### Adjectives of veracity as vagueness regulators

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### Adjectives of veracity

Adjectives of veracity (AVs) in prenominal position in Spanish signal that the referent is an outstanding exemplar of the category denoted by the noun

- Paloma es una verdadera artista.
   'Paloma is a true artist.'
- (2) El tráfico es un auténtico problema en Madrid.'Traffic congestion is a real problem in Madrid.'
- (3) Marina es una verdadera americana.'Marina is a real American.'

## Adjectives of veracity

- The kind of modification AVs perform in the noun seems to involve some sort of gradability
- In fact, equivalent expressions in English (*real, true*) have been analyzed as degree (Morzycki, 2009) or prototypical modifiers (Morzycki, 2011)
- Modification by AVs raises the question of how scalarity is present in the nominal domain –if degrees are represented in the lexical semantics of nouns or their gradability is of a conceptual or contextual nature

## Plan

- 1. Readings
- 2. Distribution and previous analyses
  - Degree analysis
  - Prototype analysis
- 3. Proposal: a vagueness analysis
- 4. Consequences

### Prenominal position

The intensifier use is only available in prenominal position in Romance (I will focus on Spanish data only)

- (4) a. Esther sintió auténtico dolor.'Esther felt real pain.' (a very intense one)
  - b. Vivieron una verdadera aventura en Zambia.
    'They had a real adventure in Zambia.' (an intense, challenging, probably dangerous one)

### Prenominal position

Postnominal: literal reading 'not fake/false'

- (5) a. Esther sintió dolor auténtico.'Esther felt real pain.' (not a fake one)
  - b. Vivieron una aventura verdadera en Zambia'They had a true adventure.' (not an imaginary one)

The literal reading is the only one available in predicative position

- (6) a. El dolor era auténtico.'The pain was real.' (only: not fake)
  - b. La aventura fue verdadera.

'The adventure was real.' (only: not false)

### Determiner

(7) a. Carlos es el verdadero padre de María.'Carlos is María's true father.'

cf. Carlos es un verdadero padre.

'Carlos is a true father.'

b. Se ocultó al niño su verdadera identidad.
 'The child was kept from knowing his true identity.'
 cf. ??una verdadera identidad

'a true identity'

# Ways of being the outstanding individual

- Individual with a high degree of the property denoted by the noun (Morzycki, 2009)
- Individual closest to the prototype (Morzycki, 2011)

Some nouns have been proposed to lexicalize a degree argument (Bolinger, 1972; Morzycki, 2009; de Vries, 2010)

1. Nouns that categorize individuals based on a gradable property

(8) 
$$\llbracket idiot \rrbracket = \lambda x.\iota d[x \text{ is } d\text{-idiotic}]$$
 (Morzycki, 2009)

- They receive a degree interpretation with size adjectives
  - (9) A big idiot / cheese enthusiast.
  - (10) # A big basketball player / problem.

- AVs combine with these nouns
  - (11) Juan es un auténtico genio.'Juan is a real genius.'
  - (12) Esther es una verdadera entusiasta del jazz.'Esther is a true jazz enthusiast.'
- Morzycki (2009) proposes that English AVs are adnominal degree morphemes

- Abstract mass and count nouns (*wisdom*, *problem*) (Bolinger, 1972)
  - (13) Juan respondió con auténtica sabiduría.'Juan answered with real wisdom.'
  - (14) El tráfico en Madrid es un verdadero problema.'Traffic congestion in Madrid is a true problem.'

#### some problems

The distribution of AVs is not restricted to these nouns –and the interpretation is not always that of high degree of the property

- Deverbal nouns
  - (15) Una verdadera derrota de ETA no debe basarse tan solo en la retirada de sus armas.
    'A true defeat of ETA should not be based only in destroying its weaponry.'
  - (16) Ha supuesto una auténtica revolución en el transporte aéreo.

'It has brought about a real revolution to air transport.'

some problems

Concrete nouns

(17) Es una verdadera casa rural al estilo del siglo XIX.'It's a real rural house with a 19th century style decoration.'

(see Constantinescu (2011) for problems in general with degrees in the lexical semantics of nouns)

The outstanding individual referred by true P is sometimes closed to the prototype of the category denoted by P.

(18) A real sportscar.

Morzycki (2011) proposes an analysis for English *real* and *true* based on manipulation of scales of prototypicality

(19) 
$$\llbracket real \rrbracket^c = \lambda f_{\langle e,t \rangle} \lambda x.f(x) \wedge large_c(similar_c(x, prototype(f)))$$

 $\rightarrow$  However, subjectivity, rather than typicality, is what seems to be at stake in modification by AVs

#### some problems

Nouns that denote concepts with clear prototypes do not usually combine with AVs – And even when they do, they fail to point to the prototype of the category

- (20) \*Vimos una verdadera ave.'We saw a true bird.'
- (21) El Archaeopteryx y el Archaeornis son auténticas aves.'Archaeopteryx and Archaeornis are true birds.'
- (22) Esther es una verdadera artista hace unas flores de ganchillo preciosas.
  'Esther is a true artist she makes beautiful crochet flowers.'

typical

A real modifier of typicality ((proto)tipico, 'prototypical') mainly occurs in postnominal position, and thus receives a restrictive interpretation.

- (23) Inma es una artista (proto)típica.'Inma is a typical artist.'
- (24) ?? Inma es una típica artista.'Inma is not a typical artist'

typical

As such, the negation of the DP entails that the individual is N, but not A. This is not the case with AVs

- (25) Inma no es una artista (proto)típica → Inma es una artista 'Inma is not a typical artist' → 'Inma is an artist'
- (26) Inma no es una artista (proto)típica, pero sí una artista.'Inma is not a typical artist, but she's an artist.'
- (27) Inma no es una verdadera artista → Inma es una artista
   'Inma is not a true artist' → 'Inma is an artist'
- (28) ??Inma no es una verdadera artista, pero sí una artista.'Inma is not a true artist, but she's an artist.'

Nouns that denote natural kinds or concrete objects do not usually combine with AVs

- (29) a. \* Vimos una verdadera ave.'We saw a true bird.'
  - b. \* Solo quiero beber auténtica agua.'l only want to drink real water.'
- (30) a. ?? Tengo una verdadera mesa en mi despacho.'I have a true table in my office.'
  - b. ?? Llevaba una auténtica pistola.

'She carried a real gun.' (# 'not a fake one')

Unless the membership of the individual in the category denoted by the noun is being discussed

 (31) El Archaeopteryx y el Archaeornis nos son animales intermedios entre estos dos grupos [reptiles y aves], sino auténticas aves, con algunos caracteres que las asemejan más a los reptiles. (from Google)
 'Archaeopteryx and Archaeornis are not transitional animals between these two groups (reptiles and birds), but

true birds, with some features that make them look more like reptiles.'

Unless the membership of the individual in the category denoted by the noun is being discussed

(32) Ceres fue considerado demasiado pequeño para ser un verdadero planeta.

'Ceres was considered too small to be a real planet.'

(33) Tráeme una verdadera silla, no esa cosa de IKEA que compraste.

'Bring me a true chair, not that IKEA thing you bought.'

- Natural kinds (and concrete objects, to a lesser extent) are discrete concepts — Category membership is not graded
- The relevant factor for combination with AVs is uncertainty about where the cutoff point for the category denoted by the noun is — vagueness

# An additional ingredient

Subjectivity

The outstanding individual is an outstanding individual according to the speaker

AVs select the evaluative dimensions of the noun

(34) Su casa es un auténtico palacio, pero no es un palacio de verdad.

'Their house is a real palace, but it's not an actual palace.'

(35) Marina es una verdadera americana, pero no tiene la nacionalidad.

'Marina is a real American, but she is not a US citizen.'

(36) No es un verdadero padre para ninguno de sus hijos.'He's not a true father to any of his children.'

Subjective predicates

Subjective predicates can be embedded under subjective attitude verbs (*find, consider*) (Stephenson, 2007; Sæbø, 2009; Bouchard, 2012)

- (37) I find dinosaurs terrifying.
- (38) # I find dinosaurs extinct.

Nouns modified by AVs can be embedded under subjective attitude verbs such as *find* or *consider*.

- (39) a. ??Encuentro que Marina es profesora / americana.'I find Marina to be a teacher / an American.'
  - Encuentro que Marina es una verdadera profesora / americana.
    - 'I find Marina to be a true teacher / a real American.'

Subjective predicates

Subjective predicates give rise to faultless (rather than objective) disagreement (Kölbel, 2002; Lasersohn, 2005; Stephenson, 2007; Stojanovic, 2007; Bylinina, 2014)

- (40) A: Roller coasters are fun.
  - B: No, they aren't.

Nouns modified by AVs give rise to faultless disagreement rather than contradiction

- (41) A: Marina es profesora. 'Marina is a teacher.'
  - B: No, no lo es (es periodista).'No, she isn't (she's a journalist).'
- (42) A: Marina es una verdadera profesora.'Marina is a true teacher.'
  - B: No, no lo es (no motiva a sus alumnos).'No, she isn't (she doesn't inspire her students).'

Nouns denoting natural kinds or concrete objects modified by AVs do not give rise to subjectivity

- (43) ? Encuentro que esto es un verdadero pájaro.'I find this to be a true bird.'
- (44) ? Encuentro que esto es una auténtica mesa.'I find this to be a real table.'

Nouns denoting natural kinds or concrete objects modified by AVs do not give rise to subjectivity

(45) A: El Archaeopteryx y el Archaeornis nos son animales intermedios entre estos dos grupos [reptiles y aves], sino auténticas aves, con algunos caracteres que las asemejan más a los reptiles.

> 'Archaeopteryx and Archaeornis are not transitional animals between these two groups (reptiles and birds), but true birds, with some features that make them look more like reptiles.'

B: No, no lo son.

'No, they aren't.'

### Interim summary

- Degree and prototype analyses of AVs don't account for their distribution and type of modification
- AVs combine only with vague nouns
- AVs turn the noun into a subjective predicate

### Internal structure of nouns

- The relevant factor in the combination with AVs is uncertainty about where the cutoff point for the category is  $\rightarrow$  Nouns can be vague
- AVs restrict the denotation to outstanding individuals of the category → entities in the denotations of nouns are ordered according to their similarity with some ideal values (usually the prototype) (Rosch, 1973; Osherson and Smith, 1981; Kamp and Partee, 1995)
- But, unlike adjectives, nouns do not seem to be linguistically gradable (Constantinescu, 2011)

### Internal structure of nouns

### Sassoon (2013b)

- Nouns are multidimensional predicates
- Noun concepts map entities to their weighted mean on a set of dimensions. Function f<sup>+</sup>(P, t, g,) maps entities to degrees reflecting the extent to which they match P's ideal values in those dimensions.
- Nouns have the same parts of interpretation as adjectives: standard, domain, dimension set F, weight, and value.

### Vagueness model

- Full vagueness model (Sassoon, 2013b): Ground context c<sub>0</sub>, partial contexts c ∈ C, total contexts t ∈ T
- For each P, in each context c, for an assignment function g, x's positive degree in P is
  - unspecified (vague)
  - a given real number  $deg^+(P, c, g)(x)$  (sharp)
- In every total context t, P is associated with a positive extension deg<sup>+</sup>(P, t, g) and a negative one deg<sup>-</sup>(P, t, g)

### Vagueness model

- The standard for any P is calculated based on a salient set of entities (≅ Comparison class)
- Standard<sup>+</sup>(P, t, g) = S(P, t, g, Domain<sup>+</sup>(P, t, g))
   For any entity set X ⊆ D<sup>n</sup>, S(P, t, g, X) is a salient degree of P

### Proposal: vagueness regulation

- AVs are vagueness regulators
- In particular, they restrict the domain in which the standard for the noun is calculated
- In this way, the standard rises and the denotation is shrunk to best exemplars of the category

### AVs as domain restrictors

AVs restrict the domain to entities that are already in the denotation of P in the context:

## AVs as domain restrictors

For any predicate P and any individual d

(49) 
$$\llbracket P \rrbracket^{+} =$$

$$= \lambda x.deg^{+}(x, P, c, g) \succeq$$

$$Standard^{+}(P, c, g, Domain^{+}(P, c, g))$$
(50) 
$$\llbracket true \ P \rrbracket^{+} =$$

$$\lambda x.deg^{+}(x, P, c, g) \succeq Standard^{+}(P, c, g, \llbracket P \rrbracket^{+})$$

## AVs as domain restrictors

(51) 
$$\llbracket x \text{ is a true } P \rrbracket = 1 \text{ iff}$$
  
 $deg^+(x, P, c, g) \succeq Standard^+(P, c, g, \llbracket P \rrbracket^+)$ 

(52) 
$$[\![Paloma is a true artist]\!] = 1$$
 iff  
 $deg^+(Paloma, artist, c, g) \succeq$   
 $Standard^+(artist, c, g, [\![artist]\!]^+)$ 

### Intensification

- (53) Paloma es una verdadera artista.'Paloma is a true artist.'
  - AVs raise the standard of the vague noun, so the denotation is restricted to the best exemplars of P, those entities ranking high in the ordered denotation of P, according to the speaker's criteria
  - Intensification derives from the fact that entities in the denotation of true P have higher degrees in the dimensions of the noun

### Intensification

- (54) Marina es una auténtica americana.'Marina is a real American.'
- (55) Carlos es un verdadero padre.'Carlos is a true father.'
  - In nouns with an objective (non-vague) and a subjective (vague) sense, AVs force the vague reading by selecting the subjective dimensions to restrict the domain.

### Literal reading 'not fake'

- (56) Carlos es el verdadero padre de María.'Carlos is María's true father.'
  - In loose or normal uses, these nouns are vague regarding whether they refer to fake instances or not
  - AV raise the standard to include only best exemplars in the denotation of the noun (according to the speaker)

### Literal reading 'not fake'

• The definite determiner introduces de requirement that the denotation of true P has a sole individual

(57) 
$$\llbracket the \rrbracket = \lambda f : f \in D_{\langle e,t \rangle} \land \exists !x[f(x) = 1] .$$
  
$$\iota y[f(y) = 1] \text{ (Heim and Kratzer, 1998)}$$

- which usually will correspond to the actual one
- but not necessarily so
  - (58) Tú eres mi verdadero padre. (said to an adoptive father)

'You are my true father.'

### Non-vague nouns

- (59) \* Vimos una verdadera ave.'We saw a true bird.'
- (60) \* El 7 es un verdadero número primo.'7 is a true prime number.'
  - In nouns denoting sharp concepts, the standard is fixed by convention, so the limit between P and not P is clear (no vagueness)
  - The speaker cannot order the domain according to their own criteria
  - So modification by AVs becomes trivial

### Non-vague nouns

- However, if the noun is used metaphorically (categorization is based in subjective dimensions), modification by AVs become possible again
  - (61) Juan es un verdadero pájaro.Lit. 'Juan is a true bird.' (he's wily)

- In this type of analysis, AV have an effect similar to that of very + adj
- Very manipulates the comparison class: it calculates the new standard by restricting the CC to entities which are already P (Klein 1980; Kennedy and McNally 2005; McNabb 2012, a.o.):

(62) 
$$\llbracket very \rrbracket^c = \lambda G \lambda x. \exists d [standard(d)(G)(\lambda y. \llbracket pos(G)(y) \rrbracket^c) \land G(d)(x)]$$

simmilarities

In fact, the effect they have in nationality and other adj/nouns with stereotypical dimensions is equivalent:

- (63) Marina es muy americana / una verdadera americana.'Marina is very American / a true American.'
- (64) Juan es muy payaso / un verdadero payaso. Lit. 'Juan is very clown / a real clown.'

simmilarities

Recursion of *very* is only possible with the same lexical item (Kennedy and McNally, 2005)

- (65) a. \* I was quite very surprised.
  - b. \* I was really very surprised.
  - c. I was [[very very] surprised].

The same seems to happen with AVs

- (66) a. \* Un auténtico verdadero artista.
  - b. Un verdadero verdadero artista.

some differences

- Negation
  - (67) Lluís es alto pero no muy alto.'Lluís is tall but not very tall.'
  - (68) a. ??Paloma es una artista pero no una auténtica artista.

'Paloma is an artist, but not a real artist.'

- b. Carlos es padre pero no es un verdadero padre.'Carlos is a father but not a true father.'
- $\rightarrow$  That's the behavior of imprecision regulators
  - (69) #Although the townspeople are asleep, some of them are awake. (Lasersohn, 1999)

Adverbs of veracity (*verdaderamente* 'truly', *realmente* 'really', *auténticamente*) have a degree modifier use with adjectives

- (70) Marina es verdaderamente alta.'Marina is truly tall.'
- (71) Lluís estaba realmente nervioso.'Lluís was really nervous'

If the vagueness analysis for AVs is in the good track, their adverbial counterparts would be expected to combine only with vague adjectives

The prediction seems to be borne out

- Relative adjectives (vague)
  - (72) Marina es verdaderamente alta. 'Marina is truly tall.'
  - (73) El viaje nos salió realmente barato.

'The travel turned out to be really cheap.'

- Absolute adjectives (gradable, not vague) only if coerced
  - (74) El vaso está verdaderamente lleno.'The glass is truly full.'
    - cf. El vaso está muy lleno. 'The glass is very full.'
  - (75) La camisa está realmente mojada.'The shirt is really wet.'
    - cf. La camisa está muy mojada. 'The shirt is very wet.'

- Non-gradable adjectives (not gradable, not vague)
  - (76) ??Vanessa está realmente embarazada.'Vanessa is really pregnant.'
    - cf. Realmente, Vanessa está embarazada. 'Really, Vanessa is pregnant.'
  - (77) ??Este problema es verdaderamente geopolítico.'This problem is truly geopolitical.'
    - cf. Verdaderamente, este problema es geopolítico (no medioambiental)
      'Truly, this problem is geopolitical (not environmental).'

### Sources of subjectivity: evaluative adjectives

- Multidimensional adjectives can be classified according to their logical dimension binding operations (Sassoon, 2013a):
  - Conjunctive (*healthy*): entities are required to reach the standard in all of their dimensions
  - Disjunctive (*sick*): entities are required to reach the standard in at least one of their dimensions
  - Mixed (*smart*): the context determines whether they are conjunctive or disjunctive
- Evaluative adjectives are 'mixed': the 'weight' and salience of the dimensions is subject to contextual and intra-speaker variation (Bylinina, 2014)

# Sources of subjectivity: nouns

an idea

Multidimensionality

- Just like with adjectives, the weight assigned to the dimensions of the noun can vary across contexts and speakers
- However, only subjective (as opposed to objective, maybe definitional?) dimensions seem to be able to receive different weights

# Sources of subjectivity: nouns

two possibilities

The domain for calculating the standard of true P could be

 The set of individuals that are already P in the context, according to the speaker — manipulation of the judge parameter

(78) 
$$\llbracket true P \rrbracket^+ = \lambda x.deg^+(d, P, c, g) \succeq Standard^+(P, c, g, \llbracket P \rrbracket^{+,j})$$

• The set of individuals characterized by the subjective or stereotypical dimensions associated with P

## Conclusion

- Adjectives of veracity are domain restrictors
- They shrink the domain from which the standard of the noun is calculated
- Intensification derives from the fact that individuals in the extension of the modified noun rank high in its dimensions

### Further issues

- Vagueness vs. imprecision
  - Another type of vagueness analysis: context operators (McNabb, 2013; Beltrama and Bochnak, Beltrama and Bochnak)
- Epistemic reading of adverbs of veracity (see Constantinescu (2013) for an epistemic analysis of *true* and *real*)
- Prenominal position in Romance
  - (79) un completo idiota / ??un idiota completo 'a complete idiot.'
  - (80) un presunto asesino / ??un asesino presunto 'an alleged murderer.'
  - (81) las viejas llaves / las llaves viejas'the old keys / the keys that are old.'

# Thanks!

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