of stative verbs can function as adjectives. An important consequence of the analysis presented here is that the prenominal position in English (and the post-nominal one in Hebrew) must be assumed not to be reserved for adjectives only, but to be able to host verbal elements as well.

2 Are all present participles adjectival?
2.1 All present participles behave like adjectives

What led certain scholars (Borer 1990, Bresnan 1996, Parsons 1990) to claim that present participles are adjectival is the fact that many of them can appear prenominally.

Wasow (1977) mentions the premonimal position in English as a position allowing only adjectives, not verbs (2). Doron (2000) claims, that in Hebrew, the post-nominal position is always good for adjectives, but not necessarily good for verbs (3).

(2)   a. a beautiful / smart / rude boy
    b. *a drinks / drank boy

(3)   a. *yeled yafe   / xaxam*
        boy beautiful / smart
        'a beautiful / smart boy'
    b. **yeled šata*
        boy drank

Nevertheless, a great number of present participles can appear in the prenominal position in English (4), and in the post-nominal position in Hebrew (5):

(4)   a. an interesting / amusing boy, a disgusting / annoying movie, a flourishing town, a
        glimmering diamond, a fitting remark, an understanding friend
        b. the jumping / crying / growing / eating / writing boy

(5)   a. *yeled me'anyen   /   macxik, seret   me'acben,   'ir   mesagseget, yahalom*
           boy interesting / funny, movie annoying, town flourishing, diamond
           nocec
           glimmering
        b. *yeled kofec   / boxe   / oxel*
           boy   jumping / crying / eating

Therefore, present participles behave like adjectives here.

However, it seems that this test is the only one in which all present participles behave this way.[1]

2.2 Not all present participles behave like adjectives
It turns out that when present participles are inserted into other adjectival contexts, the results are not homogenous: while certain participles freely appear in these contexts, other participles cannot appear in them. The following subsections illustrate this phenomenon.

2.2.1 Complement of *seem*, *become* etc.
Wasow (1977) suggests that certain verbs, such as *seem*, *become, look* and others, take as their complements only APs, not VPs[2]. Compare (6a) with (6b):

(6)   a. The boy seems / became beautiful / smart / rude.
        b. *The boy seems / became chewing gum / folding his papers.

Looking now at present participles, while some of them can appear as complements to *seem* or *become* (7), others cannot (8):

(7)   a. The movie seems interesting / amazing / amusing / annoying.
        b. The town became flourishing.
        c. Your remark seems fitting.
        d. Your friend has become understanding.
        e. ".. and his raiment became shining" (Mark 9:3)

(8)   *The boy seems / became jumping / growing / crying / eating / writing.

A similar test applies to Hebrew, at least for some speakers. The verb *nir'a* in Hebrew is ambiguous between the meanings of 'seems/seemed' and that of 'was seen'. The verb *nišma* is

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[1] Bat-El (to appear) shows that morphologically as well, all Hebrew participles behave on a par with adjectives, and unlike verbs. This fact can, perhaps, facilitate or enable a process in which participles diachronically become adjectives. However, it does not necessarily mean that syntactically, all participles are adjectives.
[2] These verbs can take as a complement any AP that can function predicatively.

also ambiguous, between 'sounds/sounded' and 'is heard/was heard'. When these verbs are followed by an adjective, they only have the first meaning (9a), and when followed by a verb phrase, they only have the second, perceptual meaning (9b):

(9) a. *ha-yeled nir'a / nišma nexmad.*
       the-boy seems / sounds   nice
     b. *ha-yeled nir'a / nišma lo'es mastik.*
       the-boy was+seen   is/was+heard   chewing gum

When Hebrew present participles are preceded by *nir'a / nišma*, some of the sentences are interpreted with 'seems' / 'sounds', as expected if the participles are adjectives (10a), while others are interpreted with 'was seen' / 'is/was heard', as expected if the participles are verbs (10b)[3]:

(10) a. *ha-seret   nir'a / nišma me'anyen / madhim / meša'aše'a.*
        the-movie   seems / sounds interesting / amazing / amusing
      b. *ha-yeled nir'a / nišma kofec / oxel / holex.*
        the-boy was+seen   is/was+heard jumping / eating / walking

2.2.2 –*ly* suffixation
The English suffix –*ly* is a very productive suffix which attaches only to adjectives, and turns them into adverbs (11):

(11) a. beautifully, smartly, rudely
      b. *eatly, *walkly, *thinkly

Here as well, present participles behave non-uniformly: some of them allow –*ly* suffixation (12), while others disallow it (13):

(12) interestingly, surprisingly, excitingly, pleasingly, fittingly, lastingly, compromisingly, forgivingly, shiningly, glimmeringly

(13) *sittingly, *cryingly, *jumpingly, *walkingly, *writingly, *chewingly, *drawingly, *findingly, *foldingly

In this case too Hebrew provides a similar test. While in Hebrew there is no productive morphological operation that forms adverbs from adjectives, adverbs can be formed syntactically using *be-ofen A* ('in a A manner'). Again, some present participles can form adverbs in this way (14a), while others cannot (14b):

(14) a. *be-ofen me'anyen   / mafti'a   / merageš / mitxašev   / matmid*
        in-manner interesting / surprising / exciting / understanding / lasting
      b. **be-ofen   boxe / kofec / holex   / kotev*
        in-manner crying / jumping / walking / writing

2.2.3 Following the future copula in Hebrew

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[3] For some speakers, *nir'a / nišma* cannot be followed by a VP at all. In this case the test is clearer: for such speakers (10a) will be grammatical, while (10b) will be ungrammatical.

As claimed in Doron (2000), in Hebrew, only adjectives can follow the future copula. Compare (15a) with (15b):

(15)   a. *ha-yeled yihiye   yafe   / xaxam / xacuf.*
          the-boy will+be beautiful / smart / rude
        b. **ha-yeled yihiye lo'es mastic / mekapel niyarot.*
          the-boy will+be chewing gum / folding papers

Again, present participles behave non-uniformly in this context: some can follow the future copula (16), while others cannot (17):

(16)   a. *ha-yeled yihiye me'anyen   / mafti'a   / meša'aše'a / margiz.*
          the-boy will+be interesting / surprising / amusing   / annoying
        b. *ha-ir   tihiye   mesagseget.*
          the-town will+be flourishing
        c. *ha-xulca tihiye   mat'ima.*
          the-shirt will+be fitting
        d. *ha-xaver šelxa   yihiye mitxašev.*
          the-friend yours will+be understanding

(17)   **ha-yeled yihiye kofec   / holex   / gadel   / boxe.*
         the-boy will+be jumping / walking / growing / crying

2.2.4 *un-* prefixation

As was noted by Wasow (1977), *un-* can be prefixed to both verbs and adjectives, but with different results: when prefixed to verbs, the resulting form expresses the reversal of the action denoted by the original verb (*dress – undress, lock – unlock*). When prefixed to adjectives, the resulting form expresses the opposite property or state from that denoted by the original adjective (*happy – unhappy, intelligent – unintelligent*). Prefixation of this second *un-* can therefore distinguish adjectives from verbs. Note, that adjectivalhood is not a sufficient condition in this case, since *un-* does not attach to all adjectives (*unsmart, *unrude). Still, it attaches only to adjectives. Let us now consider present participles:

(18)   uninteresting, unsurprising, unexciting, unpleasing, unfitting, uncompromising, unforgiving, unassuming, unreasoning, unrevealing

(19)   *uncrying, *ungrowing, *unjumping, *unwalking, *unwriting, *unchewing, *undrawing, *unstanding, *unfinding.

The data in (18-19) reinforces the conclusion that some present participles can be adjectival, while others cannot. Notice, that it is impossible to claim that in (18) *un-* prefixes to verbs, since such an analysis would predict also the existence of the non-existing verbs *uninterest, *unsurprise etc.

In this case, too, Hebrew offers a parallel test. The negative prefix *bilti-* attaches only to adjectives, though not productively (Doron 2000). Again, it can attach to certain present participles, and not to others:

(20)   a. *bilti-mexayev, bilti-mazik, bilti-mat'im*
          unbinding,   undamaging, unfitting

b. *bilti-mecayer, *bilti-kofec, *bilti-boxe
   undrawing,   unjumping, uncrying

2.2.5 Modification by degree modifiers

There is a debate in the literature regarding the conditions for modification by degree modifiers such as English *very, so, less* and *more* or Hebrew *kaze* ('so'): while Brekke (1988) and Emonds (1991) claim that these elements modify only adjectives, Borer (1990) maintains that the ability of a predicate to be modified by these elements has nothing to do with its adjectival or non-adjectival nature. In my opinion, examples like (21-23) lead to the conclusion that adjectivalhood is a necessary condition for pre-modification by *very, less, more* and *kaze* (21-22), but not a sufficient one (23).

(21)   a. Max is very pale / tall.
        b. Max is more / less intelligent / considerate than John.
        c. *maks kaze xiver / gavoha.*
           Max   so   pale   tall

(22)   a. *Max very eats / grows.
        b. *Max less eats / grows than John.
        c. *maks kaze lo'es mastik / ohev   et   lusi.*
            Max   so chews gum   loves ACC Lucy

(23)   a. *Romeo is very dead.
        b. *This car is more / less black than that one.
        c. *romeo kaze met.*
           Romeo so   dead

Again, present participles behave non-uniformly in this context: some of them allow pre-modification by degree modifiers (24), which suggests that they are adjectives, while others disallow it (25):

(24)   a. The movie is very interesting / amusing.
        b. Florence is more flourishing than Sienna.
        c. Your mother is less understanding than mine.
        d. *ha-seret kaze me'anyen / macxik.*
           the-movie so   interesting / funny

(25)   a. *Max is very jumping / growing / crying.
        b. *Max is more / less jumping /growing / crying than John.
        c. *maks kaze kofec   / boxe   / gadel.*
            Max so jumping / crying / growing

2.2.6 Coordination with adjectives

Another piece of evidence that points to the conclusion that some participles are not adjectives comes from coordination facts. Some present participles cannot appear in coordination structures with adjectives, both in English and in Hebrew (26-27):

(26)   a. *a crying and beautiful girl
        b. *yalda boxa ve-yafa*

(27)   a. *a rude and jumping boy
        b. *_yeled xacuf ve-kofec_

Note that although the conjuncts' being of the same category is not a necessary condition for the grammaticality of a coordination structure (as shown in Sag et al 1985), it is a sufficient one: if two elements are of the same category, they can be coordinated. Therefore, if two elements cannot be coordinated, it is safe to conclude that they are not of the same category.[4][5]

To conclude this section: while all present participles behave like adjectives in that they can appear prenominally, only some of them pass other tests of adjectivalhood. Though none of the tests is conclusive by itself, over all the tests indicate a very clear tendency - only certain present participles are able to behave like adjectives, both in English and in Hebrew.

An obvious question at this point is: how can we define the set of present participles that can function as adjectives? In the next section I will present Brekke's (1988) solution to this problem.

3 Brekke's (1988) *Experiencer Constraint*
3.1 The analysis
Brekke (1988) noticed the fact that only certain present participles are adjectival,[6] and attempted to define the set of verbs whose participles can function as adjectives. He thus suggested the *Experiencer Constraint*, which stated that only verbs that have an internal Experiencer θ-role – *surprise, amuse, amaze,* etc. - have adjectival present participles.
Brekke's generalization can account for a substantial part of the data presented in section 2 above: it draws a clear distinction between participles of object-Experiencer verbs, which were shown to consistently pass tests for adjectivalhood, such as those in (28a), and participles of verbs denoting activities or processes not involving mental states, which were shown to consistently fail these tests, such as those in (28b):

(28)   a. Participles of object-Experiencer verbs: *amazing, amusing, interesting, boring, exciting, fascinating, intriguing, surprising* etc.
        b. Participles of other verbs: *jumping, crying, growing, laughing, writing, walking, drawing* etc.

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[4] It could be suspected that there is another condition on coordination, responsible for the ungrammaticality of (26-27), namely, a constraint against coordination of stage-level predicates (*crying, jumping*) with individual-level predicates (*beautiful ,rude*), or of dynamic predicates with stative ones. However, such coordinations are possible, when both predicates are of the same category:
(i)   a. an interesting and available position
           b. Max likes Lucy and often invites her to his house.
[5] Note, on the other hand, that some present participles can be coordinated with adjectives:
(i)   a. an interesting and beautiful girl
           b. *yalda me'anyenet ve-yafa*
(ii)   a. a big and flourishing town
           b. *'ir gdola ve-mesagseget*
(iii)   a clever and understanding man
However, this does not prove that these participles are adjecitves since, as mentioned above, there are coordination structures in which the conjuncts are not of the same category.
[6] His evidence for this comes only from the distribution of *very* and the possibility of –*ly* suffixation.

Therefore, the constraint seems quite promising.

3.2 The problems
However, Brekke's *Experiencer Constraint* raises both a theoretical and an empirical problem. The theoretical problem is that the analysis does not provide an explanation as to *why* it should be the case that only participles of object-Experiencer verbs can be adjectival. The *Experiencer Constraint* can be attributed neither to some property of object-Experiencer verbs, nor to some property of adjectives. In this respect, it seems almost coincidental that it is precisely this type of verbs which have corresponding participial adjectives.

The empirical problem is even more disturbing. As Brekke himself notes, there are adjectival present participles which are not derived from object-Experiencer verbs, in contrast to the predictions of the *Experiencer Constraint.* Brekke classifies the additional verbs which form adjectival present participles to three classes. The following characterizations and examples of these classes are his:

(29)   a. Present participles of *"disposition"* verbs – "verbs that describe the psychological character of a human being": compromising, condescending, cunning, daring, forgiving, knowing, loving, understanding, etc.
          b. Present participles of *"impact"* verbs: blazing, dashing, glimmering, glistening, sparkling, shining, etc.
          c. Present participles of *"manner"* verbs – "verbs that describe the manner in which some event proceeds, or evaluate some psychological or social phenomenon": enduring, fitting, flourishing, lasting, telling, revealing, etc.

The first class consists roughly of subject-Experiencer verbs. The second class is the class of "verbs of light emission" (Levin and Rappaport Hovav 1995). The third class seems to have no natural characterization, other than the fact that all of its members have corresponding adjectival present participles.

The participles in all of these classes do not correspond to object-Experiencer verbs, yet they do function as adjectives. The four verb classes: object-Experiencer, "disposition", "impact" and "manner", when looked at thematically, do not form a natural class. As Brekke notes "*There is obviously a generalization waiting to be captured here… ".*

4 An aspectual constraint on the formation of adjectival present participles
Brekke's constraint on the formation of adjectival present participles was thematic. I suggest that we try and pursue a different path: looking at the aspectual properties of the relevant verbs. Since the main difference between verbs and adjectives lies in their aspectual features, this seems like a natural domain in which to look for the definition of the set of adjectival present participles, as well as of other sets of adjectives.

Verbs denote different kinds of eventualities. According to the traditional, "Aristotelian" classification (Vendler 1957, Dowty 1979 among many others), verbs can denote four types of eventualities: dynamic verbs denote accomplishments, achievements or activities/processes, and stative verbs denote states. Stative verbs refer to static, unchanging eventualities, which do not result in the creation, change of state or change of location of any of their participants. *Know, own* and *love* are some prototypical stative verbs.

I suggest the following constraint on the formation of adjectival present participles:

(30)   The *Stativity Constraint*
        Only stative verbs have corresponding adjectival present participles.[7]

Let us see how the current hypothesis deals with the problems mentioned above with regard to the *Experiencer Constraint*.

4.1 The empirical coverage of the *Stativity Constraint*

Let us first consider whether (30) captures the data in section 2 above. It was noted that consistently, four types of verbs have corresponding adjectival present participles: object-Experiencer, "disposition", "manner" and "impact" verbs (in Brekke's terms). I claim that what is common to all of these verbs is that they are (or can be) stative. Let us look at each group separately.

4.1.1 Object-Experiencer verbs

It has been repeatedly suggested in the literature (Dowty 1979, and for a detailed discussion see Arad 1998) that object-Experiencer verbs like *interest, annoy, excite, disgust, amaze* etc., have both an eventive and a stative interpretation. In the eventive interpretation, the object undergoes a change of mental state, as in (31a). In contrast, the stative interpretation merely asserts that the object is in a specific mental state (31b) (examples from Arad 1998):

(31)   a. Nina frightened Laura to make her go away.
        b. John's behaviour frightened Nina.

As Arad notes: "On the stative reading there is *no* change of state in the experiencer… the stative reading thus only asserts that the experiencer is at a specific state as long as she perceives the stimulus.. "
It is often noted that stative verbs are incompatible with the progressive in English (Dowty 1979, among many others). This phenomenon can serve as a test for identifying stative verbs. As expected, many object-Experiencer verbs cannot appear in the progressive:[8]

(32)   *The book is depressing / boring / worrying the children.

4.1.2 Disposition verbs

This class consists of verbs like *compromise, love, understand, know, dare*, etc. These are in fact subject-Experiencer verbs, which are traditionally classified as stative (Dowty 1979). These verbs denote the mental state of their subject, without entailing any change of state in either the subject or the object:

(33)   a. John loves Mary.

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[7] Note that the generalization in (30) does not state that *all* stative verbs have a corresponding adjectival present participle. This issue is addressed in section 6.
[8] This test should be used carefully. First, it is generally noted that achievement verbs are also incompatible with the progressive, and so incompatibility with the progressive does not entail stativity. Second, the test should not be taken as conclusive since even the most prototypical stative verbs can appear in the progressive under certain condition (*I'm loving it*). Perhaps the best way to make the judgments clearer is to use sentences with present perfect progressive. Compare (i) and (ii):
    (i)   The children have been watching the movie for an hour when their parents arrived.
    (ii)   *The movie has been interesting the children for an hour when their parents arrived.
For a discussion of the (in)compatibility of object-Experiencer verbs with the progressive, see Pesetsky (1987).

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b. John understood the situation.

As predicted, these verbs cannot appear in the progressive (but see footnote 8):

(34)   a. *My friend is understanding me.
        b. *John is daring to do it.   (meaning: John dares to do it)

4.1.3 Manner verbs
This class includes verbs such as *fit, flourish, last* and *reveal*. These verbs obviously denote a state of affairs, a property of their subject, and do not entail any change of state. In fact, it is hard to find a common property of the verbs in this group, other than their stativity.

(35)   a. The shirt fits her.
        b. The war lasted 3 years.

These verbs as well are incompatible with the progressive:

(36)   a. *The shirt is fitting her.
        b. *The war was lasting 3 years.
        c. *This dress is revealing your neck.

4.1.4 Impact verbs
The aspectual status of verbs of light emission, such as *shine, glimmer, shimmer, sparkle* etc., is not clear. As noted by Spencer and Zaretskaya (2003), these could be thought of as states or as processes. I suggest that these verbs are stative, since they attribute some steady property to their subject, and do not entail any change of state:

(37)   a. The diamond shines.
        b. The water sparkles.

Regarding these verbs, it is harder to show that they are indeed stative. Consider (38):

(38)   a. The diamond is shining.
        b. The water was sparkling.

The sentences in (38) are not ungrammatical. Does that mean that these verbs are compatible with the progressive? Not necessarily. The participles in (38) might be adjectives. The problem arises here since light emission verbs do not have complements, and so a verbal reading cannot be forced.
Kenny (1963) suggests an additional test for stativity: in the present tense, sentences with dynamic verbs have a frequentative interpretation – they are understood as involving more than one event (39a). On the other hand, sentences with stative verbs do not have this interpretation (39b).

(39)   a. John runs.
        b. John knows the answer.

Let us now look at verbs of light emission:

(40)   a. The diamond shines.
        b. The water sparkles.

The interpretation of the sentences in (40) does not seem to be habitual, or involve more than one event. This reinforces the intuition that Brekke's "impact" verbs are stative as well.[9]

It seems, then, that the common feature of object-Experiencer, "disposition", "manner" and "impact" verbs is that they are all stative. These verbs therefore form an aspectual natural class.

4.2 Why stative verbs?

As mentioned above, the theoretical problem with Brekke's *Experiencer Constraint* is that it does not provide an explanation as to *why* it should be that only object-Experiencer verbs have corresponding adjectival present participles. I believe that the current constraint can provide such an explanation.

As noted in the beginning of this section, verbs denote different types of eventualities: states, processes/activities, achievements and accomplishments. Adjectives, on the other hand, invariably denote states:

-   Parsons (1990) suggests that adjectives, just like stative verbs, have a "Davidsonian" state argument, which ranges over stative eventualities.
-   Rothstein (1999) claims, that while stative verbs have an event argument ranging over count-like stative eventualities, adjectives, at least in English, have a state argument ranging over non-atomic mass-like *M-states*.

In any case, it is clear that adjectives denote properties of states only.

Since verbs can pick up different types of eventualities, while adjectives always pick up states, in order to derive an adjective from a verb, the eventuality which the verb denotes must somehow be converted into a state. This is probably done in different manners by different morphemes, and accordingly, different constraints are imposed on the input.

As an example, let us look at the formation of adjectival passives. Bresnan (1996) and Doron (2000) suggest that adjectival passives in English and Hebrew, respectively, can be formed only from telic verbs, which have as part of their interpretation a "result state"; In Bresnan's words: "The state denoted by the adjective appears to be the result state of the eventuality denoted by the participle" (pp. 12-13). Passive morphology can, then, "isolate" the result state of a verb, and make it the denotation of the adjective. Another example would be the adjectival morpheme -*y* (as in *jumpy, smiley*) that takes a verb V which denotes an activity, and creates an adjective which denotes a homogenous property: the property x has if x V's often/a lot.

In view of this, the following analysis suggests itself: –*ing* is the default, "simplest" adjectival morpheme:

-   If we accept Parsons' (1990) claim, that both stative verbs and adjectives have a state argument, -*ing* only marks the categorial change from verb to adjective. It is incapable of any aspectual manipulation. Therefore, it can only take as input stative verbs - the only verbs which denote states to begin with, and can therefore derive adjectives without any aspectual change.

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[9] It may be noted that the class of "impact" verbs presents the least clear case. Participles of this class often fail tests for adjectivalhood. For example, in Hebrew it is impossible to create adverbs based on them: **be-ofen nocec/mavhik* 'in a shining/gleaming manner', and in English, *un-* cannot be prefixed to any of them: *unshining, *unglistening. This, however, goes hand in hand with the vagueness regarding their aspectual status.

- If we adopt Rothstein's (1999) suggestion that verbs denote properties of count-like eventualities, while English adjectives denote properties of mass-like states, we can regard –*ing* as performing the 'grinding function' of Lewis (cited in Rothstein 1999) – a function which maps count entities into mass entities composed of the same stuff. -*ing* can still be regarded as the simplest adjectival morpheme. It cannot change the meaning of the predicate, only the perspective on it (whether it is a count entity or a mass entity). Therefore, it selects only stative verbs, because they belong to the simplest aspectual class, with the least additional information in comparison to adjectives. The grinding operation will therefore not result in a loss of information.

So, the *Stativity Constraint* is very intuitive: adjectives denote states; stative verbs denote states as well; therefore, stative verbs are the natural input for an operation which derives adjectives.[10]

To conclude, I claim that there are two types of present participles: present participles of dynamic verbs, which are verbal only, and present participles of stative verbs, which can function as both verbs[11] and adjectives.

5 The prenominal position
5.1 The category of prenominal dynamic participial phrases
In the previous sections, I have argued that only certain present participles are adjectival. However, as was shown in section 2.1, many present participles can appear prenominally, including participles of dynamic verbs like *jumping* and *crying*:

(41)   a. The $_{XP}$[jumping] boy is my cousin.
        b. *yeladim* $_{XP}$[*boxim*] *me'acbenim oti.*
           children   crying   annoy   me
           'crying children annoy me.'

I suggest that in (41), XP is a clausal constituent, a reduced relative clause, as in Siloni's (1995) analysis of participial phrases, and the participle is a verbal form, uninflected for tense. In English, full relative clauses appear post-nominally. However, in (41) the hypothesized reduced relative appears prenominally. I suggest that in English, reduced relatives are base-generated to the left of the head they modify (this is claimed also in Cinque 2007).

The prenominal position is therefore argued to be able to host not only adjectives, but also verbal elements. I will now present two pieces of evidence reinforcing this idea.

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[10] It is important to note that when a verb turns into an adjectival present participle, something happens to its thematic structure as well. If the verb is transitive, some sort of closure is performed upon the internal thematic role, and the role need not be realized by an argument. The exact nature of the closure is unclear: in some cases it might be existential-like (*your shirt is revealing = there is something which your shirt reveals*), and in others it seems universal, or quasi-universal in the sense of Chierchia 1995 (*the book is interesting = there are many people who the book interests*). The issue requires further study.
[11] Note that since stative verbs cannot appear in the progressive, present participles of stative verbs following the copula will not be interpreted as verbs, but presumably only as adjectives (i). In addition, present participles of transitive stative verbs will not be interpreted as verbs when they appear without a complement (ii):
(i)   The town is flourishing.
(ii)   The book is interesting.
However, in the right environment, present participles of stative verbs do function as verbs:
(iii)   I noticed him annoying the children.

5.1.1 Complementation

If we look at the sentences in (42), it is obvious that they are ungrammatical since they contain verbs that have an obligatory internal θ-role which is not assigned:

(42) a. *The boy interested / amazed / understood.
  b. *The boy folded / locked / tamed.
  c. *ha-yeled inyen / hiftia / hidhim / hevin.
    the-boy interested / surprised / amazed / understood.
  d. *ha-yeled kipel / maca / na'al / ilef.
    the-boy folded / found / locked / tamed.

However, the participles of these verbs behave non-uniformly:

(43) a. the interesting / amazing / understanding boy
  b. yeled me'anyen / mafti'a / madhim / mevin
    boy interesting / surprising / amazing / understanding

(44) a. *the folding / locking / taming boy
  b. *yeled mekapel / moce / no'el / me'alef.
    boy folding / finding / locking / taming

Why is there a difference between (43) and (44)? According to the proposed analysis, the verbs in (42a) are stative, and therefore their participles, in (43), are adjectival. In the process of becoming adjectives, some sort of closure was performed upon the internal thematic role of the verb, and as a result, this role need not be assigned by the adjective. The verbs in (42b), on the other hand, are dynamic. According to my analysis, their participles, in (44), though appearing prenominally, are verbal, and not adjectival. As such, they naturally have the original thematic grid of the verb. So, the DPs in (44) are ungrammatical for precisely the same reason as that for the ungrammaticality of (42): the verbs in them have an unassigned obligatory θ-role.

5.1.2 Ambiguity in the prenominal position

In this subsection I would like to show that the assumption that the prenominal position can host verbal projections as well as adjectival ones can account for certain ambiguities. I will discuss here passive participles, for reasons that will be clear presently.
It is well known that many passive participles are ambiguous between a verbal and an adjectival reading:

(45) The house was evacuated.
    'The house was in the state of being evacuated, empty, unpopulated.'
    'Someone evacuated the house.' (Perhaps the house was re-populated since.)

It is less acknowledged that DPs such as (46) are likewise ambiguous:

(46) the evacuated house
    'The house which is in the state of being evacuated, the empty house, the unpopulated house'

'The house which has been evacuated' (even if it has since been re-populated, and is not longer empty)

The first reading of (46) corresponds to the adjectival, state reading of (45), while the second one corresponds to the verbal, event reading. If the prenominal position is taken to be exclusively adjectival, it is hard to explain how the two readings arise. On the other hand, if we accept that verbal elements can appear prenominally, and given that the participle itself is ambiguous, we straightforwardly predict the ambiguity of (46).

The reason why it is hard to show the same ambiguity with present participles is that the adjectival reading and the verbal reading of the participle will always be very similar. This is because by hypothesis, the participles which have an adjectival reading correspond to stative verbs, and so their verbal reading is stative, just like their adjectival reading. For example, according to my analysis, the participle in *the flourishing town* is ambiguous between a verbal and an adjectival reading. However, the two readings are very tough to tease apart.

To conclude, the discussion above supports the hypothesis that prenominal participles may be verbal, and not only adjectival. Therefore, the prenominal position cannot serve as a diagnostics for identifying adjectives.[12]

5.2 The reduced relative analysis of dynamic participles in Hebrew
As state above, I suggest that the participles in (41b), repeated here as (47), appear as part of verbal reduced relative clauses, and do not form APs:

(47)   *yeladim* [OP [t *boxim*]] *me'acbenim oti.*
        children   crying   annoy   me
        'Crying children annoy me.'

A question that might arise given this analysis, is why we do not find here the complementizer *ha-*, which introduces reduced relatives (or semi-relatives, in the terminology of Siloni 1995) in Hebrew. The fact that there is no complementizer here might suggest that the participles are, after all, adjectives, and not reduced relatives.
However, the fact that the participles do not appear in any other adjectival context strongly undermines the possibility that they are adjectives. Another piece of evidence that these participles form some clausal constituent comes from negation. In Hebrew, adjectives can be negated by phrasal negation:

(48)   a. *baxurot lo razot lo yexolot lihiot dugmaniot.*
           girls   not thin not can   be   models
           'Girls who are not thin cannot be models.'
        b. *maks kara šloša sfarim lo me'anyenim*

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[12] Another set of facts that seems to be relevant here is the following:
(i)   a. The jumping boy is my cousin.
             b. ?The boy jumping is my cousin.
(ii)   a. The interesting boy is my cousin.
             b. *The boy interesting is my cousin.
While (ib) may appear in certain context, (iib) is completely ungrammatical. This might have to do with the fact that the structures in (i) contain a reduced relative clause, which may appear either before or after the noun it modifies, while the structures in (ii) contain an AP, which in English must appear prenominally.

13

Max read three books not interesting
'Max read three uninteresting books.'

Note that, as shown by Siloni (1995), semi-relatives cannot be negated, that is, they cannot include clausal negation:

(49)   *'iš   ha-lo kore   iton   ba-rexov…
         man that-not reading paper in+the-street

Now, note that post-nominal participles of dynamic verbs do not allow negation either:

(50)   *yeladim lo boxim mad'igim et   ha-rofe.
         children not crying worry   ACC the-doctor

This suggests, again, that these participles form reduced relative clauses, rather than APs. Notice, in contrast, that participles of stative verbs, which form adjectives, can be negated, as is exemplified in (48b) with the participle *me'anyen* 'interesting'.

It seems, therefore, that the phonetic realization of the complementizer *ha-* is independent from the clausal status of the constituent,[13] and that post-nominal dynamic participles in Hebrew, just like English pre-nominal counterparts in English, appear as part of verbal reduced relatives, and do not form APs.

To conclude, in this section I claimed that the prenominal (or post-nominal) position can host both APs and reduced relative clauses. Although superficially looking the same, some present participles are true adjectives, and form premonimal APs, while others are verbs, and appear prenominally only inside a reduced relative clause.

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[13] It seems that the realization of *ha-* has to do with the phonological heaviness of the reduced relative clause: *ha-* becomes acceptable, and in fact necessary, when the clause is heavier. So, if the participle is accompanied by a complement or a modifier, as in (i), the complementizer will surface:
(i)   a. *yeladim boxim   be-kol   ram mad'igim et   ha-rofe.
               children crying in+voice loud worry   ACC the-doctor
            b. *yeladim ha-boxim   be-kol   ram mad'igim et   ha-rofe.*
               children that-crying in+voice loud worry   ACC the-doctor
               'children crying loudly worry the doctor.'
It is unclear to me at this point whether this "heaviness" effect affects only verbal participial clauses or APs as well. So while APs which contain only an adjective are always bad with *ha-* (ii), some heavier APs disallow *ha-* as well (iiia), while others allow it, or even require it (iiib). The issue clearly calls for further research.
(ii)   a. *mixnasayim(*ha-)kcarim hayu nir'im   yoter tove.*
               pants   that- short   were looking more good
               'Short pants would have looked better.'
            b. *pitaron (*ha-) tov   yesameax   oti.*
               solution that- good will+make happy me
               'A good solution will make me happy.'
(iii)   a. *mixnasayim (*ha-) kcarim be-šloša sentimetrim hayu nir'im yoter tov.*
                pants   that- short   in-three centimeters were looking more good
               'Pants three centimeters shorter would have looked better.'
            b. *pitaron ha-tov   / ?tov   bišvili eino tamid   tov   bišvilxa.*
               solotuin that-good   good   for+me not always good   for+you
               'A solution that is good for me is not always good for you.'

6 A further question

As the reader my have noticed, the *Stativity Constraint* provides a necessary condition on verbs for having an adjectival present participle counterpart. It does not provide a sufficient condition. There are numerous stative verbs which do not have corresponding adjectival participles. Among these are *sit, stand, have, own, equal, resemble, reflect, mean, indicate, see, hear, taste, believe, desire*. A priory, two possibilities exist. One option is to show that these verbs, for some reason, are not truly stative. This can be claimed, for example, regarding *sit* and *stand*, which can appear in the progressive (see Dowty 1979, p. 173-180). The second option is to state an additional constraint on the formation of adjectival present participles. At this moment, I do not have an answer to this problem.

7 Conclusion

This paper has aimed to clarify the categorial status of present participles. I began by showing that although many present participles appear in the prenominal position, and are therefore considered adjectives, other adjectival contexts discriminate between different present participles: some present participles are consistently able to occupy them, while others are consistently ungrammatical in them. I suggested the *Stativity Constraint*, which states that only stative verbs have corresponding adjectival present participles. Finally, I showed that the occurrence of present participles of non-stative verbs in prenominal position is not counter-evidence to my analysis, since these participles differ from adjectives, and are best analyzed as part of verbal reduced relative clauses.

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