

Exclamatives, exclamations, miratives and speaker's meaning

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Exclamations, exclamatives and miratives are utterances that do not merely convey some informative content, but are designed to express the emotional attitude of surprise. In this paper I argue that analysing what it means to express surprise must be based on three main ideas: (1) the idea that exclamatives are instances of metarepresentational use; (2) the idea that what is communicated in exclamatives and exclamations are what relevance theorists call impressions, rather than definite propositions, where impressions are communicated by slightly increasing the manifestness of a whole range of propositions; and (3) the idea that utterances may not only communicate by conveying Gricean meaning_{NN}, but also by showing, i.e. by providing direct evidence for certain thoughts. Thus, what is communicated in exclamatives and exclamations is typically not reducible to Gricean speaker meanings. I outline the implications of my approach by comparing it to some recent semantic accounts.

Keywords: exclamation, exclamatives, mirativity, emotion, relevance, procedural meaning

1 Introduction

When we engage in verbal communication, we often use utterances not merely to convey informative content, but also to convey what kind of impression this information has left on us. In this paper I will look at utterances that express surprise or unexpectedness. Examples are the following:

- (1) [On receiving an unexpected present:] Such a nice present!
- (2) [Mary, having made plans for a picnic in expectation of good weather, to Peter on the way to the picnic place:] It's raining!
- (3) Who could be cuter than you? (Zanuttini and Portner, 2003: ex. 22a)

(4) Isn't he the cutest thing? (Zanuttini and Portner, 2003: ex. 22b)

Such utterances are studied under the name of *exclamations* (in the European linguistic tradition) or *mirativity* (in typological linguistics). Utterances of this type express what can be informally described as '[The] speaker's "unprepared mind", unexpected new information, and concomitant surprise' (Aikhenvald, 2004: 195).¹

The expressions in (1)-(4) could be uttered without expressing this element of surprise, therefore it is clear that the expression of surprise with these utterances is a purely pragmatic phenomenon. Moreover, the precise character or sense of the emotion or attitudes conveyed seems to vary from instance to instance, and range from mild, pleasant surprise to strong indignation over unexpected events. In fact, Zanuttini and Portner argue that the exclamatory force of (3) and (4) is purely pragmatic, and it seems that no other author has claimed anything to the contrary.

However, many languages have dedicated grammatical forms to convey this element of surprise. English, for instance, has an *exclamative* sentence type² (5) and particles that may be used to indicate exclamatory force (6):

¹In this paper I assume that exclamativity and mirativity are essentially the same phenomenon, and that exclamations, exclamatives and mirative utterances express the same range of pragmatic meanings. Aikhenvald does not discuss English exclamative sentence types in connection with mirativity. However, the definition of mirativity she provides in this quote certainly covers well the function of exclamatives, so a natural conclusion seems to be that the English exclamative sentence type, for instance, is one possible linguistic way to encode mirative meaning. Moreover, the relation between exclamatives, exclamations and miratives is rarely addressed in the literature. Olbertz (2009) is an exception. She distinguishes miratives from exclamatives by the status of the propositional content of the utterance. In miratives, she claims that the propositional content is communicated alongside the speaker's attitudinal stance as at-issue meaning. In exclamatives, the propositional content is either presupposed or not at issue. This way of distinguishing between miratives and exclamatives has the unfortunate consequence that indirect evidentials used as miratives would have to be classified as exclamatives, not as miratives, because both the speaker and the addressee know that P, because both share best-possible-grounds-evidence (even visual evidence) for P. But miratively used evidentials are consistently treated in the literature as paradigm cases of mirative markers. Therefore, Olbertz' criteria strike me as leading to rather counter-intuitive results, and I conclude that there is no systematic basis to distinguish between exclamatives and exclamations on the one hand, and mirative utterances or miratives on the other.

Lau and Rooryck (2017) argue that mirative markers indicate punctual change of epistemic state from ignorance to awareness, and need not communicate surprise. If correct, this analysis of miratives could lay the foundation for a different kind of distinction between mirativity and exclamations: while the former category need not involve surprise, the latter one does. However, Lau and Rooryck (2017) do not argue this point explicitly.

²While the existence of the exclamative sentence type in English is beyond doubt, there is some disagreement as to how exactly it is constituted:

- (i) «What a fool I've been», she said quietly. (Collins, 2005: ex. 1a)
- (ii) Oh, how stupid you two are! (Collins, 2005: ex. 1b)
- (iii) What a lovely car. (Collins, 2005: ex. 2a)
- (iv) I said "How splendid!"
- (v) They were so rude! (Collins, 2005: ex. 7b)
- (vi) He's so cute! (Zanuttini and Portner, 2003: ex. 23)
- (vii) The things he eats! (Collins, 2005: ex. 7c)
- (viii) They dismissed the Paula Jones case! (Michaelis, 2001: 1040, unnumbered example)

- (5) What a lovely place for a picnic!
 (6) Wow, you're already here!

Other languages may employ mirative evidentials, or dedicated mirative forms such as special auxiliary-main verb constructions, mirative pronoun sets, or 'sudden discovery' tense forms (Aikhenvald, 2004: 211-215).

"Exclamativeness" or mirativity are intuitively hard to characterise precisely, apart from using suggestive terms such as "surprise", "unprepared mind", or "sudden discovery". Psychologists studying surprise emphasise that surprising stimuli send non-propositional information to the mind. Yet languages do have means to encode mirativity: they have developed linguistic items that indicate that the speaker intends to make it transparent to her audience that she is in a certain psychological state which can not be exhaustively expressed in purely propositional terms. How is this possible? I argue that an answer can be found by considering the following sub-questions in turn:

1. What is the essence of mirativity, in cognitive psychological terms?
2. What is involved in communicating mirativity?
3. How can mirative interpretations be linguistically indicated?

This paper is structured around answering these questions in this order. But first I want to briefly summarise the status of linguistic research into exclamations, exclamatives and miratives.

2 Miratives in semantics and pragmatics

An adequate semantic-pragmatic account of miratives—i.e. exclamations and exclamatives—must surely start by asking what is the essence of these utterance types or speech acts. What is it that exclamations (i.e. purely pragmatically conveyed miratives) and exclamatives (i.e. linguistically encoded miratives) have in common? There are two properties that have been widely discussed in the literature. All major linguistic accounts include them in one way or other. The first is that exclamations *express* something rather than inform the audience of something. Exclamations are instances of an utterance type that Searle (1979) calls *expressives*. However, exclamatives do not feature in his list of paradigm examples of expressives.

The essence of expressives is, according to Searle, that their *essential condition* is to express (roughly: to make transparent to the audience) the psychological or emotional state that the speaker is in. Therefore, the speaker of an expressive wants neither to make the world fit the words (i.e., to request or wish that a state of affairs should hold), nor to make the words fit the world (i.e., to describe a state of affairs). Expressive speech acts have no *direction of fit*. Rather, the proposition expressed in expressives is *presupposed*.

Collins (2005) accepts only (i)-(iv) as exclamatives. These are sentences or phrases that start with *what* or *how*.

While Rett (2011) and Zanuttini and Portner (2003) agree with Collins that (v) and (vi) should be analysed as exclamations rather than exclamatives, Elliott (1974), Michaelis and Lambrecht (1996) and Nelson regard these utterance types as exclamatives. Both Rett (2011) and Zanuttini and Portner (2003) treat utterances such as (20) as paradigm cases of exclamatives, contrasting with Collins (2005).

Michaelis (2001) insists that news reporting exclamations such as (viii) do not count as exclamatives; Zanuttini and Portner, on the other hand, explicitly include at least some cases of such utterances in their category of exclamatives.

The idea that exclamations presuppose their propositional content has been asserted ever since the seminal study of Grimshaw (1979). But this criterion alone would not distinguish exclamations from other expressives, according to Searle (1979). Nor are utterances that presuppose their propositional content always exclamations; reminders or repetitions are counterexamples. And news-reporting exclamations as in (7) convey new information rather than information that is presupposed.³

(7) They dismissed the Paula Jones case! (Michaelis, 2001: 1040, unnumbered example)

Rett (2011) proposes that exclamations have a particular illocutionary force, *E-force*. Performing this speech act is appropriate when the propositional content of the utterance is salient and true. When these conditions apply, performing the speech act *E-force* amounts to expressing that the speaker had not expected that P. In other words, the speech act made in exclamations expresses that some expectations have been violated.

There is some debate about whether exclamations always involve expectation violations. Zanuttini and Portner (2003) doubt this. They comment that a guest invited to a dinner does indeed expect to be served delicious food. Yet, she can exclaim *What a delicious dessert!* The guest's expectation that she would be served a delicious dinner have been fulfilled, and indeed have been exceeded. Rett (2011) counters that exceeded expectations do underlyingly involve violation of expectations: they violate the expectation that the desserts served are delicious only to degree *D*. However, there are examples showing that one can exclaim about *fulfilled expectations*. Consider (8):

(8) Susan visits her good friend Mary and wants to bring a gift for Mary's oldest son. Susan hasn't seen him in a while, but she suspects that he has grown enough that a certain jumper that her own son has outgrown may now fit Mary's son, and she brings this jumper along as a gift. On seeing Mary's son, Susan realises that he has indeed grown enough that the jumper will probably fit. She says: *How tall you've grown! That's great, I have this jumper for you...*

In this example, Susan must have expected that the jumper will fit, at least strongly enough to make her decide to bring it along. Therefore this example can not be put aside by claiming that Susan's expectation that the jumper may fit was not very high and thus the surprise was that contrary to expectations, the jumper fit. Rather, the surprise was that expectations were perfectly fulfilled. I conclude that many (perhaps even most) exclamations do involve expectation violation, but some exclamations may also involve expectation satisfaction.

This leads to the question of what expectations are and how they can be modelled. Zeevat (2013) proposes that expectations include both proper beliefs and assumptions which may be inferred from them and for which the individual has some evidence, even if this evidence is not strong enough to warrant belief. In other words, expectations are shaped by the mutual beliefs of the speaker and her audience, and by assumptions that are inferrable from (i.e., compatible with) them. Hence, exclamations can be understood as expressions of emotions caused by the realisation that some true and salient propositions cut off certain possible inferences, thereby subtly changing the expanded common ground, i.e. the possible inference space determined by proper mutual beliefs. This leads to an 'updated version of update semantics' (Zeevat, 2013: 318) which not only tracks updates to the com-

³Researchers differ on whether news-reporting exclamations are instances of the exclamative sentence type. See e.g. Michaelis (2001: 1040) and Zanuttini and Portner (2003: 47 footnote 12) for discussion. However, the mirative nature of these utterance must be explained in any case.

mon ground understood as consisting of mutual beliefs, but also updates to the expanded common ground.

Zanuttini and Portner (2003) aim at identifying the formal properties of the exclamative sentence type. This means that they have little to say about exclamations (mirativity) in general. Still, their approach is interesting in that they avoid directly incorporating the notion of expectation violation in their formalisation. Exclamatives, they say, have two basic properties: first, they have a *wh*-operator – variable structure. Second, they denote a set of alternative propositions. Third, the propositional content is presupposed. From these features the pragmatic component interprets the speech acts that the speaker intended to perform. Utterances with all of these three properties together are not good candidates for any of the major speech acts *assertion*, *interrogative* or *imperative*. Instead, the first two properties trigger a pragmatic process of domain-widening called R_{widening} : the domain over which the *wh*-operator operates is to be extended. Zanuttini and Portner (2003: 51) illustrate their proposal with the following example:

(9) The things he eats!

Because the exclamation (9) syntactically indicates that its propositional content is presupposed, (9) presupposes *He eats something*. Assume that the exclamation is uttered in the course of a conversation where we discuss which hot peppers our friends eat. In this situation, the domain of quantification D_1 to which the pragmatic operation of widening will apply (R_{widening}) is a set of peppers that may have the following members:

(10) poblano, serrano, jalapeño, güero.

Furthermore, we know that most of our friends, to the extent they like spicy food, eat poblanos, serranos, possibly sometimes jalapeños. Uttering (9) about one particular friend, in this context, will cause the domain D_1 to be expanded to a domain D_2 that includes even hotter peppers that very few people eat, such as habanero. Thus, (9) implies that this friend eats peppers ('things') that one normally does not expect people to eat. This is how the pragmatic process of domain widening applied to a contextually determined domain of quantification over presupposed content leads to an interpretation that violates expectations, thereby expressing surprise.

In fact, Zanuttini and Portner (2003) argue that this pragmatic process of domain widening captures the ideas of expectation violation or expectation surpassing that intuitively leads to the sense of surprise expressed in exclamations. But if this the case, then this process must be at work in all mirative utterances, in exclamations as well as in exclamatives. However, it is not clear what triggers this process in the absence of the formal features inherent in exclamatives. There are two possibilities: either the pragmatic widening process can also be triggered in ways other than by noticing the presence of the semantic features factivity and quantificational operator-variable structure, or it is other pragmatic operations besides widening that characterise the force of exclamation. In the first case, the question arises whether the proposed semantic features are so important at all, and the explanatory force of the account is significantly weakened. In the second case, the account misses the essence of what exclamatory force (mirativity) is.

The accounts reviewed so far agree that mirative utterances, apart from some peculiar exceptions, express the emotion of surprise. Lau and Rooryck (2017) object to this view. Their objection is based on arguments from Adelaar (1977; 2014), who presents data from some Quechua varieties showing

that mirative morphemes occur in utterances that convey neither counter-expectations or surprise. Thus, in (11) the mirative marker *-naq* occurs in a question without alluding to any expectations or violations of expectations:

- (11) Tarma quechua (Andes) (Lau and Rooryck, 2017: 112(6))

wipi-ru-y ma: ayga-sh ga-naq
weigh-PERV-2A/S.IMP let_us_see how.much-REP be-3A/S.MIR

‘Weigh it, let us see how much it is!’

In the following example (12), the mirative marker *-shka* co-occurs with the direct evidential marker *-mi*. This latter marker indicates certainty, and its use amounts to the speaker making an objective statement without expressing any emotions such as surprise.

- (12) Ecuadorean Highland Quichua (Lau and Rooryck, 2017: 112(7))

kipi llashak-mi ka-shka
bundle heavy-CERT be-3A/S.MIR

‘The bundle is heavy indeed.’

In fact, Adelaar (2014: 106) comments that mirative markers in Ecuadorean Highland Quichua do not occur in exclamations.⁴

Adelaar, and Lau and Rooryck following him, argues that this data shows that the core meaning of mirativity is indicating that the speaker experienced a punctual transition from the epistemic state of not knowing some state of affairs S_A to being aware of S_A . These authors refer to this change of epistemic state in short as ‘sudden discovery’ or ‘sudden realisation’. Mirative utterances may additionally convey notions such as surprise, counterexpectation or ‘unprepared mind’ by way of conversational implicature⁵.

The main question that Lau and Rooryck (2017) set out to answer is why the present perfect aspect can in some languages be ambiguous between an aspectual interpretation and indirect mirativity (e.g. in Bulgarian), in other languages ambiguous between aspectual interpretation, indirect evidentiality and mirativity (e.g. in Turkish), and why in yet other languages indirect evidentials may also indicate mirativity (e.g. in Washo [Hokan] and Hare [Athabaskan]). They assume that there must be a shared underlying structure in these various domains of tense-aspect, evidentiality and mirativity. In other words, the proposal is that the semantic domains of aspect, evidentiality and mirativity are formally structured in the same way. Morphemes in different languages can then leave certain parts of this structure unspecified, allowing for various kinds of ambiguities to arise.

⁴This comment suggests that the correct conclusion should be that markers such as Ecuadorean Highland Quichua *-shka* (and perhaps Tarma Quechua *-naq*) do not linguistically encode mirativity in the usual sense as defined by Aikhenvald (2004: 195) (quoted above). Hence these data should not be used in a discussion of the semantic underpinnings of the notion of mirativity. Lau and Rooryck (2017), however, draw another conclusion, namely that the notion of mirativity should be widened and the core meaning of mirativity should be separated from that of expressing surprise (or any similar emotion).

⁵Although this possibility does not arise in the Quechua cases involving the morphemes in examples (11) and (12), it seems.

Lau and Rooryck argue that this common structure of the respective semantic domains can be most clearly seen in the domain of lexical aspect. The Vendlerian aspectual classes *states*, *processes*, *accomplishments* and *achievements* can be formally distinguished with reference to their internal composition: whether they consist of several stages, whether they have final stages or intermediate states. States consist only of a single stage, whereas processes consist of an initial stage followed by a series of later stages, but lack a final stage. Accomplishments and achievements have an initial stage and a final stage, but only accomplishments have a series of intermediate stages. Grammatical perfect aspect forms encode the information that the stages the lexical structure refers to are component stages of the event described, and that the final stage holds at the time of speaking.

The domain of evidentiality relates to information stages of the speaker and refers to how the speaker moves from one epistemic state to another. Lau and Rooryck (2017) propose to define indirect evidentiality as expressing the idea that the speaker has arrived at the final information stage of knowing the event communicated by a series of intermediate stages. In the case of hearsay, the speaker has moved from the initial information stage of ignorance to the final stage of knowledge as a result of an intermediate stage where she learned about the event from someone else. In the case of inferential evidentiality, the speaker has arrived at the final stage of knowing the event as a result of several intermediate stages of inference or reasoning. Indirect evidentiality-indicating morphemes encode the information that the final stage holds at the time of utterance.

Mirativity-indicating morphemes encode the same information as evidentials, but in addition specify that there are no relevant intermediate information stages. In other words, the speaker is undergoing a transition from ignorance about the event to knowledge (or at least awareness) of the same in a single step. By leaving it unspecified whether intermediate information stages are involved, morphemes can indicate both indirect evidentiality and mirativity. By leaving it unspecified whether the stages referred to are component stages of the event or information stages of the speaker, morphemes can serve double duty as perfective aspect indicators and indirect evidentials. By leaving both types of information underspecified, morphemes can be triply ambiguous between perfect aspect, indirect evidentiality and mirativity.

While this account sheds interesting light on the relationship between perfect tense-aspect, evidentiality and some types of mirative markers related to verb inflection, it obscures the relation of the semantics of mirative markers to the expression of surprise or related emotions. Indeed, Lau and Rooryck (2017: 118) argue that “the interpretation of surprise can be derived from the core meaning of sudden change in the form of a pragmatic implicature: an [sic] sudden change from one information stage to another can be pragmatically interpreted as a surprise given the right context”. This amounts to the claim that the surprise component of miratives is due to a proposition, communicated by the speaker by way of implicature, that conceptually represents the thought that the speaker is surprised by what is described by what she said. In other words, surprise is not *expressed* as speech act theorists put it, but described. But surely communicating a proposition such as I AM SURPRISED THAT YOU HAVE ALREADY ARRIVED is much different from exclaiming *You have arrived already!*, a difference that speech act theorists propose to capture with their notion of *expressing*. In section 3 below I will review cognitive psychological research on the emotion of surprise, showing that surprise is essentially a non-propositional phenomenal state, a ‘metarepresentational feeling’ as one psychologist describes it. This means that communicating surprise or related emotions can not be explained by recourse to Gricean conversational implicatures alone.

By removing the surprise component from the semantics of miratives, Lau and Rooryck (2017) aim to account for miratives of the Quechua type as in examples (11) and (12). But if Adelaar's (2014: 106) observation is correct that these miratives actually never occur in utterances that express surprise, then Lau and Rooryck's account would make the wrong predictions for those morphemes. It would predict that given the right context, these forms may on occasion implicate surprise, contrary to fact. Again, this points to the conclusion that the surprise component of mirative utterances cannot be a conversational implicature.

Notice that the accounts reviewed here follow a common strategy: they aim at finding some semantic feature that can be expressed in formal semantic or speech act theoretical terms, and that is present in all cases of mirative utterances. At the same time, they start (with the exception of Lau and Rooryck, 2017) from the insight that exclamations *express* a certain psychological or emotional state, that of surprise, which in turn is generally caused by expectation violation. This suggests that the questions we need to ask are: what are psychological states such as surprise? How can verbal utterances express these psychological states? How can psychological or emotional states become the object of informative intentions in ostensive communication? In other words, the first questions we need to ask in studying exclamations are cognitive psychological and cognitive pragmatic ones, not formal semantic ones. There is a certain paradox here: speech acts are, according to Searle (1979), determined in part by the propositional attitudes expressed in them. Consequently, philosophers of mind and language, as well as linguists, have studied the nature of propositional attitudes and their relation to speech acts. However, the study of exclamations has in general not turned to a study of the psychological states involved, nor to the question of how mirative utterances could communicate such states. In the following sections, I want to pursue these issues.

3 The cognition of surprise

Most of the accounts of mirativity reviewed here assume that surprise is essentially caused by our being confronted with a situation that we did not expect. Cognitive psychologists have experimentally confirmed that unexpectedness is the most important factor for producing the emotion of surprise, as opposed to earlier theories that took the attribution of an unexpected situation as being caused by chance or luck as the determining factor for inducing surprise (Stiensmeier-Pelster, Martini and Reisenzein, 1995).

In a review of cognitive psychological research on the emotion of surprise, Reisenzein (2000) points out that this emotion is induced by a certain constellation of mental processes. First, a surprise-inducing event triggers a process assessing that the event exceeds some threshold value of unexpectedness, or that it is in a noticeable degree of discrepancy with a cognitive schema. Next, ongoing information processing operations are interrupted and processing resources are re-allocated to examine the unexpected event, analysing and evaluating what the appropriate response to the event should be. This response may be an immediate reaction or a revision of the schemas that were responsible for raising the expectation that was dis-confirmed by the event.

However, surprise is not merely a state of mind attained as the result of sub-conscious cognitive processes. It has a conscious, i.e. subjective aspect. This means that it is a phenomenal state ('it feels in a particular way to be surprised', Reisenzein, 2000: 262), and 'one is immediately aware of one's surprise experience' (Reisenzein, 2000: 262). This awareness arises in a non-reflective way, we do not seem to have to infer anything in order to have a subjective experience of surprise.

Reisenzein argues that the subjective experience of surprise may be explained as follows: The appraisal of unexpectedness causes a re-allocation of processing resources to deal with this clash with expectations. This resource re-allocation may be sensed by a transducer that sends a non-propositional signal. If the signal exceeds a certain level and becomes conscious, the subject will have 'a sensation-like experience of this schema-mismatch signal.' (Reisenzein, 2000: 267)

The subjective experience of surprise puts us into a state of mind in which we are conscious of the information that a certain event interrupted our normal processing by being in discrepancy with cognitive schemata. Being consciously aware of this information, our mind can use it to control other mental activities or processes. According to Reisenzein, this is the most important function of emotions such as surprise:

The most important functional property of conscious states is widely thought to be their system-wide accessibility and their being (thereby) poised for exerting global control [...] The information that the surprise feeling reliably provides (if the previously drawn conclusions are correct) concerns the occurrence and intensity of mental interruption and/or the occurrence and degree of a schema-discrepancy. Note that, on both counts, the information provided by the surprise feeling can be said to be metacognitive in character, that is, it is information about, respectively, the person's cognitive processes or the status of his or her belief system [...] (Hence, on both counts, surprise can be called a "metacognitive" [...] or a "metarepresentational" [...] feeling). Taken together, these points suggest that the function of the surprise experience is to make this information globally available presumably because this is a precondition for it to exercise global control (specifically, to influence goal-directed actions such as epistemic search). (Reisenzein, 2000: 274)

Most important for our purposes is that once we are subjectively aware of the information that a certain event has surprised us, this information may become part of the content of an utterance. However, as suggested above, this information is arguably non-propositional in nature. How can non-propositional information become the object of an informative intention in ostensive communication (that is, the type of communication in which the communicator intends the fact that she has this informative intention to become part of the common ground)?

The answer to this question depends on what it means to say that some piece of information is non-propositional. As we have seen, Reisenzein proposes that the information provided by the subjective experience of surprise is something like an analogous signal, a signal that only a dedicated measuring system can interpret. Sperber and Wilson (1995; 2015) argue that non-propositional information of the type inherent in impressions could be accounted for in another way. Impressions, they argue, raise the *manifestness* of a wide range of propositions. What this means can best be explained by considering example (13) in some detail:

- (13) When I started cycling from home to work in the summer, I was struck by some of the views that one doesn't get when taking the bus. It made such a strong positive impression on me that I felt compelled to stop and take in this view for a while.

What was it that made me stop? How can I explain to you why I reacted this way? It is practically impossible to do this satisfactorily except by showing a picture (and hoping that it causes a similar

impression in you, which it most likely does not, because so many elements of the situation can not be captured in a picture).

What I can do, however, is to try to verbalise some of the thoughts that came to mind:

- (14)
- a. This is a magnificent landscape
 - b. This is a perfect picture of tranquillity
 - c. There are such beautiful and soothing colours in nature
 - d. Such a clean air and pure view of nature exists right in the middle of a town
 - e. It is a privilege to enjoy this view every day

None of these statements individually describes thoughts that I clearly had (or rather: remember having had) in mind, but they are not far off. Jointly, the elements in the list do give a fairly good approximation to what I felt at the time. But the list does not feel exhaustive, and the individual items on the list feel a bit exaggerated when put in these words.

Sperber and Wilson argue that an impression such as the one that the view in (13) can make, raises the manifestness of an array or family of thoughts, some of which may be roughly characterised by the propositions conveyed by the sentences in (14). A proposition is *manifest* to an individual to the extent that he is capable (in principle) of representing it mentally and accepting it as true or probably true. Manifestness is a matter of degree: a proper belief, for instance, is a proposition that we have represented in our mind and accepted as true. On the other hand, there may be pieces of information in our environment that we could notice in the sense that our senses are able to perceive them, but that we haven't represented mentally. Such pieces of information are weakly manifest. Events such as encountering a view of landscape such as in (13) raise the manifestness of a host of (possibly related) pieces of information such as those described in (14), but not necessarily to such a degree that we actually represent them *individually* and in conceptual form. The information conveyed by an impression is indeed ineffable and non-propositional in this sense. However, one can still analyse this non-propositionality in terms of the manifestness of conceptual representations (which are of a propositional nature).

Could the information carried by the emotion of surprise be analysed in the same way? I argue that it can. Zeevat (2013) observes that we usually experience surprise when we encounter a situation that is unexpected *in ways that matter to us*. Information that matters to us is what Sperber and Wilson (1995) call *relevant* information. Inputs to cognitive processes are *relevant* to an individual to the extent that the number of *positive cognitive effects* they achieve is high and the *processing effort* involved in deriving these cognitive effects is low. Our mind is organised in such a way that it tends to allocate attention and processing resources to those inputs that promise to be most relevant. This is the *cognitive principle of relevance*. Exactly what level of relevance to an individual an input needs to have in order to satisfy this condition and be attended to depends on a variety of factors, including level of attention, what else is going on at the time, and so on, and varies from moment to moment.

Normally, inputs selected for attention need only be slightly more relevant than competing ones. But it may happen that some inputs are considerably more relevant than competing ones, and more relevant than those that were attended to previously. These inputs yield a very high number of positive cognitive effects for a modest amount of processing effort. Among these cognitive effects will be many of the type *contradiction and elimination*, particularly if the context against which the input is processed contains cognitive schemata that are in discrepancy with the input. This means that in-

puts which are considerably more relevant than those that were selected for attention in the moments before will often be ones that contradict expectations set up by cognitive schemata (or other salient memory chunks). In other words: such inputs are likely to be ones that trigger surprise detection mechanisms.

Let us assume that surprise is caused by inputs that are considerably more relevant to the individual than the inputs usually attended to at around the time of processing the surprising input. Such inputs are indeed 'unexpected in ways that matter to us'. Such inputs raise the manifestness of a large array of representations. This means that surprising inputs will trigger non-propositional information in a similar way to impressions: they increase the manifestness of a whole range of representations. The 'transducer' detecting signals informing the mind of surprise may just be a monitor observing the distribution of cognitive effects.

However, inputs may be unexpected and 'surprising' in different ways. Consider:

- (15) [You look down the corridor and realise there is fire and smoke in the building.]
- (16) [A child is walking down the street and sees a very cute looking young cat.]

The input (15) is indeed very relevant, yielding a considerable range of cognitive effects. It is indeed unexpected and surprising. However, among the various cognitive effects it yields there is one that stands out: the thought *Get out of the building and warn others*. This cognitive effect is made highly accessible, and is the vehicle for many more cognitive effects. It is the kind of input that makes you exclaim *The building's on fire!* However, the point of this utterance is **not** to express your surprise about the fire.

Input (16) is somewhat different. It does yield many cognitive effects, it is highly relevant to the individual. However, there is no one cognitive effect that stands out. Rather, the cognitive effects amount to an impression. The input can make the child exclaim *So cute!* This time, the point of the exclamation is indeed to express the communicator's impression of 'surprise' at the cuteness of the cat. It is utterances caused by inputs of this kind that are usually discussed under the label of mirative utterances or exclamatives, whereas the term 'exclamations' may also extend to utterances triggered by inputs of the kind in example (1).

4 The communication of surprise

The subjective experience of surprise provides us with information about how the perception of a situation or an event has impinged on our mental life. This information, though non-propositional and impression-like in nature, can become the content of an utterance. More precisely: it may become the object of the informative intention behind an ostensive stimulus. Thus, a communicator engaging in an exclamation or using an exclamative intends to convey to her audience that a certain situation or event has been unexpectedly relevant to her, increasing the manifestness of a large open array of propositions.

How can a communicator achieve these goals? One goal is simple to achieve: conveying a description of the situation or event that has caused surprise can easily be achieved by communicating a proposition, an explicature. The other goal, to convey the way in which this situation has impinged on the communicator, is a bit more complex. For one thing, communicating surprise is metarepresentational in nature, as it is about communicating a subjective experience, i.e. a mental judgement

about an input. For another, the goal of re-creating in the audience a similar sense of relevance by way of slightly raising the manifestness of a large, open array of representations can not be achieved by conveying descriptive content; rather, the communicator must aim to cause a similar *experience* of surprise in the audience. Since the experience of surprise is based on non-propositional information and hence ineffable, this experience can only be conveyed by the communicator using an ostensive stimulus that the audience directly displays the communicator's surprise. Such a display of the communicator's surprise may be achieved by using prosodic features typically associated with the emotional attitude of surprise (Wharton, 2009: 163-165), while conveying a propositional content that the audience directly experiences as surprising.⁶ In other words, the communicator must engage in an act of *communicating by showing* in the sense of Sperber and Wilson (1995; 2015). I will discuss these aspects, the metarepresentational dimension and the communication-by-showing dimension, in more detail in the following sub-sections.

4.1 *The metarepresentational dimension*

As Sperber and Wilson (1995), Wilson and Sperber (1988) and Wilson (2012) point out, utterances can be used in two fundamentally different ways: one way is to *describe* states of affairs in some possible world. Utterances used in this way are relevant as a result of the truth conditional content they convey. A second way is to *interpret* or *metarepresent* another representation, such as a mental representation (a thought) attributable to someone. This is what Sperber and Wilson call the *interpretive use* or the *metarepresentational use* of utterances. A metarepresentationally used utterance is one that is relevant as a result of its metarepresentation relation. In other words, a metarepresentationally used utterance achieves relevance through its *resemblance in content* to another representation, and not through its truth conditional descriptive content.⁷

Consider in this connection the following comment by Laura Michaelis, which is helpful in clarifying the metarepresentational nature of the subjective experience of surprise:

In the model assumed here, surprise is not merely a response (startled or otherwise) to a situation which the speaker had failed to predict. For example, I might not have predicted a hallway encounter with a colleague, but I would not necessarily find that encounter surprising (even if my colleague had startled me). Instead, surprise entails a **judgement** by the speaker that a given situation is **noncanonical**. A noncanonical situation is one whose absence a speaker would have predicted, based on a prior assumption or set of assumptions, e.g., a stereotype, a set of behavioral norms, or a model of the physical world... (Michaelis, 2001: 1039)

⁶Facial expressions displaying surprise, on the other hand, do not appear to be effective in communicating surprise. Reizenstein (2000: 272-273) reviews three experiments investigating the facial feedback hypothesis, according to which facial displays of surprise should affect the strength of the surprise feeling experienced by observers. All three experiments fail to show an effect of facial surprise display on the subjective experience of surprise. The failure of natural facial displays of surprise to be effective in the communication of surprise may be related to the fact that surprise is caused by epistemic states such as believe (one can only be surprised by some fact, so one must be able to represent this fact as a true statement, a true belief), as Baron-Cohen, Spitz and Cross (1993) point out.

⁷Resemblance in content is defined in terms of sharing logical properties: two mental representations interpretively resemble each other (i.e. resemble each other in meaning) to the extent that they share their analytic or contextual implications (Wilson and Sperber, 1988: 137-138).

This means that a mirative utterance is not the result of an unmediated reaction to an unexpected event. Rather, it is the result of a mental *appraisal* or *judgement* about how this unexpected event has struck the communicator. Michaelis' comments suggest that this judgement could have the propositional content *The speaker has formed the judgement that it is non-canonical that P*. Reizenzein argues that the informative content of this judgement is non-propositional in nature. I have argued above that the non-propositional information provided by the communicator's appraisal or judgement of the unexpected event (the subjective experience of surprise) should be understood as a mental state in which a whole array of mental representations (thoughts) have been made slightly more manifest, achieving an unusually high level of relevance for the cogniser.

The subjective experience of surprise puts us into a state of mind in which we mentally represent the fact that an input yields an unusually high level of cognitive effects that are unusually widely distributed. Mirative utterances are relevant in terms of representing to the audience this mental state or attitude that the unexpected event has caused the communicator to have, a mental state that is conscious, albeit ineffable. In other words, the main relevance of mirative utterances lies in representing mental representations that the communicator has formed as a result of cognising the surprise inducing input. Mirative utterances are therefore *instances of metarepresentational use*.⁸

Existing discussions of metarepresentational uses of utterances have focused on instances where the metarepresentationally used utterance resembles in relevant respects a more or less clearly identifiable set of representations. In these situations it is possible to gauge the degree of resemblance in content that the metarepresentationally used utterance aims at. It is also possible to predict in which situations the expectation of faithfulness entails higher degrees of resemblance and in which situations it entails lesser degrees of resemblance. Such considerations are, of course, difficult to spell out in instances where the mental state that is metarepresented is that of an open array of representations having been made more manifest. To begin with, it is not necessarily clear if a particular member of this array (say, for instance, (14b)) has become manifest to the communicator to the point of being mentally represented. This raises the question whether it is meaningful at all to say that mirative utterances are instances of metarepresentational use, because resemblance in content cannot be verified.

Communication takes place against a mutual cognitive environment, or common ground. A mutual cognitive environment consists of pieces of information that are manifest to both communicator and audience, including the information that communicator and audience share this cognitive environment. An input that is extraordinarily relevant to one individual in a mutual cognitive environment will be likewise extraordinarily relevant to other individuals who share this mutual cognitive environment. Moreover, the input will be relevant in similar ways to the individuals sharing this cognitive environment: the cognitive effects that make the input relevant to these individuals will necessarily be similar ones. This means that a communicator intending to induce in her audience a mental state resembling her own in terms of impressions does have a means at her disposal, after all: she must choose an utterance that is extraordinarily relevant *in the mutual cognitive environment* of communicator and audience.

⁸The idea that exclamatives are instances of metarepresentational use was proposed already in the earliest exposition of the theory of metarepresentational use in relevance theory, in Sperber and Wilson (1995: 253-254) and Wilson and Sperber (1988: 151). I will discuss these proposals in more detail below. Here, I merely point out that Sperber and Wilson's proposals only discuss exclamatives, not exclamations or mirativity in general, and do not amount to a thorough analysis of exclamatives.

4.2 The showing-meaning_{NN} dimension

An audience presented with an utterance describing a situation or event that is extraordinarily relevant in the mutual cognitive environment of communicator and audience is given a perfect *cause* for being surprised. If the communicator had been surprised by that situation or event in the first place and produced this utterance with the intention of metarepresenting to the audience this subjective experience of surprise, then by using this utterance the communicator presents her audience with *direct evidence* of her own surprise. This evidence is often enhanced by employing prosodic features that are typically associated with surprise, such as the sentence exclamation pattern in English, consisting of rising intonation and lengthening (emphasis) (Rett, 2011: 412-413, Bartels, 2014).

According to Sperber and Wilson (Sperber and Wilson, 1995; 2015), a communicator presenting her audience with direct evidence of the content of her informative intention is indeed engaging in a form of ostensive communication. However, the information conveyed in this way will not count as speaker meaning analysed in terms of the Gricean concept of *Meaning_{NN}* (Grice, 1957; 1989). In order to convey *Meaning_{NN}*, a communicator must not only intend to inform her audience of something, but also do this by using an utterance (ostensive stimulus) that does not give the audience *cause* to acquire this information, but rather gives them a *reason* to infer this. Grice wanted to distinguish strongly between cases of *showing* (such as displaying a bandaged leg in order to inform the audience that one's leg is bandaged) and cases of *Meaning_{NN}* (such as showing a bandaged leg in order to inform the audience that one cannot play squash), with the aim of excluding the former from the investigation of verbal communication. Sperber and Wilson, on the other hand, point out that verbal communication typically involves stimuli that fall somewhere in between 'showing' and 'meaning', and that one cannot exclude cases of 'showing' from the discussion of communication:

- (17) a. Peter: Do you want to play squash?
b. John (displaying his bandaged leg): My leg is bandaged.

Mirative utterances (including exclamations and exclamatives) work in a similar way: they use a linguistically mediated description of a surprising situation as a means of *showing* (i.e. displaying evidence of) how this information has impinged on the communicator, thereby re-creating in the audience a subjective experience of surprise. In examples like (17), the evidence displayed is visual. Many exclamatives or exclamations are similarly uttered in situations where the situation described by the proposition expressed is in visual evidence, see, for instance, (18) or (19).

- (18) What a lovely car. (Collins 2005, 2a)
(19) Isn't he the cutest thing? (Zanuttini and Portner, 2003: ex. 22b)

In these cases it is easy to see that the linguistic content serves basically to point out some information that is accessible to the audience by non-linguistic means as well. In other words, the descriptive content of the mirative utterance is a means of *showing* or *displaying* evidence for a situation or event that the communicator judges as surprising. Things are slightly different in cases such as (21) or (20).

- (20) The things he eats! (Collins 2005, ex. 7c)
(21) They dismissed the Paula Jones case! (Michaelis 2001, unnumbered, p. 1040)

In these examples, the situation described in the proposition expressed is not in visual evidence. Still, the situation described is one that the communicator has judged surprising in the mutual cognitive environment. In this sense, it still can be said to function by pointing the audience to some cognitive input that gives them direct evidence of its surprising nature.

These observations amount to the claim that in order to communicate the subjective experience of surprise, the propositional content of the utterance must be designed to function as a means of showing evidence of the speaker's surprise. This is only possible if the utterance expresses a proposition that is mutually manifest between communicator and audience, or in other words, presuppose their propositional content. There is, therefore, a pragmatic explanation for the semanticist's observation that exclamatives do not convey their propositional content as new information but presuppose it.⁹

In order to re-create in the audience the sense of surprise that the communicator experienced, she must produce an ostensive stimulus that is *considerably more relevant* than other utterances. Notice that ostensive stimuli give rise to specific expectations of relevance: the stimulus is at least relevant enough to be worth the audience's attention, and the most relevant one compatible with the communicator's abilities and preferences. This is the *communicative principle of relevance*. Mirative utterances will therefore have to be such that the audience can experience them as even more relevant than the communicative principle of relevance requires.

This account implies that mirative utterances function by inducing in the audience an actual experience of surprise along similar lines to the one that the communicator has experienced from the eventuality described in the utterance. Robyn Carston (personal communication) asks how this account would deal with communication situations where the audience simply fails to react to the communicated eventuality in the way the communicator did. Consider a variant of example (16) above: the child is positively impressed by the cuteness of the cat. Her parent accompanying her fails to share his daughter's fondness for cats; perhaps he even finds them rather unpleasant. The girl's exclamation *So cute!* in reference to the cat will never induce in her parent any similar impression. Yet surely the parent will understand that his daughter is uttering an exclamation. Does this not indicate that it is not enough to attribute the essence of exclamations to the communicator's providing direct evidence for her feeling? Doesn't this show that there must be representational content in the speaker's meaning that is characteristic of exclamations, and that allows the parent to comprehend his daughter's exclamation despite the fact that he fails to be impressed by the sight of the cat the way his daughter is?

Responding to this question, recall that the communication of surprise requires the communicator to produce an utterance that is claimed to be unusually relevant *in the mutual cognitive environment*. This presupposes that communicators generally manage to make correct assumptions about this mutual cognitive environment. But there are also numerous instances where communicators fail in this respect. This is the case in the example discussed; but there are many more types of miscommunic-

⁹This pragmatic explanation could be interpreted in a stronger or a weaker sense. The stronger sense amounts to the claim that because the presuppositional status of the utterance's propositional form can be explained on pragmatic grounds, this information is not semantically encoded. The weaker sense maintains that this pragmatic explanation sheds light on why at least some exclamative forms encode semantic restrictions on the presuppositional status of the proposition conveyed. While the stronger claim may be appealing from a theoretical point of view, it must be stressed that Zanuttini and Portner (2003) argue not only a semantic point about the content of exclamatives, but also a syntactic point about subtle effects on sentence structure attributable to the semantic operators they postulate. Therefore, the weaker interpretation of the pragmatic explanation for the presuppositional status of the propositional content of exclamatives should be preferred.

ation involving failed estimation of the mutual cognitive environment, including the mundane case of a speaker saying *John wrote an interesting paper* to her friend, mistakenly assuming that he knows the same person called John that she does. Every pragmatic theory recognises that competent communicators have the cognitive capacity to cope to a certain extent with such failed estimations of the mutual cognitive environment. Relevance theory does this by pointing out that communicators can follow comprehension procedures varying in metarepresentational complexity (Sperber, 1994). Other approaches refer to some version of Stalnaker's (2002) notion of accommodation. I conclude that the problem raised by Carston can be addressed along these lines as well.

5 The procedural indication of mirativity

Mirative utterances have two essential cognitive-pragmatic features: first, they are used to metarepresent the speaker's subjective experience of surprise. Second, they are more relevant than the audience would expect. It is conceivable that languages may develop shortcuts to indicate to the audience that they should follow particular paths in the inferential phase of comprehension (Blakemore, 1987; 2002). As Wilson (2011) puts it, there may be expressions that raise the activation level of certain heuristic sub-processes involved in comprehension. For example, some words (e.g. particles) may raise the activation level of procedures that look for relevant metarepresentation frames; others may raise cognitive effects searching processes to a significantly higher level. Indicators of the first type are metarepresentational use indicators. Such indicators are well-studied in the relevance theory literature. Indicators of the second type are less well studied but proposed by Blakemore (2002: 138-148) in her analysis of English *well*. My claim is that linguistic forms that are truly specialised for indicating miratives encode instances of both types of procedure triggers simultaneously. An example of this kind of mirative marker is the English exclamative sentence type. However, linguistic items that indicate only one of these factors involved in mirative interpretations separately— i.e. metarepresentational use, or relevance level indication, but not both simultaneously— can also be used to guide the audience towards a mirative interpretation. Examples of metarepresentational use indicators used to point out mirative meanings are indirect evidentials. Examples of relevance level indicators used to indicate mirativity may include the English particles *even*, *only*, *already* and *still*, which, according to Zeevat (2013), have mirativity as part of their meaning.

5.1 *Miratives and the procedural indication of metarepresentational use*

That exclamatives should be analysed as indicators of metarepresentational use was first argued by Sperber and Wilson (1995: 253-254). They argued that the striking parallels in form between interrogatives and exclamatives, observed in many languages, can find a natural explanation in this way. Interrogatives, on Sperber and Wilson's account, are instances of non-attributive metarepresentational use: someone who asks a question guarantees the relevance of a true completion of the logical form of the interrogative. That is, the interrogative metarepresents a relevant answer. For instance, the speaker of (22) indicates that (23) is relevant to someone (speaker or addressee, to be determined pragmatically) if the base level proposition is truly completed.

(22) How clever is Jane?

(23) Jane is clever to degree X

Someone who utters an exclamation is guaranteeing the truth of a relevant, or in other words noteworthy, completion of the logical form of the utterance. That is, the exclamation metarepresents a true proposition that is relevant enough to be remarked upon. According to the communicative principle of relevance, a proposition that is relevant enough to be remarked upon translates into a proposition that is unexpected. For instance, the speaker of (24) indicates that (25) is true of some (highly) relevant propositional enrichment of the logical form of the exclamation.

(24) How clever Jane is! (Sperber and Wilson, 1995: example 158, p. 253)

(25) Jane is clever to some relevant (i.e. noteworthy) degree x

If we additionally assume that exclamations encode another procedure trigger as well, one that raises the level of expected relevance (as outlined above), we may be in a better position to explain the intuition that the degree x variable will usually be set to a very high degree, not merely to some minor degree of noteworthiness in the situation.

The use of evidentials indicating an indirect information source (i.e., hearsay or inference) is widely known since the seminal studies by Aksu-Koç and Slobin (1986) and DeLancey (1997), see also the comprehensive survey in Aikhenvald (2004: 195-215). The insight that indirect evidentials are indicators of (various sub-types of) metarepresentational use is discussed in detail by Blass (1989; 1990) and Ifantidou (2001; 2005a;b; 2009), among others. Given that mirative utterances essentially involve metarepresentational utterance use, the widespread occurrence of indirect evidentials as mirativity markers finds a natural explanation.

5.2 Procedural indicators of relevance and miratives

I have argued above that in order to re-create in the audience an experience of surprise, the communicator must use an utterance that is considerably more relevant than the average ones the audience is attending to. Since by the communicative principle of relevance, ostensive stimuli raise a specific expectation of the level of relevance that the stimulus achieves, a mirative utterance must therefore be more relevant than the expectation raised on the basis of the communicative principle of relevance suggests.

It is conceivable that languages may develop procedural indicators affecting the level of expected relevance. Diane Blakemore argues that the English particle *well* may have this effect. According to her analysis, *well* signals that the utterance is more relevant in the accessible contexts than the audience may have anticipated (Blakemore, 2002: 140-141). For instance, when Jessica uses *well* in her utterance in (26), this particle causes Per to expect more cognitive effects to be gained from Jessica's answer than he would otherwise have expected, making it likely that he will understand Jessica as having intended to convey some set of (weak) implicatures such as the ones in (27), and more besides.

(26) *Per*: Wasn't that superb last night, how Andrew played the violin?

Jessica: Well, he didn't win the young talent's prize for nothing.

(27) a. Per didn't only play superbly last night, he is a superb player.

b. One can be proud of Per.

c. Per played so superbly that it confirms the prize was well deserved.

d. ...

Zeevat (2013) argues that particles such as English *even*, *only*, *already* and *still* carry mirative meanings, although these may be suspended under special conditions. His reason for claiming this is that the difference between (28b) and (28c) cannot be explained on the assumption that *only* means nothing more than “exclusively NP”, because (28b) and (28c) would then be synonymous which intuitively they are not.

- (28) a. Sarah: Who came to the party?
b. Mike: JOHN came to the party.
c. Mike: Only JOHN came to the party.

Only must convey something else in addition, and intuitively this is something to the effect that *Contrary to expectations, exclusively John came to the party*.

I suggest that the difference between (28b) and (28c) can be explained in procedural terms. Assume that *only* linguistically triggers two procedures:

- (29) a. Interpret the extension of the phrase it applies to as an exclusive entity.
b. The utterance is more relevant than expected.

The difference between (28b) and (28c) can then be explained in the following way: (28b) emphasises the idea that John, in contrast to other persons, came to the party. Effectively, this communicates the explicature *John and no one else came to the party*. (28c), on the other hand, emphasises the same idea, but additionally guarantees that this idea is very highly relevant, i.e. more cognitive effects than anticipated could be gained from it. This means, in effect, that it was unexpected that no one else than John came to the party. This unexpectedness may, of course, trigger a subjective experience of surprise. One advantage of this analysis is that it removes the necessity to specify under which conditions the mirative meaning of *only* may be suspended.

Recall Lau & Rooryck’s (2017) claim that the core meaning of mirative markers is to indicate that the speaker experienced a punctual transition in epistemic states from not knowing a certain state of affairs to being aware of it. In cognitive pragmatic terms this means that the state of affairs in question has become manifest to the speaker in an instant. Moreover, the state of affairs in question has become manifest to the speaker to a sufficiently high degree that she not only mentally represents this phenomenon, but also becomes aware of the fact that she does so. There is a close connection between manifestness and relevance: inputs that pass a certain threshold of relevance are necessarily manifest to the individual to the degree that the individual both represents this input and finds it worthwhile to process it. It follows that linguistic markers that guarantee that a certain mental representation has a level of relevance higher than expected will also raise the manifestness of this representation in an instant. In short, such markers could be used to indicate that the speaker experienced a punctual transition from the state of not knowing something to being aware of it. In this way my account can shed interesting light on Lau and Rooryck’s take on miratives. However, my account does not reduce mirativity to one core meaning; rather, there are two components to mirative interpretations, and languages may use a variety of combinations of procedure triggers to linguistically indicate these interpretations.¹⁰

¹⁰Notice also that lexical items may encode both conceptual information and procedural meaning simultaneously (see e.g. Wilson, 2011; 2016 for discussion). This allows for the possibility that certain mirative morphemes may encode

Procedural indicators of mirativity need not be restricted to lexical items or morphemes. There is considerable evidence that prosodic features such as intonation and emphasis may carry procedural meaning (Vandepitte, 1989; House, 2006; Wilson and Wharton, 2006). It seems that the English sentence exclamation intonation pattern mentioned above may be analysed as triggering the procedure to interpret the utterance as more relevant than expected. House (2006: 1554) suggests the following procedural semantics for the high boundary tone, which is one crucial component of the high rising tone pattern at the basis of the exclamation intonation pattern: ‘A procedural hypothesis concerning the high boundary tone (H%) itself is that it encodes an instruction to interpret the preceding phrase as part of a larger piece of structure, thereby giving it an open-ended status, and indicating a wider context.’ If we assume that instead of instructing the audience to ‘interpret the preceding phrase as part of a larger structure’ the high boundary tone instructs the audience to interpret it as being more relevant than expected, i.e. yielding richer cognitive effects than the audience would consider taking the utterance at face value, then we can understand the structure indication role of this tone as being a consequence of its relevance indication function: in order to get more cognitive effects, the audience will have to increase both context and structure to increase the manifestness of a large array of conceptual representations. In other words, this hypothesis sheds light on House’s analysis. However, House (2006: 1555-1556) continues her paper by showing that analysing the high rising tone pattern and its function needs to look at more components besides the role of the high boundary tone, and is further complicated by the fact that this pattern likely has other functions besides indicating surprise alone. A full investigation of these matters is beyond the scope of this paper.

6 Conclusion

Mirative utterances characteristically combine two pragmatic properties: first, they are instances of the metarepresentative use of utterances. Second, they raise the level of expected relevance to a level higher than the one set by the communicative principle of relevance alone. But most importantly, mirative utterances communicate by displaying to the audience direct evidence of the subjective experience of surprise encountered by the communicator when confronted with the respective cognitive input (i.e. a situation or event). This means that mirative utterances fall on the *showing* end of the *showing-meaning_{NN}* continuum (Wharton, 2009; Sperber and Wilson, 1995). In consequence, the essence of mirative utterances is not expressible in terms of formal logical properties of utterances, as such properties are only applicable to elements of speaker’s meaning in the Gricean sense of *Meaning_{NN}* (Sperber and Wilson, 2015). Still, the fact that there are linguistic forms specialised for expressing mirative utterances (such as exclamation in English, and arguably mirative particles such as *only*, *still*, *even* in English) shows that mirativity can be semantically encoded. Semantically encoding mirativity can be achieved by combining two procedure triggers in the sense of Blakemore (2002): a procedure requiring a metarepresentational use interpretation, and a procedure raising the relevance expectation of the communicative input to very high levels.

semantic operators such as the ones discussed by Zanuttini and Portner (2003) in addition to one or both of the types of procedural indicators discussed here.

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