

Non-predicating adjectives: a semantic account

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1. Introduction

This thesis is a study of the non-predicating adjectives of English, and an attempt to provide a semantic explanation for why predication is not possible in some instances. The inability to predicate often corresponds to other limitations which are also analysed, such as an inability to be nominalised or accept gradability. As a consequence of characterising atypical adjective behaviours and functions, the semantics of regular predicating adjectives are also necessarily characterised and described. The data for analysis constitute two broad and distinct classes of adjectives that are united in an inability to predicate (either at all or without a shift in meaning) but for different reasons; firstly those which are only non-predicating when they modify certain nouns, and secondly those which have a semantic structure similar to nouns, and which are correspondingly limited syntactically.

Consider the adjectives in (2) which exemplify the first major class. The adjectives in (1) do not reflect any significant shift in meaning when phrased predicatively, but in (2) when these same adjectives are predicated they no longer reflect the meaning evident in the attributive position¹:

	Attributive		Predicative
(1)	(a) <i>big</i> house		the house is <i>big</i>
	(b) <i>hard</i> surface		the surface is <i>hard</i>
	(c) <i>complete</i> list		the list is <i>complete</i>
	(d) <i>real</i> diamond		the diamond is <i>real</i>
(2)	(a) <i>big</i> eater	≠	the eater is <i>big</i>
	(b) <i>hard</i> worker	≠	the worker is <i>hard</i>
	(c) <i>complete</i> fool	≠	the fool is <i>complete</i>
	(d) <i>real</i> mess	≠	the mess is <i>real</i>

In (2a) and (2b) the adjectives appear to modify the *actions* associated with the agentive nouns they modify, so for example the meaning of (2a) can be paraphrased ‘someone who *eats a lot*’ and of (2b) ‘someone who *works hard*’. In (2c) and (2d) the adjectives appear to have taken on a *degree modifying function* so that in (2c) they express that ‘someone is *very foolish*’ and in (2d) that ‘something is *really messy*’. In each attributive instantiation in (2) the adjectives are united in attributing qualities to something distinct from the noun referent, whether that be an *action* or a

¹ The effects of predicative phrasing will be discussed further in 2.4. The ‘does not equal’ sign (≠) indicates that the paraphrase is unsuccessful.

quality already expressed by the noun. The predicative paraphrases in (2) do not reflect the meanings evident in the prenominal (attributive) phrases but rather invite an interpretation whereby the qualities expressed by the adjectives are attributed directly to (or *descriptive of*) the referents.

One theoretical assumption that must be made in order to claim that the predicative phrases in (2) do not reflect the prenominal meanings is that the prenominal phrases have a *default interpretation*. In most cases a less likely but perfectly acceptable predicable sense could also be understood, so that in (2a) for example the ‘eater’ might be physically ‘big [in size]’ and (2d) might mean a mess that is ‘real’ (not fake). This ambiguity is well known, particularly in relation to phrases such as *beautiful dancer* in which the adjective (*beautiful*) might describe the referent (*the dancer*) or the action associated with the noun (*dancing*, i.e. *dances beautifully*). There is no a priori reason to suppose that a potentially ambiguous phrase should have a clear ‘default interpretation’ in consideration of the many contexts in which language occurs, and furthermore it is difficult to prove whether one interpretation is the ‘default’ unless corpus data or native speakers are appealed to. I will take the view that in many cases (such as those in (2)) the interpretation stated to be the default is so likely as to be uncontroversial, and furthermore I later introduce examples for which it is acknowledged neither potential interpretation should be considered the default. It is also the case that meanings referred to in this paper are by and large intended to be considered *outside of any specific or unusual context* (so far as that is possible). This approach echoes that of Paradis (2000, p. 5) who, in discussing the phrases *old car*, *old friend* and *old boyfriend* notes that although they are all ambiguous, they likely have “default interpretations out of context” (for example with *boyfriend* the adjective will likely mean ‘former’, and with *friend* will mean something like ‘of long standing’).

The second major class of non-predicating adjectives I discuss are those that do not attribute individual qualities at all. These are *denominal* adjectives, derived not just morphologically from nouns but retaining a noun-like semantic structure, which results in behaviours akin to *modifying nouns* (when one noun is simply placed before another in order to modify it):

- | | | |
|-----|----------------------------|--------------------------------------|
| (3) | <i>parental</i> guidelines | ? the guidelines are <i>parental</i> |
| (4) | <i>presidential</i> palace | ? the palace is <i>presidential</i> |

The predicative phrases (3a, 4a) sound clumsy because they suggest that ‘parental’ and ‘presidential’ are *individual qualities* of the nouns, when in fact these adjectives behave like modifying nouns and structurally contain *several* qualities. In these particular cases the adjectives describe the *purpose* of

the modified noun, revealed by suitable paraphrases such as *guidelines for parents* (3), and *palace for the president* (4), in which the adjective surfaces as the noun from which it is derived and is linked to the head noun by the preposition 'for'. These paraphrases resemble those which describe the semantic content of noun compounds, such as *butter knife* which means *knife for butter*.

These data raise a number of questions of theoretical interest, and those I will focus on are: if an adjective does not 'directly characterise the noun referent', then what does it modify? If some adjectives are simply stylistic variants of nouns, how should we conceive of their semantic structure? What is it in predicative and nominalised phrasing that prevents atypical functions from being expressed?

1.1 Non-referential modification

Phrases such as (2a) and (2b) that involve agentive nouns (*eater, worker*) have been considered widely in the literature; notable among researchers working under the paradigm of transformational grammar are Bolinger (1967), Vendler (1963), Politzer (1971, p. 96) and Sussex (1974). For these grammarians the inability to predicate is explained, as might be expected, by *transformations* in which the *deep structure* differs from that of regular predicating adjectives (in most cases explained by the adjective being derived from an adverb). Levi (1978) presents a particularly thorough account of 'complex nominals' (nouns and their modifiers) in which the non-predication evident in such phrases is addressed in similar terms. The idea that adjectives sometimes do not attribute qualities to the referent of the modified noun is acknowledged in the grammar compendiums of Quirk *et al.* (1985) and Greenbaum (1996). It is also a distinction noted by semanticists interested in the concept of *syncategorematicity* (Bloemen, 1982; Carstairs, 1971; Neto, 1985), for whom the inability to predicate in phrases such as *big eater* can be explained by the 'syncategorematic' application of the adjective. More recently explanations have been put forward that utilise a decompositional semantics to differentiate the two functions. Ferris (1993, p. 42) distinguishes between an *ascriptive* (referent modifying) and *associative* (non-referent modifying) function that differentiates (1) from (2) respectively, and bases his account to a large degree on fundamental differences in how words are seen to relate to the real world (a distinction between *intensional* and *extensional* words). Beard (1991) labels the distinction between (1) and (2) as one of *scope ambiguity*; the former have a *wide scope* and the latter a *narrow scope* in which an adjective can 'compose semantically' with only one particular feature of the noun it modifies.

Adjectives that sometimes display a degree modifying function, as in (2c) *complete fool* and (2d) *real mess*, are discussed in detail by Paradis (2000) and are said to have taken on a *reinforcing function* in place of their *propositional readings* exemplified here in (1c) and (1d); their ‘role’ when reinforcing is to “specify a degree of a property of a noun, not to describe a property of a noun” (Paradis, 2001, p. 61)². In terms of grammaticalisation theory (Hopper & Traugott, 2003), they have become ‘bleached’. In this regard the adjectives can be regarded to have what I call separate *functions* dependent on the noun they modify: the one adjective, *real*, functions as a degree modifier in cases like *real idiot* and separately attributes qualities in cases like *this is a real Rembrandt (not a fake)*.

In chapter 3, I propose a *decompositional semantics*, which allows for the adjectives in (2) to modify an element of the noun meaning separate from what is denoted by it, much like the “decompositional or featural composition” proposed by Beard (1991) which is a simplified version of Jackendoff’s framework (1983). I use few formalisms here, and am not committed to any particular account of lexical semantic decomposition.

1.2 Sense enumeration

This apparent dual function, however, immediately raises the question of sense distinctions. That is, might it be more correct to consider the adjectives to be *polysemous*, with the instantiations in (2) differing from (1) due to being separate *meanings* or *senses*? An analysis supporting polysemy is certainly justified in those cases where words in one lexical class have the same form but have arisen from separate etymological paths (such as the distinction between *bank* ‘financial institution’ and *bank* ‘the slope bordering a stream’), but in cases where words share an etymological history³ and differ only to a certain extent or in certain linguistic contexts, it can be difficult to determine when a separate sense is justified. It can also be difficult to justify extensive lists of senses (as in a dictionary definition) when the semantic distinctions between them become so subtle as to be of little consequence or better explained by context, or when uses that are so rare as to best be considered ‘phrasal’ (or near phrasal) are included (Raskin & Nirenburg, 1998, p. 194). This raises a question that Paradis (2000, p. 6) also finds of interest, which is whether “(i) a given lexeme is interpreted as a single inherently vague concept, or (ii) whether the various shades of meaning of a given lexeme are

² For Quirk *et al.* (1985) the reinforcing function is subsumed by the label *non-inherent* in which the referent is not directly characterised by the adjective, as in the examples *a perfect stranger* (‘perfectly strange’) and *a true scholar* (‘truly scholarly’) (see 3.2).

³ Geeraerts (1997, p. 6) puts succinctly how changes in meaning can arise in a lexeme over time, stating that polysemy is “roughly, the synchronic reflection of diachronic semantic change”.

to be attributed to the context.” To account for (1a) for example, a dictionary definition might require a sense of ‘big’ as in ‘large in size’, and to account for its function in *big eater* (2a) a separate sense in which it refers to ‘a large amount’; if the two semantic outcomes are predicted by the nature of the noun being modified however (as I will propose – see chapter 3) – by the linguistic context – then it may be possible to avoid the need for a separate sense to be posited. The abandonment of fixed senses in favour of contextually determined lexical meaning is central to the work of Pustejovsky (1995), but this approach has also been criticised as not offering a real alternative to polysemy, in that “what superficially looks like a model in favour of monosemy is in reality an endeavour to integrate polysemy into the lexicon” (Willems, 2006, p. 590). No attempt is made to conclusively answer this question here, but because my analysis relies on contextual disambiguation I will refer to the *function* of adjectives rather than distinguishing separate senses in most cases.

A distinction between sense enumeration and dynamic lexical interaction becomes less relevant if the phrases under investigation are best considered *phrasal*, *lexicalised* or *idiomatic*. If this is the case, then by definition the phrases are ‘syntactically limited’ because they do not represent free combination of separate lexical items (they are not compositional). In fact there is no clear line dividing compositional phrases from those which are lexicalised; it has even been suggested that *all* prenominal adjectives form at least ‘weak’ constructions that straddle the divide between lexical and syntactic aspects of grammar (Sadler & Arnold, 1994). Evidence for weak lexical constructions in (2) comes in the form of the inability for the adjectives to be *conjoined* with other adjectives prenominally (** the big and old eater*, ** a complete, young fool*); in simple terms, these adjectives must collocate directly with the noun they modify. Nevertheless, semantically these adjectives still attribute qualities to an element of the noun semantics, and these are the same qualities they attribute to the referent of the noun in regular compositional phrases, so they can still be considered semantically active lexical units.

1.3 Denominal adjectives

Levi (1978) argues at length within the paradigm of transformational grammar for a nominal origin in adjectives such as those in (3) and (4) (*presidential palace*, *parental guidelines*), and their similarity in function to modifying nouns is also noted by Ferris (1993) and Miller & Fellbaum (1991, p. 210). The semantic structure of nouns can be differentiated from that of regular adjectives in that the former designate ‘things’ that are endowed with various properties, whereas adjectives designate a single

property (Jespersen, 1929, p. 74; Wierzbicka, 1986, p. 472). These denominal adjectives have been referred to as *relative* adjectives (Beard, 1991, p. 199; Raskin & Nirenburg, 1998, p. 155; Sussex, 1974, p. 193) because they can be seen to *relate* one noun-like entity to another rather than attribute a single quality. The outcome of this structure is a function that has been referred to as *classification* rather than *description* of the noun they modify (Bache, 1978; Warren, 1984, 1989).

1.4 Thesis outline

This thesis presents a semantic account of what Raskin & Nirenburg (1998, p. 150) call “the central issue of [English] adjective syntax – and semantics”, which is the distinction between predicating and non-predicating adjectives. In chapter 2 the semantics of ‘regular’ predicating adjectives is presented in terms of their primary function (which I label *quality attribution*) and structure (in terms of *gradability*), and we consider how it is that qualities are manifested (*conceptual relevance*) and the effects of predication and nominalisation. Chapter 3 introduces an explanation for the alternations seen in (1) and (2), for which it is suggested that the adjectives sometimes attribute qualities to a *non-referential* semantic element of the noun, whether it be an agentive noun (as in 2a, 2b) or what I call ‘degree’ nouns (as in 2c, 2d). The label *indirect modification* is intended to account for the fact that although the adjectives do not *directly* attribute qualities to the referent in these cases, they nevertheless modify it *indirectly* (e.g. *a hard worker* is different from just *a worker* by virtue of *working hard*). In chapter 4 denominal nouns such as those in (3) and (4) are discussed with a focus on how their function differs from that of quality attribution. A general conclusion is reached in chapter 5 in which it is suggested that the inability to predicate (and in some instances to be nominalised) arises from adjectives that deviate from the standard function, which is to *attribute qualities directly to the noun referent*. It is also suggested that the reason such atypical semantic functions are restricted to the attributive (prenominal) syntactic position is because this phrasing is simply a *collocation* in which the relationship between the two phrasal elements is not made explicit by the syntax.

2. Predicating adjectives

Before discussing the semantic behaviour of various non-predicating adjectives of English it is necessary to establish a clear description of the function of ‘regular’ predicating adjectives. This provides a solid theoretical footing upon which to base further discussion and also introduces concepts that will be important in what follows. The primary function of predicating adjectives is found to be *quality attribution*, in which a single (and typically *gradable*) quality that is *conceptually relevant* is expressed as being present in the denotation of the modified noun.

2.1 Attributing qualities

Syntactically, the typical English adjective *modifies* a noun. Semantically, the function is less clear; it might be said to ‘modify’, ‘describe’ or ‘characterise’ the noun, and the quality which it attributes might also be referred to as a ‘property’, ‘feature’, ‘dimension’ or ‘attribute’. For consistency we will refer to *quality attribution* as the semantic function of regular predicating adjectives, in that each adjective specifies a single quality and indicates that the quality is present in the noun referent.

What types of qualities are attributed? Givón (1984, p. 52) suggests that the “most prototypical adjectival qualities [are] those of stable physical qualities such as size, shape, texture, colour, taste or smell”. Dixon (1982) gives examples of *dimension*, *physical property*, *colour*, *age*, and *speed*. These ‘physical qualities’ are objective – they are things we can use our senses to confirm – and are often relevant to similarly physical referents:

(1)	<i>enormous</i> bridge	the bridge was <i>enormous</i>	[dimension]
	<i>smooth</i> rock	this rock is <i>smoothest</i>	[physical property]
	<i>red</i> sunset	the sunset was <i>deep red</i>	[colour]
	<i>young</i> driver	the driver seemed <i>quite young</i>	[age]
	<i>slow</i> train	the train is <i>really slow</i>	[speed]

Underived adjectives can also attribute non-physical (abstract) qualities however, such as *human propensities* like *clever*, *happy*, *dull*, *tired* and *sporty*, or subjective notions such as *value*:

(2)	<i>clever</i> boy	your boy is very <i>clever</i>	[human propensity]
	<i>happy</i> person	those people seem <i>happy</i>	[human propensity]

cheap clothes

these clothes are *cheap*

[value]

A noun denotation need not be a physical entity in order to be modified by predicating adjectives, but attributing a tangible quality to a more abstract noun referent will result in a metaphorical reading⁴, or what we might call a “semantic shift across domains” (Paradis, 2000, p. 2):

- (3) *firm* commitment
 solid argument
 empty promise
 soft approach

What these data indicate is that the quality referred to by each adjective is expressed as being descriptive of the noun referent regardless of whether or not the particular referent is physical or the quality verifiable. A similar issue arises in *evaluative* adjectives, which express a subjective opinion and which therefore attribute qualities that are not necessarily objectively present in the referent:

- (4) *untrustworthy* person
 delicious cake

The qualities attributed by the evaluative adjectives in (4) might not be agreed upon by different speakers, and do not represent inherently objective facts about the referent. Linguistically however the language treats both subjective and objective properties in the same way: they’re both attributable, and are asserted to be inherent properties of the referent.

It is not always clear exactly what quality is being attributed by an adjective nor how it applies to a referent in any particular case. Consider bare evaluatives⁵ such as *good* / *bad* / *terrible* / *great* which are widely applicable due to their subjectivity and non-specificity (one can express an opinion on just about anything, and therefore generic evaluatives like ‘good’ and ‘bad’ can describe almost any referent). As a result it is not always clear what element of the noun referent’s meaning is being evaluated; Katz (1964, p. 263) notes that “what is beautiful for a girl is not beautiful for a tree, and

⁴ The question of whether or not these are best considered metaphorical applications or simply separate senses is left unresolved. See Chapter 1 for a brief discussion of polysemy and sense distinctions.

⁵ I distinguish these ‘bare evaluatives’ from those which have an evaluative *component* (e.g. *beautiful*, *naive*) while at the same time clearly expressing a separate quality (e.g. *beauty*, *naivety*). Bare evaluatives only express evaluation.

what it is for a dog to be good differs from what it is for a couch or an apple to be good". Willems (2006, p. 591) suggests it is the meaning of the head nouns that differs in the phrases *good car*, *good meal*, *good knife*, and "not the meaning of the attribute [quality]", so that the way in which a particular quality is 'attributed' can be dependent on the nature of the noun referent⁶. Colours have featured prominently in the literature to highlight this difficulty; a *green book* for example might have a green dust jacket, cover, or pages (Szabo, 1995, p. 130). A *red bird* must be red only in particular respects in order to be named as such, i.e. "it should have most of the surface of its body red, though not [necessarily] its beak, legs, eyes" (Lahav, 1989, p. 264), and a *red apple* is likely 'red-skinned' while a *red watermelon* has red pulp (Reimer, 2002, p. 187). The 'Generative Lexicon' model provided by Pustejovsky (Boguraev & Pustejovsky, 1990; Pustejovsky, 1995, p. 76; 2006) accounts for such 'collocational semantic variation' via a complex nominal structure in which only certain aspects of the noun meaning are modified in such phrases. Such variation can largely be accounted for in terms of a featural decomposition of nouns, however there can also be some variability in the semantic content of quality attributing adjectives themselves, and it is not certain that what I refer to as a 'single quality' can always be considered as such. Szabo (1995, p. 124) for example points out that while *round* [shape] has a fairly consistent meaning (there is "just one way to be round"), *intelligent* can refer to various abilities, such as being "intelligent in solving crossword puzzles, in writing computer programs ... and in countless other ways".

Ambiguities in semantic content and application like those introduced here require an elaborated explanatory framework which is beyond the scope of this thesis. While such difficulties should be acknowledged, for present purposes I will assume that the adjectives discussed in this section monosemous and express a single quality in the noun denotation.

One way in which quality attribution can be more clearly characterised is by contrasting it against adjectives that do not appear to behave in this way, and which may be restricted to the attributive position for this reason:

- | | | | |
|-----|---------------------------|------|--------------------------------|
| (5) | <i>former</i> flatmate | (5a) | * flatmate is <i>former</i> |
| (6) | <i>alleged</i> accomplice | (6a) | * accomplice is <i>alleged</i> |
| (7) | <i>same</i> problem | (7a) | * problem is <i>same</i> |

⁶ Similarly Givón notes that a *fast car* is one that 'drives fast' while a *fast horse* is one that 'runs fast' (1970, p. 829). Intuitively it is preferable, if polysemy is ignored, to model the different meanings as arising from the qualities intrinsic to the nouns rather than to assert that 'fast' has separate meanings in these examples.

It is widely acknowledged that adjectives like those in (5) – (7) have an atypical function and are restricted to the attributive position (Beard, 1991, p. 200; Bolinger, 1967, pp. 19-20; Lakoff, 1970; Sussex, 1974, p. 124; Warren, 1989, p. 352) but it is difficult to characterise how their function differs from quality attribution. Kemmerer (2000, p. 60) identifies a *specifying* function rather than a *descriptive* one, largely basing his research on that of Bache (1978). Specifying adjectives occur furthest from the head noun in sequences of prenominal modifiers and sit closest to the *determiners* in both position and, it is claimed, in function⁷. Rather than attributing qualities they “help single out or quantify the referent of the construction in relation to some context” (Bache & Davidsen-Nielsen, 1997, p. 458). In (5) the referent may then be said to have been *singled out* in terms of a temporal sequence (as being ‘the previous one’), in (6) the referent is placed into a *context* of modality in which its very existence is questioned, and in (7) the referent is *related* to another, so the adjective does not attribute a specific *quality* of ‘sameness’ that is inherent in the referent but rather compares it to a separate entity. There is intuitively something that distinguishes the adjectives in (5) – (7) from predicating adjectives, as with the other examples of specifying adjectives identified by Kemmerer, which include *only, own, same, other, former, major, main, chief, similar, different, general, specific, and certain*⁸. Apart from intuition, there is no a priori reason to suppose that ‘formerness’, ‘allegedness’ and ‘sameness’ are not simply qualities like any other; so, what is it that distinguishes the function of these non-predicating adjectives from those which predicate?

For Quirk *et al.* (1985, p. 431) the non-predicating adjectives in question are simply ‘adjectives related to adverbs’ suggested by paraphrase, for example:

- | | | |
|------|------------------------------|---------------------------------|
| (8) | my <i>former</i> friend | <i>‘formerly my friend’</i> |
| (9) | a <i>possible</i> friend | <i>‘possibly a friend’</i> |
| (10) | an <i>occasional</i> visitor | <i>‘occasionally a visitor’</i> |

It is also suggested that the ‘adverbial nature’ of these adjectives is revealed in their compatibility with a verb of general meaning⁹, such as *occur* in the following example:

- | | | |
|------|---------------------------|--|
| (11) | <i>occasional</i> showers | <i>‘showers <u>occur</u> occasionally’</i> |
|------|---------------------------|--|

⁷ Sussex labels these adjectives *modal* and suggests they are a heterogeneous group, defined as a single class for the most part only because of “their ordering in strings of attributive adjectives” (1974, p. 114).

⁸ Other words that appear in this ‘modification zone’ in sequences of prenominal modifiers are *ordinal and cardinal numbers* (e.g. ‘first’, ‘second’, ‘next’, ‘two’, ‘few’, ‘many’) (Kemmerer, 2000, p. 62) which are omitted from the present analysis due to their borderline adjectival status.

⁹ Other verbs noted are *make, perform, act, occur, happen, take place* (Quirk, 1985, p. 431).

Thus there are implied verbs that “can be seen as lexical realisations of the predicational force that is inherent in the nouns”. Even in the noun *friend* there is an activity signified in the form ‘acting as a friend’ so (8) can be paraphrased with the implied verb made explicit: *formerly acted as a friend*. Predication requires that adjectives attribute a quality to the noun referent (see 2.4), so if instead they modify an implied *verb*, then not only is their inability to predicate explained, but also they can be seen to still attribute qualities, but not directly to the referent. For Sadler & Arnold (1994, p. 222) however, such adjectives “do not denote properties at all”, unlike regular adjectives which “describe properties separate from [those] picked out by the head noun”. This view is similar to that of Oltean (2007) who considers these adjectives to modify qualities already expressed by the nouns to which they apply. Ferris (1993, p. 111) makes a similar claim that is made clear by example; regarding *former king* he states “... [former] does not apply to the putative referent of the noun phrase ... [but] rather it applies in some way to the status of the *property* inherent in the noun (*king* in this example)”.

I suggest that the common function shared by the ‘specifying’ adjectives identified by Kemmerer is that they restrict the possible range of reference. This is quite clearly the case with adjectives such as *only, main, chief, specific, general, certain*, and in other cases is manifested temporally (*former, previous, old*¹⁰), modally (*alleged, purported*), or by specifying the noun’s relation to others (*similar, different, same, other*). To talk about a ‘certain / specific X’ for example is to state which actual referent (X) is being referred to out of a set of otherwise possible referents, and does not translate into a *description* of it. If asked to identify X from a list of possible referents we might refer to all kinds of qualities that X has, but not about it having the qualities ‘certain’ or ‘specific’¹¹. Put simply, specifying adjectives are not ‘qualities that the noun referent has’ but rather they make specific what referent is being referred to or how it relates to external contexts such as time, modality, and other entities.

¹⁰ ‘Old’ has several senses, one of which is synonymous with ‘former’ (Taylor, 1992, p. 1).

¹¹ Essentially the same claim is made by Ferris (1993, p. 109); adjectives such as *main [fault]*, and *prime [suspect]* are “inherently restrictive, and select the particular entity to be identified by a speaker out of an already assumed body of entities; thus the *faults* ... are not *main faults* in any general sense ...”

2.2 Conceptual relevance

In order for an adjective-noun phrase to be interpreted literally, the quality attributed by an adjective must be one that it is possible for the referent to have. This is put succinctly by Miller & Fellbaum:

Adjectives are selective about the nouns they modify. The general rule is that if the referent denoted by a noun does not have the attribute whose value is expressed by the adjective, then that adjective-noun combination requires a figurative or idiomatic interpretation. For example, a building or a person can be tall because buildings and persons have height as an attribute, but streets and yards do not have height, so *tall street* or *tall yard* do not admit a literal reading. (Miller & Fellbaum, 1991, p. 213)

I assume that the quality must be *conceptually relevant* to the noun referent in order to be applicable, whether the interpretation is literal or figurative. Consider the famous nonsense phrase provided by Chomsky (1957) which is ‘grammatical’ but semantically bizarre:

(12) colourless green ideas sleep furiously

A colour value – whether attributed as absent (colourless) or of a particular type (green) – is simply not *relevant* to the abstract and intangible referent ‘idea’¹². Adjectives that are relevant might include ‘clever’, ‘new’, ‘strange’ and ‘good’, and in addition we could modify the referent with adjectives denoting tangible qualities that result in a (standardised) figurative interpretation, such as ‘big’ and ‘small’. It is easy enough to think of phrases in which the adjective quality is not relevant to the noun referent, with a resulting semantic incongruity:

(13)	? <i>slow</i> rock	? the rock is <i>slow</i>
	? <i>rectangular</i> idea	? the idea was <i>rectangular</i>
	? <i>red</i> driver	? the driver was <i>red</i>

Rocks are inanimate and immobile, and so are rarely thought of as having a quality of ‘speed’; ideas are complex but are not physical and so are rarely thought of as having a shape; drivers can be good or bad, young or old, but are not usually associated with a colour. We are adept at coming up with

¹² The logical impossibility for the combination of the two colour denoting adjectives ‘colourless’ and ‘green’ is not relevant here (they are *contrary terms* which cannot both be true, but can both be false – see Miller & Fellbaum (1991, p. 211)).

exceptional contexts in which such expressions could be perfectly valid (a hot train driver may appear red; if rocks are rolling down a hill one may be slower than the rest, and so on), but outside of such contexts, in a default interpretation, there is an intra-phrasal semantic incongruity that makes these hard to interpret. The adjectives are attributing qualities which are not conceptually relevant (or not even possible) for the noun referents, and the fact that this effect is detectable supports the assertion that 'quality attribution' is the primary function of predicative adjectives such as these.

For example, collocation of an adjective that expresses the value of a tangible quality may result in an ill-formed phrase or require a strongly metaphorical interpretation when it modifies an abstract noun referent:

(14) *long* ? idea / ? character

Long allows a clearer interpretation when collocated with physical referents for which *length* is a relevant quality:

(15) *long* knife / car / table

The abstract nouns *question* and *day* represent entities with a beginning and an end, and so accept the adjective with its quality of *physical length* easily interpreted as *temporal length*:

(16) *long* question / day

Finally, consider how this adjective might be of dubious acceptability describing even physical referents for which the quality *length* is not relevant, such as those which are 'round' in shape:

(17) *long* ? pancake / ? orange / ? circle

What I refer to as 'conceptual relevance' mirrors the notion of *applicability conditions* discussed by Lahav (1989). In Lahav's view, quality attributing adjectives are never actually 'inapplicable' but rather we simply have no agreed upon conception of how the quality applies to the referent.

[T]he reason that some adjectives do not have conditions of applicability to some nouns is not that there is some intrinsic incongruence between the individual meanings of the noun and the

adjective, but simply because we have not had the occasion and interest to assign them applicability conditions. (Lahav, 1989, p. 266)

Conceptual relevance can be measured to some extent in terms of how *acceptable* certain phrases are, but this notion is difficult to measure. As mentioned already, speakers will easily come up with unusual contexts in which almost any phrase might be interpreted as appropriate and acceptable. Lahav's assertion can account for why almost any collocation is *potentially* possible no matter how *unlikely* it might be. I appeal once again to a *default interpretation outside of specific context* (see chapter 1) so that if an unlikely or unusual context is required to make sense of a phrase, then it can be said to be of dubious acceptability. Conceptual relevance will be of particular importance in determining whether or not an adjective modifies the referent directly or a separate element of the decomposed nominal semantics in cases of indirect modification (chapter 3).

2.3 Scalability

A typical – but not universal – feature of English quality attributing adjectives is *gradability*, which allows for them to be *compared* and *intensified*, resulting from the perception of a quality being something that can vary in degree (Warren, 1989, p. 349)¹³. Haag (1997, p. 113) calls the ability to be graded “[t]he hallmark of the lexical category”, and Raskin & Nirenburg (1998, p. 151) note that it “is seen as such an essential property of adjectives that many writers include it in their definition of the category”. The term *scalability* is widely used to refer to a more complex ‘scalar’ structure which can account for different kinds of conceptual scales that have linguistic consequences (e.g. * *completely long*, * *slightly immaculate*). The fairly intuitive concept of gradability in adjectives is in reality a significant challenge for semanticists.

Gradation can in some instances be *lexicalised*, allowing separate words to represent distinct regions on a hierarchical scale that represents a single quality of the noun referent. Miller & Fellbaum (1991, p. 212) give the examples, among others, of *size* (e.g. *miniscule, tiny, small, big, huge, gargantuan*), and *warmth* (e.g. *frigid, cold, cool, tepid, warm, hot, and scalding*). More commonly in English,

¹³ Gradability is not exclusive to the lexical class of adjectives. Many *adverbs* accept precisely the same modifications (e.g. *sooner, very soon*) because they too represent gradable concepts (Rusiecki, 1985, p. 3).

gradability is expressed (in either *comparative* or *superlative* degrees) by suffixation (18) or periphrastically with words such as *least*, *less*, *more* and *most* (19)¹⁴:

- (18) *heavy* table
- | | | |
|-----|-----------------------|---------------|
| (a) | <i>heavier</i> table | [comparative] |
| (b) | <i>heaviest</i> table | [superlative] |
- (19) *pleasant* dreams
- | | | |
|-----|------------------------------------|---------------|
| (a) | <i>less / more pleasant</i> dreams | [comparative] |
| (b) | <i>more / most pleasant</i> dreams | [superlative] |

Even when it is not marked for comparison or intensification an adjective can be said to attribute a positive value (or an ‘absolute degree’ as opposed to a comparative or superlative degree (Greenbaum, 1996, p. 139)) in that it indicates the *presence* of a certain quality¹⁵. The ‘absolute value’ of the adjective is “at least as great as some contextually determined standard” (Kennedy, 1997, p. 113), as evident in the value of *tall* which will represent a different height in *tall man* than in *tall building*. Kennedy sums up the gradable structure of adjectives neatly:

... gradable adjectives are analysed as expressions whose semantic function is to define a mapping between objects and points on a scale. Intuitively, scale is an abstract representation of measurement: an infinitely long measuring stick, which provides a representation of the amount to which an object possesses some gradable property (Kennedy, 1997, p. 65).

Another outcome of gradability is the ability to be “multiplied by ... adverbs of degree [such as] *very*, *decidedly*, *intensely*, *rather*, *quite*, *somewhat*, *pretty*, *extremely*” (Miller & Fellbaum, 1991, p. 212). Such modification is often referred to as *intensification* and a distinction can be made between those which express a heightened degree of a quality (those which ‘emphasize’, ‘amplify’ or ‘reinforce’) and those which have a lowering effect (those which ‘downtone’ or ‘attenuate’) (Paradis, 2001, p. 56; Quirk, 1985, p. 429):

¹⁴ In English the relevant method of comparison is dependent on the number of syllables; it is indicated only by inflection in monosyllabic words and some disyllabic words, while the remainder of disyllabic words and the majority of those with three or more syllables (e.g. *difficult*, *beautiful*, *impolite*) must be modified periphrastically (with premodifiers) (Greenbaum, 1996, p. 139).

¹⁵ Of course some adjectives specify the *lack* of a quality, for example negatives like *unfriendly* or *non-scalar*.

A similar case is found with adjectives such as *dead*, *true*, *identical*, and *male* which Paradis labels *limit* adjectives. These differ logically from scalar and extreme adjectives “in that they are not associated with a scale but conceptualized in terms of ‘either ... or’” (Paradis, 2001, p. 52)¹⁶.

- | | | |
|------|---|---|
| (22) | <i>almost identical</i>
<i>completely dead</i> | <i>* very identical</i>
<i>? less dead</i> |
|------|---|---|

These adjectives often occur as pairs of *complementary antonyms* (Raskin & Nirenburg, 1998, p. 151) like *dead / alive* and *male / female* in which each is one member of a pair that is partly defined by the other, with no (or limited) degrees admitted between the two opposites¹⁷.

In summary, scalar adjectives accept scalar modifiers so long as they do not represent an extreme point on a scale, while limit adjectives are not intrinsically scalar but rather are qualities that are either present or not in a referent. Regardless of their particular scalar structure and varying gradability, all of these adjectives have a quality attributing function that is evident in their ability to freely predicate (see 2.4):

- | | | |
|------|--|--|
| (23) | <i>immaculate</i> outfit
<i>bankrupt</i> official
<i>female</i> animal
<i>dead</i> plants | the outfit is <i>immaculate</i>
the official is <i>bankrupt</i>
the animal seems <i>female</i>
the plants are <i>dead</i> |
|------|--|--|

2.4 Predication

The semantic function of most adjectives in English has been identified as quality attribution, which is possible both when the adjective occurs *attributively* (prenominally) and *predicatively* (after a copular verb such as ‘be’ or ‘seem’), as is the case in the following example:

¹⁶ If limit adjectives *are* marked with scalar modifiers, then they take on a separate qualitative meaning (as in *very male* or *more alive*), and thus “the meaning change must be a value of the property scale” (Haag, 1997, p. 117). This is also acknowledged by Raskin & Nirenburg (1998, p. 169) who state that while ungradable adjectives should not technically allow for degrees of comparison, “such meaning shifts are not too hard to make, thus rendering the trait of gradability potentially nearly universal within the lexical category.” Paradis also notes that it is possible to be indeterminate between totality and scalarity (2001, p. 58); some words might be biased towards an ‘either or’ reading but “gradability can be changed and they may take on a scalar reading” as in *very sure* and *absolutely sure*.

¹⁷ These are also referred to as *contradictory* terms, because the truth of one implies the falsity of the other (e.g. if *X is female* then *X is not male*) (see Gross *et al.* (1989, p. 94)).

(24) *comfortable sofa*

the sofa is *comfortable*

Despite the syntactic differences (when attributive the adjective is the complement of a noun phrase and when predicative it is the complement of a verb phrase (Szabo, 1995, p. 110)), in semantic terms the denotation of the noun (*sofa*) has the adjectival quality (*comfort*) attributed to it in both positions¹⁸. A central claim of this thesis is that adjectives are restricted from the predicative phrasing when they do not attribute a quality directly to the noun referent, but why should predication require quality attribution? Consider Ferris' answer:

It is the position of the adjective which instantiates a property explicitly assigned to the entity already identified by the subject of the sentence ... [and] this relation is marked constructionally by the use of a form of the verb *to be* preceded by an expression identifying some entity and followed by the adjective instantiating the property. (Ferris, 1993, p. 38)

For Ferris, the “predicative position reserved solely for referent-qualification” (1993, p. 99). As Ferris identifies, in predicative phrasing the relationship between the two phrasal elements is made explicit by the use of the copular verb; in the attributive position on the other hand no specific semantic function is made clear, and the adjective is simply collocated with the noun it modifies. This is the first clue for why predication is not possible for some adjectives or certain instantiations.

The semantic function of predication that I will refer to in this thesis is that provided by Gross *et al.*:

To say x is *Adj*, where *Adj* is a predicative adjective, is assumed to mean that there is an attribute A such that $A(x) = Adj$; that is to say, *Adj* is the value of the function $A(x)$. For example, the gradable attribute of *size* ranges over a continuum of sizes between the values *large* and *small*; thus, *elephants are large* means that the value of $Size(elephant) = large$. (Gross, et al., 1989, p. 94)

A logical inference that can be made in regards to non-predicating adjectives is that their function deviates in some way from that outlined by Gross *et al.*, whether it be in terms of *what* they attribute to a noun or *how* they do so.

¹⁸ Ferris suggests that the attributive and predicative uses of apparently freely predicating adjectives may not ‘share the same referential locus’. He goes on to explain: “If we move from the predicative structure (7) *clouds are small* to the phrase *small clouds*, we pass to an expression which identifies a certain group of entities but does nothing more than identify them; whereas expression (7) identifies a quite different (and much larger) group of entities, and says something about them ...” (1993, p. 41). This difference appears diminished however when the reference is limited by an article or by expressing in the singular (*the small cloud/s*).

2.5 Nominalisation

Quality attributing adjectives can also be expressed in *nominalised* form and then logically related to the referent via a suitable phrase (Levi, 1978; Quirk, 1985). The nominalised form of a quality attributing adjective also serves to *name* the quality that is attributed; for example, in *comfortable sofa* the adjective attributes the quality of *comfort*¹⁹ – which is the nominalised form of the adjective – and thus we can refer to:

(25) the *comfort* of the sofa / the sofa's *comfort*

The relationship between an adjective and its nominalised form – which names the quality – has been identified by Givón (1970, p. 821) as:

being ADJECTIVE = having QUALITY_N

Note that many of the 'specifying' adjectives, identified in 2.1 as having a function distinct from quality attribution, resist nominalisation:

(26) *former* flatmate * the *formerness* of the flatmate / the flatmate's *formerness*

(27) *alleged* thief * the *allegedness* of the thief / the thief's *allegedness*

Another similarity with predicative phrasing is that when nominalised and phrased as in (25) the relationship between the adjective and the noun is made explicit, in this case not via a copular verb ('is', 'seems') but rather via a possessive relationship in which the adjective quality is named and expressed as belonging to the noun denotation.

¹⁹ Another suitable candidate as a nominalisation of *comfortable* is *comfortableness*, but this may be considered synonymous with 'comfort' and so the latter more familiar term is used.

3. Direct and indirect modification

For some adjectives, an inability to predicate is only evident in certain linguistic contexts, dependent on the noun they modify. The inability to predicate arises from an atypical function in which the quality attributed by the adjective does not directly modify the referent of the noun:

(1)	<i>true</i> champion	≠	(1a)	the champion is <i>true</i>
(2)	<i>firm</i> friend	≠	(2a)	the friend is <i>firm</i>
(3)	<i>complete</i> mystery	≠	(3a)	the mystery is <i>complete</i>
(4)	<i>real</i> idiot	≠	(4a)	the idiot is <i>real</i>
(5)	<i>heavy</i> smoker	≠	(5a)	the smoker is <i>heavy</i>
(6)	<i>free</i> thinker	≠	(6a)	the thinker is <i>free</i>

In the prenominal phrases (1) – (6) the adjectives do not attribute qualities directly to the noun denotations; in (1) for example the *champion* him/herself does not have a quality ‘true’ but rather is ‘truly a champion’ and in (2) the *friend* does not have a quality ‘firm’ but is ‘firmly a friend’. In these semantic paraphrases the adjective is expressed in the form of an *adverb* (*true* → *truly*, *firm* → *firmly*) which reflects the actual prenominal function, which is to describe either the *manner* of an action or behaviour (such as ‘think’, ‘smoke’ and ‘be a friend’) or the *degree* of a quality (such as ‘mysterious’ or ‘idiotic’)²⁰ rather than the referent. Similar paraphrases better reflect the meanings of the other prenominal phrases:

(7)	<i>complete</i> mystery	‘ <i>completely</i> mysterious’
(8)	<i>real</i> idiot	‘ <i>really</i> idiotic’
(9)	<i>heavy</i> smoker	‘smokes <i>heavily</i> ’
(10)	<i>free</i> thinker	‘thinks <i>freely</i> ’

I will refer to the function of the adjectives in (1) – (6) as *indirect modification*, which is intended to acknowledge that while the referent may not have a quality *directly* attributed to it, it is still the case that the noun referent is semantically modified by the adjective. For example a *heavy smoker* is not a heavy *person*, but is still certainly different from simply ‘a smoker’ and a *complete mystery* (in a default interpretation) is not ‘a mystery that has been completed’ but still differs from just ‘a

²⁰ Adverbs are a diverse lexical class and include words that modify actions (verbs) and the degree of a quality. As Miller & Fellbaum assert (1991, p. 209) “[modifiers] that modify nouns are called adjectives; those that modify anything else are called adverbs”.

mystery'. A label such as 'non-referential modification' could potentially imply that the referent is not modified at all by these adjectives, when – as has just been indicated – this is not the case.

Predication in (1a) – (6a) does not reflect the meaning of the prenominal phrases and instead coerces an interpretation in which the adjectives *do* attribute qualities directly to the referent (see 2.4). In other words, when predicated the phrases select an interpretation in which the adjectives *directly modify* the referent. Indeed, all of the adjectives in (1) – (6) also have a regular quality attributing function which is apparent in the following phrases:

(11)	<i>true</i> story	(11a)	the story is <i>true</i>
(12)	<i>firm</i> flooring	(12a)	the flooring is <i>firm</i>
(13)	<i>complete</i> picture	(13a)	the picture is <i>complete</i>
(14)	<i>real</i> watch	(14a)	the watch is <i>real</i>
(15)	<i>heavy</i> traffic	(15a)	the traffic is <i>heavy</i>
(16)	<i>free</i> society	(16a)	the society is <i>free</i>

The phrases in (1) – (6) are in fact ambiguous, in that the adjectives can potentially be understood to modify the noun directly or indirectly. For example, (4) has the potential interpretation 'an idiot who is real' (in the sense of not being imaginary), and (5) 'a smoker who weighs a lot', although such interpretations are unlikely.

The idea that adjectives can sometimes resist predication because they attribute qualities to something other than the referent is not new. Quirk *et al.* (1985) for example refer to adjectives which modify the noun referent directly as *inherent*, and those which do not as *non-inherent*²¹. For Quirk *et al.* the two semantic behaviours do not represent separate adjective senses, but rather the non-inherent behaviour in (1) – (6) arises from "an extension of the basic sense of the noun".

Modification of a noun by means of a non-inherent adjective can be seen as an extension of the basic sense of the noun. Thus a *firm friend* is 'a friend whose friendship is firm', and a *perfect stranger* is 'a stranger who is perfectly strange'. (Quirk, 1985: 435)

²¹ Greenbaum (1996, pp. 134-135) makes essentially the same observation in his grammar compendium, but labels those which directly modify the referent as 'attributive', explaining that when adjectives function attributively they *attribute a quality or characteristic to what is denoted by the noun they modify*.

Thus it is claimed that the physical qualities attributed by ‘old’ and ‘firm’ are interpreted non-literally when applied to the abstract concept *friendship* (cf. (2)), and likewise ‘perfect’ does not apply to the ‘basic sense’ of *stranger* (a person) but to an ‘extension’ of its sense (being strange). This ‘extension’ of meaning is similarly described by Raskin & Nirenburg (1998, p. 156) as ‘a shift from a physical property to an extended or metaphorical non-physical one’. Politzer (1971, p. 99) makes essentially the same observation, suggesting that when functioning indirectly the application of the adjective to the noun “can ... be described as less basic or more figurative”. It is no surprise that such ‘figurative’ modification occurs however, as this is a regular function of quality attributing adjectives (as was discussed in 2.2). Put simply, these researchers have acknowledged that sometimes adjectives do not modify the referent directly.

In the case of adjectives that have taken on a *degree modifying* function such as *true* in *true champion* (1), there is evidence that diachronic processes have resulted in a reinforcing sense separate from their original descriptive sense (Paradis, 2000), so for example notions of ‘completeness’ have been reinterpreted over time as measures of the *degree of a property* rather than applying to the *denotation*. The relevant sense in any particular instantiation can be determined by the type of noun being modified, resulting in the distinction apparent between *true* in (11) ‘factually correct’ and (1) ‘truly / very much so’ (this will be discussed further in 3.3). The degree modifying function is quite separate from the inherent function in that the adjective no longer serves to attribute a quality of its own, but there is no need to posit a separate *sense* in consideration of the fact that the relevant function can be determined purely from linguistic context.

In this chapter I suggest that it is the nature of the modified noun that allows for indirect modification, specifically in having a decompositional semantics in which two separate sites are made available for adjectival quality attribution: a *referential element* (the denotation of the noun) and a separate *non-referential element*, the nature of which differs between agentive and degree nouns; it may be an *action* (‘smoke’, ‘think’, ‘be a friend’²²) or a *quality* (‘mysterious’, ‘idiotic’)²³.

²² The noun *friend* can be considered to have a non-referential element expressed as the verbal concept *be a friend* (Miller & Fellbaum, 1991, p. 208); this is discussed further in 3.1.

²³ Politzer (1971, p. 97) discusses the possibility that “every noun in English is ... accompanied by an indefinite pronoun” so that for example “the mere existence of the word *table* implies that “Something is a table”. Whatever the non-referential meaning of ‘table’ may be, it does not trigger the indirect modification evident in the examples raised here and so this possibility is left for further research.

3.1 Agentive nouns

Many phrases that result in non-predicating adjective behaviour involve nouns which are *agentive*:

(17)	<i>heavy</i> smoker	≠	(17a)	* the smoker is <i>heavy</i>
(18)	<i>big</i> eater	≠	(18a)	* the eater is <i>big</i>
(19)	<i>hard</i> worker	≠	(19a)	* the worker is <i>hard</i>
(20)	<i>free</i> thinker	≠	(20a)	* the thinker is <i>free</i>

As suggested in 3.1, this behaviour can be explained by *indirect modification* in which the adjectives do not attribute qualities directly to the noun referent. The semantic content of the prenominal phrases is clearly better expressed as follows²⁴:

(21)	<i>heavy</i> smoker	(21a)	'someone who smokes <i>heavily</i> '
(22)	<i>big</i> eater	(22a)	'someone who eats <i>a lot</i> '
(23)	<i>free</i> thinker	(23a)	'someone who thinks <i>freely</i> '
(24)	<i>hard</i> worker	(24a)	'someone who works <i>hard</i> '

In each case the adjective surfaces in adverbial form²⁵ (21a – 24a) and modifies not the referent ('someone')²⁶, but the *action* associated with the agentive noun, which consists of the verb from which the agentive noun is derived (e.g. think_[V] → thinker_[N])²⁷. This is supported by Beard who states that in these phrases the adjectives “seem to compose with the underlying base of the

²⁴ The paraphrases are regarded as preferable to the predicative phrasing but it should be acknowledged that many different types of phrasing can also capture the correct meaning. Bolinger for example, while referring to prenominally modified agentive nouns and their adverbial paraphrases, points out “*a clever strategist* is one who ‘plans strategy cleverly’ or who ‘plans clever strategy’ or who is ‘clever at planning strategy’.” (1967, p. 30).

²⁵ The adjective ‘big’ (22) has no corresponding morphologically derived adverbial form but we may claim can still be applied semantically to the notion of ‘eating’ by using a suitable phrase such as ‘a lot’ or ‘much’ (22a). In (24) and (24a) the adjective ‘hard’ and the adverb ‘hard’ are homomorphs.

²⁶ This is what Politzer refers to as an “underlying indefinite pronoun” (Politzer, 1971, p. 98).

²⁷ The noun *friend* which can be modified indirectly in *firm friend* and *old friend* can be conceived of as having a non-referential component in the form of the verbal concept *be a friend* (Beard, 1991, p. 206; Miller & Fellbaum, 1991, p. 208). Because it is not overtly agentive however it is left out of the present detailed analysis so as to not unnecessarily complicate the discussion. Similarly the noun *hostess* is not overtly marked with an agentive suffix (nor is the masculine noun *host*), but the phrase *perfect hostess* appears to allow indirect modification; as Warren rightly asserts, it (Warren, 1989, p. 351) “invites the interpretation ‘person who acts perfectly as a hostess’” as opposed to a person who is ‘perfect’”.

derived noun rather than with the derived nominal as a whole” (Beard, 1991, p. 199)²⁸. Agentive nouns often result in this indirect modification, but not always; when the property attributed by the adjective can *only* be true of a *person* the result is regular direct modification, with the phrase correspondingly free to predicate without a shift in meaning. Examples of such adjectives are those that describe a *physical appearance* or *state*, which are clearly potential qualities of people but which cannot readily describe actions:

- | | | | |
|------|----------------------|-------|-----------------------------|
| (25) | <i>female</i> worker | (25a) | the worker is <i>female</i> |
| (26) | <i>blind</i> worker | (26a) | the worker is <i>blind</i> |
| (27) | <i>fat</i> smoker | (27a) | the smoker is <i>fat</i> |

But not:

- | | | | | |
|------|----------------------|---|-------|---|
| (28) | <i>female</i> worker | ≠ | (28a) | someone who works in a <i>female</i> manner |
| (29) | <i>blind</i> worker | ≠ | (29a) | someone who works in a <i>blind</i> manner |
| (30) | <i>fat</i> smoker | ≠ | (30a) | someone who smokes in a <i>fat</i> manner |

Phrases in which adjectives directly modify the referent are uncommon with agentive nouns; most adjectives are interpreted as modifying the verbal element unless they are unable to do so (consider modifying ‘eater’ with such diverse adjectives as *fast*, *healthy*, *small*, *good*, *heavy* etc.). Most of the adjectives in (17) – (20) for example could easily describe a person – we commonly refer to people as ‘big’, ‘free’ and even ‘heavy’:

- | | | |
|------|---------------------|----------------------------|
| (31) | <i>heavy</i> person | person who is <i>heavy</i> |
| (32) | <i>big</i> person | person who is <i>big</i> |
| (33) | <i>free</i> person | person who is <i>free</i> |

When adjectives premodify agentive nouns an indirect modification is clearly favoured, and the reason for this is likely pragmatic. If a speaker has referred to someone using an agentive noun, they have probably done so because this is a *relevant* description. We can (and usually do) refer to people in other ways, such as pronominally (‘he’, ‘them’) or by name; if the fact that someone is a smoker is irrelevant pragmatically there is no reason to identify them as such. Hence, the very choice of using

²⁸ Politzer expresses the same notion in different terms; for him these adjectives “restrict or narrow the meaning of the noun [and] limit the semantic field covered by the noun which they modify” (1971, p. 99).

an agentive noun biases the interpretation of the adjective-noun complex to an indirect modification.

What (25) – (30) demonstrate is that it is nevertheless *possible* to attribute qualities directly to the referent of an agentive noun, and not to the action associated with it.

In order to account for the two possible behaviours, which I have labelled direct and indirect modification, we must permit a kind of nominal decomposition whereby the referent can be separated from the verbal component, which can be tabulated as follows:

Agentive noun	Referential element	Non-referential element
smoker	person	smoke
eater	person	eat
thinker	person	think
worker	person	work

Table 1: Decompositional elements of agentive nouns

This decomposition is required to provide a specific site for quality attribution in phrases that reflect an indirect modification.

Despite the tendency for agentive nouns to pragmatically invite indirect modification, there are phrases which are largely ambiguous between direct and indirect interpretations. Consider the following example discussed by Politzer (1971, pp. 97 - 99).

- (34) *poor* teacher
- (a) the teacher is *poor at teaching / teaches poorly*
 - (b) the teacher is *poor* (lacks wealth, 'poor person')

Both the indirect (34a) and direct (34b) interpretations of the prenominal phrase (34) appear to be reasonable outside of any specific context, with neither constituting a clear or expected default. In this case the adjective is relevant to both semantic components of the noun (the referential component and the verbal component 'teach') and so perhaps it is not surprising that its reading is ambiguous. A similar ambiguity is discussed by Beard (1991, p. 196) with the two interpretations represented by the 'bracketing paradox' (a model which Beard does not support):

- (35) Russian teacher
- (a) [Russian teach]er 'someone who *teaches* Russian'
- (b) [Russian] [teacher] 'a teacher who *is* Russian'

I have suggested that for pragmatic reasons an indirect interpretation is usually favoured in ambiguous cases involving agentive nouns, so we might expect (34a) and (35a) to be the default in each case. An explanation for why these examples do not display such a strong preference for indirect modification may once again be couched in terms of speaker choice; *teacher* is morphologically agentive, being derived from the verb *teach*, but it also refers to a *profession* as do the non-derived nouns *dentist*, *doctor* and even perhaps *student*. These nouns of profession are more likely to be used for reasons of simple identification – to refer to one person or group of people – than are most verb-derived agentive nouns. In simple terms, nouns of profession are commonly used to identify people and so qualities are readily attributed directly to those people without *necessarily* referring to their profession²⁹.

Leaving aside the reasons for a particular default interpretation, there remains an ambiguity in all phrases for which the adjective is able to modify both the referential and non-referential element. The following is an example much discussed in the literature:

- (36) X is a beautiful dancer
- (a) person [X] *is beautiful* [inherent]
- (b) person [X] *dances beautifully* [non-inherent]

In (36) both a direct and indirect interpretation are possible because 'beautiful' can readily modify either the referential or non-referential element:

Agentive noun	Referential element	Non-referential element
dancer	person	dance

Table 2: Decompositional elements of 'dancer'

²⁹ Ferris (1993, p. 24) provides an example *royal hatmaker* that involves a profession but which still strongly favours an interpretation of indirect modification; the phrase suggests "a hatmaker who has some special relationship to a royal family or royal person without being royal himself." The preference for an indirect interpretation can be explained in terms of conceptual relevance because the potential reading of 'a hatmaker who is royal' (direct modification) is pragmatically bizarre, as those of royal extraction are unlikely to be engaged in a profession.

This requires that the adjective can attribute qualities freely to both nominal and verbal elements; while this is not controversial it is also worthy of discussion. Intuitively it is possible, with the adjective having a readily derived adverbial form (*beautifully*) which can describe the manner of an action. This has been considered in the transformational literature (Lyons, 1968), where the ‘adverb of manner’ (*beautifully*) is transformationally related to the adjective (*beautiful*) and results in the ‘parallel constructions’ (36a/b). Likewise Bolinger (1967, p. 29) refers to a what is essentially the same ambiguity in *beautiful singer* as “a conflict of homonyms (or - what amounts to the same thing - a varying selection from two widely separated parts of the semantic range of the adjective)”. We need not consider the direct and indirect behaviours to be resultant from a ‘conflict of homonyms’, because in each case the adjective attributes the same quality and is simply *applied* differently, dependent on the site of modification within the decompositional semantics of the modified noun. The ambiguous phrase (36) does not reflect a choice of *sense* but of *function*. This dual function is also unproblematic from the perspective of a conceptual hypothesis of meaning; both refer to the same concept ‘beauty’.

... [in the conceptual hypothesis] ‘having the same meaning’ means ‘instantiating the same concept’. Thus, ‘Islamic’ and ‘Muslim’ might be said to be synonyms, because the corresponding concept, which we can either refer to as MUSLIM or ISLAMIC, is identical. (Riemer, 2010, p. 28)

Further support for modelling the indirect behaviour (36b) as modifying something distinct from the referent is found in discussions concerned with how the referent is ‘characterised’ in each interpretation. In the philosophical linguistic literature for example it has been noted that in (36a) both ‘beautiful’ *and* ‘dancer’ are characterising the referent (X), or in an Aristotelian sense they both ‘qualify the substance’ (i.e. the referent: X is beautiful *and* X is a dancer) (Bloemen, 1982; Carstairs, 1971; Neto, 1985)³⁰. This is referred to as a *categorematic* adjective, and is contrasted against the *syncategorematic* application in (36b) where only ‘dancer’ really characterises X, and ‘beautiful’ does not. As Bloeman puts it, syncategorematic words are “specifications of attributes, rather than attributes of substances” (1982, p. 682) which supports the notion advanced here that the adjective does not attribute a quality to the ‘substance’ (the referent) when indirect. Giegerich (2005, p. 582) suggests that an adjective is only *intersective* when “‘this X(N) is Y(Adj)’ is true [] for entities which are both X and Y”, as in (36a). Finally, this specific example has been labelled *dual adjectival modification* (Pustejovsky, 2006: 19) in that the adjective “can refer to dance technique or physical

³⁰ An in depth logical analysis is provided for the similar ambiguity of *good dancer* in Szabo (1995, pp. 110 - 121).

attributes". These authors support a view in which the adjective can be interpreted as modifying the referent or the verbal element of meaning implicit (and pragmatically salient) in the agentive noun.

Predicative phrasing removes the ambiguity evident in (34) – (36) and only allows for an interpretation whereby the adjective expresses a quality that is directly predicative of the noun referent:

- | | | |
|------|--------------------------------|-------------------------|
| (37) | the teacher is <i>poor</i> | 'lacking wealth' |
| (38) | the teacher is <i>Russian</i> | 'from Russia' |
| (39) | the dancer is <i>beautiful</i> | 'physically attractive' |

This restriction of potential interpretation may arise from the use of the copular verb which makes explicit the semantic relationship between the two phrasal elements. In the prenominal instantiations (34) – (36) the adjectives are simply collocated with the nouns they modify, without any such explicit marker, and there is a corresponding ambiguity in meaning, with both direct and indirect functions available as potential interpretations.

Nominalisation has the same effect; even when an indirect function is strongly favoured prenominally, nominalisation restricts the possible interpretation to one of direct reference modification³¹:

- | | | | |
|------|-------------------------|---|---------------------------------------|
| (40) | <i>heavy</i> smoker | ≠ | the <i>heaviness</i> of the smoker |
| | <i>big</i> eater | ≠ | the <i>bigness</i> of the eater |
| | <i>hard</i> worker | ≠ | the <i>hardness</i> of the worker |
| | <i>free</i> thinker | ≠ | the <i>freedom</i> of the thinker |
| | <i>poor</i> teacher | ≠ | the <i>poverty</i> of the teacher |
| | <i>Russian</i> teacher | ≠ | the <i>Russianness</i> of the teacher |
| | <i>beautiful</i> dancer | ≠ | the <i>beauty</i> of the dancer |

As expected there is no obvious change in meaning when adjectives that are applicable only to the referent are nominalised:

³¹ There is no familiar nominal form that corresponds with *big* or *Russian* in (40) but the generic suffix '-ness' successfully captures the intended *meaning*, even if the derived forms are odd.

(41)	<i>female</i> worker	the <i>femaleness</i> of the worker
	<i>blind</i> worker	the <i>blindness</i> of the worker
	<i>fat</i> smoker	the <i>fatness</i> of the smoker

Nominalisation also makes explicit the semantic relationship between the two phrasal elements, as did predication; in this case by naming the quality it is expressed as *belonging to* the referent. The potential ambiguity evident in the attributive position is lost because the relationship is now made clear; the quality attributed by the adjective can no longer apply to a separate non-referential element of the noun semantics.

By decomposing the semantic structure of agentive nouns into both a referent element and a separate verbal component, the model proposed provides a clear site for the quality attribution of adjectives which do not directly modify the person or thing denoted by the noun, while at the same time accounting for those which do. The choice to use an agentive noun to refer to a person or thing is a pragmatic one made for reasons of relevance, and as such an indirect modification is usually favoured, unless the adjective is only conceptually relevant to the referent. Indirect modification is only possible when adjectives premodify nouns and is lost in predicative phrasing or when the adjective is nominalised. These syntactic limitations arise due to the explicit semantic relationship expressed in these types of phrasing; in the prenominal instantiation in which the two phrasal elements are simply collocated, the atypical function is permitted.

3.2 Degree nouns

There is another commonly occurring type of phrase in which adjectives resist predication and which lends itself to an explanation in terms of indirect modification. These are phrases in which what is sometimes called a *degree noun* is modified by an *intensifying / reinforcing* adjective. Rather than attributing an independent quality to the referent of the noun, the function of these adjectives is to modify the *degree* of the *gradable property already expressed* by the modified noun. The following examples show how the default prenominal intensifying / reinforcing function is lost in predicative phrasing:

(42)	<i>complete</i> disaster	≠	(42a)	the disaster is <i>complete</i>
(43)	<i>total</i> mystery	≠	(43a)	the mystery is <i>total</i>
(44)	<i>absolute</i> legend	≠	(44a)	the legend is <i>absolute</i>
(45)	<i>true</i> hero	≠	(45a)	the hero is <i>true</i>
(46)	<i>true</i> mystery	≠	(46a)	the mystery is <i>true</i>
(47)	<i>real</i> disaster	≠	(47a)	the disaster is <i>real</i>
(48)	<i>real</i> problem	≠	(48a)	the problem is <i>real</i>
(49)	<i>utter</i> fool	≠	(49a)	* the fool is <i>utter</i> ³²

In (47) and (48) for example, in a likely default interpretation the adjective ‘real’ refers to the extent (degree) of the disaster or problem, while predicatively (47a/48a) the adjective can only be understood to attribute the quality of ‘reality’ (‘real’ as an antonym of ‘fake’ or ‘false’, etc.). A similar shift in function – from degree modification to quality attribution – is evident in each alternation in (42) – (49).

Examples such as these have been discussed widely in the literature, but perhaps most thoroughly by Paradis (2000) who investigates ten such adjectives. Firstly she finds that these *degree nouns* differ considerably from *referential nouns* in that they “correspond to gradable property concepts” (Paradis, 2000, p. 12), resulting in a semantic character ‘similar to an adjective’, although of course they clearly have a denotation also. Just as the agentive nouns can be conceived of as having two separate sites for adjectival value attribution, so can these ‘degree nouns’:

Degree noun	Referential element	Non-referential element
disaster	thing [disaster]	disastrous
fool	person [fool]	foolish
mystery	thing [mystery]	mysterious
hero	person [hero]	heroic

Table 3: Decompositional elements of degree nouns

The reinforcing adjectives are, put simply, morphologically and syntactically adjectival but semantically function as degree modifiers³³ (a function usually evident in adverbs such as *very*,

³² Of these reinforcing adjectives, ‘utter’ is well known for being a non-predicating adjective – it can never be phrased predicatively as it only has a reinforcing sense.

slightly, completely). As with the indirect modification of agentive nouns, the atypical behaviour is suggested paraphrastically where an adverbial form best reflects the prenominal sense:

- | | | | |
|------|----------------------|-------|---------------------------|
| (50) | <i>true</i> mystery | (50a) | <i>truly</i> mysterious |
| (51) | <i>real</i> disaster | (51a) | <i>really</i> disastrous |
| (52) | <i>total</i> mystery | (52a) | <i>totally</i> mysterious |

The reinforcing adjectives intensify (or reinforce) the *degree* of the secondary semantic element rather than attributing a *value* to any other particular quality of the referent, and thus only characterise the referent indirectly. Their role is “to specify a degree of a property of a noun, not to describe a property of a noun” (Paradis, 2001, p. 61). This function is different from that of the adjectives that modify agentive nouns (discussed in the preceding section) because in the case of the latter a quality is still attributed, even though it does not apply directly to the referent; in *free thinker* for example (20) the adjective attributes the quality of *freedom* to the verbal component [*to think*]. In contrast, (42) – (49) modify qualities already evident in the nouns and do not introduce any specific quality themselves.

In regards to these adjectives having both a descriptive and a reinforcing function, it is interesting to note that many modifiers which do not obviously have ‘degree’ as part of their semantic makeup can nevertheless be interpreted as degree modifiers simply by collocation with adjectives (Haag, 1997, p. 116), as in the following:

- (53) You were *damned* (very) lucky
He was *filthy* (very) rich
We were *awfully* (very) happy
This dessert is *sinfully* (very) delicious

Adjectives such as ‘complete’ and ‘true’ take on a degree modifying behaviour by default when they are collocated with degree nouns, much as the modifiers above (53) shift in qualitative contexts. Haag actually rejects the notion that *nouns* can have ‘lexical scale’ however, stating “nouns are not inherently scalar, such that their modification triggers a value of scale in the lexeme, as is the case with adjectives” (Haag, 1997, p. 119), and an example given is *fool* which cannot be modified by the ‘degree word’ *very*. This analysis however does not take into account the degree modifiers that *are*

³³ Technically the adjectives have taken on a “reinforcing totality function” (Paradis, 2001, p. 60) in that they modify *bounded* rather than *unbounded* gradable concepts (see 2.3).

able to modify ‘fool’ in terms of degree, such as all those introduced prenominally in (42) – (49). Under the model proposed here there is a semantic explanation for this behaviour in the form of the non-referential element which is qualitative and so can accept modification in terms of degree.

As was the case with the agentive nouns, if adjectives attribute values to qualities relevant *only* to the referent element of a degree noun and not to the non-referential element, then modification is direct and results in a regular, predicable sense:

(54)	ancient disaster	a disaster which is ancient
	tired fool	a fool who is tired
	perplexing mystery	a mystery which is perplexing
	pimply hero	a hero who is pimply

This direct modification is evidenced further by the unsuitability of adverbial paraphrases in these cases:

(55)	ancient disaster	(72a)	* anciently disastrous
	tired fool	(73a)	* tired-ly foolish / foolish in a tired manner

As is also expected, a direct non-reinforcing sense can *potentially* be interpreted in prenominal phrases where that sense is applicable to the referent (regardless of its likelihood):

(56)	complete mystery	(74a)	mystery which is complete (finished)
(57)	complete fool	≠	(75a) the fool is complete

In (56/a) the referent may be conceived of as an *event*, in that it has a beginning and an end occurring within a relatively restricted temporal space, and so can be *described* as ‘complete’ just as well as any other event (‘party is complete’, ‘cycle is complete’ etc.). This descriptive sense is not possible in (57/a) where the referent does not have a salient quality relevant to ‘completeness’.

Another parallel to the alternations involving agentive nouns is that the referent can be thought of as only being characterised once when the adjective behaves indirectly and twice when it modifies directly. To put it another way, in reinforcing senses the referent is *described* by the noun (e.g. ‘fool’) and not by the adjective (‘complete’); the nouns are used for *descriptive* purposes, not *identification*

(61)	<i>complete</i> list	list is <i>complete</i>	'finished'
	<i>complete</i> collection	collection is <i>complete</i>	'with all parts'
	<i>true</i> story	story is <i>true</i>	'factual'
	<i>real</i> events	events are <i>real</i>	'actual'
	<i>real</i> diamond	diamond is <i>real</i>	'authentic'
	<i>absolute</i> devastation	devastation was <i>absolute</i>	'total'

This indicates that it is indeed the 'degree' quality or 'descriptive' function of the nouns that allow for indirect modification, because when the noun lacks this feature only the regular non-reinforcing function is maintained.

A final parallel that links the semantic behaviour of these phrases to the indirect agentive phrases is their inability to be nominalised and retain the degree modifying semantics:

(62)	a <i>true</i> report	the <i>truth</i> of the report	
	a <i>true</i> scholar	* the <i>truth</i> of the scholar	[reinforcing]
	a complete journey	the <i>completeness</i> of the journey	
	a complete disaster	* the <i>completeness</i> of the disaster	[reinforcing]

The inability for adjectives to maintain a degree modifying function when predicated or nominalised can be explained for the same reasons as for direct and indirect modification in the preceding section; in these syntactic frames the semantic relationship between the adjective and the modified noun is made explicit, and suggests the adjective attributes a quality to the referent. In the case of phrases with reinforcing adjectives and degree nouns, no separate quality is attributed to the noun and so the reinforcing sense cannot be maintained except in prenominal position.

3.3 Indirect modification and predication

As discussed in 2.4, predicative phrasing is only possible when an adjective attributes a quality to the referent of the modified noun. In this chapter the notion of indirect modification has been introduced to describe a function that sometimes arises when adjectives modify *agentive* nouns, and

reason; by naming the quality and then relating it to the noun referent as something it *possesses*, this type of phrasing implies that a quality is attributed:

- (69) the eater's *bigness* [size] / the *bigness* [size] of the eater
the idiot's *completeness* / the *completeness* of the idiot

In predication the two phrasal elements are related semantically by inclusion of a copular verb. To say that something *is* or *seems* [quality] more explicitly attributes a quality to the referent than does a prenominal phrase in which the two elements are simply collocated.

Prenominal:	AN	e.g. 'big eater'
Predicative:	N [be] A	e.g. 'the eater is big'

Similarly nominalisation of the adjective (and the subsequent change in phrasing) makes explicit that the quality belongs to the referent:

Nominalisation:	A _{nominalised} [of] N	e.g. 'the bigness [size] of the eater'
-----------------	---------------------------------	--

The fact that indirect modification is restricted to the prenominal position has been shown to be a result of this function differing from the regular direct quality attribution that is made explicit in other types of phrasing. The ambiguity evident in prenominal modification is a result of the diverse semantic relationships that are possible as a result of simple collocation.

4. Classifying the referent

Some adjectives are restricted to the attributive position because they have a fundamentally different function than attributing a quality to the referent. These are sometimes said to *classify* the referent as being of a certain *type / kind / class* rather than *describe* it, and in this chapter we will consider two distinct varieties of adjectives that may be said to have this function; firstly, adjectives that usually attribute qualities but which take on a *class naming* function when collocated with particular nouns, and secondly those which have a semantic structure similar to nouns, with resultant syntactic limitations.

The adjectives in (1) – (3) have taken on a *class naming* function in collocation with these particular nouns and, in a likely default interpretation, no longer attribute any specific quality:

(1)	red panda	≠	(1a)	the panda is red
(2)	nervous disorder	≠	(2a)	the disorder is nervous
(3)	short story	≠	(3a)	the story is short

In (1) for example ‘red’ refers to a particular *species* of panda rather than attributing a *colour* value to an individual. In (2) the disorder does not have a nervous *quality* but rather is of the nervous *kind*, and in (3) the story is not necessarily ‘short’ in quality but in kind. This class naming function is not the result of any *linguistic* features in either the adjective or noun, but rather is dependent on the *encyclopaedic world knowledge* of the language user; while naming the subspecies of panda in (1) certainly implies much about the appearance and other intrinsic qualities of the referent, no such qualities are attributed to the referent by the adjective. Predication, as in (1a) – (3a), implies a quality attributing function so that ‘red’ (1a) now attributes a colour value to the referent (and similarly with ‘nervous’ and ‘short’) rather than name the class it belongs to. Marking the adjectives as gradable has the same result:

(4)	very red panda	‘panda that is red in colour’
(5)	slightly nervous disorder	‘disorder that has a nervous quality’
(6)	awfully short story	‘story that does not take long to tell / read’

Nominalisation also removes the possibility of a classificatory interpretation in these phrases:

- (7) the redness of the panda / the panda's redness
- (8) the nervousness of the disorder / the disorder's nervousness
- (9) the shortness of the story / the story's shortness

As a result, the class-naming function is restricted to the prenominal position, as was the case with indirect modification.

Another group of adjectives which serve to classify the noun referent rather than attribute qualities are those which are sometimes referred to as *denominal* or *relational*, which are structured semantically like nouns and therefore behave like *modifying nouns* which are common in English.

- | | | | | |
|------|---------------------|---|-------|----------------------------|
| (10) | parental guidelines | ≠ | (10a) | guidelines are parental |
| (11) | presidential palace | ≠ | (11a) | the palace is presidential |

The predicative paraphrases (10a / 11a) invite an interpretation in which the adjectives describe the referent by naming one of its qualities, so we might say the 'guidelines have a parental quality' or 'the palace has a presidential quality'. While it is possible for any building to have a presidential *quality* (perhaps appearing 'important', 'imposing' or 'typical of a government building') this is not the likely default meaning of the prenominal phrase (11). Preferable paraphrases express the adjectives in *nominal* form, as the nouns from which the adjectives are morphologically derived:

- (12) 'guidelines *for* parents'
- (13) 'palace *of* the president'³⁵

Because the adjectives here are expressed as *nouns*, as a result of English syntax they must be conjoined by a linking preposition to express the relationship the two have to each other. The similarity to modifying nouns is evident in the following examples:

- | | | | |
|------|--------------|-----------------------|----------------------------|
| (14) | butter knife | * the knife is butter | 'knife <i>for</i> butter' |
| (15) | stage door | * the door is stage | 'door <i>of</i> the stage' |

³⁵ We may choose to call this a 'palace *for* the president' rather than '*of* the president' but neither is obviously more correct. In either case the logical relation supplied by the preposition captures the intended meaning more successfully than predicative phrasing. Levi (1978, p. 6) suggests that such ambiguity is "reduced to manageable proportions in actual discourse by semantic, lexical, and pragmatic cues."

As with the denominal adjectives in (10) – (13) these modifying nouns are best paraphrased as a noun linked to the referential noun by a preposition. Nominal modifiers like ‘butter’ and ‘stage’ differ fundamentally from most adjectives by representing entities that have many separate qualities rather than naming a quality themselves (see 4.2).

When predicated, nominalised or marked for lexical scale they either result in semantically ill-formed phrases or ones in which their function must be understood as quality attribution:

- (16) ? very parental guidelines
- (17) ? the parentalness of the guidelines
- (18) ? slightly presidential palace
- (19) ? the presidentiality of the palace

Adjectives that function to ‘classify’ the referent do still *modify* it, even if this is not a result of quality attribution. Furthermore, to some extent ‘classification’ is a result of regular quality attribution, in the sense that by having a particular quality it belongs to a referential ‘subset’:

At the semantic level, although a noun and an adjective modifier may contribute differently to the meaning of the compound, a near-universal truism is that the denotation of the compound is a subset of the denotation of its constituent head noun (Abdullah & Frost, 2007, pp. 504-505)

Regardless of the label used to describe their function, the adjectives discussed in this section differ semantically from the regular predicating variety discussed in chapter 2.

4.1 Underived adjectives and encyclopaedic knowledge

Whether an adjective serves to *classify* or *describe* – whether it is relational or qualitative – cannot always be determined in linguistic isolation. There are many regular predicating scalar adjectives that can take on a classificatory function only in certain linguistic contexts, the interpretation of which depends on encyclopaedic knowledge and also on established usage (Giegerich, 2005, p. 577). Consider the different possible interpretations of (20)³⁶:

³⁶ Beard claims that some prenominal phrases which are ambiguous between a relational and qualitative semantics can “regularly have around four potential interpretations” (Beard, 1991, p. 202) rather than the two noted here. The other interpretations that he notes however appear to result from separate senses of the

- (20) grey kangaroo
- | | |
|--|---------------|
| (a) grey <i>type</i> of kangaroo (species) | [classifying] |
| (b) grey <i>coloured</i> kangaroo | [descriptive] |

The classificatory interpretation in (20a) requires that the hearer know there is a *variety* of kangaroo referred to as ‘grey’, because there is no linguistic cue in either the adjective or the noun³⁷, and if the hearer is aware of the variety ‘grey’ then the classificatory interpretation will likely be the default. (20b) is a qualitative interpretation that can potentially result from the exact same phrase, in which the adjective attributes the colour ‘grey’. The relative unlikelihood of a qualitative interpretation (20b) can be explained in terms of Gricean relevance; *describing* a kangaroo as grey in *colour* is usually irrelevant, as all members of these species are of a similar colour, and thus it would violate the *maxim of Relevance* (Grice, 1989, pp. 26 - 27). Specifying which *variety* of kangaroo is being referred to on the other hand will be relevant in many situations, such as population control or education.

The classificatory nature is also evidenced by phrases in which there would otherwise occur a logical contradiction:

- (21) the red grey kangaroo

There are contexts in which (21) might correctly characterise a referent, for example if a kangaroo of the grey *variety* appears red *in colour* after a dust storm. If both adjectives were attributing qualities of colour to the referent then the phrase would be ill-formed because they are *contrary terms* (they cannot both be true, but both can be false – see Miller & Fellbaum (1991, p. 211)). Note that (21) cannot characterise a kangaroo of the red *variety* which happens to be grey *in colour*; this is because the classificatory sense must always occur closer to the head noun in a sequence of prenominal modifiers than a descriptive / qualitative adjective (see Bache & Davidsen-Nielsen (1997) and Kemmerer (2000)), so this interpretation is only possible when the ordering is reversed:

- (22) the grey red kangaroo

adjective rather than a separate function (we may claim here that ‘grey’ can refer to the referent being ‘dull’ or ‘dreary’ for example). These potential separate interpretations are omitted here for reasons of relevance.
³⁷ Also see (Abdulkhaliq, 2001, p. 28) for a discussion of how *encyclopaedic world knowledge* differs from *linguistic knowledge*, and (Riemer, 2010, p. 94) for a discussion of the difficulties in distinguishing the two.

The fact that classificatory adjectives must be adjacent to the noun they modify hints at the simplest explanation for why these class naming adjectives resist predication, nominalisation and gradability (see previous section), which is that they may have formed *lexical constructions* with the nouns they modify. If the prenominal instantiations represent a single lexical entry rather than a compositional phrase, then it is not surprising that the adjectives which form a part of them are unable to be altered morphosyntactically (see 1.2). It is however difficult to determine definitively whether a prenominal adjective is lexicalised or not in any particular case, as Sadler & Arnold (1994) acknowledge, arguing instead for a model that includes both ‘weakly’ and ‘strongly’ lexical constructions. Abdullah & Frost (2007, p. 503) also declare that it “remains controversial ... where to draw the line between compositional expressions, on one side, and lexicalized/idiomatic expressions, on the other”. There is insufficient scope here to consider the extent of lexicalisation in each instance, and consequently I will assume that lexicalization reflects an antecedent alteration in the semantics of the adjective.

In most cases the class naming adjective correlates in meaning somewhat with its regular quality attributing sense. For example, while ‘nervous’ is a *type* of disorder, it is also the case that people with the disorder will have a nervous *quality* (24)³⁸:

- | | | | | |
|------|-------------------|---|-------|---------------------------------------|
| (23) | nervous applicant | = | (23a) | the applicant is nervous |
| (24) | nervous disorder | ≠ | (24a) | the disorder is nervous ³⁹ |

This correlation is clearer in the following example⁴⁰ where the classificatory function of the adjective (26) is almost indistinguishable from its descriptive one (25):

- | | | | | |
|------|----------------|---|-------|------------------------|
| (25) | short trousers | = | (25a) | the trousers are short |
| (26) | short story | ≠ | (26a) | the story is short |

The phrase *short story* has a likely default classificatory interpretation in which the referent is identified as being a certain *kind* of story; the fact that ‘short stories’ may well be correspondingly short in length or in the time required to read them simply reflects the aptness of the label, and not

³⁸ This example is adapted from Gross *et al.* (1989, p. 93) and is similar to an example provided by Warren (1989, p. 351) of *nervous breakdown* in which the adjective has a classifying function.

³⁹ The only way in which (24a) can be successfully interpreted is in a figurative reading where ‘disorder’ is personified for effect and described as having a nervous temperament.

⁴⁰ Adapted from Warren (1989, p. 351).

a quality attributing function of the adjective. As in (21) and (22), the classificatory function in (26) is revealed in the ability to further modify the referent with an adjective that would otherwise present a logical contradiction of quality attribution, as in *a long short story* which might describe a *short story* (class) that is relatively long (length).

As with previous examples, the classificatory sense in (26) is lost in predicative phrasing (26a) and the adjective now describes a referential quality (*length*). This is true of all adjectives with a class-naming function:

(27)	grey cloud	=	the cloud is grey	[descriptive]
	grey kangaroo	≠	the kangaroo is grey	[classifying]
	easy game	=	the game is easy	[descriptive]
	easy chair	≠	the chair is easy	[classifying]

This same interpretation surfaces when the adjectives are nominalised:

(28)	the <i>grey</i> ness of the kangaroo / the kangaroo's <i>grey</i> ness
	the <i>nervous</i> ness of the disorder / the disorder's <i>nervous</i> ness
	the <i>short</i> ness of the story / the story's <i>short</i> ness
	the <i>easy</i> ness of the chair / the chair's <i>easy</i> ness

By deriving a noun from an adjective, nominalisation gives a *name* to an adjectival quality, so to talk about the 'nervousness of N' is to imply that the N has the quality of being nervous to some degree. This is not possible for class labelling adjectives which do not attribute individual qualities to the referent.

Marking class-naming adjectives for gradability also prevents a classificatory interpretation being reached:

(29)	<i>very grey</i> kangaroo	'kangaroo of a strong grey colour'
	<i>slightly nervous</i> disorder	'disorder that is slightly nervous'
	<i>really short</i> story	'story short in length'
	? <i>less easy</i> chair	? 'chair with less ease'

While this reveals that class-naming adjectives are not conceptually gradable, a lack of gradability alone is not sufficient evidence for a lack of quality attribution (see 2.3). What marking for gradability does reveal however is whether a usually gradable adjective (such as those in (29)) has taken on a classificatory function in any particular instance.

4.2 Denominal adjectives and relational semantics

It is fairly uncontroversial to claim that some adjectives which are morphologically derived from nouns also have a semantic structure that is similar to nouns, but what is less clear is how to model the semantic interaction between such modifiers and the referents they modify. Fundamental questions arise, such as exactly what should or should not be considered a ‘quality’, and what should or should not be considered an adjective. In this section evidence is put forward to support the view that the non-predicating behaviour of some adjectives derives from a ‘nominal’ semantics (4.2.1), and difficulties in modelling their semantic function is discussed (4.2.2). Finally, the potential for a functional ambiguity is discussed (4.2.3).

4.2.1 Denominal adjectives

There is much evidence to support the notion that some adjectives have a semantic structure indistinct from nouns and so behave in the same way as *modifying nouns* in English. Levi (1978) calls such adjectives *denominal* (or *adjectivalized nouns*) and, coming from the perspective of a transformational grammarian, considers the surface adjectives to be transformations of underlying nouns. They are also sometimes referred to as *relative* or *relational* adjectives, which is a term long established in European (and specifically Russian) schools of language study (Beard, 1991, p. 199; Raskin & Nirenburg, 1998, p. 155; Sussex, 1974, p. 193). As Raskin & Nirenburg explain:

This tradition does accept as dogma what Levi tries so painstakingly to prove, namely that “relative adjectives [are] derivatives of nouns” ... and the term is basically unfamiliar to English grammarians because much, if not most of what relative adjectives do in other languages is done in English by nouns preceding other nouns. (Raskin & Nirenburg, 1998, pp. 155 - 166)

As was seen in examples (10) – (13), the denominal structure of an adjective is suggested by semantic paraphrase in which it is best expressed as a noun (*presidential palace* → *palace for the*

president). The meaning of (30) for example is not successfully captured by predication (30a) but rather by a *relative clause construction* (Levi, 1978, p. 77), as in (30b):

- (30) *literary criticism*
 (a) * the criticism is *literary*
 (b) criticism of / relating to *literature*

More compelling evidence for a nominal semantic structure comes in the form of what Levi calls ‘morphological adjectivalization’ (1978, p. 147), whereby a noun can be modified by either a denominal adjective or the noun from which the adjective is derived with little if any difference in meaning:

	Adjective + noun	Noun + noun
(31)	<i>linguistic</i> difficulties	<i>language</i> difficulties
	<i>dramatic</i> criticism	<i>drama</i> criticism
	<i>atomic</i> bomb	<i>atom</i> bomb
	<i>dental</i> appointment	<i>dentist</i> appointment

This functional correspondence is also evident in the apparent arbitrariness of whether one form or the other becomes dominant in everyday usage. Consider the following examples⁴¹:

- | | | | |
|------|--|-------|---|
| (32) | <i>dental</i> appointment | (32a) | <i>dentist</i> /'s appointment |
| (33) | [?] <i>doctoral</i> appointment | (33a) | <i>doctor</i> /'s appointment |
| (34) | <i>medical</i> appointment | (34a) | [?] <i>medicine</i> appointment |
| (35) | [?] <i>electrical</i> appointment | (35a) | [?] <i>electrician</i> /'s appointment |

Although (32) – (35) all represent kinds of *appointments*, some are commonly identified with the modifier in the form of a derived adjective (left column) and others with a modifying noun (right column).

If we accept that some adjectives are semantically indistinct from nouns, then in the prenominal position they form what is (in terms of semantic structure) a *compound noun*, and so we might expect their behaviour to correlate with the modifying nouns in these constructions. Indeed,

⁴¹ These examples are adapted from (Bolinger, 1967, p. 31).

denominal adjectives and modifying nouns are “virtually identical in many aspects of their behaviour” (Giegerich, 2005, p. 576). Some of the restrictions faced by these modifiers are outlined by Levi (described by Miller & Fellbaum):

[I]n *baseball game* the noun *baseball* is used as an adjective to modify *game*, but, like a non-predicative adjective, the nominal adjective does not conjoin (*the long and baseball game*), is not gradable (*the extremely baseball game*), and cannot be nominalized (*the game’s baseballness*). Consequently, non-predicative adjectives can be considered stylistic variants of modifying nouns ... (Miller & Fellbaum, 1991, p. 210)

What is it in terms of semantic structure and function that differentiates a noun or denominal from a regular quality attributing adjective? The primary distinction is made clear by Jespersen (quoted in Raskin & Nirenburg (1998, p. 142) and in Paradis (2000, p. 8)):

The adjective indicates and singles out one quality, one distinguishing mark, but each substantive suggests, to whoever understands it, many distinguishing features by which he recognizes the person or thing in person (Jespersen, 1929, p. 74).

Unlike predicative adjectives, a ‘substantive’ (noun) does not represent a single quality, but is instead an entity with many qualities of its own. This analysis is supported by Wierzbicka:

[T]here are at least two crucial and interrelated semantic differences between nouns and adjectives. First, nouns tend to designate ‘kinds of things’ endowed with certain properties; whereas adjectives designate properties as such. Second, as Jespersen pointed out, a noun tends to suggest a rather large number of properties (even though its meaning cannot be reduced to those properties); an adjective, on the other hand, designates (what is seen as) a single property. (Wierzbicka, 1986, p. 472)

This distinction provides an explanation for the inability to predicate faced by denominal adjectives and modifying nouns, because predication reflects a quality attributing function (see 2.4) and this is not possible when the modifier does not denote a single quality:

(36) *train platform*⁴² * the platform is *train* ‘platform for *trains*’

⁴² The fact that the modifier appears to have the surface *form* of a noun does not alone explain its non-predicating behaviour, because surface form does not always determine lexical class. Consider for example *criminal* in ‘a *criminal* [noun] is someone who undertakes *criminal* [adjective] acts’.

The prenominal modifier ‘train’ is unable to predicate because it does not attribute any *specific quality* (in the sense outlined in 2.1) to the referent (the platform), but rather represents a separate entity with its own suite of qualities. This semantic structure can also capture that of the denominal adjectives discussed in this section, which are simply ‘stylistic variants’ of modifying nouns (*presidential* ⇔ *president*, *parental* ⇔ *parent*, *literary* ⇔ *literature*). Warren (1989, p. 352) supports the view that modification with a noun or denominal does not result in quality attribution, stating that the ‘referential content of a [denominal] adjective’ (represented by the noun from which it is derived) is “incompatible with [a] characterising [quality attributing] function”. If denominal modifiers do not attribute a specific quality, then it is expected under the current analysis that they would not be permitted to predicate (see 2.4) or be nominalised (see 2.5).

4.2.2 Relations

If denominal / relative adjectives and modifying nouns do not attribute a single quality, then what is their semantic relationship to the noun referent when they occur prenominally? The label *classifying* has been used by many researchers to characterise the function of these adjectives and to contrast them against the ‘regular’ quality attributing, predicating variety. Warren (1989, p. 352) differentiates classifying adjectives from those which *characterise* (i.e. attribute qualities, in my terms), and gives the examples *coastal* and *naval*. Bache (1997) differentiates a classificatory function from a *describing* one, finding evidence in the preferred ordering of prenominal modifiers by speakers of English. It is the classifying adjectives which sit closest to the head noun in the prenominal sequence and are said to “subcategorize the head they modify [so for example] a *medical dictionary* is a special kind of dictionary and *solar energy* is a special kind of energy” (1997, p. 458). Sussex (1974, p. 116) and Beard (1991) label these adjectives *relational* and distinguish them from *qualitative* ones. Ferris (1993, p. 24) refers to *associative* adjectives, making a distinction between *ascription* in which the adjective “conveys a property which is valid for the entity instantiated by the noun” and *association* when it is “valid for something else”. An example of the former is *symphonic overture* which is symphonic “in and by itself” and of the latter *operatic overture* which “does not have the usual characteristics of opera [because it] is purely orchestral”⁴³. Giegerich (2005, p. 572) also uses the label *associative* and gives the example ‘dental decay’ in which “dental does not describe the nature of the decay (as *slow* or *unexpected* would, for example) but identifies what is decaying”. In other words, ‘dental’ is not a quality of the decay but is a separate

⁴³ In other words, *symphonic* attributes a quality, whereas *operatic* relates the referent to a separate entity.

entity introduced to describe what is being decayed. Sadler & Arnold (1994, p. 210) call these adjectives *nominal* or *substantive* and suggest that they “characterise the class or kind picked out by the head N rather than the individual the N characterises”. It is clear that there is much support for separating denominal adjectives from the regular quality attributing variety, however the label ‘classifying’ suggests a fairly homogeneous group with a common function, when in reality the relationship between these modifiers and the nouns they modify is more varied; I will instead refer to a *relational* function.

The interpretation of how a nominal modifier relates to the referent of the modified noun is dependent to some extent on encyclopaedic knowledge rather than linguistic cues, as was the case with class-naming adjectives (see 4.1). Consider the default interpretations of the following phrases (adapted from Giegerich (2005, p. 579)):

- | | | |
|------|-------------------|-------------------------------|
| (37) | <i>olive oil</i> | ‘oil <u>made from</u> olives’ |
| | <i>engine oil</i> | ‘oil <u>for</u> engines’ |

Despite modifying the same noun, the two modifiers in (37) relate in different ways to the referent, evident in the suitable preposition that arises in paraphrase. Giegerich (2005, p. 577) provides another example in which a denominal adjective *papal* (with the referential content ‘pope’) can be interpreted as the subject of a phrase (38) or the object (39):

- | | | |
|------|---------------------|-----------------------------|
| (38) | <i>papal visit</i> | ‘visit <u>by</u> the pope’ |
| (39) | <i>papal murder</i> | ‘murder <u>of</u> the pope’ |

To arrive at these separate interpretations a speaker must rely on encyclopaedic knowledge, insofar as it is assumed that “the pope is unlikely to murder anyone but is known to go visiting.” These examples are presented here to show that the appropriate *relation* between the modifier and the head noun (expressed in paraphrase by a linking preposition such as ‘by’ or ‘of’) cannot necessarily be determined linguistically. Sussex (1974, p. 126) makes a similar observation when he attempts to construct a more precise paraphrase for the noun compound *milkman* and wonders if he is a man who ‘handles’, ‘delivers’ or ‘trades in’ milk; ultimately he decides that it is almost impossible to limit the number of possible interpretations in any manageable way.

When a denominal adjective is considered in isolation it is particularly difficult to determine what linguistic relations it might instantiate, and this is reflected in the difficulty lexicographers have in defining them. Often they are defined simply as ‘of or pertaining to [something]’ rather than (as is usual for quality attributing adjectives) “by reference to an attribute whose value is expressed” (Gross, et al., 1989, p. 94). Of course, if they are semantically indistinct from nouns as I have claimed in 4.2.1 this is not surprising, because they do not represent a single quality / attribute. Nouns that are sometimes used as a modifier (as almost any noun can be) are unlikely to have their ‘modifying function/s’ listed in their dictionary entry, so for example ‘butter’ is unlikely to have the meaning ‘of or pertaining to butter’ listed. Dictionary entries for denominal adjectives are justified in light of them being morphologically marked as modifiers – as lexicalised adjectives – but the difficulty in providing a single definition reflects their nominal semantic structure.

What kinds of relations are possible in noun compounds? Various attempts have been made to delimit the possible relations to some extent; Quirk *et al.* (1985, p. 1339) note that adjectives which have a “semantic relation to nouns” often have meanings like *consisting of*, *involving* and *relating to*, citing examples such as ‘experimental’, ‘rural’, ‘political’ and ‘statutory’. Warren (1989, p. 352) discusses the ‘connections’ these modifiers create, such as *consisting of*, *belonging to*, *occurring in/on/at*, *dealing with*, *caused by*, *be for*. Ljung (Lees, 1973) goes a step further, linking relations to particular derivational suffixes; for example, adjectives with suffixes *-y/-ous/-ful* are identified as being variants of HAVING (as in *sandy* = ‘having sand [on it]’), and those that with suffixes *-like/-ic/ish* as being variants of RESEMBLING (as in *metallic* = ‘resembling metal’). Levi (1978) rejects outright any suggestion that these relations cannot be fully enumerated and described:

A careful examination of the semantic relationships between head nouns and prenominal modifiers in [complex nominals] reveals not only that these relationships are not “endless in number” as ... others have asserted, but that the variety of these relationships is in fact confined within a very limited range of possibilities. (Levi, 1978, p. 75)

Levi goes on to identify nine ‘predicates’ intended to capture all of the possible semantic relationships that occur between nominal modifiers and the head noun. These are listed below alongside the ‘traditional terms’ to which they correspond (1978, p. 77):

(40)	CAUSE	causative
	HAVE	possessive / dative
	MAKE	productive; constitutive, compositional

USE	instrumental
BE	essive / appositional
IN	locative [spatial or temporal]
FOR	purposive / benefactive
FROM	source / ablative
ABOUT	topic

By identifying and separating these various types, it is possible to more formally account for how nominal modifiers relate to the referent. Recall examples (10) and (11) in which the prepositions ‘for’ and ‘of’ appeared in paraphrase to express how the entities named by the modifiers relate to the referents:

- | | | |
|------|----------------------------|--------------------------------|
| (41) | <i>parental</i> guidelines | guidelines <i>for</i> parents |
| (42) | <i>presidential</i> palace | palace <i>of</i> the president |

Using Levi’s predicates we can identify the correct relation in (41) to be FOR (purposive / benefactive) because the *guidelines* are for the benefit of *parents*, and in (42) perhaps HAVE (the palace is a possession of the president) or FOR (the palace is also for the benefit of the president). For present purposes it is not necessary to determine which relation is the most suitable to capture the semantics of any particular phrase⁴⁴, but it is important to note how such relations differ from quality attribution. To make this point clear, we can abandon Levi’s predicates and substitute the varied logical relations with a more general relational term (such as simply ‘related to’) and still capture the semantic content of noun compounds with some degree of success⁴⁵; certainly more successfully than via predication:

parental guidelines	⇔ ‘guidelines <i>related to</i> parents’	? guidelines are parental
presidential palace	⇔ ‘palace <i>related to</i> the president’	? palace is presidential
literary criticism	⇔ ‘criticism <i>related to</i> literature’	? criticism is literary
papal visit	⇔ ‘visit <i>related to</i> the pope’	? visit is papal
papal murder	⇔ ‘murder <i>related to</i> the pope’	? murder is papal
butter knife	⇔ ‘knife <i>related to</i> butter’	* knife is butter

⁴⁴ Beard (1991, p. 221) suggests that the appropriate relation is determined via a decompositional semantics, in which the modifier corresponds to an “available argument position ... in the semantic feature inventory of the [head] noun”. Only if no such feature is available will the speaker “assume[] one of Levi’s ... high-level categories which fits the pragmatic situation”.

⁴⁵ For Downing (1988) it is only the non-specific ‘related to’ relationship that is provided by the grammar, and more specific relationships rely on encyclopaedic knowledge.

train platform

⇔ 'platform *related to* trains'

* platform is train

What is shared by all denominal adjectives and modifying nouns is a semantic structure that has referential content which must be related somehow to the referent of the modified noun. Exactly what kind of relation is appropriate in any particular instance must be determined largely with encyclopaedic knowledge and logical inference, but it remains the case that this is a logical relation and not the attribution of a single quality, as evident in the examples in (above). The fact that such a variety of relations can be inferred simply by premodifying a noun also supports the assertion I have made in 2.4 that simple collocation allows for more variation than when a specific relationship between two phrasal elements is made explicit, as is the case with predication and nominalisation.

4.2.3 Functional ambiguity

Despite the fact that denominal adjectives lend themselves to paraphrases in which they are expressed as nouns, it is still possible to model their function as quality attribution in some instances. Some examples of supposedly denominal adjectives put forward in the literature are not definitively restricted to the attributive position; Warren (1989, p. 352) for example identifies the adjectives *coastal* and *naval* as being 'restricted to the attributive position' because of their classifying function, but they appear to have marginal acceptability in some instances:

- | | | |
|------|---------------------------|---------------------------------------|
| (43) | <i>coastal</i> village | ? 'the village is <i>coastal</i> ' |
| (44) | <i>coastal</i> road | ? 'the road is <i>coastal</i> ' |
| (45) | <i>naval</i> architecture | ? 'the architecture is <i>naval</i> ' |
| (46) | <i>naval</i> building | ? 'the building is <i>naval</i> ' |

The adjective *coastal* in (43) might be considered to attribute a value to the quality of 'location' (or even more specifically, 'proximity to the coast') as is the case with *inland*:

- | | | |
|------|-----------------------|-------------------------|
| (47) | <i>inland</i> village | 'the village is inland' |
|------|-----------------------|-------------------------|

Naval in (45) – (46) may be seen to attribute the quality of 'origin' or 'ownership' and so can be compared to adjectives such as *foreign* [*origin*] or *governmental* [*ownership*] which are freely predicating:

- (48) *foreign* architecture ‘the architecture is *foreign*’
 (49) *governmental* building ‘the building is *governmental*’

Another example introduced in the literature is *national budget* in which Beard declares *national* ‘cannot be a property’:

National cannot be predicated of *budget* because a nation cannot be a property, inherent or otherwise, of a budget, thereby explaining the unacceptability of the QAdj [qualitative adjective] reading **the budget is national*. (Beard, 1991, p. 218)

Is it really not possible for *national* to be a quality of the referent? Conceptually there is no obvious reason why *budget* cannot attribute a value of the quality ‘geographic / political scope’ (with the antonym ‘local’ for example). If this is the case the quality can be considered to have a *lexicalised scale* (see 2.3) onto which both *national* and *local* attribute values⁴⁶. The distinction between a ‘value’ (national) and the ‘quality’ that is attributed to it (scope) can be made clear in phrasing such as *the budget is national [in scope]*, just as a leaf may be *green [in colour]* or a person *untrustworthy [in character]*.

This apparent ambiguity in how *national*, *coastal* and *naval* function need not be of major theoretical concern. It is entirely possible for a single adjective to have both possible functions, as has already been suggested with the adjective *presidential*: in the phrase *presidential palace* the adjective could equally well function denominally (relating the referent to ‘president’) or attributively (attributing an absolute value of the quality of ‘presidentiality’ to the referent). This ambiguous function has been noted by Bartning and Noailly (1993, p. 27) who suggest that qualitative meanings have historically emerged from originally relational meanings (quoted in Raskin & Nirenburg (1998, p. 157)):

... these [denominal or relational] adjectives [can], parallel to their relational interpretation, give way to a qualitative analysis, with, in some cases, a clear binary distinction between the two different usages, and, in others, a continuum of the sense, which renders the description very delicate.

⁴⁶ *National* and *local* are provided as potential antonyms of each other, allowing for a familiar antonymic quality structure (or ‘bipolar’) which is the case for most qualities. It is entirely possible however for a single quality to have various lexicalised values that are not necessarily antonymic or hierarchically arranged. Gross *et al.* (1989, p. 94) for example note that there are qualities which “seem to be trichotomous (*solid / liquid / gaseous*) and some, perhaps, with even greater polarity (*red / green / yellow / blue*).”

Any potential ambiguity disappears when the adjective occurs predicatively, with only a qualitative interpretation being possible (see 4.3).

4.3 Classification and predication

The reason that adjectives which classify are restricted to the attributive position is that their semantic function is fundamentally different from quality attribution. In chapter 3 it was shown that interpretations of indirect modification are not possible when an adjective is predicated, because the predicative position reflects quality attribution *directly* to the referential element of a noun. In the case of classifying adjectives, predication is not possible because these adjectives do not attribute *any specific quality* to the referent at all, whether as a result of having taken on a class-naming function (see 4.1) or due to having a noun-like semantic structure complete with the multiple qualities typical of nouns (see 4.2).

By substituting classifying adjectives into the model of predication provided by Gross *et al.* (see 2.4) the unsuitability of predicative phrasing becomes immediately apparent. Firstly, with adjectives that have taken on a *class-naming* function, predication results in quality attribution; (50) implies (51):

(50) the panda is *red*

(51) redness(panda) = *red*

Placing the adjective after the copular verb *is* implies that a quality 'redness' is present in the referent. The potential for a classificatory interpretation is lost in predication due to the copular verb making explicit the relationship between the adjective and the referent.

By nominalising the adjective or marking it for gradability the classificatory function is also lost, because as a label for a certain *type* of referent the adjective is not representative of a single quality nor conceptually gradable:

(52) the *redness* of the panda / the panda's *redness*

(53) very / slightly *red* panda

To describe the quality attributed by an adjective, the adjective is nominalised, just as the quality attributed by *red* (when it has a qualitative function) is *redness*. In the case of semantically denominal adjectives, I have argued that no specific quality is attributed and so it is reasonable to suppose that no nominalisation is possible. Although the ability to do so is complicated somewhat due to the adjective being already derived from a noun, it is in fact always possible to further derive

a noun from a denominal adjective (for example with suffixes such as *-ness / -ity*), although the resulting term is often not lexicalised nor familiar:

- (54) coastal → ?coastalness
parental → ?parentalness
literary → ?literariness

This is not the case with noun-derived adjectives that are not semantically denominal (that are predicative with a regular quality attributing function); in these instances, nominalisation generally results in a familiar lexicalised term:

- (55) *muscle* (noun) → *muscular* (adjective) → *muscularity* (nominalised adjective)
fact (noun) → *factual* (adjective) → *factuality* (nominalised adjective)

The unacceptability of * *guidelines are parental* is the result of predication reflecting quality attribution. Substituting the phrasal elements into the predicative function provided by Gross *et al.*, the semantic structure of the phrase is:

- (56) ? *parentalness(guidelines)* = *parental*

The phrase is ill-formed because 'parentalness' is expressed as a quality. In an adjective with an ambiguous function such as *presidential* (see 4.2.3), a predicative phrase is not ill-formed but as is expected only allows for a qualitative interpretation, and not a relational one:

- (57) *presidentiality(palace)* = *presidential* (*the palace is presidential*)

In the qualitative sense, it may be preferable to label the quality to which *presidential* attributes a value as 'style' or 'appearance' (a quality for which semantically related adjectives might be *stately* or *grand*). This results in a more natural function:

- (58) *style(palace)* = *presidential*

The inability to predicate or be nominalised that is evident in adjectives that have taken on an atypical classifying function is to be expected; they have been shown to have a function distinct from quality attribution and so they cannot be phrased in predicative position following a copular verb, nor can they be nominalised (named) and phrased as belonging to the referent of the modified noun.

5. Conclusion

In this thesis I have provided a semantic account of the various contributing factors that can result in an inability to predicate for certain adjectives, and sometimes only when they perform certain functions. Initially I presented an account of the semantics of regular predicating adjectives (chapter 2) including their quality attributing function, the need for qualities to be conceptually relevant to the noun referent to result in a literal interpretation, and their typically gradable conceptual structure which is further divided into those which have a bounded or unbounded scalar structure. I also discussed the ability to predicate and to be nominalised, and how these abilities reflect a quality attributing function; predication explicitly links the adjective to the noun referent via a copular verb, while nominalisation requires that the quality expressed by the adjective be named and related to the referent possessively. In chapter 3, I provided an explanation of *indirect modification* to account for the non-predicability faced by certain adjectives when they modify agentive and degree nouns. I introduced a decompositional nominal semantics in which agentive nouns and degree nouns contain both a referential element consisting of the entity referred to by the modified noun, and a separate non-referential component which serves as a site separate from the noun denotation for quality attribution. Indirect modification is revealed semantically by paraphrase, in which the adjective typically surfaces in adverbial form and modifies either the action associated with agentive nouns (in the form of the verb from which they are derived, e.g. *hard worker* → *works hard*, *heavy smoker* → *smokes heavily*) or the degree of a quality already expressed by the degree noun (*real idiot* → *really idiotic*, *complete mystery* → *completely mysterious*) contingent on its conceptual relevance to the non-referential element. Predicative phrasing requires, via the copular verb, that the adjective attributes a quality directly to the referent, and because in these instances the site of modification is non-referential, predication was shown to not be possible. In chapter 4 I characterised the *classifying* function evident both in otherwise quality attributing adjectives that have taken on a *class-naming* function, and in *denominal* adjectives. I supported research that posits a semantic structure for denominal adjectives that is identical to that of modifying nouns, resulting in phrases that behave like noun compounds in English, and characterised that structure as differing from non-denominal adjectives due to representing multiple qualities rather than a single one. The way in which nouns and denominal adjectives relate to the referent was found to be unpredictable and idiosyncratic, but able to be reduced to a generic expression in which the referential content of the modifier is simply *related to* the noun referent (e.g. *parental guidelines* → *guidelines related to parents*, *papal visit* → *visit related to the pope*), and it was acknowledged that predication is sometimes possible when denominal adjectives are reinterpreted as having a quality attributing

function (e.g. the ambiguous phrase *presidential palace* may have interpretations *palace for the president* or *palace [which] is presidential [in quality]*). For both groups of classifying adjectives neither predication nor nominalisation were found to be possible because the adjectives do not have a function in which they express a single quality.

A general conclusion resulting from the semantic analysis presented is that atypical adjective functions are restricted to the prenominal (attributive) position, whether they be *indirect modification* or *classification*. The reason for this, I suggest, is that in both predicative phrasing and when nominalised, a quality attributing function is made explicit either by the copular verb in predication, or by the quality being named and expressed possessively. When in the prenominal position, no such explicit relationship between the modifier and the head noun is expressed and thus a more diverse semantics is possible.

Bibliography

- Abdulkhaliq, M. M. (2001). *English Noun Classes and Generative Lexical Mechanisms*. Stanford University, Stanford.
- Abdullah, N., & Frost, R. A. (2007). Rethinking the Semantics of Complex Nominals. In Z. Kobti & D. Wu (Eds.), *Advances in Artificial Intelligence* (Vol. 4509/2007, pp. 502-513). Heidelberg: Springer Berlin.
- Bache, C. (1978). *The order of premodifying adjectives in present-day English*. Odense: Odense University Press.
- Bache, C., & Davidsen-Nielsen, N. (1997). *Mastering English*. Berlin: Mouton de Gruyter.
- Bartning, I., & Noailly, M. (1993). Du relationnel au qualificatif: Flux et reflux. *Information grammaticale*, 42(42), 27-32.
- Beard, R. (1991). Decompositional Composition: The Semantics of Scope Ambiguities and 'Bracketing Paradoxes'. *Natural Language & Linguistic Theory*, 9(2), 195-229.
- Bloemen, J. (1982). Syncategorematic Words. *Linguistic Inquiry*, 13(4), 681-682.
- Boguraev, B., & Pustejovsky, J. (1990, August 20-25, 1990). *Lexical Ambiguity and The Role of Knowledge Representation in Lexicon Design*. Paper presented at the The 13th conference on Computational linguistics, Helsinki, Finland.
- Bolinger, D. L. M. (1967). Adjectives in English: Attribution and Predication. *Lingua*, 18, 1-34.
- Carstairs, A. (1971). Syncategorematic Words. *Linguistic Inquiry*, 2(1), 107-110.
- Chomsky, N. (1957). *Syntactic Structures*. The Hague: Mouton.
- Dixon, R. M. W. (1982). *Where have all the adjectives gone?: and other essays in semantics and syntax*. : Mouton.
- Downing, P. A. (1988). On the creation and use of English compound nouns. *Language*, 53, 810-842.
- Ferris, D. C. (1993). *The meaning of syntax : a study in the adjectives of English*. London ; New York: Longman.
- Geeraerts, D. (1997). *Diachronic prototype semantics*. Oxford: Clarendon press.
- Giegerich, H. J. (2005). Associative adjectives in English and the lexicon–syntax interface. *Journal of Linguistics*, 41, 571-591.
- Givon, T. (1970). Notes on the Semantic Structure of English Adjectives *Language*, 46(4), 816-837
- Givón, T. (1984). *Syntax: A Functional-Typological Introduction, Vol. I*. Amsterdam: John Benjamins.
- Greenbaum, S. (1996). *The Oxford English Grammar*. Oxford: Oxford University Press.
- Grice, P. H. (1989). *Studies in the way of words*. Cambridge, MA: Harvard University Press.

- Gross, D., Fischer, U., & Miller, G. A. (1989). The Organization of Adjectival Meanings. *Journal of Memory and Language*, 28, 92-106.
- Haag, M. (1997). Continuous and discrete adjectival scales. *Lingua*, 103, 113-126.
- Hopper, P. J., & Traugott, E. C. (2003). *Grammaticalization*. Cambridge: Cambridge University Press.
- Jackendoff, R. (1983). *Semantics and Cognition*. Cambridge: MIT Press
- Jespersen, O. (1929). *The Philosophy of Grammar*. London: Allen & Unwin.
- Katz, J. J. (1964). Semantic Theory and the Meaning of 'Good' *The Journal of Philosophy* 61(23), 739-766.
- Kemmerer, D. (2000). Selective impairment of knowledge underlying prenominal adjective order: evidence for the autonomy of grammatical semantics. *Journal of Neurolinguistics*, 13, 57-82.
- Kennedy, C. (1997). *Projecting the adjective: the syntax and semantics of gradability and comparison*. University of California, Santa Cruz.
- Lahav, R. (1989). Against Compositionality: The Case of Adjectives. *Philosophical Studies*, 57, 261-279.
- Lakoff, G. (1970). *Irregularity in Syntax* New York: Holt, Rinehart and Winston Inc
- Lees, R. B. (1973). Review: [untitled]. *Language*, 49(3), 704-714.
- Levi, J. N. (1978). *The Syntax and Semantics of Complex Nominals*. New York: Academic Press.
- Lyons, J. (1968). *Introduction to theoretical linguistics*. London: Cambridge U.P.
- Miller, G. A., & Fellbaum, C. (1991). Semantic networks of English. *Cognition*, 41, 197-229.
- Neto, J. B. (1985). Syncategorematic Words Again. *Linguistic Inquiry*, 16(1), 151-152.
- Oltean, S. (2007). On the Semantics of Adjectives. *Philologia*, 52(1), 155-163.
- Paradis, C. (2000). Reinforcing adjectives: A cognitive semantic perspective on grammaticalization. In R. Bermúdez-Otero, D. Denison, R. M. Hogg & C. B. McCully (Eds.), *Generative theory and corpus studies*. (pp. 233-258). Berlin: Mouton de Gruyter.
- Paradis, C. (2001). Adjectives and boundedness. *Cognitive Linguistics*, 12(1), 47-65.
- Politzer, R. L. (1971). English Ambiguity as a Pedagogical Problem: The Attributive Adjective. *The French Review*, 45(1), 96-103.
- Pustejovsky, J. (1995). *The Generative Lexicon*: Massachusetts Institute of Technology.
- Pustejovsky, J. (2006). Type Theory and Lexical Decomposition. *Journal of Cognitive Science*, 6, 39-76.
- Quirk, R. G., Sidney; Leech, Geoffrey; Svartvik, Jan. (1985). *A Comprehensive grammar of the English language*. New York: Longman Inc.
- Raskin, V., & Nirenburg, S. (1998). An Applied Ontological Semantic Microtheory of Adjective Meaning for Natural Language Processing. *Machine Translation*, 13, 135-227.

- Reimer, M. (2002). Do Adjectives Conform to Compositionality? *Philosophical Perspectives*, 16(Language and Mind), 183 - 198.
- Riemer, N. (2010). *Introducing Semantics*. Cambridge: CUP.
- Rusiecki, J. (1985). *Adjectives and comparison in English*. New York: Longman Inc. .
- Sadler, L., & Arnold, D. J. (1994). Prenominal Adjectives and the Phrasal/Lexical Distinction. *Journal of Linguistics*, 30(1), 187-226.
- Sussex, R. (1974). The Deep Structure of Adjectives in Noun Phrases *Journal of Linguistics* 10(1), 111-131
- Szabo, Z. (1995). *Problems of Compositionality*. Massachusetts Institute of Technology.
- Taylor, J. (1992). Old Problems: Adjectives in Cognitive Grammar. *Cognitive Linguistics*, 3, 1-37.
- Vendler, Z. (1963). The Grammar of Goodness. *The Philosophical Review*, 72, 446-465.
- Warren, B. (1984). *Classifying Adjectives*: Acta Universitatis Gothoburgensis.
- Warren, B. (1989). Pseudo-problematic pseudo-adjectives. *English Studies*, 70(4), 348-355.
- Wierzbicka, A. (1986). What's in a noun? (or: How do nouns differ in meaning from adjectives?). *Studies in language*, 10(2), 353–389.
- Willems, K. (2006). Logical polysemy and variable verb valency. *Language Sciences*, 28, 580-603.