# *Prices go up, surge, jump, spike, skyrocket, go through the roof...* Intensifier Collocations with Parametric Nouns of Type PRICE

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#### Abstract

The paper looks into the expression of intensification with parametric nouns such as PRICE, COST, FEE, RATE, etc., focusing on collocations these nouns form with intensifying adjectives, inchoative and causative intensifying verbs and corresponding de-verbal nouns. Degrees of intensification possible with these nouns are discussed, as well as analytical vs. synthetic expression of intensification (a steep increase in prices ~ a spike in prices). Sample lexicalization rules are proposed-namely, rules that map semantic representations of intensifier collocations headed by nouns of this type to their deepsyntactic representations. The theoretical framework of the paper is Meaning-Text linguistic theory.

## **1** The Problem Stated

The paper looks into the expression of intensification with parametric nouns such as PRICE, COST, FEE, RATE, etc., hereafter *PRICE type nouns*, or {N<sub>PRICE</sub>} for short (see Table 1, Section 3 below). More precisely, it describes collocations these nouns form with intensifying adjectives, as well as with inchoative and causative intensifying verbs and corresponding deverbal nouns. A cursory comparison is provided with antonymic, i.e., attenuating, expressions entering in collocations with {N<sub>PRICE</sub>}.

A parametric noun (cf. Mel'čuk, 2013: 214) corresponds to (at least) a two-place predicate, 'P of X is  $\alpha$ ', with X being the thing parameterized and  $\alpha$ , the value of the parameter: *the price*<sub>P</sub> [of gas]<sub>X</sub> is [\$1.85 per gallon]<sub> $\alpha$ </sub>, the speed<sub>P</sub> [of the vehicle]<sub>X</sub> is [70 miles per hour]<sub>a</sub>, the quantity<sub>P</sub> [of oil]<sub>X</sub> is [30 tons]<sub>a</sub>, etc.<sup>1</sup>

The  $\alpha$  value may not be explicitly quantified, but characterized as being big or small (on some scale): *The price of gas is high.* | *The speed of the vehicle is low.* | *The quantity of oil is huge.* | Etc.

I will be interested namely in the case where  $\alpha$  of an N<sub>PRICE</sub>, without being explicitly quantified, is qualified as high, or 'big' [STATIVE], or rising—'getting bigger'—[INCHOATIVE], or else being caused to rise [CAUSATIVE]. These cases are illustrated, respectively, in (1), (2) and (3); the examples come from Google searches (some have been slightly modified).

(1) STATIVE: '[[P of X being  $\alpha$ ,]]  $\alpha$  is (very) big', etc.

- a. Post-paid service plans often charge steep (astronomical, prohibitive) overage FEES.
- b. California divorce COST is high (whooping high, exorbitant).

(2) INCHOATIVE: '[[P of X being  $\alpha$ ,]]  $\alpha$  begins to be bigger than  $\alpha'$  by  $\beta$  ( $\beta$  being big)'

- a. Electricity COSTS went up (rose sharply, surged, skyrocketed) in August.
- b. Make sure your mortgage payments do not increase1 if there is a rise (a major hike, a spike) in interest RATES.

<sup>&</sup>lt;sup>1</sup> An N<sub>PRICE</sub> parametric noun typically has additional dependents; thus, the person who determines the price of something corresponds to an argument (in our terms, semantic actant) of PRICE; similarly, the person who incurs the cost of something corresponds to a semantic actant of COST; FEE has two additional semantic atants: the one who sets it and the one who pays it; and so on. These actants are not directly relevant for the present discussion.

- (3) CAUSATIVE: '[[P of X being α,]] α is caused to begin to be bigger ...'
  - a. Massive regulation of the health care industry causes the PRICES to increase1 (to go way up, to go through the roof).
  - b. Higher mortgage rates spurred an increase (a jump, a surge) in home SALES.
  - c. If you're running for office you don't want to be known as the person who increased2 (hiked up) TAXES.<sup>2</sup>

The paper will focus on two phenomena, observed in the examples above:

1) Varying degrees of intensification expressed by  $\{N_{PRICE}\}$  collocates.

Thus, steep < astronomical; go up < skyrocket << go through the roof; a rise < a spike; raise < hike up; and so on.

 Synthetic vs. analytical expression of intensification in collocations headed by {N<sub>PRICE</sub>}.

High(er) degree of intensification can be expressed either by an N<sub>PRICE</sub> collocate itself or by a separate lexeme (underlined in the examples below), which gives rise to approximate equivalences: [cost is] *exorbitant*  $\langle whooping high \rangle$ ; [costs] *skyrocket*  $\langle rise \ sharply \rangle$ ; *hike up* [prices]  $\langle cause \ a \ substantial \ rise [in prices] \rangle$ ; etc. When intensification is expressed analytically, the collocate of an N<sub>PRICE</sub> is itself intensified, serving as the base of the corresponding collocation of "second order", as it were.

These phenomena will be described from the viewpoint of Meaning-Text linguistic theory [MTT], in particular, its lexicological branch, *Explanatory Combinatorial Lexicology* (Mel'čuk, 2006), and its dependency-based semantics and syntax (Mel'čuk, 2012, 2013 and 2015).

The rest of the paper is structured as follows: a brief review of formal means used in the Meaning-Text approach to describe intensification: the lexical function Magn 'big'/'intense' and other related lexical functions (Section 2); an overview of {N<sub>PRICE</sub>} and intensifying expressions with which they combine (Section 3); degrees of intensification expressed by collocates of {N<sub>PRICE</sub>} and their lexicographic treatment (Section 4); a sketch of lexicalization rules for analytical vs. synthetic expression of intensification with {N<sub>PRICE</sub>}, i.e., rules that map semantic representations of the corresponding collocations to their deep-syntactic representations (Section 5); conclusion (Section 6).

Data used in the paper come from a collocation database that Igor Mel'čuk kindly let me use, *Longman Dictionary of Contemporary English* [LDOCE, <u>www.ldoce.online.com</u>], and the WWW.

The collocation database consists of over 15,000 entries (entry count is per collocate, not per headword). The number of intensifier collocations is some 4,000; only a small proportion of those are headed by  $\{N_{PRICE}\}$ . For the purposes of this paper, collocations were added and data complemented from the two other sources.

Linguistic literature on intensification is extremely rich and even a cursory survey thereof is impossible here; some of the works I consulted are Greenbaum (1970), Quirk *et al.* (1985: 589*ff*), Altemberg (1991), Kennedy & McNally (2005), Cacchiani (2004), Gallardo (2008), Méndez-Naya, ed. (2008), Fleischhauer (2013), Bertinetto & Civardi (2015) and van Der Wouden & Foolen (2017). Within Meaning-Text approach, various aspects of intensification were treated, for instance, in Boguslavskij & Iomdin (2000), Iordanskaja & Polguère (2005), Grossman & Tutin (2007) and Milićević & Timošenko (2014).

# 2 Meaning-Text Description of Intensification: Magn and Related Lexical Functions

#### 2.1 Collocations and Lexical Functions

In the MTT framework, collocations are described in terms of lexical functions [LFs]. Since LFs are quite well known, there is no need to introduce them here (the interested reader may consult, for instance, Wanner, ed., 1996 and Mel'čuk, 2015: 155-279) and we can pass directly to the LFs relevant for the present discussion: Magn, Plus, IncepPredPlus, and CausPredPlus. But first, two important facts, holding for all LFs, should be noted.

• The meaning of an LF is actually a cluster of several related meanings, similar to the meaning of a grammeme, which also "stands for" a cluster of several meanings; for instance, the grammeme 'plural' can mean 'more than one' [*three books*], 'a kind of' [*three cheeses*], 'a big quantity of' [*the sands of the desert*], and so on. This explains the recourse to several glosses

<sup>&</sup>lt;sup>2</sup> INCREASE1 'become bigger' is an intransitive verb, and INCREASE2 the corresponding causative verb.

indicating the meaning of some LFs, such as Magn (see immediately below).

• Elements of the value that an LF returns for a given headword are not perfectly synonymous (this may be the case even if we consider just one particular meaning of the LF, as mentioned in the preceding paragraph); in fact, sometimes they display obvious semantic differences, which in case of intensifiers may go beyond varying degrees of intensification. Thus, for instance, [a] *spike* [in prices] is not only more intense than [a] rise but also quicker, [prices] go through the roof means that they rise very high from an already high starting level, and so on (for more on this, see Section 3). However, such differences can be ignored in contexts where precision and attention to detail are not paramount, i.e., in most everyday discourse situations.

#### 2.2 Lexical Functions Magn and Plus

The LF Magn is an adjectival/adverbial modifier whose meaning is 'intense(ly)', 'big', 'much'/ 'many'.

Here are examples of Magn type collocations as they would appear in an English *Explanatory Combinatorial Dictionary* [ECD] (where collocates are listed in the entries of their headwords):

NUMBER <sub>(N)</sub> 'quantity'
Magn: <i>large</i> , <i>sizeable</i> , <i>//myriad</i> , <i>&lt;&lt; huge</i> ,
<< record-breaking, << unprecedented,
<< //gazillion
FIGURE <sub>(N)</sub> 'number'
Magn: high, << huge, << staggering
SHORTAGE
Magn: severe, acute
Magn <sup>temp</sup> : <i>chronic</i>
INFLATION
Magn <sup>quant</sup> : widespread, rampant
impossible to control Magn: << runaway
COST(N)
Magn: high, significant, < huge, << astronomi-
cal, << exorbitant
SPENDING <sub>(N)</sub>
Magn <sub>2</sub> : strong

[AntiBon+Magn<sub>2</sub>]: *lavish* 

The symbol "//" precedes a fused element of the value of an LF, expressing together, i.e., in one word, the meaning of the headword and the intensification; thus, *myriad* means 'huge number'. Degrees of intensification are indicated by the symbols "<" (more) and "<<" (much more). (Another way to specify intensification degrees is to use degree Roman superscripts; see Section 4.)

Superscripted semantic features, such as temp and guant above, identify the dimension of the meaning of the headword that is being intensified. Subscripted Arabic numerals, as in Magn<sub>2</sub>, indicate the semantic actant of the headword on which the intensification bears. (In this particular case, these are the things for which the spending takes place; cf. *military* (*defense*, *capital*) spending).

Non-standard components, such as impossible to control, capture the additional meaning carried by a given collocate with respect to the basic meaning of the relevant LF; we will see more of these in Section 3.

The last example features a configuration of LFs, made up of a complex LF AntiBon 'not good according to the Speaker', and the already seen Magn<sub>2</sub>. Intensifying LFs often enter into such configurations. For some examples of the LF AntiMagn, see Table 2 in Section 3.

Like Magn, the LF Plus is a quantitative modifier, a comparison marker meaning 'to a greater extent'; its antonym is Minus 'to a lesser extent'. Both appear only in complex LFs, either with Magn (e.g., PlusMagn(ALERT): *heightened*; PlusMagn(CONCERN): growing; MinusMagn(DISCIPLINE): failing) or with Incep and Pred (see immediately below).

# 2.3 Lexical Functions IncepPredPlus and CausPredPlus

These are complex verbal LFs, made up of the following simple LFs: the verb Pred 'to.be', the already seen comparison marker Plus 'more', and the verb Incep 'begin', respectively Caus 'to.cause'. Thus, IncepPredPlus means 'begin to be bigger (than before/than something else by some value)' and IncepPredPlus—'cause something [to begin] to be bigger (than before/than something else by some value)'. For instance:

NUMBER<sub>(N)</sub> 'quantity' IncepPredPlus: *grow* <sup>quickly</sup> IncepPredPlus: << *explode* 

#### COST<sub>(N)</sub>

IncepPredPlus: go up, rise, increase1 very quickly IncepPredPlus: << (sky)rocket CausPredPlus: drive up [ART ~], push [ART ~] up/higher  $Caus_2PredPlus: raise [ART ~]^3$ 

For some examples of the antonyms of these two LFs, the attenuators IncepPredMinus and CausPredMinus, see Tables 4 & 5 below.

## **3** Intensification with PRICE-type Parametric Nouns

 $\{N_{PRICE}\}\$  have a "natural" and very rich co-occurrence with expressions of intensification (this is why they have been selected for this study). The nouns are presented first, and then their intensifying (and some of attenuating) collocates.

#### 3.1 The Domain of {N<sub>PRICE</sub>}

Here are some nouns belonging to the set  $\{N_{\text{PRICE}}\}$ :

amount budgetdeficit expense(s)businessfarecharge(s)feecost(s)figuredebtinflation	interest investment <u>level</u> mortgage <u>number</u> price(s)	rate sales spending stock(s) tax(es) wage(s)
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Table 1. Some members of  $\{N_{PRICE}\}$ 

The bolded nouns are the core items of the set; the co-occurrence data supplied below applies in the first place to these nouns and is shared to a somewhat lesser extent, albeit quite robustly, with the remaining items (for more on this, and for some frequency data, see the end of this section).

Other, semantically more distant nouns such as *employment*, *enrolment*, *turnout*, etc., share some co-occurrence with  $\{N_{PRICE}\}$ .

Some of the nouns in Table 1 are used (in the relevant sense) only in the plural (e.g. *sales*) or are much more frequently used in the plural (those with the plural marker in parentheses). In some cases, there is a meaning difference between the plural and the singular form (i.e., they represent two different lexemes); for instance, *costs* 'expenses' vs. *cost* = 'price'.

The underscored nouns can combine with some other nouns from the set, as in *Inflation levels* are high; *Mortgage rates* went up; *The amount of sales increased*1; etc., but they easily undergo ellipsis: *Inflation is high*; *Mortgage went up*; *The sales increased*1. Conversely, there are instances where these nouns are used alone, such as *The rate(s) increased*1; *The figures/numbers are up*; etc.<sup>4</sup>

#### 3.2 Intensifiers of {N<sub>PRICE</sub>}

Tables 2-5 show the most common intensifying collocates of  $\{N_{PRICE}\}$ ; attenuating collocates are indicated as well, for comparison.

In the tables, the non-standard components of an LF meaning (abruptly & quickly, from a high level, impossible to control, etc.) precede the elements of LF value which express them; these components are based on LDOCE's definitions of the corresponding lexical units. Intensification levels are tentatively indicated as Degree I and Degree II/III.

Magn 'big'		
Degree I	Degree II/III	
high; steep	astronomical; exorbitant;	
	making Operl impossible prohibitive;	
	impossible to control runaway; stag-	
	gering	
Plus 'to a gre	ater extent'	
Degree I	Degree II/III	
growing	galloping	
AntiMagn 'small'		
Degree I	Degree II/III	
low < modest	negligible	
Minus 'to a smaller extent'		
Degree I	Degree II/III	
falling	dwindling	

Table 2. Degree adjectives combining with  $\{N_{PRICE}\}$ 

Two adjectival modifiers non-specific to  $\{N_{PRICE}\}$ , colloq. whooping 'very large [physically]' and colloq. jaw-dropping 'very impressive or surprising' are indiscriminately used as higher-level intensifiers or attenuators.<sup>5</sup>

<sup>&</sup>lt;sup>3</sup> Examples for the last two LFs: *Increasing fuel prices also drive up the cost of food* (the Cause is external, i.e., not an actant of the headword, so Caus bears no actantial subscripts); *Apple quietly raised the cost of some of its machines* (the Causer is internal, coinciding with the SemA 2 of the headword, i.e., the person who determines the cost, which is shown by the actantial superscript accompanying Caus).

<sup>&</sup>lt;sup>4</sup> These are of course two different types of ellipsis. The first ellipsis type is seen also in the expressions such as *The* (exchange) rate of the US dollar fell/rose against the Japanese Yen.

<sup>&</sup>lt;sup>5</sup> Examples: Nike debuts a pair of sunglasses at the Rio Olympics for a jaw-dropping cost of \$1,200 [by anyone's standard, this must be 'very high']. | The price is jaw-dropping, 9 dollars per bottle. [For quality wine, this means 'very low'.] | Yet another whopping pay raise ['very big', or, ironically, 'very small'].

IncepPredPlus 'become +'		
Degree I	Degree II/III	
gradually Creep		
up; go up;	roof, abruptly jump, surge, shoot	
grow; in-	up, spike, zoom; abruptly & guickly	
crease1; rise	balloon, escalate, explode; quickly,	
	to a high level SOAF; guickly, by a	
	large amount (sky)rocket	
IncepPredM	inus 'become –'	
Degree I	Degree II/III	
gradually	abruptly, to a very low level crash;	
cool; de-	gradually, to a very low level $dwindle$ ;	
crease;	abruptly, by a large amount <i>plummet</i> ,	
for a short	plunge, tumble	
time dip;		
drop; fall;		
go down		

Table 3. Inchoative degree-verbs combining with {N<sub>PRICE</sub>}

<b>CausPredPlus</b> 'cause to become +'			
Degree I	Degree II/III		
boost; drive up; increase <b>2</b> ; push up/higher; put up; raise; send up	deliberately hike up, ramp up; send sky- high/soaring, send through the roof		
<b>CausPredMinus</b> 'cause to become –'			
Degree I	Degree II/III		
cut; drive down; push down/lower; reduce; send down	slash		
down/lower; reduce; send down	1		

Table 4. Causative degree-verbs combining with {N<sub>PRICE</sub>}

S <sub>0</sub> IncepPredPlus		
Degree I	Degree II/III	
growth; in-	$jump_{(N)}$ ; escalation; explosion;	
$crease_{(N)};$	<i>spike</i> <sub>(N)</sub> ; <i>surge</i> <sub>(N)</sub>	
$rise_{(N)}$		
S <sub>o</sub> IncepPredMinus		
Degree I	Degree II/III	
$drop_{(N)}; dip_{(N)}$	$crash_{(N)}$	
S <sub>0</sub> CausPredPlus		
Degree I	Degree II/III	
<i>raise</i> <sub>(N)</sub>	hike <sub>(N)</sub> ; rump-up	
S₀CausPredMinus		
Degree I	Degree II/III	
$cut_{(N)}$ ; re-		
duction		

Table 5. Degree nouns combining with  $\{N_{PRICE}\}$ 

Many collocates (both intensifiers and attenuators) are metaphorically derived from independent lexical units denoting basic spatial positions (up/down) or changes thereof (rise/fall, jump/dip; hike up/push down), as well as violent physical phenomena (explosion/crash).

As mentioned at the beginning of this section, most of the collocates listed in Tables 2-5 combine with the nouns in Table 1, but some of them fit some nouns better than others. For example, in a cursory www search, *ballooned* was most frequently found in combination with *costs* (40,700 hits), significantly less so with *prices* (6,210) and infrequently with *fees* (1,230). Similarly, *crashed* was found co-occurring most often with *prices* (61,100 hits), more rarely with *stock* (19,100), and hardly ever with *fees* (349). On the other hand, some nouns have more specific collocates, not used with other nouns.

Degree I intensity collocates seem to fit virtually all nouns from  $\{N_{PRICE}\}$ , those of Degree II/III may have a less close fit with some of the nouns.

Table 6 features common intensifiers of some (for the most part) Degree I intensifying and attenuating collocates of  $\{N_{PRICE}\}$ .

Magn of Magn/AntiMagn		
Degree II/III		
extremely,		
colloq. whoop-		
ing		
Magn of IncepPredPlus/Minus		
Degree II/III		
abruptly, by a large amount <i>dramati-</i> <i>cally</i>		
substantially; colloq. waycallyMagn of S₀IncepPredPlus/Minus		
Degree II/III		
abrupt, by a large amount dramatic		

Table 6. Intensifiers of {N<sub>PRICE</sub>} degree collocates

The same intensifiers combine with highand low degree expressing collocates of  $\{N_{PRICE}\}$ ; for instance, *very* (*extremely*, *whooping*) *low/high prices*; *Stocks rose/fell sharply* (*considerably*, *dramatically*); and so on.

To sum up, while some interesting generalizations over collocates of  $\{N_{PRICE}\}\$  are possible, it is still necessary to describe the co-occurrence for each noun individually. More on this will be said in Conclusion.

### 4 Degrees of Intensification with PRICE-type Parametric Nouns

As mentioned previously, *ECD* lexicographers use three degrees of intensification with Magn type LFs: 'intense', 'very intense, and 'very very intense'. Some data from the collocation database I consulted are presented in Table 7, next page.

The 3-way distinction is based on linguistic intuition and has not been specifically theorized within this framework.

In the linguistic literature on intensification, some authors use three degrees (e.g., Cacchiani, 2004), as above, and others, two: relative and

	Magn	Magn <	Magn <<
DANGER	big, grave, great		mortal
DIFFER- ENCE	big, funda- mental, sig- nificant, sharp, stark, striking, vast	crucial, enor- mous, huge, key	
DIFFER- ENT	basically, distinctly, dramatically, markedly, starkly, strik- ingly		complete- ly, entire- ly, //poles apart, rad- ically, totally
EPIDEM- IC <sub>(N)</sub>	major, vast	sweeping	
EVI- DENCE	quant ample, clear, cogent, compelling, convincing, dramatic, quant moun- tainous, strong, unam- biguous	conclu- sive, in- contro- vertible, irrefuta- ble	
FACT	True	well- establish- ed, well- known	irrefuta- ble
PAIN	keen, <sup>temp-</sup> nagging, searing, se- vere, sharp, <sup>temp</sup> unrelent- ing	killer-	excruciat- ing, ex- treme, gut- wrench- ing
SPEED <sub>(N)</sub>	High	breath- taking, lightning	break- neck
TIRED	//exhausted, to the bone, very, //washed out	complete- ly, ex- tremely	
TOLL	heavy	devastat- ing	

high (e.g., Gallardo, 2009).<sup>6</sup> However, the theoretical bases of or linguistic evidence for these distinctions are hardly ever discussed.

Table 7. Degrees of Magn in an ECD database (excerpts)

In domains such as ours, degrees of intensification could be determined rather objectively, by reference to numerical values of the parameters in question. That is, we could try and find conceptual correlates for intensification degrees admitted by  $\{N_{PRICE}\}$ .

Let us assume the following Semantic Structure [SemS] for the LF IncepPredPlus (on semantic representations in MTT, see, for instance, Mel'čuk, 2012: 161-394):





NB: The semanteme configuration in the shaded area of *Figure 1* is not the part of the meaning of the LF IncepPredPlus: it represents the context (or conditions) in which the configuration 'begin being bigger ...' can be implemented, at the deep-syntactic level, by the LF in question. (This context is actually a generalized SemS of the corresponding collocation base with its SemA 1.) See the lexicalization rules in *Figure 3*.

A note on the actants of the semanteme 'bigger' is in order: in ' $\alpha$  is bigger than  $\alpha'$  by  $\beta$ , ' $\alpha'$ is the value [of something] that is being compared with ' $\alpha'$ ', which is either ' $\alpha$ ' at some previous time point or the value of another parameter; the meaning ' $\beta$ ' is obvious—the value representing the difference between ' $\alpha$ ' and ' $\alpha'$ '. Thus, *Prices go up means* 'prices [of something] are  $\alpha$ ,  $\alpha$  being bigger than  $\alpha'$  [=  $\alpha$ before the change] by  $\beta$ ', and *Prices of wheat are higher than prices of barley* means 'prices of wheat are  $\alpha$ ,  $\alpha$  being bigger than  $\alpha'$ , prices of barley, by  $\beta$ '.

Some possible instantiations of the SemS in Figure 1 follow:

- (4) a. Between 1850 and 1854 prices<sub>P</sub> of wheat<sub>X</sub> jumped by 60% [β].
  - b. The price<sub>P</sub> of natural gas<sub>X</sub> <u>rose</u> above \$5 per mcf [α].
  - c. Gasoline<sub>X</sub> prices<sub>P</sub> <u>will increase</u>1 by 10%  $[\beta]$ , to 1.65 euros per liter  $[\alpha]$ .
  - d. Crude oil<sub>x</sub> prices<sub>P</sub> <u>spiked</u> from \$13 [α'] to roughly \$34 per barrel [α], i.e., by some 38% [β].

As we can see, specific lexicalizations of the meaning of IncepPredPlus correlate with actual numerical values of the parameter P. Therefore, we could posit that higher degree inchoative verbs are used if the value of  $\beta$  exceeds a

<sup>&</sup>lt;sup>o</sup> Remember that we are talking about intensifiers in collocations, not more or less free intensifiers that may present more degrees: *a bit/somewhat < enough/rather < quite/pretty/really < absolutely/extremely/totally.* 

certain percentage point or if  $\alpha$  is bigger than  $\alpha'$  by certain amount, and so on. The same reasoning could be used to determine whether a twoor three-degree distinction is necessary for degrees of intensification.

This kind of precision would be in order if we were to elaborate entries for a terminological database or a lexicon to be used in some NLP applications. For our purposes, however, it is enough to determine the relative values of the parameter.

Speaking about linguistic evidence, it is clearly there to corroborate a two-degree distinction; cf., for instance, the incompatibility of higher degree nouns and verbs with *slight(ly)/a bit* (a *slight increase/\*surge; costs rose/\*spiked slightly*) or the incompatibility of higher degree adjectives with VERY/A LOT (*very high* (*steep*) vs. *very \*staggering*). However, the evidence is hard to come by when it comes to distinguishing between (the putative) Degrees II and III.

For the time being, I will refrain from making too fine distinctions and will use two degrees of intensification: high, and very high, which will be indicated by degree superscripts accompanying the relevant LFs: Magn<sup>I</sup> vs. Magn<sup>II</sup>, IncepPredPlus<sup>I</sup> VS. IncepPredPlus<sup>II</sup>, and CausPredPlus<sup>I</sup> VS. CausPredPlus<sup>II</sup>. (The same superscripts can be used with attenuating LFs).<sup>7</sup>

Thus, the SemS in Figure 1 above is actually good for IncepPredPlus<sup>1</sup>, and that of Incep-PredPlus<sup>11</sup> looks like this:



Figure 2. SemS of the LF IncepPredPlus<sup>II</sup>

This is a generalized representation, capturing the core meaning of this LF; in actual fact, either  $\alpha$  or  $\alpha'$  (or both) can also be characterized as 'big', which will trigger specific lexicalizations: if  $\alpha$  is 'big' (plus the non-standard component 'quickly' is present), then *soar* is an appropriate lexicalization, if both  $\alpha$  and  $\alpha'$  are big, *'go through the roof'* is OK, and so on.

# 5 Sample Lexicalization Rules for Intensifiers of PRICE-type Parametric Nouns

As indicated in Section 1, higher degree of intensification with  $\{N_{PRICE}\}$  nouns can be expressed synthetically, within an  $N_{PRICE}$  collocate, or analytically, by a separate lexical unit forming a collocation with the  $N_{PRICE}$  collocate as the headword; this gives rise to equivalences such as these:

- (5) a. Alberta crop crisis sent wheat PRICES through the roof<sub>CausPredPlus</sub><sup>II</sup>.
  - b. Alberta crop crisis **caused**<sub>caus</sub> wheat *PRICES* to shoot up<sub>IncepPredPlus</sub><sup>II</sup>.
  - c. Alberta crop crisis **spurred**<sub>Caus</sub> a **sharp**-<sub>Magn</sub> **increase1**<sub>S0IncepPredPlus</sub><sup>I</sup> in wheat PRICES.
  - d. Wheat PRICES spiked IncepPredPlus<sup>II</sup> (rose IncepPredPlus<sup>I</sup> steeply Magn<sup>I</sup>, got Incep much Magn<sup>I</sup> higher<sub>Plus</sub>) 'in the wake of 'Adv<sub>2</sub>Caus Alberta crop crisis.

These sentences are mutual paraphrases: they express the same meaning—'Alberta crop crisis caused wheat prices to begin being much big-ger'—but they do so more and more analytically, as it were, as we go from (5a) to (5d).

In MTT framework, there are two ways to produce these sentences:

1) by alternative lexicalizations from their common semantic structure, through application of semantic-to-deep syntax mapping rules (e.g., Mel'čuk, 2013: 188-259);

2) by meaning-preserving reformulations of the deep-syntactic structure of any of these sentences, through application of deep-syntactic equivalence, or paraphrasing, rules (e.g., Mel'čuk, 2013: 137-188).

In what follows, I will illustrate the first rule type.

Sample rules for synthetic vs. analytic implementation of inchoative high intensity verbs are given in Figure 3, next page. (Some lexicalization rules for the FL Magn can be found in Mel'čuk 2013: 213-214.)

These rules are needed (among others) to produce paraphrases such as those in example (5d) above.

Similar lexicalization rules can be written for other intensifying (and attenuating) LFs.

<sup>&</sup>lt;sup>7</sup> While the Roman superscript notation is sporadically found (in the MTT literature) with Magn type LFs, it is standardly used with realization LFs to indicate "degrees" of realization.

# 6 Conclusion

The paper discussed intensifier collocations of parametric nouns of type PRICE, in particular degrees of intensification and analytical vs. synthetic expression of intensification possible with these nouns.

While all the nouns considered share to a considerable extent the co-occurrence with intensifiers—in particular Degree I intensifiers, they also have their own, idiosyncratic, collocates, a finding consistent with the collocation phenomenon in general. Thus, a generalized lexicographic entry for the nouns belonging to  $\{N_{PRICE}\}$  can be envisaged, but this does not obviate the need for recording intensifier collocations for each member of the set, in their respective lexicographic entries.

Two degrees of intensification, high and very high, were suggested for these nouns' collocates, along with the corresponding formal lexicographic treatment within the Meaning-Text paradigm.

Sample lexicalization rules for intensifier collocation headed by members of {N<sub>PRICE</sub>} were proposed, taking into account the possibility of analytical and synthetic expression of intensification, i.e., by a separate lexeme, a collocate of an {N<sub>PRICE</sub>} intensifier (*a steep rise in PRICES (TAXES, FEES*); *SALES (STOCKS) rose dramatically*), or within the intensifier itself (*a hike in PRICES (TAXES, FEES*); *SALES (STOCKS) went through the roof*).

Attenuating collocates of  $\{N_{PRICE}\}\$  were considered in a cursory way, insofar as they provided a basis for comparison with the intensifying collocates. Preliminary findings point to two differences: attenuators are not as numerous as intensifiers, and they are even less prone to a three-degree distinction of intensity.

IncepPredPlus<sup>II</sup>



Figure 3. Lexicalization rules for the FL IncepPredPlus<sup>II</sup>

Future work could focus on determining, based on a larger corpus of data, if two degrees of intensification are enough to cover all the cases of intensification (as tentatively suggested here) or, on the contrary, a three-degree distinction is necessary. Other topic to explore include factors determining the choice of intensifier collocates of PRICE type nouns (e.g., how high a rise in prices should be in order for it be called *a spike*, etc.), as well as preference rules for analytical vs. synthetic expression of intensification with the nouns of this type. Plus, of course, a closer look at attenuation, along the same lines.

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#### References

- Altemberg, Bengt. 1991. Amplifier Collocations in Spoken English. In Johanson, S. & Stenström, A.-B., eds, English Computer Corpora. Selected Papers and Research Guide, Mouton de Gruyter, Berlin/New York, p. 127-149.
- Bertinetto, Pier Marco & Civardi, Eugenio. 2015. The Semantics of Degree Verbs and the Telicity Issue. *Borealis: An International Journal of Hispanic Linguistics*, 4(1): 57-77.
- Boguslavskij, Igor & Iomdin, Leonid. 2000. Semantika medlennosti [The Semantics of Slowness]. Slovo v tekste i v slovare. Sbornik stat'ej k 70letiju akademika Ju. D. Apresjana. Jazyki russkoj kul'tury, Moskva, p. 52-60.
- Cacchiani, Silvia, 2004. Towards a Model for Investigating Predicate-Intensifier Collocations. *Proceedings of EURALEX 2004*, p. 943-947.
- Fleischhauer, Jens. 2013. Interaction of Telicity and Degree Gradation in Change of State Verbs. In Arsenijević, B., Gehrke, B. & Marín, R., eds, Studies in the Composition and Decomposition of Event Predicates. Springer, Dordrecht, p. 125-152.
- Gallardo, Catherine. 2009. L'intensification dans les expressions figées françaises à coordination interne. *Lingvisticæ Investigationes*, 32(2): 238-252.
- Greenbaum, Sidney. 1970. Verb-Intensifier Collocations in English: An Experimental Approach. Mouton, The Hague/Paris.
- Grossmann, Francis & Tutin, Agnès. 2007. Motivation of Lexical Functions in Collocations: The Case of Intensifiers Denoting 'Joy'. In Wanner, Leo, ed., Selected Lexical and Grammatical Issues in the Meaning-Text Theory. In Honour of Igor Mel'čuk. Benjamins, Amsterdam/Philadelphia, p. 140-165.
- Iordanskaja, Lidija & Polguère, Alain. 2005. Hooking up Syntagmatic Lexical Functions to Lexicographic Definitions. In Apresjan, Ju. & Iomdin, L., eds, *East-West Encounter: Second International Conference on Meaning-Text Theory*. Slavic Culture Languages Publishing House, Moscow, p. 176-186.
- Kennedy, Christopher & McNally, Louise. 2005. Scale Structure, Degree Modification, and the Semantics of Gradable Predicates. *Language*, 81, p. 345–381.

- Mel'čuk, Igor. 2012, 2013, 2015. Semantics. From Meaning to Text, vols 1-3. John Benjamins, Amsterdam/Philadelphia.
- Mel'čuk, Igor. 2006. Explanatory Combinatorial Dictionary. In Sica, G., ed., Open Problems in Linguistics and Lexicography. Polimetrica, Monza, p. 225–355.
- Méndez-Naya, Bélen, ed. 2008. Intensifiers, Special Issue of English Language and Linguistics, 12(2).
- Milićević, Jasmina & Timošenko, Svetlana. 2014. Towards a Fine-grained Description of Intensifying Adjectives for Text Processing. *Computational Linguistics and Intellectual Technologies. Proceedings of the Annual International Conference on Computational Linguistics, DIALOG 2014*, p. 427-440.
- Quirk, Randolph, Greenbaum, Sidney, Leech, Geoffrey & Svartvik, Jan. 1985. *A Comprehensive Grammar of the English Language*. Longman, London.
- Van Der Wouden, Ton & Foolen, Ad. 2017. A Most Serious and Extraordinary Problem. Intensification of Adjectives in Dutch, German, and English. *Leuvense Bijdragen*, 101: 82-100.
- Wanner, Leo, ed. 1996. *Lexical Functions in Lexicography and Natural Language Processing*. Benjamins, Amsterdam/Philadelphia.