Towards a measurement-theoretic typology of gradable adjectives

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Introduction

Outline

In this talk I shall

- briefly introduce semantic typology of Beck et al. (2009)
- challenge it with novel data
- offer an alternative, measurement-theoretical typology

Empirical motivation i

Warlpiri comparative formation:

(1) Warlpiri (Pama-Nyungan; Bowler 2016: 4)

Nyirrpi=ji *nguru* *yukanti.* *Yurntumu=ju* *wiri-jarlu.*
N=TOP country small Y=TOP big-AUG

‘Nyirrpi is small. Yuendumu is big.’
i.e. ‘Yuendumu is bigger than Nyirrpi.’

[morphosyntactic typology: Stassen 1985]

Empirical motivation ii

why does Nez Perce but not Warlpiri have the morphological comparative?

(2) Nez Perce (Sahaptian; Deal & Hohaus 2019: 350)

Kareem hii-wes qetu kuhet Shaq-kin'ix.

K.NOM 3S-be.PRS MORE tall S-from

'Kareem is taller than Shaq.'

Empirical motivation iii

why does Japanese but not Nez Perce have the differential comparative?

(3) Japanese (Altaic; Beck et al. 2009: 10)

Sally-wa *Joe-yori* *5 cm* *se-ga* *takai.*

S-TOP J-YORI 5 cm back-NOM tall

'Sally is 5cm taller than Joe.'

Empirical motivation iv

why does Thai but not Japanese have degree questions?

(4) Thai (Kra-Dai; (Beck et al. 2009: 58))

Maria *soong* *tao* *ry?*

M tall equal Q

'How tall is Maria?'

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- 19-item questionnaire, 7 under particular scrutiny
- 3 clusters of constructions
- 4 classes of languages
- 3 interdependent parameters to account for the variation

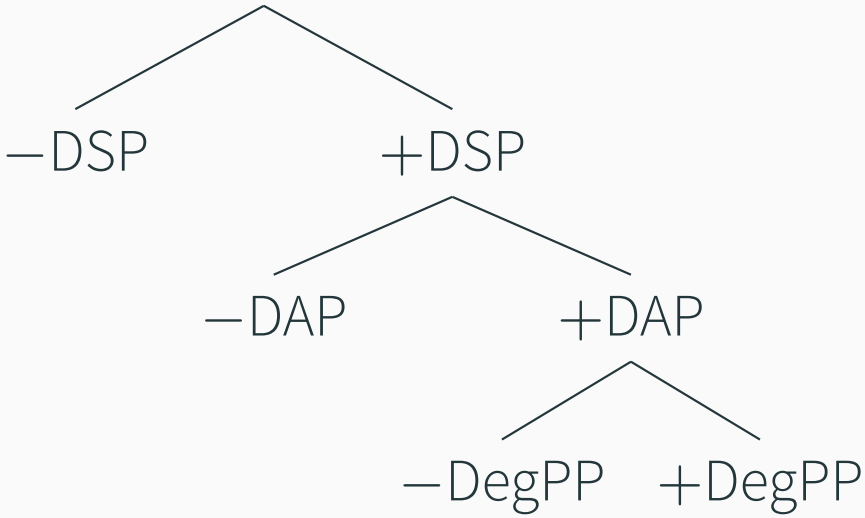
A subset of Beck et al.'s (2009) sample

	DiffC	CompDeg	Scope	NegIs	DegQ	MP	SubC
Motu	N	N	n/a	n/a	N	N	n/a
Yorùbá, Samoan	Y	Y	N	n/a	N	N	n/a
Russian, Guaraní	Y	Y	Y	Y	N	N	N
Thai, English	Y	Y	Y	Y	Y	Y	Y

Parameters i

- P1 (Degree Semantics): does L have degrees as an available semantic type?
- P2 (Degree Abstraction): is λ-abstraction over the degrees possible in L?
- P3 (Degree Phrase): can the degree argument position be overtly filled?

Parameters ii



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- relaxing Beck et al.'s (2009) theory would compromise it

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- MPs are a [+DegPP] construction (P3)
- all of the [+DSP] (P1) and the majority of other [+DegPP] (P3) use the conjoined strategy

Kunbarlang conjoined comparatives

(5) a. *Kundulk bi-nungku man-**djurrkmi**, la mayi bi-ngaybu*
tree DAT-you.GEN III-short CONJ NM.III DAT-I.GEN

*man-**kukkarlyung**.*
III-long

'My stick is longer than yours.' [lit. 'Your stick is **short** and mine is **long**.'] [IK1-160618_000-01]

b. *Ngal-bangardi kin-**kukkarlyung**, la Ngal-ngarridj*
II-skin.name II-long CONJ II-skin.name

***karlu**.*
NEG.PRED

'Ngalbangardi is taller than Ngalngarridj.' [lit. 'Ngalbangardi is **tall** and Ngalngarridj is **not**.'] [IK1-160616_000-01]

Measure phrases in Kunbarlang

(6) a. *Nginda* *ngunda* ***6*** ***foot*** ***kin-kukkarlyung,*** *karlu,*
DEM.PROX.II not 6 ft II-long NEG.PRED

nginda *kin-djurrkmi,* *yimarne* *4* *foot.*
DEM.PROX.II II-short, like 4 ft

'She's not **6 feet tall**, no, she's short, maybe 4 feet.'

[IK1-170616_1SY-01]

b. *kun-**djorlok*** ***korro*** ***middjaba**=ngaybu*
IV-deep at knee=I.GEN

'knee-deep' [ibid.]

With respect to Beck et al.'s (2009) list

	DiffC	CompDeg	Scope	NegIs	DegQ	MP	SubC
Motu	N	N	n/a	n/a	N	N	n/a
Yorùbá, Samoan	Y	Y	N	n/a	N	N	n/a
Russian, Guaraní	Y	Y	Y	Y	N	N	N
Thai, English	Y	Y	Y	Y	Y	Y	Y
Kunbarlang	N	N	n/a	n/a	N	**Y**	N
Nez Perce	N	N	n/a	n/a	N	N	n/a

Nez Perce has morphological comparatives, yet doesn't have a clear place in this model

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- there is only one construction, and it requires a positive setting of P3 (DegPP)
- no other constructions betray the presence of degrees
- this is potentially inconsistent with the implicational hierarchy, i.e. [+DegPP] $\Rightarrow$ [+DSP]
- the DegPP cluster is not homogenous either (MPs vs. DegQ and Subcomparatives)

Measurement theory analysis

Representational Theory of Measurement

- originally Krantz et al. (1971)
- real numbers as a model of abstract ordering structures and their elements
- scales of varying expressive power (Stevens 1946)
- can be used in degree semantics (e.g. Klein 1991, Sassoon 2010, van Rooij 2011)

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- interval (difference, e.g. temperature in °F or °C)
- ratio (proportions, e.g. length or age)

…and what it means

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- interval: quaternary algebraic difference structures
- ratio: closed extensive structures, which add concatenation to the strict weak order relation

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- conjoined comparatives: nominal
- morphological comparatives: ordinal
- differential comparatives (*3in taller than*): interval
- ratio comparatives (*twice as tall as*): ratio

Measure phrases

- measure phrases require ratio scales (van Rooij 2011: 340–1)
    - ratio scales allow for multiplication
- instead, I propose that they can be represented as equivalence classes (at least in some languages)
    - perhaps when the language treats them as chunks (rather than compositionally à la Sassoon's (2010) analysis of unit names)
    - cf. also Tiemann, Hohaus & Beck's (2012) degree individuals (pronominal MPs such as *this big*)
    - if so, nominal scales suffice

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i.e. simply as a characteristic function of the '2ft' class

and not as a ratio between the length degree of *x* and the length degree of a unit-object (say, foot; cf. Sassoon 2010)

Beginnigs of a measurement-theoretic typology

Language	Highest available scale	Degree-based type
Motu, Washo	nominal without unit names	−DSP
Kunbarlang	nominal with lex'd unit names	↯
Nez Perce	ordinal	↯
Samoan	interval	+DSP
English	ratio	+DegPP

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- much more (Kennedy & McNally 2005, Sassoon 2013: ch. 7, a.m.o.)

Conclusions

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- the parametric framework is powerful and insightful
- but further work is needed to determine the extent of variation
- measurement scales can provide a framework more flexible and empirically adequate

Questions and future work

- a theory of lexicalisation or of cognition?
- need to match the empirical coverage of Beck et al. (2009)
- what determines the scale that a given adjective is associated with?
- should be easy to integrate with the approaches to intra-linguistic variation, but remains to be done

Thank you!

- for your attention
- Kunbarlang speakers for sharing their language and answering my questions so patiently
- audiences at Melbourne, Konstanz, and HSE Moscow for feedback

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Appendix: Additional Kunbarlang data

Kunbarlang conjoined comparatives

conjoined strategy is used for:

- predicative phrasal comparatives
- adverbial comparatives
- attributive comparatives
- comparatives of quantity
- clausal comparatives
- differential comparatives [with a measure phrase]
- comparison with a degree [with a measure phrase]
- comparative subdeletion

Degree questions

(7) *Birlinj nayi durduk ki-buddu-karrme?*
how NM.I dog 2SG.NF-3PL.OBJ-hold.NP
'What kind of dog have you got?' [IK1-180606_1SM-01]

Equatives

(8) a. **Nga-karrme yimarne birlinj kuyi ki-karrme.*
1SG.NF-hold.NP like how NM.IV 2SG.NF-hold.NP
intended: 'I've got same (number) as you have.'
[IK1-180606_1SM-01]

b. *Ka-birrinja kuyi ngarrk-burrun-karrme,*
3SG.NF-similar.NP NM.IV 1.INCL.NF-3PL.OBJ-hold.NP
nyima la nganjma.
you.CONTR CONJ I.CONTR
'What we have is similar, you and me.' [ibid.]

Absence of degree questions in Kunbarlang

degree questions may be thought of as a counterpart of the MPs, but their absense can be explained along two possible lines:

- the degree question word is not lexicalized (degree questions are identical to manner/quality questions)
- DegQs are not a direct counterpart of MPs because they necessarily involve abstraction