From *completely free* to *complete freedom.*
Spanish adjectives of completeness as maximizers of property concept nouns[1]

Melania S. Masià
Consejo Superior de Investigaciones Científicas (ILLA-CSIC) & Universitat Autònoma de Barcelona

ABSTRACT
Maximizers (*completely*, *fully*) are degree modifiers sensitive to the scale structure of the adjective they combine with. Spanish adjectives of completeness (*completo* 'complete', *total* 'total') show a distribution similar to that of their adverbial counterparts when modifying property concept [PC] nouns (*libertad* 'freedom', *sabiduría* 'wisdom'). This paper argues that adjectives of completeness are degree modifiers in the nominal domain. In order to do so, it adopts a semantics of PC nouns as denoting substances, following Francez and Koontz-Garboden (2015), which can be bounded or unbounded, just like their related adjectives (*libre* 'free', etc.). Establishing a strong parallelism between adverbs and adjectives of completeness contributes to the understanding of scalarity across categories and the relation between degrees and measurements.
KEYWORDS: adjectives of completeness, property concept nouns, maximizers, degree modification, nominal gradability, deadjectival nominalizations

1. Introduction

Modifiers with adverbial and adjectival counterparts are an important source of information for cross-categorial manifestations of gradability. Adjectives of completeness [ACs] in Spanish (*completo* 'complete', *total* 'total') (1) display a strong parallelism in their distribution and interpretation to their corresponding adverbs (*completamente* 'completely', *totalmente* 'totally') (2). The latter have been analyzed as degree modifiers sensitive to scale maximums (Rotstein and Winter 2004; Kennedy and McNally 2005; a.o.).

(1) a. La completa libertad de la prensa.
the complete freedom of the press
b. ??la total sabiduría de Lucía
the total wisdom of Lucía

(2) a. La prensa es completamente libre.
the press is completely free
b. ??Lucía es totalmente sabia.
Lucía is totally wise

This paper argues that, in cases such as the ones in (1), ACs are degree modifiers as well. Nouns such as *libertad* 'freedom' or *sabiduría* 'wisdom' encode property concepts [PC] (Dixon 1977; Francez and Koontz-Garboden 2015; a.o.) and have corresponding adjectives (*libre* 'free', *sabio* 'wise') that lexicalize the same concept. Two unexpected facts arise when a PC noun combines with an AC (1). First, mass nouns (either abstract nouns, like PC nouns, or concrete nouns, like *water*) are cumulative and do not have clear boundaries that may constitute a maximum for ACs. Second, the AC in (1) seems to be asserting something not about the amount of freedom of the press, but rather about its degree. These facts are in conflict with the common view that nouns, as opposed to adjectives, are not gradable (see, e.g., Constantinescu 2011; cf. Sassoon 2013 and references therein). Exploring these issues will help to unravel the correspondence between measurement of amounts in the nominal and

[1] I would like to thank the audience at Going Romance 29 at Radboud University in Nijmegen for their feedback. I'm also grateful to Violeta Demonte, Carme Picallo, Elena Castroviejo, Xavier Villalba, Zoltan Zato and one anonymous reviewer for their helpful comments and discussion. Any remaining errors are my own. The research underlying this work has been partially supported by research project FFI2012-32886 funded by the Spanish MINECO and by scholarship FPU2010-6022 from the Spanish MECD.

measurement of degree in the adjectival realm (Bartsch and Vennemann 1973; Cresswell 1977; Doetjes 1997; a.o.).

In order to account for this behavior and motivate an analysis of ACs as maximizers, I adopt Francez and Koontz-Garboden's (2015) analysis of PC nouns as denoting portions of substances for Spanish. Maintaining the distinction between adjectives and nouns, degrees are introduced externally to the noun, by a functional projection. ACs are argued to saturate this degree and set its value to the maximum in the scale of size, and consequently intensity, of the property denoted by the noun.

This paper is organized as follows. In order to set the basis for the analysis of ACs, section 2 lays out the properties of maximality modifiers in the adjectival domain. Section 3 shows that the distribution and properties of ACs modifying PC nouns parallels those of maximizers. The semantics of PC nouns and the source of their gradability are discussed in section 4. Section 5 provides an analysis of ACs as maximizers. Finally, section 6 concludes.

2. Maximality modifiers in the adjectival domain

Gradable adjectives differ with respect to whether their scales include a maximal or a minimum value, both or neither (Rotstein and Winter 2004; Kennedy and McNally 2005; a.o.). If the set of degrees used by the adjective includes a lower or an upper bound, the predicate's standard is set with respect to that value. If the adjective is associated with an open scale, the standard is calculated contextually. The typology of scale structures is provided in (3).

(3)			
	(Totally) open scale	○————○	(*tall*, *wide*, *beautiful, wise*)
	Lower closed scale	●————○	(*dirty*, *impure, dangerous, wet*)
	Upper closed scale	○————●	(*dry*, *clear*, *free*, *dark*)
	(Totally) closed scale	●————●	(*open*, *closed*, *visible*, *full*)

Maximizers such as *completamente* 'completely' or *totalmente* 'totally' are a type of modifiers sensitive to the scale structure of the adjective. In particular, they only occur with upper- and totally-closed scale adjectives (4) (Rotstein and Winter 2004; Kennedy and McNally 2005).

(4) a. completamente {seco / oscuro / libre / cerrado / visible / lleno}
completely dry dark free closed visible full
b. ??completamente {alto / ancho / bello / impuro / sucio}
completely tall wide beautiful impure / dirty

The role of these modifiers is to indicate that the referent has a maximal degree of the gradable property denoted by the adjective *G*. More formally, maximizers set the value of the degree argument of *G* to the maximum in its scale S_G (Kennedy and McNally 2005). Since the function **max** only yields a value if the scale has a maximum defined, the restriction to upper and totally closed adjectives is accounted for.

(5) $[\![completely]\!] = \lambda G \lambda x.\ \exists d[d = \mathbf{max}(S_G)\ \&\ G(d)(x)]$ (Kennedy and McNally, 2005)

Maximizers display a series of properties derived from their maximality semantics. First, they entail that the end of the scale has been reached. Consequently, it is contradictory to assert that the referent can have a higher degree of the property (6) (Kennedy and McNally 2005). Second, the construction *maximizer G* is a total construct, in the sense that it has the distribution of an upper-closed scale adjective (Rotstein and Winter 2004). This is shown by the fact that it is compatible with *casi* 'almost' (7). And third, because of the universal quantification in the semantics of the **max** function, *maximizer G* accepts exceptive phrases (8).

(6) #El avión está completamente lleno; hay un asiento libre en la primera fila.
The plane is completely full there.is a seat free in the first row
'The plane is completely full; there is an empty seat in the first row.'

(7) El avión está casi completamente lleno.
the plane is almost completely full

(8) El avión está completamente lleno, excepto un asiento en la primera fila.
the plane is completely full except a seat in the first row
'The plane is completely full, except for a seat in the first row.'

To sum up, maximizers are degree modifiers restricted to adjectives that use a scale closed (at least) in its upper end and they set the degree of the property denoted by the adjective to that maximum. We turn now to adjectival counterparts of these modifiers to check whether they are maximizers as well.

3. Adjectives of completeness modifying property concept nouns

In the nominal domain, adjectival counterparts of maximizers are able to modify nouns related to gradable adjectives. This section shows that ACs behave as maximizers when modifying nouns that denote properties or qualities[2] if they are related to upper- or totally closed scale adjectives.

ACs present the properties of maximizers when modifying PC nouns. First, the entailment that there is already a maximal amount of the property comes through. Adding that something can have more of the property is thus contradictory (9) (cf. (6)). Second, the construction is compatible with *casi* 'almost' (10) (cf. (7)) and, third, it accepts exceptive phrases (11) (cf. (8)).

(9) a. #La prensa tiene total libertad, pero podría tener más.
the press has total freedom but could have more
'The press has total freedom, but it could have more of it.'

b. #La sala está en completa oscuridad; puedes apagar otra luz.
the room is in complete darkness can.2SG switch.off other light
'The room is in complete darkness. You can switch off another light.'

(10) a. La prensa tiene casi total libertad para informar.
the press has almost total freedom for inform.INF
'The press has almost total freedom to inform.'

b. La casi completa oscuridad de la sala le impide ver al asesino.
the almost complete darkness of the room DAT prevents see.INF to.the murderer
'The almost complete darkness of the room prevents her from seeing the murderer.'

(11) a. La prensa tiene total libertad, salvo en asuntos religiosos.
the press has total freedom except in issues religious
'The press has total freedom except for religious issues.'

b. La sala está en completa oscuridad, excepto por la tenue luz de la luna.
the room is in complete darkness except for the faint light of the moon
'The room is in complete darkness, except for the faint light of the moon.'

Yet not every PC noun is acceptable with ACs. The nouns in (12) are compatible with *completo*, but those in (13) are not. It is important to note that the former are related to upper and totally closed scale adjectives (that is, adjectives with a maximum), whereas the latter are correlates of open and lower-closed scale adjectives (i.e., adjectives without a maximum). Therefore, the compatibility of PC nouns with ACs depends on the scale used by the adjective related to the noun, and both the adjective and the noun seem to share scalar properties.

(12) a. Upper closed scale adjectives:
completa aridez, total claridad, absoluta libertad, total oscuridad, completa lealtad

[2] ACs also modify nominalizations of adjectives that denote states (*total soledad* 'total loneliness') and occurrences of events (*una completa crueldad* 'a complete cruelty'), which are out of the scope of this article. I understand quality-denoting nouns as non-eventive and not having argument structure (as opposed to states). As such, nouns denoting qualities do not accept temporal modification and the holder of the property does not have to be obligatorily present (see Roy 2010; Villalba 2013; Arche and Marín 2015; a.o.).

complete aridity total clarity absolute freedom total darkness complete loyalty

b. Totally closed scale adjectives:
completa opacidad, total soledad, absoluta visibilidad
complete opacity, total loneliness absolute visibility

(13) a. Open scale adjectives:
??completa anchura, ??total belleza, ??absoluta altura, ??absoluta sabiduría
complete wideness total beauty absolute tallness absolute wisdom

b. Lower closed scale adjectives:
??completa impureza, ??total inseguridad, ?absoluta suciedad
complete impurity total insecurity absolute dirtiness

However, this does not necessarily mean that the nouns in (12), just like their cognate adjectives, have a maximum standard. In other words, it is not the case that, in order for something to qualify as, for instance, *freedom*, it must have a maximal amount of the property. Compare (14), where there is a contradiction in asserting that the press could be freer, to (14), where no such conflict arises. More evidence comes from entailments of the comparative constructions. A maximum standard adjective in the comparative entails that the individual in the *than*-clause does not have the property (15) (Kennedy and McNally 2005). That entailment does not seem to be present for the nouns (15) (cf. Fábregas 2016:III.2).

(14) a. #La prensa es libre. Solo tiene que pasar un control del gobierno.
the press is free only has.to pass a inspection of.the government
'The press is free. It just has to pass an inspection from the government.'

b. La prensa tiene libertad. Solo tiene que pasar un control del gobierno
the press has freedom only has.to pass a inspection of.the government
'The press has freedom. It just has to pass an inspection from the government.'

(15) a. La prensa local es más libre que la prensa nacional. ⇒ La prensa
the press local is more free than the press national the press
nacional no es libre.
national NEG is free
'The local press is freer than the national press.' ⇒ 'The national press is not free.'

b. La prensa local tiene más libertad que la prensa nacional. ⇏ La
the press local has more freedom than the press national the
prensa nacional no tiene libertad.
press national NEG has freedom
'The local press has more freedom than the national press.' ⇏ 'The national press does not have freedom.'

In short, the scale structure of the adjective plays a role in the semantics of its cognate noun. In particular, ACs only modify PC nouns when they are related to an upper- or totally closed scale adjective. In that case, they behave as maximizers. A degree analysis of ACs can thus be imported to the nominal domain. The next question is which (bounded) scale is being accessed by these modifiers. In order to answer this question, the semantics of PC nouns is discussed next.

4. The semantics of property concept nouns

Nouns that denote property concepts have a series of characteristics that set them apart as a group of nouns. In this section, I first review the properties of Spanish PC nouns regarding their reference, their relational status and their gradability. I then argue for an approach that analyzes them as predicates of portions of a substance, adopting Francez and Koontz-Garboden's (2015) proposal for PC nouns in Ulwa. The source of gradability of PC nouns is discussed right after and established to be an ordering in their domain that tracks mereological structure.

4.1 Properties of property concept nouns

PC nouns behave morphosyntactically as mass nouns (Nicolas 2004, 2010). For instance, they are invariable in number (16) (but see, e.g., Beauseroy and Knittel 2007 for the range of readings they display when inflected for number), and they are compatible with quantifiers such as *poco* 'little' or *demasiado* 'too much' (17).

(16) a. #arroces; #cervezas
rices beers
b. #libertades; #felicidades
freedoms hapinesses

(17) a. poco arroz; demasiada cerveza
little rice too.much beer
b. poca libertad; demasiada felicidad
little freedom too.much happiness

PC nouns and mass nouns both have cumulative reference. A predicate has cumulative reference if whenever it holds of two things, it also holds of their collection (Krifka 1989). For instance, the result of combining the beer in two glasses is referred to as *beer* as well. Similarly, John's happiness and Mary's happiness put together can be referred to as *happiness*.

Regarding the status of the holder of the property, PC nouns denote abstract properties and can appear on their own, but often refer to instantiations of those properties. The examples in (18) show absolute uses of PC nouns, while (19) illustrates uses where the individual the property is manifested in is present.

(18) a. La libertad es lo más importante.
the freedom is the more important
'Freedom is the most important thing.'
b. Disertaron sobre la belleza toda la noche.
discussed.3pl about the beauty all the night
'They discussed beauty all night.'

(19) a. la libertad de la prensa – su libertad
the freedom of the press its freedom
b. la belleza de las cataratas Victoria – su belleza
the beauty of the falls Victoria its beauty

Most analyses of PC nouns assume that the holder is part of the meaning of the noun; that is, that the noun is relational (Nicolas 2004, 2010; Moltmann 2004, 2009). Relational nouns such as kin nouns are relations between two individuals (see, e.g., Barker 1995). However, if PC nouns were relational, two facts would follow. First, the holder of the property would be an argument and would thus be always obligatorily realized. This is complicated by the fact that the distinction between arguments and modifiers in the nominal domain is not as clear as in the verbal domain (Partee and Borschev 2003, a.o.), but the examples in (18) pointed against the argumental character of the PP phrase expressing the holder of the property (cf. Moltmann 2004 for a view in terms of tropes and kinds of tropes). Second, PC nouns would not be able to receive an existential interpretation without the presence of the holder, but only a universal one (20). This is not borne out, as the examples in (20), from Carlson (1977), show.

(20) a. Democracy is nearing extinction. UNIVERSAL
b. The Greeks practiced democracy. EXISTENTIAL
c. There is now democracy in India. EXISTENTIAL

Finally, the third property of PC nouns is the clear correlation between measurement of intensity in the adjectival domain and measurement of quantity in the domain of PC nouns. The sentences in (21) with an adjective and a degree modifier seem to be equivalent to those in (21) with the corresponding PC noun and a quantifier or an AC.

(21) a. Lucía es muy paciente.
c. Lucía tiene mucha paciencia.

Lucía is very patient
b. La prensa es completamente libre.
the press is completely free

Lucia has a.lot.of patience
d. La prensa tiene completa libertad.
the press has complete freedom

This shows that PC nouns are gradable in some way. Most approaches do not include degrees in the semantics of the noun; rather the measure function for the nouns is introduced later in the structure (Nicolas 2004, 2010; Moltmann 2009; cf. Bochnak 2013). This allows keeping the distinction between adjectives and nouns (see section 5.1).

To sum up, three main empirical facts need to be captured by an analysis of PC nouns, namely their mass denotation, their relation to the holder of the property, and the relation between the gradability of the noun and that of the corresponding adjective.

4.2 Property concept nouns as predicates of portions of a substance

In order to account for the mass denotation of Spanish PC nouns, I will assume that they denote portions of substances, following Francez and Koontz-Garboden's (2015) proposal for PC terms in Ulwa (see also Levinson 1978). This model draws in the mereological approach to mass terms (Link 1983). The basic idea is that substances are predicates over a domain that is partially ordered. The set $\mathcal{A}$ of portions of a substance form a join semi-lattice with the join operation $\sqcup$ (commutative, idempotent, and associative), which induces an ordering relation $\preccurlyeq$ on the set $\mathcal{A}$. This ordering relation can be thought of as a 'part-of' relation. A PC noun thus denotes the set of all portions of a substance, as in (22), where *p* is a variable over portions and **freedom** is the characteristic function of the set.

(22) $[\![libertad]\!] = = \lambda p.\mathbf{freedom}(p)$

The way to predicate the property denoted by a PC noun of an individual is by a possession relation (Francez and Koontz-Garboden 2015). Roughly, an individual has the property denoted by the PC noun if it possesses a portion of the substance. As a consequence, possessive morphology is required to relate PC nouns to an individual (cf. Francez and Koontz-Garboden 2015 for crosslinguistic evidence). In Spanish, this can be done by a PP headed by *de* or a possessive pronoun (19). Since the holder of the property is not a semantic argument of the PC noun (see section 4.1), the possessive relation ($\boldsymbol{\pi}$) is introduced by the head of a possessive PP, which selects the possessor DP as its complement (23), as in Storto (2003). This PP then adjoins to the PC noun (the possessum) and modifies the property it denotes via predicate modification (23). This captures the fact that the possessor behaves like a restrictive modifier of the possessum and that the definiteness is introduced in Romance by the determiner and it is not a property of the genitive construction, as in English Saxon genitive DPs (Storto 2003; cf. Barker 1995).

(23) a. $[\![de\ la\ prensa]\!] = \lambda p.\boldsymbol{\pi}(\text{the-press},p)$
b. $[\![libertad\ de\ la\ prensa]\!] = \lambda p.\mathbf{freedom}(p)\ \&\ \boldsymbol{\pi}(\text{the-press},p)$

In short, the analysis of PC nouns defended here is one in which they denote portions of substances, thus accounting for their mass denotation, and are related to an individual via a possessive relation introduced externally, by a possessive head. We turn now to the source of gradability of PC nouns.

4.3 Source of gradability and collapse between amount and intensity in PC nouns

The last crucial property of PC nouns to be modeled is their gradability. I follow Francez and Koontz-Garboden (2015) in taking the domain of a substance denoting term to be partially ordered. Gradability is modeled as an ordering of portions of substance. Two postulates regulate it. The first postulate states that any substance P is ordered by a total preorder $\leq$, equivalent to the relation 'smaller or equal to'. This means that any two portions of a substance are comparable in size, and that they can

be either of the same size or else one is bigger than the other. According to the second postulate, the preorder ≤ preserves the mereological part-of relation. Consequently, a portion *p* that is part of another portion *q* is smaller than *q*, the portion it is part of (Francez and Koontz-Garboden 2015).

Recall from the end of section 4.1 that there is a correlation between the amount of a substance-denoting property and the degree of that property. For instance, having *complete freedom* is comparable to being *completely free* (21). Evidence for the correspondence between amount and intensity, or quantity and quality, in PC nouns comes from exclamatives and size adjectives. As for exclamatives, the examples in (24) from Brucart and Rigau (2002) for Catalan show that a quantity exclamative with *quant* ('how much') and a quality one with *quin* ('what') have the same interpretation with PC nouns such as *paciència* ('patience') (24), but not with concrete mass nouns (24) (Tovena 2001; Brucart and Rigau 2002).

(24) a. ¡Quanta paciència!
how.much patience
'What a patience!'
b. ¡Quina paciència!
what patience
'What a patience!'
c. ¡Quanta gent!
how.much people
'How many people!'
d. ¡Quina gent!
what people
'What (strange) people!'
Catalan

The collapse of the notions of amount and intensity can also be observed in the distribution and readings of size adjectives like *grande* 'big' or *enorme* 'huge'. Size adjectives have an intensifying reading with PC nouns (25), but do not occur with concrete mass nouns (25).

(25) a. una gran {belleza / libertad}; una sabiduría enorme
a big beauty freedom a wisdom huge
'a great {beauty / freedom}'; 'a huge wisdom'
b. *gran agua; #arroz enorme
big water rice huge

Amount equals intensity in PC nouns. One option to account for this would be to assume that the domain of PC nouns form a total order instead of a partial one, and thus that PC nouns lexicalize scales, just like their corresponding adjectives (see Francez and Koontz-Garboden 2015; cf. Bochnak 2013). This is, however, problematic. First, the part-whole relation $\preccurlyeq$ that orders substances allows for overlapping between portions of a substance, but there is no overlapping of degrees in a scale (unless degrees are substituted by intervals, see Schwarzschild and Wilkinson 2002). Excluding the possibility of overlapping would draw apart the semantics of PC nouns and mass nouns. Second, scales, as total orders, are antisymmetric. This means that, whenever two degrees stand in the same position in the ordering, they are necessarily the same degree. This does not seem to be the case for two portions of a substance of the same size. For instance, in (26), the particular portion of beauty that is the Taj Mahal's beauty is different for that of the Stata center, even if they are of the same size. However, the degree of beauty of both building is identical.

(26) The Taj Mahal has as much beauty as the Stata Center, though their beauties are very different. (Francez and Koontz-Garboden, 2015)

In order to account for the relation between the PC noun and its related adjective, I assume that property concepts can be gradable or non-gradable, and, if gradable, bounded or unbounded. This information is conceptual and, as such, part of the root. It passes on to the different lexicalizations of it. For instance, the property concept that is the base for *free* and *freedom* is gradable and bounded. Since it is gradable, the individuals that possess the property or the portions of the substance form an ordered set; since it is bounded, there is a maximal degree or amount of the property an individual can

have. By contrast, the concept for *wisdom* is unbounded and the derived noun and adjective do not have maximums. Finally, the concept for *father* and *fatherhood* is not gradable.[3]

By encoding the boundedness of the concept in the root, the difference between nouns and adjectives is preserved. Nouns denote properties and their domain forms a join semi-lattice, whereas adjectives are relations between degrees and individuals and their domain forms a scale (see Krifka, 1989; cf. Wellwood, 2014), and there is a mapping between the two. That is, a certain amount of a property corresponds to a certain degree of the same property, but only adjectives include degree arguments.

In sum, the semantics of PC nouns have been discussed in this section. In particular, they have been argued to denote properties of substances. Gradability of PC nouns comes from an ordering in the domain of portions of the substance. Degrees are not part of the semantics of the noun. The next section shows how they are introduced by a functional head and puts forward the analysis for ACs as maximizers.

5. Adjectives of completeness as maximizers of property concept nouns

Section 3 showed that ACs are sensitive to the presence of a maximum and display the properties of maximality modifiers in the adjectival domain. This section puts forth an analysis of ACs as degree modifiers of PC nouns. In particular, ACs are maximizers: they set the value of the degree argument associated to the noun to the maximum in the intensity scale. In order to do so, it is first necessary to introduce degrees in the semantics of PC nouns.

5.1 Introducing degrees in the semantics of PC nouns

So far, it has been argued that Spanish PC nouns denote substances and are related to an individual by a possessive relation. Although there is an ordering in the domain of the noun, no degree argument is available. This is expected, since nouns do not combine directly with degree morphology. Compare, for instance, the obligatory presence of *much* in nominal comparative (27) but not in adjectival ones (27) in English (see, e.g, Bresnan 1973; Wellwood 2014).

(27) a. The local press has as *(much) freedom as the national press.
b. The local press is as (*much) free as the national press.

For a noun to be measured or counted, it requires that a degree argument be introduced externally, via a null head (Abney 1987; Zamparelli 1996; Schwarzschild 2006; Solt 2015; a.o.). I adopt here Solt's (2015) MEAS projection (28). When applied to an individual, MEAS introduces a measure function that links individuals to degrees on the scale of some dimension, and thereby enables the semantic composition of quantity expressions with nouns.[4] For PC nouns, the degree argument represents the measure of the size of the portion of the substance.

(28) $[\![\text{MEAS}]\!]^g = \lambda x \lambda d.\boldsymbol{\mu}_S(x) \geq d$ (Solt 2015:236)

MEAS encodes an underspecified measure function $\boldsymbol{\mu}_S$ whose scale of measurement *S* is contextually determined. The choice of the scale is not completely unrestricted but it must be monotonic on the part-whole structure of the object (Schwarzschild 2006). For PC nouns, size of the portion is monotonic (more freedom implies a bigger portion of freedom). Quantifier adjectives such as *a lot of*

[3] I am assuming that Spanish adjectives and their corresponding nouns are derived from a common root, but not from one another. A first piece of evidence for this is the fact that some adjectives are derived from the PC noun, and not the other way around (*silencioso* 'silent' – *silencio* 'silence'; *hambriento* 'hungry'- *hambre* 'hunger') .

[4] MEAS (type <*e,dt*>) composes with the noun via a rule of Degree Argument Introduction, which identifies the individual argument of MEAS and the noun and demotes it to second position in the lambda prefix (Solt 2015).

(i) Degree Argument Introduction (DAI): If α is a branching node, {β,γ} are the set of α's daughters, and $\beta = \lambda x.\text{P}(x)$, $\gamma = \lambda x \lambda d.Q(d)(x)$, then $\alpha = \lambda d \lambda x.[P(x) \wedge Q(x)(d)]$ (Solt 2015:237)

or *little* (17) measure thus the size of the portion of the substance denoted by the PC noun.

Looking ahead, since size correlates with intensity in PC nouns and size is monotonic for these nouns, the intensity scale shared by the noun and the corresponding adjective is adequate for μ_S to use it as the dimension of measurement. This is the dimension ACs will use.

5.2 Adjectives of completeness are maximizers

Once the degree argument is introduced, the expression *MEAS + PC noun* is a gradable property. Its degree argument can be saturated by degree expressions such as quantifier adjectives (*much*, *little*). I propose that ACs can saturate this degree as well. ACs have the semantics in (29), which is equivalent to that of adverbs of completeness (5). They take a relation between degrees and individuals and return a property with the value of the degree argument set to the maximum of the scale used by the gradable predicate.

(29) $[\![AC]\!] = \lambda G_{<d,et>} \lambda x.\ \exists d[d = \mathbf{max}(S_G)\ \&\ G(d)(x)]$

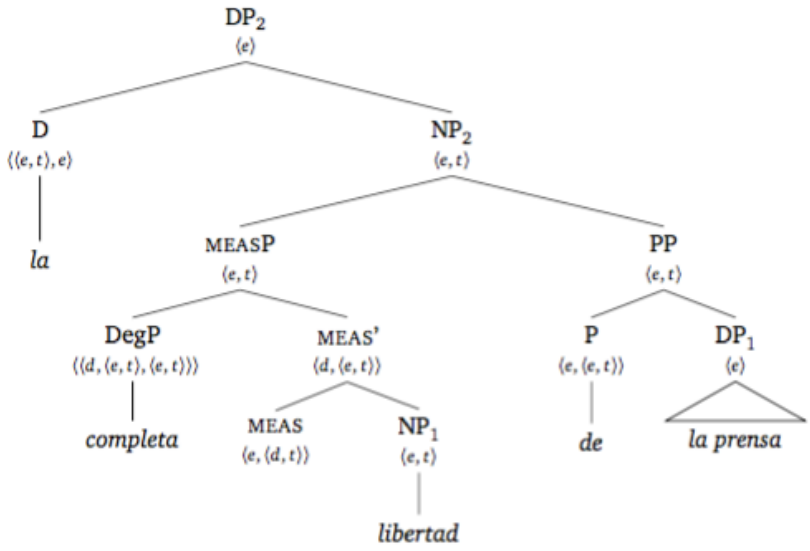
In the case of PC nouns, the scale S_G is provided by the value of the measure function $\boldsymbol{\mu}_{\mathbf{S}}$, introduced by MEAS. The choice of the dimension of measurement S used by $\boldsymbol{\mu}$ is contextually determined, but must be monotonic. In this case, S is set to size, and therefore, intensity (see sections 4.3 and 5.1). For those property concepts that are bounded, there is a maximum size for the portion of the substance their corresponding PC noun denotes, and consequently, for its intensity. The **max** function in the semantics of ACs returns that value for those PC nouns, such as *libertad* 'freedom' (30). For unbounded PC nouns, such as *sabiduría* 'wisdom', no maximum is available and the function **max** is undefined. This results in unacceptability of ACs (see (13)).

(30) $[\![\textit{completa libertad}]\!] = \lambda p[\boldsymbol{\mu}_{\mathbf{S}}(p) \geq \mathbf{max}(S_{freedom})\ \&\ \mathbf{freedom}(p)]$

Now, we can put all the pieces together. A phrase such as *la completa libertad de la prensa* 'the complete freedom of the press' denotes the unique portion of freedom that the press possesses and that measures the maximum amount (and therefore intensity) of freedom possible (31). The full derivation for a PC noun with the possessor of the property and an AC is as (31). The null head MEAS combines with the PC noun via DAI and introduces the degree argument. Then the AC *completa* saturates the degree argument and fixes its value to the maximum in the scale. The result is a property of individual that have the maximum amount of freedom. Then the property conjoins with the property of being in a possessive relation with an individual (the press in this case). Finally, the whole NP combines with the definite determiner.

(31) a. $[\![\textit{la completa libertad de la prensa}]\!] = \iota p[\boldsymbol{\mu}(\mathrm{p}) \geq \mathbf{max}(\mathrm{S}_{freedom})\ \&\ \mathbf{freedom}(p)\ \&\ \boldsymbol{\pi}(\text{the-press}, p)]$

b.



Note that, in the analysis in (31), ACs compose with the noun through MEAS and target their lexical scale. The possessor acts then as a restrictive modifier of the MEASP. A reasonable alternative would be that, since the possessor of the property has a certain portion of the substance, the part-whole structure of the individual would provide a maximum for ACs. That is not the case, however. For instance, the height of a building is a delimited amount (the interval between 0 and, say, 170 m), but ACs are unacceptable in this context (32). The same applies to *impureza* (impurity) in (32).

(32) a. *la completa altura del edificio
the complete tallness of.the building
b. *la total impureza de la muestra
the total impurity of the sample

In the analysis put forward here, ACs are degree modifiers and not regular adjectives when modifying PC nouns. As a consequence, they are not expected to be subject to the difference in interpretation between prenominal and postnominal position for adjectives in Romance languages (see, e.g., Demonte 2008; Cinque 2010). This is borne out. In (33), both versions, with the adjective to the left or to the right of the noun, receive the same reading. However, with nouns other than PC nouns (33), prenominal position corresponds with a non-restrictive interpretation whereby the committee is said to include a wide variety of members, to be comprehensive, while postnominal position asserts that all the members of the committee arrived.

(33) a. La prensa tiene {completa libertad / libertad completa}.
the press has complete freedom freedom complete
'The press has complete freedom'
b. Comprobamos la {total aridez / aridez total} del terreno.
checked.1pl the total aridity aridity total of.the land
'We checked the total aridity of the land.'
c. Llegó el {completo comité de expertos / comité de expertos completo}.
arrived the complete committee of experts committee of experts complete
'The{complete committee of experts / whole committee of experts} arrived.'

Another prediction of analyzing ACs as degree modifiers is that they should not be able to appear in predicative position, because the degree modifier needs to be adjacent to the degree argument. Yet, ACs do occur predicatively with PC nouns (34). There are reasons to think that this is not a degree reading of ACs, however. First, note that PC nouns using open scales are also acceptable with predicative uses of ACs (35), but not with attributive ones (35), which pattern with the distribution of adverbs of completeness (35). Second, the predicative AC can be substituted by its negative

counterpart *incompleto* 'incomplete', which is never a degree modifier, in both cases (36). These facts indicate that ACs here are receiving a reading that can be paraphrased as 'from all points of view' or 'in every respect' (e.g., Fábregas 2015). For instance, saying that someone's wisdom is complete does not mean that she has a maximum intensity of wisdom, but rather that she is wise in every respect.

(34) La libertad de la prensa es {completa / ?total}.
the freedom of the press is complete total

(35) a. Su {bondad / sabiduría} es {completa / ?total}.
her goodness wisdom is complete total

b. ??la completa {bondad / sabiduría} de Esther
the complete goodness wisdom of Esther

c. Esther es completamente {buena / sabia}.
Esther is completely good wise

(36) a. La libertad de la prensa es incompleta.
the freedom of the press is incomplete

b. La {bondad / sabiduría} de Esther es incompleta.
the goodness wisdom of Esther is incomplete

To sum up, degrees are introduced in the semantics of PC nouns via a null functional head MEAS (Solt 2015). The dimension of measurement is set to size, and ACs are degree modifiers that can saturate this degree. In particular, ACs have been argued to measure the size of the portion of a substance, which correlates with its intensity, and assert that the size is maximal.

6. Conclusion

This paper has argued that ACs are degree modifiers of PC nouns. In particular, it has been shown that they are maximizers. In order to do so, PC nouns have been analyzed as predicates of portions of substances that enter a possession relation with the holder of the property. The domain of PC nouns is ordered, but their semantics does not include degrees. In line with other mass nouns, degrees are introduced by a special functional head. The intensification reading of ACs derives from the collapse of amount and intensity measurements in PC nouns.

It has been put forward that both adverbs and adjectives of completeness target a relation between degrees and individuals and set the degree to the maximum in the scale, reinforcing the parallelism between the adjectival and the nominal domain and contributing to the understanding of scalarity in the latter. However, degree modification of nouns is still a controversial issue and investigating other uses of ACs with nouns may shed light in this direction. In particular, eventive nominalizations of some verbs (*la total destrucción de la ciudad* 'the total destruction of the city) and evaluative nouns (*un completo idiota* 'a complete idiot') are candidates to being other instances of gradability in the nominal domain.

References

Abney, Steven. 1987. "The English Noun Phrase in Its Sentential Aspect." PhD diss., MIT.

Arche, María J., and Rafael Marín. 2015. "On the Edge: Nominalizations from Evaluative Adjectives." In *Romance Linguistics 2012: Selected Papers from the 42nd Linguistic Symposium of Romance Languages*, ed. by J. Smith and T. Ihsane, 261–74. Amsterdam: John Benjamins.

Barker, Chris. 1995. *Possessive Descriptions*. Stanford: CSLI Publications.

Bartsch, Renate, and Theo Vennemann. 1973. *Semantic Structures: A Study in the Relation Between Semantics and Syntax*. Frankfurt: Athenäum.

Beauseroy, Delphine, and Marie Laurence Knittel. 2007. Nombre et détermination : le cas des noms abstraits de qualité. *Rivista di Linguistica* 19(2), 231-262.

Bochnak, M. Ryan. 2013. "Cross-Linguistic Variation in the Semantics of Comparatives." PhD diss., University of Chicago.

Bresnan, Joan. 1973. “Syntax of the Comparative Clause Construction in English.” *Linguistic Inquiry* 4 (3): 275–343.

Brucart, Josep Maria, and Gemma Rigau. 2002. “La Quantificació.” In *Gramàtica Del Català Contemporani*, ed. by J. Solà, M. R. Lloret, J. Mascaró, and M. Pérez Saldanya, III:1517–89. Barcelona: Empúries.

Carlson, Greg. 1977. “Reference to Kinds in English.” PhD diss., University of Massachussetts Amherst.

Cinque, Guglielmo. 2010. *The Syntax of Adjectives: A Comparative Study*. Cambridge, MA: MIT Press.

Constantinescu, Camelia. 2011. “Gradability in the Nominal Domain.” PhD diss., Universiteit Leiden.

Cresswell, Max J. 1977. “The Semantics of Degree.” In *Montague Grammar*, ed. by B. H. Partee, 261–92. New York: Academic Press.

Demonte, Violeta. 2008. “Meaning-Form Correlations and Adjective Position in Spanish.” In *Adjectives and Adverbs: Syntax, Semantics, and Discourse*, ed. by L. McNally and C. Kennedy, 71–100. Oxford: Oxford University Press.

Dixon, R. M. W. 1977. “Where Have All the Adjectives Gone?” *Studies in Language* 1 (1): 19–80.

Doetjes, Jenny. 1997. “Quantifiers and Selection. On the Distribution of Quantifying Expressions in French, Dutch and English.” PhD diss., Universiteit Leiden.

Fábregas, Antonio. 2015. “Una Nota Sobre Las Lecturas de Los Adverbios de Grado.” *Lenguaje* 43 (2): 247–69.

———. 2016. *Las nominalizaciones*. Madrid: Visor.

Francez, Itamar, and Andrew Koontz-Garboden. 2015. “Semantic Variation and the Grammar of Property Concepts.” *Language* 91 (3): 533–63.

Kennedy, Christopher, and Louise McNally. 2005. “Scale Structure and the Semantic Typology of Gradable Predicates.” *Language* 81 (2): 345–81.

Krifka, Manfred. 1989. “Nominal Reference, Temporal Constitution and Quantification in Event Semantics.” In *Semantics and Contextual Expression*, ed. by R. Bartsch, J. van Benthem, and P. von Emde Boas, 75–115. Dordrecht: Foris.

Levinson, Jerrold. 1978. “Properties and Related Entities.” *Philosophy and Phenomenological Research* 39(1): 1-22.

Link, Godehard. 1983. “The Logical Analysis of Plurals and Mass Terms: A Lattice-Theoretical Approach.” In *Meaning, Use and Interpretation of Language*, ed. by R. Bäuerle, C. Schwarze, and A. von Stechow, 303–23. Berlin: De Gruyter.

Moltmann, Friederike. 2004. “Properties and Kinds of Tropes: New Linguistic Facts and Old Philosophical Insights.” *Mind* 113: 1–41.

———. 2009. “Degree Structure as Trope Structure: A Trope-Based Analysis of Positive and Comparative Adjectives.” *Linguistics and Philosophy* 32 (1): 51–94.

Nicolas, David. 2004. “The Semantics of Nouns Derived from Gradable Adjectives.” In *Proceedings of Sinn Und Bedeutung 8*, 197–208. Universität Konstanz.

———. 2010. “Towards a Semantics for Mass Expressions Derived from Gradable Expressions.” *Recherches Linguistiques de Vincennes* 1: 163–198.

Partee, Barbara H., and Vladimir Borschev. 2003. “Genitives, Relational Nouns, and Argument-Modifier Ambiguity.” In *Modifying Adjuncts*, ed. by E. Lang, C. Maienborn, and C. Fabricius-Hansen, 67–112. Berlin / New York: Mouton de Gruyter.

Rotstein, Carmen, and Yoad Winter. 2004. “Total Adjectives vs. Partial Adjectives: Scale Structure and Higher-Order Modifiers.” *Natural Language Semantics* 12 (3): 259–88.

Roy, Isabelle. 2010. “Deadjectival Nominalizations and the Structure of the Adjective.” In *The Syntax of Nominalizations across Languages and Frameworks*, ed. by A. Alexiadou and M. Rathert, 129–58. Berlin: De Gruyter Mouton.

Sassoon, Galit W. 2013. *Vagueness, Gradability and Typicality. The Interpretation of Adjectives and Nouns*. Leiden: Brill.

Schwarzschild, Roger. 2006. “The Role of Dimensions in the Syntax of Noun Phrases.” *Syntax* 9 (1): 67–110.

Schwarzchild, Roger, and Karina Wilkinson. 2002. “Quantifiers in Comparatives: A Semantics of Degree Based on Intervals.” *Natural Language Semantics* 10 (1): 1–41.

Solt, Stephanie. 2015. “Q-Adjectives and the Semantics of Quantity.” *Journal of Semantics* 32 (2): 221–73.
Storto, Gianluca. 2003. “Possessives in Context: Issues in the Semantics of Possessive Constructions.” PhD diss., University of California, Los Angeles.
Tovena, Lucia. 2001. “Between Mass and Count.” In *Proceedings of the 20th West Coast Conference on Formal Linguistics*, 565–578. Somerville, MA: Cascadilla Press.
Villalba, Xavier. 2013. “Eventualities under Deadjectival Nominalizations.” *Borealis. An International Journal of Hispanic Linguistics* 2 (2): 241.
Wellwood, Alexis. 2014. “Measuring Predicates.” PhD diss., University of Maryland, College Park.
Zamparelli, Roberto. 1996. “Layers in the Determiner Phrase.” PhD diss., University of Rochester.