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Precious few* and *practically all

A Cognitive Grammar approach to the modification of quantifiers

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Abstract

In the literature, considerable attention has gone to the degree modification of adjectives, as in *very pretty* and *almost full*. This study deals with the hitherto neglected modification of quantifying expressions, as in *very few* and *almost all*. We argue that there is a conceptual analogy between degree, or quality, modification and quantity modification. This hinges on the fact that the notion of boundedness configures the semantic domains of both adjectives and quantifiers: the distinction between bounded and unbounded adjectives is conceptually similar to the distinction between relative and absolute quantifiers. This allows us to take the main classes of degree modification as the basis for setting up the categories of quantity modification. Adjectives designating unbounded qualities take scalar modifiers, which may upscale, e.g. *very good,* or downscale, e.g. *fairly good* the quality. Adjectives designating bounded properties take proportional modifiers, which divide into approximating, e.g. *almost full,* or totality modifiers, e.g. *absolutely full*. In addition, adjectives can take compromisers, focusers and emphasizers, which are not tied to the unbounded-bounded nature of the adjectives they modify. We show that, in similar fashion, absolute quantifiers take scalar modifiers, which modify the quantity in the direction inherent in the quantifier, increasing it as in *very many*, and reducing it as in *very few*. Relative quantifiers take proportional modifiers, which divide into approximating, e.g. *almost all,* and totality modifiers, e.g. *absolutely all*. Quantifiers can also take compromisers, focusers and emphasizers, which are not tied to the absolute-relative distinction. We apply the proposed model for quantity modification to corpus-based case studies of (*a*) *few* and *all*, to illustrate its classificatory power.

Keywords: absolute and relative quantification, scalarity versus non-scalarity, quantity modification, bounded and unbounded qualities, degree modification

1. **Introduction**

There is a long cognitive-functional tradition of research into the modification of adjectives, as in *very pretty* and *almost full* (e.g. Bolinger 1967, Paradis 2001, Ghesquière & Davidse 2011). By contrast, little focused attention has gone to the modification of quantifiers, as in *very few* and *almost all*. This study wants to begin to fill this gap. Our way into the hitherto neglected issue of quantifier modification is the

strong conceptual analogy between quality modification and quantity modification which was hypothesized to exist by Ghesquière & Davidse (2011). This analogy hinges on the point that the notion of boundedness configures the semantic domains of both adjectives and quantifiers, and that it is (un)boundedness which determines the primary types of modifiers adjectives and quantifiers take.

Authors such as Bolinger (1967, 1972) and Paradis (1997, 2000, 2001) have established that the distinction between bounded and unbounded adjectives correlates with, and can indeed be drawn out by, the modifiers they take. *Unbounded* adjectives are inherently conceptualized as degrees, and therefore take scalar modifiers, which change the designated degree, as in *very long* and *rather short*. *Bounded* adjectives, by contrast, designate properties that have to reach a boundary to be present at all. They take proportional modifiers, which compare the actually attested property to the boundary as either approximating or reaching it, as in *almost full*, *completely empty*.

We argue that the distinction between unbounded and bounded adjectives is conceptually similar to that between absolute and relative quantifiers (Milsark 1977, Langacker 2016, Davidse 1999, 2004). The latter also correlates with scalar versus proportional modifiers, which operate on the different types of quantification they construe.

Unbounded adjectival meanings are similar to *absolute* quantifiers which measure along a continuous quantity scale, such as (*a*) *few, many*, in that they both involve an open continuous scale without an upper boundary. Like unbounded adjectives, these quantifiers take scalar modifiers, which change the quantity indicated, as in (1), where *very* increases the number indicated by *many*.

(1) Joe Lynch touched the lives of *very many* people in Ireland. (WB)[1]

Bounded adjectives such as *full* and *empty* are like relative quantifiers such as *all* and *no*(*ne*) because they invoke the notion of a boundary in a similar way. Relative quantifiers *compare* the size of the actually predicated mass to a reference mass, indicating whether or not the two coincide. The meaning of the relative quantifier *all* can be thought of as reaching complete coincidence with the reference mass, while that of the negative relative quantifier *no* is defined by complete non-coincidence with the reference mass. This schematic similarity in turn motivates the analogy between proportional quality and quality modifiers. Proportional quantity modifiers indicate whether the actual quantity approximates, e.g. *almost all*, or reaches complete coincidence with the reference mass, e.g. *absolutely all*, as illustrated in (2).

(2) if *absolutely all* other options fail. (WB)

[1] Examples followed by (WB) were extracted from WordbanksOnline.

In short, the primary modifier types, scalar versus proportional, involve the reconfiguring of basic conceptual mechanisms in the shift from quality to quantity modification. We argue that similar reconfiguring allows the use of the modifier types compromisers, emphasizers and focusers with both adjectives and quantifiers. We apply the proposed model for quantity modification to corpus-based case studies of (*a*) *few* and *all,* to illustrate its classificatory power.

The article will be structured as follows. Section 2 discusses the relation between (un)boundedness and the gradability of adjectives (2.1) and the degree modification of unbounded and bounded adjectives by scalar modifiers and totality/approximating modifiers (2.2). In section 2.3, we add, with reference to Quirk et al. (1985), the remaining types of adjectival modifiers, viz. compromisers, focusers and emphasizers. In section 3, we discuss the two basic types of quantifiers, absolute and relative and the conceptual mechanisms involved in them. In section 4, we propose our typology of the main types of quantity modifiers. Section 5 is dedicated to our pilot studies of (*a*) *few* and *all*. We report on the qualitative and quantitative results of the two case studies with a view to assessing our model of quantity modification. In section 6, we summarize the most important findings of the study.

2. Quality modification of adjectives

Bolinger (1967, 1972), Paradis (1997, 2000, 2001) and Kennedy & McNally (2005: 358) have all pointed out that the feature of boundedness is not restricted to adjectives alone. As Paradis (2001: 49) put it, "boundedness is a highly schematic domain which configures a wide range of different content domains". In adjectives, boundedness is associated with gradability, in nouns with countability and in verbs with *Aktionsart* (Paradis 2001: 47). Intriguingly, Paradis does not relate boundedness to quantifiers. This is precisely what we do by arguing that the distinction between bounded and unbounded adjectives is conceptually analogous to that between relative and absolute quantifiers. In this section, we discuss how boundedness configures the semantic domain of adjectives, their gradability (2.1) and the different classes of quality modification (2.2). In section 3, we will show how boundedness motivates the distinction between the two main types of quantifiers and the correlating classes of quantity modification.

2.1 Boundedness and gradability

According to Paradis (2001: 52), bounded adjective meanings construe properties as involving a boundary, either an extreme point or a limit. These properties either apply or do not apply and they do not involve any form of scalarity, e.g. *dead, full.* By contrast, the properties construed by unbounded adjectives invoke ranges on a scale, which does not involve a boundary, e.g. *long, old.*

Importantly, as noted by Bolinger (1967: 4), Paradis (2001: 48) and Kennedy & McNally (2005: 348), boundedness and unboundedness are not fixed, inherent properties of adjectives, but are typically

dependent on contextual construal. For instance, being 'married' is a state that either applies or does not apply, but it can be coerced into a gradable notion, as in the following pick-up line to a married woman, which measures her married status as occupying a very small range on the scale.

(3) He grinned. 'You are not *very married*.' 'Mr Mahoney, for all you know about me, I am very married indeed. And you're a very charming pilot who has a girl in every airport. ...' (WB).

Thus, when we talk about bounded and unbounded adjectives, this is really shorthand for 'adjectives used with bounded or unbounded meanings'.

2.2. Degree modification of adjectives designating bounded vs. unbounded qualities

Bolinger (1967), Paradis (1997, 2000, 2001, 2008) and Kennedy & McNally (2005) have all pointed out that the unbounded-bounded distinction motivates the different types of degree modification of adjectives. There are underlying similarities in the kind of gradability of the adjective and the grading conveyed by the corresponding degree modifiers: "there has to be a harmonious relationship between the adjective and its modifier" (Paradis 2001: 51). The modification of unbounded qualities involves *measuring* the actual degree of a quality, which is higher or lower than some reference point, on a scale with some form of assumed measure units. This is why unbounded adjectives take **scalar** modifiers (e.g. *very pretty*). The modification of bounded qualities on the other hand involves *comparing* the actual degree to a boundary, either approximating or reaching it. That is, bounded adjectives take **proportional** modifiers (Kennedy & McNally 2005: 349–353), which can be either **approximating** (e.g. *almost full*) or **totality** modifiers (e.g. completely *full*). These basic types of quality modification are illustrated by the examples below.

(4) a. He is *very tall*.
(4) b. *He is *very dead*.

(5) a. The glass is *half full*.
(5) b *The ruler is *half long*.

(6) a. The glass is *completely full*.
(6) b *The ruler is *completely long*.

In (4a), *very* combines naturally with the unbounded adjective *tall*. By contrast, in (4b) the bounded adjective *dead* in combination with *very* sounds incongruent and requires special contextualization to be acceptable. Similarly, the proportional approximating modifier *half* in (5a) and the totality modifier *completely* in (6a) combine naturally with the bounded adjective *full*, but they cannot be combined with the scalar adjective *long*.

Having proposed scalar versus proportional modifiers as the primary distinction, we have to clarify our position with regard to Quirk et al.'s (1985: 445) well-known distinction between amplifiers and downtoners. They typify amplifiers as having a positive orientation and a general heightening effect, e.g. (7), while downtoners are characterized by a negative orientation and a general lowering effect, e.g. (8).

(7) *awfully sorry, entirely free* (Quirk et al. 1985: 445)

(8) *fairly small, nearly dark* (Quirk et al. 1985: 445)

It can immediately be noted here that Quirk et al. (1985) subsume under their 'amplifiers' both scalar (*awfully*) and totality (*entirely*) modifiers. Likewise, under 'downtoners' they include both scalar (*fairly*) and proportional modifiers (*nearly*).[2] Against this, we hold on to the primacy of the distinction between scalar and proportional modifiers, which correlates with unbounded versus bounded adjectives. We view the distinction between positive and negative orientation as secondary. In our view, it is manifested clearly only by scalar modifiers, which can either **upscale**, e.g. *very red*, or **downscale** an unbounded quality, e.g. *fairly red*. With non-scalar, proportional modifiers, what Quirk et al. view as amplifying versus downtoning corresponds to our totality (*entirely free*) versus approximating (*nearly dark*) proportional modifiers.

2.3 Further subtypes of quality modification

The types of degree modifiers described in section 2.2 are defined strictly by their co-occurrence with bounded and unbounded adjectives. There are also other modifier types of adjectives, which tend to be less tied to the bounded-unbounded distinction. To classify these, we refer to Quirk et al.'s (1985) well-known typology of quality modifiers, which, however, we modify on a number of points.

Firstly, Quirk et al. (1985: 446) discuss under their category of 'downtoners' also modifiers such as *rather*, noting that they can be used with both favourable and unfavourable import, which they link largely to the context. Quirk et al. do not treat these modifiers as a distinct class in their discussion of

[2] Quirk et al. (1985) do not bring the bounded or unbounded nature of the modified element to bear on the modifiers.

adjectives, but for further subclassification they refer the reader to their typology of subjuncts (1985: 583f.), which they illustrate mainly with the modification of verbs, participles, etc. It is there that they introduce the subclass of 'compromisers'[3] for adverbials such as *rather*, *more or less*, etc. as in (9).

(9) He must have been *rather in a difficulty*. (Quirk et al. 1985: 602)

We will use the category of **compromisers** to designate modifiers of both unbounded and bounded adjectives. With unbounded adjectives, compromisers tend to be vague about the question whether there is moderate down- or upscaling of the quality being modified. If mild downscaling, as in (10), or upscaling, as in (11), appear to be present with certain examples, these are mainly due to context and rhetorical effects such as using understatement to convey upscaling, as in (11).

(10) Roth is the perfect panto villain and turns a pretty average movie into a *rather good* one. RATING 3 (WB)

(11) Fergie, who has dieted to 9 1/2st with the help of Weight Watchers, cheekily replied: 'I must say I did look rather good.' (WB)

With bounded adjectives, compromisers hedge on the question whether or not the boundary is reached, as in (12).

(12) Only three matches were lost to the weather and despite torrential rain, a *more or less full* card was achieved, much to the relief of fixtures organisers. (WB)

Secondly, Quirk et al. (1985: 445–452) distinguish intensifiers from emphasizers. Whereas intensifiers modify the degree of the quality designated by the adjective (1985: 445), as in examples (4–6) above, emphasizers add to the force of the adjective (1985: 447), as in (13), where *really*, does not increase the degree of 'illness', but simply emphasizes that the property applies. They can be used with both unbounded (13) and bounded adjectives (14). **Emphasizers** are the first extra class of adjectival modifiers that we add to our typology.

(13) A trial scheme is being brought in to stop skivers taking time off with invented colds and flu – but it will also hit workers who are *really ill*. (WB)

[3] Compromisers are also ranged under the superordinate type of 'downtoners' in the section on subjuncts. Again, we differ with Quirk et al. (1985: 590, 598) on this point.

(14) This place is empty. I mean *really empty*, not just gone away on holiday empty. (WB)

Finally, under subjuncts, Quirk et al. (1985: 604–607) discuss focusing subjuncts, which they divide into well-known subclasses such as 'exclusive' (e.g. *only*, *merely*, *just*) and 'inclusive' (e.g. *even*) focusers (König 1991, Nevalainen 1991). We add **focusers** as a final category to our typology of adjectival modifiers. Like emphasizers, focusers do not change the degree of unbounded adjectives (15), and they can also be used with bounded adjectives (16). But whereas emphasizers stress that the quality applies, focusers situate the focus value *vis-à-vis* alternative values.

(15) But they [lamas] do have a serene, *even* regal air that makes them very relaxing to be around (WB)

(16) Ahem appeared edgy. It was widely assumed that he was *merely* nervous (WB)

Inclusive focus, prototypically realized by *even*, evokes a focus value which is located at the extreme end of a scale and which evokes alternative values on that scale. The scale invoked may be of all sorts of types (Eckardt 2012: 302): evaluative, modal, or mirative (De Lancey 2001), i.e. assessing degrees of surprise. In other words, the value focused on is further removed in quality from the alternative values, or less likely or more surprising than them. In (15), for instance, to attribute a 'regal' air to lamas is more surprising than to ascribe them a 'serene' air. With exclusive focus, prototypically realized by *only*, one focus value is highlighted and all other alternatives are excluded as possible values. (16) illustrates an exclusive use, which focuses on *nervous*, against all other possible alternatives.

We conclude this section on quality modification with Figure 1, which summarizes the main types of modifiers of adjectives we distinguish in their hook-up with unbounded versus bounded adjectives.

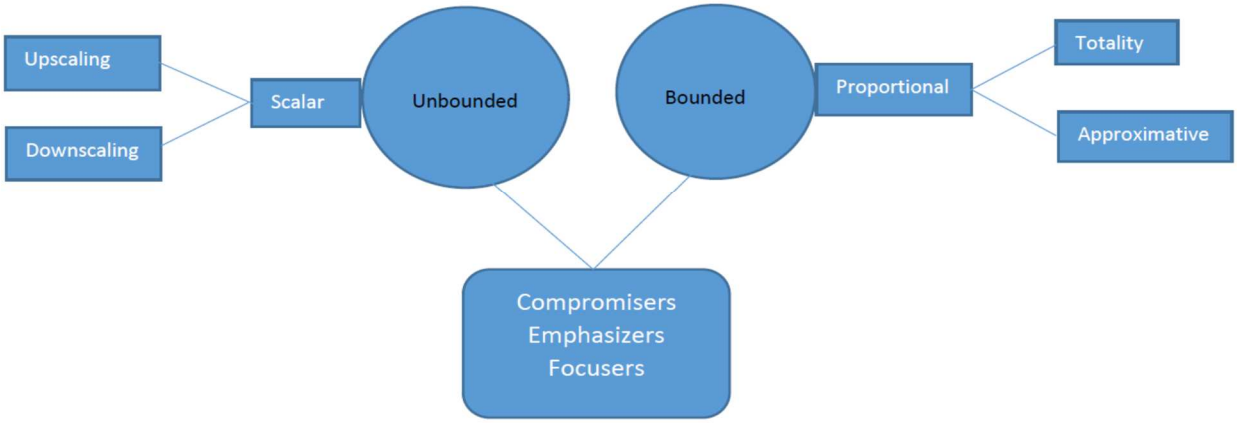

Figure 1: Main types of quality modifiers.

3. Quantification

In section 2 we noted that the main theorists of (un)boundedness identified its manifestation in adjectives (gradable–non-gradable), nouns (count–mass) and verbs (different types of *Aktionsart*). The one instantiation of (un)boundedness they did not touch on is that found with quantifiers (absolute–relative), which, we claim, is conceptually similar to the contrast between unbounded and bounded adjectives. The central thesis of this article is that the degree modification of adjectives and the quantity modification of quantifiers involve a number of analogous mechanisms. It is for this reason that we hold that the main subtypes of degree modification can be re-conceptualized into subtypes of quantity modification. From this perspective, we will, in this section, home in on the distinction between absolute and relative quantification in general (sections 3.1 and 3.2) and on the instances of each type studied in this article, (*a*) *few* and *all* (sections 3.3 and 3.4) The approach we take to absolute and relative quantification is that developed within the cognitive-functional framework by Langacker (1991, 2016; see also Davidse 1999, 2004), but it also incorporates compatible[4] descriptive insights from the formal tradition by authors such as Milsark (1977) and Nouwen (2010). It is important to note that, just as with bounded vs. unbounded adjective uses, we are really looking at absolute vs. relative *uses* of quantifiers. Quantifiers whose erstwhile meaning is absolute can almost all receive a relative construal in specific contexts (for further discussion, see sections 3.2 and 3.4).[5]

3.1 Absolute quantifiers

According to Langacker (1991: 86), absolute quantifiers specify the 'cardinality' or "size" of some instantiation t_i of a type T, by offering "a direct description of magnitude" (Langacker 1991: 82–83), for instance *three*/*one hundred and one*/*numerous*/etc. *mice*. In order to do this, absolute quantifiers invoke a scale of magnitude which may be discrete, as it is with cardinal numbers, or continuous, as with schematic quantifiers such as *few* and *many*. Figure 2 represents the direct measuring of instances t_i of a type T as 'three' according to the cardinality scale.

[4] Langacker (1991: Ch. 1) refers to McCawley (1981) when he sets out the distinction between absolute and relative quantifiers. Davidse (1999, 2004) has pointed out the descriptive convergence between Milsark's (1977) weak and strong quantifiers and Langacker's absolute and relative quantifiers.

[5] Likewise, some quantifiers whose most common use is relative, like *most*, may receive an absolute reading in certain contexts, such as when *most* functions as the superlative of absolute *many*.

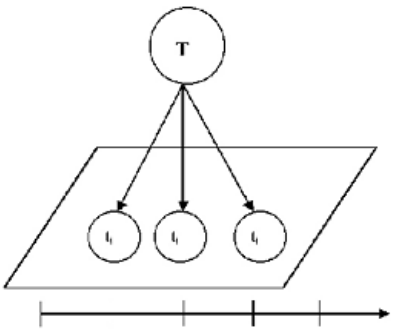

Figure 2: Absolute quantification (based on Langacker 1991: 76, 85).

Langacker (2016) offers a more fine-grained and further articulated analysis of absolute quantifiers in terms of four parameters. These are: (i) the **measurement scale**, which can be either **quantized** or **continuous**, (ii) the **measured mass**, which is plural or continuous, (iii) the **point of reference**, which is either the scale's **origin** or a **norm** on the scale, and (iv) the **scalar assessment**, which can be either **positive** or **negative**. Langacker visualizes these parameters with the representations in Figure 3 below. In what follows we discuss these four parameters, each of which divides absolute quantifiers into different binary groups.

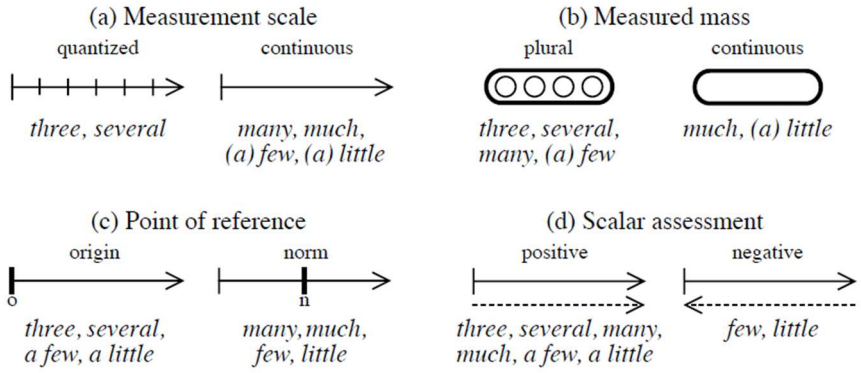

Figure 3: Parameters involved in absolute quantification (Langacker 2016: 9).

Parameter (a), **scale of measurement**, is foundational to absolute quantifiers. Langacker (2016: 9) distinguishes two basic scales: a quantized one with discrete values (symbolized by vertical marks on the scale), which underlies cardinal numbers, e.g. *three*, and non-specific quantifiers such as *several*, and a continuous scale (symbolized by an even arrow), which underlies non-specific quantifiers such as *many*, *much*, (*a*) *few* and (*a*) *little*. A crucial difference between these two is revealed by the fact that the quantity designated by the former cannot undergo scalar modification, **very three*, **very several*, whereas the quantities designated by the latter can: *very many*/*much*/*few*/*little*, *a good few*, etc. This

suggests that the continuous quantity scale incorporates a scalarity similar to the quality scale inherent in unbounded adjectives. It is precisely because of the scalar nature of their semantics that quantifiers such as *many*, *much*, (*a*) *few* and (*a*) *little* are similar to unbounded, or 'scalar', adjectives. In our view, just as unbounded adjectives like *red* or *tall* designate ranges on a qualitative scale, absolute quantifiers measured along a continuous scale designate ranges on that scale.

Quantifiers measuring against a countized scale can only measure the designata of count nouns. That is, they typically measure the designata of plural count nouns, i.e. heterogeneous masses consisting of replicated discrete entities such as *pebbles* (Langacker 1991: 78), with *one* discrete entity constituting the smallest positive number on the scale. They either 'count' the discrete entities precisely in terms of the cardinality scale, e.g. *three pebbles*, or they quantize against a scale with more aproximative values, e.g. *several pebbles*. In both cases, they put a value on a number of discrete entities. Quantifiers measuring against a continuous scale can only measure plural count and mass nouns. They thus quantize either internally homogeneous masses (designated by mass nouns) (Langacker 1991: 28), e.g. *much*/*little gravel*, or internally heterogeneous masses conceptualized as discrete entities (designated by plural count nouns), e.g. *many*/*few pebbles*. In other words, continuous quantifiers can only measure masses – be they replicate or homogeneous masses – not a single discrete entity.

This takes us to parameter (b), type of **measured mass**, from which singular count nouns are excluded. This parameter distinguishes between (absolutely) measuring heterogeneous masses designated by plural count nouns, *three*, *several*, *many*, (*a*) *few pebbles*, and homogeneous masses designated by mass nouns, e.g. *much*, (*a*) *little gravel*. The circles in the visualization represent the (replicated) discrete entities, whereas their absence represents the 'continuous' homogeneity of the substances designated by mass nouns.

Parameter (c) distinguishes the different **points of reference** that the semantics of absolute quantifiers can take. On the one hand, there is the group that takes the 'origin' of the scale as reference point (symbolized by the vertical line marked as 'o' at the left end of the scale). At its other end, the measurement scale of absolute quantifiers is inherently open, or 'unbounded'. This open-endedness refers us again to the similarity between absolute quantifiers and unbounded adjectives, which imply an open scale (Kennedy & McNally 2005). The cardinality scale, which starts from zero, is prototypical here, but the scales underlying schematic quantifiers like *several*, *a few* and *a little* also take the origin of the scale, or 'zero', as their point of reference. The other group takes a 'norm' on the scale as reference point (symbolized by a vertical line marked as 'n' on the scale). This is what schematic quantifiers like *many*, *much*, *few*, *little* do. They resemble the semantic structure of unbounded adjectives like *tall* and *short*, which also take a norm on the qualitative scale as their reference point (see Tribushinina 2008, 2010).

The final parameter is the orientation of **scalar assessment** (d), which can be either positive or negative. All the absolute quantifiers that take the origin of the scale as point of reference intrinsically have a positive orientation of assessment, e.g. *three*, *several*, *a few* and *a little*. In addition, quantifiers that go 'up' from an assumed norm on the scale such as *many* and *much* have a positive orientation. It is only those quantifiers whose assessment goes 'down' from a norm on the scale such as *few* and *little*, that have a negative orientation of scalar assessment. The opposing orientations are indicated by the dotted arrows under the measurement scales themselves.

Let us now apply these parameters to the main subtypes of absolute quantifiers, where cardinal numbers form a primary subtype opposed to absolute quantifiers with schematic meaning such as *several, many, much,* (*a*) *few,* (*a*) *little*. Cardinal numbers have a quantized measurement scale, with discrete and normative values. Each value or measurement occupies a single, discrete point on the scale (parameter a). Cardinal numbers do not overlap but each occupies a specific position along the scale. In contrast with the schematic quantifiers, which express an assessment dependent on context, the quantity specified by cardinal numbers is independent of the context. What is measured can be designated by either a singular or a plural count noun (parameter b). The point of reference for cardinal numbers is the origin, zero (parameter c). The scalar assessment is entailed to be negative if the quantity described coincides with the origin (that is zero). Any quantity above zero, whether singular (1), or plural (from 2 upwards) entails a positive scalar assessment (parameter d).

All schematic quantifiers, e.g. *several*, (*a*) *few*, *numerous* and *many*, invoke a schematic and non-normative scale.[6] This entails that they are all vague and imprecise in some way[7] – the point on which we concentrate in this paragraph. With quantifiers such as *several* and *various*,[8] the scale is quantized with discrete points, but they are not normative. With quantifiers such as (*a*) *few*, *numerous* and *many*, the scale is continuous with overlapping values (parameter a). Their point of reference can be either the origin or a norm on the scale (parameter c), and the scalar assessment can be either positive or negative (parameter d). Parameters a, b and c are generally not distinguished, leading people to try and relate schematic absolute quantifiers to each other into a general schematic scale such as *no*, *few*/*little, a few*/*a little, many*/*much*[9] (cf. Huddleston & Pullum 2002: 392). However, the multiple conceptual parameters that Langacker posits for the different meanings of schematic absolute quantifiers

[6] Schematic quantifiers always measure a mass, designated either by a plural count noun or a mass noun (parameter b).
[7] Except for *no*, which indicates that no instantiation of the relevant type could be measured.
[8] The quantifier uses of *several* and *various* derived via grammaticalization from the lexical adjective uses (see Breban 2014).
[9] Huddleston & Pullum (2002: 392) tentatively try to establish relations between the schematic quantifiers, arguably hinting at the finer contrasts Langacker (2016) brings out: "Some speakers feel that the upper bound can be somewhat greater with *several*, but that is difficult to establish. *A few* contrasts with *many* more directly than does *several* (though not so directly as does *few*)".

tally well with Nouwen's (2010) observations about the vagueness and context dependence of schematic quantifiers, which caution against correlating them too straightforwardly with the scale of cardinal numbers. Nouwen stresses that quantifiers "do not stand proxy for amounts, quantities or frequencies", but rather "express *perspectives on quantities"* (Nouwen 2010: 1). He suggests that because of their vagueness, schematic quantifiers cannot be ordered and that it is impossible, for example, to establish whether *many* is less or more than *several*, or whether *several* is less or more than *a few*. According to Nouwen (2010: 5), quantifiers such as *few* and *many* do not stand for a precise amount, nor for a proportion or percentage (with for example *few* implying 2/10 and *many* 7/10). They are inherently vague[10] and can only be understood by making an epistemic evaluation of the utterance in the context in which it is uttered. Moreover, the notion of a norm serving as a reference point for quantification[11] is a very complex one, as it is usually very context dependent. The norm, or normative situation, involved in schematic quantifiers should be understood broadly as including notions like *expected situation* and *desired situation*, as illustrated by (17).

(17a) Many people saw through my disguise, i.e. *more than I expected.* (Nouwen 2010: 5)

(17b) There are many people in this queue, i.e. *more than I want there to be.* (Nouwen 2010: 5)

3.2 Relative Quantifiers

Relative quantifiers **"**make a quantitative assessment relative to a reference mass" (Langacker 1991: 83; cf. Milsark 1977: 23), profiling the actually predicated mass as a proportion (part or all) of the reference mass. In the default case, the reference mass consists of the "maximal instantiation of the pertinent category" (Langacker 1991: 110), as in (18), where *most parents* invokes the whole extension of the category as reference mass. The reference mass may also be a "contextually determined" (ibid.) portion of the whole category, as in (19), where the reference mass is formed by all the parents who have children at the school in question.

(18) *Most parents* support their children.

(19) *Most parents* were present at the Parent-and-Teacher meeting.

[10] These properties of schematic quantifiers allow them to be used with various rhetorical functions (Nouwen 2010: 5).

[11] In the Langackerian approach, the norm invoked as reference point by absolute schematic quantifiers such as *many*/*much* and *few*/*little* should not be confused with the notion of 'reference mass'. The notion of reference mass is specific to the semantics of relative quantitifiers such as *all* and *most*, which compare the predicated mass to the reference mass (Langacker 1991) (See section 3.2).

Langacker (2016: 6) refers to these two different types of reference mass as the maximal extension (ME), as in (18), and the contextually relevant extension (RE), as in (19), respectively. As the reference mass contains the maximal, or a contextually limited, instantiation of the type T designated by the nominal head, it is abbreviated as R_T (Langacker 1991: 108). It can be said that the reference mass R_T contains all the instances of the type specification T that are invoked in the **current discourse context**. The predicated mass P either consists of a portion of the reference mass, *most parents* as in (18–19), or it fully coincides with the reference mass, *all parents* in (20), or it does not contain any instances of R_T, as with *no parents* in (21).

(20) *All parents* should be special, but some fail, some abuse, some don't have the ability. (WB)

(21) *No parents* could have raised these children successfully without the aid of professionals. (WB)

Figure 4 represents the mechanisms in relative quantification, whereby the instances t_i of a type T in the predicated mass P are compared with those in the reference mass R_T.

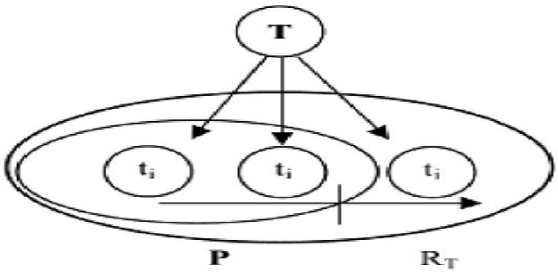

Figure 4: Relative quantification (Langacker 1991: 76, 108).

A crucial point made first, to our knowledge, by Milsark (1977) is that there is systematic absolute/relative polysemy with *no*, *any*, *some*, *many*/*much*, *few*/*little*, etc., and cardinal numbers. Milsark (1977: 18–19) illustrates the general mechanism of polysemy with the ambiguous example (22).

(22) *Some*/*SOME businessmen* walked in. (Milsark 1977: 18)

On its absolute reading, *some* is typically unstressed and just conveys that a quantity of salesmen walked in. On its relative reading, *some* is always stressed (*SOME*) and conveys that a subset of a larger group of salesmen walked in, implying that some other group remained outside. The stress on *some* conveys

the contrast between the set that walked in and the set that remained outside. The two subsets together form the reference mass of all the contextually relevant instances of businessmen in the current discourse context. Therefore, stressed *some* in (22) acquires a relative reading. According to Milsark (1977: 18), it should always be possible to substitute NPs with relative quantifiers by a more explicit alternate with *of the*, e.g. *some of the businessmen* for (22), in which *of* marks the relation to the contextually identifiable reference set from which 'some salesmen' are selected.

However, caveats are due for both recognition criteria. As pointed out by Milsark (1977: 18) himself, absolute quantifiers can be stressed too, if used contrastively, as in (23).

(23) There were *SOME students* in my class.

Some contrasts here with other absolute quantities: 'some but not many' or 'some but not none'. We would like to point out that the structure quantifier + *of* + definite nominal does not always code a NP with relative quantification either. This can be illustrated by the example with *few of* + nominal in (24).

(24) he used the opportunity to evaluate the blacks present and was a little disappointed: there were *few of them* (WB)

The context makes clear that *few* of them quantifies the entire set of blacks present. What this sentence means is that the blacks present were *few*, or in other words, that there were *few* blacks present. The quantifier *few* here directly measures the set of instances of the *type* 'blacks' and is therefore absolute. *Of them* means 'of the type' in question, it does not express a relative, or 'partitive', meaning to a reference mass.

On the basis of contextual semantic analysis, supported by nuanced use of the recognition criteria of stress and the *of to*-alternate, Brems & Davidse (2003) investigated corpus data with quantifiers from the three sets claimed to be polysemous by Milsark. They found that all three subclasses do manifest absolute and relative uses, but not in equal proportions. With *some*, *any*, and *no*, relative uses were more frequent, showing that these quantifiers are typically used relatively. With schematic quantifiers such as *many* and (*a*) *few* and cardinal numbers, by contrast, the absolute uses were the most frequent and clearly constituted the unmarked uses. Examples (25) and (26) illustrate the – more marked – relative uses of cardinal numbers and schematic quantifiers.

(25) What of the quality of these studies? *Ten* are unpublished doctoral dissertations, *two* are masters' theses, and the rest are published primarily in parapsychology journals. (WB)

(26) Though *many of* Haig's suggestions were relevant, many others were wide off the mark. (WB)

In (25), *ten* and *two* are clearly stressed, expressing the contrast between the complementary sets 'ten', 'two' and 'the rest'. They also allow the alternates *ten*/*two of the studies*, which make explicit the subset relation to the reference mass of all the studies being considered in the context. Similarly, *many* in (26) is stressed and contrasts with *many others*, while *of Haig's suggestions* expresses the reference mass from which both these sets are drawn.

3.3. (*A*) *few*

The first case study in this article deals with the quantity modification of (*a*) *few* (see section 5.1). As noted in section 3.2, the unmarked uses of (*a*) *few* are the absolute quantifier uses. In accordance with the parameters and visual conventions discussed in section 3.1, Langacker (2016: 10) represents the semantics of the absolute quantifiers uses of *a few* and *few* as in Figures 5a and 5b.

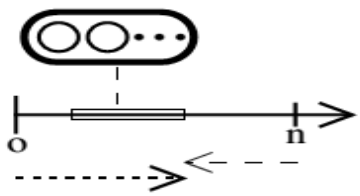

Figure 5a: *a few*.

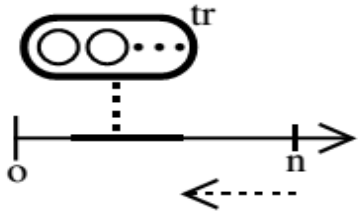

Figure 5b: *few*.

Both quantifiers are used to measure internally heterogeneous masses designated by plural count nouns, but they differ in terms of their point of reference and scalar assessment. According to Langacker (1991: 84) the point of reference for *a few* is zero, and its scalar assessment is positive: *a few* indicates a modest positive departure from the zero point. On the other hand, the point of reference for *few* is a norm on the scale, from which the quantity indicated deviates negatively. As stressed by Nouwen (2010), this norm is context-bound and a matter of the speaker's assessment, and it can receive various contextualizations such as 'below the expected/desired value'. This analysis is illustrated in an interesting way by the two different attested renderings of Matthew 22:14, given as (27)–(28). With both, a contextual contrast is set up with *many* (more than an assumed norm, viewed positively). In more traditional bible translations such as (27), *few* measures in a negative direction away from the assumed norm (presumably of human expectations), whereas in more modern translations like (28), *a few* may be found, which measures positively from zero.

(27) For many are called, but *few* chosen. (English Standard Version)

(28) Yes, many people are invited, but only *a few* are chosen. (New Century Version)

As noted in section 3.2, quantifiers whose primary meaning is absolute can also be construed relatively. We argued that the criteria and tests posited by Milsark (1977) to recognize instances of (marked) relative construals of (*a*) *few* are necessary but not sufficient conditions: (i) stress on *FEW*, (ii) possible alternation with the form (*a*) *few of*. Besides these, close semantic-pragmatic inspection of the contexts is required to establish whether or not we are dealing with a relative reading. We can illustrate this with examples (29) and (30).

(29) these aren't our regulars. *A few of them* are; but most of them came on the first two tours (WB)

(30) If *only a few*, but not all ten candidate countries, are ready by December, we shall complete the negotiations in Copenhagen with those who are ready ... (WB)

In (29), the form *a few of them* is used, and a reading with stress on *FEW* is plausible. Further inspection of the context shows that this stress is motivated by contrast with *most of them* in the following part of the sentence. A *few of them* and *most of them* designate two subsets of the reference mass *our regulars* mentioned in the previous sentence, and anaphorically referred to by *them*. We are, therefore, dealing with a relative use of *a few*, in which the predicated mass measured by *a few* is compared to the reference mass designated by the pronoun *them*. In (30), *a few* is used in an elliptical NP, which on the model of the following NP *all ten candidate countries*, we can fill out as *only a few candidate countries.* It is possible to use the analytical alternate in this context, and *few* is naturally stressed when read aloud: *if only a FEW, but not all, <u>of the</u> ten candidate countries are ready*. Moreover, the context supports a relative reading: the reference mass is formed by *the ten candidate countries*, and *a few* selects one possible subset from it.

In section 3.2, we also argued, against Milsark (1977), that lexically absolute quantifiers do not *necessarily* acquire a relative reading when stressed or followed by *of* + NP. We discussed example (24), reproduced here as (31), as an example of a NP with *few of*, which nevertheless has an absolute reading. *Few* is a direct measure – involving no comparison to a reference mass – of the blacks present. *Of them* does not designate a reference mass. Rather, it means 'few of the type 'blacks''. As we have *few* without *a* here, the measuring is 'down' from the norm formed by subject *he*'s earlier expectations. Example (32) illustrates an absolute use expressed by *a few of them*, with measures 'up' from zero. Again, *of them* does not designate a relation to a reference mass. Rather, it designates the relation to the type specifications provided in the preceding text, i.e. 'books on a subject that is only of passing interest for most people'. *A fair few of them* can be paraphrased in this context by 'a fair few such books'.

(31) he used the opportunity to evaluate the blacks present and was a little disappointed: there were *few of them* (WB)

(32) At least half a dozen worthwhile titles appear each year, a surprising number for a subject that is only of passing interest for most of us. Such books have a limited sale (reader, I speak as one who knows, having written *a fair few of them*). (WB)

3.4. All

The second case study in this article deals with the quantity modification of *all*, which is always a relative quantifier (see section 5.1). In the formal-semantic tradition, *all* is referred to as a universal relative quantifier, which quantifies over the whole reference mass or set. Using Cognitive Grammar conventions and concepts, Langacker (2016: 7) represents in Figure 6 the semantic import of *all*, as used in an example like (20), reproduced here as (33), which makes a statement about 'parents' in general.

(33) *All parents* should be special but some fail, some abuse, some don't have the ability. (WB)

The inner circle represents the actually predicated mass and the equal sign indicates that the predicated mass coincides with the maximal extension (ME) of the reference mass represented by the outer circle. Langacker (2016: 7) emphasizes that although both masses coincide, each of them remains functionally distinct.

Figure 6: *all* (Langacker 2016: 7).

As noted in section 3.3, the reference mass can also be only a contextually relevant extension (RE), as in (34), where the reference set is formed only by the jokes sent in as a reaction to the speaker's invitation.

(34) I invited readers to send in their favourite German jokes. Nearly a thousand, including at least 100 Germans, did. *Almost all the jokes* were puns. (WB)

4. Subtypes of quantity modification

As indicated in the Introduction, our central hypothesis is that the modification of quantifiers can be approached via its conceptual analogy with the degree modification of adjectives.

In section 2.1, we reviewed the established idea that the distinction between unbounded and bounded adjectives determines the different types of modifiers they take. *Unbounded* adjectives are inherently conceptualized as degrees: they designate qualities such as *long* or *short*, which can only be conceptualized as ranges on a qualitative scale. *Bounded* adjectives, by contrast, designate properties that either apply or do not apply such as *dead* or *alive*, *empty* or *full*; that is, the property has to reach a boundary, or comply with a standard, to be present at all (Bolinger 1967, 1972; Paradis 1997, 2000, 2001, 2008). This determines the degree modifiers that can be used with them. Unbounded adjectives take scalar modifiers, which change the designated degree, as in *very long* and *rather short*. Scalar modifiers activate a range going up or down from an assumed norm on a *scale defined by measuring units*, not by maximum or minimum values (Kennedy & McNally 2005: 349). Bounded adjectives take proportional modifiers which compare the actually attested property to a boundary as either approximating or reaching it. As upper or lower boundaries may be involved, they "calculate differences relative to minimum and maximum values on the scale" (Kennedy & McNally 2005: 353). Totality modifiers indicate that the boundary is completely reached, as in *completely full*. Approximating modifiers indicate how far the property is removed from the boundary, as in *almost empty* (Kennedy & McNally 2005: 353)

Just as there are two basic types of adjectives, unbounded or bounded ones, quantifiers can be described in terms of two basic types, viz. absolute and relative quantifiers, which we discussed in section 3. *Absolute* quantifiers measure the size of some set or mass by offering a direct description of its magnitude. This direct measurement refers to an implied scale, either a quantized scale with measure units, e.g. *three*, *several*, or a continuous scale with overlapping values, e.g. (*a*) *few*/*many*. Absolute quantifiers indicate a range on this scale. *Relative* quantifiers, on the other hand, make a quantitative assessment relative to a reference mass or reference set (Milsark 1977: 23; Langacker 1991: 108). They *compare* the mass they actually designate to a reference mass, indicating whether the predicated mass coincides with, is a part of, or has no overlap at all with the reference mass, e.g. *all*/*most*/*no parents*.

As pointed out in Ghesquière & Davidse (2011: 256), absolute and relative quantifiers are conceptually similar to unbounded and bounded adjectives. Unbounded adjectival meanings are similar to absolute quantifiers in that they imply an open scale without an upper boundary. For instance, *long* designates an intrinsically scalar quality, a degree of 'longness'. Likewise, the meaning of an absolute quantifier like *many* designates a range on a scale without an upper boundary (Langacker 2016: 9). Bounded adjectives are similar to relative quantifiers to the extent that they imply an upper boundary (Kennedy & McNally 2005). For instance, the property 'full' is defined relative to an upper boundary.

Similarly, the meaning of the relative quantifier *all* is defined relative to a maximal extension (Langacker 2016: 6).

The hypothesis central to this article is that given the conceptual similarity between bounded and unbounded adjectives and absolute and relative quantifiers, the mechanisms of degree modification and quantity modification are also analogous. In this section, we set out to show that the typology of quality modifiers proposed in section 2 (see Figure 1) does indeed manifest a striking analogy with the typology of quantity modifiers. We will cover the main modifier types of absolute quantifiers in section 4.1 and of relative quantifiers in 4.2. Examples cited will be mainly from the datasets analysed for the case studies on (*a*) *few* and *all*, but will go beyond these if a type was not attested in these specific datasets.

4.1. Submodifiers of absolute quantifiers

4.1.1. Scalar submodifiers

Absolute quantifiers like (*a*) *few* and *many* designate a range on a continuous scale with an origin but without upper boundary. They can take scalar quantity modifiers, as opposed to absolute quantifiers that imply a quantized scale: *very many*, *very few* as opposed to **very three*, **very several*. We argue that these scalar modifiers operate on the 'range' indicated on the continuous scale. They *modify* the quantity indicated, either increasing or upscaling it, e.g. *very many*, or they decrease or downscale it, e.g. *so few*. This upscaling or downscaling effect operates on the positive or negative direction inherent in the scalar assessment. Thus, we predict that due to its inherent positive scalar assessment, positive *a few* will take scalar modifiers which increase the quantity, as in (1a). Conversely, negative *few* will take modifiers that decrease or downscale the quantity, as in (1b).

Just as degree modifiers change the degree of the quality, scalar quantity modifiers change the quantity that is indicated. We will refer to these two types with the same terms used for scalar degree modifiers (see 2.2), viz. upscalers and downscalers, bearing in mind that we are talking here about quantity modification, not degree modification.

(35) I got offered *quite a few* bad guys in American movies (WB)

(36) Then look at the *precious few* victories (WB)

Upscalers increase a positive scalar quantity. They can be expressed by e.g. *quite a few* (37), *a good few* (38). **Downscalers** further diminish a negative scalar quantity. They can be realized by e.g. *too few* (39), *so few* (40), *very few* (41). Particularly with downscalers we find some examples of less delexicalized modifiers like *precious few* (42), *piffling few*. These are collocations in which adjective and

quantifier form an idiomatic combination. Modifiers such as *precious* and *piffling* have the effect of further reducing the negatively assessed small quantity indicated by *few*.

(37) I wrote it myself after reading *quite a few* books on investing and checking websites (WB)

(38) Set a date *a good few* months in advance and give yourself deadlines (WB)

(39) On my long referral list, there are *very few* Elizabeths, *very few* Timothys, several Kyles, lots of Charlenes and Kylies, spelt in many ways (WB)

(40) If the police believe that their existing powers regarding careless driving and failing to maintain proper control of vehicles are adequate, why is it that *so few* drivers are prosecuted for these offenses?(WB)

(41) British trainees are unable to make progress because there are *too few* higher training places (WB)

(42) His place kicking was flawless, but there were *precious few* other virtues in a performance where hesitancy throughout was garlanded only by glaring mistakes. (WB)

Scalar modifiers, subdividing into upscalers and downscalers, are strictly tied to absolute quantifiers. In the next sections of 4.1, we will discuss the other modifier types found with absolute quantifiers, which are also found with relative quantifiers: compromisers (4.1.2), focusers (4.1.3), emphasizers (4.1.4). We will discuss the specific ways in which they interact with absolute quantification

4.1.2. Compromisers

Again parallel with quality modifiers, we find compromisers modifying absolute quantifiers, e.g. *comparatively few*, *relatively few*, *rather few*, *fairly few*, *a fair few*. We also see clear analogy between the semantics-pragmatics of compromisers applying to unbounded qualities and absolute quantities. Used with absolute quantifiers, compromisers are vague about the question whether there is moderate down- or upscaling of the quantity in question. In certain contexts, they may be felt to have a mild downscaling effect, as in (43), ***rather few*** *of them have rich family lives*, or a moderate upscaling one, as in (45), *he made* ***a fair few*** *decisions*. The compromisers clearly do interact with the continuous scalar meaning of the quantifiers. However, the upscaling and downscaling effects are largely due to the context. When we look at examples (44) and (46), we see the extent to which compromisers can hedge quantifiers and their implied evaluations. In (44) ***relatively few*** *symptoms* convey a very nuanced perspective on negatively oriented 'few': hypertension may have relatively few symptoms but the symptoms are there and they are serious. In (46) ***a fair few*** *illustrations* is part of a negative book review:

the quantity of illustrations that is there is assessed as *a fair few*, which suggests both that there are not all that many, but that the illustrations still just fill up the thin volume.

(43) they cannot help but notice that *rather few* of them have rich family lives, that may seem isolated and lonely. (WB)

(44) … high blood pressure or hypertension is sometimes known as the "silent killer" as it produces *relatively few* symptoms but can lead to heart attack or stroke. (WB)

(45) I gained the distinct impression that the referee was guessing when he made *a fair few* of his decisions … (WB)

(46) Yet this thin volume is, at 158 pages with *a fair few* illustrations in between, too long, too laboured and a little too loving. (WB)

4.1.3. Focusers

Focusing modifiers used with absolute quantifiers have the same semantic-pragmatic meaning that all focus markers have. They situate a focus value relative to alternative values, typically by invoking an implied scale. The focus value may be related to the alternative values in an inclusive way ('even') or in an exclusive way ('only') (König 1991, Nevalainen 1991). The specific scale involved in focus relations between absolute quantifiers is of course the quantized or continuous scale of absolute quantifiers. For instance, in (51) *as few as* conveys exclusive focus ('only'), and it positions the focus value *one or two* chloroplasts in algae against the much higher number of chloroplasts (*typically several dozen or more*) in other plants. Exclusive focus markers of absolute quantities put the focus value at the lower end of the quantitative scale relative to alternative values that are higher up the scale. Exclusive focusers of absolute quantifiers may be e.g. *only a few* (47), *a mere few* (48), *barely a few* (49), *a bare few*, *just a few* (50), *as few as* (51). In (52), *even* positions *many* minors relative to Ø ('some') *minors*. The focus value is put higher up the quantative scale, and *even* includes reference to all the values starting from Ø ('some') *minors*.

(47) In the smaller courtrooms the defendant is *only a few* feet from the bench. (WB)

(48) … he abandoned a lectureship in Japan after *a mere few* weeks, simply because he wasn't enjoying himself (WB)

(49) The town, which is *barely a few* miles into Scotland, had to look south when seeking an outlet for football. (WB)

(50) Sadly, my last consultation with him was *just a few* hours before his most untimely death … (WB)

(51) In algae *as few as* one or two large chloroplasts are present per cell, but plant cells typically contain several dozen or more. (WB)

(52) Majors trump minors, *even many* minors. (WB)

Importantly, there is a clear semantic difference between focusers and scalar modifiers. diminishers in that focusers do not actually make the quantity in their scope smaller or larger, while scalar modifiers do (see 4.1.1).

4.1.4. Emphasizers

Finally, absolute quantifiers can – very infrequently – also take emphasizers. Like focusers, they do not actually change the quantity but merely emphasize – or query, as in (53) – that the quantity stated is correct.

(53) "People see my life as a fairy-tale", said Marianne Faithful, plucked at 17 from her convent education to whisper As Tears Go By, sleep with (was it *really three*?) Rolling Stones and end the decade in overdoses and wretchedness. (WB)

4.2. Submodifiers of relative quantifiers

4.2.1. Proportional modifiers

Relative quantifiers *compare* the size of the actually predicated mass to a reference mass, indicating whether or not the two coincide, and if not, to what extent they don't. The analogy between relative quantifiers and bounded adjectives obtains only between relative quantifiers such as *all* and *none* and bounded adjectives. This is because the notion of a boundary functions in a similar way in them. Thus, both positive bounded properties such as 'full' and negative ones such as 'empty' are defined relative to a boundary, which has to be reached for the property to apply. Similarly, the meaning of the relative quantifier *all* can be thought of as reaching complete coincidence with the reference mass, while that of the negative relative quantifier *no* is defined by complete non-coincidence with the reference mass. This schematic similarity in turn motivates the analogy between proportional quality and quality modifiers.

Proportional quantity modifiers focus on the comparison of the predicated mass with the extension of the reference mass. They comment on the coincidence (54), partial coincidence (55) or empty overlap (non-coincidence) with the contextually indicated extension (56). Complete coincidence and empty overlap are both signaled by totality modifiers such as *absolutely*, *completely*. **Totality** modifiers indicate that the quantity designated by a relative quantifier coincides completely with the extension, e.g. *absolutely all* in (54), or differs completely from it, e.g. *absolutely none* in (57). **Approximating** modifiers indicate the extent to which the actually designated mass differs from the

relevant extension. *Practically all* in (55) indicates a slight difference from coincidence, while *almost none* in (56) indicates a slight difference from non-coincidence.

(54) if *absolutely all* other options fail. (WB)

(55) disabled secretaries can do *practically all* office jobs. (WB)

(56) The need for someone like De Niro became more pressing when a survey of American teenage males, the primary audience of The Untouchables, revealed that *almost none* had seen the original series or heard of Eliot Ness, but that all recognised the name of Al Capone. (WB)

(57) The problem here is that government wants to have it both ways – to give universities, which are private bodies, all the burdens of the public sector with *absolutely none* of the advantages. (WB)

Conceptualized in this way, the basic distinction between totality and approximating modifiers can be extended from proportional quality to proportional quantity modifiers.

4.2.2. Compromisers

Just as compromisers of bounded adjectives hedge on the question whether or not the boundary defining the property is reached, compromisers of relative quantifiers hedge on the question whether or not there is full coincidence between the predicated and the reference mass, as in (58).

(58) The Almagest of Ptolemy contained a full complement of tables that allowed the practising astronomer – whose ultimate concern was in all probability astrological – to perform *more or less all* the ordinary calculations needed in his day-to-day work. (WB)

4.2.3. Focusers

Focusers of relative quantifiers situate, like all focus markers, a focus value relative to alternative values. Whether the focus value is an absolute or relative quantifier does not fundamentally impact on semantic-pragmatic discourse schemata such as exclusive or inclusive focus, as illustrated by (59), where *most* (men being unhappy) is situated at the higher end of a general quantity scale, which also includes *many*.

(59) My own theory is that Neil and Mitch were in no way unusual; that they were unhappy in their souls because many men, perhaps *even most*, are unhappy in their souls.

4.2.4. Emphasizers

Exceptionally, relative quantifiers can take emphasizers, which do not change the quantity but merely emphasize that the quantity stated is correct, as in (60).

(60) Discreetly in the corner sat Sister Maria, but I saw her, her eyes bursting with tears. There was *really none of* Bali's family there, only a cousin named Raj who need not have come as he hid himself beneath a bushy beard and kept looking down at his feet. (WB)

Figure 7 summarizes the main types of modifiers of quantifiers we distinguish in their hook-up with absolute versus relative quantifiers. The typology is a perfect mirror of that of modifiers of adjectives (Figure 1), but we should always bear in mind that the modifiers operate on aspects of the semantics of quantifiers, not adjectives, here.

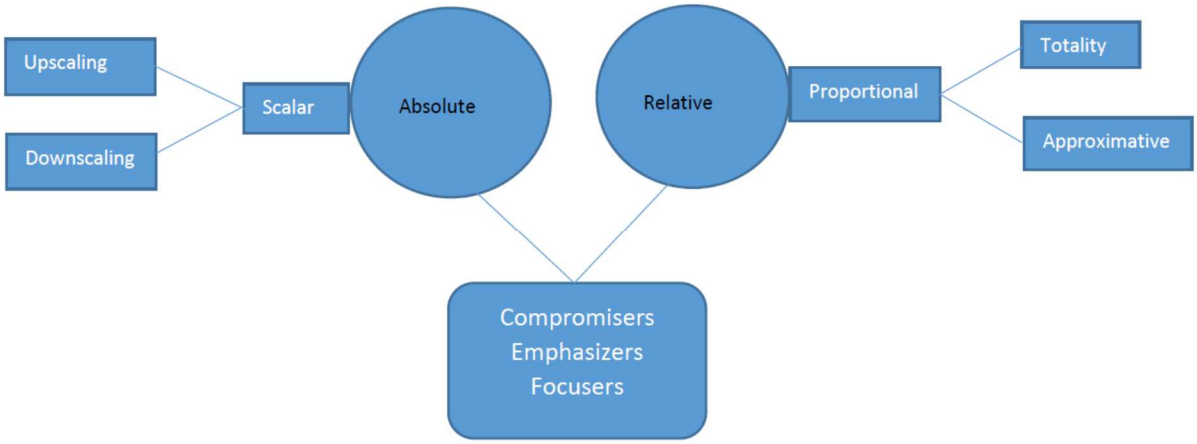

Figure 7: Main types of quantity modifiers.

5. Case studies

In section 4, it was established that the boundedness-motivated extrapolation from quality to quantity modification applies to specific subtypes of quantifiers only. Scalar modifiers are taken by unbounded adjectives and absolute quantifiers with an implied continuous scale. Proportional modifiers are taken by bounded adjectives and relative quantifiers involving complete coincidence or non-coincidence with the reference mass. This is why we chose to carry out pilot studies on the modification of (*a*) *few* and *all*. The case studies aim at offering a first verification of the adequacy of the model of quantity modification proposed in section 4. Does the model allow for exhaustive analysis of all quantity modifiers attested? And are the types of modifiers found with absolute and relative quantifiers distributed as predicted? In this section, we first describe the process of data extraction and data analysis

(section 5.1). We then discuss the qualitative and quantitative results for the corpus studies of (*a*) *few* (section 5.2) and *all* (section 5.3).

5.1. Data and data analysis

The pilot studies were meant as a first trial run for our typology of quantity modifiers. We limited the corpus data to written data because spontaneous speech presents the analyst with such complicating factors as interruptions, online changes, etc., which make qualitative analysis more difficult. A further concern was to arrive at sufficiently representative, yet also homogeneous datasets. The decision was taken to extract data from the UK Times subcorpus of WordbanksOnline, which limits the qualitative and quantitative results to formal written British English, but covers text types from all the different domains ranging from business through fiction to medicine and religion, etc. The time interval covered was from 2001 to 2005.

The first step involved the extraction of data samples of comparable size. For *all*, a random sample of 20.000 hits was extracted from the total 80.020 hits obtained upon querying the quantifier as described above. For (*a*) *few*, an exhaustive extraction of 19.965 was made. All the instances in which the quantifiers received additional modification were then handpicked and subsequently analyzed. Occurrences of *few* were distinguished from those of *a few*. The data was tagged for type of quantifier (absolute or relative), as (*a*) *few* allows a marked relative construal (see sections 3.2 and 3.3). The different lexical items which functioned as quantity modifier were identified. For (*a*) *few,* 10% of the instances (a total of 2.000) received modification. For *all*, by contrast, only 1.1%, 221 modified instances were registered. The different modifying elements were then classified in terms of the categories set out in section 4, on the basis of close semantic-pragmatic analysis of the individual contexts. The qualitative-quantitative findings are reported on below.

5.2. (*A*) *few*

In this pilot study on the modification of (*a*) *few*, we first present the overall quantitative distribution of the different types of quantity modifiers found in the Times extraction. Secondly, we verify whether the different modifier types discriminate between *a few* and *few.* We analyse the semantic-pragmatic implications of the differences in distribution between the modifiers of *a few* and *few* and attempt possible explanations for these differences. Thirdly, we look at the modifier types of the unmarked relative and the marked relative uses of (*a*) *few* and investigate whether or not it correlates with significant differences in the distribution of modifiers. Table 1 represents the overall distribution of quantity modifiers with (*a*) *few.*

	(*a*) *few*	
	n	%
Scalars	922	46
Upscalars	196	9.8
Downscalars	726	36.2
Compromisers	99	5
Focusers	978	49
Total	1999	100

Table 1: Absolute and relative frequencies of modifier types of (*a*) *few*.

The most frequently occurring type is formed by focusers, which account for 49% (978) of the total number of modifiers. They include the following elements in decreasing order of frequency: *only* (539), *just* (436), *a bare* (1), *a mere* (1), *as few as* (1). All these elements convey exclusive ('only') focus. Focusing modifiers are followed closely by scalar modifiers, which chalk up 44.5% (992) of the total. Within this category, downscaling modifiers predominate, representing 36.2% (726) and including: *very* (397), *too* (151), *so* (146), *precious* (31) and *piffling* (1). Upscaling modifiers represent 9.8% (196) and feature *quite* (160) and *a good few* (69). Next come the compromisers with 5% (133), i.e. *relatively* (71), *a fair few* (19), *comparatively* (7), *the relative few* (1), *rather* (1). No emphasizers were attested in our Times dataset. Table 2 visualizes how the distribution of modifiers splits up between *a few* and *few*.

	a few		*Few*	
	n	%	n	%
Upscalars	196	9.8	0	0
Downscalars	0		726	36.4
Compromisers	18	0.8	81	4
Focusers	976	48.9	2	0.1
Total	1190	59.5	809	40.5

Table 2: Absolute and relative frequencies of modifier types of *few* vs. *a few*.

A first observation is that *a few* is more frequently modified than *few*, even though the difference is not enormous, with a 59.5%–40.5% ratio. The modification of *a few* consists primarily of focusers (48.9%), a much smaller proportion of upscaling modifiers (9.8%), and a small fraction of compromisers (0.8%).

The modification of *few* is formed primarily by downscaling modifiers (36.4%) and a much smaller proportion of compromisers (4%). Importantly, upscaling modifiers are found only with *a few* and downscaling modifiers only with *few*. This confirms the prediction that scalar modifiers operate on the intrinsic direction of scalar assessment of the quantifier (see section 3.1): upscaling modifiers increase a positively scalar quantity, while downscaling modifiers diminish a quantity with negative scalarity.

Intriguingly, it can be observed that the quantity modification of *a few* and *few* displays something approximating complementary distribution, with *a few* basically selecting focusing and upscaling modification and *few* downscaling modifiers and compromisers.[12] The semantic-pragmatic interpretation of this distribution yields an interesting picture. *A few*, if modified, typically takes markers of exclusive ('only') focus. While these do not actually decrease the quantity focused on, they can be argued to construe a negative perspective on the focus quantity, putting it on the lower end of the quantity scale in contrast with the higher quantities it is contrasted with, as illustrated in example (30) above, reproduced here as (61). Its less frequent modification type is upscaling, which increases the positive quantity indicated by *a few*, as in (62).

(61) If *only a few*, but not all ten candidate countries, are ready by December, we shall complete the negotiations in Copenhagen with those who are ready ... (WB)

(62) Burnley is a town that few know or visit. The textile industry faded, the nearby coal mines closed, the brightest and the best left. *Quite a few* of the post 1997 political elite have Burnley, or near, roots. (WB)

Conversely, *few* typically takes downscaling modifiers that further diminish its inherent negative directionality, as in (63). In a minority of cases, *few* takes compromisers, which are vague about the question whether there is moderate down- or upscaling of the quantity in question and can hence be taken to slightly mitigate the negative directionality of *few*, as illustrated in (64).

(63) *Too few* judges, advocates and solicitors were handling too many cases without adequate time for preparation. (WB)

(64) We have not been without our critics and the institutions concerned regarded the fact that *relatively few* of their corporate customers switched back as evidence of their deep satisfaction. (WB)

[12] It is not a case of perfect complementary distribution, as *a few* also takes a small proportion (0.8%) of compromisers (*a fair few*) and *few* a tiny fraction (0.1%) of focusers (*as few as*).

Still, when we put together the overall thrust of the modification of *a few* and *few*, it tends towards negativity. While *a few* depicts a positive quantity, it is mainly modified to put the focus quantity on the lower end of the quantity scale, and *few*, which departs negatively from an assumed contextual norm, is mainly further downscaled. This raises the interesting question if quantity modification might manifest a negativity bias similar to that suggested to exist with degree modifiers (Jing-Schmidt 2007). However, addressing this question properly is beyond the scope of this article.

Tables 3 and 4, then, show the frequencies of the absolute uses versus the relative construals of (*a*) *few* overall and *a few* versus *few* in our data. In a few cases (tagged 'ambiguous'), it was impossible to contextually disambiguate the absolute from the relative reading.

	(a) few	
	n	%
Absolute	1900	95
Relative	95	4.8
Ambiguous	4	0.2

Table 3: Absolute and relative frequencies of absolute and relative uses of (*a*) *few*.

	a few		*few*	
	n	%	n	%
Absolute	1140	57	760	38
Relative	48	2.4	47	2.4
Ambiguous	2	0.1	2	0.1
Total	1190	59.5	809	40.5

Table 4: Absolute and relative frequencies of absolute and relative uses of *a few* vs. *few*.

These results confirm that the relative reading is a marked construal of the lexically absolute quantifiers (*a*) *few*. The relative construal does not seem to show a preference for either of the two variants.

Table 5, finally, shows the distribution of the modifier types with the absolute and relative uses of *a few* versus *few*. From these figures transpires that the relative construals follow of *a few* and *few* respectively follow the modification tendencies of the absolute uses. This can probably be explained by the fact that whereas the absolute uses directly measure the quantity, the relative uses compare the measured predicated mass with the reference mass. In other words, the relative construals use the same

measuring mechanisms (continuous scale, point of reference, scalar assessment) as the absolute uses, but to portion off the predicated mass from the reference mass. This is why the modification tendencies of the absolute uses extrapolate to the relative uses.

	Absolute *a few*		Relative *a few*		Ambiguous *a few*		Absolute *few*		Relative *few*		Ambiguous *few*	
Upscalars	177	8.85	19	1	0	0	0	0	0	0	0	0
Downscalars	0	0	0	0	0	0	683	34.15	41	2.1	2	0.1
Compromisers	18	0	0	0.3	0	0	75	3.75	6	0.3	0	0
Focusers	945	47.25	29	1.4	2	0.1	2	0.1	0	0	0	0
Total	1140	57	48	2.4	2	0.1	760	38	47	2.4	2	0.1

Table 5: Absolute and relative frequencies of modifier types with absolute and relative uses of *a few* vs. *few*.

5.2. *All*

As noted in section 5.1, the 20,000 token data sample extracted for *all* from the Times subcorpus of Wordbanks featured only 1.1% (219 tokens) with modification. All the quantity modifiers of *all* are proportional modifiers, and more specifically approximators, lexically diversified as follows: *almost all* 56.6% (124), *nearly all* 23.7% (52), *virtually all* 12.8% (28), *about all* 4.1% (9), *practically all* 2.3% (5), *substantially all* 0.5% (1) (see Figure 8). No examples of totality modifiers, compromisers, focusers or emphasizers occurred in the admittedly fairly small sample of modified examples that was yielded by the original dataset of 20,000 tokens. Still, this suggests that proportional modifiers may be the main type of modification found with relative quantifiers, and that compromisers, focusers and emphasizers may be rather rare with them.

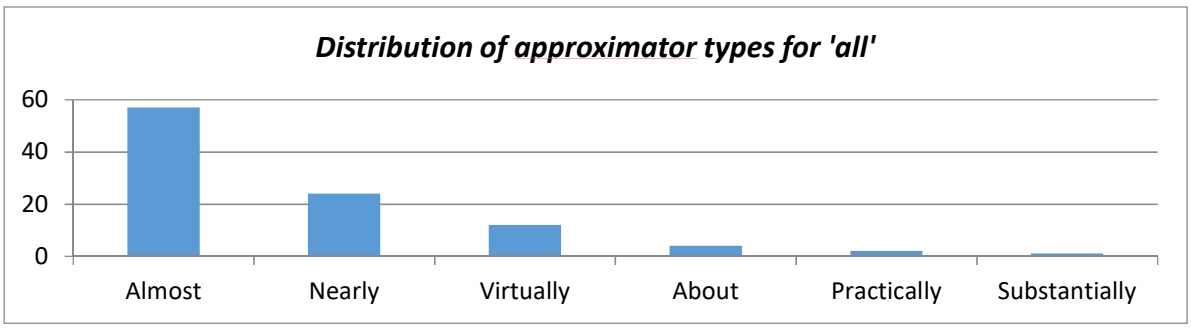

Figure 8: Distribution of approximator types of *all*.

6. Conclusions

In this article we have developed a Cognitive Grammar approach to the main types of quantity modification in English. Our guiding hypothesis was that quantity modification is analogous to quality modification because boundedness configures the semantic domains of both adjectives and quantifiers. With quantifiers, (un)boundedness manifests itself in the distinction between absolute and relative quantifiers.

We first set out our typology of quality modifiers. The distinction between bounded and unbounded adjective uses correlates with that between scalar (up- and downscaling) modifiers and proportional (totality and approximating) modifiers. Adjectives can be further modified by compromisers, focusers and emphasizers, whose general characteristics transcend the bounded-unbounded distinction.

We then developed the analogy between bounded and unbounded adjectives and absolute and relative quantifiers more precisely. The scalar nature of unbounded adjectives is conceptually similar to the continuous scale found with absolute quantifiers such as (*a*) *few* and *many*. And the idea of bounded adjectives reaching an inherent boundary is analogous to that of relative quantifiers involving complete (non)coincidence with a reference mass, as with *all* and *no(ne).*

This analogy, we argued, allows reconceptualization of the typology of quality modification to a typology of quantity modification. The distinction between absolute and relative quantifiers correlates with that between scalar (up- and downscaling) modifiers and proportional (totality and approximating) modifiers. Quantifiers can also be modified by compromisers, focusers and emphasizers.

By way of verification of the adequacy of this model of quantity modification, we applied it in pilot studies of (*a*) *few*, whose unmarked uses are absolute, and *all*, which is a relative quantifier expressing full coincidence with the reference mass. The qualitative analysis of our corpus data enabled us to confirm our hypothesis that the semantic distinction between absolute and relative quantification correlates with scalar versus proportional modifiers. The proposed typology of modifiers was shown to be sufficient to cover the different types found in the data. The quantitative tendencies established were also promising for future research into such issues as negativity bias in quantity modification, possibly extending the analogy between quality and quantity modification further.

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