Crosslinguistic variation
in comparison constructions*

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This paper presents parallel sets of data on comparison constructions from 14 languages. On the basis of the crosslinguistic differences we observe, we propose three parameters of language variation. The first parameter concerns the question of whether or not a language's grammar has incorporated scales into the meanings of gradable predicates. The second parameter differentiates between languages that allow quantification over degrees in the syntax and those that do not. Finally, we propose a syntactic parameter that concerns options for syntactically filling the degree argument position of a gradable predicate.

Keywords: comparison constructions; crosslinguistic variation

1. Introduction

This paper presents the results of our joint work on comparison constructions (Project B17, SFB 441, University of Tübingen). The project has elicited crosslinguistic data on comparison constructions in 14 languages. Our goal has been an in-depth study of those languages, with the perspective of figuring out how their grammars differ in order to yield the diverse empirical picture that comparisons present across languages.

The languages we have selected are Bulgarian, Guaraní (an Amerindian language spoken mostly in Paraguay), Hindi-Urdu, Hungarian, Mandarin Chinese, Mooré (a Gur language), Motu (from Papua New Guinea), Romanian, Russian, Samoan, Spanish, Thai, Turkish and Yorùbá (a Benue-Congo language). Besides practical issues like accessibility of data and native speakers, our selection has been guided by the goals of getting a diverse set of data and of getting a grasp on the grammatical factors that decide upon the appearance of comparison constructions.

To this end, one important input has been the typological work on comparison by Stassen (1985). He identifies in particular languages that use a verbal

strategy – exceed-type languages – and languages that use a conjunctive strategy to express comparison (we will not make use of Stassen's other language types in this paper). Yorùbá and Mooré exemplify the first type and Motu the second. Stassen classifies Samoan as a conjunctive language, and that is why we included it in our study. However, it turns out that the conjunctive strategy is archaic and that present day Samoan uses a construction instead that looks quite similar to English-like comparatives; see Villalta (2008b). This makes our language sample less balanced than it would ideally be. Even so, we have languages in which the surface appearance of a comparison is strikingly different from the familiar English comparative.

Secondly, Beck, Oda and Sugisaki (2004) have proposed a parameter of crosslinguistic variation that distinguishes Japanese from English. The parameter identifies a particular set of data to be tested. Moreover, it reveals that surface appearance is insufficient to draw any conclusions about grammar, since Japanese at first glance looks rather similar to English and has been analysed in a parallel way in theoretical linguistics. Yet there are important empirical differences that are revealed once one takes a closer look at the data. Comparatives that have a Japanese-like appearance and that have the potential of (dis-)proving the relevance of the parameter proposed by Beck, Oda and Sugisaki exist in Mandarin Chinese, Guaraní, Hungarian, Thai and Turkish.

Finally, there are some subtle differences between the Indo-European languages with respect to comparatives (see e.g. Reglero (2007)). Following up on potential differences in syntax and semantics has lead to an investigation of Bulgarian, Russian, Hindi-Urdu, Romanian and Spanish, for the purpose of contrasting them with English and German (which is identical to English in the respects that interest us here).

We have designed a questionnaire with a set of core data to be tested. The questionnaire was translated into each language. Then data were elicited from naive informants. The set of data to be tested was augmented according to the specific questions raised by the language under investigation. Since there is a set of core data, however, we have comparable data on comparisons for all 14 languages.

The questionnaire has a general part, in which availability and expression of various comparison constructions (comparative, equative, superlative, etc.) are tested. Besides the form of the relevant comparison construction, we also investigated whether its interpretation is English-like or not (e.g. does 'Mary is as tall as Bill is' truth-conditionally imply that Mary is tall?). The goal of this part is to get an impression of the systematicity of degree constructions in the syntax and semantics of the language.

A second part of the questionnaire is a detailed study of the grammar of comparatives, which are the most studied and best analysed degree construction in

English and indeed in other languages as well. This part includes data like difference comparatives, subcomparatives and comparison with a degree, which are suited to determine whether the language has a degree semantics in the sense of a standard theory of comparison (going back to von Stechow (1984)) and whether it confirms or disconfirms the parameter suggested in Beck, Oda and Sugisaki.

Finally, the questionnaire investigates syntactic possibilities in the realization of comparatives, for example, clausal and phrasal comparatives, adverbial and attributive comparatives. This part serves to get a grasp on the syntactic foundation for the expression of comparison and to enable us to decide upon the finer points of crosslinguistic variation e.g. by eliminating orthogonal factors.

The paper is structured as follows: Section 2 presents and explains the important aspects of our questionnaire. The crosslinguistic results are discussed in Section 3. Their theoretical interpretation includes a suggestion on what parameters may be at work to produce this crosslinguistic picture. The consequences of our proposals are discussed in Section 4. The appendix presents the original questionnaire as well as the core crosslinguistic data in the form of a simple database.

2.   The questionnaire

Our project's goal is to combine thorough empirical study with theoretical analysis. Ours is not a classical typological study; we wholeheartedly endorse Baker and McCloskey's (2007) support of a crosslinguistic methodology that involves a smaller number of languages, but a more detailed, theoretically guided investigation. We extend this methodology from application to syntax to the syntax/semantics interface and compositional semantics, as proposed and demonstrated for complex predicate constructions in Beck (2005). This means that beyond a description of how a given language chooses to express a particular concept, we want an analysis of the chosen structure and an understanding of how the language's grammar constrains expression of the concept. To give an example, Motu expresses the English comparison in (1) as in (2). Both languages convey the information that there is an ordering of Mary's position on the height scale relative to Frank's to the effect that Mary's is higher (i.e. (3)), but the structures used look very different. Why?

(1)   Mary is taller than Frank is.

(2)   *Mary   na   lata,   to   Frank   na   kwadoḡi.*
       Mary   TOP   tall,   but   Frank   TOP   short
       "Mary is taller than Frank."

(3) |--------------F-----M------>

We will not, of course, be able to ultimately answer the question why Motu chooses (2). But we propose an analysis of (2) that captures crucial differences to English comparatives, and we furthermore propose a reason for why Motu cannot choose (a structure corresponding to) (1): a parameter of crosslinguistic variation. In order to achieve that, we need a syntactic and semantic analysis of (1), and a reasonably comprehensive set of Motu data that follow up on important features of the English analysis. It is the latter kind of information that our questionnaire is designed to provide.

Subsection 2.1. summarizes the core ingredients to the standard syntactic and semantic analysis of comparison in English. Subsection 2.2. discusses the analysis of Japanese from Beck, Oda & Sugisaki as a case study in parametric variation. The core data questions contained in the questionnaire are presented in Subsection 2.3. Subsection 2.4. explains our elicitation procedure.

2.1   English comparison constructions

A theory of how comparison works in English enables us to ask questions about crosslinguistic variation that are guided by linguistic analysis. The pertinent points include assumptions about adjective meaning, syntax and semantics of degree morphology, and matters of Logical Form and compositional interpretation. The theory summarised below is essentially Heim's (2001) version of von Stechow's (1984) seminal work on comparison. See Beck (to appear) for a recent exposition. It is this theory of comparison that the crosslinguistic study and analysis are based on. (There are of course competitors (e.g. Klein (1980)) and alternative versions (e.g. Kennedy (1997)) of this theory; see e.g. Klein (1991) for discussion; also see below for discussion of how the adoption of this theory interacts with certain points made in this paper.)

The foundation of the analysis of English comparison constructions is the lexicon. Adjectives are given lexical entries according to which they relate a degree and an individual, cf. (4). (4b) is an abbreviation for (4a).

(4)   a. $[\![\text{ tall }]\!] = \lambda d: d \in D_d. \lambda x: x \in D_e.$ Height $(x) \geq d$
        b. $[\![\text{ tall }]\!] = \lambda d.\lambda x.$ x is d-tall

Degrees are abstract entities (type $\langle d \rangle$) that form a scale (i.e. a set ordered by an ordering relation). Klein (1991), following Cresswell (1976), reconstructs degrees as equivalence classes of individuals. There is a height scale, an intelligence scale, a temperature scale etc, which are mutually non-comparable. The reason for assuming such abstract objects in the analysis of English is that there are expressions that refer to them, as well as expressions that operate on them. One such expression is the comparative. The meanings of (5a) and (5b) are paraphrased in terms of

degrees. It is the comparative morpheme whose semantics expresses the relation between degrees as in (6a,b).

(5) a. Captain Apollo is taller than 1.70 m.
         The largest height degree that Captain Apollo reaches exceeds 1.70 m.

     b. Your shoes are longer than this cupboard is deep.
         The largest length degree that your shoes reach exceeds the largest degree of depth that this cupboard reaches.

(6) a. comparative morpheme for comparison with degree (type $\langle d, \langle\langle d,t \rangle, t \rangle \rangle$):
         $[\![\text{-er}]\!] = \lambda d.\ \lambda P.\ \max(P) > d$

     b. comparative morpheme for clausal comparatives (type $\langle\langle d,t\rangle, \langle\langle d,t\rangle, t\rangle \rangle$):
         $[\![\text{-er}]\!] = \lambda D1.\ \lambda D2.\ \max(D2) > \max(D1)$

(7) $\max(P) = \iota d: P(d) = 1\ \&\ \forall d'[P(d') = 1 \rightarrow d' \leq d]$

These considerations reveal an important feature of the grammar of comparison in English: comparatives (going back to Bresnan (1973)) are taken to require a very abstract syntax, because semantically, the comparative morpheme is the highest operator in the clause, but syntactically, it appears rather low in the immediate vicinity of the matrix clause adjective. A classical[1] derivation of (5b) is given below ((8) is the underlying structure, (9) the surface and (10) the Logical Form); compositional interpretation of the Logical Form is given in (11).

(8) underlying structure:

(9)   surface:

```
                        IP
              _____
             IP                      CP₃
        _____            _____
       DP        I′          than         CP
   your shoes  _____                _____
              I      AP              C         IP
              |    _____          how₁    _____
             are DegP    A              DP          I′
                _____  |         this cupboard  _____
               t₂   t₃  long–er₂                 I      AP
                                                 |    _____
                                                is DegP    A
                                                   t₁     deep
```
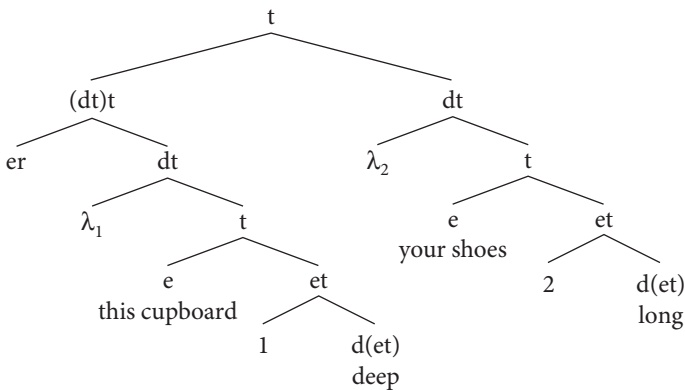
(10)   LF:

```
                               t
                    _____
                  (dt)t                 dt
              _____            _____
             er        dt          λ₂         t
                   _____              _____
                  λ₁        t            e        et
                        _____     your shoes  _____
                       e       et              2    d(et)
                  this cupboard _____             long
                               1    d(et)
                                    deep
```
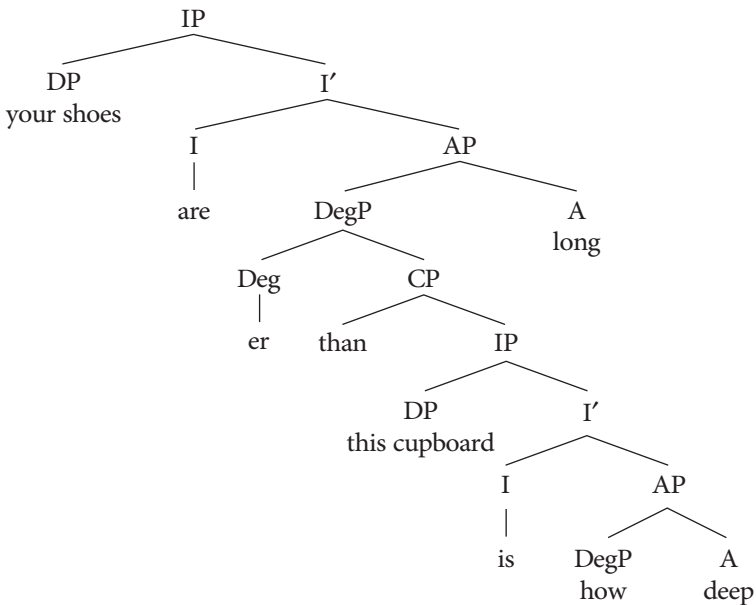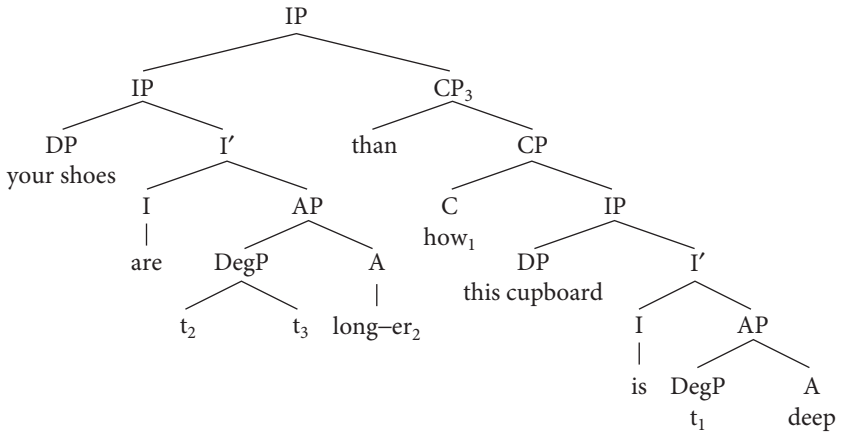
(11)   a.   ⟦ [1 [this cupboard t1 deep]] ⟧ = λd. Depth(this_cupboard) ≥ d
        b.   ⟦[2 [your shoes t2 long]]⟧ = λd. Length(your_shoes) ≥ d
        c.   ⟦-er⟧ = λD1. λD2. max(D2) > max(D1)
        d.   ⟦-er⟧ (λd. Depth(this_cupboard) ≥ d)(λd. Length(your_shoes) ≥ d) = 1
              iff max(λd. Length(your_shoes) ≥ d) > max(λd. Depth(this_cupboard) ≥ d)
              iff Length(your_shoes) > Depth(this_cupboard)

In this derivation, the *than*-constituent originates as the sister of the comparative morpheme. Its surface position is achieved by extraposition. The constituent consisting of the comparative morpheme plus *than*-constituent is called a DegP here, following Heim (2001). It occupies the position SpecAP (a more sophisticated syntactic analysis is conceivable that employs functional categories (e.g. Gergel (2008)); the simple version suffices for our purposes). The comparative morpheme joins the adjective to yield the comparative form (or alternatively is combined with dummy *much* to yield *more*).

At the level of syntax that is the input to compositional interpretation (Logical Form), the *than*-constituent is the first argument of the comparative morpheme. In the case of a *than*-clause, it needs to denote a set of degrees. This is achieved via wh-movement within the *than*-clause and predicate abstraction. The main clause needs to provide a similar set of degrees. We derive this with the help of QR of the DegP. As Heim (2001) observes, the DegP is of type $\langle\langle d,t\rangle,t\rangle$, a quantifier over degrees, and hence the prototypical kind of constituent to undergo QR.

We have given above an example of a predicative comparative. Examples with attributive and adverbial comparatives, as well as other clausal comparatives, differ from our case in terms of position of the AP and the kinds of ellipsis they involve. They are the same in terms of underlying assumptions about structure and compositional interpretation. Some sample data are given below.

(12)   a.   Mr Bingley keeps more servants than Mr Bennet does.
      b.   [[-er [than [2 [Mr Bennet does [~~VP~~ keep t2 many servants]]]]]
          [2 [Mr Bingley keeps t2 many servants]]]

(13)   a.   Colonel Fitzwilliam behaved more amiably than his cousin did.
      b.   [[-er [than [2 [his cousin did [~~VP~~ behave t2 amiably]]]]]
          [2 [Colonel Fitzwilliam behaved t2 amiably]]]

(14)   a.   Colonel Fitzwilliam behaved more amiably than I had expected.
      b.   [[-er [than [2 [I had expected [~~XP~~ C.F. behave t2 amiably]]]]]
          [2 [Colonel Fitzwilliam behaved t2 amiably]]]

The important aspects of this theory of comparatives are:

– comparison is between degrees
– matrix and *than*-clause provide sets of degrees through abstraction over a degree variable
– the comparative morpheme relates their maxima
– adjectives denote relations between degrees and individuals

With these features of the theory in place, it is straightforward to extend data coverage in many ways (and this is indeed one of the strengths of this analysis). There is a bunch of other quantifiers over degrees that differ from the comparative in terms of their specific meaning, but are otherwise rather similar (examples given under (a), paraphrases under (b) and standard Logical Forms under (c)):

(15)   Degree Question (DegQ):[2]

      a.   How tall is Captain Apollo?
      b.   For which d: Captain Apollo is d-tall
      c.   [Q [1 [Captain Apollo is t1 tall]]]

(16)   Measure Phrase (MP):

    a.   Captain Apollo is exactly 1.74 m tall.

    b.   The largest degree d such that Captain Apollo is d-tall is 1.74 m

    c.   [[exactly 1.74 m] [1 [Captain Apollo is t1 tall]]]

(17)   Equative:

    a.   Starbuck is as tall as Captain Apollo is.

    b.   The largest degree of height that Starbuck reaches is at least as high as the largest degree of height that Captain Apollo reaches.

    c.   [[as[1 [Captain Apollo is t1 tall]]] [1 [Starbuck is t1 tall]]]

(18)   Superlative:[3]

    a.   Helo is the tallest.

    b.   The largest degree of height that Helo reaches exceeds the largest degree of height that any other relevant person reaches.

    c.   [Helo [-est C [2 [1[t2 is t1 tall]]]]]

(19)   Difference Comparative (DiffC):[4]

    a.   Helo is 8 cm taller than Starbuck is.

    b.   The largest degree of height that Helo reaches is 8 cm plus the largest degree of height that Starbuck reaches.

    c.   [[8 cm -er [1 [Starbuck is t1 tall]]] [1 [Helo is t1 tall]]]

According to the classical view, these degree operators are genuine quantifiers. Heim (2001) (following up on Kennedy (1997)) investigates this feature of the analysis by examining their interaction with other scope bearing elements. She finds scope interaction in particular with certain modal verbs. A key example is (20), in which the comparison can take scope over the matrix clause modal. The relevant reading is (21a), according to which the sentence states a requirement on the minimum length (reading (21b), which imposes a requirement on absolute length, is also possible, but not really relevant here). In (22) we illustrate a situation that makes (21a) true.

(20)   This draft is 10 pages long. The paper is required to be exactly 5 pages longer than that.

(21)   a.   The length the paper reaches in all situations meeting the requirements is 15pp.
        = the minimum length required for the paper is 15 pages

    b.   In all situations meeting the requirements, the length of the paper is 15pp.
        = the paper must be exactly 15 pages long

(22) |------------------------15pp----------------------->

///////////////////////////   sit1: the paper is exactly 15pp long

//   sit2: the paper is exactly 18pp long

//   sit3: the paper is exactly 20pp long

sit1 – sit3 are compatible with the requirements

the length that the paper reaches in all of them is 15pp

The Logical Forms of the two possible readings and their interpretations are given below. In (23a), the minimum requirement reading, the DegP takes scope over the modal verb. Heim argues that this is important confirmation of the quantifier analysis of the comparative, and we follow her here.[5]

(23)   a.   [[exactly 5pp -er than that] [1 [required [the paper be t1 long]]]]
              $max(\lambda d. \forall w'[R(@,w') \rightarrow$ the paper is d-long in w']) = 10pp + 5pp
              = the minimum length required for the paper is 15 pages

        b.   [required [[exactly 5pp -er than that] [1[the paper be t1 long]]]]
              $\forall w'[R(@,w') \rightarrow max(\lambda d.$ the paper is d-long in $w') = 10pp + 5pp]$
              = the paper must be exactly 15 pages long

We must distinguish these degree operators from the unmarked, positive form of the adjective. The positive adjective is used to make a vague or context dependent statement about the extent to which an individual has the property expressed by the adjective.

(24)   Helo is tall.
        Helo reaches a size that exceeds the contextual threshold for tallness.

This is analysed in terms of a combination of the lexical adjective and a positive operator, (25a). There is no reason to think that the positive operator scopally interacts with other operators (e.g. *Helo is not tall* is not ambiguous, nor has there ever been such a claim). Therefore we propose that it combines with the adjective directly.[6] We illustrate with von Stechow's (2006) semantics for the positive, according to which the positive relies on a contextually given neutral interval (L_c), and states that the individual has the adjectival property to an extent that is at least as high as the neutral interval's upper bound, (25b).

(25)   a.   [Helo is [AP POS tall]]
        b. $\llbracket POS_c \langle\langle d,\langle e,t\rangle\rangle,\langle e,t\rangle\rangle \rrbracket = \lambda Adj. \lambda x. \forall d[d \in L_c \rightarrow Adj(d)(x)]$

(26)   a.   Helo is tall.
        b. $POS_c (\lambda d.\lambda x.x$ is d-tall)(Helo) iff $\forall d[d \in L_c \rightarrow Height(Helo) \geq d]$
        c. |------------//////////----------------x--------------------> ∞
                          L_c Height(Helo)

In this subsection, we have seen an analysis of comparison in English that uses a degree ontology in the semantics, and that has gradable predicates introduce into the syntax degree arguments. English has various operators that quantify over these degree arguments, among them the comparative, but also measure phrases and degree questions. The comparative is an operator that interacts scopally with other quantifiers, e.g. modals. English comparatives make the most of the syntax of Logical Form in order to be interpretable.

2.2   Japanese comparison

Beck, Oda & Sugisaki (2004) argue that comparison in Japanese is different from comparison in English in important respects. Japanese (27) looks superficially similar to English (28a), with *yori* taking the place of *than*. But several empirical differences between the two languages lead Beck, Oda & Sugisaki to propose a different analysis, closer to that of English (28b). We present their core data and their analysis here as motivation for aspects of our crosslinguistic study.

(27) Sally-wa   Joe-yori   se-ga   takai.
       Sally-TOP   Joe-YORI   back-NOM   tall

(28) a.   Sally is taller than Joe.
      b.   Compared to Joe, Sally is taller.

The following differences to English comparatives are judged to be indicative of a different analysis by Beck, Oda & Sugisaki. In contrast to English, Japanese does not permit direct measure phrases (cf. (29) below), subcomparatives (cf. (30)), or degree questions (cf. (31)). The acceptability of a differential comparative (29b), however, indicates that the semantics underlying the *yori*-construction is a degree semantics.

(29) a.   Sally-wa   5 cm se-ga   takai.
            Sally-TOP   5 cm back-NOM   tall
            Sally is 5cm taller/*Sally is 5cm tall.

      b.   Sally-wa   Joe-yori   5 cm se-ga   takai.
            Sally-TOP   Joe-YORI   5 cm back-NOM   tall
            Sally is 5cm taller than Joe.

(30) a.   *Kono tana-wa   [ano doa-ga   hiroi yori (mo)] (motto) takai.
            this   shelf-TOP [that door-NOM wide YORI (mo)] (more)   tall

      b.   This shelf is taller than that door is wide.

(31) a.   John-wa   dore-kurai   kasikoi no?
            John-TOP   which degree   smart   Q
            'To which degree is John smart?'

      b.   How smart is John?

Beck, Oda & Sugisaki also note that in contrast to English, a matrix clause modal verb in a Japanese comparison construction does not permit the wide scope reading

of the comparative operator, i.e. the minimum requirement interpretation (example given in (32)).

(32) Sono ronbun wa   sore yori(mo) tyoodo 5_peeji nagaku-nakerebanaranai.
      that   paper   TOP that YORI(MO) exactly 5_page   long-be_required
      The paper is required to be exactly 5 pages longer than that.

A final important difference that Beck, Oda & Sugisaki identify concerns examples like (33) below. The English sentence is not acceptable.

(33) Negative Island Effect (NegIs):
      *Mary bought a more expensive book than no boy did.

This is a so-called negative island effect – negation in the *than*-clause often leads to unacceptability. **Von Stechow (1984) and Rullmann (1995) give a semantic expla-**nation for this effect: the maximum *than*-clause degree in (33) is in fact undefined, hence the whole sentence is meaningless and therefore unacceptable.

(34) $\lambda d.$ no boy bought a d-expensive book   max undefined!

Interestingly, the Japanese analogon to (33) is acceptable; the example in (36) has a different, sensible interpretation, as the paraphrase indicates: it means that Mary bought a book that was more expensive than the book that no boy bought. The *than*-clause does not describe degrees at all, but individuals, cf. (35). It seems to be a relative clause, and this is Beck, Oda & Sugisaki's analysis.

(35) $\lambda x.$no boy bought x

(36) a.   John-wa   [dare-mo kawa-naka-tta no   yori]
           John-TOP anyone   buy-NEG-PAST   NO   YORI

           takai   hon-o   katta.
           expensive   book-ACC   bought
           'John bought a book more expensive than the book that nobody bought.'
      b.   *John bought a more expensive book than nobody did.

These basic facts are summarized in (37):

(37) Japn: *subcomparative (SubC), *measure phrase (MP), *degree question (DegQ),
            NegI-Effect (NegIs) and Scope not like English
            but: Differential comparative (DiffC) ok!

In order to capture these differences to English, Beck, Oda & Sugisaki suggest that Japanese does not permit quantification over degree arguments. This is expressed in the following parameter:

(38) Degree Abstraction Parameter (DAP) (Beck, Oda & Sugisaki):
      A language {does/does not} have binding of degree variables in the syntax.

If there is no binding of degree variables, a language cannot have degree operators like the English comparative. This explains the properties Scope (for a degree operator to take wide scope, binding of degree variables is necessary), NegIs (since the *yori*-clause does not denote a set of degrees but a set of individuals, it is fine), DegQ (which again needs binding of degree variables, as seen above), SubC (comparing two sets of degrees requires degree variable binding) and MP (since measure constructions involve quantification over degrees). But of course now we face the question of what the semantics of the normal comparison construction is – if Japanese has the negative setting of the DAP, the analysis developed for English above cannot be applied to Japanese. A different analysis without abstraction over degree variables must be developed.

Beck, Oda & Sugisaki propose an analysis in terms of a context dependent version of the comparative. They consider English *compared to* and Japanese *yori* to be context setters not compositionally integrated with the main clause. They provide us with an individual (type $\langle e \rangle$) instead that is used to infer the intended comparison indirectly. Thus we would be concerned in (39) with a comparative adjective without an overt item of comparison, such as English (40a) (without context) or (40b) (where the intended context is given explicitly). We present Beck, Oda & Sugisaki's semantics for Japanese *kasikoi* in the version developed in Oda (2008) in (39′). The analysis implies that Japanese adjectives are inherently comparative and context dependent. Unlike in English, there is no separable comparative operator. The task of the *yori*-constituent is to tell us about the intended context – Joe in (39), making salient Joe's intelligence as the item of comparison. Note that this analysis employs degree abstraction neither in the main clause (since there is no comparative morpheme) nor in the *yori*-constituent (since if it is a clause, as in (36), it is some kind of relative clause). The analysis is thus compatible with the negative setting of the DAP.

(39)   Sally wa   Joe yori   kasikoi.
        Sally TOP Joe YORI smart
        Sally is smarter than Joe.

(40)   a.   Mr Darcy is smarter.
        b.   Compared to Mr Bennet, Mr Darcy is smarter.

(39′)   a. $[[\text{kasikoi } c]]^g = \lambda x.\max(\lambda d.\ x \text{ is } d\text{-smart}) > g(c)$
        b. $[[\text{Sally wa kasikoi}]]^g = 1$ iff $\max(\lambda d.\ S \text{ is } d\text{-smart}) > g(c)$
        c.   c   := the standard of intelligence made salient by comparison to Joe
                        := Joe's degree of intelligence

See Beck, Oda & Sugisaki and Oda (2008) for further discussion and empirical motivation of the analysis. What matters for present purposes is that a language

may lack English-type quantifiers over degrees, even when it employs a degree semantics. For a given language and comparison construction, we need to ask whether the constituent seemingly corresponding to the English *than*-constituent is really a compositional item of comparison denoting degrees, and whether there is a genuine comparison operator.

2.3   Questionnaire questions

The questionnaire's aim is to find out to what extent other languages share the properties of the grammar of English laid out in Section 2.1.

The questionnaire has a descriptive part, which elicits data corresponding to (24) (the positive), (1) (the comparative), (18) (the superlative), (17) (the equative), and a few more like degree questions and comparisons with *too* and *enough* (see the appendix). We check availability of such structures and their interpretation. This part aims at finding out whether the picture that we get from English, that there is a family of morphemes (free or bound) that operate on degree arguments, is reproducible in the target language. The questionnaire also checks for availability of attributive, adverbial and clausal comparatives (like (12), (13) and (14)). This serves to get an idea of the syntactic options for the expression of comparatives. Note also that availability of clausal comparatives is a prerequisite for checking negative island data and subcomparatives: if clausal comparatives are generally unavailable, those two types of data cannot be constructed. Representative examples are repeated below.

(41)   Positive:
Helo is tall.

(42)   Comparative:
Mary is taller than Frank is.

(43)   Superlative:
Helo is the tallest.

(44)   Equative:
Starbuck is as tall as Captain Apollo is.

(45)   Attributive comparative:
Mr Bingley keeps more servants than Mr Bennet does.

(46)   Adverbial comparative:
Colonel Fitzwilliam behaved more amiably than his cousin did.

(47)   Clausal comparative:
Colonel Fitzwilliam behaved more amiably than I had expected.

An important question our crosslinguistic investigation raises is whether the language under investigation shares the degree ontology that English makes use of.

Relevant data points for this include availability of comparison with a degree and availability of difference comparatives, repeated below.

(48) a.   Captain Apollo is taller than 1.70 m.   (CompDeg)
      b.   Helo is 8 cm taller than Starbuck is.   (DiffC)

The next important issue investigated in the questionnaire comes from Beck, Oda and Sugisaki's (2004) proposals regarding crosslinguistic variation in the grammar of comparison, specifically the DAP.

(49) Degree Abstraction Parameter (DAP) (Beck, Oda & Sugisaki):
      A language {does/does not} have binding of degree variables in the syntax.

They argue that English has the positive setting of the DAP while Japanese has the negative setting. If a language has the negative setting of the DAP, we expect, according to the analysis presented above, that it will not have degree questions, measure phrases and subcomparatives (as we saw above, this is the case in Japanese.). (We also expect that the data that appear to be comparatives have a different analysis from English comparatives. We focus here on those data points where (non-)availability of a structure gives direct evidence of the parameter setting.)

(50) a.   Degree Question (DegQ):
           How tall is Captain Apollo?

      b.   Measure Phrase (MP):
           Captain Apollo is exactly 1.74 m tall.

      c.   Subcomparative (SubC):
           Helo's shoes are longer than this cupboard is deep.

Two further types of data support a negative setting of the DAP. The first is the scope effect from above. If a language has no binding of degree variables, then the structure from which the wide scope reading of the comparison could be derived is unavailable.

(51) Scope:
      This draft is 10 pages long.
      The paper is required to be exactly 5 pages longer than that.

(52) a.   [[exactly 5pp -er than that] [1 [required [the paper be t1 long]]]]
      b. $\max(\lambda d. \forall w'[R(@,w') \rightarrow$ the paper is d-long in $w']) = 10\text{pp} + 5\text{pp}$
      c.   The length that the paper reaches in all situations meeting the requirements
           is 15pp.
           = the minimum length required for the paper is 15 pages

The second type of data concerns negative island effects.

(53) Negative Island Effect (NegIs):
      *Mary bought a more expensive book than no boy did.

If a *than*-clause does not describe degrees at all, but individuals (as it would be forced to do by a negative setting of the DAP), such structures may be acceptable. Hence acceptability and interpretation of data corresponding to (53) are also part of our questionnaire.

2.4 Eliciting the Data

This subsection describes the stages in the development of language specific questionnaires and the process of data elicitation. The English questionnaire provided in the appendix served as the minimal base for the elicitation of data from our language sample. To create questionnaires for the languages at hand we went through the following procedure steps (to be explicated below): familiarising with the relevant structures and morphemes in the target language; constructing examples with the help of the primary informant(s); eliciting data from naïve secondary informants; analysing the elicited data, fixing the questionnaire and repeating the elicitation step if necessary.

Stassen (1985) in addition to the grammars available for our languages was used to gain a first insight into the make-up of basic degree constructions. Relying on the information about the morphological markers involved and the structure of simple comparative sentences, we let our primary informants translate the examples from the minimal questionnaire into the target language. As our primary informants we selected native speakers of the language able to share their intuitions in a second language. After constructing the examples and providing the glosses they were asked to deliver their judgements about the felicity of selected sentences in contexts we constructed in order to convey a first impression about the interpretation of the relevant examples. Some potentially ungrammatical structures, e.g. subcomparatives or comparatives hosting negation in the embedded clause, were constructed without the help of the primary informants or asked to be translated literally.

To keep the judgements uniform, we introduced an acceptability scale based on ratings from 1 to 4, with 1 corresponding to 'acceptable (in the given context)' and 4 corresponding to 'unacceptable (in the given context)'.

The sentences collected from the primary informants were supplied with contexts and a questionnaire with a set of answers based on the ratings mentioned above was developed. We included questions on any language-specific comparative-related phenomena that surfaced during the work with the primary informants and seemed worth investigating. The sentences and partly the contexts were presented in the original script without glosses. From 2 to 6 secondary informants for each language were asked to answer the questions and provide their comments if needed. If the resulting answers were inconsistent, primary informants were

consulted again and the questionnaire was adjusted for an additional round of data elicitation.

Since we needed judgements informing us about interpretation in addition to judgements pertaining simply to grammaticality, let us illustrate how we proceeded in those cases. We believe that the only judgement that a native speaker can reliably provide is an acceptability judgement (and this may correspond to judging grammaticality, truth vs. falsity or felicity; compare Matthewson (2004)). Hence all intuitions about interpretation were elicited with the help of a context that unambiguously fixed the relevant interpretation. We give three examples below, concerning differential comparative, context dependency and scope, respectively.

(54) Context: Adé is looking at the thermometer he put in his garden. The temperature indicated by the thermometer is 25^0C. The day before the temperature was 18^0C. Could Adé say:

Rũndã wã zĩiga yaa tʋʋlga n yʋʋd zaamē ne degre
today DEF place is hot C exceed yesterday with degree

sēn yʋʋd a nu. (Mooré)
ON exceed NM five

"It's at least 5^0C warmer today than yesterday."

(55) Context: Suppose that Sangeeta is 5'6", which is more than the average height for women in India. Can you say the following sentence in this situation?

Sangeeta lambi hai. (Hindi-Urdu)
Sangeeta tall.Fem is
"Sangeeta is tall."

(56) Context: A student of yours asks you about the length requirement on his term paper. He is afraid that his draft is too short. According to the university regulations, the minimal length is 25 pp. Can you make the following remark in this situation?

Vash chernovik 20 stranic. (Russian)
your draft 20 pages

Kursovoj nado byt' rovno na 5 stranic dlinnee.
paper necessary be exactly by 5 pages long-COMP

"Your draft is 20 pp long. The paper needs to be exactly 5 pp longer than that."

Finally, a comment on two data points that can be tricky to collect – measure phrases and scope. There is substantial variation in the acceptability of measure phrases within and across languages (compare in particular Schwarzschild (2004)). For example, unlike *tall*, English *heavy* cannot combine with a measure phrase, while the German counterpart can. Moreover, there is variation with respect to

what a language can express measurement for; not all languages naturally have degree measurement for temperature, for instance.

(57)   a.   *John is 67kg heavy.
       b.   Hans ist 67kg schwer.
            Hans is 67kg heavy

In collecting our crosslinguistic data, we chose a handful of plausible candidate adjectives for measurement – the ones that we thought we the best possible candidates for combination with a measure phrase. Besides physical height and extent, length of time (e.g. *five hours long*) can very frequently be measured. We only concluded that a language did not permit measure phrases if we could not find a few that worked.

Regarding scope data, it is important to realize that Heim's point can only be made with modal verbs, and only some modals produce the relevant minimum requirement reading. In the example below, *should* in contrast to *have to* does not.

(58)   The paper should/has to be exactly five pages longer than that.

The same variation between different modals is found in other languages as well (e.g. German, Russian). In the crosslinguistic study, we tried to find the modals that work. Good candidate modals are the ones that occur in the Sufficiency Modal Construction (von Fintel & Iatridou (2005)), a connection pointed out in Krasikova (2008). Where possible, we tried to put those modals in the comparative. We cannot *prima facie* exclude the possibility that a language simply lacks the relevant kind of modal entirely and that the scope facts therefore are unrevealing with respect to the nature of the comparative. But see Section 3 for our results.

3.   Results

This section summarizes those results from the crosslinguistic study that have a significant bearing on the theory of comparison and its options for language variation. For a more complete overview of the data, the reader is referred to our database in the appendix. For a detailed discussion of comparison constructions in the individual languages, we refer to the publications Krasikova (2007), Krasikova (2009), Gergel (2008), Fleischer (2007), Savelsberg (2009), Vanderelst (2008), Hofstetter (2009); Hofstetter (in preparation), Villalta (2008a), Villalta (2008b).

Subsection 3.1. investigates the ontological and lexical foundations that underlie a language's options for the expression of comparison. In Subsection 3.2 we specifically check predictions made by Beck, Oda and Sugisaki's (2004) Degree

Abstraction Parameter against our languages. More superficial differences in syntactic options are the issue considered in Subsection 3.3. In each of our subsections, we propose a parameter of crosslinguistic variation that is at the heart of the differences we observe. The first two are semantic parameters in that they concern the way a language compositionally interprets syntactic structure. The third is a syntactic parameter.

Before we proceed, a general comment on our presentation of the empirical results is in order. We will frequently make statements like 'language X does not have degree questions' or 'language Y does not allow clausal comparatives'. What is meant by this is that the language does not allow a structure parallel to the English degree construction. Mostly, the language in question finds an alternative strategy to express a similar content. Where this is relevant, we list the alternative structure in the appendix along with the unavailable target structure. The reader may verify our empirical claims there.

3.1   Degree semantics – DSP effects

The basis of the grammar of comparison in English is the degree ontology used in the semantics. Adjectives – more generally, gradable predicates – have an argument position for degrees. Those argument positions must be saturated in the syntax. Degree operators have a semantics that does that, indirectly, through quantifying over degrees. In order to determine whether the language under investigation is like English in this respect, we evaluate the questionnaire with respect to:

i.   whether the language has a family of expressions that plausibly manipulate degree arguments: comparative, superlative, equative morphemes, items parallel to *too* and *enough*.
ii. whether the language has expressions that plausibly refer to degrees and combine with degree operators: comparison with a degree (CompDeg), difference comparative (DiffC).

3.1.1   *Conjunctive strategy – Motu*
Motu, our representative of a conjunctive language, gives a clear negative answer to both of these questions. There is no dedicated degree morphology, and both CompDeg and DiffC are impossible. Other types of data that would be indicative of a degree semantics, like measure phrases or degree questions, are unavailable as well (compare the questionnaire in the appendix for an illustration of what the language can and cannot do).

(59)   *Mary   na   lata,   to   Frank   na   kwadoḡi.*
Mary   TOP   tall,   but   Frank   TOP   short
"Mary is taller than Frank."

(60)   CompDeg:

　　*Mary na   lata 1.70m.
　　 Mary TOP   tall, 1.70m
　　 Intended: "Mary is taller than 1.70m."

(61)   DiffC:

　　*Mary na   lata 2cm ai to   Frank na   kwadoḡi.
　　 Mary TOP tall 2cm by but Frank TOP short
　　 Intended: "Mary is 2cm taller than Frank."

We see no evidence for an underlying degree semantics, and speculate that there is the following parameter of language variation:

(62)   Degree Semantics Parameter (DSP):

　　A language {does/does not} have gradable predicates (type $\langle d,\langle e,t\rangle\rangle$ and related), i.e. lexical items that introduce degree arguments.

Motu would, of course, have the negative setting [−DSP]. This leaves us with the task of finding a semantic analysis for Motu adjectives. They occur only in one form, which seems similar to the English positive form in two respects. The example in (63) is not acceptable in a context in which it is impossible to regard Mary as tall and Frank as short, e.g. (63′b). Both adjectives thus seem to carry the meaning of a positive form of the adjective (and this is of course completely different from the English comparative). What counts as tall and short, however, varies somewhat with the context, so (63) is acceptable in the context in (63′a); context dependency has to be part of the Motu adjective meaning as well. Our task is, thus, to come up with an adjective meaning for Motu adjectives that is similar to the English positive form, but does not introduce a type $\langle d\rangle$ argument (cf. the negative DSP setting hypothesised above).

(63)   Mary na   lata, to   Frank na   kwadoḡi.
　　 Mary TOP   tall, but Frank TOP   short
　　 "Mary is taller than Frank."

(63′) a.   Context: Mary is 1.70m and Frank is 1.60m.
　　 b.   Context: Mary is 2m and Frank is 1.98m.

It is clear that context dependency, apparent vagueness, can come in through different means than the English positive. An English example in which a degree semantics and a positive operator are unlikely to be involved in the semantics of a vague predicate is *behind* in (64). Modifiability in (64b) is a sign of context dependency, but there is no indication of a grammar of degree in the case of *behind* and other locative prepositions (like combinability with expressions that refer to degrees etc.).

(64)   a.   The picture is behind the sofa.
      b.   The picture is right/sort of/not quite behind the sofa.

An analysis of *behind* in terms of context dependency could look as in (65). This follows Klein's (1980) analysis of the English positive, which we do not adopt for English positive adjectives, but find plausible for other examples of context dependency like this one.

(65)   ⟦ *behind* ⟧ = λc.λx.λy.y counts as being in a place behind x in c   (c a context)
      ⟦ *behind the sofa* ⟧ = λc.λy.y counts as being in a place behind the sofa in c

Our suggestion is that Motu adjectives have this kind of context dependent semantics. I.e. $tall_{Motu} \neq tall_{English}$, but $tall_{Motu}$ is similar to English *behind the sofa*. Our example in (66) is analysed in (66′).

(66)   *Mary   na   lata,   to   Frank   na   kwadoĝi.*
      Mary   TOP   tall,   but   Frank   TOP   short
      "Mary is taller than Frank."

(66′)   a.   ⟦ $tall_{Motu}$ ⟧ = [λc. λx. x counts as tall in c]
      b.   ⟦ $short_{Motu}$ ⟧ = [λc. λx. x counts as short in c]
          ⟦ $short_{Motu}$ ⟧^{C} must be a subset of [λx. x does not count as tall in c]
      c.   ⟦Mary na lata, to Frank na kwadoĝi⟧^{C} = 1 iff
          Mary counts as tall in c and Frank counts as short in c

The sentence is predicted to be true in the context it is uttered in as long as the context can be construed as ranking Mary and Frank on the height scale as depicted below. We expect the sentence to have a 'descriptive use' Barker (2002), according to which it informs the hearer that Mary is above the current size standard and Frank is below it. But in addition, we expect that the sentence can be used to provide information on the context – a 'sharpening use' in the sense of Barker (2002): 'we are in a context in which people like Mary count as tall and people like Frank count as short'. Sharpening accounts for acceptability of (63) in context (63′a). The unacceptability of (63) in context (63′b) must stem from the fact that a height of 1.98m is very hard to construe as falling into the 'short' section on the height scale. Normal size expectations restrict manipulability of the context.

(67) |-----------F------------M----------------->

      /////////////////   ////: short

      |||||||||||||||||||||||||| \\\\\\\\\\\\\\\\\\\\\\\ ||||: not tall; \\\\: tall

This analysis leads us to expect that combination with expressions that refer to degrees is not possible (e.g. CompDeg, DiffC), and this is what we find (both for Motu *tall* and for English *behind*). To sum up, our point is that Motu has no

degree operators, not even the positive. Perhaps degrees and scales are a level of abstraction above context dependency that a language may or may not choose to develop.

3.1.2 *Exceed-type languages – Mooré and Yorùbá*

Our exceed-type languages present a less clear picture. In Mooré and in Yorùbá, what could be the morphosyntax of degree is limited to verbs expressing 'exceed' and 'reach'. Those verbs also have the uses that the corresponding English verbs have, e.g. (68′a). One prima facie plausible analysis of the exceed-type comparative would have been to take the element corresponding to *exceed* to relate two type ⟨e⟩ objects, as it probably does in English (68′).

(68)   Owó   osù   rè   ju   ti   ẹ   lọ   [Yorùbá]
       money month her   exceed that your go
       "Her income exceeds your income."

(68′) a.   Your expenses will always exceed your income.
       b.   ⟦ exceed$_{English}$ ⟧ : ⟨e,⟨e,t⟩⟩

However, both Yorùbá and Mooré have comparison with a degree and differential comparatives; this is illustrated below for Yorùbá (compare the appendix for more data from those languages).

(69)   *Ade ga   jo   Isaac lo.*
       Ade   is_tall exceed Isaac go
       Ade is taller than Isaac.

(70)   DiffC:
       Kathy fi   esebata kan ga   ju   Sandra lo.
       Kathy   with foot   one is_tall exceed Sandra go
       Kathy is one foot taller than Sandra.

(71)   CompDeg:
       Kathy ga   ju   esebata marun ataabo   lo.
       Kathy   is_tall exceed foot   five   and half go
       Kathy is taller than five and a half feet.

In view of the availability of comparison with a degree and differential comparatives, it seems that a scale structure of the arguments of Mooré and Yorùbá *exceed* ought to be assumed. We might as well call those arguments degrees, then. We tentatively conclude that these languages can talk about degrees and have the positive setting of the DSP. The morpheme we call 'exceed' could then be analysed as a comparative morpheme; that is, we suggest (72):[7]

(72)   ⟦ exceed$_{Mooré/Yorùbá}$ ⟧ = ⟦-er⟧

Other exceed-type languages may not share those properties, though; no general prediction follows regarding whether a particular exceed-language is [+DSP] or [−DSP]. This depends on DiffC and CompDeg judgements. One could also look for other [−DSP] languages among the conjunctive languages.

3.2   Degree abstraction – DAP effects

Let us next investigate languages that provide clear evidence in favour of an underlying degree semantics. Mandarin Chinese has both differential comparatives and comparison with a degree. Thus we will take it to be [+DSP].

(73)   DiffC:

Lisi   bi   Zhangsan   gao   5 li mi.   [Mandarin Chinese]
Lisi   COMP   Zhangsan   tall   5cm
Lisi is 5cm taller than Zhangsan.

(74)   CompDeg:

Lisi   bi   yi mi qi   gao.
Lisi   COMP   170   tall
Lisi is taller than 1,70m.

At the same time, there are important differences to English that are indicative of a negative setting of the DAP repeated below.

(75)   Degree Abstraction Parameter (DAP) (Beck, Oda & Sugisaki):
A language {does/does not} have binding of degree variables in the syntax.

Chinese does not have scope interaction (Scope), nor does it display English-like negative island effects (NegIs). It does not allow subcomparatives (SubC), measure phrases (MP) or degree questions (DegQ).

(76)   NegIs:

Lisi   mai   de   shu   bi   Zhangsan   mei   mai   de   gui.
Lisi   buy   DE   book   COMP   Zhangsan   NEG   buy   DE   expensive
Lisi bought a more expensive book than the one that Zhangsan didn't buy.

(77)   Scope:

Lisi   xuyao   bi   Zhangsan   shao   mai   yixie   lazhu.
Lisi   must   COMP   Zhangsan   few   buy   a_little   candles
Lisi was required to buy fewer candles than Zhangsan.
#Lisi's minimally required number was below Zhangsan's.

(78)   DegQ:

*Lisi   shi   duo   gao?
Lisi   is   much   tall
How tall is Lisi?

(79)   MP:

Zhe   ge   xiangzi   shi   20 gongjin   zhong.
DEF   CL   suitcase   is   20 kg   heavy
The suitcase weighs 20kg.

(80)   SubC:

Zhe   ge   zhuozi   bi   nage   men   kuan   de   gao.
DEF   CL   table   COMP   DEF   door   wide   DE   high
The table is higher than the door is wide.

In other words, structures that require binding of degree variables and the positive setting of the DAP are absent.[8] We take Chinese to be [−DAP], just like Japanese. This implies that the semantics of comparison must derive an appropriate meaning without binding of degree variables. For analyses of the comparison constructions in Chinese and Japanese that work without abstraction over degree variables, see Krasikova (2007), Beck, Oda and Sugisaki (2004), and in particular Oda's (2008) analysis from Section 2. We take Samoan, Mooré and Yorùbá to fall into the same class of languages with a [+DSP], [−DAP] parameter setting, since they lack scope interaction, MPs and DegQs (see the appendix for details).

Another group of languages including for example Russian shows some similarities to Chinese in not permitting subcomparatives, measure phrases or degree questions (Data shown in the appendix). But, unexpectedly if they had a [−DAP] setting as well, they do show scope interaction, and they exhibit the exact same negative island effect as English.

(81)   Статье   надо   быть   ровно   на 5   страниц   длиннее.
paper.DAT   necessary   be   exactly   by 5   pages   long.COMP
The paper has to be 5 pages longer.
Minimum requirement reading ok.

(82)   *Света   купила   более   дорогой   подарок, чем
Sveta   buy.PAST   much.COMP   expensive   present   what.INSTR

никто   другой.
nobody   other
Sveta bought a more expensive present than nobody else.

This means that we need a more fine-grained distinction than what Beck, Oda and Sugisaki developed. The difference between Japanese-like languages and Russian-like languages is the issue of the next subsection.

3.3   Degree phrase expression – DegPP effects

We assume that scope interaction and negative island effects indicate a [+DAP] parameter setting in Russian. This raises the question of why subcomparatives,

measure phrases or degree questions are not possible, i.e. how the language differs from English-like languages.

Note that all three types of data involve an adjective combining with a syntactic element that we would characterise as a DegP. The SpecAP position is filled in overt syntax in each case – by the trace in (83a), by *how* in (83b) and by the measure phrase in (83c).[9] The SpecAP position is the degree argument position of a gradable predicate. It is filled by degree operators.[10] We represent below the surface structure of the relevant examples.

(83)   a.   Helo's shoes are longer than the cupboard is deep.
            [than [how1 [the cupboard is [**AP** t1[A deep]]]]]

       b.   How deep is the cupboard?
            [**AP** how [A deep]]

       c.   The cupboard is exactly 35 cm deep.
            [the cupboard is [**AP** [exactly 35 cm] [A deep]]]

We hypothesise that filling SpecAP, the position dedicated to the degree argument of an adjective (or gradable predicate) is constrained. In the Russian-type languages, it seems to be impossible to fill this position overtly. The above data are distinguished from normal comparatives – *than*-clause and main clause – in the following way:

A normal *than*-clause does not overtly fill the SpecAP position of the adjective. The ellipsis remedies the problem with 'filling overtly' the SpecAP position. Structures corresponding to (84) are fine in Russian.

(84)   Helo's shoes are longer than mine are.
       [than [how1[mine are [AP t1 long]]]]

Secondly, *-er* (or rather, its crosslinguistic counterparts) must not be sitting in the position SpecAP in overt syntax. Only at LF is the degree argument position of the gradable predicate filled – by the trace of the comparative DegP.

(85)   overt syntax: Helo's shoes are [AP _ [A′ long -er]] [than mine are _]
       LF: [[DegP -er [than [how1[mine are [AP t1 long]]]]]
                       [1[AP t1 [A′ long]]]

We propose the following parameter.[11]

(86)   Degree Phrase Parameter (DegPP):
       The degree argument position of a gradable predicate {may/may not}
       be overtly filled.

Note that the SpecAP position is filled by expressions that trigger binding of the degree argument, hence the question as to the setting of the DegPP arises only for

languages that have the setting [+DAP]. We take Guaraní and Turkish to fall into the same class of languages with parameter settings [+DSP], [+DAP], [-DegPP].

There are some languages in which the question 'can the degree argument position of an unmarked adjective be filled?' appears to be answered with 'well, depends'. This can be seen from the data in the appendix for Romanian, in which the relevant data points subcomparatives, measure phrases and degree questions are only possible with the addition of the morpheme *de*. It can also be seen for Spanish, which allows the subcomparative, but only under particular syntactic circumstances (Reglero (2007)). We regard these as rescue strategies; that is, we suppose that the languages concerned have the negative setting of the DegPP, but that this is obscured by the availability of a fairly obvious alternative. Gergel (2008) proposes that Romanian has a visibility condition on the occurrence of the elements we call DegPs, which can be met by the introduction of a functional head. This shows that the DegPP is perhaps a shorthand for a set of syntactic circumstances that need to be outlined in more detail. We will stick to it for the moment for expository reasons.

A look at the appendix will reveal, finally, that there are some languages that behave in the relevant respects just like English or German: Bulgarian, Hungarian and Thai. Furthermore, Hindi-Urdu doesn't look identical to English, but for independent reasons. Hindi-Urdu does not have *than*-clauses. Bhatt & Takahashi (2008) derive this fact from an independent property of Hindi-Urdu, namely that finite clauses in this language cannot combine with postpositions. Since Hindi-Urdu *than* is a postposition, there are no *than*-clauses.

(87) **Aaj   maine socha tha se zyaadaa garam hai.*   [Hindi-Urdu]
      Today I   think   was SE more   hot   is
      Intended: It is warmer today than I thought.

Unavailability of *than*-clauses in turn makes subcomparatives and testing the negative island effect impossible. But this has nothing to do with the grammar of comparison – it simply means that these constructions cannot be used to test the grammar of comparison in Hindi-Urdu. We take this issue to be orthogonal to the questions we investigate in this paper (a similar point holds for Turkish, Mooré, Samoan and Yorùbá). Other than that, Hindi-Urdu is English-like with respect to the three parameters investigated here (see Bhatt & Takahashi for a study of more fine-grained differences between English and Hindi-Urdu).

3.4   Overview

The table below summarises the behaviour of the languages we investigated with respect to the data that we treat as key data for the identification of parameter settings. A comment on the notation in the table: DiffC, CompDeg, DegQ, MP, SubC

mean availability of the constructions so named. Scope means availability of the relevant reading of a comparison operator taking wide scope over another quantifier like a modal. NegIs means a negative island effect that is parallel to English. Where such a data question cannot be raised in a language for independent reasons, we note this with 'n/a' for 'not applicable'.

We see that {DiffC, CompDeg} cluster together (although in Japanese, comparison with a degree is frequently odd. We take there to be an independent explanation for this fact.[12] For the purposes of our analysis we have taken Japanese CompDeg as a 'no' value.). The data points {Scope, NegIs}, where applicable, similarly cluster together. Finally, {DegQ, MP, SubC} also generally behave in a parallel fashion (although this can be partially obscured by different rescue strategies; the bracketed '(no)' in the table alludes to the availability of some rescue strategy or other in the language in question).[13] Besides the clusters, we have found dependencies. For example, in our sample only languages that have difference comparatives show scope interaction or degree questions. Only languages that show scope interaction permit subcomparatives and so on. The table clearly reveals an imbalance in our language selection that could not later be remedied: Motu as the sole representative of the conjunctive strategy is alone in exhibiting the negative value for some of the key properties of comparisons.

Lg\Fact	DiffC	CompDeg	Scope	NegIs	DegQ	MP	SubC
English	yes	yes	yes	yes	yes	yes	yes
German	yes	yes	yes	yes	yes	yes	yes
Bulgarian	yes	yes	yes	yes	yes	yes	yes
Hindi-Urdu	yes	yes	yes	n/a	yes	yes	n/a
Hungarian	yes	yes	yes	yes	yes	yes	yes
Thai	yes	yes	yes	yes	yes	yes	yes
Romanian	yes	yes	yes	yes	(no)	(no)	(no)
Spanish	yes	yes	yes	yes	(no)	(no)	(no)
Guaraní	yes	yes	yes	yes	no	no	no
Russian	yes	yes	yes	yes	no	no	no
Turkish	yes	yes	yes	n/a	no	no	n/a
Chinese	yes	yes	no	no	no	no	no
Japanese	yes	%	no	no	no	no	no
Mooré	yes	yes	no	n/a	no	no	n/a
Samoan	yes	yes	no	n/a	no	no	n/a
Yorùbá	yes	yes	no	n/a	no	no	n/a
Motu	no	no	n/a	n/a	no	no	n/a

We have conducted a statistical analysis of the significance of the clusters and dependencies found in the data. Specifically, we used the Fisher Exact test to rule

out that the phenomena in each cluster or dependency that we considered are independent. Since Fisher Exact does not distinguish between unidirectional (dependencies) and bidirectional (clusters) implications, we applied the method described in Maslova (2003) to check if the detected significance is valid for the uni- or bidirectional case. For this purpose, the results obtained for the original distribution of features (column 2 in (88)) are augmented by the results for the modified distribution of features (columns 3 and 4 in (88)) that have to be insignificant for a symmetrical dependency to hold.

(88)   Statistical analysis

Cluster/Dependency	Fisher Exact (A and B)	Fisher Exact (A and A = B)	Fisher Exact (B and A = B)
DegQ ⇔ MP	**p < 0.01**	**p = 1**	**p = 1**
DegQ/MP ⇔ Subcomp	**p < 0.01**	**p = 1**	**p = 1**
Scope ⇔ NegIs	**p < 0.01**	**p = 1**	**p = 1**
DegQ/MP ⇒ Scope	**p ≈ 0.05**	**p ≈ 0.05**	**p = 1**
SubComp ⇒ NegIs	p > 0.01	–	–

According to (88), the p-values for the two clusters {DegQ, MP, SubC} and {Scope, NegIs} are significant for the original distribution and insignificant for both additional ones, which suggests that we are dealing with the statistically significant symmetrical dependency.[14,15] For the implication DegQ/MP ⇒ Scope Fisher Exact revealed marginal significance in two out of three cases which means that we have a marginally significant unidirectional dependency. The conditional Sub-Comp ⇒ NegIs comes out not significant, so no argument can be based on this finding. More data ought to be gathered in order to conclusively show the dependency. Since both clusters and the dependency MP/DegQ ⇒ Scope are significant, our theoretical conclusions are still supported by the statistical analysis.

We conclude that it is highly unlikely that our data exhibit the clusters we observe by accident. A linguistic theory is thus called for that makes a systematic connection between availability of DiffC and CompDeg, and similarly for the elements of the other clusters. Furthermore, linguistic theory has to ensure that whatever properties of the grammar allow DiffC are a prerequisite for availability of scope interaction and DegQ, and so on.[16]

This is the aim of this paper. The clusters of properties identify of course our proposed parameters. This is summarized below.

(89)   Degree Semantics Parameter (DSP):
        A language {does/does not} have gradable predicates (type $\langle d,\langle e,t\rangle\rangle$ and related), i.e. lexical items that introduce degree arguments.

(90)   Degree Abstraction Parameter (DAP) (Beck, Oda & Sugisaki):
       A language {does/does not} have binding of degree variables in the syntax.

(91)   Degree Phrase Parameter (DegPP):
       The degree argument position of a gradable predicate {may/may not}
       be overtly filled.

Lg\Para	DSP	DAP	DegPP
English	+	+	+
German	+	+	+
Bulgarian	+	+	+
Hindi-Urdu	+	+	+
Hungarian	+	+	+
Thai	+	+	+
Romanian	+	+	−
Spanish	+	+	−
Guaraní	+	+	−
Russian	+	+	−
Turkish	+	+	−
Chinese	+	−	−
Japanese	+	−	−
Mooré	+	−	−
Samoan	+	−	−
Yorùbá	+	−	−
Motu	−	−	−

The following are the dependencies between the parameter settings: It only makes sense to ask whether a language has abstraction over degree variables if that language has a degree ontology in the first place – i.e. only if we determine a setting [+DSP] need we inquire into the setting of the DAP. If we determine a setting [−DSP] we must have [−DAP] as well. Similarly, the phrases we call DegPs are operators over degrees. They can only occur if the language allows such operators, i.e. has the setting [+DAP]. In this way the parameters explain the dependencies between the data clusters. This is summarized in the form of a decision tree below.

(92)   [+DSP]   / [+DAP]   / [+DegPP]
       /   \   \ [−DegPP]
       \   [−DAP]
       [−DSP]

4.   Summary and Conclusions

4.1   Summary

A closer analysis has confirmed the first impression one has: the grammar of comparison is subject to substantial crosslinguistic variation.

The following languages are like English and German with respect to the grammar of comparison: Thai, Bulgarian and Hungarian. English-like but without the relevant subordinate clauses, hence without clausal comparatives, is Hindi-Urdu. This difference to English is orthogonal to the issue of comparison and must be seen as an independent property of the language's grammar.

Next, there are languages which are very similar to English but have a relatively superficial constraint on the appearance of degree phrases in the Spec position of an AP. In Russian, Turkish and Guaraní this position may not be filled. In Romanian and Spanish, this position may only be filled under restricted syntactic circumstances.

A group of languages somewhat farther removed from English-type languages is the one that uses a degree ontology, but has limited means of dealing with degrees at the syntax/semantics interface of the language. In Japanese, Chinese, Yorùbá, Samoan and Mooré there is no quantification over degree variables. This restriction is stated in terms of a ban on abstraction over degree variables.

Finally, Motu does not appear to have predicates with an argument slot dedicated to scalar structures – degrees. This is a profound difference in terms of the organisation of the lexicon.

4.2   Conclusions

We have grouped our empirical findings into clusters each of which provides evidence on a point of decision in the grammar. These decision points are called parameters. The DSP is a semantic parameter that concerns systematic lexical variation. It has a conceptual predecessor in Chierchia's (1998) work on the denotations of nouns. The DAP is a semantic parameter that concerns the syntax/semantics interface, and the mechanisms of compositional interpretation that are available there. It is conceptually kin to Beck's (2005) proposals on the interpretation of complex predicates. Finally, the DegPP is a syntactic parameter, or perhaps a first approach to a family of syntactic constraints that may or may not be operative in a given language. As a potentially similar case, wh-questions come to mind, which also have to be syntactically marked in many languages (either by a head or by movement), but not in all.

It has been very important for our theoretical reasoning that empirical properties can be seen as coming in clusters, and that there are dependencies between

them in that some options appear to be prerequisites for others. This is the original motivation for a parameter of grammar as the one grammatical property that decides on all instances in the cluster (compare Chomsky (1981) for use of the term 'parameter' in such a connection). In terms of future work, our analysis makes the prediction that the same clusters and dependencies show up in other languages. Our theory could be falsified by the discovery of a language that has degree questions and measure phrases, but an (otherwise unexpected) absence of scope mechanisms for degree operators, for instance. For the purpose of proposing relevant clusters and dependencies, we have replaced the traditional typological strategy of gathering data from 80+ languages by the collection of a smaller language sample – a sample large enough to allow a statistical evaluation of the correlations that our data show. Both strategies require a careful selection of the language sample. We believe that given that, our methodology is a useful tool for crosslinguistic research. It is impossible under normal circumstances to conduct a detailed syntactic and semantic analysis of 80+ languages – indeed, the 14 languages we have investigated occupied the eight coauthors for the better part of two years. But properties of the grammar will only be revealed by such a detailed study. This makes working with a smaller sample imperative. Statistical analysis can augment data collection by telling us which correlations are unlikely to be accidental, hence should be anchored in the theory of grammar.

It should also be stressed once more that our parameters were proposed after detailed syntactic and semantic study of the constructions in question in each of our languages. To give an example, the issue of whether a language has degree questions hasn't been and cannot be resolved by simply making an informant translate 'How old are you?' into the target language – this will most likely yield some well-formed question inquiring after the relevant information in any language. Rather, the elicited structure needs to be carefully examined as to its formal ingredients and properties. It has to be excluded that it corresponds to 'What is your age?', 'What have you as an age?', 'Is the number of your summers large?' and any number of other irrelevant possibilities. Linguistic analysis and claims about parameter settings are inseparable.

The plausibility of the particular points of variation that we have proposed ought to be investigated further. Can we find reasons for the proposed parameters, can they be related to other properties of the grammar, can they be deduced from something?

Kennedy (to appear) looks for a reason for (most of the effects of) the DAP in the lexicon, specifically the entry of the comparative morpheme. Krasikova (2007) also looks for a lexical explanation for why the DAP should exist as a restriction, but in her case it's systematic lexical variation concerning adjective meanings. Those are not the only possibilities of deriving the DAP. It is conceivable that

variable binding is more restricted in some languages than in others, in which case one should look for constraints on anaphoricity, relative clause formation and on QR in Japanese and other [−DAP] languages. Alternatively, Gergel (2008) suggests that the binding of degree variables in particular is subject to a visibility constraint in Romanian – supporting the view that there is something special about degree variable binding. These questions open up the possibility of much future research into correlations of the parameters proposed here for comparison constructions with other properties of the grammar.

It seems to us that comparatives may be something that a language develops over time. Perhaps they all start with a [-/-/-] setting and may then incorporate scales into the grammar, moving to [+/-/-]. This is a change that Samoan, perhaps, has just undergone (see Villalta (2008b)). Next, we want to quantify over members of those scales, yielding [+/+/-]. This stage is exemplified by Guaraní. Now the grammar needs to decide on the particular formal means that indicate quantification over degrees. Languages differ in their morphosyntactic options for doing so. This speculation leads to an expectation regarding directionality of language change: change might generally move 'upwards' in the tables above.[17] More concretely, according to our analysis it should not be possible for a language like Motu to develop degree questions, but not change in any other respect.

Applying a parallel reasoning to language acquisition, we might expect that a child should not acquire degree questions (i.e. something that requires [+DAP] and [+DegPP]) before degree morphology (i.e. evidence for [+DSP]), for example. Similarly, difference comparatives or comparison to a degree should come no later measure phrases. This, however, is all just speculation at present.

Appendix 1: Questionnaire

The following list of examples is an English version of that part of our questionnaire that is discussed in the paper. It provided the starting point for the crosslinguistic investigation by being translated into the target language. The actual set of data collected is larger; compare http://www.sfb441.uni-tuebingen.de/b17/daten/index.html. The data were tested for well-formedness and interpretation in the way described in Section 2.

(1) a.   Adé is taller than Isaac.   [predicative phrasal[18]]
     b.   Isaac is richer than Adé.

(2) a.   Isaac ran faster than Adé.   [adverbial]
     b.   Naila sang louder than Adé.

(3)   Naila wrote more letters than Sandra.   [quantity]

(4)   Adé has a faster car than Isaac.   [attributive]

(5)   a.   Today it's warmer than yesterday.   [possibly clausal]
       b.   Naomi is richer than I thought.

(6)   a.   Adé wrote more books than Sandra wrote letters.   [clausal]
       b.   Adé sang louder than Isaac whistled.

(7)   a.   Adé is as tall as Isaac.   [Equative]
       b.   Sandra ran as fast as Naomi rode her bicycle.

(8)   a.   Adé is less tall than Isaac.   [less; negative comparison]
       b.   Adé is smaller than Isaac.

(9)   a.   Isaac is tall.   [Positive; antonym; negation]
       b.   Adé is small.
       c.   Adé is not tall.

(10)   a.   Out of them all, Adé is the tallest.   [Superlative]
       b.   Sandra drove the fastest car.

(11)   a.   Isaac is too tall to play in the junior team.   [too; enough]
       b.   Adé is tall enough to play in the junior team.

(12)   a.   Naomi is 2cm taller than Sandra.   [differential]
       b.   It's at least 5^0C warmer, than yesterday/than I thought.

(13)   a.   Sandra is 1 meter tall. Naomi is taller than that.   [Comparison with degree]
       b.   Naomi is taller than 1 meter.

(14)   Sandra bought a more expensive book than nobody did.   [Negative Island]

(15)   An African elephant can be larger than an Indian elephant.   [Scope: Possibility]

(16)   a.   Your book has to be exactly 5 pages longer than that.   [Scope: Necessity]
       b.   Context: You want to start to write a book. You ask me how many pages
             you have to write for the book to be published. I show you another book
             which has 25 pages and say (16a). What do you think: is your book
             accepted by me if it has the following number of pages?

             i.   27 pages [Yes/No]
             ii.   30 pages [Yes/No]
             iii. 34 pages [Yes/No]
             iv.   46 pages [Yes/No]

(17)   a.   How tall is Naomi?   [Degree Question]
           b.   How many books has Isaac?
           c.   How fast can Naomi run?

(18)   a.   Naomi is 1.70m tall.   [Measure Phrase]
           b.   The film is three hours long.

(19)   a.   This table is taller than that door is wide.   [Subcomparative]
           b.   The knife is longer than the drawer is deep.

Appendix 2: Database

The following database contains the crosslinguistic data on comparative constructions in 15 languages. Examples in 14 languages have been elicited with the help of the questionnaires exemplified by Appendix 1. Additionally, we included the relevant Japanese data from Beck, Oda and Sugisaki (2004) to support the empirical claims in the body of the paper. The database consists of 15 tables each of which contains example sentences from one language and which are sorted alphabetically. Examples appear partly in the original script and are provided with the gloss, the translation, the grammaticality/felicity judgement and the context/reading where necessary. Each language table contains up to 19 examples pertaining to the different phenomena discussed above and presented in the following order: (i) descriptive part exemplifying the basic types of degree constructions in the given language (predicative phrasal, adverbial and attributive comparative, comparative of quantity, clausal comparative, equative, *less*-comparative, positive, superlative, too/enough constructions; (ii) data pertaining to the DSP (differential comparative, comparison with a degree); (iii) data pertaining to the DAP ('negative island effect' test, tests for scope interactions of the comparative with the modals); (iv) data pertaining to the DegPP (degree question, measure phrase construction, subcomparative).

The judgement field contains felicity judgements for the scope interaction examples (supplied with the relevant contexts or readings) and grammaticality judgements for the rest. The following ranking has been used in both cases: ok(grammatical/felicitous); ?(slightly marked/slightly odd); ??(marked/odd); *(ungrammatical/infelicitous). The judgements have been elicited using the following scale of answers: "Yes, I can say this sentence (in the given context)"; "Maybe I can say this sentence (in the given context)"; "I would rather not say this sentence (in the given context)"; "I cannot say this sentence (in the given context)".

"n/c" and "n/a" in the judgement field indicate that the example cannot be constructed or the test is not applicable. In the latter case, the comment field in the footer row contains a short explanation.

"n/c" and "*" rows usually contain alternative examples (Alt) along with the literal ones (Lit). The former reflect alternative ways to express the relevant meaning, e.g. in the form of paraphrases or by resorting to 'rescue' strategies.

Glossary

1, 2, 3	Person	masc	Masculine
Abl	Ablative case	MOTTO	Japanese: intensifying particle ('even')
Acc	Accusative case		
AS	Assertion marker	NEG	Negative adverb
asp	Aspectual particle	neg	Negative marker
C	Coordination	neut	Neutrum
CL	Classifier	neut	Neutrum
COMP	Comparative marker (on the gradable predicate)	NM	Numeral marker
		Nom	Nominative case
		obl	Oblique case
compl	complementizer	ON	Nominalization marker
cond	Conditional mood	pass	Passive voice
copula	Copula	past	Past tense
CTFT	counterfactual	pl	Plural
Dat	Dative case	PM	Proper name marker
DE	Chinese: particle that links verbs/nouns to adjectives	poss	Possessive
		pron	Personal pronoun
		PS	Polarity sensitive
de	Romanian, Spanish: degree particle	Q	Question particle
		Refl	Reflexive
def	Definite article	rel	Relative pronoun
dem	Demonstrative	SE	Hindi: morpheme that introduces the item of comparison
DIR	Samoan: directional particle		
emph	Emphatic particle		
Erg	Ergative case	sg	Singular
fem	Feminine	subj	Subjunctive mood
FOC	Focus marker	Subj	Subject
Gen	Genetive case	SUP	Superlative marker
GENR	Samoan: general tense-aspect-mood marker	Top	Topic maker
		YORI(MO)	Japanese: morpheme that introduces the item of comparison
impf	Imperfective		
Instr	Instrumental case		

Bulgarian	Example	Judgement
Predicative Phrasal Comparative	Росен е по-висок от Таня. Rosen is COMP-tall.masc from Tanya Rosen is taller than Tanya.	ok
Adverbial Comparative	Росен тичаше по-бързо от Таня. Rosen ran COMP-fast from Tanya Rosen ran faster than Tanya.	ok
Attributive Comparative	Мария купи по-скъпа книга Rosen bought COMP-expensive.fem book.fem отколкото Таня. from_how_much.def Tanya Maria bought a more expensive book than Tanya.	ok
Comparative of Quantity	Росен събра повече гъби от Таня. Rosen gathered much.COMP mushrooms from Tanya Rosen gathered more mushrooms than Tanya.	ok
Clausal Comparative	Росен е по-висок, отколкото беше Rosen is COMP-tall.masc from_how_much.def was Таня на същата възраст. Tanya at same.def age Rosen is taller than Tanya was at the same age.	ok
Equative	Етажерката е толкова висока колкото shelf.def is that tall.fem how_much.def и вратата. also door.def The shelf is as high as the door.	ok
'Less' Comparative	Росен е по-малко образован от Добрин. Rosen is COMP-little educated.masc from Dobrin Rosen is less educated than Dobrin.	ok
Positive	Росен е висок. Rosen is tall.masc Rosen is tall.	ok
Superlative	Росен е най–високият в неговия клас. Rosen is SUP-tall.def in his class Rosen is the tallest in his class.	ok
Intensional Comparative: "Enough"	Мария е достатъчно висока за да играе волейбол. Maria is enough tall.fem for subj play volleyball Maria is tall enough to play volleyball.	ok
Intensional Comparative: "Too"	Мария е прекалено висока за да играе волейбол. Maria is too tall.fem for subj play volleyball Maria is too tall to play volleyball.	ok
Differential	Този куфар е (с) 5кг по-тежък от чантата. this suitcase is (with) 5 kg COMP-heavy from bag.def This suitcase is 5 kg heavier than the bag.	ok

Bulgarian	Example	Judgement
Comparison With A Degree	Росен е по-висок от 1.75.	ok
	Rosen is COMP-tall.masc from 1.75	
	Rosen is taller than 1.75.	
Negative Island Effect	Мария купи по-скъп подарък отколкото	*
	Maria bought COMP-expensive present from_how_much.def	
	никой друг.	
	nobody other	
	Lit.: Maria bought a more expensive present than nobody else.	
Scope in Main Clause: Possibility Modal	Полярните мечки могат да бъдат по-високи от	?
	polar bears can subj be COMP-tall from	
	кафявите мечки.	
	brown bears	
	Polar bears can be taller than grizzly bears.	
	Reading: The maximal height reached by polar bears exceeds the maximal height reached by grizzly bears.	
Scope in Main Clause: Necessity Modal	На Венци му беше необходимо да купи	?
	to Ventzi him was necessary subj buy	
	по-малко подаръци, отколкото на Юлиан.	
	COMP-little presents from_how_much.def on Julian	
	Ventzi needed to buy fewer presents than Julian.	
	Context: Ventzi had to buy from 4 to 8 presents. Julian had to buy from 6 to 8 presents.	
Degree Question	Колко е висок Венци.	ok
	How_much is tall.masc Ventzi	
	How tall is Ventzi?	
Measure Phrase Construction	Росен е висок 1.80.	ok
	Rosen is tall.masc 1.80	
	Rosen is 1.80 tall.	
Subcomparative	Етажерката е по-широка, отколкото е	?
	shelf is COMP-wide.fem from_how_much.def is	
	висока вратата.	
	high.fem door.def	
	The shelf is wider than the door is high.	

Mandarin Chinese	Example	Judgement
Predicative Phrasal Comparative	Lisi bi Zhangsan gao.	ok
	Lisi compare Zhangsan tall	
	Lisi is taller than Zhangsan.	
Adverbial Comparative	Lisi bi ta de laoshi shang de hao.	ok
	Lisi compare he poss teacher sing DE good	
	Lisi sang better than his teacher.	
Attributive Comparative	Lisi mai le yi ba bi Zhangsan mai de chang	ok
	Lisi buy asp a CL compare Zhangsan buy rel long	
	de san.	
	DE umbrella	
	Lisi bought a longer umbrella than Zhangsan did.	
Comparative of Quantity	Lisi bi Zhangsan xie de xin duo.	ok
	Lisi compare Zhangsan write DE letter many	
	Lisi wrote more letters than Zhangsan did.	
Clausal Comparative	Lit: Lisi bi wo xiangxiang fu.	*
	Lisi compare I think rich	
	Alt: Lisi bi wo xiangxiang de fu.	ok
	Lisi compare I think rel fu.	
	Lisi is taller than I thought.	
Equative	Lisi he Zhangsan yiyang gao.	ok
	Lisi with Zhangsan same tall	
	Lisi is as tall as Zhangsan.	
'Less' Comparative		n/c
Positive	Lisi hen gao.	ok
	Lisi very tall	
	Lisi is tall.	
Superlative	Lisi shi tamen ban zui gao de xuesheng.	ok
	Lisi is they class most tall DE student	
	Lisi is the tallest student in his class.	
Intensional Comparative: "Enough"	Lit:	n/c
	Alt: Lisi da dao neng kai che le.	ok
	Lisi big reach can drive car Asp	
	Lisi is old enough to drive a car.	

Mandarin Chinese	Example	Judgement
Intensional Comparative: "Too"	Lit:	n/c
	Alt: Lisi tai chang le, suo yi ta bu neng shui Lisi very long Asp therefore he NEG can sleep zai shafa chang. on sofa on Lisi is too tall to sleep on the sofa.	ok
Negative Island Effect	Lisi mai de shu bi Zhangsan mei mai de gui. Lisi buy DE book compare Zhangsan NEG buy DE expensive Lisi bought a more expensive book than the one that Zhangsan did not buy.	ok
Scope in Main Clause: Possibility Modal	Yi zhi beijixiong keyi bi yi zhi daxiong geng da. a CL polar_bear can compare a CL grizzly_bear even big Polar bears can be bigger than grizzly bears. Reading: The maximal height reached by bears exceeds the maximal height reached by pandas.	*
Scope in Main Clause: Necessity Modal	Lisi xuyao bi Zhangsan shao mai yixie lazhu. Lisi must compare Zhangsan few buy a_little candles Lisi was required to buy fewer candles than Zhangsan. Context: Lisi was required to buy from 5 to 10 candles. Zhangsan was required to buy from 7 to 10 candles.	*
Differential Comparative	Lisi bi Zhangsan gao 5 li mi. Lisi compare Zhangsan tall 5 cm Lisi is 5 cm taller than Zhangsan.	ok
Comparison With A Degree	Lisi bi yi mi qi gao. Lisi compare 170 tall Lisi is taller than 1.70 m.	?
Degree Question	Lit: Lisi shi duo gao? Lisi is much tall	*
	Alt: Lisi you duo gao? Lisi has much tall How tall is Lisi?	ok
Measure Phrase Construction	Lit: Zhe ge xiangzi shi 20 gongjin zhong. def CL suitcase is 20 kg heavy	*
	Alt: Zhe ge xiangzi you 20 gongjin zhong. def CL suitcase has 20 kg heavy This suitcase weighs 20 kg.	ok
Subcomparative	Zhe ge zhuozi bi nage men kuan de gao. def CL table compare def door wide DE high This table is higher than the door is wide.	*

Guaraní	Example	Judgement
Predicative Phrasal Comparative	Maria i- jyvate- ve Pedro- gui. Maria is tall COMP Pedro than Maria is taller than Pedro.	ok
Adverbial Comparative	Juan oñani pya'e- ve Diego- gui. Juan ran fast COMP Diego than Juan ran faster than Diego.	ok
Attributive Comparative	Maria i- mbayruguata hepy- ve Pedro- gui. Maria has car expensive COMP Pedro than Maria has a more expensive car than Pedro.	ok
Comparative of Quantity	Maria ohai heta- ve aranduka Pedro- gui. Maria wrote much COMP books Pedro than Maria wrote more books than Pedro.	ok
Clausal Comparative	Maria i- jyvate- ve che aimo'ã- va'ekue'- gui. Maria is rich COMP I think past than Maria is richer than I thought.	ok
Equative	Maria i- jyvate Pedro- icha. Maria is tall Pedro as Maria is as tall as Pedro.	ok
'Less' Comparative		n/c
Positive	Maria i- jyvate. Maria is tall Maria is tall.	ok
Superlative	Lit:	n/c
	Alt: Maria pe i- jyvate- vé- va escuéla- pe. Maria this is tall COMP rel school this Maria is the tallest of the school.	ok
Intensional Comparative: "Enough"	Maria i- jyvate poȓa omoi hağua pe ta'anga opyké- re. Maria is tall good put to this frame wall on Maria is tall enough to put this frame on the wall.	ok
Intensional Comparative: "Too"	Maria tuichai- terei oke hagua pe tupa- pe. Maria tall too to sleep this bed in Maria is too tall to sleep in this bed.	ok
Differential Comparative	Pe arahaku haku- ve 5 grado che aimo'a- va- this temperature warm COMP 5 degree I think rel ekue'- gui. past than It is 5 degrees warmer than I thought.	ok

Guaraní	Example	Judgement
Comparison With A Degree	Maria i- jyvate- ve 1.70 metro- gui. Maria is tall COMP 1.70 meter than Maria is taller than 1.70 m.	ok
Negative Island Effect	Maria ojogua kuri petei ymo'aha ipuku -ve -va Pedro Maria buy past an umbrella large COMP rel Pedro nda- ojogua- i va'ekue- gui. not buy neg past than Lit: Maria bought a larger umbrella than Pedro didn't buy.	*
Scope in Main Clause: Possibility Modal	Peteĩ gua'a i- katu tuicha- ve peteĩ tui- gui. A parrot is can big COMP a magpie than A parrot can be bigger than a magpie. Reading: The maximal height reached by parrots exceeds the maximal height reached by magpies.	ok
Scope in Main Clause: Necessity Modal	Maria ojogua va'era mbovy -ve apytimby ka'ay Pedro -gui. Maria buy must little COMP packet tea Pedro than Maria had to buy fewer packets of tea than Pedro. Context: Maria had to buy 5-10 packets of tea. Pedro had to buy 8-10 packets of tea.	ok
Degree Question	Mba'eita i- tuja Pedro? how is old Pedro Intended: How old is Pedro?	*
Measure Phrase Construction	Pe juguata kuri poteĩ ára ipuku. this journey past six day long Intended: This journey was six days long.	*
Sub-comparative	Pe mesa i- jyvate- ve pe oke i- pe- gui. this table is high COMP this door is wide than This table is higher than this door is wide.	*

Hindi	Example	Judgement
Predicative Phrasal Comparative	Sangeeta Ramesh se lambi hai. Sangeeta Ramesh SE tall.fem is Sangeeta is taller than Ramesh.	ok
Adverbial Comparative	Sangeeta ne Ramesh se zyaadaa tez dauṛi. Sangeeta Erg Ramesh SE more fast ran Sangeeta ran faster than Ramesh.	ok
Attributive Comparative	Sangeeta kepaas Ramesh se zyaadaa tez kar hai. Sangeeta poss Ramesh SE more fast car is Sangeeta has a faster car than Ramesh.	ok

Hindi	Example									Judgement
Comparative of Quantity	Sangeeta	ne	Ramesh	se	zyaadaa	kitaabẽ	likhī.			ok
	Sangeeta	Erg	Ramesh	SE	more	books	wrote			
	Sangeeta wrote more books than Ramesh.									
Clausal Comparative	Lit:	Aaj	maine	socha	tha	se	zyaadaa	garam	hai.	*
		Today	I	think	was	SE	more	hot	is	
	Alt:	Aaj	us	se	zyaadaa	garam	hai	jitnaa	maine	ok
		Today	that	SE	more	hot	is	how	I	
		socha	tha.							
		think	past							
	It is warmer today than I thought.									
Equative	Sangeeta	Ramesh	jitna	lambi	hai.					ok
	Sangeeta	Ramesh	how	tall.fem	is					
	Sangeeta is as tall as Ramesh.									
'Less' Comparative	Sangeeta	Ramesh	se	kam	lambi	hai.				ok
	Sangeeta	Ramesh	SE	less	tall.fem	is				
	Sangeeta is less tall than Ramesh.									
Positive	Sangeeta	lambi	hai.							ok
	Sangeeta	tall.fem	is							
	Sangeeta is tall.									
Superlative	Sangeeta	apne	klass	mein	sab	se	lambi			ok
	Sangeeta	her_own	class	in	SUP	SE	tall.fem			
	chatra	hai.								
	student	is								
	Sangeeta is the tallest student in her class.									
Intensional Comparative: "Enough"	Lit:									n/c
	Alt:	Sangeeta	is	per	par	charne	ke_liye	bahut	bhārī	hai.	ok
		Sangeeta	this tree	on	climb.obl	to	very	big.fem	is	
	Sangeeta is tall enough to climb on this tree.									
Intensional Comparative "Too"	Lit:									n/c
	Alt:	Sangeeta	sofe	par	sone	ke_liye	bahut	bhārī	hai.	ok
		Sangeeta	sofa.obl	on	sleep.obl	to	very	big.fem	is	
	Sangeeta is too tall to sleep on the sofa.									
Differential Comparative	Sangeeta	Ramesh	se	2 cm	zyaadaa	lambi	hai.			ok
	Sangeeta	Ramesh	SE	2 cm	more	tall.fem	is			
	Sangeeta is 2cm taller than Ramesh.									
Comparison With A Degree	Sangeeta	5'4"	se	zyaadaa	lambi	hai.				ok
	Sangeeta	5'4"	SE	more	tall.fem	is				
	Sangeeta is taller than 5'4".									

Hindi	Example	Judgement
Negative Island Effect		n/a
Scope in Main Clause: Possibility Modal	Bandar langoor se badee ho saktee hain.	ok
	Monkeys langoors SE tall.fem be can are	
	Monkeys can be bigger than langoors.	
	Context: The maximal height reached by monkeys exceeds the maximal height reached by langoors.	
Scope in Main Clause: Necessity Modal	Ise theak 5_page aur lamba honā chahiye.	ok
	It exactly 5_page more long.masc be should	
	It (the paper) has to be 5 pages longer.	
	Context: The minimal requirement for the length of the paper is 25 pages. The draft is 20 pages long.	
Degree Question	Sangeeta kitni lambi hai?	ok
	Sangeeta how_much tall.fem is	
	How tall is Sangeeta?	
Measure Phrase Construction	Sangeeta 5'6" lambi hai.	ok
	Sangeeta 5'6" tall.fem is	
	Sangeeta is 5'6" tall.	
Sub-comparative	Lit:	n/a
	Alt: Darwāzā chaūṛā se meja jyādā ūnchī hai.	ok
	Door wide SE table more high.fem is	
	The table is higher than the door is wide.	
Comment:	**"Negative island effect" and "Subcomparative" tests are not applicable because of the lack of clausal comparatives.**	

Hungarían	Example	Judgement
Predicative Phrasal	Véra magasabb, mint Péter.	ok
	Véra tall.COMP than Péter	
	Véra is taller than Péter.	
Adverbial Comparative	Anna jobban főzöt mint Péter.	ok
	Anna well.COMP cooked than Peter	
	Anna cooked better than Peter.	
Attributive Comparative	Marinak egy nagyobb kertje van, mint Péternek.	ok
	Mari.Dat a big.COMP garden is than Peter.Dat	
	Mary has a bigger garden than Peter.	
Comparative of Quantity	Julianna több esernyőt vett, mint Rudi.	ok
	Julianna much.COMP umbrellas bought than Rudi	
	Julianna bought more umbrellas than Rudi.	

Hungarian	Example	Judgement
Clausal Comparative	Mari gazdagabb, mint (ahogy) gondoltam. Mari rich.COMP than how thought Mary is richer than I thought.	ok
Equative	Anikó (ugyan) olyan magas, mint Ildikó. Anikó just as tall as Ildikó Anikó is as tall as Ildikó.	ok
'Less' Comparative	Pisti kevesébé inteligens, mint Péter. Pisti less intelligent than Peter Pisti is less intelligent than Peter.	ok
Positive	Anikó magas. Anikó tall Anikó is tall.	ok
Superlative	Ebbe a csapatba Juli leg magasabb. this.in def team Juli most tall Juli is the tallest in this team.	ok
Intensional Comparative: "Enough"	Anikó elég magas ahoz hogy feltegye a festményt. Anikó enough tall that.for that up_hang.subj def painting Anikó is tall enough to hang up the painting.	ok
Intensional Comparative: "Too"	Juli túl hosszú (ahoz/ara) hogy elférjen ezen az ágyon. Juli too long that.for that in_fit this def bed Juli is too tall to sleep on the sofa.	ok
Differential Comparative	A fogalmazás 5 oldalal hosszabb mint a vázlat. the work 5 pages.with long.COMP than def draft The paper is 5 pages longer than the draft.	ok
Comparison With A Degree	Péter súlyosabb, mint 70 kiló. Péter heavy.COMP than 70 kilo Peter is heavier than 70 kilo.	ok
Negative Island Effect	Mari egy drágább könyvet vett, mint senki. Mari a expensive.COMP book bought than nobody Lit.: Maria bought a more expensive book than nobody.	*
Scope in Main Clause: Possibility Modal	Egy jeges medve nagyobb lehet, mint egy grizzly medve. A polar bear big.COMP be_can than a grizzly bear A polar bear can become bigger than a grizzly. Reading: The maximal height reached by polar bears exceeds the maximal height reached by grizzly bears.	ok
Scope in Main Clause: Necessity Modal	A fogalmazás pedig pontosan 10 oldalal hosszabb. def work but exactly 10 pages.with long.COMP kell legyen. must be The paper, however, has to be exactly 10 pages longer. Context: The minimal requirement was to write a 20-page long paper. Pisti wrote a 10 pages draft.	ok

Hungarian	Example	Judgement
Degree Question	Milyen magas Juli? How tall Juli How tall is Juli?	ok
Measure Phrase Construction	Rudi 1.71m magas. Rudi 1.71m tall Rudi is 1.71 m tall.	ok
Sub-comparative	A kés hosszabb, mint amilyen mély a fiók. the knife long.COMP than what deep the drawer The knife is longer than the drawer is deep.	ok

Japanese	Example	Judgement
Predicative Phrasal Comparative	Sally wa Joe yori kasikoi. Sally Top Joe YORI smart Sally is smarter than Joe.	ok
Adverbial Comparative	Taro wa Hanko yori(mo) (motto) hayaku hasiru. Taro Top Hanko YORI(MO) (MOTTO) fast run Taro runs faster than Hanako.	ok
Attributive Comparative	Mary wa John yori (motto) takusan-no ronbun-o kaita. Mary Top John YORI (MOTTO) many-Gen paper-Acc wrote Mary wrote more papers than John.	ok
Comparative of Quantity	Taroo wa Hanako-ga katta yori(mo) takusan(-no) Taroo Top Hanako-Nom bought YORI(mo) many(-Gen) kasa-o katta. umbrella-Acc bought Taroo bought more umbrellas than Hanako did.	ok
Clausal Comparative	Mary wa John-ga kaita yori takusan-no ronbun-o kaita. Mary Top John-Nom wrote YORI many-Gen paper-Acc wrote Mary wrote more papers than John did.	ok
Equative	Lit: 	n/c
	Alt: John wa Mary to onaji kurai kasikoi. John Top Mary with same degree smart John and Mary are smart to the same degree.	ok
'Less' Comparative		n/c
Positive	Taro wa kasikoi. Taro Top smart Taro is smart.	ok

Japanese	Example	Judgement
Superlative	John wa ichiban kasikoi.	ok
	John Top most smart	
	John is the smartest.	
Intensional Comparative: "Enough"		n/c
Intensional Comparative: "Too"	Kno hon wa gakusei-ga yomu niwa muzukasi sugiru.	ok
	this book Top student-Nom read for difficult too	
	This book is too difficult for the students to read.	
Differential Comparative	Sally wa Joe yori 5cm se-ga takai.	ok
	Sally Top Joe YORI 5cm back-Nom tall	
	Sally is 5 cm taller than Joe.	
Comparison With A Degree	Mary-wa 7 satu yori motto takusan-no hon-o katta.	??
	Mary-Top 7 CL YORI MOTTO many-Gen book-Acc bought	
	Intended: Mary bought more than 7 books.	
Negative Island Effect	John-wa dare-mo kawa-naka-tta no yori takai	ok
	John-Top anyone buy-neg-Past ON YORI expensive	
	hon-o katta.	
	book-Acc bought	
	John bought a more expensive book than the one that nobody bought.	
Scope in Main Clause: Possibility Modal	Not tested.	
Scope in Main Clause: Necessity Modal	Sono ronbun wa sore yori(mo) tyoodo	*
	that paper Top that YORI(MO) exactly	
	5_peeji nagaku-nakerebanaranai.	
	5_page long-be_required	
	The paper is required to be exactly 5pp longer than that.	
	Context: The minimal requirement for the length of the paper is 25 pages. The draft is 20 pages long.	
Degree Question	Lit: John wa ikura kasikoi no?	*
	John Top how_much smart Q	
	Alt: John wa dore-kurai kasikoi no?	ok
	John Top which-degree smart Q	
	How smart is John?	
Measure Phrase Construction	Sally-wa 1.65m se-ga takai.	*
	Sally-Top 1.65m back-Nom tall	
	Intended: Sally is 1.65 m tall.	
Sub-comparative	Kono tana wa ano doa-ga hiroi yori(mo) (motto) takai.	*
	this shelf Top that door-Acc wide YORI(MO) (MOTTO) tall	
	Intended: The shelf is taller than the door is wide.	
Comment:	**Scope of the comparative in the main clause has not been tested with a possibility modal.**	

Mooré	Example	Judgement
Predicative Phrasal Comparative	A Joseph yaa woko n yʋd a Jean. PM Joseph is.AS long C exceed PM Jean Joseph is taller than Jean.	ok
Adverbial Comparative	A Jean zoee tao-tao n yʋd a Joseph. PM Jean ran.AS fast C exceed PM Joseph Jean ran faster than Joseph.	ok
Attributive Comparative	A Jean raa ba-bedre n yʋd a Marie baagã. PM Jean bought.AS dog-big C exceed PM Marie dog.def Jean bought a bigger dog than Marie.	?
Comparative of Quantity	A Jean raa sɛb wʋsgo n yʋd a Marie. PM Jean bought.AS books many C exceed PM Marie Jean bought more books than Marie.	ok
Clausal Comparative	Lit: A Marie yaa woko n yʋd mam da tẽeda. PM Marie is.AS long C exceed I past think.impf.AS	*
	Alt: A Marie yaa woko n yʋd mam sẽn da tẽeda. PM Marie is.AS long C exceed I ON past think.impf.AS Marie is taller than I thought.	ok
Equative	A Noemie yaa woko n ta a Justine. PM Noemie is.AS long C reach PM Justine Noemie is as tall as Justine.	ok
'Less' Comparative		n/c
Positive	A Michel yaa woko. PM Michel is.AS long Michel is tall.	ok
Superlative	Bãmb fãa sʋka a Michel la woko n yʋda. them all among PM Michel FOC.is long C exceed Among them all, Michel is the tallest.	ok
Intensional Comparative: "Enough"	A Jean yaa woko tɩ seke. PM Jean is.AS long C be_enough Jean is tall enough.	ok
Intensional Comparative: "Too"	A Jean yaa woko tɩ looge. PM Jean is.AS long C exceed Jean is too tall.	ok
Differential Comparative	A Philomene yaa woko n yʋd a Noemie ne PM Philomene is.AS long C exceed PM Noemie with sentimetr a nu. centimeter NM five Philomene is 5 cm taller than Noemie.	ok

Mooré	Example										Judgement
Comparison With A Degree	A	Martine	yaa	woko	n	yʊd	mɛtr	a	ye	la	ok
	PM	Martine	is.AS	long	C	exceed	meter	NM	one	C	
	sentimɛtr	pissoobe.									
	centimeter	sixty									
	Martine is taller than 1 meter 60.										
Scope in Main Clause: Possibility Modal	Not tested.										
Scope in Main Clause: Necessity Modal	Sebrã	toge	n	yaa	woko	n	yʊd	woto	ne	sebneng	??
	Book.def	has_to	C	is.AS	long	C	exceed	that	with	page	
	a	nu	kɛpɪ.								
	NM	5	exactly								
	The book has to be exactly 5 pages longer than that.										
	Context: Adama wrote a paper which is 10 pages long. The minimal required length is 15 pages for a paper to be published.										
Degree Question	A	Martine	yaa	woko	wãna?						??
	PM	Martine	is.AS	long	how_much						
	Intended: How tall is Martine?										
Measure Phrase Construction	A	Noemie	yaa	woko	mɛtr	a	ye	la	sentimɛtr	pissoobe.	*
	PM	Noemie	is.AS	long	meter	NM	one	C	centimeter	sixty	
	Intended: Noemie is 1.60 m tall.										
Sub-comparative	Lit:	Tablã	yaa	woko	n	yʊd	portã	yaa	yalenga.		*
		Table.def	is.AS	long	C	exceed	door.def	is.As	wide		
	Alt:	Tablã	yaa	woko	n	yʊd	portã	sẽn			??
		Table.def	is.AS	long	C	exceed	door.def	ON			
		yaa	yalenga.								
		is.AS	wide								
	Intended: The table is higher than the door is wide.										
Comment:	**"Negative island effect" is not testable because of the lack of clausal comparatives. Scope of the comparative in the main clause has not been tested with a possibility modal.**										

Motu	Example								Judgement
Predicative Phrasal Comparative	Mary	na	lata	to	Frank	na	kwadoği.		ok
	Mary	Top	tall	but	Frank	Top	short		
	Mary is taller than Frank.								
Adverbial Comparative	Mary	na	ane	e	abi	namonamo-mu,	to	Frank na	lasi.	ok
	Mary	Top	song	3.sg.Subj	sing	good_good-asp	but	Frank Top	NEG	
	Mary sings better than Frank.									

Mooré	Example	Judgement
Attributive Comparative	Mary na damaru lata-na e hoia, to Frank Mary Top umbrella long-sg 3.sg.Subj.past buy but Frank na damaru kwadoği-na e hoia. Top umbrella small-sg 3.sg.Subj.past buy Mary bought a longer umbrella than Frank did.	ok
Comparative of Quantity	Mary na buka momo e hoi, to Frank na lasi. Mary Top books many 3.sg.Subj.past buy but Frank Top NEG Mary has bought more books than Frank.	ok
Clausal Comparative	Lit:	n/c
	Alt: Lau na natoma-mu Mary na kwadoği, to na e lata. I Top think-Asp Mary Top short, but Top 3.Subj tall Mary is taller than I thought.	ok
Equative	Lit:	n/c
	Alt: Mary bona Frank edia lata na hegeregere. Mary and Frank their length Top equal Mary is as tall as Frank.	ok
'Less' Comparative		n/c
Positive	Mary na lata. Mary Top tall Mary is tall.	ok
Superlative	Lit:	n/c
	Alt: Idia padadiai Mary na lata herea. people amongst_them Mary Top tall very Among these people, Maria is the tallest.	ok
Intensional Comparative: "Enough"	Lit:	n/c
	Alt: Mary na lata una_dainai piksa na baine hagaua diba. Mary Top tall therefore picture Top 3.sg.fut hang_up able Mary is tall enough to hang up this picture.	ok
Intensional Comparative: "Too"	Lit:	n/c

	Alt: Mary na lata herea una_dainai sofa latanai
	    Mary Top tall very therefore sofa on
	    na basine mahuta.
	    Top 3.sg.fut.neg sleep
	Mary is too tall to sleep on the sofa.
		ok

Motu	Example	Judgement
Differential Comparative	Lit: Mary na lata 2cm ai, to Frank na kwadoği.	*
	Mary Top tall 2cm by but Frank Top short	
	Alt: Mary na 2cm ai Frank ena lata e hanaia.	ok
	Mary Top 2cm by Frank his height 3.sg.Subj exceed	
	Mary is 2 cm taller than Frank.	
Scope in Main Clause: Possibility Modal		n/a
Scope in Main Clause: Necessity Modal		n/a
Comparision With A Degree	Mary na lata 1.70m.	*
	Mary Top tall 1.70m	
	Intended: Mary is taller than 1.70m.	
Degree Question	Mary na lata be hida?	*
	Mary Top tall how_many	
	Intended: How tall is Mary?	
Measure Phrase Construction	Mary na 1.70m lata.	*
	Mary Top 1.70m tall	
	Intended: Mary is 1.7 m tall.	
Subcomparative		n/a
Comment:	Motu comparative are simply two independent clauses standing in a contrast relation. Hence, application of "Negative Island Effect" test, "Subcomparative" test, scope interactions tests makes no sense.	

Romanian	Example	Judgement
Predicative Phrasal Comparative	Maria e mai inteligentă decât Ion.	ok
	Maria is COMP intelligent than Ion	
	Maria is more intelligent than Ion.	
Adverbial Comparative	Alina a fugit mai repede decât Alin.	ok
	Alina has ran COMP fast than Alin	
	Alina has run faster than Alin.	
Attributive Comparative	Mioara are o maşină mai rapidă decât Ion.	ok
	Mioara has a car COMP fast than Ion	
	Mioara has a faster car than Ion.	
Comparative of Quantity	Maria a scris mai multe articole decât (a scris) Ion.	ok
	Maria has written COMP many articles than (has written) Ion	
	Maria has written more articles than Ion.	
Clausal Comparative	Mioara e mai bogată decât am crezut.	ok
	Mioara is COMP rich than have thought	
	Mioara is richer than I thought.	

Romanian	Example	Judgement
Equative	Piața imobilară din București este (la fel de) scumpă Market real-estate of Bucharest is as expensive ca cea din Viena. as that of Vienna Buharest's real-estate market is as expensive as Vienna's.	ok
'Less' Comparative	Este un material mai puțin prețios ca oțelul. is a material COMP little precious than steel It is a less precious metal than steel.	ok
Positive	Ion e înalt. Ion is tall Ion is tall.	ok
Superlative	Ana este cea mai înaltă dintre toți. Ana is the COMP tall among all Ann is the tallest of all.	ok
Intensional Comparative: "Enough"	Ion e suficient de înalt ca să fixeze tabloul. Ion is sufficiently of tall that subj fix picture.def Ion is tall enough to fix the picture.	ok
Intensional Comparative: "Too"	Maria e prea mare ca să încapă pe canapea. Maria is too big that subj fit onto sofa Maria is too big to fit onto the sofa.	ok
Differential Comparative	Zamfira e cu 5cm mai înaltă decât Mioara. Zamfira is with 5cm COMP tall than Mioara Zamfira is 5 cm taller than Mioara.	ok
Comparison With A Degree	Florin e mai înalt de 1.80m. Florin is COMP tall de 1.80m Florin is taller than 1.80 m.	ok
Negative Island Effect	Maria a cumpărat o carte mai scumpă decât/ca nimeni. Maria has bought a book COMP expensive than nobody Lit.: Maria has bought a more expensive book than nobody.	*
Scope in Main Clause: Possibility Modal	Un urs polar poarte să devină/fie mai mare decât un urs brun. A bear polar can subj become/be COMP big than a bear brown A polar bear can become bigger than a brown bear. Reading: The maximal size reached by polar bears exceeds the maximal size reached by brown bears.	ok
Scope in Main Clause: Necessity Modal	Lucrarea finală trebuie să fie mai lungă cu exact 10 pagini. work.def final must subj be COMP long with exactly 10 pages The final paper has to be exactly 10 pages longer. Context: A term paper in English linguistics is required to be minimally 20 pp long. Ionel has written 10 pp and asks me whether that's enough.	ok

Romanian	Example							Judgement
Degree Question	Lit:	Cât	inteligent	e		Ion?		*
		how	intelligent	is		Ion		
	Alt:	Cât	de	inteligent	e	Ion?		ok
		how	de	intelligent	is	Ion		
	How intelligent is Ion?							
Measure Phrase Construction	Lit:	Maria	e	înaltă	1.70m.			*
		Maria	is	tall	1.70m			
	Alt:	Maria	e	înaltă	de	1.70m.		ok
		Maria	is	tall	de	1.70m		
	Maria is 1.70 m tall.							
Subcomparative	Lit:	Stîlpul	e	mai	înalt	decât groapa	e adîncă.	*
		Pole.def	is	COMP	tall	than hole.def	is deep	
	Alt:	Stîlpul	e	mai	înalt	decât (e) groapa de	adîncă.	ok
		Pole.def	is	COMP	tall	than (is) hole.def de	deep	
	Intended: The pole is tallen than the hole is deep.							

Russian	Example					Judgement
Predicative Phrasal Comparative	Катя	выше		Маши.		ok
	Katya	tall.COMP		Masha.Gen		
	Katya is taller than Masha.					
Abverbial Comparative	Катя	бжала	быстрее	Маши.		ok
	katya	ran	fast.COMP	Masha.Gen		
	Katya ran faster than Masha.					
Attributive Comparative	Катя	купила	более	дорогой		ok
	Katya	bought	much.COMP	expensive.masc		
	диван,	чем	Маша.			
	sofa.masc	what.Instr	Masha.Nom			
	Katya bought a more expensive sofa than Masha.					
	Evaluativity. The sentence is only 'ok' in the following context: Mary bought a sofa that cost 800 € and Kate bought one for 600 €, which is still counts as expensive.					
Comparative of Quantity	Катя	собрала	сольше	грибов,	чем Маша.	ok
	Katya	gathered	much.COMP	mushrooms	what.Instr Masha.Nom	
	Katya gathered more mushrooms than Masha.					
Clausal Comparative	Катя	выше,	чем	я	думала.	ok
	Katya	tall.COMP	what.Instr	I	thought	
	Katya is taller than I thought.					

Russian	Example				Judgement
Equative	Петя	получил	такую	же	высокую	ok
	Petya	get.past	that	emph	high	
	оценку,	как	и	Маша.		
	grade	how	also	Masha.Nom		
	Peter got as high a grade as Mary did.					
	Evaluativity. The sentence is only 'ok' in the following context: Both Peter and Mary got a "5". ("5" is the highest grade in the Russian grading system.)					
'Less' Comparative	Маша	менее	высокая,	чем	Катя.	ok
	Masha	little.COMP	tall.fem	what.Instr	Katya	
	Masha is less tall than Katya.					
	Evaluativity. The sentence is only 'ok' in the following context: Katya is 1,80. Masha is 1,75, which is still above the average female height.					
Positive	Лена	высокая.				ok
	Lena	tall.fem				
	Lena is tall.					
Superlative	Катя	самая	высокая	в	классе.	ok
	Katya	most	tall.fem	in	class	
	Katya is the tallest in the class.					
Intensional Comparative: "Enough"	Петя	достаточно	высокий,	чтоб	играть в сборной.	ok
	Petya	enough	tall.masc	that.subj	play in team	
	Petya it tall enough to play in the team.					
	Evaluativity. The sentence is only 'ok' in the following context: One has to be above the average height in order to play in the team. Peter is above the average height.					
Intensional Comparative: "Too"	Маша	слишком	высокая, чтоб	заниматься	гимнастикой	ok
	Masha	too	tall.fem that.subj	do.inf	gymnastics	
	Mary is too tall for a gymnast.					
	Evaluativity. The sentence is only 'ok' in the following context: Mary is tall. Gymnasts are not allowed to be tall.					
Differential Comparative	Полка	на	5 см	длиннее	стола	ok
	shelf	on	5 cm	long.COMP	table.Gen	
	The shelf is 5 cm longer than the table.					
Comparison With A Degree	Полка	длиннее	восьмидесяти	сантиметров.		ok
	shelf	tall.COMP	eighty.Gen	cm.Gen		
	The shelf is longer than 80cm.					
Negative Island Effect	Свtea	купила	более	дорогой	подарок,	*
	Sveta	buy.past	much.COMP	expensive	present	
	чем	никто	другой.			
	what.Instr	nobody	other			
	Lit.: Sveta bought a more expensive present than nobody else.					

Russian	Example							Judgement
Scope in Main Clause: Possibility Modal	Статье	разрешено	быть	ровно	на	5	страниц	длиннее.	ok
	article	allowed	be	exactly	by	5	pages	long.COMP	
	The paper is allowed to be exactly 5 pages longer.								
	Context: The draft is 20 pages long. The maximal allowed length of the paper is 25 pages.								
Scope in Main Clause: Necessity Modal	Статье	надо	быть	ровно	на	5	страниц	длиннее.	?
	paper.Dat	necessary	be	exactly	by	5	pages	long.COMP	
	The paper has to be 5 pages longer.								
	Context: The minimal requirement for the length of the paper is 25 pages. The draft is 20 pages long.								
Degree Question	Какой	диван	длинный?						*
	how.masc	sofa	long.masc						
	Intended: How long is the sofa?								
Measure Phrase Construction	Света	1.62	высокая.						*
	Sveta	1.62	tall.fem						
	Intended: Sveta is 1,62 tall.								
Subcomparative	Стол	длиннее,	чем	дверь	широкая.				*
	table	long.COMP	what.Instr	door	wide.fem				
	Intended: The table is longer than the door is wide.								

Samoan	Example										Judgement
Predicative Phrasal Comparative	E	umi	Malia	i lo	Falani.						ok
	GENR	tall	Mary	than	Frank						
	Mary is taller than Frank.										
Adverbial Comparative	E	momoe	saoasoa	Malia	i lo	Falani.					ok
	GENR	run	fast	Mary	than	Frank					
	Mary runs faster than Frank.										
Attributive Comparative	E	i	ai	le	taavale	saoasoa	a	Malia	i lo	Falani.	ok
	GENR	to	pron	the	car	fast	of	Mary	than	Frank	
	Mary has a faster car than Frank.										
Comparative of Quantity	E	tele	(atu)	tusi	sa	faatau	e	Malia	i lo	Falani.	ok
	GENR	many	(DIR)	books	past	buy	by	Mary	than	Frank	
	Mary bought more books than Frank.										
Clausal Comparative	Lit:	E	mafanafana	nei	i lo	sa	faapea	au.			*
		GENR	warm	today	than	PAST	think	I			
	Alt:	E	mafanafana	(atu)	nei	i lo	le				ok
		GENR	warm	DIR	today	than	the				
		mea	na	ou	faapea	e	i	ai.			
		thing	past	I	think	GENR	in	it			
	Today it is warmer than I thought.										

Samoan	Example									Judgement
Equative	Lit:									n/c
	Alt: E	tai	tutusa	le	umi	o	Malia	ma	Falani.	ok
	GENR	nearly	same	the	height	of	Malia	and	Frank	
	Mary is as tall as Frank.									
'Less' Comparative										n/c
Positive	E	umi	Malia.							ok
	GENR	tall	Malia							
	Mary is tall.									
Superlative	I	le	aofaiga	o	tagata	ia,	e	umi		ok
	Here	the	gathering	of	person	those	GENR	tall		
	(ai	lava)	Malia.							
	pron	emph	Mary							
	Among these people, Mary is the tallest.									
Intensional Comparative: "Enough"	Lit:									ok
	Alt: E	mafai	na tautau e	Malia le	ata,	ona	e	umi.		
	GENR able	to hang	Erg Mary	the	picture,	because	GENR	tall		
	Mary is tall enough to hang up this picture.									
Intensional Comparative: "Too"	Lit:									n/c
	Alt: E	le	mafai	ona	moe	Malia i	luga o	le		ok
	GENR	not	able	to	sleep	Mary on	top	of the		
	sofa,	ona	e	umi tele.						
	sofa,	because	GENR	tall	many					
	Mary is too tall to sleep on the sofa									
Negative Island Effect										n/a
Scope in Main Clause: Possibility Modal	E	mafai ona	umi (atu)	le	pulu i lo	le	povi.			*
	GENR	able become	tall (DIR)	the	bull	than	the cow			
	A bull can become bigger than a cow.									
	Context: The maximal height reached by a bull exceeds the maximal height reached by a cow.									
Scope in Main Clause: Necessity Modal	Sa	tatau ona	le	tele	(atu)	ni	sela	e		*
	past	have to	neg	much	(DIR)	some	candles	GENR		
	faatau e	Malia i lo	Falani.							
	buy Erg	Mary	than Frank							
	Mary had to buy less candles than Frank.									
	Context: Mary was required to buy 5-10 candles and Frank was required to buy 8–10 candles.									

Samoan	Example							Judgement
Differential Comparative	E	umi	Malia	i	le	2 cm	i lo	Falani.	ok
	GENR	tall	Mary	by	the	2 cm	than	Frank	
	Mary is 2 cm taller than Frank.							
Comparison With A Degree	E	umi	atu	Malia	i lo	le	1.7mita.		ok
	GENR	tall	DIR	Mary	than	the	1.7m		
	Mary is taller than 1.7 m.							
Degree Question	O le a	umi	Malia?						*
	how	tall	Mary						
	Intended: How tall is Mary?							
Measure Phrase Construction	E	umi	1.70	mita	Malia.				*
	GENR	tall	1.7	meter	Mary				
	Intended: Mary is 1.7 m tall.							
Subcomparative									n/a
Comment:	"Negative island Effect" test and "Subcomparative" test are not applicable because of the lack of clausal comparatives.							

Spanish	Example								Judgement
Predicative Phrasal Comparative	Pedro	es	más		alto	que	Juan.		ok
	Pedro	is	much.COMP		tall	than	Juan		
	Pedro is taller than Juan.								
Adverbial Comparative	Marta	ha	corrido	más		rápido	que	Juan.	ok
	Marta	has	run	much.COMP		fast	than	Juan	
	Marta ran faster than Juan.								
Attributive Comparative	Marta	tiene	un	coche	más		rápido	que	Juan.	ok
	Marta	has	a	car	much.COMP		fast	than	Juan	
	Marta has a faster car than Juan.								
Comparative of Quantity	Maria	compró	más		paraguas	que	Juan.		ok
	Maria	bought	much.COMP		umbrellas	than	Juan		
	Maria bought more umbrellas than Juan.								
Clausal Comparative	Leticia	es	más		rica	de	lo	que	(yo)	pensaba.	ok
	Leticia	is	much.COMP	rich	than	3.sg.neut	what	I	thought	
	Leticia is richer than I thought.								
Equative	Marta	es	tan	alta	como	Juan.			ok
	Marta	is	as	tall	as	Juan			
	Marta is as tall as Juan.								
'Less' Comparative	Maria	es	menos	alta	que	Juan.			ok
	Maria	is	less	tall	than	Juan			
	Maria is less tall than Juan.								

Spanish	Example	Judgement
Positive	Maria es alta. Maria is tall Maria is tall.	ok
Superlative	Juana es la más alta. Juana is the most tall Juana is the tallest.	ok
Intensional Comparative: "Enough"	Marta es suficientemente alta para (poder) colgar el cuadro. Marta is sufficently tall for (can) hang_up the painting Marta is tall enough to (be able to) hang up the painting.	ok
Intensional Comparative: "Too"	Leticia es demasiado alta para dormir en el sofá. Leticia is too big for sleep on def sofa Leticia is too big to sleep on the sofa.	ok
Differential Comparative	Ese camino fue 2km más largo que el anterior. This way was 2km much.COMP long than the previous This way was 2km longer than the previous one.	ok
Comparison With A Degree	Marta es más alta que 1.70m. Marta is much.COMP tall than 1.70m Maria is taller than 1.70 m.	?
Negative Island Effect	Marta compró un libro más caro que Marta bought a book much.COMP expensive than Juan no compró. Juan NEG bought Lit.: Marta has bought a more expensive book than Juan didn't buy.	*
Scope in Main Clause: Possibility Modal	Un oso polar puede llegar a ser más alto/grande A bear polar can get to be more tall/big que un grizzly. than a grizzly A polar bear can become bigger than a grizzly. Reading: The maximal height/size reached by polar bears exceeds the maximal height/size reached by grizzly bears.	ok
Scope in Main Clause: Necessity Modal	El trabajo final tiene que tener exactamente 10 páginas más. The work final has to have exactly 10 pages much.COMP The final version needs to have exactly 10 pages more. Context: The minimal requirement was to write a paper of 20 pages. Juana asks me whether the 10 pages she wrote suffice.	?
Degree Question	Lit: ¿Cómo alta es Maria? how tall is Maria	*
	Alt: ¿Cómo de alta es Maria? how de tall is Maria How tall is Maria?	ok

Spanish	Example	Judgement
Measure Phrase Construction	Lit: Marta es 1.80 alta.	*
	Marta is 1.80 tall	
	Alt: Marta es 1.80 de alta.	ok
	Marta is 1.80 de tall	
	Marta is 1.80 tall.	
Subcomparative	Lit: La mesa es más alta que la puerta es ancha.	*
	The table is more high than the door is wide	
	Alt: La mesa es más alta que ancha es la puerta.	ok
	The table is more high than wide is the door	
	The table is higher than the door is wide.	

Thai	Example	Judgement
Predicative Phrasal Comparative	Maria soong gwah Hans.	ok
	Maria tall than Hans	
	Maria is taller than Hans.	
Adverbial Comparative	Maria wing reh-oh gwah Hans.	ok
	Maria run fast than Hans	
	Maria runs faster than Hans.	
Attributive Comparative	Maria seu rohm paang gwah Hans.	ok
	Maria buy umbrella expensive than Hans	
	Maria buys a more expensive umbrella than Hans.	
Comparative of Quantity	Maria dtaang nahng-seu mahk gwah Hans.	ok
	Maria compose book much/many than Hans	
	Maria writes more books than Hans.	
Clausal Comparative	Maria roo-ay gwah tee chahn keet.	ok
	Maria rich than rel I think	
	Maria is richer than I thought.	
Equative	Maria soong tao (gahp) Hans.	ok
	Maria tall equal (with) Hans	
	Maria is as tall as Hans.	
'Less' Comparative	Maria soong nawy gwah Hans.	ok
	Maria tall little than Hans	
	Maria is less tall than Hans.	
Positive	Maria (dtoo-uh) soong.	ok
	Maria (body) tall	
	Maria is tall.	

Thai	Example	Judgement
Superlative	Ny ra-wahng kohn poo-uk nee Maria keu in between person group dem Maria be kohn tee soong tee soot. person rel tall rel most/end Among this group of people, Maria is the tallest.	ok
Intensional Comparative: "Enough"	Maria soong paw (tee) ja kwaan roop kee-un nee dy. Maria tall enough (rel) will hang picture compose dem can Maria is tall enough to hang up this painting.	ok
Intensional Comparative: "Too"	Maria dtoo-uh yow gun (bpy) tee ja nawn bohn sofa nee dy. Maria body long too (go) rel will sleep on sofa dem can Maria is too tall to sleep on this sofa.	ok
Differential Comparative	Maria soong gwah Hans 2 cm. Maria tall than Hans 2 cm Maria is 2cm taller than Hans.	ok
Comparison With A Degree	Maria soong gwah 170 cm. Maria tall than 170 cm Maria is taller than 1.70m.	ok
Negative Island Effect	Maria seu nahng-seu paang gwah (tee) my mee kry. Maria buy book expensive than (rel) NEG have/there is anyone Lit.: Maria buys a more expensive book than nobody.	*
Scope in Main Clause: Possibility Modal	Bpen bpy dy tee mee kow dtoo-uh yai gwah mee grizzly. be go can rel bear white body large than bear grizzly A polar bear can be larger than a grizzly bear. Reading: The maximal height reached by polar bears exceeds the maximal height reached by grizzly bears.	ok
Scope in Main Clause: Necessity Modal	Boht-khwaam dtawng yow gwah rahng 5 nah paw-dee. article be-required long than draft 5 page exactly The article is required to be exactly 5 pages longer than the draft. Context: The draft is 10 pp long. The article is required to be at least 15 pp in length.	ok
Degree Question	Maria soong tao ry? Maria tall equal Q How tall is Maria?	ok
Measure Phrase Construction	Maria soong 172 cm. Maria tall 172 cm Maria is 1.72m tall.	ok
Subcomparative	Dto soong gwah (tee) bpra-dtoo gwahng. table high than (rel) door wide The table is higher than the door is wide.	ok

Turkish	Example	Judgement
Predicative Phrasal Comparative	Maria Hans'tan (daha) uzun. Maria Hans.Abl (even) tall Maria is taller than Hans.	ok
Adverbial Comparative	Maria Hans'tan (daha) hızlı koştu. Maria Hans.Abl (even) fast ran Maria ran faster than Hans.	ok
Attributive Comparative	Maria Hans'tan (daha) pahalı bir araba satın aldı. Maria Hans.Abl (even) expensive a car bought Maria bought a more expensive car than Hans.	ok
Comparative of Quantity	Maria Hans'tan daha fazla kitap yazdı. Maria Hans.Abl even much.COMP book wrote Maria wrote more books than Hans.	ok
Clausal Comparative	Lit: 	n/c
	Alt: Maria benim düşündüğümden daha zengin. Maria my think.particp.1Sg.Abl even rich Maria is richer than I thought.	ok
Equative	Maria Hans kadar uzun. Maria Hans as tall Maria is as tall as Hans.	ok
'Less' Comparative	Maria Hans'tan (daha) az uzun. Maria Hans.Abl (even) little tall Maria is less tall than Hans.	??
Positive	Maria uzun. Maria tall Maria is tall.	ok
Superlative	Maria bu insanların arasında en uzunu. Maria dem people.pl.Gen among most tall.Gen Among these people, Maria is the tallest.	ok
Intensional Comparative: "Enough"	Maria resmi asmak için yeterince uzun. Maria drawing hang for/in_order_to sufficient tall Maria is tall enough to hang up the painting.	ok
Intensional Comparative: "Too"	Maria kanepede uyumak için fazla uzun. Maria sofa sleep for/in_order_to much.COMP tall Maria is too tall to sleep on the sofa.	ok
Differential Comparative	Maria Hans'tan iki santim (daha) uzun. Maria Hans.Abl two cm (even) tall Maria is 2 cm taller than Hans.	ok
Comparison With A Degree	Maria bir metre yetmiş santimden daha uzun. Maria one metre seventy cm.Abl even tall Maria is taller than 1.70 m.	ok

Turkish	Example	Judgement
Negative Island Effect		n/a
Scope in Main Clause: Possibility Modal	Bir kutup ayısı bir grizzly ayısından daha büyük olabilir. a polar bear.Gen a grizzly bear.Gen.Abl even big become.can A polar bear can get larger than a grizzly bear. Reading: The maximal height reached by polar bears exceeds the maximal height reached by grizzly bears.	ok
Scope in Main Clause: Necessity Modal	Makale müsveddedeu tam beş sayfa daha uzun olmak zorunda. article draft.Abl. exactly five page even long be_required The article is required to be exactly five pages longer than the draft. Context: The draft is 10 pages long. The article is required to be at least 15 pages in length.	ok
Degree Question	Kapı ne kadar geniş? Door how_(much) wide How wide is the door?	?
Measure Phrase Construction	Maria bir metre yetmiş uzun. Maria one metre seventy tall Maria is 1.70 m tall.	??
Subcomparative		n/a
Comment:	**"Negative island effect" test, "Subcomparative" test are not applicable because of the lack of clausal comparatives.**	

Yorùbá	Example	Judgement
Predicative Phrasal Comparative	Adé ga ju Isaac lọ. Adé is_tall exceed Isaac go Adé is taller than Isaac.	ok
Adverbial Comparative	Naila kọrin sòkè ju Adé lọ. Naila sang loud exceed Adé go Naila sang louder than Adé.	ok
Attributive Comparative	John ra abùradà wíwọ́n ju ti Isaac lọ. John bought umbrella expensive exceed dem Isaac go John bought a more expensive umbrella than that of Isaac.	ok
Comparative of Quantity	John ra ìwé púpọ̀ ju Isaac lọ. John bought book many exceed Isaac go John bought more books than Isaac.	ok
Clausal Comparative	Lit: Naomi ní owó ju mo rò lọ. Naomi has money exceed I thought go	*
	Alt: Naomi ní owó ju bí mo şe rò lọ. Naomi has money exceed ON I ON thought go Naomi is richer than I thought.	ok

Yorùbá	Example	Judgement
Equative	Kathy ga tó John.	ok
	Kathy is_tall reach John	
	Kathy is as tall as John.	
'Less' Comparative		n/c
Positive	Isaac ga.	ok
	Isaac is_tall	
	Isaac is tall.	
Superlative	Láàrin gbogbo wọn, Adé ló ga jù lọ.	ok
	among all them, Adé FOC.he is_tall exceed go	
	Out of them all, Adé is the tallest.	
Intensional Comparative: "Enough"	Lit:	n/c
	Alt: Isaac ti ga tó láti ṣerè nínú ẹgbé náà.	ok
	Isaac past is_tall reach in_order_to play in team the	
	Isaac is tall enough to play in the team.	
Intensional Comparative: "Too"	Lit:	n/c
	Alt: Isaac ti ga jù láti ṣerè nínú ẹgbé náà.	ok
	Isaac past is_tall exceed in_order_to play in team the	
	Isaac is too tall to play in the team.	
Negative Island Effect		n/a
Differential Comparative	Kathy fi ẹsẹ̀bàtà kan ga ju Sandra lọ.	ok
	Kathy with foot one is_tall exceed Sandra go	
	Kathy is one foot taller than Sandra.	
Comparison With A Degree	Kathy ga ju ẹsẹ́bàtà márùn àt´àabọ lọ.	ok
	Kathy is_tall exceed foot five and´half go	
	Kathy is taller than 5.5 feet.	
Scope in Main Clause: Possibility Modal	Not tested.	
Scope in Main Clause: Necessity Modal	ìwé náà gbọdọ̀ gùn ju ìyẹn lọ pẹ̀lú ojú-ewé márùn gérégé.	*
	book the has_to is_long exceed that_one go with page five exactly	
	The book has to be exactly 5 pages longer than that one.	
	Context: The minimal requirement for the length of the book is 15 pages. The draft is 10 pages long.	
Degree Question	Lit: Báwo ni Kathy ga?	*
	how_much FOC Kathy is_tall	
	Alt: Báwo ni Kathy ṣe ga tó?	ok
	how_much FOC Kathy ON is_tall reach	
	How tall is Kathy?	

Yorùbá	Example							Judgement
Measure Phrase Construction	Lit:	Naomi	ga	mítà		àádọ́rin.		*
		Naomi	is_tall	meter		seventy		
	Alt:	Naomi	ga	ní	mítà	àádọ́rin.		ok
		Naomi	is_tall	in	meter	seventy		
	Naomi is 1.70 m tall.							
Subcomparative	Lit: Tábìlì	yìí	gùn	ju	lèkùn	yẹn	fẹ̀	lọ.	*
	table	this	is_long	exceed	door	that	is_wide go	
	Alt: Tábìlì	yìí	gùn	ju	bí	lèkùn yẹn ṣe	fẹ̀	lọ.	ok
	table	this	is_long	exceed	ON	door that ON	is_wide go	
	This table is longer than that door is wide.							
Comment:	**Scope of the comparative in the main clause has not been tested with a possibility modal.**							

Notes

1.   See Bhatt & Pancheva (2004) for a more modern syntax; this issue seems largely independent of the project pursued in this paper.

2.   Note that degree questions provide evidence in favour of the degree abstraction employed by the standard analysis of the comparative laid out above. Under general assumptions about the syntax/semantics interface (as explicated e.g. in Heim & Kratzer (1998)), movement of the wh-word *how* triggers predicate abstraction, which in this case is over the degree variable introduced by the adjective. This is the same movement as the movement taking place in the *than*-clause.

3.   The variable C in the Logical Form provides the contextually relevant set of other individuals that the superlative compares with.

4.   Note that the analysis of direct reference to degrees, and its combination with comparison operators as illustrated e.g. by the differential comparative, is one of the strengths of the standard analysis of comparison, contra theories that do not employ degrees (Klein (1980)) or reference to degrees in the comparative (Seuren (1973), Schwarzschild (2008)), in which this becomes much more complicated.

5.   This distinguishes Heim's version from Kennedy's (1997) view and analysis, where no scope interaction is perceived or derived. Their disagreement stems from the fact that the

operators that the comparative scopally interacts with are restricted to certain modal verbs (see Heim (2001)). Heim's conclusions are still under investigation (e.g. Oda (2008), Beck (in preparation), Krasikova (in preparation)), but will be the basis of our analysis in this paper.

6.   An alternative might be assuming a general lexical ambiguity between a context dependent ⟨e,t⟩ adjective meaning and a ⟨d,⟨e,t⟩⟩ meaning (as in e.g. Krasikova (2009)). Bogal-Allbritten's (2009) crosslinguistic work conceptually supports an operator analysis since it associates identifiable meaning components with morphological units. The relation between the gradable and the Positive adjective meaning has typically been seen as an invisible operator (POS) combining with the first to yield the second. Alternatively, one could consider the context dependent property meaning ⟨e,t⟩ basic, and derive a gradable ⟨d,⟨e,t⟩⟩ meaning from that by means of an empty operator – a possibility brought to our attention by Rajesh Bhatt and Chris Kennedy. Although this alternative view sheds an interesting light on our crosslinguistic study, we once more stick to the standard view as the starting point of our description and analysis.

7.   More precisely, the data in the appendix suggest that Mooré and Yorùbá have a phrasal comparative morpheme and the 'comparison with a degree' comparative operator in (6a).

8.   A reviewer points out to us that the possibility of differential comparatives combined with the impossibility of direct measure phrases raises the question of how to analyse degree expressions like 'six feet'. It seems that they can be referential in the comparative, thus not raising the problem of degree abstraction, while they must be quantificational as direct measure phrases in order to uniformly require degree abstraction. The latter can be seen to be supported by Schwarzschild's (2004) discussion of measure phrases, who argues that the combination with a direct measure phrase requires extra steps of composition – hence their less than universal acceptability. By contrast, degree expressions in comparatives are more widely acceptable and don't seem to raise issues of combinability. We do not completely understand this issue at this point. But see Oda (2008) for interesting discussion of differentials in the [−DAP] language Japanese. She argues that their behaviour supports the [−DAP] setting we assume.

9.   Although we cannot see the trace, it must be present in the syntax, for example because of movement constraints in *than*-clauses.

  (i) a. John is taller than I thought he was.
       b. ??John is taller than we wondered who was.

10.   There is one kind of element that can fill the degree argument position without, perhaps, being an operator: a referential direct measure expression as exemplified in (i), where *that* and *so* might be of type ⟨d⟩. We have not elicited the relevant data. This gap in our study might have consequences for the formulation of the DegPP. We thank Sonja Tiemann for discussion of this point.

  (i) a. (Peter is 6; tall). John is that tall, too.
       b. (Today it is 75 degrees.) I'm surprised that it is so warm.

11.   This parameter is supposed to pertain to the degree argument slot of a gradable predicate, not the well-formedness of expressions like '8 cm' in sentences of the language. In particular, the difference degree argument slot of the comparative and the degree argument of the comparative in comparison with a degree are not supposed to fall under this parameter. Neither case represents the degree argument slot of a gradable predicate.

12.   Beck, Oda and Sugisaki provide an analysis of the Japanese comparison construction along the lines of English (i). They further analyse both the Japanese and the English 'compared to'-phrase as a context setter. Interestingly, it seems to be strange to give as the "context" a direct value of the required variable, cf. (ii). Thus we propose that there is an independent reason which makes CompDeg awkward in Japanese.

    (i)   Compared to John, Mary is tall.
    (ii) ??Compared to 1.70m, Mary is tall.

13.   We should also note that the Turkish degree question does not seem to be as fully ungrammatical as one might expect (its status would be better described with 'questionable'; measure phrases are slightly worse). However, neither does it seem to be a canonical structure to express the relevant question, justifying the 'no' in the relevant position in the table.

14.   Fisher Exact yielded no results for the cluster {DiffC, CompDeg} because of the predominance of positive values for the two variables. However, the phi coefficient in this case is significant (phi = 0.685).

15.   The dependencies MP/DegQ $\Rightarrow$ DiffC und Scope $\Rightarrow$ DiffC also suffer from the low occurrence of [–DiffC] – the sample is short of languages that disallow differential comparatives – and, therefore, statistical testing cannot produce meaningful results in these two cases. The statistical analysis is hindered by the gap in the data collection pointed out above.

16.   Note that an analysis of Heim's data with modals that does not involve quantification over degree variables fails to predict that Scope clusters with NegIs, and that it is a prerequisite for DegQ, MP and SubC.

17.   It also may provide an insight into the behaviour of Turkish: perhaps the slightly fuzzy results we got regarding degree questions and measure phrases are indicative of a change in the setting of the DegPP towards a positive value that Turkish is in the process of undergoing.

18.   We use the term "phrasal comparative" purely descriptively without any theoretical implications on the kind of analysis for the data it covers.

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