Separate but equal:  
*a typology of equative constructions*  
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0 overview

(1) a. Amy is taller/more tall than Bill.  
   b. Amy is as tall as Bill.  

* a robust description of cross-linguistic variation in strategies of comparison: Ultan (1972); Stassen (1985); Dixon (2008)  
* a robust theoretical model of cross-linguistic variation in the semantics of comparatives: Kennedy (2005a); Beck et al. (2009); Bochnak (2015b)  
* some partial descriptions of cross-linguistic variation in strategies of equation: Haspelmath and Buchholz (1998); Henkelmann (2006)  
* the present paper is an attempt to propose a cross-linguistic typology of equative constructions...  
* (...and, to a lesser extent, to propose a theoretical analysis of a new subspecies of equative)  
* a glossary for both types of constructions:

<table>
<thead>
<tr>
<th>Amy</th>
<th>(is) more tall than Bill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amy</td>
<td>as tall as Bill</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>TARGET OF COMPARISON</th>
<th>PARAMETER</th>
<th>PARAMETER</th>
<th>STANDARD</th>
<th>STANDARD OF COMPARISON</th>
</tr>
</thead>
</table>

1 comparative typologies

1.1 a descriptive typology

* original descriptive typologies: Ultan (1972); Stassen (1985), and more recently Dixon (2008)  
* PARTICLE COMPARATIVES mark the standard with a particle or other morpheme

(2) Sadom -ete hati mananga -i  
    horse -from elephant big -pres.3sg  
    ‘The elephant is bigger than the horse.’  

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* Many thanks to my language consultants: Daniela Culinovic for Croatian; Jos Tellings for Dutch and Imbabura Quichua; Peter Hallman for German and Syrian Arabic; Nicoletta Lociom for Italian; Jinyoung Jo and Hendrik Kim for Korean; Ed Keenan for Malagasy; Adrian Brasoveanu for Romanian; Victoria Mateu for Catalan and Spanish; Ingvar Löfstedt for Swedish; and Sozen Oksan for Turkish. Thanks also to the audience at my October 2018 UCLA Syntax Seminar presentation. I have put asterisks next to languages from Australia/New Zealand/Papua New Guinea.

1 The particle comparative in (2) is a ‘separative comparative’, with a standard marker meaning ‘from’; other languages with separative comparatives include Amharic, Andoke, Classical Arabic, Aranda, Aymara, Bedauye, Bilin, Burmese, Burushaski, Carib, Cœur d’Alene, Eskimo, Guarani, Biblical Hebrew, Hindi, Japanese, Jurak, Kashmiri, Khalka, Korean, Lamutic, Laz, Manchu, Mandarin, Nama, Piro, Quechua, Tajik, Tibetan, Tupi, Turkish, and Vayu.
– ALLATIVE COMPARATIVES: standard marker elsewhere introduces goal phrases (e.g. ‘to’ or ‘for’)\(^2\)

(3) Sapuk ol- kondi to kibulkeneny
big.3sg the deer to the waterbuck
‘The deer is bigger than the waterbuck.’ \(\text{Maasai}\)

– LOCATIVE COMPARATIVES: standard marker is a locative preposition (e.g. ‘on’)\(^3\)

(4) A ka gya ni ma
he is big me on
‘He is bigger than me.’ \(\text{Mandinka}\)

– DEDICATED COMPARATIVES: involve a construction-specific standard marker\(^4\)

(5) Lehibe nojo ny zana ny Rabe
tall than the son his R
‘Rabe is taller than his son.’ \(\text{Malagasy}\)

• EXCEED COMPARATIVES employ a verb (e.g. ‘exceed’) to impose strict ordering\(^5\)

(6) To bi ni gau.
he exceed you tall
‘He is taller than you.’ \(\text{Mandarin}\)

• CONJOINED COMPARATIVES use conjunction to associate the target and the standard of comparison, using either antonyms, as in (7) and (8), or predicate negation, as in (9) and (10).\(^6\)

(7) Ua loa lenei vá’a, ua puupuu lena
is long this boat is short that
‘This boat is longer than that boat.’ \(\text{Samoan}\)

(8) Yan kau tukta, man almuk
I more young he old
‘I am younger than him.’ \(\text{Miskito}\)

(9) Kaw -ohra naha Waraka, kaw naha Kaywerye
tall not be.3sg.masc W tall be.3sg.masc K
‘Kaywerye is taller than Waraka.’ \(\text{Hixkaryana}\)

(10) Ina na námo herea una na dia námo
this is good more that is not good
‘This is better than that.’ \(\text{Motu}\)

• a note: the constructions in these descriptive categories might vary with respect to whether they involve a parameter marker, as the contrast between (7)/(8) and (9)/(10) shows.

\(^2\)Other languages with allative comparatives include Basque, Breton, Dakota, Gumbainggir, Hungarian, Jacaltec, Kamuri, Latvian, Mandinka, Maori*, Mapuche, Miwok, Naga, Nama, Navajo, Nuer, Salinan, Sranan, Siouan, Tamil, Tamazight, Tamil, Tarascan, Tubu, and Ubykh.

\(^3\)Additional languages: Cebuano, Chuckchee, Miwok, Navajo, Salinan, and Tamil.

\(^4\)English exemplifies this category, as do most European languages, as well as Ilocano, Javanese, Sranan, and Toba Batak.

\(^5\)English has an exceed comparative; so does Aymara, Bandari, Baris, Cambodian, Dagomba, Duala, Fulani, Gbe, Hausa, Igbo, Jabem, Kirundi, Maasai, Margi, Nguna, Quechua, Sika, Sranan, Swahili, Tamazight, Thai, Vietnamese, Wolof, Yagan, and Yoruba.

\(^6\)Languages that do the former include Cayapo, Dakota, Mangarayi*, Maori*, Sranan, and Sika; languages that do the latter include Hixkaryana, Menomini, Mixtec, Shipibo, and Yavapai (see also Kubota and Matsui, 2010). Other languages in this broad category include Abipon, Ekagi, Gumbainggir, Kobon, Monumbo, Nahuatl, and Pala.
1.2 a theoretical typology

• differentiation between explicit and implicit comparatives (Beck et al., 2004; Kennedy, 2005a, 2007a)

(11) IMPPLICIT VS. EXPLICIT COMPARISON (Kennedy, 2005b)

a. Implicit comparisons establish an ordering between $x$ and $y$ with respect to gradable property $g$ using the positive form [(e.g. Amy is tall)...] in such a way that the positive form is true of $x$ and false of $y$.

b. Explicit comparisons establish an ordering between objects $x$ and $y$ with respect to the gradable property $g$ using morphology whose conventional meaning has the consequence that the degree to which $x$ is $g$ exceeds the degree to which $y$ is $g$.

• (another parameter along which they can vary: they can compare individuals or degrees)

(12) a. explicit degree comparative: Amy is taller than Bill.

b. implicit degree comparative: Compared to Bill, Amy is tall.

c. implicit individual comparative: Amy exceeds Bill in height.

• diagnostics underpinning this distinction (also Pearson, 2010; Bochnak and Bogal-Allbritten, 2015):

  – crisp judgments: truth in ‘borderline’ cases

(13) NON-BORDERLINE CASE: Essay A is 600 words; Essay B is 200 words.

  a. Essay A is longer than Essay B.
  b. Compared to Essay B, Essay A is long.

(14) BORDERLINE CASE: Essay A is 600 words; Essay B is 590 words.

  a. Essay A is longer than Essay B.
  b. #Compared to Essay B, Essay A is long.

  – interpretation/compatibility with absolute adjectives (Kennedy, 2007b; Syrett et al., 2010)

(15) a. Pass me the tall one.
  b. %Pass me the empty one.

(16) a. Rod B is more bent than Rod A.
  b. ??Compared to Rod A, Rod B is bent.

  – compatibility with measure-phrase differentials

(17) a. Kim is 10cm taller than Lee.
  b. %Compared to Lee, Kim is 10cm tall.

• a summary of the typology of particle comparatives:

![A typology of comparatives](image-url)

Figure 1: A typology of comparatives
2 equative typologies

2.1 a descriptive typology

- original descriptive typologies: Haspelmath and Buchholz (1998) (‘HB’; 47 European languages, 52 languages total) and Henkelmann (2006) (25 languages)

- RELATIVE EQUATIVES use a relativizer (usually a degree or manner wh-word) to mark the standard. See the Appendix for an extensive list.

  - NON-PM RELATIVE EQUATIVES lack a parameter marker

    (18) Sestra mi e xubava kato tebe. sister my is pretty how(sm) you ‘My sister is as pretty as you.’

    (19) I adheffi mu ine òmorì san (kj) esêna. the sister my is pretty as(sm) (also) you ‘My sister is as pretty as you.’

  - PM RELATIVE EQUATIVES have a parameter marker

    (20) A minha irmã é tão bonita quanto você. the my sister is that(pm) pretty how(sm) you ‘My sister is as pretty as you.’

    (21) Ô óma caçaa ai jìnnan ó daa prà. he so(pm) good is how(sm) he GEN brother ‘He is as good as his brother.’

- PREDICATIVE EQUATIVES are formed with a predicate meaning roughly ‘equals’, either as a main predicate (22)–(23) or an adverb (24)

    (22) M -toto wa -ngu ni hodari sawa na wa -ko. L.sg -child L.sg -poss.1sg be clever equal with(sm) L.sg -poss.2sg ‘My child is as clever as yours.’

    (23) (I) rite tom te nunui o oona wae ki ooku. TNS like indeed the big GEN PL.GEN.3SG foot to PL.GEN.1SG ‘His feet are just as big as mine.’

    (24) M -àsor -àaci koufi yà -nisàa -ti kùdùkù F -be.long -IMPERF stick COM -arm -poss.1SG together ‘The stick and my arm are equally long.’

- CONJOINED EQUATIVES are a direct analog to conjoined comparatives; they too may or may not have a parameter marker.

    (25) Dana eu cecela eu odi we ija ha cecela. man that tall that like.that like 1.sg also tall ‘That man is as tall as I.’

    (26) Avan aq valves -e polaa -vee avan -um oyaram -aa irukkaaraan. his elder.brother -ACC like -EMPH he -too tallness -ADVIL is.3sg.m ‘He is as tall as his elder brother.’

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7 HB characterize relative equatives as having an aerial distribution in Europe.
8 Languages with main predicate equatives include Indonesian, Maori*, Vietnamese, and Yoruba; and those with adverbial predicate equatives include Danish, Dutch, Estonian, Finnish, Faroese, Norwegian, Swedish, and Swiss German.
a typology of equatives

• CASE-MARKED STANDARDS use a case marker to mark the standard; like conjoined comparatives, these may or may not have parameter markers.\(^9\)

(29) Yen -ke æymen porpor, rey -ke -kwo.
• case-marked standards

2sg -POSS knife sharp 3sg -POSS -SM
‘Your knife is as sharp as his.’

Awtuw*, Henkelmann 382

(30) Ilit -tut utuqqa -tig -aq.

thou -SM be.old -PM -3sg,IND
‘He is as old as you.’

Greenlandic Eskimo, HB 285

(31) Pani -i -mi qam -nw shumaq.

sister -1sg -DIR you -SM pretty
‘My sister is as pretty as you.’

Ancash Quechua, HB 285

• DEDICATED EQUATIVES involve standard markers with “no transparent etymology,” identified by HB as the rare case. As above, these may or may not have parameter markers. Welsh in (32) has both a dedicated PM and SM; Modern Irish and Breton have dedicated PMs but co-opted SMs (the commutative and conjunction morphemes, respectively).

(32) Mae e cyn dued a 'r frán.

is he PM black SM the crow
‘He is as black as the crow.’

Welsh, HB 285

(33) Tá Máire chomh cliste le Liam.

is M PM clever with(SM) Liam
‘Máire is as clever as Liam.’

Modern Irish, HB 285

(34) Ma c'hoar a red ken buan ha c'hwi.

my sister PTL run PM fast and(SM) you
‘My sister runs as fast as you.’

Breton, HB 285

2.2 a theoretical typology based on English

• a morphosyntactic perspective: “A parameter marker may be synthetic or analytic. If it is synthetic, we speak of an equative degree, which is completely analogous to the familiar comparative degree in comparative constructions” (HB 283).

• a semantic one: can we differentiate between explicit and implicit equatives?

(35) a. Amy is as tall as Bill.

b. Amy is tall like Bill.

c. Amy is tall; Bill is tall (too).

d. Amy equals Bill in height.

e. Amy and Bill are equally tall.

f. Amy’s height equals Bill’s.

\(^9\)Other languages include Abkhaz, Arabic, Basque, Comanche, Ibabura Quechua, Japanese, Kabardian, Kalmyk, Krongo, Lezgian, Ndyuka, Tamil, Turkana, and Turkish (Haspelmath and Buchholz 1998:296, Henkelmann 2006:382–3).
• some tests

1. availability of the weak reading

(36)  A: Bill doesn’t want a bodyguard who is shorter than he is. Is Amy a possibility?
      B: Yes, Amy is as tall as Bill is (in fact, she’s taller).

(37)  a. Amy is as tall as Bill, in fact she’s taller.       \textit{PM relative}
      b. Amy is tall like Bill, in fact she’s taller.       \textit{non-PM relative}
      c. Amy is tall; Bill is tall (too). In fact she’s taller.\textit{conjoined}
      d. Amy equals Bill in height, #in fact she’s taller.\textit{predicate}

– this diagnostic distinguishes between the non-predicate equatives in (37a)–(37d) – which can receive a weak interpretation – with the predicate equatives in (37d), which cannot.
– the latter observation is no surprise, as the predicate involved in each of these strategies is the word \textit{equals}, which is not compatible with an ‘at least’ interpretation.

2. acceptability with factor modifiers

– reminiscent of Kennedy (2005a) on explicit/implicit comparatives: the latter involve positive constructions, which are incompatible with factor modifiers

(38)  a. Amy is twice as tall as Bill.                  \textit{PM relative}
      b. Amy is (*twice) tall like Bill.                \textit{non-PM relative}
      c. Amy is (*twice) tall; Bill is tall (too).     \textit{conjoined}
      d. Amy (*twice) equals Bill in height.           \textit{predicate}

3. evaluativity patterns

– a construction is evaluative iff it requires that a degree exceed a contextually-valued standard

(39)  a. Amy is as tall as Bill, but she’s short.
      b. Amy is as short as Bill, #but she’s tall.

– the same expectations regarding the ‘positive forms’ of adjectives as with factor modifiers
– the judgment relies on holding fixed Amy’s and Bill’s comparison class, and the pattern exemplified in (39) holds only for relative adjectives (Rett, 2015b)

(40)  a. Amy is as tall as Bill, but she’s short.           \textit{PM relative}
      b. Amy is tall like Bill, #but she’s short.        \textit{non-PM relative}
      c. Amy is tall; Bill is tall (too), #but she is short.\textit{conjoined}
      d. Amy equals Bill in height, but she’s short.      \textit{predicate}

• summary of diagnostics

\begin{center}
\begin{tikzpicture}
  \node {equatives}
  \tikzstyle{level 1} = [sibling distance=1cm, level distance=4cm]
  \tikzstyle{level 2} = [sibling distance=1cm, level distance=4cm]
  \tikzstyle{level 3} = [sibling distance=1cm, level distance=4cm]
  \node {predicative}
    child{node {no weak reading}}
    child{node {explicit/PM \{ modifiable \} \{ non-evaluative \} \}}
  \node {non-predicative}
    child{node {implicit/non-PM \{ unmodifiable \} \{ evaluative \} \}}
\end{tikzpicture}
\end{center}

Figure 2: A typology of equatives (to be revised)
2.3 a (minor) cross-linguistic extension

- predicative equatives universally receive only a strong, ‘exactly’ interpretation, definitionally

\[(41) \text{Jan is even } \text{lng als Piet. Hij is zelfs } \text{lng er.}\]
\[\text{‘John is as tall as Pete. He is in fact taller.’}\]
\[\text{Dutch}\]

\[(42) \text{Thomas är lika } \text{lng som Christoffer; han är faktiskt } \text{lngre.}\]
\[\text{‘Thomas is as tall as Christoffer; he is in fact taller.’}\]
\[\text{Swedish}^{10}\]

- implicit (non-PM relative) equatives also seem to be unacceptable with factor modifiers, and evaluative, in general

  - in Croatian, relative equatives are formed only with the relativizer kao (‘as’)

\[(43) \text{Ivan je visok kao Petar.}\]
\[\text{‘John is as tall as Peter.’}\]
\[\text{Croatian}\]

\[(44) \text{Ivan je dvostruko visok kao Petar.}\]
\[\text{‘John is twice as tall as Peter.’}\]
\[\text{Croatian}\]

\[(45) \text{Ivan je visok kao Petar, a Petar je nizak!}\]
\[\text{‘John is as tall as Peter, and Peter is short!’}\]
\[\text{Croatian}\]

  - Syrian Arabic, too, has a implicit equative strategy

\[(46) \text{Kariim } \text{tawiil mitl Ahmад.}\]
\[\text{‘Karim is tall, like Ahmad (is).}\]
\[\text{Syrian Arabic}\]

  - these equatives are also unmodifiable and evaluative.

\[(47) \text{*Kariim } \text{tawiil mitl Ahmад } \text{sa -marrt -een.}\]
\[\text{‘Karim is tall like Ahmad twice.’}\]
\[\text{Syrian Arabic}\]

\[(48) \text{#Kariim } \text{tawiil mitl Ahmад, bas itneenaat -un } \text{ktiir ?išaar.}\]
\[\text{‘Karim is tall like Ahmad, but both of them are very short.’}\]
\[\text{Syrian Arabic}\]

\[\text{\textsuperscript{10}The consultant for (42) reports that the equative is a contradiction of its continuation.}\]
but explicit (PM relative) equatives seem to be more of a mixed bag; they actually seem to form two distinct subcategories (see the Appendix).

<table>
<thead>
<tr>
<th>LANGUAGE</th>
<th>PARAMETER MARKER?</th>
<th>MODIFIABLE?</th>
<th>EVALUATIVE?</th>
<th>WEAK READING?</th>
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<tr>
<td>English</td>
<td>* as</td>
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<tr>
<td>Dutch</td>
<td>so</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
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<tr>
<td>German</td>
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<td>yes</td>
<td>no</td>
<td>yes</td>
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<tr>
<td>Spanish</td>
<td>tan</td>
<td>no?</td>
<td>no</td>
<td>yes</td>
</tr>
</tbody>
</table>

Figure 3: Subtypes of explicit equatives

the first category is exemplified by Swedish

(49) Thomas är dubbelt så lång som Christoffer.
    T is twice so(PM) tall as(sm) C.
    ‘Thomas is twice as tall as Christoffer.’

(50) Thomas är så lång som Christoffer, men båda är korta.
    T is so(PM) tall as(sm) C, but both are short
    ‘Thomas is as tall as Christoffer, but both are short.’

(51) Thomas är så lång som Christoffer, han är till och med högre.
    T is so(PM) tall as(sm) C, he is even taller
    ‘Thomas is as tall as Christoffer, in fact he is even taller.’

the second category is exemplified by Italian

(52) *Gianni è due volte tanto alto quanto Pietro.
    G is two times that.much(PM) tall how.much(sm) P
    ‘John is twice as tall as Peter.’

(53) Gianni è tanto alto quanto Pietro, ma è basso.
    G is that.much(PM) tall how.much(sm) P, but he is short
    ‘John is as tall as Peter, but he is short.’

(54) Gianni è tanto alto quanto Pietro. Infatti, è più alto.
    G is that.much(PM) tall how.much(sm) P, In fact, he is more tall
    ‘John is as tall as Peter. In fact, he is taller.’

does it make sense to differentiate between *so*-like parameter markers and *tan*-like parameter markers?

– so, elsewhere in English: a ‘resultative’ (Meier, 2003) or ‘sufficientive’ (cf. an ‘excessive’ like too)
– tan/tak, elsewhere: a degree demonstrative

these data suggest that a more accurate cross-linguistic typology of equative strategies is as in Figure 4, with explicit relative equatives divided into two categories: those whose PMs are sufficientives like so, and those whose PMs are degree demonstratives, meaning roughly that much.
3 consequences for formal semantic theory

3.1 degree semantics and degree quantifiers

- gradable vs. non-gradable adjectives:
  - ability to be modified by an intensifier like very with a non-coerced interpretation
    
    (55)  
    a. %Amy is very Australian.  
    b. Amy is very tall.

  - (ability to occur in an explicit comparative construction with a non-coerced interpretation)
    - ability to be modified by a measure phrase (sufficient but not necessary for being gradable)

    (56)  
    a. *Amy is one and a half Vegemites Australian.  
    b. Amy is one and a half meters tall.

- a useful way to formally differentiate between the two: non-gradable As characterize individuals (or describe sets of individuals); gradable As relate an individual to a (set of) degree(s) (Cresswell, 1976)

    (57)  
    a. \[\text{Australian} = \lambda x. \text{australian}(x)\]  
    b. \[\text{tall} = \lambda x \lambda d. \text{tall}(x) \geq d\]

- beginning with Bresnan (1973) and Heim (1985): comparative and equative morphemes (= parameter markers) are **degree quantifiers** they quantify over the degree associated with the gradable parameter

    (58)  
    a. Amy likes some Australian foods.  
    b. Amy is more tall than Bill.

- individual quantifiers can be analyzed as ranging over individuals or sets...

    (59)  
    a. \[\text{all} = \lambda P \lambda Q \forall x [P(x) \rightarrow Q(x)]\]  
    b. \[\text{all} = \lambda P \lambda Q. P \subseteq Q\]
...so too can degree quantifiers.\footnote{Where $\max(D) = \exists d \in D: \forall d' \in D[d' \neq d \rightarrow d' < d]$}

\begin{equation}
\begin{aligned}
(60) & \quad \text{a. } \mathcal{J}^{-er} \mathcal{K} = \lambda D \lambda D'. \max(D') > \max(D) & \text{degree-based} \\
& \quad \text{b. } \mathcal{J}^{-er} \mathcal{K} = \lambda D \lambda D'. D' \supset D & \text{set-based}
\end{aligned}
\end{equation}

\begin{equation}
\begin{aligned}
(61) & \quad \text{a. } \mathcal{J}^{-as} \mathcal{K} = \lambda D \lambda D'. \max(D') \geq \max(D) & \text{degree-based} \\
& \quad \text{b. } \mathcal{J}^{-as} \mathcal{K} = \lambda D \lambda D'. D' \supseteq D & \text{set-based}
\end{aligned}
\end{equation}

### 3.2 formalization of the comparative typology

- some correlations

\begin{equation}
(62) \quad \text{The implicit/explicit comparison parameter (Kennedy 2005:7)}
\end{equation}

Languages differ in their inventory of degree morphemes. Some have no explicit comparison morphology (and possibly no ‘true’ degree morphology at all...); in which case they have implicit comparison.

- assumption, effectively: explicit $\rightarrow$ degrees
  
  1. if a language has an explicit comparative strategy, it has in its lexicon a degree quantifier (= the comparative parameter marker)
  2. if a language has in its lexicon a degree quantifier, it ‘has degrees’\footnote{I follow many others in using the phrase ‘has degrees’ to mean something like: has lexical items whose semantic contribution can only be modeled using a semantics that employs degrees as a separate entity or type.}
  3. if a language has an implicit comparative strategy, it may or may not have degrees (it might relate individuals, or degrees, or both, as in (35b) and (35d).)

- some languages that have been argued to not have degrees at all:
  * Motu (Beck et al., 2009);
  * Fijian (Pearson, 2010);
  * Washo (Bochnak, 2015a,b; Beltrama and Bochnak, 2015);
  * Navajo (Bochnak and Bogal-Allbritten, 2015);
  * Walpiri (Bowler, 2016)

  - whether or not a strategy involves a degree quantifier is a semantic commitment, cross-cutting the morphosyntactic distinctions Ultan’s and Stassen’s typologies, exemplified in (7)-(10)

- explicit comparatives that involve a degree quantifier are analyzed as traditional comparatives have been, namely with the semantics in (60).

- implicit comparatives in languages that ‘don’t have degrees’ are typically analyzed as relating degree-free ‘comparison classes’ à la Klein (1980, 1982) (Pearson, 2010; Bochnak, 2015b)

- implicit comparatives in languages that ‘have degrees’ may receive either interpretation, depending (Bogal-Albritten and Coppock, 2019)

### 3.3 formalization of the equative typology

#### 3.3.1 implicit, non-PM relative equatives

- I analyze implicit equatives the same way as I analyze similatives (63a) and generic equatives (63b) in English: as relative clauses ranging over manners and (evaluative) properties (Rett, 2013)

\begin{equation}
\begin{aligned}
(63) & \quad \text{a. } \text{Amy danced as Bill danced. } & \text{similative} \\
& \quad \text{b. } \text{Amy is white as snow. } & \text{generic equative}
\end{aligned}
\end{equation}
background assumptions (see Rett, 2013):

- gradable adjectives lexicalize degrees, but verbs don’t;
- a relation \( R \) can introduce a free manner (or property) variable into the derivation (Landman, 2000), similar to the one that associates verbs with their times\(^{13}\)

\[
\begin{align*}
(64) & \quad \text{a. } [\rho] = \lambda \tau_{(e, t)} \lambda e. E(e) \land R(e, m) \\
& \quad \text{b. } [\tau_{e, t}] = \lambda \tau_{(e, t)} \lambda e. E(e) \land R(e, t)
\end{align*}
\]

\[
\begin{align*}
(65) & \quad \text{a. } [\text{Amy danced}] = \exists e [\text{dance}(e) \land \text{agent(Amy, e)}] \\
& \quad \text{b. } [\text{Amy danced} \rho] = \exists e [\text{dance}(e) \land \text{agent(Amy, e)} \land R(e, m)] \\
& \quad \quad \quad \text{ shorthand: } \exists e [e = \text{dance(Amy)} \land R(e, m)]
\end{align*}
\]

- the equation of two degrees, in English specific equatives, involves a degree quantifier (the parameter marker); the equation of two properties or manners does not

• the analysis:

\[
(66) \quad \text{Amy is white as snow.}
\]

\[
\begin{align*}
& \quad \text{a. } [\text{Amy is white}] = [\text{Op}_p \text{ Amy is white } \rho] = \lambda P \exists e [e = \text{white}(\text{Amy}) \land R(e, P)] \\
& \quad \text{b. } [\text{as snow is white}] = [\text{as snow is white } \rho] = \lambda P' \exists e' [e' = \text{white}(\text{snow}) \land R(e', P')]
\end{align*}
\]

\[
\begin{align*}
& \quad \text{c. predicate modification: } \lambda P \exists e, e' [e = \text{white}(\text{Amy}) \land R(e, P) \land e' = \text{white}(\text{snow}) \land R(e', P')] \\
& \quad \text{d. existential closure: } \exists P, e, e' [e = \text{white}(\text{Amy}) \land R(e, P) \land e' = \text{white}(\text{snow}) \land R(e', P')]
\end{align*}
\]

\[
(67) \quad \text{Gianni e alto come Pietro.}
\]

\begin{center}
\textit{Italian relative equative}
\end{center}

\[
\begin{align*}
& \quad \text{a. } [\text{Gianni e alto}] = [\text{Op}_p \text{ Gianni e alto } \rho] = \lambda P \exists e [e = 3d[\text{tall}(\text{gianni}, d) \land d > s] \land R(e, P)]^{14} \\
& \quad \text{b. } [\text{come Pietro e alto } \rho] = \lambda P' \exists e' [e' = 3d'[\text{tall}(\text{pietro}, d') \land d' > s] \land R(e', P')]
\end{align*}
\]

\[
\begin{align*}
& \quad \text{c. predicate modification: } \lambda P \exists e, e' [e = 3d[\text{tall}(\text{gianni}, d) \land d > s] \land R(e, P) \land e' = 3d'[\text{tall}(\text{pietro}, d') \land d' > s] \land R(e', P')] \\
& \quad \text{d. existential closure: } \exists P, e, e' [e = 3d[\text{tall}(\text{gianni}, d) \land d > s] \land R(e, P) \land e' = 3d'[\text{tall}(\text{pietro}, d') \land d' > s] \land R(e', P')]
\end{align*}
\]

3.3.2 explicit, PM relative equatives

• sufficientive equatives should be analyzed as the equative counterpart of explicit comparatives, i.e. as involving degree quantifiers, as in (61)

- this explains their weak reading (Rett, 2015a) and evaluativity pattern (Rett, 2015b);
- it also explains, with a type-shift, their ability to occur with a factor modifier (cf. the ability of explicit comparatives to occur with measure-phrase differentials)

• demonstrative equatives (e.g. the Romanian (68)) can be analyzed by formal analogy to accounts of degree correlatives (e.g. the Romanian (69)) (Brasoveanu, 2009)

\[
(68) \quad \text{Irina este tot \textit{atit} de înaltă ca \textit{și} Maria.}
\]

\begin{center}
\textit{Romanian}
\end{center}

I is all that-much(PM) of tall as(SM) also M

'Irina is as tall as Maria.'

\[
(69) \quad \text{Pe cit e Irina de frumoasă, (tot) pe \textit{atit} e de deșteaptă.}
\]

\begin{center}
\textit{Romanian}
\end{center}

PE how.much is I DE beautiful all PE that.much is DE smart

'However much Irina is beautiful (to a certain, significant extent), she is that smart (i.e. to the same, equally significant extent."

\footnotesize
\begin{enumerate}
\item \( R \) could be characterized as a null type-shifter or a polysemous meaning shift, depending on your aesthetic inclinations.
\item Lots to be said about how this positive construction comes to denote an evaluative property! But it does, in matrix sentences and elsewhere, see Rett (2015b).
\end{enumerate}

\[13\]

\[14\]
– the degree correlative has an added layer of semantic complexity because it compares differential
degrees (Bale, 2008)

- the analysis involves two standard assumptions:

  – the embedded clause introducing the standard is a degree relative, ultimately denoting a a degree
definite via a type-shifter or other meaning transformation (Caponigro, 2004)

(70) $[[	ext{ca sì Maria este inalță}] = \text{MAX}(\lambda d.\text{tall}(\text{maria},d))$

– the demonstrative encodes anaphora to this maximal degree

(71) $[[\text{Irina este tot atât de inalță ca sì Maria}] = \text{tall(irina, MAX}(\lambda d.\text{tall}(\text{maria},d)))$

- the analysis – and the reduction to degree demonstratives – correctly predicts the behavior of demon-
strative equatives shown in Figure 4:

  – they’re not evaluative (neither are degree demonstratives with positive relative adjectives)

(72) A: How tall is Amy?
B: That tall, which is to say, she’s short.

  – they have a weak reading (so do degree demonstratives)

(73) A: How tall is Amy? (gesturing) Is she this tall?
B: Yes (she’s that tall), in fact she’s taller.

  – they’re unacceptable with factor modifiers because they involve direct reference rather than ab-
straction over degrees

(74) *Gianni è due volte così alto.
G is two times that tall
‘John is twice that tall.’ Italian

4 summary

- equative strategies differ just as much and in just as interesting ways across languages... in fact, there
seem to be even more ways to equate two things than there are to strictly compare them!

- while the descriptive typologies tend to focus on morphosyntax, there are some correlated semantic
properties that seem to be universal:

  – predicative equatives lack a weak reading (i.e. always mean ‘exactly’)
  – implicit equatives (relative equatives without a parameter marker) are evaluative and unacceptable
with factor modifiers
  – explicit equatives (relative equatives with a parameter marker) seem to fall into two distinct
categories
    * those with degree demonstrative PMs are non-evaluative and unacceptable with modifiers
    * those, like English, with sufficientive PMs are non-evaluative and acceptable with modifiers

- lots more work needs to be done to expand this typology across languages (as has been done, in part,
for comparatives)...

- and to test the extra predictions about e.g. the parallel behavior between degree demonstratives and
demonstrative equatives predicted by my formal semantic account
Appendix: Relative equatives

Below is a table of the three subtypes of relative equatives, based on that in Haspelmath and Buchholz (1998) (p292) and on my own data. In some places, my classification of languages into the latter two categories is speculative (i.e. a morphological decision, rather than a decision based on semantic diagnostics).

<table>
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<th>Implicit relative equatives</th>
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<th>Sufficientive relative equatives</th>
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