

# Exclamatives as emotive assertions of intensity

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## Abstract

In this paper, we argue for an analysis of exclamative sentences as assertions equivalent to declarative sentences with emotive verbs. We offer a wide range of arguments for why exclamatives are assertive, including the facts that they can be directly negated, and that they can be used as responses to information-seeking questions. Like emotive verbs, exclamatives convey a presupposition *not* of factivity but of subjective veridicality: i.e., they rely on the speaker's belief that the propositional content is true and do not require that it is actually true. Exclamations, in other words, presuppose belief of truth about *p* (veridicality) by the speaker, and assert the emotion of surprise or unexpectedness about the degree expressed in *p*. This produces *intensity*. Our analysis extends to many mirative phenomena, and implies that there is no need to posit a special speech act for exclamatives or to suppose that exclamatives are a distinct clause type.

**Keywords.** assertion; emotive predicate; exclamative; German; Greek

## 1. Introduction

There is a long-standing tradition in linguistic theory that postulates that a speech act (Searle 1969) is created by prefixing a proposition with an illocutionary force operator. In more recent work at the syntax-semantics interface, the classic performative hypothesis (Ross 1970; Lewis 1970) has been revived by works that propose several speech act operators in the syntactic representation of a sentence (e.g., Haegeman 2014; Krifka 2015; Speas & Tenny 2003; Wiltschko & Heim 2016; and many others).

Certainly, when we think, for example, of the contrast between assertions versus questions, we acknowledge that the two differ in in 'illocutionary force', as well as syntactic structure and therefore *clause* type. Most formal analyses assume a logical language that reflects these differences, and a designated speech act operator such as 'ASSERT' and '?' (Krifka 2015) serves to reflect the distinct illocutionary forces. When we put exclamations into this discussion, the issues become: Are exclamatives distinct in semantic and syntactic type from assertions? Do exclamatives have distinct illocutionary force from assertions, like questions are argued to have? If so, what is the illocutionary force of the exclamative?

Our paper takes a fresh look at these questions. Prominent theories about exclamatives indeed posit an illocutionary force operator: Rett's (2011) 'E-FORCE' and Grosz's (2012) EX operators instantiate it. Yet, unlike with questions—where, as we just said, the speech act operator returns a different semantic type (a question)—the alleged E-FORCE and EX return the original proposition ('the at-issue content') and a 'not-at-issue' proposition (in this case: surprise/amazement about *p*). These operators, therefore, should be compatible with an assertive analysis of the exclamative, and one wonders what exactly is achieved by postulating a distinct speech act operator. It is plausible to hypothesize a simpler analysis without a speech act operator, one that could derive the properties of exclamatives by the ingredients of their assertion. This will be the driving premise of our analysis.

Surprisingly, a crucial component of the theories positing an exclamative operator is that they claim that *wh*-exclamatives lack assertive content. The only descriptive content allowed is a factivity presupposition (relying on earlier discussions in Grimshaw 1979; Zanuttini & Portner 2003; Abels 2010); and there is expressive content, which is also assumed to not be asserted. Consider the following *wh*-exclamative and its contents at the descriptive and expressive level:

(1) How fast Eliud Kipchoge was!

descriptive content/presupposition: ‘It is a fact that Eliud Kipchoge was very fast.’

expressive content/not-at-issue: ‘Speaker is amazed/surprised about Eliud Kipchoge being so fast.’

In this paper, we challenge the position that exclamatives lack assertive content. We will claim that the intended expressive content above is what the *wh*-exclamatives actually *assert*. We will argue, based on data from Greek and German, that exclamatives are emotive assertions akin to assertions of sentences containing emotive predicates such as *be amazed*, *be surprised* (2), and have very similar truth conditions and presuppositions:

(2) I am amazed at how fast Eliud Kipchoge was!

Our claim is that (1) and (2) are identical in terms of what they assert and what they presuppose, and we will group them together under the label ‘emotive assertions’. They both assert that the speaker has the emotion of amazement towards the believed proposition that ‘Eliud Kipchoge was extremely fast’, and presuppose that the speaker has that belief. Our analysis will rely on new data from Greek and German showing that acknowledging the assertive content of exclamatives and the different nature of their presupposition is long overdue.

Our paper is structured as follows. In Section 2, we address two central data points that have traditionally played a significant role in the discussion of whether exclamatives feature assertive content. These data points concern two questions: (i) Can the descriptive content of exclamatives be denied? and (ii) Can exclamatives be used as responses to information-seeking questions? Our answer to both questions will be ‘yes’, in contrast to previous claims. Section 3 then turns to the syntax-semantics interface in more detail and discusses Greek data illustrating a similarity between exclamatives and complements of emotive predicates in that both appear with the Greek complementizer *pu*. After illustrating the relevant distributions, we will argue for an analysis that spells out our claim that exclamative sentences are equivalents to declarative assertions containing an emotive verb and its complement with an extreme degree. In Section 4, we will focus on data from German that further support such an approach. In particular, we will demonstrate that the only version where German uses a complementizer in exclamatives is the case of *that*-exclamatives, *that* being the typical Germanic complementizer in assertive contexts. Crucially, the assertive character of these exclamatives is not only signaled by its choice of the complementizer *dass* (‘that’), but also by the distribution of exclamative discourse particles, which suggests that exclamatives share mood features with assertive declarative clauses. Section 5 summarizes and concludes the paper.

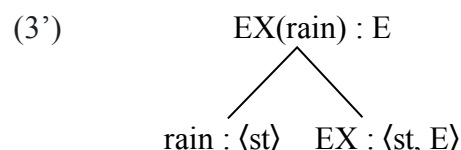
## 2. Exclamatives feature assertive content

Exclamatives are generally considered semantic objects that are associated with a dedicated illocutionary operator. Prominent examples are Rett's (2011) 'E-FORCE' and Grosz's (2012) EX operators. Let us first illustrate this general idea in the next section by sketching very briefly the approach by Grosz (2012); see also Gutiérrez-Rexach (1996, 2001) and Postma (1996) for seminal proposals of an intensional operator EXC(LAMATIVE) over propositions. We will then address two central data points that are often cited in favor of such exclamative-force approaches, which distinguish between declarative exclamations on the one hand and exclamatives on the other hand (Section 2.2 and Section 2.3).

### 2.1 The exclamative operator and expressive content

In the context of optative and exclamative constructions, Grosz proposes an operator EX that combines with a truth-conditional expression of type  $\langle s,t \rangle$  (i.e., with a proposition) and maps this proposition onto felicity conditions that capture the speaker's attitude towards the proposition. Crucially, the resulting denotation is not truth-conditional, but, according to Grosz, 'felicity-conditional'. In particular, he claims that application of EX to a proposition yields a one-dimensional meaning of type  $E$  (defined as the type of expressive meaning). Consider the following example and the representation in (3'); see Grosz (2012: 118):

(3) Boy, is it raining!



Grosz proposes that EX removes its propositional complement from the level of descriptive at-issue meaning, and shifts it to the level of expressive meaning. By contrast, Grosz continues, if one utters a declarative exclamation like (4), one still expresses a truth-functional statement (i.e., that it was snowing in Barcelona):

(4) It is raining in Barcelona! (Can you believe it?)

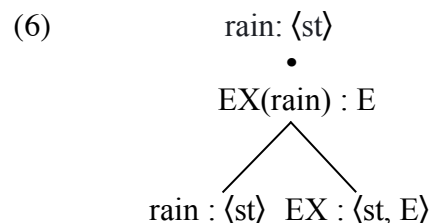
It is not clear empirically what distinguishes (3) from (4). (4) sounds every bit as 'expressive' as (3); the only difference seems to be that the expressivity in one case seems to be about the degree of rain (in [3]) whereas in (4) the expressivity seems to be about the fact that it is raining. Other than that, both seem to be expressing an amazement stance. But in the approach to exclamatives sketched in (3) above, declarative exclamations are assigned a multidimensional meaning (with an expressive and a descriptive, truth-functional) component, whereas exclamatives like in (3) lack assertive meaning.

Following Potts (2005, 2007), we could say that the descriptive part  $\langle st \rangle$  combines with the expressive part  $\langle st, E \rangle$  by means of the composition operator ' $\bullet$ ', which combines both meanings, passes the descriptive content up, and interprets it relative to the context modified by EX (see

also Gutzmann 2015 on several applications of such a ‘multidimensional’ semantics). Formally, the composition operator ‘•’ yields the following result (Potts 2007: 187):

$$(5) \llbracket \text{EX} \rrbracket^C \bullet \llbracket \text{rain} \rrbracket^C = \llbracket \text{rain} \rrbracket^{\llbracket \text{EX} \rrbracket (\llbracket \text{rain} \rrbracket)^C}$$

According to this multidimensional analysis, the operator EX passes the descriptive content of  $\llbracket \text{rain} \rrbracket$  unchanged—that is, it is at-issue and it can be asserted or questioned. However, its context of interpretation is altered by the content of the operator. So, in contrast to the proposal by Grosz (2012) illustrated in (3), the result is the following two-dimensional semantic object:



But is there really empirical evidence that exclamatives, on the one hand, and declarative exclamations on the other hand differ in this respect? In the literature, we find two central data points that are cited in favor of distinguishing between the two: (i) the descriptive content of exclamatives cannot be denied, unlike the descriptive content of declarative exclamations which can be; and (ii) exclamatives, in contrast to declarative exclamations, cannot be used as responses to information-seeking questions. We will turn to both data points in turn.

## 2.2 The descriptive content of all exclamatives can be denied

Declarative exclamations and *wh*-exclamatives are both exclamations. Yet a standard assumption in the literature that assumes a difference between the two is that the former counts as an assertion and can thus be denied, whereas the *wh*-exclamative does not make a contribution to the discourse that could be denied (or affirmed) directly. The intended difference is reflected below (examples and judgments by Rett 2008, 2011):

(7) A: (Wow,) John bakes delicious desserts!  
 B: No (he doesn't), these are store-bought. John's actually a terrible cook.

(8) A: (My,) What delicious desserts John bakes!  
 B: ? No (he doesn't), these are store-bought. John's actually a terrible cook.  
 B': Not really; these are store-bought. John's actually a terrible cook.

Exclamatives can nevertheless be ‘weakly denied’ by phrases like *not really* etc. ([8B’]; see Rett 2008), and overall the reported difference in judgment regarding direct negation (of the descriptive content, as is clear from the continuations above) needs to be updated. For one thing, as marked in (8B), the ill-formedness of *No* reported by Rett is rather weak. Other speakers we consulted find no trouble responding *No* to this sentence. In Greek, for instance, both types of sentences can be routinely negated:

- (9) A: Po po, o Janis ftiaxni nostima glyka!  
 wow the John makes delicious sweets  
 ‘Wow, John bakes delicious desserts!’  
 B: Oxi/Ba/A, ba! Ta agorase apo to zaxaroplasteio.  
 ‘No! These are store-bought.’  
 B’: Oxi/Ba/A ba. Dhen mou aresoun.  
 ‘No! I don’t like them.’
- (10) A: Ti nostima glyka pu ftiaxni o Janis!  
 what delicious sweets that bakes the John  
 ‘What delicious desserts John bakes!’  
 B: Oxi/Ba/ A, ba! Ta agorase apo to zaxaroplasteio.  
 ‘No! these are store-bought.’  
 B’: Oxi/Ba/A ba. Dhen mou aresoun.  
 ‘No! I don’t like them.’

We will discuss the form of Greek *wh*-exclamatives in more detail below. At this initial stage suffice it to note that (i) the Greek *wh*-exclamative appears as a *what*-exclamative and not *how*-exclamative, as is the case in English, (ii) the *what*-exclamative contains the complementizer *pu*, suggesting some sort of embedding (which we come back to), (iii) both types can be negated, and (iv) with a number of negators that include the particle *oxi* ‘no’ but also other particles such as *ba*, and *a ba*. These are more informal rejection markers, and can also be used to reject regular assertions:

- (11) A: O Janis ftiaxni nostima glyka.  
 the John makes delicious sweets  
 ‘John bakes delicious desserts!’  
 B: Oxi/Ba/ A, ba! Ta agorazi.  
 ‘No! He buys them.’  
 B’: Oxi/Ba/A ba. Dhen mou aresoun.  
 ‘No! I don’t like them.’

The rejection expressed by negating the previous assertion is indistinguishable from the rejection of an exclamation. Hence, when we look at Greek, the idea that exclamatives cannot be negated or rejected is simply a non-starter. Given the Greek data and the more generous judgments of English that we received, the idea that *wh*-exclamatives cannot be rejected needs to be revised. Note that Castroviejo Miró (2008) has already made a similar point. Consider her examples (27):

- (27) a. A: How tall Bill is!  
 b. B1: # That’s not true, you are not emotional.  
 c. B2: Come on, he’s not that tall.

Interestingly, Castroviejo Miró claims “(27b) is impossible, because the speaker’s emotional state cannot be denied, but a sentence like (27c) is acceptable and felicitous in this dialog, because what is being denied is not the speaker’s attitude, but rather the sentence that one can infer when interpreting a *wh*-exclamative, i.e., that Bill is very tall. We cannot reply by denying

that the speaker believes it, but we can deny the believed content.” These are observations that we share and return to. It is also important to note that *come on* is being used as a rejection here, on a par with weak-denial strategies like *not really* and Greek *ba* illustrated earlier.

Importantly, recent experimental work also challenges the presumed judgment difference between declarative exclamations and *wh*-exclamatives in German, and the ensuing hypothesis that the descriptive content of exclamatives cannot be negated. In particular, a large-scale acceptability study (n=112) by Trotzke (in press) demonstrates that there is no difference between *wh*-exclamatives and other forms of exclamation like declarative exclamations when testing the felicity of different denial strategies like the ones introduced above.

More specifically, participants in this study had to rate the acceptability of Speaker B’s denials on a scale ranging from 1 (= very bad) to 6 (= very good). Crucially, all judgments of exclamation items were at ceiling (ranging from 5.2 to 5.7) and thus in accordance with filler items presenting perfect mini-dialogues (e.g., *wh*-question + corresponding declarative answer); see Trotzke (in press) for items and detailed statistics. Table 1 summarizes some of the results relevant in our context:

<i>Exclamation type</i>	<i>strong denial (e.g., No!...)</i>	<i>weak denial (e.g., Not really,...)</i>
declarative	5,55	5,70
<i>wh</i> -exclamative	5,28	5,46

Table 1. Summary of some ratings from Trotzke (in press).

As Table 1 makes clear, both utterance forms prefer the weak-denial strategy (e.g., *not really* etc.), indicating that the descriptive content is indeed in a way backgrounded in exclamatives like (8), but that this backgrounding is the same in declarative exclamations (7).

Since no one to date has proposed that we need factivity presuppositions to account for the descriptive contribution of declaratives like (7), such an approach would also be on the wrong track when dealing with the descriptive content of exclamatives. Given this recent experimental evidence and the routine negations in Greek illustrated above, let us now strengthen the empirical claim that exclamatives do not differ much from declarative exclamations by looking at how both can be used as responses to information-seeking questions.

### 2.3 Exclamatives can be used as responses to information-seeking questions

Grimshaw (1979: 321) argued that exclamatives are always infelicitous as responses to questions. Here is her prominent example:

- (12) A: How tall is John?  
 B: # How tall John is!  
 B’: John is very tall.

The *wh*-exclamative presumably conveys the same descriptive content as the declarative assertion in (12B’)—though it would be more accurate to say that it is equivalent to *John is extremely tall*, an end-of-scale degree. Yet, the argument goes, declaratives are felicitous answers, and the utterance form speakers typically use to answer questions. The exclamative cannot be used as a response to the question in (12), hence the exclamative cannot be an assertion, the

argument concludes. Zanuttini & Portner (2003) and many others have further claimed that the descriptive content of exclamation is a factivity presupposition and that this is the reason why their content cannot serve as a response providing new information.

Let us challenge this argument by considering first that the ability or not to answer a question is not necessarily evidence for assertive force or lack thereof. Many questions, for example, can be answered with other questions—often rhetorical—or imperatives:

- (13) A: Who came to the party?  
 B: Who didn't? (Intended to convey: Everyone did).  
 B': Ask Mary. (Intended: She will tell you).

It is clear that being an answer and being an assertion are not the same thing, and Grimshaw's initial argument needs to be seen in this light. One could argue, of course, as Sadock (1971) and Giannakidou & Mari (to appear) do, that rhetorical questions like (13B) are equivalent to assertions semantically, in which case the clause type (question) does not determine the semantic value or discourse function. And if that is the case, then the distinct clause type of exclamation does not necessitate a distinct semantic or pragmatic type either.

Second, while the previous literature has mainly focused on the type of responses, we would like to explore the type of questions instead. When we do that, we find that exclamation can indeed be used as responses to information-seeking questions (pace Grimshaw 1979 and others), as long as they do not yield a mismatch at the level of information structure. Look at the following patterns:

- (14) A: How fast was Eliud Kipchoge?  
 B: (My God!) Eliud Kipchoge was [very]<sub>F</sub> fast.  
 B': # [How fast Eliud Kipchoge was!]<sub>F</sub>  
 B'':# [Eliud Kipchoge war<sup>'was'</sup> aber<sub>PART</sub> auch<sub>PART</sub> schnell<sup>'fast'</sup>!]<sub>F</sub>

(14B) is a perfect answer to a narrow-focus question (14A), and it can be prefixed with an exclamation introduction like *My God*. (14B') is odd as already pointed out in the literature. Crucially, (14B'')—a German declarative featuring the exclamation particles *aber auch*—is as bad as (14B'), although the syntax is clearly 'assertive' (more on these particles in Section 4). Hence, the infelicity of (14B') does not, again, prove non-assertiveness. Instead, it might be due to the nature of the question. (14A) asks directly what the degree of fastness was. But if, as we are suggesting, the speaker's belief of the extreme degree of fastness is presupposed (see Section 3), then offering a *wh*-exclamation to this type of question is infelicitous.

Contrast the above with the following examples, where the question is not directly about the degree of fastness:

- (15) A: Tell me, how did Eliud Kipchoge do in the race?  
 B: My god! [How fast he was!]<sub>F</sub>  
 B': My god! [He was very fast!]<sub>F</sub>  
 B'': My god! [Der<sup>'this-one'</sup> war<sup>'was'</sup> aber<sub>PART</sub> auch<sub>PART</sub> schnell<sup>'fast'</sup>!]<sub>F</sub>

When the information-structural context is changed, using the three utterance forms as responses to a broad-focus question, we see a clear improvement of both the exclamation (15B') and the

declarative exclamation (15B’). We claim that (15B) is also fine in such a context because it no longer expresses narrow focus as in (15B), but instead (due to different intonation) it can also be interpreted as an all-focus declarative.

These patterns suggest that the second data point in the literature, intended to support an approach distinguishing between exclamatives and declarative exclamations can be dismissed as well: exclamatives, just like declarative exclamations, can be used as responses to information-seeking questions. Let us now proceed to the gist of our proposal, which is that exclamations, as a class (*wh*- and declarative ones), are emotive assertions of intensity.

### 3. Greek exclamatives and emotive *pu*

In this section, we present new data from Greek exclamatives suggesting an affinity of exclamatives to emotive assertions such as *I am amazed/surprised that Bill bakes delicious desserts, I am amazed at how delicious desserts Bill bakes*. Based on the empirical parallels, we extend the category of emotive assertion to include exclamatives, and propose a syntax that captures that. The big picture idea here is that *wh*-exclamatives and corresponding declarative exclamations form a natural class: emotive assertions of intensity.

#### 3.1 Greek *what*-exclamatives: Distribution of *pu*

There is not much discussion of exclamatives in the Greek literature, and our goal in this paper is to document the core patterns. Recall our earlier presentation of the Greek data. We noted that (i) in Greek *wh*-exclamatives appear with *what* and not as a *how*-exclamative (like English), and (ii) the *what*-exclamative contains the complementizer *pu*, suggesting some sort of embedding:

(16) Ti nostima glyka pu ftiaxni o Janis!  
 what delicious sweets that bakes the John  
 ‘What delicious desserts John bakes!’

(17) Ti grigora pu/\*oti/\*na etrekse o Kipchoge!  
 what fast that.pu run.3SG the Kipchoge  
 ‘How fast Kipchoge run!’

In employing the complementizer *pu*, Greek exclamatives look like complements of emotive verbs, which famously in the Greek literature select this complementizer. In order to appreciate the significance of this fact, consider that Greek has four complementizers: *oti/pos* (indicative), *na* (subjunctive), and *pu* which is *emotive indicative* (see Giannakidou 2016 and references therein). Of these, only *pu* appears after verbs of emotion:

(18) I Ariadne thavmase pu/\*oti/\*na o Kipchoge etrekse toso grigora!  
 the Ariadne was.amazed that.pu the Kipchoge run.3SG so fast  
 ‘Ariadne was amazed that Kipchoge run that fast.’



- (19) O Nicholas kseri/nomizi                    **oti/\*pu** efije i Ariadne.  
 the Nicholas knows3SG /thinks.3SG that.IND left.3SG the Ariadne  
 ‘Nicholas knows/thinks that Ariadne left.’
- (20) Thelo    **na/\*pu** kerdisi o Janis.  
 want.1SG SUBJ win.3SG the John  
 ‘I want for John to win.’

The problem of mood choice is not of importance here (see Giannakidou 2016 and Giannakidou & Mari to appear for extensive discussion). The key piece is the use of *pu* in the exclamative. Also important is the use of *what* instead of English *how*. *What* plus ADJ is not an otherwise attested combination in Greek, and is certainly not the way to form a degree question. As we can see below, the degree question requires, like in English, the *how wh*-phrase:

- (21) Poso/\*Ti grigora etrekse o Kipchoge?  
 how/what fast run.3SG the Kipchoge  
 ‘How fast did Kipchoge run?’
- (22) Poso/\*Ti psilos ine o Andreas?  
 how/what tall is the Andreas  
 ‘How tall is Andreas?’

Greek *wh*-exclamatives are thus clearly distinguished from interrogative structures. In further support of this, consider that degree questions are incompatible with *pu*:

- (23) \*Poso psilos **pu** ine o Andreas?  
 how tall pu is the Andreas  
 ‘How tall is Andreas?’

For completeness, we should mention that the degree *wh*-word can be used in an exclamative, but the structure is more marked, and some speakers have difficulty with it:

- (24) ?Poso psilos (pu) ine o Andreas! (marked exclamative)  
 how tall pu is the Andreas  
 ‘How tall Andreas is!’

*Pu* is optional in this case. However, as already mentioned, it must be noted that this is a marked way to form an exclamative, the default being the *what/pu*-exclamative.<sup>1</sup> What is central in our context is that the use of *pu* makes Greek exclamatives look like embedded sentences, i.e., on a par with complements of emotive verbs. Let us consider now the properties of these.

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<sup>1</sup> Greek is well known to allow polymorphy in grammar, from person marking to comparatives and imperatives, hence the use of multiple strategies is not a surprise. As we say in the text, however, the two strategies in the exclamative are not in free variation. The *what/pu* exclamative is the standard way, the degree strategy being considerably marked.

### 3.2 Emotive verbs: Subjective veridicality presupposition and emotive assertion

Contrary to what is often claimed in the literature, emotive verbs do not have a factivity presupposition. Huddleston & Pullum (2002), Egré (2008), Giannakidou (2016), and Giannakidou & Mari (to appear) point out a number of examples illustrating this point:

- (25) Falsely believing that he had inflicted a fatal wound, Oedipus regretted killing the stranger on the road to Thebes.

Huddleston & Pullum claim that in this sentence *it is not entailed* that Oedipus inflicted a fatal wound. Here is another example:

- (26) John wrongly believes that Mary got married, and he regrets that she is no longer unmarried. (Egré 2008: 30).

Giannakidou (2016) summarizes that “one can have an emotive attitude towards something that one *believes* to be a fact, but may not *actually* be a fact. One may *believe* that something happened (a *believed* fact) and then feel happy or sad about it. Hence, emotive verbs need not be veridical in the objective sense (as *know* is) but subjectively, since emotive verbs still rely on the emotive subject’s full commitment to *p*.”

Giannakidou continues that some emotive verbs have a contrary presupposition (see also Baker 1970 who proposed it for all emotives):

- (27) Negative (Contrary) presupposition of emotive factives (Giannakidou 2016)  
[[*i* is surprised that *p*]] is defined if only if: *i* believed that  $\neg p$ , at a time  $t' < t_u$  (where  $t_u$  is the utterance time).

This is the reason why the sentence below is odd:

- (28) Ariadne is surprised that Nicholas participated in the marathon, #and she always thought that he would do it.

In other words, emotive predicates such as *be surprised*, *be amazed* are defined based on the individual anchor *i*'s prior beliefs, and carry a negativity expectation.<sup>2</sup> I am amazed at something and I am surprised by something only if I expected something not to be the case. When the complement concerns a degree, this negativity is responsible for producing intensity:

- (29) Ariadne is surprised at how tall Nicholas is, #and she always thought that he is extremely tall.

In (29), the use of *surprise* and *how tall* drives the intensity of the statement because the extreme degree is contrary to expectation. Interestingly, *how tall* gets interpreted as *extremely tall* in this

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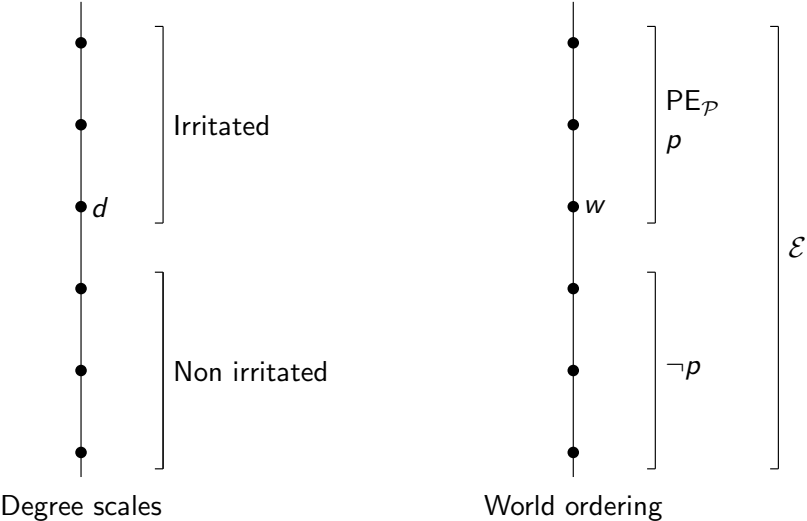
<sup>2</sup> Giannakidou & Mari (to appear) also mention that negativity does not characterize *all* emotive verbs (*pace* Baker). For instance, *John is happy that his wife is pregnant—and he always thought that this is possible!* is totally fine. Our point here is that exclamation marks are on a par with complements of *contrary* emotives such as *be surprised*, because we want to capture the unexpectedness of the degree (see discussion in the next section).

context, despite the fact that it lacks an apparent degree modifier—a point to which we return. In any case, it is the combination of *be surprised*, and generally the unexpectedness of the emotive predicate with the extreme degree that produces an intensity of emotion otherwise not attested with emotives as a class: *John is amazed that Mary is here* is emotive but not intense.

We will lay out now the latest version of the theory of Giannakidou & Mari (to appear) (GM) for emotive verbs that we will adopt. All emotive predicates (like *glad*, *sad*, *happy*, *surprised*, etc.), according to GM, express emotions. Emotions are attitudes (or, psychological states) towards believed facts or potential facts (as is the case with *fear*). Emotive attitudes are gradable: one can be *very sad*, *a little bit sad*, *terribly sad*—or, on the other hand, *not sad at all*, or *only a little bit sad*. It is therefore no accident that emotional attitudes often employ adjectives that are gradable and scalar. The gradable nature of emotion, GM argue, is responsible for their nonveridical assertion in the following way.

GM propose a mapping from degrees of emotions to worlds, which we illustrate with their example, *irritated*. The scalar predicate establishes a threshold  $d$ , above which one is irritated and below which one is not. The mapping partitions the modal base into worlds above the threshold in which  $i$  has the emotion and those in which she does not. This partition is driven by the threshold  $d$ . Note (see Figure in [30]) that in the worlds in which  $i$  has the sentiment,  $p$  is true. In other worlds,  $W$  is a set of worlds ordered by the emotion (sentiment)  $S$ . The set of worlds is partitioned into two equivalence classes of worlds. One is the set of worlds in which the attitude holder has the emotion and  $p$  is true. The other one is the set of worlds in which the attitude holder does not have the emotion and  $p$  is false.

(30)



This partitioning allows us to define *Positive-Extent-worlds* (PE) for  $p$ :

$$(30') \text{ PE}_{\mathcal{P}} = \{w' \in \mathcal{E}_{\mathcal{P}} : w' \text{ where the propositions in } \mathcal{P} \text{ are true}\}$$

In other worlds,  $W$  is a set of worlds ordered by  $S$ . The set of worlds is partitioned into two equivalence classes of worlds. One is the set of worlds in which the attitude holder has the emotion and  $p$  is true. The other one is the set of worlds in which the attitude holder does not

have the emotion and  $p$  is false. Here, the set  $\mathcal{P}$  is the singleton set  $\{p\}$ . So  $PE_{\mathcal{P}}$  contains all the worlds in which  $p$  is true. In  $PE_{\mathcal{P}}$   $i$  has sentiment  $S$ . But not all worlds in  $\mathcal{E}$  are PE worlds for  $p$ ;  $\mathcal{E}$  only partially supports  $p$ .  $PE_{\mathcal{P}}$  is a subset of  $\mathcal{E}$  (the emotive space). The complement of  $PE_{\mathcal{P}}$  contains  $\neg p$  worlds. The semantics proposed here may remind the reader of the *Best* ordering used for modals (Portner 2009); it is indeed a similar ordering function, only for GM, the ordering source merely contains  $p$ .

If exclamatives are parallel to emotives, they are also not factive, and they carry a similar presupposition and assertion. The presupposition is subjective veridicality, i.e., that  $i$  believes  $p$  to be true, and the assertion is the emotive stance:

- (31) *Semantics of emotives* (Giannakidou & Mari to appear):
- (i)  $\llbracket i \text{ V-emotive } p \rrbracket^{w, \text{Dox}(i), E}$  is defined iff
    - a.  $\text{Dox}(i)$  contains only  $p$  worlds (subjective veridicality)
    - b.  $E$  is nonveridical and contains  $p$  and  $\neg p$  worlds (emotive nonveridicality).
    - c. If defined:  $\forall w' \in PE_E p(w')$  (assertion of emotion)

If we adopt this parallelism between emotive predicates and exclamatives, we have to posit a higher emotive  $V$  in the exclamative structure (which additionally has a contrary presupposition). Let us now see how this can be done at the syntax-semantics interface.

### 3.3 The syntax and semantics of exclamatives

We will argue, based on the above analysis, that exclamatives, such as (32), are emotive assertions akin to assertions containing the predicates *be amazed*, *be surprised* overtly in (33):

(32) How fast Eliud Kipchoge was!

(33) I am amazed at how fast Eliud Kipchoge was!

We claim that these sentences are identical in terms of what they assert and what they presuppose, and we will therefore group them together under the label ‘emotive assertions’. They both assert that the speaker has the emotion of amazement towards the believed proposition that ‘Eliud Kipchoge was extremely fast’, and presuppose that the speaker has this very belief. The first step of spelling out our idea is to posit that the exclamative is the complement of an emotive null predicate (36); this approach particularly suggests itself in the Greek cases because of the distribution of the complementizer *pu* (see Section 3.1 above), Greek exclamatives (34) already look identical to complements of emotive verbs (35):

- (34) **Ti grigora** pu etrekse o Kipchoge!  
 what fast that.pu run.3SG the Kipchoge  
 ‘How fast Kipchoge run!’

(35) Meno ekpliktos pu o Kipchoge etrekse **toso grigora**.  
 stay surprised that.pu the Kipchoge run.3SG so fast  
 ‘I am surprised that Kipchoge run that fast.’

(36) NULL-V-emotive [C [IP [VP ]]]

For the Greek case, we claim that the null predicate (just like the overt emotive predicate) is akin to *be surprised/be amazed* and carries a morphosyntactic feature [+expressive], and that it selects a complementizer (*pu*) that agrees with this feature:

(37) [... [NULL-V-emotive<sub>[+expressive]</sub> [CP *ti grigora*] pu<sub>[+expressive]</sub> [IP etrekse o Kipchoge]]]



Some more empirical justification for the postulation of such a feature comes from Giannakidou & Yoon (2011). The motivating data were expressive metalinguistic comparatives such as *I’d rather die than marry him!*, which are also exclamations. In Korean and Greek, these involve special complementizers, *nuni, para*—though English simply has *than*. In Giannakidou & Yoon (2011) it is claimed that this can be captured by expressive indices, and in the context of our data above we can now say that the class of  $V_{emotive}$  contains expressive indices (Potts 2007):

(38) *Emotive verbs* contain expressive indices  
 An emotive verb contains an expressive index  $\langle a \mathbf{I} q \rangle$ , where  $a$  is the individual anchor,  $q$  the proposition it embeds; and  $\mathbf{I}$  ranges between  $[-1, 1]$ .

The expressive index is a contribution of  $V_{emotive}$  at the not-at-issue level. These indices can have a morphosyntactic realization, and may actually trigger agreement. It is not uncommon for expressives to do that; for example, Potts & Kawahara (2004) claim this for honorific agreement, and Giannakidou & Yoon for metalinguistic negation. We argue here that the relation between  $V_{emotive}$  and *pu* is expressive agreement; the emotive verb carries a morphosyntactic feature [+expressive], and selects a C that agrees with this feature. Expressiveness, therefore, is not a property of illocutionary operators like the exclamative operators that have been proposed by Rett (2011), Grosz (2012), and others (recall Section 2.1). Rather, expressiveness is a result of the fact that we have an emotive V and agreement.

Now, the *pu*-complement contains *toso grigora* ‘that fast’, which gets interpreted as ‘extremely fast’. *Ti grigora* ‘what fast’ seems to be interpreted the same way. But *toso grigora, ti grigora* do not contain overt degree morphology. These non-canonical uses of degree morphology, we will argue, are realizations of an extreme degree morpheme that we will call SO-degree. The actual *John ran so fast!* has precisely this interpretation and also lacks an expected degree modifier such as *very, extremely* and the like (for a detailed discussion of such extreme degrees, see Morzycki 2012). Here we will propose the following:

(39)  $\llbracket \text{SO+adjective} \rrbracket$  = the property of the Adjective to an extreme degree

The concept of ‘extreme’ in degree, we will argue, has an objective basis and is not purely subjective: a temperature of 25 C is *not* extremely hot, though it might be perceived as such by someone with sensitivity to heat. It is not decisive for our discussion to establish the precise nature of extreme degree, and the relatively uncontroversial assumption that it relies on both fact and some subjective factors will suffice.

As a result, the exclamative has the following meaning; the relevant anchor is always the speaker  $s$ , and  $E$  is the emotive space contributed by the null predicate *be surprised/amazed*:

- (40)  $\llbracket \text{Ti grigora pu etrekse o Kipchoge!} \rrbracket^{w, \text{Dox}(s), E}$  is defined iff
- $\text{Dox}(s)$  contains only worlds where Kipchoge run SO-fast (subjective veridicality)
  - $E$  is nonveridical and contains  $p$  and  $\neg p$  worlds (nonveridicality of emotion).
  - If defined:  $\forall w' \in \text{PE}_E$ : Kipchoge ran SO-fast in  $w'$  (assertion of emotion)

This analysis derives the meaning of the *what*-exclamative without positing an exclamative operator, and captures its affinity with the emotive predicate; it allows a very intuitive explanation of the flavor of the exclamative.

As we mentioned earlier, emotive verbs can of course also take less intense complements, i.e., lacking the SO-degree, and this allows them to be neutral in intensity. The difference, therefore, between a regular emotive assertion and the *wh*-exclamative is that the latter always expresses an emotive stance towards a proposition that contains an extreme degree. We can think of this as *intense* emotivity, or *mirativity*. The crucial point here is that the intensification in exclamatives is always part of the descriptive content, hence it patterns with other forms of ‘emphasis for intensity’ at the propositional level (see Beltrama & Trotzke 2019 for several lexical and syntactic strategies).<sup>3</sup> In other words, intensification does not derive from an illocutionary operator, but from the emotive assertion. According to our analysis in (40), it is now easy to see that the declarative exclamation can receive exactly the same treatment:

- (41)  $\llbracket \text{O Kipchoge etrekse toso grigora ! ‘Kipchoge run so fast!’} \rrbracket^{w, \text{Dox}(s), E}$  is defined iff
- $\text{Dox}(s)$  contains only worlds where Kipchoge run SO-fast (subjective veridicality)
  - $E$  is nonveridical and contains  $p$  and  $\neg p$  worlds (nonveridicality of emotion).
  - If defined:  $\forall w' \in \text{PE}_E$ : Kipchoge ran SO-fast in  $w'$  (assertion of emotion)

Hence, there is no difference between the declarative and the *wh*-exclamative—supporting what we observed earlier in the context of negation and responses to *wh*-questions (Sections 2.2 and 2.3 above). Both syntactic forms contain SO-degree morphemes, and both cases feature embedding under a covert emotive predicate *be surprised/amazed*. Our analysis, by doing away with distinct illocutionary operators for exclamatives, argues that exclamativity is an *attitude* rather than a speech act, and this seems to be well motivated. The illocutionary-operator approaches will have difficulties capturing the similarities between emotive attitudes and exclamatives we pointed out here, and they are also not capable of showing exactly what the illocutionary force of an exclamative might be.

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<sup>3</sup> Note that there are also strategies of intensification (even with SO-degrees) that are based on adding non-descriptive content like intensifying speaker commitment and attitudes; cf. the use of so-called ‘drama *so*’ (see Beltrama & Trotzke 2019 for detailed discussion and comparison to SO-degrees that are part of the denotation):

(i) Chris is SO next in line (Potts 2005)

What *is*, after all, the exclamative illocutionary force? It is very hard to offer an answer because exclamateness seems to cut across clause types and illocutionary forces. It applies to assertions, including metalinguistic comparatives (42a), questions (42b), and imperatives (42c):

- (42) a. I'd rather die than marry him! (Giannakidou & Yoon 2011)  
b. John will come to the party?! (Really?)  
c. Open the door, damn it!

Given this data, it seems implausible to assume that exclamateness is a specific, distinct speech act. It adds, rather, an emotive attitude to whatever the speech act is. Although we will not analyze these cases in the present paper, our novel idea of exclamateness as an attitude of intense emotivity offers, we think, a promising basis for addressing such facts, contrary to the exclamative *illocutionary* force approaches. Exclamation, in our view, becomes an emotive attitude, and our analysis can be extended to capture a number of phenomena that fall under the rubric of 'mirativity', like certain lexical and/or morphological markers (DeLancey 1997; Peterson 2010) or syntactic strategies of 'mirative fronting' (Cruschina 2012; Trotzke 2017).

The central idea of our syntactic analysis is that exclamatives are embedded structures, and we now move on to illustrate some German facts that further support the analysis we proposed here. German is particularly rich in syntactic configurations that have been termed 'insubordinates' in the literature and that typically convey an emotional stance. In the following section, based on our analysis above, we will claim that these syntactic structures (at least in the domain of exclamatives) are not 'insubordinated' at all: they can be characterized as emotive assertions and are thus embedded under a null predicate *be amazed*, just like we have illustrated above for the Greek data.

#### 4. German exclamatives as subordinated structures

In this section, we focus on a phenomenon that has been termed 'insubordination' by Evans (2007) in a cross-linguistic perspective: the use of embedded clause structures as root clauses (see also D'Hertefelt 2018 for recent typological work). German is particularly rich in these constructions, which have been discussed in terms of 'independently used verb-final clauses', so-called 'solitaires' (Schwabe 2006, 2007), and 'V-final root clauses' (Truckenbrodt 2006). In this context, a prominent case are dependent clauses that take on an emotive interpretation as soon as they are used in root contexts: so-called *that*-exclamatives.

##### 4.1 Germanic insubordination

Let us consider an example. As soon as the following German embedded clause introduced by *dass* ('that') in (43a) is used as a root clause, it takes on an emotive meaning and is interpreted as an exclamative (43b). We abstract away from prosodic differences here; see Truckenbrodt (2013) for the relevant intonational patterns.

- (43) a. Ich weiß, [dass der schön singen kann].  
 I know that this.one beautiful sing can  
 ‘I know that he can sing beautifully.’  
 b. Dass der schön singen kann!  
 that this.one beautiful sing can  
 ‘How surprising that he can sing beautifully!’

This pattern can also be found in further Germanic languages. Consider examples from Dutch (44a) and Swedish (44b); see Bennis (1998) and Delsing (2010):

- (44) a. Dat hij die boeken kan lezen! [Dutch]  
 that he those books can read  
 ‘Wow, he can read those books!’  
 b. Att du hann till mötet! [Swedish]  
 that you reached to meeting.DEF  
 ‘What a surprise that you reached the meeting!’

These cases are interesting and relevant in the context of the Greek data that employ a complementizer (*pu*) we discussed earlier. On a par with Greek, this type of complementizer exclamative—at least in Dutch and German—features a word order that is typical of embedded configurations in those languages (i.e., SOV). In what follows, we will focus on German to illustrate that this data point dovetails nicely with our analysis proposed above.

## 4.2 German exclamatives are embedded

Note first that unambiguous exclamatives in German are always verb-final and thus feature embedded word order. This holds for *that*-exclamatives (45a) and *wh*-exclamatives alike (45b):

- (45) a. Dass der schön singen kann! [only exclamative]  
 that this.one beautiful sing can  
 ‘How surprising that he can sing beautifully!’  
 b. Wie schnell der laufen kann! [only exclamative]  
 how fast this.one run can  
 ‘How fast he can run!’

It has often been pointed out in the literature that the clause type ‘exclamative’ in German is intended to cover many more configurations (e.g., *wh*-V2- or V1-exclamatives); see d’Avis (2016) for a recent overview. However, an example like (46) is structurally ambiguous between a question and an exclamation reading (the same holds for V1-exclamatives, modulo intonational differences due to word order). This is why German makes heavy use of so-called discourse particles (more on this in Section 4.3 below), which clearly disambiguate between the exclamation (47a) and the question (47b) reading:



- (46) Wie schnell ist der ~~ist!~~? [question or exclamative]  
 how fast is this.one is
- (47) a. Wie schnell ist der aber auch ist! [only exclamative]  
 how fast is this.one PART PART is  
 ‘How fast he is!’
- b. Wie schnell ist der denn/wohl ist? [only question]  
 how fast is this.one PART PART is  
 ‘How fast is he (I’m wondering)?’

Of course, not only discourse particles, but also intonational means help to disambiguate between the two readings (for V1-exclamatives in this context, see Brandner 2010), and it has recently been shown which prosodic features exactly are involved in distinguishing between V2 *wh*-questions and V2 *wh*-exclamatives in German (Repp 2015). Be that as it may, we highlight again here that the only syntactic configurations that unambiguously express the exclamation reading are the verb-final structures in (45) above—and this corresponds to the embedded word order, as already mentioned.

When we now turn to the choice of complementizers, we observe that the case of *dass*-exclamatives are the only version where German uses a complementizer in exclamatives. Crucially, the complementizer *dass* (‘that’) in German is the typical complementizer that is selected by verbs in assertive contexts (48a), and it is also fine with emotive predicates (48b). However, it is completely ungrammatical in non-assertive contexts (48c):

- (48) a. Andreas glaubt, dass Eliud eine Pause gemacht hat.  
 Andreas believes that Eliud a break made has  
 ‘Andreas believes that Eliud took a break.’
- b. Andreas ist erstaunt, dass Eliud eine Pause gemacht hat.  
 Andreas is amazed that Eliud a break made has  
 ‘Andreas is amazed that Eliud took a break.’
- c. \* Andreas möchte wissen, dass Eliud eine Pause gemacht hat.  
 Andreas wants to.know that Eliud a break made has

Accordingly, the only case in German where we find a realization of the C position in exclamatives suggests that this position can only be filled by an element that is known for occurring only in assertive contexts. Other non-assertive C choices are not available both with emotive predicates (49a) and in exclamatives (49b):

- (49) a. \* Andreas ist erstaunt, ob Eliud eine Pause gemacht hat.  
 Andreas is amazed whether Eliud a break made has
- b. # Ob Eliud eine Pause gemacht hat! (only reading: deliberative question)  
 whether Eliud a break made has

Given our analysis for the Greek exclamatives in Section 3 above, we can now ask to what extent we can extend such an analysis to German. In particular, in Section 3 we have claimed (i) that exclamatives are complements of a null emotive predicate, and thus exclamatives are embedded and (ii) that this emotive predicate performs an emotive assertion—no matter if the predicate is

overt (as in declarative performatives) or covert (as in exclamatives).

The German facts now support this idea in two crucial ways: (i) unambiguous exclamatives in German always feature embedded (i.e., verb-final) word order and (ii) the predicate that embeds the exclamation must indeed be part of an assertive speech act because otherwise the choice of *dass* ('that') remains unaccounted for. Accordingly, we propose the same analysis for German *that*-exclamatives, the only difference being that the complementizer *dass* does not carry the [+expressive] feature because it can also occur in non-emotive contexts like (43a) above. However, the German facts teach us that the complementizer appearing under an emotive predicate must be compatible with assertive force (in our case 'emotive assertion'):

(50) [... [NULL-V-emotive<sub>[+assertive]</sub>] [CP Ø] *dass* <sub>[+assertive]</sub> [IP er so schnell ist 'that he so fast is']]]



The German facts thus complement the Greek data in a very nice and compelling way: while Greek demonstrates the necessity for postulating an agreement mechanism based on expressivity, the German observations make clear that, at the same time, the null predicate indeed is selecting assertiveness. Crucially, recall that Greek *pu* cannot appear in non-assertive contexts either; cf. example (23) above, repeated here for convenience, and the corresponding embedded structure (51b):

- (51) a \* Poso psilos **pu** ine o Andreas?  
 how tall pu is the Andreas  
 'How tall is Andreas?'  
 b. \* O Janis theli na kseri pu efije o Andreas.  
 the John wants SUBJ know.3SG pu left.3SG the Andreas  
 '(Intended: 'John wants to know whether Andreas left.')

In sum, Greek morphosyntax distinguishes between assertive and non-assertive complementizers, but then further distinguishes between emotive and non-emotive assertive complementizers. German only makes the former distinction, but taking both data sets into account supports an analysis where the relevant C head must carry both features: [+assertive] and [+expressive]; German *dass* is simply underspecified regarding  $\pm$ expressiveness. This perfectly fits our claim that exclamatives are nothing more than 'emotive assertions', i.e., combination of being assertive and expressive at the same time:

(52) *Basic morphosyntax of exclamatives, final version:*

[... [NULL-V-emotive<sub>[+assertive],[+expressive]</sub>] [CP C<sup>0</sup> <sub>[+assertive],[+expressive]</sub> [IP ]]]



We move on now to further support the idea that exclamatives indeed *must* carry a feature [+assertive] by looking at how exclamatives in German make use of discourse particles—functional elements of the clause that are known to depend on relevant force/sentence-mood features. These data will further strengthen the analysis sketched in (52) and also highlight once

more that there is no relevant difference between exclamatives, on the one hand, and declarative exclamations on the other hand.

### 4.3 Exclamatives and assertive force: The use of German discourse particles

As already mentioned above (see [47]), otherwise identical structures like (53) can be disambiguated by discourse particles in German:

- (53) a. Wie schnell ist der aber auch ist! [only exclamative]  
how fast is this.one PART PART is  
'How fast he is!'
- b. Wie schnell ist der denn/wohl ist? [only question]  
how fast is this.one PART PART is  
'How fast is he (I'm wondering)?'

Crucially now, the same exclamative particles can not only also occur in *dass*-exclamatives (54a) and V1-exclamatives (54b) (as could maybe be expected), but also in declaratives (54c), turning the declarative into an exclamation speech act:

- (54) a. Dass Eliud aber auch so schnell ist!  
that Eliud PART PART so fast is  
'How surprising that Eliud is so fast!'
- b. Ist der aber auch schnell!  
is this.one PART PART fast  
'Boy! Is he fast!'
- c. Eliud ist aber auch schnell!  
Eliud is PART PART fast  
'Wow! Eliud is so fast!'

Note that these particles are totally ungrammatical in questions:

- (55) \* Was hat Eliud aber auch gemacht?  
what has Eliud PART PART made  
'What has Eliud done?'

As already discussed in Section 2, the literature generally postulated that declarative exclamations like (54c) feature assertive force (e.g., Rett 2011). Accordingly, an approach that suggests itself here is that exclamative particles of the type illustrated above are fine in both V2 and verb-final configurations because both are 'emotive assertions', thus forming one natural class. The distribution of German particles is just an expected reflex following from this assumption. This is in line with our general approach (see above) where exclamative sentences are equivalents to an assertive declarative containing an emotive verb and its complement.

For discourse particles, too, it has been proposed that the connection between force/sentence mood and the particles can be modeled by agreement of features like [+assertive]. In particular, Bayer & Obenauer (2011) have proposed an analysis that leaves the particle in situ



## 5. Conclusions

We have proposed here a new theory of exclamatives as a manifestation of emotive attitude towards an extreme degree, and suggested a syntax of exclamatives that involves features such as [+assertive] and [+expressive]. Our semantics explains the intensity of exclamatives, and our analysis overall was motivated by structural similarities between complements of emotive verbs and exclamatives. In light of the Greek and German data we discussed in the sections above, it does not make sense to talk about exclamatives as distinct speech acts; rather, we argued, exclamateness is an emotive *attitude*. The speech-act approaches will have difficulty capturing the structural and semantic similarities between emotive attitudes and exclamatives we pointed out here (word order, distribution of functional elements like complementizers and particles)—and, equally importantly, they are incapable of showing exactly what the illocutionary force might be. We saw that exclamateness characterizes assertions, but also questions and imperatives; it is therefore not a distinct speech act. In our analysis there is no special exclamative illocutionary force, and the ideas proposed here can be extended to capture a number of phenomena that fall under the rubric of ‘mirativity’. We hope that future research will undertake this task.

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