

ON THE SEMANTICS OF MIRATIVITY*

Vesela Simeonova
University of Ottawa

1. Introduction

The goal of this paper is to offer a semantics of the phenomenon of MIRATIVITY. Mirativity has been defined as encoding the speaker's surprise, unprepared mind, discovery of state of affairs that is unexpected, Slobin and Aksu (1982); DeLancey (1997, 2012); Aikhenvald (2012). Mirative sentences can involve one of the following: exclamative intonation (1), some lexical expression (2), grammaticalized dedicated particle (3), or grammaticalized non-dedicated particle (4).¹

(1) I have money!

(2) *I can't believe* I have money!²

(3) salyím-e áta-si di nan-po bçhos **lo le**
Salim-GEN father-AG this house built REP SUPR
'Salim's father built this house' (surprise at reported information) [Shina]
Ex. (32) in Aikhenvald (2012) citing Bashir (2010)

(4) **Context:** The Speaker reaches into his pocket and discovers money that he didn't know he was carrying:

a. Pul-um var-**miş!**
money-POSS.1SG exist-miş
'I have money!' [Turkish]

b. Ima-l sam pari!
have-PP.SG.MASC. be.PRES.1SG money
'I have money!' [Bulgarian]

*I thank Marisa Rivero, Ana Arregui, Andrés Salanova, Raj Singh for comments and advice on earlier versions of this work and the audiences at TOM 2015 at Carleton University, CLA 2015 at University of Ottawa, and SLS 2015 at Heidelberg University for comments and questions. I also thank Ayşegül Kutlu for judgments in Turkish, and Gita Zareikar for help with Turkish and discussions. This work was partially subsidized by SSRCH Grant 410-2009-0828 to M. L. Rivero and SLS student travel award. Abbreviations: PP=Past participle, REP=reportative, SURP=surprise. Contact of author: vesela.simeonova@uottawa.ca

¹I am glossing *miş* as itself because its status in the literature on Turkish is far from settled between aspectual, temporal, or modal morpheme, see Şener (2011) for overview.

²I thank Raj Singh for this sentence.

Of these types, the last one, in (4), is perhaps the most controversial. ‘Grammaticalized non-dedicated particle’ means a grammaticalized element which also has other function(s) in the relevant language, not exclusively related to surprise in expressive sentences. This other function has been shown by Aikhenvald (2012); DeLancey (1997) for languages from various language families to be the expression of INDIRECT EVIDENTIAL in non-exclamative clauses, that is, a marker which shows that the speaker has no direct perceptual (eg., visual) evidence for the proposition uttered, but some indirect piece of evidence (eg., report or inference). An example of indirect evidential use is (5)-(6). The first part, (5), shows that the morpheme of interest is not felicitous if the speaker has direct evidence. The second part, (6), shows that it is felicitous when the speaker has indirect evidence.

(5) **Speech act 1** [Direct context]: Speaker 1 saw a lot of money in Ivan’s wallet, which he was supposing (no surprise). Speaker 1 says:

a. Kemal pul var(#miş).
 Kemal money exist-miş
 ‘(#Reportedly,) Kemal has/had money.’ [Turkish]

b. Ivan ima-(#I) pari.
 Ivan has-PP.SG.MASC money
 ‘(#Reportedly,) Ivan has money.’ [Bulgarian]

(6) **Speech act 2** [Indirect context]: The speaker is not surprised and did not have prior predictions about Ivan’s financial situation. Then (Speech act 2) the speaker passes on the information to another person, who was not a participant in Speech act 1:

a. Kemal-in pul var-miş.
 Kemal-POSS.3SG money exist-miş
 ‘Reportedly, Kemal has/had money.’ [Turkish]

b. Ivan ima-I pari.
 Ivan have-PP.SG.MASC money
 ‘Reportedly, Ivan has/had money.’ [Bulgarian]

Given the fact that in non-mirative sentences, the morphemes in question are not felicitous with direct evidence, it is remarkable that they are felicitous in mirative sentences with direct context like (4). Some previous accounts, eg. Rett and Murray (2013), reconcile the use of the indirect evidential morpheme in mirative sentences and in declarative sentences and derive the mirative meaning from the evidential meaning. Others hold that mirativity is a separate grammatical category that has little to do with evidentiality, as pointed out by Aikhenvald (2012); DeLancey (2012).

This paper provides a semantics for mirativity that is independent of the notion of evidentiality and proposes that the relation between evidentiality and mirativity is one of

pragmatic intensification. Section §2 shows some arguments why miratives are separate from evidentials, Section §3 is the analysis and Section §4 concludes.

2. Mirativity is separate from evidentiality

At first the idea to unify the meaning of mirativity and evidentiality looks appealing. Some notable proposals in this direction are Rett and Murray (2013) and Smirnova (2013). Smirnova (2013) proposes that the evidential morpheme gets an indirect interpretation in declarative context and a direct interpretation in indirect context. Rett and Murray (2013) argue that the unifying element between evidentials and miratives are expectations: the proposition is unexpected in the case of miratives, and expected - in the case of declaratives.

2.1 The parametric dependence views

2.1.1 Direct in mirative - Indirect in declarative

The fact that the indirect evidential meaning is ‘gone’ in mirative sentences has been noted in virtually all works on the topic, as early as the seminal paper by DeLancey (1997). Examples to show this are usually given with direct context, such as the discovering of money in the speaker’s pocket (context inspired from DeLancey (1997)), shown in (4). This has led Smirnova (2013) to propose a conditioned use of the morpheme: in declarative sentences - indirect meaning, and in exclamatives - direct.

Consequently, the opposite should not be possible: to get direct meaning with declaratives and indirect with exclamatives. The first part was shown to hold in declarative context (5)-(6), where in non-mirative environments the evidential morpheme is felicitous reportative context and not in direct context. However, the latter is not true. In fact, in mirative sentences with indirect evidential, any evidential context is felicitous, not just direct. This is shown in (7) below. The sentence is felicitous in all kinds of evidential contexts - direct, inferential, and reportative.

- (7) **Context:** The speaker thought that Ivan/Kemal has no money.
- (i) **Direct:** The speaker sees a lot of money in Ivan/Kemal’s wallet.
 - (ii) **Inferential:** The speaker notices that Ivan is buying expensive items.
 - (iii) **Reportative:** Someone tells the Speaker that Ivan/Kemal has money.
The speaker believes it and exclaims:

- a. Ivan ima-l pari!
Ivan have-PP.SG.MASC money
‘Ivan has/had money!’ [Bulgarian]
- b. Kemal-in pul var-miş!
Kemal-POSS.3SG money exist-miş

‘Kemal has/had money!’

[Turkish]

These examples show that in Bulgarian and Turkish, there are no restrictions with respect to the source of evidence, when the indirect evidential morpheme is used in a mirative sentence. Since any context will do, treating the evidential morpheme as direct in exclamative context omits the rest of the possible contexts and contradicts the more general fact that the context is completely underspecified for source of information in mirative sentences. Aikhenvald (2012); DeLancey (2012) show that this is the case for other languages as well.

2.1.2 Expectations-based account

The second unifying analysis is based on expectations, by Rett and Murray (2013). Rett and Murray (2013) propose, drawing on data from Cheyenne, that an expectations component, E , is active in indirect evidentials and in miratives, instead of previous analyses of evidentials, which consider an epistemic component Izvorski (1997). The set of expectations E_c^t is defined as “the set of propositions representing the expectations of an individual x [at time t], including the propositions x knows and believes about the past, present and future” (Rett and Murray 2013: 465). In the mirative reading, the proposition uttered does not belong in E . In the evidential reading, it relates the set of expectations of a third party (if the indirect evidential is reportative) or the speaker (if inferential), and the proposition is entailed by those expectations.

The following is the example from Cheyenne, (35)-(36) in Rett and Murray (2013), where *hoo’o* is the marker of indirect evidence.

- (8) a. Hawk won-hoo’o. - **evidential interpretation**
 at-issue proposition: $p = \lambda w. \text{hawk won in } w$
 not-at-issue restriction: $E_c^t \models p$
 illocutionary relation: propose to add p to CG
- b. Hawk won-hoo’o. - **mirative interpretation**
 at-issue proposition: $p = \lambda w. \text{hawk won in } w$
 not-at-issue restriction: $E_c^t \models p$
 illocutionary relation: propose to add p to CG
 TARGET(e_l) $\rightarrow p = \notin E_i^{\tau(e_1)}$

The idea here is that what creates the two different interpretations is that, in the evidential case, the proposition is contained in the set of expectations of the speaker, while in the mirative one it is not.

This analysis cannot be extended to Bulgarian or Turkish. The non-mirative indirect sentences in (6) are not about expectations - neither by the speaker, nor by a third party. The context in sentence (5), repeated below as (9) was set up as ‘no surprise’ to distinguish from mirative environment. If the morphemes expressed that the proposition is within the set of expectations E of the speaker, then its use should be felicitous in direct but not counter to

expectations context, and yet in Bulgarian and Turkish, it is not:

- (9) [Direct context with met expectations]: Speaker 1 saw a lot of money in Ivan's wallet, which he was supposing (no surprise). Speaker 1 says:
- a. Kemal pul var(#**miş**).
Kemal money exist-miş
Intended: '(#As I expected,) Kemal has/had money.' [Turkish]
 - b. Ivan ima-(#I) pari.
Ivan has-PP.SG.MASC money
Intended: '(#As I expected,) Ivan has money.' [Bulgarian]

In addition, in non-mirative sentences with the indirect evidential marker, the proposition is notoriously not asserted by the speaker, as discussed at length in AnderBois (2014). The proposition expressed by reportative sentences can be negated by the speaker even in the very same sentence:

- (10) **Reportative context:** In a previous speech act, Seda told Ayşe (the speaker of this speech act) that Sinan fell off the bike. Ayşe does not believe the report and conveys that when she retells the information to her conversational partner in Speech act 2:

Sinan bisiklet-ten düş-**müş** ama gerçekte öyle birşey yok
Sinan bike-ABL fall-REP but actually like nothing exists
'It is reported to the speaker that Sinan fell off the bike, but in fact nothing like that happened.' [Turkish]

From AnderBois (2014), ex. (24), citing Şener (2011)

If the proposition had to be entailed by the Speaker's expectations, then we would have an implication that the Speaker's opinion that the proposition is not true is always the result of unmet expectations. In a sense, this means that if the speaker negates something reported, he/she has to be surprised at the fact that it is not borne out. However, in reality, the contexts where a reported sentence can be negated are numerous and not restricted only to those cases where the speaker is surprised that the report is not true. A context which aims to target this is below:

- (11) **Context:** The speaker heard a rumor a while ago, that Ivan went to Italy on a particular date. She also learned the true facts (which are contrary to the rumor) by finding the boarding pass, which proves that Ivan flew to Germany. This could have happened even before learning the rumor.

Spored sluhovete Ivan patuval za Italia, no vsashtnost toj
according rumors Ivan travel.EV.REP for Italy, but in.fact he

e patuval za Germania.
 be.PRES.3SG travel.PP for Germany
 ‘According to the rumors, Ivan went to Italy, but in fact he went to Germany.’
 [Bulgarian]

In mirative sentences, on the other hand, the proposition is asserted by the speaker, and continuing with negation is not felicitous:

(12) [Mirative context]: **Context:** The speaker thought that Ivan/Kemal has no money.

- (i) **Direct:** The speaker sees a lot of money in Ivan/Kemal’s wallet.
- (ii) **Inferential:** The speaker notices that Ivan is buying expensive items.
- (iii) **Reportative:** Someone tells the Speaker that Ivan/Kemal has money.
 The speaker believes it and exclaims:

a. Kemal pul var-**miş** (#ama gerçekte öyle birşey yok)
 Kemal money exist-miş but actually like nothing exists
 Kemal has/had money (# but this is not true)! [Turkish]

b. Ivan ima-**l** pari, (#no vsashtnost tova ne e
 Ivan has-PP.SG.MASC money but in.fact this not be.PRES.3SG
 vjarno!)
 true
 ‘Ivan has money (#but this is not true)!’ [Bulgarian]

The result is the same for any evidential context - perhaps trivially true in direct context like (12-i), but notably true in non-direct context (12-ii)-(12-iii).

To sum up, even though the expectation based analysis could capture the meaning of the evidential in mirative contexts, it cannot account for its evidential meaning in evidential languages where the reported information can be negated by the speaker, like Bulgarian and Turkish and potentially others, see AnderBois (2014).

2.2 Mirativity is not marked by the evidential morpheme

The literature seems to be unanimous that miratives are **expressed** by the evidential morpheme in evidential languages. This has been claimed for Turkish by Slobin and Aksu (1982), Tibetan by DeLancey (1997), and recently for Cheyenne by Rett and Murray (2013), and even by works arguing that mirativity is a category separate from evidentiality, such as Aikhenvald (2012); DeLancey (2012).

In fact, that mirativity is marked by evidentiality is not shown clearly with infelicitous example lacking the evidential morpheme. Showing that the morpheme can be used in mirative sentences does not mean that it **must** be used to convey the mirative effect. More data is needed on other languages, but at least in Bulgarian and Turkish, the indirect

evidential is not obligatory in mirative sentences, as shown below:

(13) **Context:** The Speaker reaches into his pocket and discovers money that he didn't know he was carrying:

a. Pul-um var!
 money-POSS.1SG exist
 'I have money!' [Turkish]

b. Ima-m pari!
 have-PRES.1SG money
 'I have money!' [Bulgarian]

Any analysis seeking to derive the mirative meaning from that of an evidential has to posit that something else is going on in example (13) and languages without evidentials. I propose an account of mirativity which does not rely on evidential meaning or marking (§3). This allows to seek unification of a broader scale, not between mirativity and evidentiality, but of the meaning of mirativity across languages, regardless of the morphological expression.

2.3 Summary

The data from Bulgarian and Turkish presented here cast doubt on the idea that mirativity is derived from evidential morphology. Analyses trying to derive the mirative meaning from the presence of the evidential morpheme cannot be extended to languages without evidential morphemes or languages where such morphemes are only optional in mirative sentences (such as Bulgarian and Turkish). The analysis proposed below is not dependent on evidential morphology but proposes instead a focus sensitive mirative operator.

3. Analysis

The proposal consists of a mirative operator that presupposes a set of alternatives ordered on a contextually salient scale of expectations. The source of the set of alternatives is discussed in §3.1, the nature of the scale in §3.2, and §3.3 puts them together in the mirative operator.

3.1 Mirativity and alternatives

In the case of languages with no dedicated mirative morphology, like English, Bulgarian, and Turkish, the set of alternatives is evoked by intonational focus in the sense of Rooth (1992). Evidence that intonation matters is the fact that a sentence like (1), repeated as (14-a), or (13), repeated as (14-b)-(14-c), forms a minimal pair, shown in (15), depending on whether pronounced with an 'exclamative' or 'unexpectedness' intonation, as in

Castroviejo Miró (2008) (also, ‘with marked intonation’, ‘use-conditional intonation’, ‘intonationally prominent’, as in Zeevat 2013) or declarative intonation.³

(14) **Context:** The Speaker reaches into his pocket and discovers money that he didn’t know he was carrying:

a. I have money!

b. Pul-um var!
money-POSS.1SG exist
‘I have money!’ [Turkish]

c. Ima-m pari!
have-PRES.1SG money
‘I have money!’ [Bulgarian]

(15) **Context:** The Speaker replies confirmatively to a question whether he/she has money:

a. I have money.

b. Pul-um var.
money-POSS.1SG exist
‘I have money.’ [Turkish]

c. Ima-m pari.
have-PRES.1SG money
‘I have money.’ [Bulgarian]

This is true also for the cases with indirect evidential morpheme in the mirative sentence: (4) is ambiguous between mirative and a declarative reportative again based on special intonation, which is the essence of the puzzle in the first place. To keep things simple, only non-evidential sentences will be used to make the point of sufficiency of focus clearer.

As for languages with a dedicated mirative marker, like Shina (3), the job of evoking a set of alternatives could be carried out by the particle itself or a combination of that particle

³This paper takes intonation merely as a given and does not do justice to its importance and various nuances in sentences marked with ‘!’. The reader is referred to the discussion of this matter in Zeevat (2013) and Castroviejo Miró (2008). What suffices for the purposes of this analysis is the presence of focus. I am also assuming an intuitive relation between mirative and exclamative clauses of the sort sketched in works like Rett and Murray (2013); Aikhenvald (2012); Zeevat (2013); Zanuttini and Portner (2003), a.o. but without formalizing it or going into the debate whether exclamative clauses are a separate clause type, eg. by Elliott (1971); Grimshaw (1979); Zanuttini and Portner (2003); Abels (2010) and how miratives would fit into that debate - a question deserving a paper on its own but whose answer does not have huge implications for the proposal here.

and focus. In that way, it is possible to assume the same semantic operator for all the cases, which is instantiated differently.

That focus takes part in the composing of the mirative meaning in Bulgarian and Turkish is clear from the minimal pairs where both sentences have the exclamative intonation, but different DP is focused: in (16), the speaker is surprised that Paul is drinking coffee as opposed to other, more expected beverages. Therefore, the focus in the felicitous sentences (16-a-i) for Bulgarian and (16-b-i) for Turkish is on the word *kafe/kahve* ‘coffee’, and focusing another word, eg. Paul, yields infelicity, as shown in (16-a-ii) and (16-b-ii), respectively. In (17), a scenario where the speaker (Nova) is surprised that Paul is drinking coffee as opposed to other, more plausible, according to her, drinker. Focus is on the word *Paul* and focusing *kafe/kahve* yields infelicity, as shown in (17-a-ii) and (17-b-ii) for Bulgarian and Turkish respectively.

(16) The speaker (Nova) sees Paul drinking coffee. She thought that Paul hates coffee so she is surprised and exclaims:

a. (i) Paul *pie* *KAFE_F!*
 Paul drink.PRES.3SG coffee
 ‘Paul is drinking COFFEE!’ [Bulgarian]

(ii) #PAUL_F *pie* *kafe!*
 Paul drink.PRES.3SG coffee
 ‘PAUL is drinking coffee!’ [Bulgarian]

b. (i) Paul *iç* *KAHVE_F!*
 Paul drink.PRES.3SG coffee
 ‘Paul is drinking COFFEE!’ [Turkish]

(ii) #PAUL_F *iç* *kahve!*
 Paul drink.PRES.3SG coffee
 ‘PAUL is drinking coffee!’ [Turkish]

(17) The speaker (Nova) sees that someone is drinking coffee. It looked to her like Drew or Brandon, but when she comes closer, she finds that it is Paul, so she is surprised and exclaims:

a. (i) PAUL_F *pie* *kafe!*
 Paul drink.PRES.3SG coffee
 ‘PAUL is drinking coffee!’ [Bulgarian]

(ii) #Paul *pie* *KAFE_F!*
 Paul drink.PRES.3SG coffee

‘Paul is drinking COFFEE!’ [Bulgarian]

b. (i) PAUL_F iç kahve!
 Paul drink.PRES.3SG coffee
 ‘PAUL is drinking coffee!’ [Turkish]

(ii) # Paul iç KAHVE_F!
 Paul drink.PRES.3SG coffee
 ‘Paul is drinking COFFEE!’ [Turkish]

The set of alternatives arising from the focus marking on ‘coffee’ in (16) is given in (18) and for ‘Paul’ (17) in (19).

(18) Set of alternatives for sentence (16):

$$A = \left\{ \begin{array}{l} \lambda w. \text{ Paul is drinking tea in } w, \\ \lambda w. \text{ Paul is drinking beer in } w \\ \lambda w. \text{ Paul is drinking coffee in } w \\ \lambda w. \text{ Paul is drinking a coconut smoothie in } w \\ \lambda w. \text{ Paul is drinking vodka in } w \end{array} \right\}$$

(19) Set of alternatives for sentence (17):

$$A = \left\{ \begin{array}{l} \lambda w. \text{ Brandon is drinking coffee in } w \\ \lambda w. \text{ Paul is drinking coffee in } w \\ \lambda w. \text{ Drew is drinking coffee in } w \end{array} \right\}$$

The resulting set of alternatives is ordered on a scale of expectations, which is discussed next.

3.2 Scale of expectations

The set of alternatives is ordered on a contextually salient scale of expectations relativized to the speaker.

In order for Nova to be surprised at Paul’s drinking coffee, she has to know or have some inference about Paul’s habits: eg., she knows that he is very much a tea person, but he also likes beer. She knows that he does not like coffee, but she also knows that he is not a vodka person and that he hates coconut. Then her surprise is derived from the order of the alternatives on the expectations scale E given in (20). Top to bottom are less to more expected, and the bolded alternative is the true one.

(20) Set of alternatives for sentence (16) ordered on a scale of Nova’s expectations:

$$E_{Nova}^{c((16))} = \left\{ \begin{array}{l} \lambda w. \text{ Paul is drinking tea in } w, \\ \lambda w. \text{ Paul is drinking beer in } w \\ \lambda w. \text{ **Paul is drinking coffee in } w** \\ \lambda w. \text{ Paul is drinking vodka in } w \\ \lambda w. \text{ Paul is drinking a coconut smoothie in } w \end{array} \right\}$$

Two remarks are due. One is that the ordering is relativized to both context and speaker. A more rigid idea is in Beaver and Clark (2009) where expectation is regarded as objective in a given situation. However, it is easy to imagine a different speaker, Brett, in the same context who could be surprised at the same proposition (Paul is drinking coffee) but for a different reason. This is reflected in the set and/or the ordering. In (21), imagine that Brett knows that Paul really likes beer and is not a coffee person, but he does not know that Paul likes tea. Brett would be less surprised if Paul was having a soda or beer and more surprised if the objectively most plausible alternative (tea) were true:

(21) Set of alternatives for sentence (16) ordered on a scale of **Brett's** expectations:

$$E_{Brett}^{c((16))} = \left\{ \begin{array}{l} \lambda w. \text{ Paul is drinking beer in } w \\ \lambda w. \text{ Paul is drinking soda in } w \\ \lambda w. \text{ **Paul is drinking coffee in } w** \\ \lambda w. \text{ Paul is drinking vodka in } w \\ \lambda w. \text{ Paul is drinking tea in } w \end{array} \right\}$$

I take this to mean that objective scales will not do and both context and speaker relativization is needed. A situation where everyone agrees on what is surprising and what is accepted as more expected alternatives can be regarded as a special case of the version presented here.

The second remark to be made is that effectively, the proposal of ordering a set of alternatives on a scale of expectations means that all mirative utterances are degree expressions.⁴ They fit the definition of gradable adjectives (in this case: gradable modifiers) of Kennedy and McNally (2005):

- (22)
1. set of degrees (abstract unit)
 2. dimension (height, cost, weight, etc.)
 3. ordering relation

(Kennedy and McNally, 2005, p. 351)

In the case of mirative, the dimension is expectations.

Involvement of a degree element is proposed already in works on surprise involving gradable adjectives (Rett (2011) and discussion in her Section 3). An example is (23), which is (11) in Rett (2011).

(23) (My,) how tall John is!

⁴I thank Ivona Kučerová for suggesting to me to include this discussion.

- a. $\{d : \text{tall}'(\text{john}, d)\}$
- b. $\{p : p = \lambda w \exists d [\text{tall}'(w)(\text{john}, d)]\}$

Rett (2011) provides an account of exclamatives in general, not specifically intending to target miratives. One part of her proposal is that all exclamative sentences involve a gradable predicate, which is contextually clear, even if not lexically specified. An example is (24), her (25a):

(24) (Oh,) The places Tori visited!

According to Rett (2011), “[24] can only be used to exclaim about the degree to which the places Tori visited instantiate some gradable predicate (e.g. how exotic they are)” (Rett, 2011, p. 15). Sentence (24) is not a mirative, but a marveling type of exclamative. While this idea could cover a lot of miratives, it seems that not all of them would fit, like for example the following:

- (25) Speaker 28/65: (I can’t believe) it’s Tuesday!!! I thought it was...
- a. Speaker 28: ... Monday.
 - b. Speaker 65: ... Wednesday.

Perhaps one could imagine a scale of being late or early to cover some of the scenarios that (25) could be uttered in, depending on whether the speaker thought it’s Monday (25-a) or Wednesday (25-b), but even that would not work if the speaker is not uttering this because of their schedule but just because they are mistaken about the day.

To sum up thus far, the set of alternatives is ordered on a scale according to the speaker’s personal degree of expectedness in that context. They could, but need not coincide with some objective measure in the world.

3.3 Putting them together: mirative operator

The mirative operator proposed here acts as a comparative that being surprised at the true alternative is derived from the fact that some other, more favored (expected to a higher degree) alternative, i.e. higher on the scale, is false. This is formalized below:

$$(26) \quad \llbracket \text{MIR} \rrbracket_{s_1}^{c((16))} = \lambda f_{\langle s, t \rangle} . \lambda w . [f(w) = 1 \wedge \exists g_{\langle s, t \rangle} \text{ s.t. } E_{s_1}^c(g) > E_{s_1}^c(f) \wedge g(w) = 0]$$

So, in order to be surprised, there has to exist at least one alternative in the set such that it is more expected than the true alternative.

Note that, stated in this way, the operator makes no reference to propositions which were less expected than the one that turned out true (say, a $g'(w)$ s.t. $E_s^c(g'(w)) < E_s^c(f(w))$), eg. the alternative that Paul is drinking a coconut smoothie (in this context). This is different from a proposal on exclamatives by Zanuttini and Portner (2003), from which this current proposal is very much inspired.

Zanuttini and Portner (2003) have a semantics which allows for a number of false alternatives under consideration. To get an exclamative (and surprise) effect, the set is

widened by context update to include the true alternative:⁵

- (27) Exclamatives widen the domain of quantification for the WH operator, which gives rise to the set of alternative propositions denoted by the sentence.

As Zanuttini and Portner (2003) put it: “Widening allows us to capture those aspects of the meaning of exclamatives which have been informally described as ‘a sense of surprise’, ‘unexpectedness’, ‘extreme degree’, and the like. Widening is [...] derived from the denotation on the basis of pragmatic reasoning” (Zanuttini and Portner, 2003, p. 40). Thus, it is defined as a context change (their (32)):

- (28) WIDENING: For any clause S containing $R_{widening}$, widen the initial domain of quantification for $R_{widening}$, $D1$, to a new domain, $D2$, such that
- (i) $\llbracket S \rrbracket_{w,D2,\succ} - \llbracket S \rrbracket_{w,D1,\succ} \neq 0$ and
 - (ii) $\forall x \forall y [(x \in D1 \& y \in (D2 - D1)) \rightarrow x \succ y]$

In addition, the pragmatic reasoning is resolved as a conventional scalar implicature: “Exclamatives introduce a conventional scalar implicature to the effect that the proposition they denote lies at the extreme end of some contextually given scale. Thus, *How very cute he is!* indicates that his degree of cuteness is greater than the alternatives under consideration.” (Zanuttini and Portner, 2003, p. 47). So, for them the scale is coming from implicature, and the true proposition is the maximally unexpected in the relevant set of alternatives. In the example with grades (29), all the possible grades A-F are salient in the context, i.e. F is a salient alternative and lowest on the scale of expectations for that speaker in that scenario even if the speaker got a B (29-a).

- (29) A first year student studied hard for the exam. The student’s expectations are for a grade in the A range. Thus, everything below A will be not in the set of expectations.
- a. The student gets a B.
 - b. The student gets an F.

It seems that in Zanuttini and Portner’s (2003) account, in order to get (29-a), B has to be the lowest in order for the Speaker to be surprised. The proposal presented in this paper is more flexible and the ‘maximally unexpected’ case would be possible but not exclusive.

⁵The Wh-operator is what generates a set of alternatives in their account, because a lot of exclamative sentences involve an overt Wh-word:

- (i) **What** a lovely house you have!

In sentences with no overt Wh-word, however, a Wh-OP needs to be posited covertly.

4. Conclusion

In this paper, I proposed a degree semantics for mirative sentences independent from evidentiality. I suggested that, in languages with grammaticalized evidential markers, when indirect evidentials are used in mirative sentences, they do not mark mirativity, i.e. the evidential morphology is not an indispensable part of the mirative meaning, but is optional.

Because this proposal is based on the idea that mirativity and evidentiality are not semantically related, it has the potential to be extended to languages where evidential morphology does not exist but mirative sentences do (eg., English), and those where an evidential and a mirative marker co-occur, like Shina (3), in which mirativity cannot be accounted for by proposals which unify the concept of evidentiality and mirativity.

Many questions remain open, for example: (1) the relation between miratives and exclamatives and all contiguous questions, eg. (i) the discussion on whether exclamatives are a separate clausal type or not, Grimshaw (1979); Abels (2010); Zanuttini and Portner (2003); Rett (2011) - respectfully about miratives; (ii) how miratives and especially miratives with indirect evidential fit among other types of expressives (eg. use-conditional content theory of Gutzmann (2015)); (iii) whether the proposition in mirative sentences can be used as an answer to a question and whether it is asserted or presupposed (for example, according to Zanuttini and Portner (2003) and Abels (2010) it is factive, in Rett and Murray (2013) it is entailed, and in the paper here I suggested that it is asserted).⁶ (2) how miratives fit into the class of degree expressions. (3) how the mirative operator interacts with other focus sensitive elements, eg. *only*, *even* etc. in Beaver and Clark (2009). (4) this paper talks about a mirative operator as one generic concept. Typological work, eg. Aikhenvald (2012), propose that there are fine-grained subtypes of mirativity. This is yet to be formalized.

References

- Abels, Klaus. 2010. Factivity in exclamatives is a presupposition. *Studia Linguistica* 64:141–157.
- Aikhenvald, Alexandra. 2012. The essence of mirativity. *Linguistic Typology* 16:435–485.
- AnderBois, Scott. 2014. On the exceptional status of reportative evidentials. In *Salt 24*. NYU.
- Bashir, Elena. 2010. Traces of mirativity in Shina. *Himalayan Linguistics* 9:1–55.
- Beaver, David and Brady Clark. 2009. *Sense and sensitivity: How focus determines meaning*. John Wiley & Sons.
- Castroviejo Miró, Elena. 2008. An expressive answer: Some considerations on the semantics and pragmatics of wh-exclamatives. In *Proceedings from the annual meeting of the chicago linguistic society*, volume 44, 3–17. Chicago Linguistic Society.
- DeLancey, Scott. 1997. Mirativity: the grammatical marking of unexpected informat. *Linguistic typology* 1:33–52.
- DeLancey, Scott. 2012. Still mirative after all these years. *Linguistic Typology* 16:529–564.

⁶Thanks to Carlos de Cuba for first suggesting to me that the proposition is not presupposed.

- Elliott, D.E. 1971. The grammar of emotive and exclamatory sentences in English. *Ohio State Working Papers in Linguistics* 8:viii–110.
- Grimshaw, Jane. 1979. Complement selection and the lexicon. *Linguistic inquiry* 10:279–326.
- Gutzmann, Daniel. 2015. *Use-conditional meaning: Studies in multidimensional semantics*. OUP Oxford.
- Izvorski, Roumyana. 1997. The present perfect as an epistemic modal. In *Proceedings of salt vii*.
- Kennedy, Christopher and Louise McNally. 2005. Scale structure, degree modification, and the semantics of gradable predicates. *Language* 81:345–381.
- Rett, Jessica. 2011. Exclamatives, degrees and speech acts. *Linguistics and Philosophy* 34:411–442.
- Rett, Jessica and Sarah E. Murray. 2013. A semantic account of mirative evidentials. In *Proceedings from (SALT) XXIII*, ed. Todd Snider, 453–472. Ithaca, NY: CLC Publications. doi:http://dx.doi.org/10.3765/salt.v23i0.2687.
- Rooth, Mats. 1992. A theory of focus interpretation. *Natural Language Semantics* 1:75–116.
- Şener, Nilufer. 2011. Semantics and pragmatics of evidentials in Turkish. Doctoral dissertation, University of Connecticut.
- Slobin, Dan and Ayhan Aksu. 1982. Tense, aspect and modality in the use of the Turkish evidential. In *Tense-aspect: Between semantics & pragmatics*, ed. Paul J. Hopper, volume 1 of *Typological Studies in Language*, 185–200. John Benjamins.
- Smirnova, Anastasia. 2013. Evidentiality in Bulgarian: Temporality, epistemic modality, and information source. *Journal of semantics* 30:479–532.
- Zanuttini, Raffaella and Paul Portner. 2003. Exclamative clauses: At the syntax-semantics interface. *Language* 79:39–81.
- Zeevat, Henk. 2013. Expressing surprise by particles. In *Beyond expressives: Explorations in use-conditional meaning*, eds. Daniel Gutzmann and Hans-Martin Gärtner, volume 28 of *Current Research in the Semantics/Pragmatics Interface*, 297–320. LEIDEN - BOSTON.