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OPERA LINGVISTICA ET LOGICA IN HONOREM BARBARAE PARTEE A DISCIPVLIS  
AMICISQVE ROSSICIS OBLATA

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# Contents

<b>Предисловие</b>	<b>1</b>
<b>1 Барбара Парти — задача наведения мостов</b> Вера Исааковна Подлеская	<b>3</b>
<b>2 Negative events: Evidence from Lithuanian</b> Peter Arkadiev	<b>7</b>
<b>3 Pair-list answers in naïve speakers and professional linguists</b> Asya Achimova, Peter Staroverov, Viviane Déprez and Julien Musolino	<b>21</b>
<b>4 Cause in Russian and the formal typology of coordination and subordination</b> Oleg Belyaev	<b>36</b>
<b>5 Notes on perspective-sensitivity</b> Lisa Bylinina, Eric McCready and Yasutada Sudo	<b>68</b>
<b>6 Формальная семантика и философия: мировой опыт и российские перспективы</b> Екатерина Вострикова и Петр Куслий	<b>82</b>
<b>7 Pronouns with multiple indices as conjunctions and disjunctions</b> Natalia Ivlieva and Alexander Podobryaev	<b>99</b>

<b>8</b>	<b>On the quantification of events</b>	<b>112</b>
	Ivan Kapitonov	
<b>9</b>	<b>Quantifiers in RSL: distributivity and compositionality</b>	<b>123</b>
	Vadim Kimmelman	
<b>10</b>	<b>Genitive of cause and cause of genitive</b>	<b>137</b>
	Julia Kuznetsova and Ekaterina Rakhilina	
<b>11</b>	<b>On how compositionality relates to syntactic prototypes and grammaticalization</b>	<b>148</b>
	Yury Lander	
<b>12</b>	<b>Factivity and unreal contexts: the Russian case</b>	<b>158</b>
	Alexander Letuchiy	
<b>13</b>	<b>Semantics of poetical tropes: Non-Fregeanity and paraconsistent logic</b>	<b>180</b>
	Basil Lourié and Olga Mitrenina	
<b>14</b>	<b>Tsakhur as a case-stacking language</b>	<b>195</b>
	Ekaterina Lyutikova	
<b>15</b>	<b>Русские местоимения и снятая утвердительность</b>	<b>219</b>
	Елена Викторовна Падучева	
<b>16</b>	<b>Cluster analysis in DLP technologies</b>	<b>243</b>
	Ekaterina Pshehotskaya and Nikita Nikitinsky	
<b>17</b>	<b>An alternative to the two solutions for the saturative <i>na-+-sja</i> construction</b>	<b>257</b>
	Eugenia Romanova	
<b>18</b>	<b><i>Kendisi</i> revisited</b>	<b>267</b>
	Pavel Rudnev	

<b>19 Degree modifiers: A new perspective on their semantics and the role of stress in it</b>	<b>276</b>
Galit Sassoon and Natalia Zevakhina	
<b>20 Interpreting sentences without prosody and context</b>	<b>290</b>
Natalia Slioussar	
<b>21 On argument structure, lexical relations, prefixation and coercion</b>	<b>303</b>
Sergei Tatevosov	
<b>22 Две миссии Барбары</b>	<b>320</b>
Владимир Борисович Борщев	
<b>Bibliography</b>	<b>332</b>

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# Abbreviations

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1	First person	GEN	genitive
2	Second person	I	noun class I
3	Third person	II	noun class II
AA	animate attributive	III	noun class III
ABL	ablative	IN	in
ABS	absolute	INF	infinitive
ACC	accusative	INS	instrumental
ACT	active	IPF	imperfective
AFF	affective	IRR	irrealis
AGR	agreement	IV	noun class IV
ALL	allative	LOC	locative
AOBL	oblique attributive	M	masculine
AOR	eorist	N	noun
ATTR	attributive	NDIR	non-directed
AUX	auxiliary	NEG	negative
CNT	count	NEUT	neuter
COM	comitative	NH	non-human
COP	copula	NOM	nominative
CVB	converb	OBL	oblique
D	determiner	P	adposition
DAT	dative	PA	active participle
DEF	definite	PFV	perfective
DEM	demonstrative	PFX	prefix
DU	dual	PL	plural
EL	elative	POSS	possessive
ERG	ergative	PRED	predicative
F	feminine	PRS	present
FUT	future	PRT	particle

PST	past	TOP	topic
PTCP	participle	TR	transitive
REFL	reflexive	V	verb
SG	singular	VBE	existential verb
SUPERS	superessive	VEXP	experiential verb

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## Degree modifiers: A new perspective on their semantics and the role of stress in it

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Galit Sassoon and Natalia Zevakhina

This paper focuses on the meaning of degree modifiers such as *slightly* and *completely*, when they are either more prosodically prominent than the scalar adjective they modify or less so.<sup>1</sup> Thus, one challenge is to explain the meaning, function and distribution of these modifiers. A second challenge is to explain the way accentuation (prosodic prominence vs. non-prominence) affects their meanings. The paper argues that the sensitivity of weak modifiers such as *slightly* to the type of membership norm of the modified adjective poses a challenge to semantic analyses of these modifiers in terms of quantification, scale-structure or norm-shifting (section 19.1.1), and suggests, instead, that these modifiers trigger granularity shifting (section 19.1.2). Two analyses of the role of accentuation in modifiers are then discussed (section 19.1.3). Lastly, the paper presents an experiment that appears to support the granularity shifting account and a compatible treatment of prosodic prominence as generating local intensification of the meaning of the accented word (sections 19.2–19.3).

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<sup>1</sup> We gratefully acknowledge Clara Cohen for recording the experimental texts. Also, our special thanks to the audience of the *Focus Sensitive Expressions from a Cross-Linguistic Perspective* workshop (Bar-Ilan University, February 2014). All the mistakes are solely ours.

## 19.1 Theoretical prerequisites

### 19.1.1 Three views of degree modifiers

Degree modifiers constitute a set of scalar alternatives ranging from weak modifiers (e.g., *slightly*, *a bit*, *somewhat*) to strong ones (e.g., *completely*, *totally*, *perfectly*). This section presents three a-priori plausible views of these modifiers and argues that they are not satisfying.

On the *quantificational view*, weak modifiers are existential quantifiers over degrees. For instance, *x is slightly A* is true iff *x is A* to at least some non-zero degree on *A*'s scale. Strong modifiers are universal over degrees. For instance, *x is completely A* is true iff *x is A* to every degree on *A*'s scale.

By contrast, on the *scale-structure view* (Kennedy & McNally 2005, Kennedy 2007, Syrett, Kennedy & Lidz 2009), degree modifiers have no truth-conditional effect, but weak modifiers (minimizers) presuppose the existence of a scale minimum and strong ones (maximizers) presuppose a scale maximum (cf. (1a) vs. (1b)).

- (1) a. *x is slightly A* is **true** iff  $f_A(x) > \min(f_A)$ ; **false** iff  $f_A(x) \leq \min(f_A)$ , and **undefined** otherwise.
- b. *x is completely A* is **true** iff  $f_A(x) = \max(f_A)$ ; **false** iff  $f_A(x) < \max(f_A)$ , and **undefined** otherwise.

Thus, weak modifiers (minimizers) combine with lower-closed adjectives (e.g., *dirty*, *wet*), whereas strong ones (maximizers) combine with upper-closed adjectives (e.g., *clean*, *dry*). Both types of modifier are predicted to combine with doubly-closed adjectives (e.g., *open*, *full*), and neither is predicted to be good with relative adjectives like *tall* or *short*. The scale of the latter is argued to be open (although this point is debatable). In accordance, in relative adjectives, '*x is A*' is true iff *x* exceeds a contextual norm:  $f_A(x) > \text{norm}(c, f_A)$ . By contrast the membership norms of lower-closed and upper-closed adjectives are scale minima and maxima, respectively (thus, they are called partial and total, respectively), whereas the norm of doubly-closed adjectives can be either a minimum (as in, e.g., the partial adjective *open*) or maximum (as in, e.g., the total adjective *full*; cf. Rotstein & Winter 2004).

Nonetheless, both the scale-structure and quantificational views conflict with some empirical observations. In particular, they fail to explain the sensitivity of minimizers like *slightly* to membership norm type. Corpus and judgment studies (Solt 2012, Bylinina 2012, Sassoon 2012) show that *slightly* is neither free to occur with every gradable adjective (pace the quantificational



view), nor restricted to only adjectives with lower-closed scales (pace the scale-structure view). Rather, it appears to select adjectives whose categorization criterion requires that entities exceed an external threshold (cf., the relation ‘>’ in (1a) as opposed to ‘=’ in (1b)), the threshold being either the minimum (as in *slightly dirty*, *slightly open*), or a midpoint (as in *slightly too tall*, *slightly tall for his age*). Accordingly, *slightly* is relatively infrequent and unacceptable with adjectives whose scale has a minimum, if their default categorization criterion requires having a degree identical to the maximum (?? *slightly full/closed*), as for instance, *slightly*’s reduced acceptability in (2) illustrates.

(2) ?? The city square is slightly full.

In fact, 2-3 people do not suffice to turn a square *slightly full*, pace (1a). The square has to be full, but only a point below the maximum may function as an external threshold for entities to exceed, thus a ‘rather full’ interpretation results (and acceptability reduces).

Furthermore, the scale-structure view predicts bare and *slightly*-modified partial adjectives to have the same meanings e.g., *dirty*  $\Leftrightarrow$  *slightly dirty*, and bare and *completely*-modified adjectives to have the same meaning, e.g., *full*  $\Leftrightarrow$  *completely full*. However, *slightly dirty* is weaker than *dirty* since it can hold of things that are less dirty than dirty things<sup>2</sup> and *completely full* is stronger than *full*, cf. (3).

(3) The tank is full, but it is not completely full, you can still top it off.

According to the scale-structure view, maximizers are assumed to function as slack regulators (Lasersohn 1999), triggering interpretations at a high precision level (Kennedy 2007, Syrett, Kennedy & Lidz 2009). To illustrate, in ordinary usage, a floor might be considered *clean* despite some stains of dirt on it, but *The floor is completely clean* means ‘The floor is strictly speaking clean’. This pragmatic role, however, does not straightforwardly extend to minimizers like *slightly*, which, rather than strengthening interpretations, weaken them (see Sassoon 2012).

Finally, on the *norm-shifting view*, minimizers would merely lower membership norms, while maximizers would merely increase membership norms, as in (4a) and (4b). However, this view, again, fails to explain the reduced acceptability and frequency of *slightly* with maximum-norm adjectives (*full*,

2 In addition, *very slightly dirty* is even weaker than *dirty*: it applies to things that are less dirty than slightly dirty ones. The same goes for accented *slightly*: *SLIGHTLY dirty* things are even less dirty than *slightly*<sub>unaccented</sub> *dirty* ones.

clean), and it wrongly predicts that speakers would intuitively infer from  $x$  is (only) slightly  $A$  that  $x$  is not  $A$ , which they do not.

- (4) a.  $x$  is slightly  $A$  is true iff  $f_A(x) > (\text{norm}(f_A) - d)$ .  
 b.  $x$  is completely  $A$  is true iff  $f_A(x) = (\text{norm}(f_A) + d)$ .

### 19.1.2 Granularity shifting analysis

On the *granularity shifting analysis*, minimizers and maximizers alike trigger shifting to finer granularity levels (Lewis 1979, van Rooij 2009, Sassoon & Zevakhina 2012a,b), namely to scales that represent more degree distinctions. This may happen because the usage of a modifier renders salient a richer set of alternatives, including besides the preadjacent  $x$  is  $A$ , also alternatives of the form  $x$  is  $M A$ . The salience of such alternatives necessitates an association of  $A$  with a finer scale comprising of more degrees than in default uses of  $A$ , in order to give the richer set of different alternatives distinct interpretations.

Moreover, as a consequence of this shifting, maximizers strengthen meanings. When finer degree differences are considered, fewer entities are seen as identical to the maximum or to any other point (as in *perfectly in time*, *completely sick*; see also Rotstein & Winter 2004). By contrast, minimizers weaken meanings: when finer degree differences are considered, more possible entities can be seen as exceeding a given threshold, be it the minimum or any other point (as in *slightly ahead of time*, *slightly taller*). Thus, this analysis seems to capture the distributional constraints and semantic contribution of modifiers.

A series of studies aimed to support the role of granularity shifting, exploiting Lewis's (1979) hypothesis that shifting from coarse to fine granularity (as in (5a)) is preferable over shifting from fine to coarse granularity (as in (5b)).

- (5) a. The Netherlands is {flat, not bumpy}, but actually it is {not completely flat, a bit bumpy}.  
 b. #The Netherlands is {not completely flat, a bit bumpy}, but actually it is {flat, not bumpy}.

Distinctions just acknowledged (slight vs. no bumps at all) cannot be ignored in immediately subsequent discourse. The main prediction of the granularity shifting analysis of modifiers is that utterances with a modified adjective (such as *completely full* or *slightly dirty*) involve an irreversible shift to fine granu-

larity. Therefore, a subsequent utterance of a bare adjective (such as *full* or *dirty*) will be interpreted on a fine scale, resulting in interpretations equivalent to ‘completely full’ and ‘slightly dirty’. By contrast, initiating discourse with utterances of bare forms of adjectives generate coarse interpretations (slight dirt is ignorable). Subsequent utterances of the modified forms produce shifts to finer granularity, i.e., interpretations that are different from those of the bare adjective: *completely full* is stronger than coarsely interpreted *full* and *slightly dirty* is weaker and can differ from coarse *dirty* if exhausted to mean ‘only slightly dirty’. Thus, higher agreement ratings for fine-to-coarse inferences (*If M A, A*) than for coarse-to-fine inferences (*If A, M A*) were predicted. This prediction was confirmed in [Sassoon & Zevakhina 2012a,b](#) ( $p < .01$ ).

These studies, however, were based on written texts. A potential confounding factor was that subjects may have stressed the modifier in the coarse-to-fine texts (e.g., *If x is dirty, x is SLIGHTLY dirty*) more often than they did in the fine-to-coarse texts (*If x is slightly dirty, x is dirty*; we thank Yael Greenberg for this observation). A remaining question is, then, what is the role of accentuation and whether granularity shifting effects will be observed at all in judgments based on recorded texts with either accented or unaccented modifiers. The experiment reported in section 19.2 addresses these two theoretical questions.

### 19.1.3 Two views on the role of accentuation in the degree modification

According to [Rooth \(1985\)](#), accentuation (i.e., focus) affects the choice of scalar alternatives. Consequently, it may trigger implicature derivation (cf. [Fox & Katzir 2011](#)). The experimental literature on differences between accented vs. unaccented *some* and *or* suggests that, indeed, in accented use, the tendency to derive implicatures increases. For instance, *Some books are on the shelf* (unaccented use of *some*) significantly differs from *SOME books are on the shelf* (accented use of *some*) in this respect (cf. [Milsark 1977](#), [Papafragou & Tantalou 2004](#), [Thorward 2009](#), [Huang & Snedeker 2009](#), [Grodner et al. 2010](#), [Zondervan 2010](#), [Chevallier et al. 2008](#)).

Considering the modifier *slightly* in this light gives rise to the view that the inference *If x is SLIGHTLY A, x is A* (accented use of *slightly*) renders scalar alternatives salient (*slightly A < pretty A < rather A < very A < completely A*) and gives rise to implicature derivation. Therefore, accented *slightly* has an upper-closed interpretation ‘only slightly’ due to which certainty in the inference is predicted to be low. By contrast, the inference *If x is slightly A, x is A*

(unaccented use of *slightly*) is less likely to render the alternatives salient, thus reducing the chance for implicature derivation. Given the higher likelihood of an upper-open interpretation ‘slightly and possibly A’, certainty in the inference is predicted to be high. For example, in (6a) and (6b), a negative answer is expected, as accented *slightly* is interpreted as ‘only slightly’. By contrast, in (7a,7b), a positive answer is expected, as unaccented *slightly* is interpreted as ‘slightly and possibly more’ (Yael Greenberg, personal communication).

- (6) a. A: The table is dirty. — B: No (?Yes), it’s SLIGHTLY dirty.  
 b. A: The table is SLIGHTLY dirty. — B: No (?Yes), it’s dirty.
- (7) a. A: The table is dirty. — B: Yes (?No), it’s slightly dirty.  
 b. A: The table is slightly dirty. — B: Yes (?No), it’s dirty.

However, beside this type of implicature facilitation, accent may have various other functions, including the creation of *local intensification* similarly to modification by *very* (Kadmon & Sevi 2010, Greenberg 2014). For instance, in (8a), accentuation gives rise to a standard which is a more extreme degree on the scale of dirtiness, thus, accentuation reinforces the meaning of *dirty*. In (8b), accentuation strengthens the meaning of *slightly*, which is now shifting the interpretation of *dirty* to a more extremely fine-grained one (effectively shrinking the distance from the threshold that entities are required to have to count as members, as stated in (9b)). Thus, *SLIGHTLY dirty* is weaker than *slightly dirty* which is weaker than *dirty*, i.e. accent increases dissimilarity between a bare and *slightly*-modified adjective, as stated formally in (9a–9d).<sup>3</sup>

- (8) a. The room is dirty, and I (really) mean DIRTY! (Kadmon & Sevi 2010)  
 b. The room is slightly dirty, and I (really) mean SLIGHTLY dirty!

3 Semi-orders are relations such as those denoted by *significantly older*, *visibly shorter*, or *perceptibly sweeter* (Gaifman 2010, van Rooij 2009)). The corresponding indifference relations (e.g., those denoted by *not significantly older*, or *not perceptibly sweeter*) are not transitive (for instance, when Ann is not much taller than Bill and Bill is not much taller than Chris, Ann *can still be* much taller than Chris). The measurement theoretic equivalence of  $x_1 >_f x_2$  for a semi-order  $>_f$  is a function  $f$  such that  $f(x_1) > f(x_2) + r$ , for some constant  $r$ , representing the perception or significance threshold. Applying this notion to modified adjectives, if  $x$  is slightly dirty, its degree of dirt is required to exceed the norm on a fine-grained semi-order (corresponding with a small significance threshold  $r$ ); however, it may not exceed the norm assuming a default coarse-grained semi-order (corresponding with a bigger significance threshold).

- (9) a.  $x$  is  $A_f$  is true iff  $x >_f \min(>_f)$ .
- b.  $x$  is slightly  $A_f$  is true iff  $x >_{f_p} \text{norm}(>_{f_p})$ , where  $>_f \subseteq >_{f_p}$  ( $x$  exceeds  $A$ 's norm relative to a semi-order  $>_{f_p}$  finer than the default  $>_f$ . The degree to which  $>_{f_p}$  is fine matches *slightly*'s prosodic prominence, as follows:
- c.  $x$  is *slightly*  $A_f$  is true iff  $x >_{f_p} \text{norm}(>_{f_p})$ , where  $>_f \subseteq >_{f_p}$ .
- d.  $x$  is *SLIGHTLY*  $A_f$  is true iff  $x >_{f_{\text{very-p}}} \text{norm}(>_{f_{\text{very-p}}})$ , where  $>_f \subseteq >_{f_p} \subseteq >_{f_{\text{very-p}}}$ .

The effect of *slightly* in (9c) is weak: the denotation of a bare adjective is close to the one of its *slightly*-modified version ( $A \approx \text{slightly}A$ ), so certainty in inferences between them is predicted to be relatively high. On the contrary, the effect in (9d) is big. An abnormally small distance from the external threshold is required, so very low degrees now count as exceeding the norm. However, assuming the accent effects to be local, the denotation of a bare adjective occurring in the context is predictably not affected ( $A \neq \text{very slightly } A$ ). Thus, certainty in the inference is predicted to be relatively low.

Dissimilarity of alternatives is yet another factor that raises likelihood of implicature derivation. According to recent studies Zevakhina 2012, Beltrama & Xiang 2013, van Tiel et al. in press, the likelihood of implicature derivation is inverse to alternative similarity. Given scalar alternatives  $A < B < C$ ,  $\neg C$  is more likely to be inferred from an utterance of  $A$  than of  $B$  (e.g., the inference *If the water is cool, it is not freezing* is more likely derived than the inference *If the water is cold, it is not freezing*), and  $\neg C$  is more likely than  $\neg B$  to be inferred from  $A$  (e.g., the inference *If the water is cool, it is not freezing* is more likely derived than *If the water is cool, it is not cold*). Returning to (9), if alternative dissimilarity plays a role here, then, again, we expect higher likelihood of upper-closed readings in the accented use than in the unaccented one. Given the set of alternatives  $\text{SLIGHTLY } A < \text{slightly}A < A$ , the alternatives  $A$  and  $\text{SLIGHTLY } A$  are more dissimilar than  $A$  and *slightly*  $A$ , rendering implicatures more likely in the context of the former than the latter.

Nonetheless, there is a difference in predictions between the implicature facilitation and intensification views of the role of accent, which results from the interaction between granularity shifting and prosodic effects. Assuming that in (10a) and (11a) granularity shifting arises due to the presence of *slightly* in the antecedent, small dirt specks suffice to render an entity *slightly dirty*. Now, following Lewis (1979), we predict that this shifting affects the subsequent occurrence of the adjective in the consequent as well, i.e., small specks suffice to render an entity strictly *dirty*, thus facilitating inference derivation (certainty in (10a) and (11a)). By contrast, the adjectives in the antecedents of (10b) and

(11b) are quite obviously not affected by the granularity shifting triggered by the subsequent occurrence of *slightly* in the consequent. Hence, in this context, small dirt specks which make an entity *slightly dirty* should not suffice to make it *dirty*. Thus, inference derivation is predicted to be hindered by the possibility of upper-closed weak interpretations of the consequent ('covered by only small dirt specks') as compared to the antecedent ('covered by more than small dirt specks'). Therefore, **prediction 1** is that (10a) > (10b) and (11a) > (11b).

- (10) a. *If the table is slightly dirty* (A), *it is dirty* (B). A = slight amount of dirt (weak), B = slight amount of dirt (weak)
- b. *If the table is dirty* (A), *it is slightly dirty* (B). A = dirt (strong), B = slight amount of dirt (weak)
- (11) a. *If the table is SLIGHTLY dirty* (A), *it is dirty* (B). A = very slight amount of dirt (very weak), B = (very) slight amount of dirt (weak/very weak)
- b. *A: The table is dirty* (A), *it is SLIGHTLY dirty* (B). A = dirt (strong), B = very slight amount of dirty (very weak)

As for prosody effects, on the local intensification view, unaccented (10a) is predicted to give rise to greater certainty than accented (11a). In (10a), *dirty* and *slightly dirty* are expected to have the same classification threshold, resulting in high certainty (whether upper-closed readings are derived or not). In (11a), though, prosodic intensification results in local shifting to abnormally fine granularity  $f_{\text{very-p}}$  for *SLIGHTLY dirty*, finer than  $f_p$  used to interpret the unaccented subsequent occurrence of *dirty*. In other words, accent induces a contrast which the Lewis's effect can't undo. Thus, (11a) is predictably less certain than (10a). Therefore, **prediction 2a** is that (10a) > (11a).

Importantly, the implicature-facilitation view makes a different prediction. On this view, accent marks focus that triggers the use of certain alternatives, which in turn, render implicatures more likely to be derived in (11a) than in (10a). However, assuming granularity-shifting, A should convey *slightly A* in the first place, so inference certainty is not expected to be affected, resulting in **prediction 2b** that is (10a) = (11a).

Finally, certainty is predicted to be lower in (11b) than (10b) if indeed dissimilarity of alternatives facilitates implicature derivation, for the dissimilarity between *SLIGHTLY A* and A is greater than the dissimilarity between *slightly A* and A.

## 19.2 Experimental study

The predictions stated in the previous sections are tested in the following experiment.

### 19.2.1 Method

*The participants*, who were recruited via Amazon Mechanical Turk, reported being native speakers of English. They were rewarded with 1 dollar for filling out a survey. 25 participants judged each item. The 1407 answers by 44 subjects whose reaction time was unreasonably fast overall and/or who skipped many questions were removed.

*The target materials* used 8 partial adjectives (*open, transparent, visible, wrong, incorrect, unclear, dirty, sick*), 8 total adjectives (*full, closed, empty, invisible, correct, opaque, clean, healthy*), and 2 modifiers (*slightly* or *completely*), resulting in 32 item combinations. Each one of these items occurred in four inference patterns, of which this paper focuses on the first two: If M A, A; If A, M A; If M A, not A; If not M A, not A, with the modifier M either accented (more prominent than the adjective A) or not, as in the following examples (12a–12d). Unmodified adjectives and negation always had neutral accent.

- (12) a. If a pet is {SLIGHTLY, slightly} sick, does it follow that it's sick?  
b. If a pet is sick, does it follow that it's {SLIGHTLY, slightly} sick?  
c. If a pet is {SLIGHTLY, slightly} sick, does it follow that it's not sick?  
d. If a pet is not {SLIGHTLY, slightly} sick, does it follow that it's not sick?

The 256 target sentences were mixed with 256 fillers.<sup>4</sup> All the sentences were recorded by a native English speaker, a PhD student working in the fields of phonetics, phonology and psycholinguistics (Clara Cohen, University of California, Berkeley), who was instructed to overemphasize the accented modifiers, to raise the likelihood of getting accent effects in the laboratory situation, if there are any in natural speech (for discussion of this point see [Hampton](#)

<sup>4</sup> The fillers consisted of 128 inference patterns with *and* and *or* (*If x is A1 conj A2, does it follow that x is A2?; If x is A2, does it follow that x is A1 conj A2?*) and 128 patterns with *and* and *or* within comparative forms (*If x is more A1 conj A2, does it follow that x is more A2?; If x is more A2, does it follow that x is more A1 conj A2?*). In all the fillers, either the first conjunct or the conjunction word was accented and a single adjective had neutral stress. These fillers can serve to study scope ambiguity, but we must leave this for a different paper.

et al. 2013). Following Huang & Snedeker (2009), prosodic prominence in antecedent clauses was signaled by a combination of high and low pitch accents L+H\*, whereas prosodic prominence in consequent clauses was signaled by another combination of low and high pitch accents, L\*+H. Neutral stress in antecedent clauses was signaled by H\* or L\*+H, depending on how long the sentence was. Neutral stress in the consequent was signaled by L\*, and the consequents always ended with an H-H% intonation characteristic of English polar questions.

The 512 sentences were counterbalanced into 16 lists of 32 items each. 512 audio files of general length 51.35 minutes made an average work time of 6.04 seconds per file and 3.09 minutes per list. With additional minimum of 16 seconds to rank and 5 seconds to fill out personal details, the fastest work time per list was estimated to be 214 seconds, or even 207 for lists that happen to be shorter than the average. Thus, only work time above 207 seconds counted for the statistics (90% of the data); with an average number of 22.5 answers per item (SD = 2.75; MIN = 19).

After listening to the recorded texts, participants had to choose an answer on a five-point Likert scale ranging from 1 (certainly not) to 5 (certainly yes). The instructions were as follows: *\*\* Notice that this HIT is for English native speakers only! \*\* For each one of the following 32 yes/no questions, click on the play button to listen to a question and then choose an answer on a 1 (certainly not) to 5 (certainly yes) scale. For example, if the question is "If Bill has 100 books and Sara has 200 books, does it follow that Sara has more books?," I would answer certainly yes (5). However, if the question is whether Sara has fewer books, I would answer certainly not (1).*

### 19.2.2 Results and discussion

Regarding inference type, a Wilcoxon signed-ranks test yields that ranking of agreement is generally significantly higher for *If slightly A*, A than for *If A*, *slightly A* ( $W = 276, p < .01$ ) and for *If completely A*, A than for *If A*, *completely A* ( $W = 486, p < .001$ ). This is also the case for the corresponding inferences divided by accentuation type into accented *slightly* ( $W = 81, p < .05$ ), accented *completely* ( $W = -136, p < .001$ ), and unaccented *completely* ( $W = -110, p < .01$ ), except for unaccented *slightly* ( $W = 58, p > .05$ ), see also fig. 19.1. This result generally supports the granularity-shifting analysis of degree modifiers, whereby shifting from fine-to-coarse granularity is preferred to shifting from coarse-to-fine one (therefore, **prediction 1** is supported).



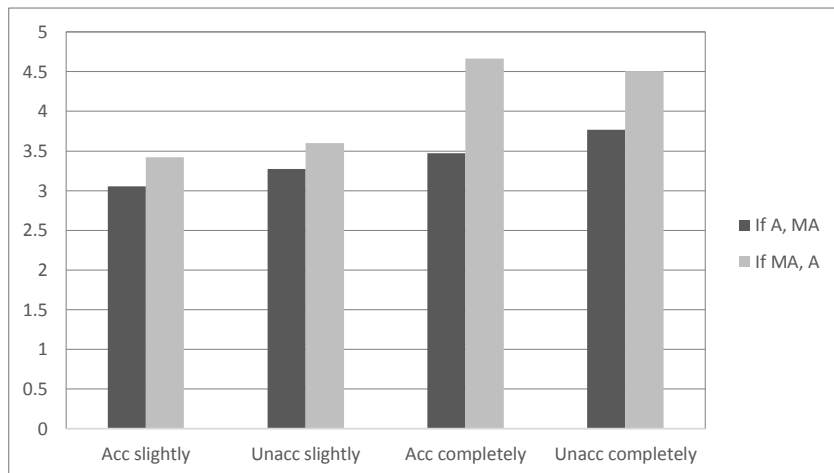


Figure 19.1: Certainty ratings in 2 inference types and accented vs. unaccented modifiers *slightly* vs. *completely*

As for prosody effects, a Wilcoxon signed-ranks test yields that ranking of agreement is generally significantly lower for accented modifiers than for unaccented ones in the two inference types (*If A, MA* vs. *If MA, A*) and two modifier types (*slightly* vs. *completely*:  $W = -860, p < .01$ ). This also holds for the following combinations of each of the inference by modifier types: *If A, completely A* ( $W = -94, p < .01$ ), *If A, slightly A* ( $W = -98, p < .01$ ), and *If slightly A, A* ( $W = -89, p < .05$ ), except for *If completely A, A* ( $W = 60, p > .05$ ; see fig. 19.2). Most importantly, evidence for a conjunction of granularity shifting and prosody effects is clearly seen in the partials. A Wilcoxon signed-ranks test yields that ranking of agreement is significantly higher for unaccented than accented *slightly* in the inference pattern *If slightly A, A* ( $W = -31, p < .05$ ). This confirms **prediction 2a**, namely that prosodic intensification is local: it results in granularity  $f_{\text{very-p}}$  abnormally fine for contexts with *SLIGHTLY*, such that a subsequent bare adjective is still interpreted only relative to a ‘normally’ fine granularity  $f_p$ . **Prediction 2b**, however, was not borne out.

This finding generally confirms the local intensification analysis of accentuation, i.e., that prosodic prominence functions similarly to the use of *very*. Thus, *SLIGHTLY dirty* is weaker than *slightly dirty*, whereas *COMPLETELY clean*

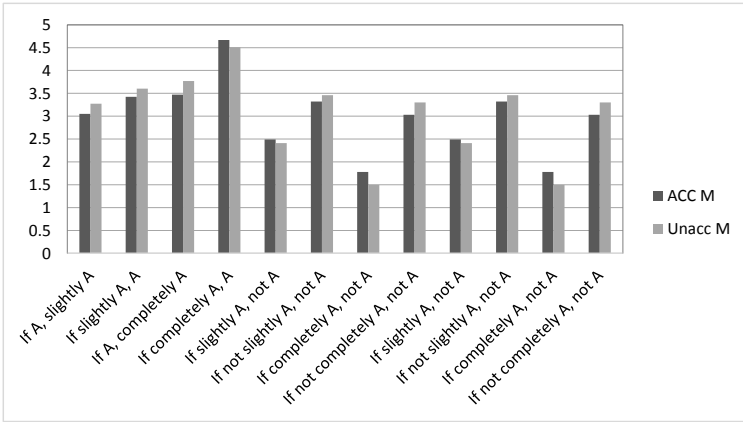


Figure 19.2: Certainty ratings in 12 inference types and accented vs. unaccented modifiers

is stronger than *completely clean*. This suggests that modifier accentuation leads to granularity level shifts that are abnormally fine even for contexts of use of modified adjectives. This kind of shifting does not affect subsequent prosodically neutral usage of a bare adjective. Thus, accentuation extends the difference between modified and unmodified forms of adjectives, thereby lowering certainty in inferences from one form to the other (except in the pattern *If completely A, A*, where extra strengthening with accented *completely* predictably facilitates certainty in the inference).

To the best of our understanding, an alternative account whereby accent on modifiers functions as contrastive focus, fails to predict the accent effects. For instance, abstracting away from details pertaining to one or other particular analysis of the phenomenon, assume accented *slightly* denotes its focus semantic value, rendering the set of scalar alternatives of *slightly* salient. This eventually leads to an upper-closed interpretation ‘only slightly A’ via the inference that stronger scalar alternatives are false (*not pretty/ very/ completely A*). However, given a granularity shifting account of *slightly*, such an analysis predicts no accent effects in inferences from, e.g., *slightly dirty* to *dirty*. Even if  $x$  is *SLIGHTLY dirty* conveys that  $x$  has a degree  $d$  that exceeds the norm relative to a fine-grained exceeding relation and  $x$  has no higher degree than  $d$ , it still follows that  $x$  is dirty relative to a fine-grained exceeding relation.

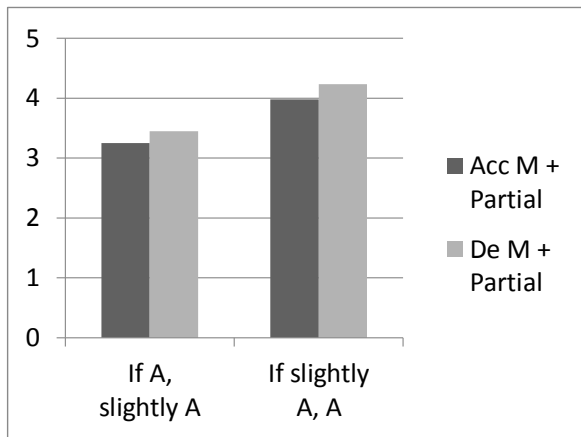


Figure 19.3: Certainty ratings reflecting granularity shifting and prosody effects in partial adjectives

Thus, accentuation is expected not to reduce certainty in the inference.

Finally, a Wilcoxon signed-ranks test revealed no significant difference between accented vs. unaccented *slightly* in the inference pattern *If A, slightly A* ( $W = -22, p > .05$ ). Thus, the data does not give evidence for higher likelihood of upper-closed interpretations (‘only slightly’) when alternatives are more dissimilar due to accentual intensification. However, we cannot infer from this that there are no accent effects in real life. The laboratory conditions may have weakened the prosodic contrast.

### 19.3 Conclusion

The results of the study confirmed the existence of shifting effects in coarse-to-fine and fine-to-coarse conditions with modifiers, even when accentuation is taken into account. In addition, the study brings evidence for prosodic intensification effects, namely effects which are not expected to occur if the only role of prosodic prominence is to render salient the set of alternatives comprising the focus semantic value of a modified adjective. At any rate, this study is preliminary. More experimentation, as well as theoretical investigation, is needed to enable progress toward the establishment of more conclusive morals.

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