Fracturing the Adjective:
Evidence from Gaelic Comparatives

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Abstract

This paper investigates the functional structure of adjectival predication in Scottish Gaelic. I propose that, because the basic meaning of an adjective changes substantially when comparative, from denoting properties to denoting intervals on scales, extra functional structure must be added to allow them to predicate of individuals. Evidence for this is quite explicit in Scottish Gaelic. To the extent that the conclusions are true more widely, they suggest that there is quite a bit of extra structure at play in predicative and attributive comparatives.

Keywords adjectives, comparatives, intervals, predication, scales; Scottish Gaelic

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1 Introduction

The aim of this paper is to use comparative syntax to probe the way that predication works in adjectival structures. I show that event structure plays a crucial role here, much as it does in NP predication (see Adger and Ramchand 2003). I propose that the basic meaning for an adjective is changed fairly radically when it becomes a comparative. Comparatives denote intervals on scales (following Schwarzschild 2002), and as such, cannot predicate over individuals. Extra functional structure must be added to allow them to behave in the same way as predicative or attributive adjectives. I show that there is a fair amount of evidence for this from Scottish Gaelic. To the extent that the conclusions about the denotations of comparatives are true more widely, this suggests that there is quite a bit of extra structure at play in predicative and attributive comparatives.

Although the data in this paper comes mostly from the behaviour of comparatives, it is not my intention to provide a fully fledged analysis of the syntax and semantics of comparatives in Scottish Gaelic; rather I want to show how the different syntactic behaviour of positive and comparative adjectives can be seen as an outcome of the kind of semantically motivated functional structure that each projects.

2 A theory of comparatives

Let us begin by adopting the theory of comparatives outlined in a number of recent papers by Chris Kennedy (see especially Kennedy 1999). In this approach, the relevant subpart of a sentence like (1) has the structure in (2):

(1)   Leila is taller than Cordy is.

(2)
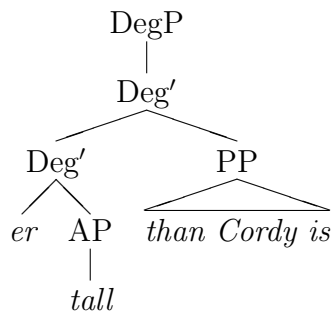
The adjective tall is the complement of a degree head Deg, and the *than*-phrase is adjoined to Deg′. Semantically, the adjective is treated as a function from individuals to degrees, so that predicating an adjective directly of an individual provides a degree. Symbolically:

(3)   [[tall(leila)]] = the extent to which Leila is tall.

Given this approach to the semantics of adjectives, the degree head must itself be a function from adjective meanings. In fact Kennedy assumes that it is a function from adjective

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meanings to a new function which itself relates a degree and an individual. This means that it has the following denotation:

(4)   [[Deg]] = λGλdλx(**R** ((G(x))(d)))

In this formula, G is a variable over adjective types, d is a variable over degrees, and x is a variable over individuals. For example, if the Deg head combines with the adjective 'tall', it will relate the extent of the subject's tallness to some other degree of tallness which is supplied by the *than*-phrase (or contextually).

More concretely, if we take the structure in (2), and we assume that the *than*-phrase simply denotes a degree, we have a derivation that looks as follows:

(5)   a.   λGλdλx(greater-than((G(x))(d))) + tall
        b.   λdλx(greater-than((tall(x))(d)))
        c.   λdλx(greater-than((tall(x))(d))) + ιd (Cordy is d tall)
        d.   λx(greater-than((tall(x))(ιd(Cordy is d tall))))
        e.   Leila + λx(greater-than((tall(x))(ιd(Cordy is d tall))))
        f.   (greater-than((tall(leila))(ιd(Cordy is d tall))

The final formula here states that the extent of Leila's tallness is greater than the extent of Cordy's tallness, which, of course, correctly captures the truth conditions of the comparative.

This semantics predicts that comparative As will have the same kind of predicational capabilities as positive As, since, once the degree structure has been Merged, we are left, once again, with a predicate of individuals (although of type ⟨e,t⟩ rather than ⟨e,d⟩). We'll see that more needs to be said to capture the behaviour of positive and comparative adjectives in Scottish Gaelic.

3   Comparatives in Scottish Gaelic

Scottish Gaelic is a VSO language, with an underlying configurational structure where the finite verb raises to a position higher than that of the subject (see e.g. Ramchand 1997, Adger 1996, Adger 2000). In sentences with no finite verb (those containing a participle, or a non-verbal predicate), a tensed auxiliary appears in the presubject position, as seen in (6):

(6)   Tha   Calum anns a'   phub/òg
        Be-PRES Calum in   the pub/young
        'Calum is in the pub/young'

In Adger and Ramchand (2003), we propose the following basic clause structure for these simple adjectival and prepostional predications in the language:

(7)

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                    TP
                  /    \
                 T      PredP
                 |     /    \
                tha  Calum   Pred
                            /    \
                          Pred   PP/AP
                                /     \
                            in the bar/careful
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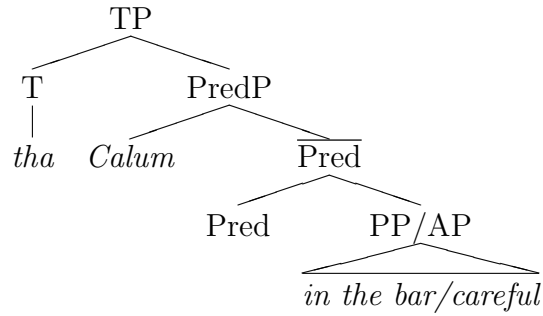
We termed this construction the *Substantive Auxiliary Construction* (SAC) since the type of auxiliary that appears here is usually termed the substantive auxiliary in traditional grammars of Gaelic. In this approach, the Pred head is generalized across categories, so that subjects of Vs, Ns, As and Ps are all introduced by this category (Bowers 1993, Kratzer 1995).

Turning now to the syntactic structure of APs in particular, Scottish Gaelic distinguishes morphologically between positive and comparative forms of adjectives (there is no distinct superlative form). The regular morphological formation of comparatives involves palatalization of the final consonant, and the addition of a schwa, but, as can be seen from the table below, we also have irregularities, such as vowel alternations (trom ∼ truime) and suppletion (math ∼ feàrr).

(8)

òg	òige	young
trom	truime	heavy
math	feàrr	good
slaodach	slaodaiche	slow

The positive and comparative forms of the adjective are not only differentiated morphologically, they are also differentiated syntactically: only the positive version can be used in the Substantive Auxiliary Construction:

(9) Tha   an gille òg
     be-PRES the boy young
     'the boy is young'

(10) *Tha   an gille òige   (na   thusa)
      be-PRES the boy younger (than you)

Compare this with the English pair:

(11)   a.   The boy is young
        b.   The boy is younger than you.

The same effect is found with other predicative structures, such as in the complements of certain verbs:

(12) a. Tha   e a' fas   aosda
         Be-PRES he ASP getting old
         'He is getting old'

(13) a. *Tha   e a' fas   aoisde
         Be-PRES he ASP getting older
         for 'He is getting older'

The same contrast between positive and comparative As can be seen with attributive adjective constructions

(14) Dh'fhalbh an gille òg
      left-PAST   the boy young
      'The young boy left'

(15) *Dh'fhalbh an gille òige   (na   thusa)
       left-PAST   the boy younger (than you)

(16) Leugh   mi an leabhar fada
      read-PAST I   the book   long
      'I read the long book'

(17) *Leugh   mi an leabhar faide
       read-PAST I   the book   longer

    Again, compare with English:

(18) a. The young boy left.
     b. The boy younger than you left.
     c. The younger boy left.

Comparative adjectives then have a distinctly different syntax from that of positive adjectives: whereas positive adjectives may be used directly in predicative or attributive positions, neither of these optional is open to comparative forms.

3.1 Three types of comparatives

How then are the comparative forms used? It turns out that there are three different ways of augmenting the simple comparative so that it can be used predicatively and attributively.

    The first type of augmentation is mainly used with the Substantive Auxiliary Construction outlined above (and with other predicative structures). It involves prefixing the comparative adjective with the particle *nas*:

(19) Tha   mi nas òige   (na   thusa)
      be-PRES I   NAS young-CMP (than you)
      'I am younger (than you)'

(20) Tha   mi nas òige   (na   tha   thusa)
      be-PRES I   NAS young-CMP (than be-PRES you)
      'I am younger (than you are)'

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Just as in English, the *than*-phrase may be either nominal (19) or clausal (20). I leave the syntax of these in Gaelic to another occasion.

This same type of augmentation is used in an adverbial comparative:

(21)   a.   Ruith   esan [gu luath]
            run-PAST he   Prt quick
            'He ran quickly '
       b.   Ruith   esan [nas luaithe   na   ruith   mise]
            run-PAST he   NAS quick-CMP than run-PAST I
            'He ran more quickly than I did'

The second type of augmentation is used for attributive comparatives, and involves prefixation with the particle *as*:

(22)   An gille as òige   na   mise
       The boy AS young-CMP than I
       'The boy younger than me'

(23)   Gach gille as òige   na   mise
       Every boy AS young-CMP than I
       'Every boy younger than me'

It is not possible to use the *as*-comparative in the Substantive Auxiliary Construction:

(24)   *Tha   mi as òige   na   thusa
       be-PRES I   AS young-CMP than you

Nor is it possible to use the *nas* comparative in attributive position when the whole DP is definite or quantified:

(25)   *An gille nas òige   na   mise
        The boy AS young-CMP than I

(26)   *Gach gille nas òige   na   mise
        each boy AS young-CMP than I

However, it is possible to use a *nas*-comparative in an indefinite DP:

(27)   Chunnaic mi gille nas òige
       See-PAST I   boy AS young-CMP
       'I saw a younger boy'

I have also found examples of an *as*-comparative in an indefinite, so these appear to be grammatical in some registers or for some dialects. My own informants rejected the example I presented them with, but further fieldwork is necessary to determine what kind of variation we find here. I have marked the example with a % to signify this.

(28)   %Chunnaic mi gille as òige
        See-PAST I   boy AS young-CMP

There is good evidence that both the *nas* and *as* comparatives can be decomposed further. There is a third type of comparative in Gaelic which I will term the Copular Comparative, which is somewhat archaic, but is still used in formal registers and in writing. The Copular Comparative consists of the copula *is* (present) or *bu/b'* (non-present) immediately followed by the comparative adjective and then the subject:

(29)   is   òige   mise na   thusa
   Cop-PRES young-CMP I   than you
           'I am younger than you'

(30)   b'   òige   mise na   thusa
            Cop-PAST young-CMP I   than you
           'I was younger than you'

The copular comparative is propositional, as can be seen from the examples above. In fact, the Copular Comparative is a subtype of a clausal construction which we termed the Inverted Copular Construction (ICC) in Adger and Ramchand (2003). Inverted copular constructions consist of the copula, a predicate of some kind, and a subject:

(31)   is   le   Calum an cù
            Cop with Calum the dog
           'The dog belongs to Calum'

We argued, in Adger and Ramchand (2003) that ICCs, just like Substantive Auxiliary Constructions, involve a predicative head. However, the predicative head in an ICC is just the copula, and it raises to T, pied-piping its complement:

(32)
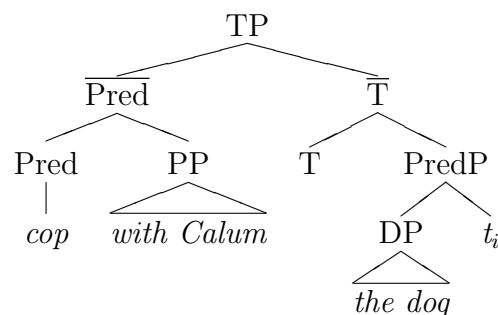
We return later to the syntax and semantics of these constructions in more detail.

We can see immediately that the *as* and *nas* comparatives have the copular comparative as a subpart, since they display exactly the same tense alternation between [s] and [bə] seen above:

(33)   An gille a b'   òige   na   mise
            The boy A cop-PAST young-CMP than I
           'The boy that was younger than me'

(34)   Bha   mi na bu   luaithe   na   thusa
            be-PAST I   NA cop-PAST quick-CMP than you

'I was quicker than you'

This suggests that *as* and *nas* comparatives are constructed from the copular comparative in something like the following way:

(35)   a.   as = a + Cop
        b.   nas = na + Cop

3.2 *nas* and *as* comparatives involve relativization

Can we decompose the remaining part of the prefix yet further? The answer is yes. The *a* subpart of these particles (pronounced as a schwa) is identical in phonology to the particle that is found in relatives:

(36)   An gille a chunnaic mise
        The boy A see-PAST I
        'The boy that I saw'

If these two particles are actually the same, then we would be assigning *as*-comparatives the following kind of structure:

(37)   [$_{\text{Relative Clause}}$ a$_i$ [$_{\text{TP}}$ [$_{\text{Cop}'}$ is òige] t$_i$]

Evidence that this is correct comes from the external distribution of *as*-comparatives and relative clauses. We can show that the comparative *a* isn't just accidentally homophonous with the relative particle, but is actually identical to it in a number of ways. Firstly, wherever a relative clause can appear, we can also have an *as* comparative. In attributive positions:

(38)   An gille as òige   na   mise
        The boy AS young-CMP than I
        'The boy younger than me'

and in clefts:

(39)   'se   Pol a   tha   a' tighinn
        COP+PRO Pol C-REL be-PRES ASP coming
        'It's Paul that is coming'

(40)   'se   Pol as truime de'n dithis
        COP+PRO Pol AS heavier of-the two
        'It's Paul that is the heavier of the two'

In addition, wherever a relative is barred from appearing, the *as* comparative is also barred from appearing. An interesting case here is the constraint found in many language barring simultaneous expression of a possessor and a restrictive relative. For example, in English, restrictive relative clauses are ill-formed in constructions with prenominal genitive DPs:

(41)   *Scotland's preparation for democracy that we expect to begin soon

If the prenominal Genitive is expressed in another way, then the relative clause is perfectly acceptable:

(42)   The preparation for democracy by Scotland that we expect to begin soon

A similar phenomenon exists in Gaelic too. In Gaelic one means of expressing possession involves placing the possessor in the genitive case after the head noun. In these constructions, a definite article is impossible:

(43)   (* an t-) ullachadh   na h-Alba   airson deamocrasaidh
         (* the)   preparation the Scotland for   democracy
         'Scotland's preparation for democracy'

In such a construction it is impossible to modify the head noun with a relative clause:

(44)   *ullachadh   a   bha   sinn an duil   na h-Alba   airson deamocrasaidh
         preparation that be-PAST we   in expectation the Scotland for   democracy

(45)   *ullachadh   na h-Alba   airson deamocrasaidh a   bha   sinn an duil
         preparation the Scotland for   democracy   that be-PAST we   in expectation

An alternative means of expressing possession involves using a prepositional phrase (in which case the article is necessary to trigger a definite interpretation):

(46)   an t- ullachadh   aig Alba   airson deamocrasaidh
         the preparation at Scotland for   democracy
         'The preparation by Scotland for democracy'

This second mode of expressing possession allows a modifying relative clause:

(47)   an t- ullachadh   a   bha   sinn an duil   aig Alba   airson
         the preparation that be-PAST we   in expectation at Scotland for
         deamocrasaidh
         democracy
         'The preparation by Scotland for democracy that we were expecting'

The *as*-comparative behaves exactly like the relative clause: in the genitive structure, it is ill-formed.

(48)   *ullachadh   as fheàrr   na h-Alba   airson deamocrasaidh
         preparation AS good-CMP the Scotland for   democracy

However, if we use the prepositional structure, it is perfect:

(49)   an t- ullachadh   as fheàrr   aig Alba   airson deamocrasaidh
         the preparation AS good-CMP at Scotland for   democracy
         'Scotland's best preparation for democracy'

Note that we have an interesting contrast between English and Gaelic here. English allows a comparative/superlative adjective to occur with a prenominal genitive (*Scotland's best*

preparation), while Gaelic does not. On the account developed here, this is because these adjectives in Gaelic are full relative clauses, rather than just adjectives.

We conclude then that *as* comparatives involve relativisation of a copular comparative. Of course, as well as making morphological and syntactic sense, this proposal captures the fact that an *as* comparative can be used as a predicate in an attributive construction (since this is exactly what relative clauses are) and fits the usual semantic function of relatives, which is to map a proposition onto a predicate. The structure of an *as*-comparative is roughly:

(50)   a. an gille as òige
           the boy AS young-COMP
           'The younger/youngest boy'
    b. [DP an [NP gille [Relative Clause a_i [TP [Cop′ is òige] t_i]]]]

This analysis now naturally captures the fact we noted earlier, that *as*-comparatives cannot occur in the Substantive Auxiliary Construction. They cannot do so for the same reason that relative clauses cannot behave as small clause predicates:

(51)   *Tha   mi as òige   na   thusa
        be-PRES I   AS young-CMP than you

I will assume that this is because Substantive Auxiliary Constructions require a situational variable (see **?**), and a relative clause cannot supply such a variable. See the next section for discussion.

Let's turn now to *nas* comparatives, putting aside *nas*- comparatives in attributive position in indefinites. Elsewhere, *nas*-comparatives have exactly the distribution of predicative adjective phrases or prepositional phrases. We have already seen them in the substantive auxiliary construction, but we also find them as complements of predicative verbs:

(52)   Tha   mi a   faireachdainn òg
        be-PRES I ASP feeling   young
        'I'm feeling young'

(53)   Tha   mi a   faireachdainn nas   fheàrr
        be-PRES I ASP feeling   NAS better
        'I'm feeling better'

and in predicate position in small clauses:

(54)   . . . agus ise fada nas fheàrr   a-nis
        . . . and her much NAS good-CMP now
        ' while she's much better now'

We also find *nas* comparatives as adverbials, which we assume are predicates of VP or some higher structure:

(55)   Ruith   i na bu luaithe na   ruith   i a-riamh
        run-PAST she NA BU fast-CMP than run-PAST she ever
        'She ran faster than she had ever done'

As-comparatives are ruled out in all of these cases:

(56) *Tha   mi a   faireachdainn as fheàrr
      be-PRES I   ASP feeling   AS better
      'I'm feeling better'

(57) ... *agus ise fada as fheàrr   a-nis
      ... and   her much AS good-CMP now
      ' while she's much better now'

(58) *Ruith   i   a bu luaithe   na   ruith   i   a-riamh
      run-PAST she A BU fast-CMP than run-PAST she ever
      'She ran faster than she had ever done'

If the PredP analysis adopted above for Substantive Auxiliary Constructions is correct, then
we can capture the facts above via the assumption that *nas*-comparatives appear as the
complement of Pred:

(59)
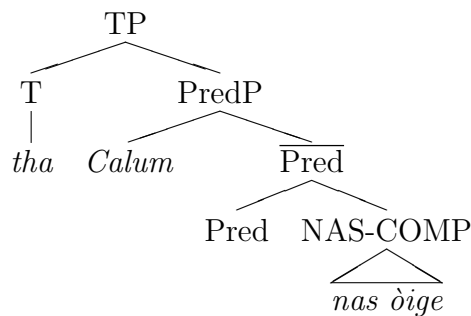
       That this is the right way to go is backed up by the syntax of predicative nominals in
Gaelic. As noted by **?**, it is impossible to have a simple NP complement in a Substantive
Auxiliary Construction:

(60) *Tha   ise oileanach
      be-PRES she student
      for 'She is a student'

Adger and Ramchand attribute this to the lack of a situational variable in nominals. They
note that to create a predicative nominal extra morphology must be added:

(61) Tha   ise na   h-oileanach
      be-PRES she in+3SG.F.POSS student
      'She is a student'

Here what we find is a reduced version of the preposition *ann* 'in' with a possessive pronom-
inal. Putting aside the precise structure of predicational nominals, it seems clear that the
function of the preposition is to add the structure required by the Pred head. The parallels
with *nas*-comparatives are clear:

(62) Tha   ise nas fheàrr   a-nis
     be-PRES she NAS good-CMP now
     'She is better now'

The structures proposed so far capture the internal structure of the two types of comparatives by analysing them as extensions of the copular comparative using syntactic devices available elsewhere in the language: relativisation and the insertion of 'extra' prepositional material to allow certain types of predication. This approach also explains why *as*-comparatives are unavailable in the Substantive Auxiliary Construction and other predicative structures, and why the *nas*-comparative is impossible in attributive position in definites. Unfortunately, as it stands, it also incorrectly rules out *nas*-comparatives as attributive modifiers of indefinites:

(63) Thug e mach iasad na bu mhotha na   bha   mi an duil
     took he out   loan NA BU big-CMP than be-PAST I in expectation
     'He took out a bigger loan than I was expecting'

(64) Thug e mach iasad a   bha   gle mh'or
     took he out   loan that be-PAST very big
     'He took out a very big loan'

Furthermore, we have still not answered the basic question of why a comparative adjective is impossible in either predicative and attributive positions:

(65) *Tha   an gille òige   (na   thusa)
     be-PRES the boy younger (than you)

(66) *Dh'fhalbh an gille òige   (na   thusa)
     left-PAST the boy younger (than you)

I tackle this second question in the next section.

4 Why does it work like this?

4.1 Semantic background

I have not yet discussed the semantics associated with the Inverted Copular Construction or the Substantive Auxiliary Construction. (Adger and Ramchand 2003) assume that the ICC is headed by a Pred head with the following semantics:

(67)   [[is]] = $\lambda\pi\lambda x[\text{holds}(\pi, x)]$

This captures the fact that such predications are interpreted as being about an individual, rather than being about a situation (they are roughly individual level predications, in the sense of Kratzer 1995):

(68) Is   mòr an   duine sin.
     Cop-PRES big that man
     'That man is big'

(69) Is   le   Calum an cù
    Cop-PRES with Calum the dog
    'The dog belongs to Calum'

(70) Is   tidsear Calum.
    Cop-PRES teacher Calum
    'Calum is a teacher'

Each of these predications has the general form:

(71)   holds(property, Calum)

The relation denoted by the copula is very general. It takes whatever concept is denoted by its complement and states that there is a relevant relation between that concept and some kind of individual. The individual can be a simple referential element, as above, or a kind:

(72) Is   eun sgarbh.
    Cop-PRES bird cormorant
    'The cormorant is a bird'

Given that copular comparatives have an ICC structure, we expect them to have a non-eventive interpretation. This is correct; note the meaning differences between the following examples:

(73) is   fheàrr ise na   esan
    Cop better she than he
    'She is better than him (in general)'

(74) Tha   ise nas   fheàrr na esan
    be-PRES she better than   he
    'She is better than him (in general *or* just now)'

This can be seen even more clearly in the use of *feàrr*, 'better' to mean 'recovered from an illness'. This interpretation is very odd with a Copular Comparative, but find with a SAC comparative:

(75) ??is fheàrr ise a-nis
    Cop better she now
    'She is better now'

(76) Tha   ise nas   fheàrr a-nis
    be-PRES she better now
    'She is better now'

As-comparatives, being simple relatives of Copular Comparatives, inherit this non-eventive interpretation.

In contrast, SACs involve a null Pred head which relates a property and a situation:

(77)   [[Pred]] = $\lambda\pi\lambda x\lambda e[\text{holds}(\pi, e) \,\&\, \text{subject}(x, e)]$

This means that an example like (78) will have the representation in (79):

(78) Tha Calum anns an taigh
      be-PRES Calum in the house
      'Calum is at home'

(79) ∃e [overlaps(e, now) & holds(at-home, e) & subject(Calum, e)]

This representation is built up via the Pred head which takes a PP complement. This PP complement denotes a property of situations, its situational variable is Event Identified with the situational variable of the Pred head (see Kratzer 1995 for details of Event Identification). The auxiliary *tha* is a selective binder of situational variables and adds in tense information.

Prepositional phrases and adjectives are natural predicates of situations, while nominals are not. This presumably follows from their underlying semantics, and may be due to the 'criterion of identity' effects discussed by Baker (2003). Because of this, if a nominal predication is required, the nominal must be augmented with some functional material as discussed in the previous section. The semantic function of this material is to add in the required situational variable. This explains the appearance of the prepositional element *ann* in nominal predication.

(80) Tha   Calum [Pred [$_{PP}$ na   oileanach]]
      be-PRES Calum   in+3SG.M.POSS student
      'Calum is a student'

(81) ∃e [overlaps(e, now) & holds(student, e) & subject(Calum, e)]

4.2 Why are simple comparative forms so restricted?

I'd like to suggest an answer to this question along the following lines:

1. contra Kennedy, comparative Deg rather than A, introduces degrees into the semantic representation, and it does so by turning the adjective into something which denotes a scalar interval.

2. Since scalar intervals are essentially abstract nominals, Pred cannot combine with Deg directly.

3. Since scalar intervals are not modifiers, DegP cannot be used attributively.

This set of ideas captures the fact that comparative adjectives cannot appear in just the same positions as positive adjectives: in a predicative structure Pred is required, but this rules out Deg; in an attributive structure a predicate of individuals is required for Predicate Modification to operate (see Heim and Kratzer 1998 for Predicate Modification), but DegP denotes a scalar interval, not a predicate. The only case where an adjective and a DegP are sufficiently similar to appear in the same position is the complement position of the copula, which simply requires a concept and creates a brute force predication between that concept and an individual.

4.2.1 Evidence from modifers

In English the quantity modifiers that appear with mass and abstract nouns differ from those that appear with count nouns. The modifiers that can appear with mass and abstract nouns can also appear with comparative but not positive adjectives:

(82)   a.   much rubbish; much attention; *much people/person
       b.   *much easy; much easier

The same patterns are replicated in Gaelic, with the slight twist that Gaelic does not distinguish between count and mass quantity modiifiers:

(83)   a.   tòrr   sgudail; tòrr   feart;   tòrr   dhaoine
            much rubbish; much attention; a lot of people
       b.   *tòrr   furasda; tòrr   nas   fhasa
            *much easy;   much NAS easier

Moreover, comparative forms cannot be intensified with the same set of intensifiers as simple adjectives:

(84)   very easy; *very easier

(85)   glé   fhurasda; *glé   nas   fhasa
       very easy;   *very NAS easier

The generalization that captures both languages is that comparative adjectives have a different set of quantity modifiers from positive adjectives, and that these modifiers are similar to those that appear with mass and abstract nouns.

4.2.2 Measure Phrases

A similar conclusion can be drawn from the behaviour of measure phrases. In English, one can always use a measure phrase with a comparative, but whether one can be used with a positive adjective varies:

(86)   a.   three years old; three years older
       b.   four weeks long; four weeks longer
       c.   ??twenty degrees hot; twenty degrees hotter

In Gaelic the contrast is categorical. Measure phrases are impossible with positive adjectives and always fine with comparatives. the following are simply direct translations of the English examples above:

(87)   a.   *tri   bliadhna aosda; tri   bliadhna nas   aoisde
            three year   old;   three year   NAS older
       b.   *ceithir seachdainn fada; ceithir seachdainn nas   fhaide
            four   weeks   long; four   weeks   NAS long

c. *fichead pung   teth; fichead pung   nas   teotha
   twenty points hot;   twenty   points NAS hotter

Interestingly, Gaelic has another very productive strategy for creating the semantic effect of a measure phrase acting on a positive adjective: it uses a corresponding abstract noun, a strategy which is again rather variable in English:

(88) a. tri   bliadhna de dh'aois
          three year   of of-age
          'three years of age'
      b. ceithir seachdainn de dh'fhad
          four   weeks   of of-length
          'four weeks in length'
      c. fichead pung de theas
          twenty point of heat
          '?twenty degrees of heat'

Once again, it appears as though comparatives pattern like abstract nouns in terms of the measure phrases they allow.

4.3   Implications

We can explain this behaviour if we follow Schwarzschild (2002) and Schwarzschild and Wilkinson (2002), and take *much* and measure phrases to be predicates of **scalar intervals**. To capture the facts above, it would suffice to say that simple adjectives do not denote scalar intervals but comparatives do. A scalar interval has the same semantic structure as a mass or abstract noun, and this is why they can be modified by the same kinds of expressions. Let us assume then that Deg combines with an Adjective to create a scalar interval:

(89) $[[\text{Deg}]] = \lambda\pi\iota J[\textbf{scale}(\pi, S) \ \& \ \textbf{part}(J, S)]$

Here we have a **scale** function which returns a scale for a property, and a mereological function **part** which selects an interval J from that scale. The modifiers of a scalar interval are the same as those of an abstract or mass noun because scalar intervals and non-count nouns have a similar part-structure (any sub- part on a scale is still part of the scale, and any subpart of a mass or abstract noun is still characterised by that noun's meaning).

However, there is a sense in which adjectives and their comparatives do denote something similar. An adjective denotes a property, and a comparative, on this account, denotes a subpart of that property organized into a scale. For this reason, the non-eventive copular verb can combine with either:

(90)   is   mòr e
        Cop big   he
        'He's large'
        holds(large, x)

(91)   is   mòtha e
        Cop bigger he

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'He's larger'
holds(interval-on-the-scale-of-largeness, x)

However, there is also a semantic distinction; the comparative is essentially an abstract noun. Recall that we suggested that nouns do not occur with situational variables because their semantics involves a 'criterion of identity' (Baker 2003). This criterion of identity involves essentially being able to say that one thing is the same as another. While one cannot do this sensibly with simple adjectives, it is possible to say things like the following:

(92)   The wine is as much colder than the beer as is the water.

What we are doing semantically here is saying that the coldness of the wine on a particular scale is the same as the coldness of the water, when both are compared to the beer. That is, although it requires some circumlocution, the criterion of identity seems to be at play with comparatives.

For these reasons, I'll assume that the positive adjective, when it is made into a comparative, denotes what is essentially an abstract noun. It follows that no situational variable is possible with a comparative, correctly ruling out comparative forms in a simple PredP structure:

(93)   *Tha   an gille òige   (na   thusa)
        be-PRES the boy younger (than you)

This approach also explains why comparative forms are ruled out in attributive constructions. Since the comparative denotes an abstract noun, it cannot be used as a modifier:

(94)   *Dh'fhalbh an gille òige   (na   thusa)
        left-PAST the boy younger (than you)

One might object to this characterisation of comparative forms with the question: why can't these comparatives simply be used as abstract nominals? I think the answer to this question is actually syntactic. The morphology of comparative formation was actually used as a means of constructing abstract nominals from adjectives in the history of Gaelic, and some of these nominals are still in use. For example, *doll*, 'blind' *doille* 'more blind' or 'blindness' (similarly for deafness, softness, fullness, strength), although this is no longer productive.[1] The reason that these expressions cannot function as abstract nouns in general is, I think, just because the Deg projection cannot extend into a nominal projection with determiners etc (perhaps because neither the A nor Deg provide a case feature).

The semantics of comparative formation in Gaelic, then, interacts with the rather strict modes of predication that the language allows. The only predicational head that can combine with DegP is the copula, which explains why attributive comparatives are build out of the copular comparative plus relativisation. Because relative clauses do not have a situational variable, they cannot be used in other predicative structures, hence a prepositional augmentation structure is used.

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[1]Notice that in English too, we find comparative forms apparently acting as nominals with determiners (as in *The heavier, the better*).

5 The puzzle of indefinites

I have only a hunch to offer here about why indefinites accept *nas*-comparatives, while definites do not. The hunch follows Lerner and Pinkal (1995)'s observation that indefinites allow both a narrow and a wide reading:

(95)   George owns a faster car than this BMW

(96)   George owns a faster car than Bill.

In (95), a narrow comparison between entities is made, while in (96), the comparison is indirect. Note that the wide reading requires reference so some situation/state/event (in this case, the state in which Bill owns a car of a certain capability). **?** notes that in (97), only the narrow reading is possible:

(97)   Of all the vehicles in the garage, George owns every faster car than *Bill/that BMW

While the narrow reading is awkward, it is possible. The broad reading is out.

Beil implements a semantics for this which involves setting up a comparison class which is either a simple set of entities, or which involves eventualities which the entities are connected with. For the latter to be possible, there must be an eventuality variable within the comparative to bind. My hunch is that this is why a *nas* comparative is possible, since, as we have seen, these involve such a variable. If the adjective is embedded within a definite determiner, or a strong quantifier, this variable could never be bound, hence the ill-formedness of *nas*-comparatives in definites.

I have not worked out this hunch any further here, since it will require more fieldwork to determine whether this is the right way to go.

6 Conclusions

The broad conclusion I'd like to draw is that comparative formation changes the semantic denotation of an adjective into something which does not behave naturally as a predicate, in either predicative or attributive structures. We can see this fairly clearly in Gaelic because the language has a very tight relationship between the morpho- syntax of predication and its semantics. English, as noted in Adger and Ramchand (2003), has a lexical item *be* which is ambiguous between a range of predicational functions, and it hence masks what is going on in these structures.

There are a number of open questions that still need to be resolved. The *nas*-comparatives in indefinites are obviously one, but there is also the question of the structure of scalar modification (why do the modifiers precede rather than follow the *nas* particle). I leave these for another time.

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