Good and Polysemy

"... the good is spoken of in as many ways as being is ..."\(^1\)

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Introduction

Polysemy is the property of a single word having multiple, but proximate meanings or senses.\(^2\),\(^3\) An example is true in true love and in true belief. Polysemy may

\(^1\) τάγαθον ἰσαχώς λέγεται τῷ ὀντὶ (EN 1096a23-24)
\(^3\) I treat meaning and sense as equivalent in this context.
then be contrasted with monosemy, the property of a single word having a single sense. But polysemy is more commonly contrasted with homonymy, the property of distinct but phonetically identical words, for example, bark in tree bark and dog's bark. Observe that in this case the lexical distinction is etymologically supported: (tree) bark derives from Old Norse börkr; (dog's) bark from Old English beorcan.4 Seriously complicating this account, however, is the view that lexical distinction may not require etymological distinction. For instance, the name of the North American finch cardinal derives from the red cassock of the Church official cardinal, but some linguists regard these as distinct words on the grounds that their meanings are remote. Once again, polysemy requires that the multiple senses of a single word be proximate.

Insofar as proximity is vague, the definition of polysemy is. Where should we draw the line between homonymy and polysemy? The answer must surely be theoretically motivated. But I know of no answer and will not attempt one here. Instead, assuming that polysemy occupies an indefinite extension on a semantic spectrum, I want to consider some of its distinct forms as well as related phenomena. In doing so, I will focus on the word good. I suggest that good is polysemous and polysemous in various ways.

To be sure, there are better candidates for a study of polysemy than good. For example, prepositions such as over have been central to polysemy studies since the eighties.5 My choice of good owes to a broader metaethical agenda. As I have argued elsewhere, linguistics offers insights into the semantics of good that philosophers have yet to appreciate. Metaethicists have had little to say about polysemy in general; and to my knowledge no philosophical work on the semantics of good has considered polysemy as such. For their part, a few linguists have made contributions to the semantics of good and more specifically to the polysemy of good. More generally, the wealth of linguistic studies of polysemy provides material for constructing a theoretical framework according to which we can make headway in explaining the polysemy and related semantic properties of good.

Variability versus Polysemy

Before turning to evidence for multiple senses of good, I want to discuss a central feature of most uses of good that has been identified as a kind of polysemy, but which arguably does not constitute polysemy at all. In discussing this feature, I will focus on

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4 Some interpretations of homonymy require orthographic identity; others require only phonetic identity as is bole and bowl. (The distinction between polysemy and homonymy therefore turns on word- and sense- or meaning-identities and their relations. Cp. D. Wiggins, "On Sentence-Sense, Word-Sense, and Difference of Word-Sense. Towards a Philosophical Theory of Dictionaries," and W. P. Alston, "How Does One Tell Whether a Word Has One or Several or Many Sense?" in Semantics: An Interdisciplinary Reader in Philosophy, Linguistics, and Psychology, Cambridge University Press, 1971, 14-34, 35-47.)

the linguistic contributions of James Pustejovsky and Ingrid Lossius Falkum respectively.6

Pustejovsky

Pustejovsky argues that polysemy, more precisely, what he calls logical polysemy,7 involves the generation of senses from a single, complex representation, called a lexical conceptual paradigm, via various mechanisms of semantic transformation such as type-coercion and — for our purposes, most importantly — selective-binding.8 The lexical conceptual paradigm encodes several basic information structures pertaining to a word, including: argument, event, lexical inheritance, and — once again, for our purposes, most importantly — qualia structures. Argument structure specifies the number and nature of arguments a predicate expression takes. Event structure specifies the event type of the expression (for example, process or state) as well as the internal structure of the event.9 Lexical inheritance structure specifies taxonomic relations between the word and related lexical items (for example, hyponymies).10 Qualia structure consists of up to four kinds of descriptive characteristics, called qualia roles, pertaining to: what a thing is made of (constitutive), how it differs from other entities of the same type (formal), how it came to be (agentive), and what it is for (telic).11 Evidently, qualia structure derives from Aristotle's four aitiai.

As Dirk Geeraerts notes, "the really generative part of [Pustejovsky's] system resides in the ways in which a predicate can combine with its argument."12 For example, if the semantic type required by the function denoted by the predicate is encoded in the argument, then so-called type-matching occurs. For instance, flow requires a liquid; hence water flows exemplifies type-matching.13 Type-coercion occurs when the argument


7 In contrast to a broader category of polysemy, which he calls complementary polysemy, logical polysemy involves no change in lexical category. For instance, the uses of hammer as noun and verb exemplify complementary, but not logical, polysemy. (28) Logical polysemes involve various forms of sense alternation, including: container/containee, count/mass, figure/ground, material/product, place/people, product/producer, plant/food. (31) For instance, The lamb is bleating and Gail is cooking lamb exemplify count/mass alternation.


10 "Identification of how a lexical structure is related to other structures in the type lattice, and its contribution to the global organization of a lexicon." (Pustejovsky 1995, 61) For example, SUV is a hyponym of car, and car is a hyponym of vehicle. (Geeraerts, 2010, 150)

11 Pustejovsky calls these "essential aspects" of qualia structure constitutive, formal, agentive, and telic, respectively. (1995, 76)

12 Geeraerts (2010) 150.

does not correspond to the type that the function requires. Consequently, a semantic transformation occurs in which the argument is converted to the required type. For instance, *The newspaper is going out of business* involves an alternation between product and producer, that is, *The newspaper* is coerced from physical object to producer of the former.

In his discussion of adjectival polysemy, Pustejovsky claims that an adjective's lexical conceptual paradigm specifies which of a noun's qualia roles it can modify. For instance, *long* is taken to be associated with a single sense having to do with extension. But the adjective can modify both formal and telic qualia roles. For example, in *long snake*, the adjective binds to the formal qualia role, which contains information regarding the physical structure of snakes; in *long CD* it binds to the telic role, which contains information regarding the data storage function of CDs. The operation of such modification is called *selective binding*. That is, the adjective selectively binds to one or another qualia role encoded in the lexical conceptual paradigm associated with the noun.

Within his discussion of selective binding, Pustejovsky offers cursory remarks on the semantics of *good*. He maintains that *good* functions as an event predicate. Basically, this means that insofar as it is a modifier the function of *good* is to modify a noun-phrase that either denotes an event or is indirectly associated with an event. The latter is the case in the example Pustejovsky uses to illustrate his point: *good knife*. Knife is, typically, associated with the event of cutting. This information is encoded in the telic qualia role of the noun. Recall that the telic qualia role encodes the purpose or function of the referent. Consequently, *good* "is able to selectively modify the event description in the telic quale of the noun" and thereby convey the sense of *knife that cuts well*.

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16 The examples and discussion are adapted from Murphy (2010) 223.
18 The qualification, which I take to be necessary to sustain the argument, is mine. But it exposes an objection that we will face below.
19 ibid. 76. Cp. "The telic quale for the noun *food* encodes this functional aspect of meaning, represented informally as [TELIC= eating]. Likewise, the distinction between semantically related nouns such as *novel* and *dictionary* stems from what we do with these objects that is different. That is, although both objects are books in a general sense, how we use them differs: while one *reads* a novel, dictionaries are for *consulting*. Hence, the respective qualia values encoding this functional information for *novel* and *dictionary* are [TELIC= reading] and [TELIC= consulting]." (77)
20 ibid. Note also his remarks on *good* at p.32: "In some sense, the adjective *good* is merely a positive evaluation of the nominal head it is modifying. Unlike the nominal polysemy above, however, there does not seem to be an alternation or focusing effect, but rather a functional dependency on the head being modified. Such adjective senses seem better classified as complementary polysemy rather than contrastive senses [i.e., cases of genuine ambiguity or homonymy], although it is not clear what the exact relation is between these senses beyond a positive judgment."
Alternatively, Pustejovsky suggests, in a case where good knife conveys the sense of knife that is well made, good selectively modifies the event description in the agentive quale of the noun. Recall that the agentive quale encodes information pertaining to the factors involved in the origin or production of an entity. Finally, Pustejovsky suggests that telic and agentive qualia are the only qualia to which good selectively binds, and that good principally binds to telic qualia.

Whatever else might be said about Pustejovsky's account of good, it is noteworthy that he regards telic qualia as the principal kind of quale to which the adjective selectively binds. On the other hand, Pustejovsky allows binding to agentive qualia, and in fact holds that what both forms of binding share is that good is an event predicate. This claim is not discussed or justified. But it seems dubious. I will revisit the claim later in the paper.

Falkum

Falkum's alternative to Pustejovsky's explanation of the polysemy of good is developed within the framework of relevance theory. Relevance theory is a prominent pragmatic theory, first formulated by Dan Sperber and Deirdre Wilson in the eighties, and subsequently refined and extended by these authors and others such as Robyn Carston. Since Grice, it has been widely accepted that what utterances implicate outstrips their literal content or "what is said." But more recent pragmaticists of various stripes have argued that the semantic content of the constituents of utterances may underdetermine the literal content of an utterance.

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22 Cp. Pethö (2001, 215): "Good is specified in the lexicon approximately like 'good for x' ... where x is an event which good selects as its argument. Good binds this argument selectively, i.e. it looks into the telic quale of the noun it modifies and selects an appropriate event predicate from there. Thus, since the telic role of knife specifies that a knife is used for cutting, a good knife will usually be interpreted as 'a knife that cuts well."

23 ibid. 254, nn. 19-20.

24 ibid. 76.


27 Cp. Falkum (2011) 82. There are more and less radical interpretations of this claim. For example, no one contests that ambiguous expressions and standard indexical constituents such as pronouns and demonstratives require resolution and referent assignment. Observe that in such cases pragmatic information is part of what is explicitly stated rather than implicated. In the case of gradable adjectives, we have seen that on most views contextual specification of a standard degree is required. Sperber and Wilson themselves refer to gradable adjectives in various places, for example, cp. Wilson, "The Conceptual-Procedural Distinction: Past, Present, and Future," in Procedural Meaning: Problems and Perspectives, V. Escandell-Vidal et al., Emerald, 2011, 3-31, at 11? In the bibliography to this chapter, Wilson also refers to an unpublished paper co-authored with Sperber, "The Interpretation of Gradable Adjectives," UCL Pragmatics Reading Group, March
such utterances or sentences would not express propositions. Accordingly, Sperber and Wilson characterize such pragmatically informed propositions as explicatures:

"The term 'explicature' was introduced into relevance theory, on the model of Grice's 'implicature,' to characterize the speaker's explicit meaning in a way that allows for richer elaboration than Grice's notion of 'what is said' ... The process of developing a logical form into a fully propositional form may involve not only reference assignment but other types of pragmatic enrichment ..."28

One of the governing ideas of relevance theory is that the principal function of language is not to encode the thought of a speaker, but to provide evidence of it. Given the linguistic evidence, shared context and broader encyclopedic and worldly knowledge and assumptions facilitate the audience's inferences to the intended meaning. Accordingly, Falkum argues that good expresses a very general concept and that, in typical instances of communication, speaker and audience rely on the context of the utterance to provide information requisite to infer a specific sense.

Falkum expressly advances this position against Pustejovsky's account, which she criticizes on the following two grounds. First, Pustejovsky's theory makes the wrong predictions concerning the construction of compositional interpretations:29

"There are several other (context-dependent) ways in which a knife could be good that do not involve 'cutting'. [For example,] 'good for stabbing people with,' 'good for threatening people with,' 'good for holding'."30

Indeed, it is easy to multiply alternatives: a knife could be good for throwing at a target, for inscribing letters in a piece of wood, for illustrating metallurgic techniques of an ancient culture, not to mention numerous peculiar and — significantly — ad hoc purposes.31

Falkum's second criticism is that there are uses of good that make "no interpretive predictions at all, due to the lack of a telic role for the adjectives to selectively modify."32 The examples she cites here include good weather and good children. I agree that the qualia structures in the lexical conceptual paradigms associated with weather and children do not contain telic roles. This is especially clear in the case of weather. Yet, Falkum continues, "there is little doubt that in these cases the compositional process proceeds as normal, giving rise to a different sense of good in each case." For example, in one context

2008. Rett's theory is, then, exceptional in treating the typical meaning of gradable constructions as a function of implicature.


29 Falkum (2011) 45.

30 ibid. 46.

31 Falkum considers and rejects an objection that Pustejovsky might submit here: "To solve this problem Pustejovsky could allow for default interpretations to be defeasible, so that specific (linguistic) contexts may suggest other interpretations not inherent to the qualia of the lexical item, as suggested by Copestake and Briscoe (1996). However, incorporating defeasibility into the semantic system would not help with the cases of clearly infelicitous interpretations generated by it." (46) [Discuss and apply to the good cases!]

32 ibid.
good weather may convey weather that is good for sailing, in another weather that is good for observing the Aurora Borealis.

In place of Pustejovsky’s appeal to the operations of selective binding, Falkum suggests that the relevant examples can be explained as instances of lexical narrowing. Lexical narrowing involves the use of a word that expresses a general or indeterminate concept to convey a more specific or determinate sense. The audience can derive the narrower sense from context, including encyclopedic information and other sorts of worldly assumptions and understanding. From the psychological end, the speaker employs what is called an ad hoc or pro-concept,33 which constitutes the sense of the term on the occasion of use and which derives from the general or indeterminate concept:

"Adjectives such as good can be seen as encoding highly general concepts, which have to be narrowed into more specific ad hoc concepts on each occasion of use (e.g., 'GOOD* knife,' 'GOOD** book,' 'GOOD*** mum,' 'GOOD**** student,' etc.). Depending on the context, good may express different ad hoc concepts in describing one and the same thing (e.g., a 'good job' could be one that is well paid, offers interesting tasks, has an inclusive social environment, offers special benefits to the employees, gives a certain social status, and so on, each of which might involve a distinct ad hoc concept). ... The pragmatic inferential process will take as input information stored in the encyclopedic entry of other lexical concepts in the utterance in the derivation of the ad hoc concept. In the case of good, encyclopedic information stored about the concept encoded in the head noun is of particular importance. However, this information is not restricted to a particular, linguistically-specified purpose (e.g., 'knives are for cutting), but might include any information relevant to the interpretation of the speaker-intended meaning of the adjective, as shown by the following examples: To become a member of Billy's exclusive gang you had to have a good knife; This is a good knife for people with wrist arthritis. Here it appears that information such as 'knives can be used for stabbing people,' 'knives can be designed in different ways,' etc. play an important role in the derivation of the ad hoc concepts communicable by good."34


34 ibid. 130. "In this way, by taking lexical interpretation to be a matter of adjusting the interpretation of individual words in accordance with one's context-specific expectations of relevance, the relevance-theoretic approach accounts for, indeed predicts, that good may be used to communicate a number of different occasion-specific senses, far beyond those predicted by Pustejovsky's account." (ibid.)
I am sympathetic to Falkum’s criticisms of Pustejovsky’s analysis of good, but with one qualification to which I return shortly.\footnote{I remain agnostic with respect to other aspects of his generative lexicon theory.} I am less sympathetic to her constructive thesis. Again, on her view good expresses a very general concept, which narrower ad hoc concepts replace in particular contexts of use. Such ad hoc narrowings must, however, have a certain systematicity; and this must owe to the content of the concept that good expresses. Falkum says nothing about the nature of this content. This is a significant gap in her account. I acknowledge that this gap does not undermine her account. It merely indicates that her account is incomplete.\footnote{[Falkum might, after all, make use of my proposal and claim that the general content of the concept that good expresses is something like realizing a purpose through possession of a gradable property to some degree.]} However, the following considerations do raise concerns for the viability of her position.

**Good and Gradability**

In most of its uses good is a gradable adjective. That is, good typically admits modification by degree morphemes such as very, rather, quite, too. Likewise, in most of its uses good admits comparative and superlative forms: better and best.\footnote{I say typically and in most of its uses because, as I will argue below, some uses of good are non-gradable.} Neither Pustejovksy nor Falkum acknowledges this fact or considers its relevance to their discussions of polysemy.

Since the seventies, formal semanticists in particular have intensively studied the semantics of gradable adjectives.\footnote{CITE!} Standard analyses associate gradable adjectives with so-called dimensions. A dimension is a gradable property. For example, tall is associated with the gradable property of height, fast with speed, and heavy with weight. More specifically, according to so-called degree-based analyses of gradable adjectives, the semantic content of a gradable adjective includes a measure function. The measure function returns a degree on a scale based on the dimension. For example, \( x \) is tall relates \( x \) to a certain degree on a scale of height. The scale itself is constructed on the basis of a contextually determined class of individuals, called a comparison class. The comparison class may — although it need not — be explicitly defined by an adjunctive for-prepositional phrase; for example, \( x \) is tall for a 12 year old; \( x \) is tall for a professional basketball player.

In the cases of tall, fast, and heavy, each adjective is (arguably) associated with a single dimension. But this is not true of all gradable adjectives. In one of his seminal papers on the semantics of gradable adjectives, Christopher Kennedy refers to a phenomenon that he calls indeterminacy: “indeterminacy is the possibility of associating a single lexical item with several distinct but related measure functions.”\footnote{“Vagueness and grammar: the semantics of relative and absolute gradable adjectives,” *Linguistics and Philosophy* 30 (2007) 1-45, 6.} More fundamentally, such indeterminacy depends on the possibility of associating a single gradable adjective with distinct but related dimensions. Kennedy illustrates the idea with large. For example, in Chicago is larger than Rome:
"[large] can be used (at least) to measure either population or sprawl, resulting in distinct truth conditions. (For example, if the population of Rome were doubled, [the sentence] would be false on the population reading but would remain true on the sprawl reading.) More complex cases are adjectives like skillful and clever, which are highly underspecified for the precise [dimension] being measured."40

Note that Kennedy suggests that indeterminacy is "a kind of polysemy."41

In my own work on good and gradability, I refer to what Kennedy calls indeterminacy as variability. That is, in the case of certain gradable adjectives the associated dimension is variable. Good is indeed a highly variable case in point. Compare good father, good painting, good at pruning trees, and good to eat with fish. Each of these complex predicate expressions is associated with a distinct set of good-making properties, which are in turn related to the nominal, prepositional, and infinitival complements or adjuncts. Accordingly, I have proposed that the semantic content of variable gradable adjectives contains a dimension-determining function from contexts to dimensions. As in the examples of modification just given, such contexts may be linguistic. However, they may also be extra-linguistic. For example, someone watching a woman prune trees might say: She's good. The dimension-determining function pre-acts and prepares the measure function.

According to my hypothesis, then, the concept that good expresses is, as Falkum would say, indeterminate because it includes a dimension-determining function that requires contextually specified information to render a value. To her credit, in a footnote Falkum offers a criticism pertinent to this style of analysis. In the note she comments on Zoltán Szabó's position that the concept that good expresses contains a role-variable and, more generally, on analyses that postulate contextually-sensitive variables in the logical form of good. Her criticism is that such postulates must be corroborated by syntactic evidence of their existence.42

I appreciate the criticism and might otherwise — that is, in the absence of the requisite syntactic evidence — concede that Falkum's more pragmatic account appears to be a legitimate alternative to my more semantic account. However, the following consideration lends some weight to the claim that the two positions are not on equal footing. Falkum's account ignores the fact that good is a gradable adjective and hence ignores the broader analytic framework of gradable adjectives. As I have suggested, within the degree-based framework a measure function is central to the semantics of gradable adjectives. The measure function serves to render a degree on a scale based on a dimension associated with the adjective. Since good is dimensionally variable, the

40 ibid.
41 ibid. [In this I believe he is mistaken. Compare the noun citizen. Every citizen is a citizen of some country. But one would not infer that citizen is polysemous just because on different occasions of its use citizen is associated with different countries. I suggest that good operates in a loosely analogous way.]
42 In a footnote, Falkum writes: "It is worth mentioning that the flexibility in Pustejovsky's account is allowed for in those formal semantic accounts that operate with a larger set of context-sensitive elements (i.e. extending beyond indexicals and linguistic ambiguity). For instance, Szabó (2001) postulates a variable in the semantic representation of the adjective good, requiring a pragmatic operation of saturation, which accounts for its different senses ... However, any account that postulates such invisible indexical elements needs to be backed up by syntactic evidence that it is really there." (n.73, p.97)
measure function that it encodes requires a determinate dimension on which the scale is based. According to this hypothesis, rendition of this dimension is the work of a separate function. But on Falkum's view, neither measure function nor the dimension-determining function exists. On the other hand, if good merely encoded a measure function, that is, the sort of measure function encoded in an invariable gradable adjective such as tall, that function could not render a degree value for the individual argument. Hence, Falkum needs to show how her proposal can be squared with the standardly accepted semantics of gradable adjectives.43

Polysemy Generativity versus Polysemy Possession

In short, I have suggested that gradable uses of good encode two functions: a measure function (µ) and a dimension-determining function (δ), the former of which depends on the latter. Accordingly, the logical form of x is good may be given as (µ(δ))(x). Hence, although there are deep disagreements among our analyses, I agree with Pustejovsky and Falkum to this extent: the semantic content of gradable good is— so to speak— schematic or general. It's just that I explain this schematicity or generality differently than they do.44

Granted this, I want to raise the question whether the property of good that Pustejovsky, Falkum, and I variously explain is in fact polysemy. Recall the definition of polysemy from the introduction: polysemy is the property of a single word having multiple, but proximate senses. Setting aside the above noted problematic concept of proximity, what do we mean when we speak of a single word having multiple senses? The problem here appears to lie with the relation of having. In each of our distinct analyses good expresses a single concept (or, in Pustejovsky's case, lexical conceptual paradigm). Moreover, this single concept does not consist of a set of distinct senses. Rather, the kind of concept that good expresses is such that on different occasions of use good can convey various senses (Pustejovsky) or convey various pro- or ad hoc concepts (Falkum) or being associated with different dimensions and hence good-making properties (author). But in that case, it is potentially misleading to maintain that good has multiple senses. Rather, it seems more accurate to say that good has the capacity to convey multiple senses or has the capacity to express and convey multiple pro- or ad hoc concepts or being associated with different dimensions and hence good-making properties. Now, one may insist that polysemy simply is some such a capacity. In other words, one may insist that the explanandum is precisely the fact that on different occasions of use a single word can convey different senses or express and convey different pro- or ad hoc concepts or be associated with different dimensions and hence good-making properties.

I see no reason to fight for one use of polysemy over the other. Polysemy may itself be polysemous, hence polysemous in both senses! But it is valuable to acknowledge the distinction between, on the one hand, having multiple senses, expressing or conveying

43 Although my suggestion that the concept that good expresses contains a contextually-sensitive function does not directly appeal to syntactic evidence, this broader framework in which my account is developed is well-engaged with relevant syntactic theory, in particular, Bresnan (1972?), Bhatt and Pancheva (2004); cp. Morzycki (2003) ch? [You might have a look at R. Blutner, "Lexical Pragmatics," in Journal of Semantics 15 (1998) 115-62.]

44 [Do you need to say here something about how the content of the dimension-determining function as well as the way that evaluators orient a scale?]
multiple concepts, etc., and, on the other hand, having the capacity to convey multiple senses, express or convey multiple concepts, etc. Consequently, going forward I will stipulate the following terminology. I will refer to a single word’s having multiple senses as *polysemic possession*. For example, according to Tyler and Evans’ radial categorical analysis the preposition *over* is polysemic possessive. I will refer to a single word’s having the capacity to convey multiple senses as *polysemic generativity*. Hence, Falkum, Pustejovsky, and I maintain that *good* is polysemic generative—although, once again, we explain the details of this property of *good* variously. I will reserve the word *polysemy* for the fact that multiple uses of a single word convey multiple senses. Finally, I will use the word *polysemic* in two ways: one, to refer to each sense constituting the set of multiple senses of an instance of polysemy; and two, to refer to each sense constituting the set of multiple senses of a word that is polysemic possessive.45

In short, the dimensional variability of *good* shows how *good* is polysemic generative. I believe this result is illuminating and important for understanding the semantics of *good*. But I am particularly interested in the possibility that *good* is polysemic possessive as well as generative. Hence, I turn now to consider that possibility on the basis of other evidence.

Quantitative *good*

Consider the following sentences:

- It’s a good distance from here to City Hall by foot.
- That’s a good load you’re hauling on your truck.
- We’ve had a few good snowfalls up in Saskatchewan already.
- A good number of our subscribers wrote in to complain about the editorial.
- The gas station is a good two miles from the Post Office.

In these cases, *good* appears to be associated with quantity, not with value or the like. Hence, I will refer to this use of *good* as *quantitative*.

McNally and Kennedy on Well

45 [Let us now consider more carefully why Pustejovsky’s and Falkum's analyses of *good* do not yield the conclusion that *good* is polysemous. Recall the definition of polysemy from the introduction: polysemy is the property of a single word having multiple, but proximate meanings or senses. Compare Pustejovsky: polysemy involves the generation of [multiple] senses from a single, complex representation, that is, a lexical conceptual paradigm, via various mechanisms of semantic transformation such as selective-binding. Hence, Pustejovsky would have us believe that in *good knife*, the sense of *good*-for-*cutting* is generated; and in *good hammer*, the sense of *good*-for-*hammering* is generated. In contrast, Falkum would have us believe that in *good knife*, the general concept GOOD undergoes narrowing and may yield, say, the ad hoc or pro-concept GOOD-FOR-CUTTING; while in *good hammer*, GOOD undergoes narrowing and may yield, say, the ad hoc concept GOOD-FOR-HAMMERING. Observe that on both analyses, there is just one concept or sense that *good* itself expresses or has. In both cases, other concepts or senses are generated from that single concept or sense. But polysemy was not originally defined as the property of a single word expressing a concept or having a sense that has the capacity to generate multiple concepts or senses. Let us call that property *polysemic generativity*. Being polysemic generative is not the same thing as being polysemous. Let us, therefore, proceed to more compelling evidence that *good* has multiple senses.]
I know of no scholarship on quantitative good. However, Louise McNally and Christopher Kennedy have published work on a closely related distinction operative in the semantically cognate adverb well. McNally and Kennedy use the term degree corresponding to my term quantitative, and manner corresponding to my value or the like. Since (most) quantitative as well as non-quantitative uses of good are gradable and hence involve degrees on a scale, I will avoid McNally and Kennedy's term degree and stick with quantitative. Because it might ultimately be thought question-begging, I will avoid the terms value and evaluative here. Instead, partly as a concession to McNally and Kennedy, but also because it is frequently opposed to quantitative, I will use the word qualitative. In short, I will here consider McNally and Kennedy's discussion of the distinction between what I will call quantitative and qualitative uses of the adverb well.

More precisely, McNally and Kennedy analyze well modification of past participles. Consider the following sentence:

The wagon is well loaded.

This sentence admits two readings:

The quantity loaded onto the wagon is great.
The quality of the loading of the wagon is high.

In earlier work McNally and Kennedy had proposed that well is ambiguous. But in their more recent publication they argue that the two senses of well are "deeply related" and that "well is … merely vague." Accordingly, they explicitly claim that well is polysemous. More precisely, given the distinction between polysemic possession and polysemic generativity, their view is that well is polysemic generative.

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46 At the end of his study of the meaning of good in Semantic Analysis (Cornell University Press, 1960, 247) Paul Ziff notes the following sentences: It is a good two miles off and He played a good hour on the cello. He acknowledges that the uses of good in these sentences do not fit his analysis according to which good means answering to certain interests. But he maintains his thesis and concludes: "Only one thing will upset the analysis presented here: a better one." (ibid.) I will not directly address Ziff's argument that good means answering to certain interests. I have discussed his account in relation to my own elsewhere. But a better analysis would begin by admitting that good is polysemous and that the two sentences Ziff cites exemplify quantitative good.


48 It is worth noting that McNally and Kennedy's point of departure is a remark by Dwight Bolinger that well "is semantically complex [in combining] features of 'approval' and 'fulfillment' in ways that defy separation." (Degree Words, Mouton, 1972, 29) That is, they treat Bolinger's remark as expressing an intuitive grasp of the idea that well admits both degree and manner interpretations.


51 "the specific semantics we adopt for adjectives and extend to the participles under study here … is not merely an attractive option for capturing polysemy; it is, in fact, the only option for well in the cases we discuss." (ibid.)
To begin, McNally and Kennedy suggest that in its quantitative use well has different distributional properties from degree modifiers such as very. Degree modifiers typically cannot be multiplied. For example:

John is well motivated, but less well motivated than I am.
John is very well motivated.
*John is very less motivated than I am.

Hence, they conclude that in its quantitative use well is not a true degree morpheme. Rather, quantitative well "functions syntactically and semantically ... essentially as it does on its [qualitative] reading." This conclusion is the first step in McNally and Kennedy’s argument that quantitative and qualitative uses of well derive from a single logical form.

Second, they maintain that well modification of participles is only possible with participles that meet the following semantic requirements:

(G) The participle denotes a gradable property and so is associated with a scale as part of its semantics.

(C) The scale generated by the participle is closed at both ends. In other words, it has a minimum and a maximum value.

Closed scale participles can be distinguished from open scale participles in that the former permit modification by proportional degree modifiers such as partially and fully.

The truck was partially/fully loaded.
#Marge was partially/fully worried.

Compare:

The truck was well loaded.
#Marge was well worried.

In cases of participles that accept well modification, a quantitative reading requires a third condition:

(M) The participle's standard of comparison cannot be the maximum value on the scale.

(M) follows from the central semantic function of the quantitative reading of well: to raise the standard of comparison for the attribute with which it combines. For example, in well acquainted, the standard for acquainted cannot be the maximum value on the scale, for then well would per impossibile raise the standard above the maximum. Contrast written. For an object to count as written, that object must have a maximal degree of

\[52\] (2013) 250.
\[53\] "The standard for acquainted is demonstrably a minimum value on the 'acquaintedness' scale: x counts as acquainted with y so long as x has some minimal (non-zero) degree of acquaintance with y." (2013, 251)
"writtenness." Hence, in well written only a qualitative reading is available. McNally and Kennedy conclude: "given these observations, we may hypothesize that a [quantitative] reading of well is always in principle available, but that this interpretation is neutralized whenever the standard of comparison for the modified expression is a maximum value on a scale."\(^{54}\)

The topic of minimum and maximum scale values leads McNally and Kennedy to consider how participial scales are derived.\(^{55}\) Participial scales derive from and are homomorphically related to aspects of their event structures.\(^{56}\) For example, a loading event involving a container \(x\) and contents \(y\) can be divided into temporally and incrementally ordered subevents of loading \(x\) with amounts of \(y\). The temporal endpoints of each of these subevents can be mapped onto an ordered set of degrees on the "loadedness" scale. The endpoint of the first subevent of loading of the smallest amount of \(x\) onto \(y\) corresponds to the minimal non-zero degree on the scale for both \(x\) and \(y\).

McNally and Kennedy maintain that the measure function encoded in the logical form of well is precisely a function on events.\(^{57}\) An implicit condition on well modification of a participle, then, is that:\(^{58}\)

(E) The participle makes available an event argument for the measure function to operate on.\(^{59}\)

For example, compare:

(i) That is well loaded hay.
(n) That is a well loaded truck.

A given participle may then be associated with more than one scale depending on the type of measurement it describes. Specifically, the type of the measurement depends on the semantic role of the event argument. In (i), the argument is an incremental theme. When it applies to an incremental theme argument, the standard of comparison for a closed scale participle is a maximum value. Hence, (i) only admits a qualitative interpretation. In (n), the argument is a non-incremental theme. When it applies to a non-incremental theme argument, the standard of comparison for a closed scale participle is a minimum value. Hence, (n) admits both qualitative and quantitative readings.\(^{60}\) This further entails that a quantitative reading is possible only if the

\(^{54}\) (2013) 252.

\(^{55}\) Precisely, their consideration of scale derivation follows their question: How do we know when the standard of comparison for some gradable property corresponds to a minimum (e.g., acquainted) or a maximum (written) value on the relevant scale?


\(^{57}\) "This should not be surprising. If we combine a Davidsonian semantics for [qualitative] adverbs (treated a properties of events), with a Kennedy-style account of their gradability characteristics, all gradable [qualitative] adverbs, and not just well, will denote measure functions on events." (255) ["We posit that the measure function denoted by well is the same as that denoted by the adjective good: it maps an event onto a(n open) scale of goodness." (256)]

\(^{58}\) Note that the authors treat this as an implicit rather than explicit condition. Why?!

\(^{59}\) (2013) 258.

\(^{60}\) (2013) 253.
"argument of the modified participle is a non-incremental theme argument of the source verb."

Finally, McNally and Kennedy wed the preceding results to the framework of Pustejovsky's generative lexicon theory. Analogous to the way Pustejovsky explains the polysemic generativity of good, McNally and Kennedy explain the polysemic generativity of well by appealing to selective binding of variables in the telic and agentive qualia associated with the modified participle. They claim that the quantitative reading of well typically occurs when it modifies an event variable in the telic quale of its argument, whereas the qualitative reading occurs when it modifies an event variable in the agentive quale. In the former case, a well loaded truck conveys the sense that the goal of the loading event, namely, to relocate matter, has been achieved to an extent that (significantly) exceeds the standard of comparison. In the latter case, the phrase conveys the sense that the quality of the agent's action of loading the truck (significantly) exceeds the standard.

**Well and Good**

What are we to make of quantitative good in light of McNally and Kennedy's results? Assuming their results, good, like well, must be an event predicate. In fact, McNally and Kennedy explicitly state this: "We posit that the measure function denoted by well is the same as that denoted by the adjective good: it maps an event onto an open scale …" Let's consider whether this claim is tenable. Recall the following sentence:

(1) It's a good distance from here to City Hall by foot.

In (1), the associated event is a walk. The standard of comparison is something like a reasonable (from the speaker's perspective) walking distance. Compare:

(1b) It's a good walk from here to City Hall.

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62 One central adjustment they make is the addition of an information structure, so-called scale structure, to the structures in Pustejovsky's lexical conceptual paradigm. Scale structure encodes information pertaining to the scale associated with the adjective, including the name of the scale, the type of scale (open, closed, or mixed), and the standard degree value.


64 Cp. also: "The polysemy associated with well is highly reminiscent of that associated with many kinds of adjectives. Badia and Saurí (1999), extending Pustejovsky's (1995) treatment of verb polysemy and his suggestions concerning the treatment of adjectives, propose that the different interpretations of e.g. fast in fast car (drives fast vs. fast cake (made/baked fast) are a consequence of the adjective's ability to act on an event variable in either the telic quale of a noun (in the case of car, where the telic quale specifies a driving event) or its agentive quale (in the case of cake), where the agentive quale specifies a making/baking event; see also Bouillon 1999 for a similar treatment of vieux 'old' in French). Indeed, if adverbs are like adjectives in being able to act on different event variables in their complements' representations via Selective Binding (see Pustejovsky 1995:129 for a definition and Badia and Saurí 2013, for an implementation), and if adjectives and participles are like nouns in being potentially specified for telic and agentive qualia, the polysemy that well exhibits is exactly what we would expect." (258)

65 (2013) 256.
(1b) admits both qualitative and quantitative readings, but (1) is naturally interpreted only quantitatively. Precisely, *good's* modification of *distance* influences the quantitative reading. *By foot* is a *adjunct of distance*. *Distance by foot* is equivalent to *walking distance*. Hence, (1) is equivalent to:

(1e) **It's a good walking distance from here to City Hall.**

The dummy subject *it* stands for the extraposed prepositional phrase *from here to City Hall*. The prepositional phrase itself is elliptical — although what it is elliptical for depends on the reading of (1b). In (1e) the prepositional phrase is elliptical for *the distance from here to City Hall*. In other words, (1e) is equivalent to:

(1e') **The distance from here to City Hall is a good walking distance.**

On a quantitative reading of (1b), *from here to City Hall* is also elliptical for *the distance from here to City Hall*. Hence, on the quantitative reading (1b) is equivalent to:

(1bn) **The distance from here to City Hall is a good walk(ing distance).**

On a qualitative reading of (1b), *from here to City Hall* is elliptical for *the walk from here to City Hall*. Hence, on the qualitative reading (1b) is equivalent to:

(1bm) **The walk from here to City Hall is a good walk.**

Consider now whether the two readings of (1b) are explicable according to McNally and Kennedy's appeal to selective binding of agentive and telic qualia roles. The qualitative reading of (1b) would be a function of selective binding of the agentive qualia role: the quality of an agent's activity of walking from here to City Hall would exceed the standard, presumably of a certain set of walks around the city. The quantitative reading of (1b) would be a function of selective binding of the telic qualia role: the quantity associated with the walking event, that is, its distance, exceeds the standard, presumably a set of reasonable walks.

I confess that I find the appeal to agentive and telic qualia roles here strained. More importantly, it seems to me that the meanings of *good* in the quantitative and qualitative readings of (1b) are fundamentally different. In particular, the quantitative goodness of the walking distance is wholly unrelated to the qualitative goodness of the walk.

Furthermore, quantitative goodness is not gradable. For example, compare:

It's a good distance from here to City Hall.
#And it's an even better distance to Independence Mall.

A further distinctive feature of quantitative *good* is that it cannot be used in predicate position. Consider:

The walk from here to City Hall is good.

This sentence does not admit a quantitative reading. Compare:
A good number of our subscribers wrote in to complain about the editorial.

If *good* is now used in predicate position, a quantitative reading is impossible:

The number of our subscribers who wrote in to complain about the editorial is good.

[in progress...]