The 'adverb-ly adjective' construction in English: meanings, distribution and discourse functions[1]

MAITE TABOADA
Simon Fraser University

CLIFF GODDARD
Griffith University

and

RADOSLAVA TRNAVAC
HSE University

We investigate a class of adjective phrases composed of a deadjectival adverb ending in *-ly* and an adjective head (e.g. *staggeringly incompetent*, *absolutely terrific*, *fiscally responsible*), a compact construction whereby two adjectives may jointly contribute to evaluative meaning. Using corpus methodologies on more than 1 million examples and relying on semantic analyses of about 1,000 instances, we propose that the construction can be divided into different semantic subtypes, including Degree (*deeply disturbing*), Focus (*utterly ridiculous*), Manner (*delightfully performed*), Reaction (*strangely compelling*), Topical (*historically inaccurate*) and Epistemic (*intuitively obvious*), among others. Using this typology, we investigate the relative distribution of each subtype across several registers of written English. We found a high frequency of the Reaction subtype in book, film and art reviews, and we suggest a discourse-functional explanation for this, linked to the perceived value of originality in expressive writing. This investigation reveals the power of semantically informed, corpus methodologies to shed light on the distribution of specific constructions.

Keywords: adverb–adjective combinations, evaluative meaning, intensification, discourse functions, semantics, corpus linguistics

1 Introduction

In our previous work on semantic subclasses of evaluational adjectives (Goddard *et al.* 2016, 2018, 2019) we became interested in a particular type of adjective phrase, where a deadjectival adverb ending in *-ly* modifies another adjective (*extremely difficult*, *painfully awkward*, *deceptively simple*). We were intrigued by the observation that they seem to be especially frequent in evaluative and critical language, such as in film and

book reviews, and that some of the combinations are highly original, even oxymoronic (*hilariously ridiculous*, *disgustingly good*). Adjective phrases of this kind essentially employ two adjectives at once, because the modifying adverb in *-ly* is derived from an adjective, so in essence it is 'Adj1-*ly* Adj2', making the construction doubly adjectival. We have dubbed this type of adjective phrase the 'adverb-ly adjective' construction. The construction gives a speaker or writer the chance to use two evaluational adjectives in a single well-crafted phrase, which if successful can achieve a special evaluational effect and at the same time display the speaker's or writer's linguistic creativity.

A comprehensive investigation based on searches across multiple corpora revealed a range of other types in addition to the highly evaluative and intensifying use. As a result, we here propose a semantically based classification, supported by and grounded in corpus analysis. We assign 'adverb-ly adjective' instances to seven major categories or types (Degree, Focus, Manner, Reaction, Topical, Time, Epistemic), and several minor categories, based primarily on the *-ly* adverb.

Some of these categories, especially Degree, Focus and Reaction, have been previously studied under the rubric of 'intensification' (Stoffel 1901; Partington 1993; Lorenz 2002; Ito & Tagliamonte 2003; Méndez-Naya 2008; Schweinberger 2021). Scholars have suggested that the presence of a varied range of deadjectival adverbs in the modifier position reflects a certain 'inflation' in the intensifier class. Once an adverbial modifier (whether ending in *-ly* or not) becomes very common, then other modifiers start to be used in its stead. This has been the case with *very*, once the most common intensifier in English, which has been overtaken by *really*. As intensifiers become delexicalized, losing some of their original meaning, then we start to recruit from the class of open adjectives in an ongoing process (Bolinger 1972; Partington 1993; Lorenz 2002; Tagliamonte 2008; D'Arcy 2015). Tagliamonte (2008) describes this process in detail, focusing on linguistic variation across generations. What is less well studied is how certain constructions are more frequent in certain registers due to discourse-functional motivations, such as the pressure to be creative and novel in critical writing or to display terminological precision in technical writing.

The outline of this study is as follows. In section 2, we provide some background on the study of intensification and review existing classifications of adjectives and adverbs. Section 3 proposes a detailed semantically informed, corpus-based typology of the 'adverb-ly adjective' construction, with diagnostics for identifying different subtypes. Building on this typology, section 4 explores in some detail the distribution of the subtypes across time and register, using various analytical techniques on five different corpora. Section 5 provides concluding discussion.

2   Orientation: intensification and previous classifications of adjectives and adverbs

2.1   More on intensification

'Intensification' is an umbrella term for a functional category or for a field of study, sometimes labelled degree (Bolinger 1972) or graduation (Martin & White 2005),

including 'boosters' or 'maximizers' (Quirk *et al.* 1985). Although the present study is not solely about intensification, some background is necessary here. 'Intensification' generally refers to the ability of some modifiers to place the modified word on a relative scale of either gradability ('more or less') or appropriateness ('truly or not'). Martin & White (2005) termed these 'force' and 'focus', respectively; we will term them Degree and Focus. Intensification is a big tent, however, which can encompass not only Degree and Focus, but also intense reaction (*incredibly good*) and emphatic epistemic meaning (*clearly dangerous*).

Intensification has been widely studied: as Méndez-Naya (2008) points out, some extensive studies date back to the beginning of the twentieth century (Stoffel 1901; Borst 1902; Fettig 1934), and it is still an active area of research (Paradis 1997; Kennedy & McNally 2005; Nevalainen 2008; D'Arcy 2015; Schweinberger 2021; Nouwen 2024). Bolinger (1972) devoted an entire book to open-class words (nouns, verbs, adjectives, adverbs) and their scalability. In relation to adjectives, he relied on lists from Borst (1902) and Kirchner (1955) which contain many combinations still prominent in present-day corpora, such as *absolutely necessary*, *bitterly cold*, *incredibly short* or *strikingly handsome.*

In the realm of intensification, Bolinger states, perhaps more than anywhere else in the grammar, processes of grammaticalization seem to always be at work, with each 'newcomer' intensifier elbowing others aside (Bolinger 1972: 18). To illustrate this point, Bolinger (1972) categorized *very* as fully grammaticized, but *really* as less so. Fast forwarding a few decades, we see that *really* is now grammaticalized, as Tagliamonte (2008) found in the language of several generations of Toronto speakers. All four of the Degree adverbs studied by Tagliamonte (*very*, *really*, *so*, *pretty*) were undergoing change in preference at the time of her study, with older speakers (over 50) preferring *very*, 30- to 49-year-olds using both *really* and *very*, and younger speakers preferring *really*, but also being the most frequent users of *so*. Tagliamonte describes this as 'intensifier recycling', a process whereby speakers recycle existing intensifiers and use them preferentially (see also Peters 1992, 1993; Partington 1993; Stenström 1999; Lorenz 2002; Ito & Tagliamonte 2003; Nevalainen 2008; Paradis 2008; D'Arcy 2015). Nouwen (2024) argues that intensifiers tend to be deadjectival adverbs and are thus an open class, just like adjectives are.

Some of the less delexicalized intensifiers have strict collocational restrictions: *bitterly cold*, but not **bitterly hot*. This kind of collocation restriction has been theorized in Mel'cuk's Meaning-Text Model (Mel'cuk 2012), where MAGN, magnification, is postulated as a basic lexical function that selects specific lexical modifiers depending on the head word. For instance, in English MAGN(rain) is realized as *heavy rain*, whereas MAGN(wind) is realized as *strong wind*. Similar restrictions are also explored by Morzycki (2012), who finds that some intensifiers such as *flat-out* or *positively* modify only extreme adjectives (*gigantic*, *fantastic*). Thus, *positively gigantic* sounds right, but *positively big* less so.

It is combinatorial aspects such as these that we explore in our article. Thus, we study not so much the use, recycling and replacement of specific intensifiers, but rather how

combinations of adverbs and adjectives in a grammatical construction may convey intensification and/or evaluation, broadly construed (cf. Lewis 2020), along with a variety of other meanings – and seek possible discourse-functional motivations for their differing distributional profiles in different registers.

2.2 Previous classification schemes in review

Existing classifications of adjectives and adverbs are relevant in that the broad semantic categories of 'adverb-ly adjective' constructions are largely predictable from those of the adjectives and adverbs individually. We here review semantic classifications of adjectives and adverbs in the main reference grammars of English.

The semantic classification of Quirk *et al.* (1985: 434ff.) is high level, recognizing three classes of oppositions, as shown in (1).

(1) Stative/dynamic. Most adjectives are stative (*tall*), but some gradable adjectives can be dynamic (*abusive*, *helpful*, *irritable*).

Gradable/nongradable. Most adjectives are gradable, but some denominal adjectives are not (*atomic*, *hydrochloric*).

Inherent/noninherent. Inherent adjectives characterize the referent of the noun directly (*a wooden cross*). Noninherent modification (*a wooden actor*) is 'an extension of the basic sense of the noun' (Quirk *et al.* 1985: 435), which we would describe as metaphorical meaning.

Quirk *et al.* (1985: 445ff.) propose a classification of adverbs that touches upon their role as modifiers of adjectives. They distinguish AMPLIFIERS (*absurdly*, *extremely*, *sharply*, *entirely*, *too*) and DOWNTONERS (*fairly*, *a bit*, *nearly*, *relatively*). These are treated separately from EMPHASIZERS, which, they say, add to the force, as distinct from the degree, of the adjective. In this class are *all*, *certainly*, *indeed*, *just*, *really*.

Huddleston & Pullum *et al.* (2002: 555ff.) divide attributive-only adjectives into the semantic classes shown in (2).

(2) Degree and quantifying – *complete fool*, *extreme end*, *outright lie*, *perfect stranger*, *total disarray*, *blithering idiot*, *thumping majority*

Temporal and locational – *current girlfriend*, *former wife*, *present manager*, *lower lip*, *southern states*

Associative – *clerical duties*, *criminal law*, *foreign affairs*, *mathematical genius*, *medical journal*

Process-oriented – *big eater*, *fast worker*, *heavy smoker*, *rapid reader*, *strong advocate*

Modal – *actual cause*, *certain winner*, *likely benefits*, *true course of events*, *mock trial*

Particularizing – *certain house*, *particular area*, *chief reason*, *principal factor*

Expressive – *dear mother*, *poor father*, *bloody tax inspector*

Hypallage (transferred) – *discreet cigarette*, *insane cackle*, *nude photo of the mayor*, *quiet cup of tea*, *stupid fault*

Most of the categories in (2) are transparent from their names. We will later turn our attention to the Associative category because it is closely related to our Topical class.

Huddleston & Pullum *et al.* (2002) characterize Associative adjectives as those which do not directly denote a property of the head noun, but rather a property associated with it; thus, *criminal law* is not a law that is criminal, but a branch of law that concerns crime. Raskin & Nirenburg (1995) label these as nonpredicating adjectives (e.g. *criminal lawyer*), as opposed to predicating examples such as *a lawyer who is criminal*. Hypallage adjectives are those that denote a transferred epithet. In a phrase like *a discreet cigarette*, it is not the cigarette itself which is *discreet*; rather, the adjective describes the way it was smoked.

Huddleston & Pullum *et al.*'s section on adverb classification (2002: chapter 6, §7.2) proposes that many adverbs, especially those ending in *-ly*, can be paraphrased in one of two ways: 'in an Adj manner/way' and 'to an Adj degree'. In agreement with this, we adopt the terms Manner and Degree, respectively.

The final comprehensive grammar classification we will discuss comes from the *Longman grammar of spoken and written English* (Biber *et al.* 1999). The semantic domains for adjectives proposed therein include color, size, time, evaluative and topical, arranged under two large classes (descriptors and classifiers), as set out in table 1.

Biber *et al.*'s classification of adverbs is summarized in table 2. We exclude the Linking class, which contains sentence adverbs (e.g. *additionally*, *overall*, *namely*, *however*, *incidentally*).

Besides these three reference grammars, other researchers have also proposed classifications of adjectives. One notable scheme is Dixon's (1977): dimension (*big*, *small*), physical property (*hard*, *sweet*), colour (*black*, *red*), human propensity (*jealous*, *generous*), age (*new*, *old*), value (*good*, *atrocious*) and speed (*fast*, *slow*). Dixon also studied the properties of adverbs derived from adjectives, pointing out that

Table 1. *Semantic domains of attributive adjectives from Biber* et al. *(1999)*

Descriptors		Classifiers	
Class	Examples	Class	Examples
Colour	*black, white, dark, bright*	Relational/ classificational/ restrictive	*additional, average, direct, general, left, necessary, original, public, similar*
Size/ quantity/ extent	*big, deep, heavy, huge, short, wide*	Affiliative	*American, Chinese, Christian, United*
Time	*annual, daily, early, new, recent*	Topical/other	*chemical, commercial, legal, phonetic, visual*
Evaluative/ emotive	*bad, beautiful, best, good, lovely, poor*		
Misc. descriptive	*appropriate, cold, complex, free, practical, strange, sudden*		

Table 2. *Semantic domains of adverbs from Biber* et al. *(1999)*

Class	Examples	Class	Examples
Place	*there, backward, far*	Stance (3 subclasses):	
Time	*now, then, recently*	Epistemic	*probably, definitely, really, apparently, mainly, kind of*
Manner	*happily, automatically, quietly, carefully*	Attitude	*unfortunately, surprisingly, curiously*
Degree	*slightly, almost, very, so, extremely, completely, awfully, somewhat, quite*	Style	*honestly, frankly, quite, simply*
Additive/ restrictive	*too, also, especially, only*		

not all adjectives can form derived adverbs, and that not all derived adverbs carry the semantics of the original adjective. Dixon noted that when a deadjectival adverb is possible, it tends to be derived from the metaphorical meaning of the adjective. For instance, *warmly recommended* corresponds to the metaphorical meaning of *warm*. This metaphorical extension is often present in the meaning of the subtypes we discuss in the next section.

3 A typology of 'Adj1-*ly* Adj2' combinations

The 'adverb-ly adjective' construction seems to be quite productive and is well represented in the various corpora we studied (see section 4 for details). As we extracted examples, we realized that the subtypes of the construction are largely predictable from the semantic category of the deadjectival adverb, i.e. Adj1, the 'adverb-*ly*' component, although some have seen the meaning of the adverb-*ly* component bleached, as in combinations with *terribly*, e.g. *terribly nice* (Nouwen 2024). Ultimately, however, it is the combination of the two adjectives together that determines the final semantic category. For instance, certain adverbs can be used in two or more patterns: *clearly visible* is Degree, whereas *clearly incompetent* is Epistemic; *historically significant* is Topical, whereas *historically low* is Degree.

In this section we introduce the following classification scheme: Degree (section 3.1), Focus (section 3.2), Manner (section 3.3), Reaction (section 3.4), Topical (section 3.5), Time (section 3.6), Epistemic (section 3.7), plus Minor subtypes and unclassified examples (section 3.8). We conclude this section with an overview (section 3.9) of the construction as a whole and some observations about what the different subtypes may have in common.

The examples cited come from various sources: COCA, CORE, TIME, SOCC and Movie$. More detail on the corpora and the extraction of examples is given in section 4.

Additionally, this section contains examples from the *SFU Review Corpus* (Taboada 2008), *Rotten Tomatoes*[2] (manually trawled[3]), and from personal observations collected from everyday usage. In all, we carefully read and analyzed about 1,000 examples, and used corpus searches on the more than 1 million examples we collected from the data in section 4.

We now run through each semantic type or category, providing simple diagnostic paraphrases, naturally occurring examples, and further notes when needed. Occasionally, 'problem examples' are given, preceded by a question mark, e.g. ?*gorgeously romantic*. In all cases, Adj1 or Adj1-*ly* refers to the deadjectival adverb ending in -*ly* (*hilariously*), and Adj2 to the head of the phrase (*ridiculous*). Under each example and category, we sometimes provide subgroups, mostly determined by the semantic class of the adverb or group of adverbs. The wording of the diagnostic paraphrases is grounded in the Natural Semantic Metalanguage framework (Goddard & Wierzbicka 2002, 2014), although they are not formal semantic explications.

3.1 Degree

We first distinguish between what we term Degree (this subsection) and Focus (next subsection). Degree combinations involve scalar gradability. They can be paraphrased as 'to an Adj1 degree' (cf. Huddleston & Pullum *et al.* 2002: 565). The Adj1-*ly* is usually replaceable by *very*, *very much* or *not very*, *very* being the prototypical delexicalized intensifier (e.g. Lorenz 2002; Tagliamonte 2008). However, if the adverb does not already imply 'very', it can itself be modified by *very*, e.g. *very slightly different*.

(3) **Examples of Degree**
- (a) *extremely difficult/important; highly unlikely/skilled/specialized/intelligent; deeply ashamed/concerned/disturbing; bitterly cold; infinitely better*
- (b) *enormously positive; hugely entertaining; exceptionally attractive; especially important/true; particularly important/difficult; slightly different; equally important; mildly amusing*
- (c) *fairly large/simple; relatively small/new/high*
- (d) *barely visible/able; clearly legible/audible*
- (e) *fully aware/capable/operational*
- (f) *extraordinarily daring; exceptionally different/acceptable*

As mentioned in section 2.1, some of the Adj1-*ly* adverbs are subject to very tight collocational restrictions because of their idiomatic nature. As a modifier of adjectives, *bitterly* mainly collocates with *cold* and *disappointing* (though with verbs it can go with *complain* and *oppose*), heightening negative evaluative prosody (Partington

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[2] www.rottentomatoes.com

[3] We mean *trawl* in the sense of 'to look through a lot of things in order to find something' (*Cambridge English Dictionary*), and (metaphorically) in the sense of 'to fish with a net the edge of which is dragged along the bottom of the sea to catch the fish living there' (*Oxford English Dictionary*). This refers to our exploration of hapax legomena, i.e. examples at the bottom of the distribution (see section 4.5).

2014). Other examples of highly specific collocations include *eminently*, as in *eminently qualified* (*deserving*, *suitable*); *brightly*, as in *brightly coloured*; *heavily*, as in *heavily armed*; and *acutely/keenly*, as in *acutely/keenly aware*.

Degree is the most frequent and prototypical semantic category of adjective-modifying adverbs. Martin & White (2005) had termed this category 'force' and contrasted it with 'focus', which applies to non-scalar, non-gradable concepts, as we will see in section 3.2. Adverbs other than those ending in -*ly* also participate in this category, most notably *very*, *quite* and *really* (a lexicalized -*ly* adverb); see section 3.2.1 for more on *really*.

3.1.1 Degree subtype: Extent

Based on the semantic opposition between 'much/many' <=> 'little/few' (often, in relation to some particular domain), we propose a subtype of Degree that we term Extent. A diagnostic paraphrase is 'How Adj2 is it?' or 'To what extent is it Adj2?'. Extent states something about either (a) the proportion ('relative quantity') of instances to which the Adj2 applies, or (b) the 'closeness of fit' of the Adj2. Extent is also included as a subtype of Degree (force) in the Appraisal framework, alongside size, vigour and proximity (Martin & White 2005: 137).

(4) **Examples of Degree: Extent**
   (a) *mostly Aboriginal; predominately Muslim; overwhelmingly positive; (the population is) overwhelmingly white*
   (b) *completely different; totally wrong*
   (c) *roughly, typically, approximately, marginally acceptable; universally accepted/ condemned (=accepted/condemned by everyone); universally attested (=attested everywhere)*
   (d) *commonly, generally accepted*

3.2 Focus

Focus applies to non-scalar, non-gradable concepts. Whereas Degree corresponds to intensity or amount, Focus concerns prototypicality: 'the preciseness by which category boundaries are drawn' (Martin & White 2005: 137). The intuition behind Focus is that this kind of modification is metalinguistic in character. The diagnostic paraphrase is 'Adj2 is (or isn't) a very appropriate word.'

(5) **Examples of Focus**
   (a) Main adverbs:
       – *really*
       – *utterly: absolutely, entirely, perfectly, simply, essentially, genuinely, entirely, truly, wholly, utterly ridiculous; genuinely terrific; perfectly legal/fine; simply brilliant; entirely inappropriate/different; essentially Finnish; truly sad/democratic/amazing/ pathetic; decidedly average/unimpressive*

(b) Some adverbs, such as *nearly* and *virtually* force a reading of the Adj2 as 'extreme' and non-scalar. The paraphrase to check the extreme nature is 'one can almost say that it is Adj2': *nearly impossible* ('one can nearly say it is impossible'), *nearly complete*; *virtually impossible/extinct/identical*

Some Adj2 are open to being modified both in terms of Degree and from the point of view of prototypicality (Focus); for example, *very red*, *truly red*; *very upset*, *truly upset* (Martin & White 2005: 138).

The *Longman grammar of spoken and written English* (Biber *et al.* 1999: 521) uses the term 'emphatic adverbs' for some of the adverbs that convey Focus, noting that they can modify non-scalar adjectives, e.g. *quite motionless*, *absolutely continuous*, *really tremendous*. This brings us to a more detailed discussion of *really*.

3.2.1 *More about* really

The situation with *really* is complex and requires some extra discussion. Now highly lexicalized, it is the most frequent modifier in most of the corpora we studied, having overtaken *quite*, *pretty, so* and *very* in different varieties of English (Tagliamonte 2008; Schweinberger 2021). Not surprising, therefore, *really* is by far the most common adverb in the Focus category, presumably resting on its adjective root (*real*) to convey high prototypicality. Equally, however, *really* can be Degree (an intensifier synonymous with *very*), depending on whether the Adj2 to which it applies is scalar or non-scalar. By 'scalar' here, we really mean 'compatible with *very*'. There are adjectives like *true*, *different* and even *unique* which might seem to be non-scalar from a purely logical-prescriptive point of view, but which can occur with *very* and accept the comparative construction, e.g. *very true*, *very different*, *very unique*.

Certainly, there are many clear examples where *really* fully satisfies the definition of a Focus modifier; for example, (a) it appears freely with non-scalar adjectives; (b) it can appear as a pre-modifier, e.g. *that's really quite amazing*, *really very good*; and (c) it can exert a Focus function with appropriate noun phrases, e.g. *That's really a secondary consideration*.

Equally, however, *really* is extremely common with scalar adjectives, such as *good* and *bad*, and countless other evaluational adjectives, as well as with *big*, *small*, *far*, *near* and other dimensional adjectives. When combined with these adjectives, *really* 'feels' like a Degree modifier; compare: *it's very big* and *it's really big*. Moreover, when *really* appears with a scalar adjective, it can be repeated, just like *very* in this respect; compare: *very very good/big/far* and *really really good/big/far*. Notice, however, that the option of doubling *really* does not often work when it modifies a non-scalar adjective (*?really really continuous*, *?really really geographical*). Thus, our proposal is that *really* can be, and very often is, a Degree modifier, and that the possibility of doubling it is a formal indicator of it having Degree status.

There is a complication which at first seems to invalidate this line of argument, but on closer inspection actually corroborates it. The complication is that *really* can be doubled not only as a modifier of adjectives, but also as a modifier of certain verbs or verb phrases

(predicates), e.g. *I really really like him*; *I really really admire her*. Traditionally, these uses of *really* would be regarded as Focus, but we propose a reconsideration of such cases. The critical observation is that the option of repeating *really* is only open with predicates that have an evaluative or otherwise gradable aspect to them. Of course, many verbal predicates, including the verbs *like* and *admire*, have an evaluative aspect and are thus implicitly gradable, but not all. A sentence like *Did he really take you to the movies?* is perfectly ordinary, but *?Did he really really take you the movies?* is unacceptable, or at least odd. Likewise, *Was she really born in France?* is perfectly ordinary, but *?Was she really really born in France?* is odd. These facts indicate that when *really* can be doubled, it indeed expresses Degree modification, not Focus.[4]

3.3 Manner

In Manner combinations, Adj2 is typically deverbal: a passive or present participle. The diagnostic paraphrase is: 'when she Verbed it, she Verbed it Adj1-*ly*' (i.e. 'in an Adj1 way'), where Verb stands for the verbal root of Adj2. For example, *randomly selected:* 'When they selected them, they selected them randomly'; *exquisitely performed*: 'When she performed it, she performed it exquisitely'. Depending on the semantics of Adj1, such combinations can be strongly evaluational.

(6) **Examples of Manner**
    (a) *randomly selected; patiently assembled*
    (b) *exquisitely/delightfully performed; brilliantly executed*

3.3.1 Manner subtype: Intended Result
We distinguish a subtype of Manner which we term Intended Result. In this construction, the verbal root of Adj2 designates a goal-directed physical activity that is intended to impact the 'material integrity' of the patient (e.g. *chop*, *slice*, *grind*) or to alter its shape (e.g. *fold*, *knot*, *tie*). In combinations like *finely chopped* and *neatly folded*, the Adj1-*ly* adverb in a sense describes the product of the activity, yet the diagnostic paraphrase for Manner combinations, i.e. 'when she Verbed it, she Verbed it Adj1-*ly*', is also satisfied. For example: *When he chopped the onions, he chopped them finely*; *When they folded the t-shirts, they folded them neatly.*

(7) **Examples of Manner: subtype Intended Result**
    (a) *finely chopped; thinly sliced; coarsely ground*
    (b) *cleanly shaved (*or *shaven); closely cropped (hair); roughly hewed* (or *hewn); an immaculately trimmed bush*

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[4] To further reinforce the parallel with the Degree modifier *very*, it can be noted that a sentence such as *I like him* can be modified with *very,* using the variant *very much*, i.e. *I like him very much* (equivalent to 'I very like him', as it would be expressed in a language such as Russian). Moreover, as expected, *very* can be doubled, *I like him very very much*. In short, with gradable, evaluative verbs, *really* and *very* both exhibit the same property.

    (c) *neatly folded (t-shirts), neatly stacked (papers)*
    (d) *loosely tied; tightly woven; tightly knotted*

The apparently paradoxical melding of manner and result seems to have its origin in the complex lexical semantics of the root verb underlying Adj2 (cf. Goddard & Wierzbicka 2009). Essentially, the meanings of such verbs (e.g. *chop*, *shave*, *fold*, *tie*) imply that the agent had a conscious outcome in mind. In the 'adverb-ly adjective' constructions, the deverbal Adj2 (e.g. *chopped*, *shaved*, *folded*, *tied*) reflects the normal expected result, while Adj1 (e.g. *finely*, *cleanly*, *neatly*, *loosely*) indicates an additional aspect intended by the agent. Clearly, the internal lexicogrammar of this subtype is more complex than most and warrants further research.

3.3.2 Other Manner subtypes: Attitude and Volitional

In lexical semantics and lexical typology, the category Manner is often acknowledged to be somewhat heterogeneous, including not only the manner in which an action or activity is performed, but in some cases the actor's attitude or apparent attitude. For example, in relation to verbs of locomotion, Slobin (2006: 62) remarks as follows: '"Manner" is a cover term for a number of dimensions, including motor pattern (e.g. *hop*, *jump*, *skip*), often combined with rate of motion (e.g. *walk*, *run*, *sprint*) or force dynamics (e.g. *step*, *tread*, *tramp*) or attitude (e.g. *amble*, *saunter*, *stroll*), and sometimes encoding instrument (e.g. *sled*, *ski*, *skateboard*), and so forth.' This leads us to postulate two further specific subtypes of Manner: Attitude and Volitional.

The Attitude subtype includes combinations where Adj2 is not deverbal, but nevertheless implies that the agent does, says or thinks something. The Adj1-*ly* adverb indicates a concurrent unexpected or otherwise notable attitude. Some of these are very familiar, e.g. *cautiously optimistic*, *brutally honest*, but there are also original and sometimes oxymoronic combinations, e.g. *quietly inflammatory*. These are still Manner, albeit in an extended sense. The paraphrase 'in an Adj1 way' does not always sound grammatically correct, but it still captures the meaning of the phrase. For example, in *brutally honest*, the meaning is that the agent does not hold back from saying true things despite knowing that the addressee can feel something very bad because of such honesty. The paraphrase 'honest in a brutal way' sounds a little forced, but it does capture the main meaning. In *cautiously optimistic*, the subject is prepared to think and wants to say that 'something good can happen', yet at the same time, they do not want to take it for granted. For *blissfully ignorant*, the meaning conveyed is, roughly, that the subject doesn't know much about it, but at the same time feels very good and doesn't wish to know more.

(8) **Examples of Manner: subtype Attitude**
    (a) *virulently anti-American; fanatically atheistic; fervently opposed*
    (b) *brutally honest; cautiously optimistic; ruthlessly competitive; fiercely independent; cheerfully undemanding; unashamedly male*
    (c) *blissfully ignorant*
    (d) *?darkly funny*

In Volitional subtype of Manner, the volition is on the part of the agent, i.e. to paraphrase 'when agent does, says or thinks something (Adj2), it was Adj1'. For instance, for *intentionally offensive*: 'when agent said something offensive, it was intentional'.

(9) **Examples of Manner: subtype Volitional**
     intentionally offensive; deliberately ambiguous; wilfully blind

The construction implies an expectation that people generally would not wish to be like this (e.g. *offensive*, *ambiguous*, *blind*), whereas in this case the agent did want to be so. The Adj1 brings intentionality to the fore (cf. Huddleston & Pullum *et al.*'s (2002) 'act-related' 'volitional' category).

3.4 Reaction

The Reaction category contains the kind of examples that first drew our attention to the 'adverb-ly adjective' construction. They are combinations that are frequently used in film and book reviews to describe how the reviewer felt about the work of art. We borrow the label Reaction from the Appraisal framework (Martin & White 2005: 56), where it is used to describe a type of Appreciation. Our diagnostic paraphrase for the Reaction class is: 'It's Adj1 that it's <u>so</u> Adj2', e.g. *strangely compelling* => 'it's strange that it's so compelling'. The intensifier *so* in this use implies *very*, and that is why there is a strong substrate of Degree in this class. Adj1 implies a 'feeling' component (cf. Goddard *et al.* 2019). If Adj2 is open to scalar modification, the construction implies 'very Adj2', even if Adj1 does not carry this implication, e.g. *strangely compelling* implies *very compelling*.

(10) **Examples of Reaction**
      (a) *incredibly good/bad; stunningly original; devastatingly effective; strangely compelling; breathtakingly simple; wonderfully moving; satisfyingly tense; surprisingly thought-provoking; impressively big; unbelievably good/bad; astonishingly good/bad; delightfully good; eerily similar; outrageously expensive; suspiciously high; breathtakingly presumptuous*
      (b) *staggeringly incompetent; bravely melancholy, ridiculously complex; disappointingly simplistic; jaw-droppingly simplistic/misguided; comically predictable; frightfully short; astonishingly slipshod; woefully inadequate/underfunded; disarmingly minimalist*
      (c) *fabulously titled; gorgeously written.* Roughly: 'it is fabulous that it is titled in this way' (i.e. that it has been given a certain title). Interestingly, the deverbal Adj2 (*titled, written*) seems to always relate to speech, writing or words.

3.5 Topical

In the Topical combinations, the adverb sets the topic or frame of reference, and Adj2 passes comment. There are two groups, the first one being very common in technical,

bureaucraticand academic registers (Biber *et al.* 1999). For both groups, Adj1 itself derives from, or is semantically very close to, a noun, e.g. *politics –> political; finance –> financial.* Huddleston & Pullum *et al.* (2002: 556) classify comparable Adj+N constructions as 'associative', where the property expressed by the adjective applies to some entity associated with the noun. For instance, in *clerical duties*, the duties are not clerical; they are simply associated with being a clerk. Similarly, in *politically incorrect statement*, the modified noun (*statement*) is not intrinsically or necessarily incorrect; it is only so if one associates it with the context of politics and ideology. In this sense, Topical can perhaps be considered an extension of the Focus meaning, whereby the Adj1 narrows or focuses the semantic space to which Adj2 applies (see section 3.9 for discussion).

We have found two different subtypes of Topical constructions, which we have simply named Topical 1 and Topical 2.

3.5.1 *Topical 1*

In this subtype, Adj1 ends in -*al*, and, in most cases, derives from a noun designating a field of study or a broad domain, e.g. *politics*, *statistics*, *the environment*. Diagnostic paraphrases include 'in respect of Noun', 'from the point of view of Noun' (i.e. 'thinking about …'). Biber *et al.* (1999: §7.3) call these, or rather, the adjectives from which they are derived, Topical.

(11) **Examples of Topical 1**
    (a) *politically incorrect/sensitive; morally wrong/superior/bankrupt; environmentally friendly/safe/responsible/ sound/sensitive/aware/conscious; politically motivated*
    (b) *historically inaccurate/significant; statistically significant; computationally tractable; technologically advanced; grammatically correct/incorrect; clinically significant; medically necessary*
    (c) *economically disadvantaged/viable/irresponsible/feasible/depressed; financially independent; fiscally responsible/conservative; commercially viable*
    (d) *developmentally appropriate/disabled; sexually/physically/politically active; physically disabled/active; academically talented/successful; musically talented; intellectually gifted; mentally unstable; emotionally disturbed*
    (e) *culturally diverse/different; socially progressive/conservative*

3.5.2 *Topical 2*

For these, the noun underlying Adj1 identifies the topic. It is not usually a field of study but more broadly a domain or area. Adj2 is ultimately deverbal but often corresponds also to a Noun. Some of the combinations may well be derived from a noun compound, e.g. *visual impairment*, *genetic modification*. A diagnostic paraphrase could be 'Noun is (or, has been) Adj1', e.g. 'the impairment is visual', 'the modification is genetic'.

(12) **Examples of Topical 2**
    (a) *visually impaired; cognitively challenged*
    (b) *genetically modified/engineered*
    (c) ?*cinematically bungled.*

<div align="center">

3.6   Time

</div>

The Time category includes several further subtypes such as frequency, duration, relative timing or pace. The Adj1 specifies or restricts the type of time or time span that pertains to Adj2.

(13) **Examples of Time**

Frequency:

frequently cited/mispronounced; occasionally offensive; regularly scheduled

 Duration:

(a) *briefly famous; momentarily suspenseful; consistently brilliant/believable; permanently disabled/scarce; perpetually angry*

(b) *?relentlessly erudite*

Relative timing:

(a) *currently involved*

(b) *recently released/promoted/retired/deceased; newly released/independent/married/ developed/minted/ emerging; previously unknown; immediately obvious/apparent*

(c) *freshly ground/grated/baked* (i.e. ground, grated or baked a short time before)

(d) *historically Black (neighbourhood)*

Pace (often implies 'very'):

increasingly popular/difficult; rapidly growing/expanding; steadily mounting

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3.7   Epistemic

</div>

The Epistemic subtype relates to source of knowledge or certainty and can include evidentiality. In general, this category includes combinations where Adj1 indicates how or with what certainty one knows that Adj2. A diagnostic paraphrase is 'Adj1-*ly*, Adj2 is the case', as in *potentially, this is fatal* or *presumably, this is deliberate*, where Adj1-*ly* can act as a sentence adverb.

(14) **Examples of Epistemic**

(a) *probably true/illegal/plagiarized; potentially fatal/lethal/dangerous/harmful/deadly/ important/serious; potentially useful/life-threatening/lucrative/damaging*

(b) *intuitively obvious; clearly incapable; seemingly effortless/endless; glaringly obvious*

(c) *presumably deliberate*

(d) *demonstrably false; patently false*

Such examples have been discussed in previous literature about adverbs. For instance, Lorenz (2002) proposes a Modal class, where modal adverbs like *apparently*, *certainly*, *possibly* or *supposedly* are used to 'express the extent to which a speaker is willing to attest to the truth of a proposition'. Partington (1993) discusses a shift from modal to intensifier in words such as *very*, originally meaning *truly* or *genuinely* (from Old English *verray/verray*, 'truth'), and *utterly, entirely, absolutely, certainly, positively.* In Partington's words, 'it is a short step from averring truth to being emphatic about it' (Partington 1993: 181).

3.8 Minor subtypes

There are several minor subtypes, with few members each, which could not be classified elsewhere. They do not appear to share any common denominator. We group them together here for the sake of completeness, but do not expand on them in any detail.

(a) Relational

(15) *mutually exclusive/beneficial; mutually assured (destruction); inversely proportional; diametrically opposed*
   ?internally consistent/inconsistent

(b) Agentive

In these combinations, Adj2 is deverbal (past participle form) and the Adj1 is usually related to an abstract noun. Often a paraphrase with a by-phrase is available, e.g. *federally funded* = 'funded by the federal government'; *legally required* = 'required by law'.

(16) *federally/privately funded; constitutionally mandated; legally required* (abstract agent or source)
   parentally subsidized/forbidden/arranged
   sexually transmitted

(c) Path-outcome

(17) *terminally ill* (cf. terminal illness, terminal cancer); *fatally ill* (cf. fatal illness); *mortally injured* (cf. mortal injury)
   upwardly mobile

(d) Unnamed but recognized minor subtypes

(18) (a) *happily married/retired; happily employed/self employed*
   (b) *publicly/commercially/readily/widely/freely available*
   (c) *sweetly scented; sharply pointed*

3.9 Some additional thoughts on the typology

All typologies are imperfect. Most suffer from an excess of either granularity or abstraction, sometimes from both. Having examined many examples of the 'adverb-ly adjective' construction, we are confident that the types discussed in this section capture most of its meanings and uses. One possible addition to the typology would be to endow it with more abstraction, i.e. to find a higher level of classification that captures these seven or eight types. One could argue that the typology can be largely subsumed into two enlarged classes, Degree and Focus. The enlarged Degree conveys intensification or evaluation (Degree, Reaction, Epistemic), whereas the enlarged Focus narrows the semantic space that the adjective applies to (Focus, Manner, Topical, Time).

The confluence of intensification and evaluation in modifiers that would be found in the enlarged Degree class has been discussed before in the literature. According to Bolinger, 'investigation will probably reveal that virtually any adverb modifying an adjective tends

to have or to develop an intensifying meaning' (Bolinger 1972: 23). He cites the example *He was deliberately mean* and comments: 'deliberately has become a virtual intensifier'. He also writes of 'less grammaticalized intensifiers' (1972: 22), but insists that 'the mere existence of a modifier tends to be taken in an intensive sense' (1972: 22–3).

Nouwen (2024) hypothesizes that that the intensifying function of deadjectival adverbs is linked to the evaluation expressed by the adjectival base of those adverbs. He also advances two generalizations regarding the phenomenon: evaluative adjectives with a negative evaluative meaning tend to turn into deadjectival intensifiers expressing high degree, while adjectives with a positive meaning make intensifiers of medium degree, perhaps because extreme values on a scale are evaluative negatively, as they involve excess. The bleaching away, or delexicalization, of the positive and negative meaning may be the result of a diachronic process, whereby the deadjectival adverb initially expresses positive or negative evaluation, typically associated to medium or high regions, respectively, of the adjective's scale. Once the evaluative meaning is bleached away, the association to medium or high degree remains and becomes the functional semantics of the intensifier.

Guimier, likewise, proposes that adverbs ending in *-ingly* followed by an adjective tend to become intensifiers (Guimier 1986: 222). As for the evaluative aspect, Lewis (2020) suggests that to characterize the adverb in an Adv+Adj combination simply as a 'degree modifier' fails to account for the development and use of *-ly* adverbs expressing speaker evaluation that cannot be reduced to intensification or indeed to degree. Lewis (2000) argues that there is a difference between, on the one hand, grammaticalized intensifiers, such as *really*, and, on the other hand, evaluative Adv+Adj combinations whose main function is to convey speaker evaluation. In the oxymoronic 'adverb-ly adjective' construction *strangely ordinary*, the negative element *strangely* does not carry the semantics of 'degree modifier' but evaluative semantics. The 'adverb-ly adjective' construction, then, can be seen as conveying intensification or evaluation, and sometimes both. This broader classification would subsume accounts for the Degree, Reaction and Epistemic subclasses in our typology.

The other subclasses (Focus, Manner, Topical, Time) do not convey either an intensifying or an evaluative meaning. They can, however, all be seen as types of focus in an enlarged sense, i.e. as narrowing the semantic space to which the adjective applies.

This more abstract and macro classification into Degree and Focus is akin to the distinction between force and focus in the Appraisal framework (Martin & White 2005). Whether this higher-level two-way division will be useful in future work is speculation on our part. For present purposes, the finer-grained classification is needed because it offers us the opportunity to explore the frequency distribution of the subtypes in different registers, as we see in the next section.

4 Relative frequency and distribution of different combination subtypes. What do corpora tell us?

In this section our goals, and consequently our modes of analysis, are quite different from establishing the typology, as we did in section 3. First, we wanted to discern whether

different subtypes of the 'adverb-ly adjective' construction have been increasing or decreasing in frequency over time. Second, we wanted to ascertain whether the different subtypes are more or less frequent in certain registers. For instance, as mentioned in section 1, we had begun with the impression that the Reaction subtype was more frequent in critical creative writing, such as film and book reviews, than in general written language. We had a special interest in highly original, sometimes oxymoronic, examples in the Reaction category, e.g. *heartbreakingly realistic*, *bravely melancholy*, *disgustingly good*, which convey very strong evaluation. We were also interested in the Manner subtype in cases where the adverb is evaluational, such as *exquisitely performed*, suspecting that this pattern too could be a register feature of sophisticated critical reviews.

Our research questions in this section, then, are: (i) Is the 'adverb-ly adjective' construction increasing in frequency over time? (ii) Are there frequency variations across registers? And, if so, what may explain this? (iii) Are there registers with more creative or original instances of the construction, including oxymorons? We will note here, in relation to (iii), that there are methodological challenges involved in investigating originality in language use. Using standard techniques on large corpora provides the most frequent distribution of a construction, but do not capture originality well. For that purpose, we directed attention to hapax legomena, that is, to phenomena at the tail of the distribution (Manning & Schütze 2003: 199). This is covered in section 4.5.

We extracted 'adverb-ly adjective' combinations from five different corpora:[5]

- *The Corpus of Contemporary American English* (COCA, Davies 2008–). At the time of extraction, COCA contained approximately 450 million words from the period 1990–2015, grouped into equal proportions of five different registers (fiction, spoken, news, academic, magazine). We used the download version of the corpus, not the web version.
- *The Corpus of Online Registers of English* (CORE, Biber *et al.* 2015; Egbert *et al.* 2015). This corpus contains 50 million words organized into several online registers such as personal blogs, FAQs, reviews or recipes.
- *TIME Magazine Corpus* (TIME, Davies 2007). The entire collection of issues from *Time* magazine, going back to the 1920s, approximately 100 million words. The corpus contains no register dimension but provides diachronic information.
- *The SFU Opinion and Comments Corpus* (SOCC, Kolhatkar *et al.* 2020). 37 million words of online news comments, collected from the site of the English-language Canadian newspaper *Globe and Mail*.
- Movie$ (Joshi *et al.* 2010). A corpus of critics' reviews from Metacritic.com, about 3.9 million words.

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[5] Data was collected in October–November 2018. Some of the frequencies in dynamic corpora (e.g. COCA) may have changed since.

The study could, naturally, expand to many more corpora. One valuable source of historical data is *The Corpus of Historical American English* (COHA, Davies 2010–). For historical purposes, we used TIME instead because it contains a single register. COHA, while quite valuable, includes information from many registers. More importantly, some registers are not uniformly included across time, especially the TV/ Movies register, which (of course) only starts in the 1930s. We were more interested in the quality of the data, not necessarily in the quantity.

From each corpus, we extracted all the 'adverb-ly adjective' combinations, either using regular expressions (i.e. word ending in *-ly* followed by another word) and refining the search results, or by using part of speech tags in the corpora that contain them (COCA, TIME and CORE).[6] We then proceeded as follows.

4.1 *Frequency by corpus*

The five corpora differ not only in size but also in composition. In order to get a sense of the relative frequency of the 'adverb-ly adjective' combination, we took account of the total number of adjectives in each corpus. In addition to traditional normalized frequencies per million words, we calculated normalized frequencies of 'adverb-ly adjective' instances over total number of adjectives (in both cases calculating over token counts, not types).

As shown in the middle columns of table 3, we find that the 'adverb-ly adjective' construction varies in frequency across corpora, with the Movie$ corpus having a dramatically higher frequency, both per million words and per 1,000 adjectives. The next highest frequency per 1,000 adjectives is found in the TIME corpus, followed at a distance by the other corpora. We speculate that the high frequency found in Movie$ is due to its evaluative nature, as it contains reviews of movies, the register that is more likely to include novel combinations of the Reaction type, a theory that we explore further in sections 4.4 and 4.5.

4.2 *Frequency over time*

The first question we wanted to answer was whether the 'adverb-ly adjective' construction has been increasing in frequency over time. For this purpose, we turned to the corpus that is more clearly diachronic, TIME. This corpus contains one hundred years' worth of data from *Time* magazine. The answer seems to be that the construction has indeed been increasing over time, having perhaps peaked around the 1990s. Figure 1 displays the frequency of the 'adverb-ly adjective' construction (a total of 205,678 instances across the entire period) with respect to the total number of all adjectives in the TIME corpus (over 4.3 million). We see that the construction was relatively popular in the 1920s–50s period, ranging from 3.7 per cent in the 1940s to 4.4 per cent in the 1920s, where we

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[6] We used python scripts to extract all the frequencies, available from: https://github.com/sfu-discourse-lab/ adverbly_adjectives

Table 3. *Frequency of 'adverb-ly adjective' instances in five corpora*

Corpus	No. of words in corpus	No. of 'adverb-ly adjectives'	Frequency per million words	No. of adjectives	Frequency per 1,000 adjectives
COCA	522,486,161	762,910	1,460.2	36,562,385	20.9
CORE	45,192,413	103,610	2,013.7	5,081,902	20.4
SOCC	38,046,009	85,004	2,234.2	4,009,524	21.2
TIME	99,875,918	205,678	1,055.3	4,348,509	47.3
Movie$	3,988,626	19,352	4,851.8	105,036	184.2

see examples such as *largely responsible*, *entirely new* or *seriously ill*. In the 1960s, there is a notable step-up, peaking at 6.3 per cent in the 1990s, where *politically correct*, *politically incorrect* and *mentally ill* were among the most frequent combinations.

In general, the trend is upwards, as shown with a different perspective in figure 2, this time with frequency per million words. There are peaks in the 1970s and 1990s, with a clear upward trend line (the solid blue line, with its dispersion in grey). In summary, in the TIME corpus, 'adverb-ly adjective' is a frequent construction and has been increasing in frequency over time.

4.3 Frequency across registers

As mentioned, our initial intuition was that 'adverb-ly adjective' combinations were more frequent in evaluative registers, such as in the book and movie reviews we studied for
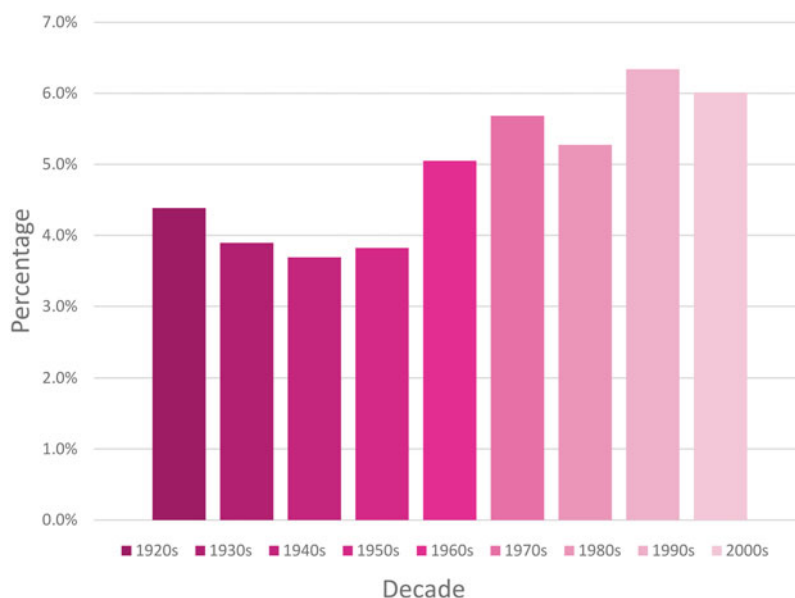

Figure 1. 'Adverb-ly adjective' construction as a percentage of all adjectives, TIME corpus
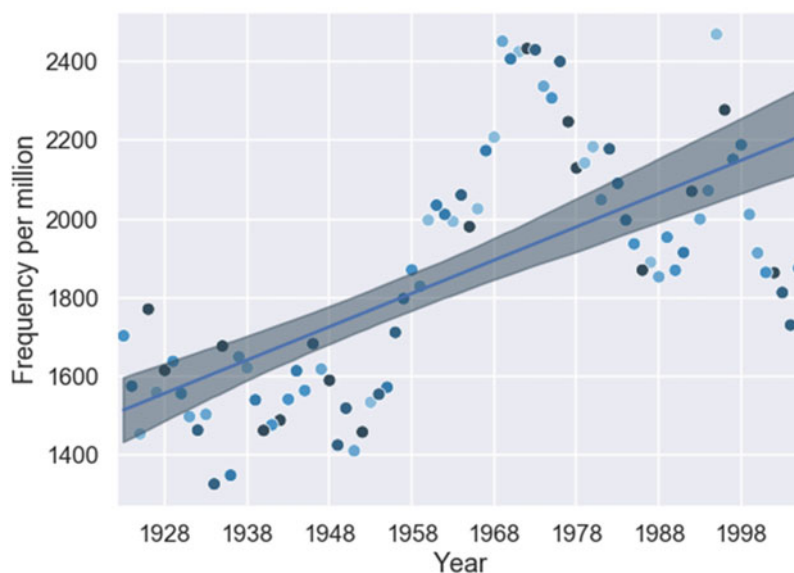
Figure 2. 'Adverb-ly adjective' constructions in TIME corpus, frequency per million words

another project (Goddard *et al.* 2019). We also had the intuition that there were differences in the relative frequency of subtypes, with some subtypes appearing more frequently in certain registers. To examine this further, we counted the number of 'adverb-ly adjective' combinations in the corpora for which we have register categories, i.e. COCA and CORE.

COCA was subdivided, at the time of data collection, into five main registers: Fiction, Spoken, News, Academic and Magazine.[7] We categorized the frequency of the construction per million words, as shown in figure 3. We found that Magazine and Academic top the list, with News and Spoken next, and Fiction last. This makes sense, as much writing in magazines is stylistically similar to movie and film reviews: it piles on modifiers and tries to be creative. As in reviews of creative products, the need is for descriptions that are vivid and memorable, with examples like *intensely personal*, *aberrantly aggressive*, *unquestionably gorgeous* and *winsomely generous*. In addition, magazine writing includes recipes, which explains the top five constructions in Magazine: *freshly ground*, *really good*, *finely chopped*, *thinly sliced* and *relatively small*.

The high frequency of 'adverb-ly adjective' combinations in academic writing is largely due to the Topical subtypes described in section 3.5, though Degree and Focus subtypes are also much used. Top combinations in the Academic section include *statistically significant*, *relatively small*, *culturally diverse* and *commonly used*. In general, academic writing uses more specialized vocabulary and denser noun phrases. Some of the constructions in academic writing are of the type that become acronyms,

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[7] The March 2020 update of COCA added three more registers: TV/Movies subtitles, blogs and general web texts.
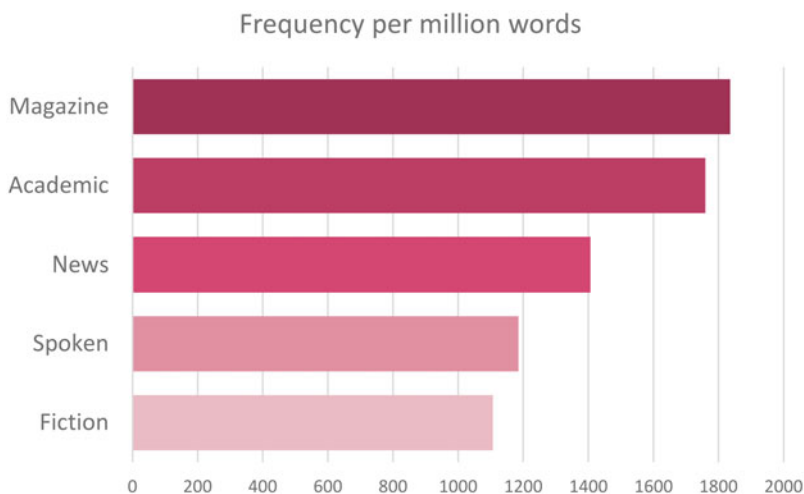
Frequency per million words

Figure 3. 'Adverb-ly adjective' constructions in COCA, by register

such as *genetically modified organisms (GMOs)*. Some of the combinations are also related to the language of bureaucracy, such as *federally funded*, often found in academic writing.[8]

In CORE (figure 4), Information Persuasion is the register that shows the highest frequency of 'adverb-ly adjective' constructions. Information Persuasion includes information blogs, which may be opinionated but not necessarily creative, with examples such as *really good*, *really nice*, *completely different* and *completely new* at the top of the distribution for this register. Next are Spoken and Opinion. The Spoken register features highly evaluative language in interviews and speeches, in addition to broadcast transcripts. The top examples in Spoken often contain *really* (*really good*, *really cool*, *really important*). This seems to confirm the intuition that the construction is more frequent in opinionated language. At the same time, the data seem to show that in informal registers, such as those in CORE, creativity is not the top priority, with instances coming predominately from the Degree and Focus subtypes.[9]

4.4 Distribution by subtype, at the top

We have thus far examined the distribution of the 'adverb-ly adjective' construction in several corpora, finding that it seems to be increasing in relative frequency over time and that it is more frequent in evaluative language. We next wanted to explore whether some of the semantic subtypes are more frequent than others. To do so, the only

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[8] Another possible analysis (perhaps for future work) would explore the relative frequency of specific combinations, such as *really nice* or *statistically significant* across registers.

[9] We assume that the construction is rare in Lyrical texts because of their concise format. We thank an anonymous reviewer for directing our attention to this question.
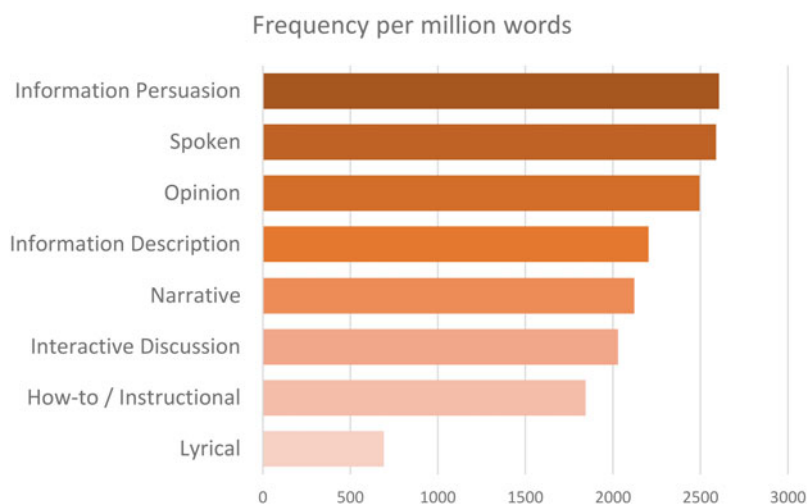
Frequency per million words

Figure 4. 'Adverb-ly adjective' constructions in CORE, by register

available procedure consists of painstaking annotation of each instance. This is because the typology is very much meaning-driven and thus relies on human judgement. Given the time-consuming nature of such annotation, we considered only a small subset of the examples, starting with the most frequent cases, i.e. the distribution at the top of the frequency scale.

We extracted the top 200 combinations in COCA and coded them into the subtypes identified in section 3. COCA was chosen as the most varied and representative corpus. Figure 5 shows that Degree and Focus clearly dominate; of the two, Degree is much more frequent, at 39 per cent of the total. The instances are common cases with *absolutely*, *barely* or *especially* (*absolutely amazing*, *barely able*, *especially difficult*). The next most frequent subtype is Topical, with examples like *academically talented*, *clinically significant* and *environmentally sound*. The Time category includes the examples *currently available* and *freshly baked*. The other subtypes contain fewer instances, perhaps notable among them *actively involved* (Manner), *deceptively simple* (Reaction) and *certainly possible* (Epistemic).

We also coded the most frequent 200 combinations in Movie\$ corpus, and here we see a picture which is similar in some respects but notably different in others (see figure 6). Degree/Focus still tops the list, as do Topical and Time. Reaction, however, increases significantly, with instances like *perilously close*, *explosively funny* and *oddly endearing* – precisely the type of more creative combinations that we are interested in. Epistemic examples also go up in frequency as compared to the COCA distribution, including instances such as *immediately clear*, *predictably disastrous* and *undeniably funny*.

This comparison, between a more general corpus like COCA and a specialized dataset like the Movie\$ corpus (albeit with a small amount of data), is consistent with the initial
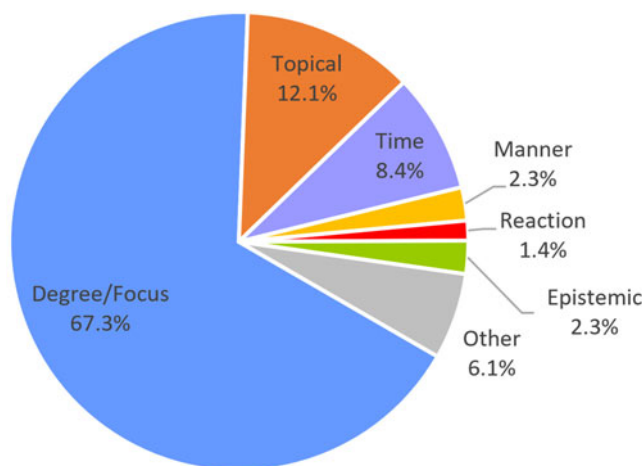
Figure 5. 'Adverb-ly adjective' subtypes in COCA (200 most frequent combinations)

intuition that Reaction is more frequent in creative and evaluative registers than in the general language.

4.5   Distribution by subtype, at the bottom

To truly test the creativity of the 'adverbly-adjective' construction, however, the best approach is to examine not the most frequent combinations, but the least frequent; that is, those combinations at the bottom or tail of the distribution. To that end, we collected all the hapax legomena in three of our corpora. Hapax legomena, nonce words, or hapaxes, are instances that occur only once in the corpus under study (Manning & Schütze 2003: 199). Examining hapax 'adverb-ly adjective' combinations may give us a sense of which combinations are unique and novel, and in what proportion relative to the semantic subtypes we have identified.

We began by counting the relative frequency of hapaxes in three different corpora: SOCC, CORE and Movie$. SOCC is a corpus of online comments, containing comments on very many different topics from the news, and thus highly evaluative. CORE is a corpus of online registers. As we have seen, it contains more instances of the 'adverb-ly adjective' combination per million words than COCA or TIME, perhaps because it contains more opinion, a defining feature of online registers (Biber & Egber 2018). Finally, Movie$ is all opinion, as it consists entirely of film reviews. Table 4 shows the hapax frequencies in these three corpora. As shown in the second and third rows, 'adverb-ly adjective' hapaxes increase across the three corpora, consistent with our view of how opinionated each corpus is and how much creativity is valued in each register. The proportionate frequency in Movie$ is strikingly higher.

We then turned to the question of semantic subtype. We collected a random sample of 200 hapaxes from the Movie$ corpus and annotated them, revealing the distribution of

Table 4. *Relative frequency of 'adverb-ly adjective' hapaxes in three corpora*

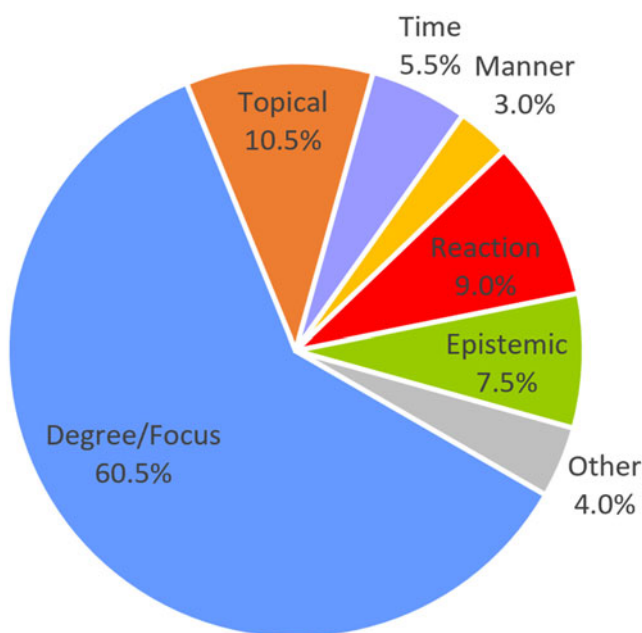|	SOCC	CORE	Movie$
Total no. of hapaxes	22,022	30,276	13,977
Hapax proportion of all 'adverb-ly adjective'	6%	29%	72%
Hapaxes, frequency per million words	578.9	669.9	3,504.2

Figure 6. 'Adverb-ly adjective' subtypes in Movie$ (200 most frequent combinations)

subtypes shown in figure 7. Compared with figures 5 and 6 (in section 4.4), which presented the distribution at the top, there are dramatic differences. Manner and Reaction have increased sharply, indicating that these subtypes are more likely to include unique and novel combinations, i.e. hapaxes. This increase comes at the expense of the Degree/Focus type, which seems to contain the more frequent combinations.

4.6 Oxymoronic 'adverb-ly adjective' combinations

A particularly interesting subset of 'adverb-ly adjective' combinations are those in which the adverb and the adjective seem to have opposing polarities, from the point of view of sentiment or affect (Martin & White 2005; Taboada 2016). Take, for example, the phrase
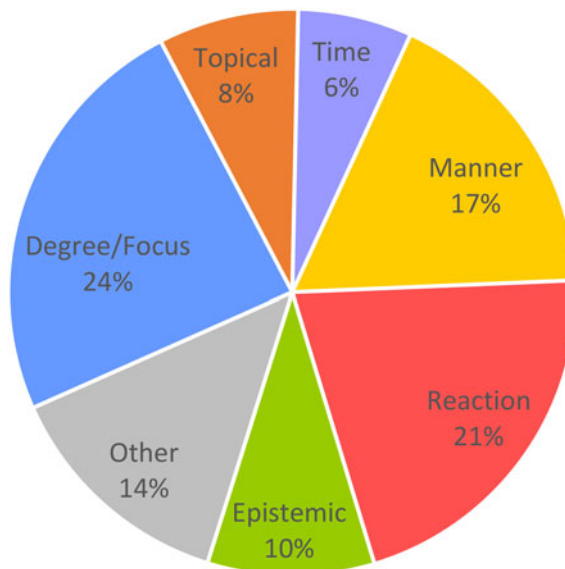
Figure 7. Hapax legomena subtypes in Movie$ (200 random examples)

wonderfully imperfect, in which the word *wonderfully* has strongly negative sentiment, whereas *imperfect* has a negative sentiment. This is a classic example of an oxymoron, an apparent contradiction in terms. We previously found, in the context of work in sentiment analysis (Taboada *et al.* 2011; Taboada 2016; Benamara *et al.* 2017; Taboada *et al.* 2017), that many such combinations could be classified as oxymorons, presumably used for their creativity and impact.

We therefore extracted oxymorons and attempted to classify them into our semantic subtypes. The process we followed started with splitting the 'adverb-ly adjective' pair into separate adverb and adjective units, then consulting their polarity and strength in standard sentiment dictionaries. If the adverb was not found in the dictionary, we converted it into an adjective by stripping the *-ly*, assuming that the polarity would be the same for the adjective and its derived adverb. Once we had the polarity for each member of the pair, we could compute the absolute difference in polarities, to identify those that were oxymorons. Part of the decision in this respect had to do with what threshold constituted enough of a difference to call something an oxymoron. We used SentiWordNet 3.0 (SWN), a standard dictionary for sentiment analysis (Baccianella *et al.* 2010) with a high coverage for most of the words we were looking up (it was missing only about 4 per cent of the words).[10]

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[10] Each sense in SWN is made up of three scores (positivity, negativity, objectivity). We extract the harmonic weighted average of the three, for all the potential synsets of each word. We then calculate the absolute maximum between the combined positivity and negativity scores and assign it a positive sign if the maximum was the positive score and a negative sign if the maximum was the negative score. This gives us a unified score

We found that, in all corpora, the combinations with the highest difference between the terms had to do with a positive adverb modifying a negative adjective, creating a novel and surprising combination, often in the Reaction class. COCA contained instances such as *comically nefarious*, *genuinely disgusting* and *wonderfully imperfect.* In CORE, we found *amusingly sardonic*, *thoroughly ruthless* and *beautifully heartbreaking.* TIME provided *deplorably high-minded*, *amusingly mangled* and *zealously moderate.*

In some cases, we find a negative adverb modifying either positive or negative adjectives, in a process of delexicalization (Partington 1993; Tagliamonte 2008; Schweinberger 2021; Nouwen 2024), whereby intensifiers such as *awfully*, *terribly* or *frightfully* are mostly delexicalized when combined with positive adjectives. Many of the instances we found as oxymorons were also made up of a Degree or Focus adverb, typically positive, followed by a negative adjective. Examples included combinations with the adverbs *absolutely*, *barely*, *certainly*, *entirely*, *fundamentally*, *genuinely*, *totally* or *truly.* In these cases, we would argue that the adverb does not contribute positive meaning, as per SentiWordNet 3.0, but only an intensifying meaning, whether up or down.

5   Discussion and conclusions

We have presented an in-depth study of a frequent and interesting construction in English, composed of a deadjectival adverb ending in *-ly* and an adjective, in what we have termed the 'adverb-ly adjective' construction. Using corpus data and semantic analysis of many instances, we arrived at a classification scheme that includes very frequent instances in classes such as Degree and Focus, but also more fine-grained distinctions between Manner, Reaction, Time and types of Topical.

The construction was interesting to us because of its potential for expressing a highly descriptive and evaluative meaning, containing in essence two adjectives that provide elevated amounts of description. From our study of what we ended up labelling the Reaction class, we knew that the construction could be doubly evaluative, with examples such as *explosively funny* or *wildly uneven*. This seems to be a syntactic niche for linguistic creativity, a place where speakers and writers who value originality can showcase their word-smithing skills. We show that the frequency of the construction overall varies across registers. In addition, certain types, such as Reaction, are more frequent in some registers (evaluative and review registers in particular), pointing to a discourse-functional motivation. The need for terminological precision in technical writing also provides the discourse-functional motivation for the subtype Topical 1.

The methodological significance of our study lies in the fact that each technique in isolation (semantic analysis, corpus analysis) would not have been able to highlight the diverse nature of the construction.

in the range between -1.0 and 1.0. The absolute difference of the two scores for a construction can then range between 0.0 and 2.0.

Our study adds to the literature on intensification as a cyclical phenomenon, one that undergoes cycles of recycling and replacement of intensifiers (see, e.g., D'Arcy 2015). Our contribution has been to focus not only on individual lexical items (e.g. *very*, *really*, *so*), but also on the role that grammatical constructions (in particular, the 'adverb-ly adjective' construction) may play in conveying intensificational meaning.

Further research could help refine the typology developed in section 3 and explore the idea (mentioned in section 3.9) that at a higher level of analysis expanded notions of Degree and Focus could lie at the heart of all or most 'adverb-ly adjective' combinations. Other future research would expand on the corpus analyses reported herein. This would help clarify whether the distributional trends we have observed are borne out in more recent data. There are also variations of the construction that deserve attention. For example, in our corpus searches, we did not include hyphenated items (*deeply-rooted*), to simplify the search process and handle a reasonable amount of data. Intensifiers that do not end in *-ly* (*well bad*, *flat-out weird*) or that have lost the *-ly* (*real nice*) are also emerging or re-emerging and entering into novel combinations (Aijmer 2018, 2021). Further, there seems to be an inflation of the adverb-*ly* component, which can be not just a simple deadjectival adverb, but other modifiers, for instance *gum-chewingly simple*. Creativity is at play here again, with examples such as *page-turningly, compulsively readable*,[11] which expand the 'adverb-ly adjective' construction by piling on a clearly novel and hyphenated modifier to the left. Finally, examples from other registers, especially spontaneous conversation, would contribute to a fuller understanding of the contexts of use of the 'adverb-ly adjective' construction.

Authors' addresses:

Department of Linguistics
Simon Fraser University
8888 University Dr.
Burnaby, BC, V5A 1S6
Canada
mtaboada@sfu.ca

School of Humanities, Languages and Social Science
Griffith University
170 Kessels Road
Nathan Qld 4111
Australia
c.goddard@griffith.edu.au

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School of Linguistics
HSE University
21/4 Staraya Basmannaya Ulitsa
Moscow 109028
Russia
trnavacr@gmail.com

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