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Whether-exclamatives: a verum strategy

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Abstract: Verum has been attested in declaratives, interrogatives, and imperatives. In this paper, we show that *whether*-exclamatives, a subtype of exclamatives, also qualify as a verum strategy, thus showing that the phenomenon ranges across all sentence moods. Motivation stems from the discourse properties of our data and the pragmatic contrast between *whether*-exclamatives and plain assertions. Furthermore, we argue that *whether*-exclamatives are illocutionarily defined as a coordination of assertion and EXCL, the illocutionary force of exclamatives. Assembling the formal tools for exclamatives, verum, and speech act coordination, we provide an analysis of verum in this complex hybrid speech act.

Keywords: exclamatives; speech acts; verum; European Portuguese; German

1 Introduction

Verum has been studied across most sentence moods, including declaratives (Gutzmann and Castroviejo Miró 2011; Gutzmann et al. 2020; Höhle 1992; Kocher 2023, i.a.), interrogatives (Goodhue 2022; Gutzmann and Castroviejo Miró 2011; Gutzmann et al. 2020; Kocher 2023; Romero 2005, 2015; Romero and Han 2004, i.a.), and has also been acknowledged in imperatives (Gutzmann and Castroviejo Miró 2011; Kocher 2023; Lohnstein 2016). In this paper, we argue that *whether*-exclamatives (Amido and Buchczyk 2022), a subtype of exclamatives, also qualify as a verum strategy, thus completing the picture by showing that the phenomenon ranges across all sentence moods.

Different frameworks for verum have been proposed. Gutzmann et al. (2020) divide these into two groups: Focus Accent Theses (FAT) and Lexical Operator Theses (LOT). On the one hand, frameworks that fall within the FAT assume focus is responsible for emphasis on the truth of the proposition. This is because a covert verum predicate, which is always present in a sentence, either receives focus accent or not. Other focus-based approaches propose that the emphasis on the truth is a pragmatic inference of the information structure resulting from polarity focus. Proponents of this theory include Büring (2006), Goodhue (2018), Höhle (1992), and Lohnstein

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(2012). On the other hand, LOT assume that verum is an operator which exists at the semantic or pragmatic level only when there is some kind of verum marking, such as verum accent. LOT approaches include Gutzmann and Castroviejo Miró (2011), Gutzmann et al. (2020), Romero and Han (2004), and Romero (2015). While we adopt the notion of verum as an operator for our formal analysis, we draw on claims from both approaches (FAT and LOT) in establishing the properties of verum.

The main goal of this paper is to identify and analyze *whether*-exclamatives in European Portuguese and Standard German (henceforth EP and SG, respectively) as a verum strategy. The structure is as follows: our data are introduced in Section 2. We look at patterns in EP and SG, describe the complex structure of *whether*-exclamatives when they occur as responses to polar questions, and further list their possible environments. We end the section with a meaning comparison between *whether*-exclamatives and plain declaratives as motivation to treat these as exclamatives with a verum component. In Section 3 we lay out the discourse properties of our data and how these pattern with verum. We furthermore discuss how verum interacts with exclamative properties, making available in *whether*-exclamatives both a verum and a high degree reading. In Section 4 we provide the formal analysis of how verum obtains in *whether*-exclamatives, bringing together Gutzmann and Castroviejo Miró's (2011) verum operator with EXCL (the illocutionary force of exclamatives), and Krifka's (2001) speech act conjunction. Section 5 concludes.

2 On *whether*-exclamatives

Prototypical examples of *whether*-exclamatives are found in (1) in EP and (2) in SG, specifically in B's answers to A.

(1) A: *A Maria é alta?*
the Maria is tall
'Is Maria tall?'
B: SE *é!*
whether is
'(Yes, and) how tall she is!'

(2) A: *Ist Maria groß?*
is Maria tall
'Is Maria tall?'
B: *Und* OB*!*
and whether
'(Yes, and) how tall she is!'

In (1) and (2), speaker B confirms that Maria is tall and furthermore conveys that she is tall to a high degree.

This observation of a cross-linguistic correspondence between these two expressions is not new as Hundertmark-Santos Martins (2014: 356) has already demonstrated this correspondence citing (3) and (4).

(3) A: *Não gostas dele?*
not like-2P.SG of.him
'Don't you like him?'
B: SE *gosto!*
whether like-1P.SG
'(Yes, and) how much I do!'

(4) A: *Magst du ihn nicht?*
Like-2P.SG you him not
'Don't you like him?'
B: *und* OB*!*
and whether
'(Yes, and) how much I do!'

While the author contributed the parallelism between the EP and SG expressions in B, what Hundertmark-Santos Martins did not offer was the classification of these expressions as (a subtype of) exclamatives. She also did not further elaborate on their parallelism in this respect, to the best of our knowledge. This is done in Amido and Buchczyk (2022). The authors identify these expressions as exclamatives because they fulfil the necessary criteria of classification, the most salient of which is that of being a degree construction (Castroviejo 2021). Furthermore, *whether*-exclamatives defy the usual categorisations of *wh*-, nominal, or inversion exclamatives (Rett 2012), which is why the authors classified them in a new category.

The terminology, *whether*-exclamative, results from the observation that both structures contain a stressed 'whether' (as indicated with the small caps *SE é!* for EP in (1), and *und OB!* for SG in (2), as well as subsequent examples). While we assume they have the same derivational structure, they differ at the phonological form: in EP, *se* ('whether') is followed by VP ellipsis (Cyrino and Matos 2002; Matos 1992); in SG, *ob* ('whether') is obligatorily preceded by the coordinate conjunction *und* ('and') (Oppenrieder 1989).

Whether-exclamatives are translated as *wh*-exclamatives (e.g., *How tall she is!*), but the two types are distinct. While both exist in EP and SG (*wh*-exclamatives in (5) and (6)), *whether*-exclamatives do not exist in English.

(5) *Quão alta é a Maria!*
how tall is the Maria
'How tall Maria is!'

(6) *Wie groß Maria ist!*
how tall Maria is
'How tall Maria is!'

In a few cases, we provide a slightly distinct translation of *whether*-exclamatives. Nonetheless, their meaning is often most closely conveyed in English through *wh*-exclamatives given that both types, by virtue of being exclamatives, convey a high degree of the gradable predicate.

In Section 2.2 we will look at the environments in which *whether*-exclamatives can be felicitously uttered. In fact, *wh*-exclamatives behave similarly. That is, in EP, SG, and English, if preceded by a phonologically realized 'and', they can occur after polar questions and positive declaratives. Following a negative declarative, a polarity

reversing strategy must be employed in addition to the preceding 'and', much like SG *whether*-exclamatives (as shown in Section 2.2). A crucial difference, however, is that *wh*-exclamatives can occur discourse-initially, while *whether*-exclamatives never can. This important piece of evidence, on the one hand, and the fact that both types of exclamatives can be found in EP and SG, on the other, ensure a contrast between them.

2.1 *Whether*-exclamatives are part of a complex structure

A particularly important aspect to consider with respect to our data is the widely agreed observation that exclamatives do not have the property of answering questions (Castroviejo 2021; Grimshaw 1979; Rett 2012; Villalba 2003; Zanuttini and Portner 2003). As already pointed out in Amido and Buchczyk (2022), we assume that *whether*-exclamatives form just one part of a complex structure, where the *whether*-exclamative proper follows an anteceding assertion, which is optionally phonologically realized. Following Zanuttini and Portner's (2003: 48) speculation, when exclamatives occur in such complex structures, they are felicitous responses to questions. We follow Trotzke and Villalba's (2020) definition of responses as a broad category that not only encompasses strict answers (assertions) but also secondary moves in discourse that provide the information to a question in a more indirect way (e.g., via implicatures). Example (7), adapted from Zanuttini and Portner (2003: 48) (optionally realized content marked with '(…)'; bracketing our own), shows that a *wh*-exclamative is a good response to a polar question if it is preceded by *and*, but infelicitous if not.

(7) A: *Is Tony's child tall?*
B: *#How tall he is!*
B′: *(Yes,) And how (tall he is)!*

With respect to *whether*-exclamatives, the data in SG further support the hypothesis of an anteceding assertion. The assertion can be phonologically null, but crucially the conjunction *und* ('and') must always be overt. This signals the presence of something that must have been asserted right before. In EP, both the conjunction *e* ('and') and the assertion are optionally realized. Regardless of whether the optionally elided content is realized, the utterances by B in (8) and (9) are felicitous and equivalent in that they update the context with an answer to the question. That is, given A's question, ?*p*, there is an update of *p* (=⟦*Maria is tall*⟧) after any version (fully or partially realized) of B's utterance.

(8) A: *A Maria é alta?*
the Maria is tall
'Is Maria tall?'
B: *((É,) e)* SE *é!*
is and whether is
'(Yes, and) how tall she is!'

(9) A: *Ist Maria groß?*
is Maria tall
'Is Maria tall?'
B: *(Ja,) und* OB *(sie groß ist)!*
yes and whether she tall is
'(Yes, and) how tall she is!'

Note that for SG example (9), if the preceding polar question were negative (e.g., *Ist Maria nicht groß?*), the optionally realizable declarative in this case would be the response particles *doch* or *na* (Oppenrieder 1989: 211) rather than *ja*, which would likewise result in an assertion of *p*. Such response particles are also assumed to be propositional anaphors (see Krifka 2013).

From these observations we hypothesize that *whether*-exclamatives always form part of a complex structure that is a coordination of two illocutionary forces, namely assertion and EXCL, the illocutionary force of exclamatives (see Section 4.1). In both languages, the assertion can be overt or not without any effect on the overall meaning of the expression. Conversely, this also means that EXCL in *whether*-exclamatives can never occur independently, but always occurs in conjunction with the assertion that precedes it. The facts in SG confirm this assumption in that the *und* ('and') is indicative of the preceding assertion. Furthermore, the reading of the *whether*-exclamative in SG in (10) is completely lost and even no longer well-formed if we omit the conjunction.

(10) A: *Ist Maria groß?*
is Maria tall
'Is Maria tall?'
B: *OB *(sie groß ist)!*
whether she tall is
∼'(Yes, and) how tall she is!'

We can thus state that *whether*-exclamatives occur in conjunction with an optionally phonetically realized declarative. This equates to the patterns on the illocutionary level summarized in (11) for EP and SG, where the assertion is coordinated with EXCL.

(11) a. ((ASSERTION) &) EXCL (for EP)
b. (ASSERTION) & EXCL (for SG)

This pre-theoretical consideration already intuitively answers the question why, for example, no bare exclamatives can be answers to questions, but exclamatives preceded by a conjunction can. We therefore assume that an anteceding assertion, an

appropriate speech act for answering a question, is in fact what answers the question. Therefore, the assertion-EXCL coordinations described above can give rise to the illusion that *whether*-exclamatives are answers to questions when the declaratives are phonologically null, especially in EP, where the conjunction can also be omitted. We will get back to this hypothesis in our formal analysis in Section 4.

2.2 Distribution of *whether*-exclamatives

So far we have seen that *whether*-exclamatives may be felicitously uttered following positive polar questions, as in (1) and (2), and following negative polar questions, as in (3) and (4). In both cases, the declarative that directly precedes them may be phonetically realized or not.

Apart from such environments, *whether*-exclamatives can also be uttered after positive declaratives, as in (12) and (13).

(12) A: *A Maria é alta.*
the Maria is tall
'Maria is tall.'
B: SE *é!*
whether is
'(Yes, and) how tall she is!'

(13) A: *Maria ist groß.*
Maria is tall
'Maria is tall.'
B: *Und* OB*!*
and whether
'(Yes,) and how tall she is!'

If they are uttered after negative declaratives, *whether*-exclamatives reverse the polarity of the asserted proposition, just like when they follow negative polar questions. This is clearly traced in German, which distinguishes response particles of absolute positive polarity between those that maintain the polarity of the preceding utterance (*ja*) and those that reverse it (*doch* or *na*) (see Farkas and Bruce 2010).

(14) A: *A Maria não é alta.*
the Maria not is tall
'Maria isn't tall.'
B: SE *é!*
whether is
'(Yes, and) how tall she is!'

(15) A: *Maria ist nicht groß.*
Maria is not tall
'Maria isn't tall.'
B: *#Ja/doch/na, und* OB *(sie groß ist)!*
yes and whether she tall is
'(Yes, and) how tall she is!'

In (14) and (15), the negative polarity of A's asserted proposition is reversed by B, who asserts that Maria is tall and tall to a high degree. In SG example (15), B's utterance simply shows that in the context of a negative declarative, the response particle preceding the *whether*-exclamative must have the polarity reversing feature, otherwise it is infelicitous.

The polarity reversing feature of the particle that precedes German *whether*-exclamatives when they are uttered following negative declaratives leads to the conclusion that in all its felicitous environments, the *whether*-exclamative is coordinated with a preceding proposition of absolute positive polarity in the same move. That is, the optionally phonologically realized anteceding assertion in the complex structure of the *whether*-exclamative is always *p*, never ¬*p*.

This idea is in line with the observation that negation in exclamatives, with few exceptions, is either expletive or results in ungrammaticality (see Castroviejo Miró 2006, 2008; Espinal 2000; Gutiérrez-Rexach and Andueza 2011; Villalba 2004). The ungrammaticality is borne out for negated *whether*-exclamatives in (16) and (17).

(16) A: *A Maria (não) é alta.*
the Maria not is tall
'Maria is (not) tall.'
B: *SE *ñao é!*
whether not is
∼'(No, and) how tall she isn't!'

(17) A: *Maria ist (nicht) groß.*
Maria is not tall
'Maria is (not) tall.'
B: **Und* OB *(sie nicht groß ist)!*
and whether she not tall is
∼'(No, and) how tall she isn't!'

Since *whether*-exclamatives are coordinated with an anteceding assertion, and exclamatives, apart from few exceptions, can only have positive polarity, we would expect the polarity of the anteceding assertion to match.

In summary, *whether*-exclamatives can occur after positive and negative polar questions, and positive and negative declaratives. Crucially, they must always have an assertion of *p* as an antecedent, whether it is overtly realized or not. This is consistent with the proposal that they are always part of a complex structure, as described in Section 2.1. In Section 2.3, we ask whether *whether*-exclamatives are indeed verum strategies and provide the main motivation to raise this question.

2.3 Motivation for *whether*-exclamatives as a verum strategy

Our main reason to analyze *whether*-exclamatives as a verum strategy is that its meaning contrasts with that of a plain declarative in what regards use conditions. Prototypical exclamatives give rise to a high degree reading, as is the case in (1) and (2), repeated here in (18) and (19).

(18) A: *A Maria é alta?*
the Maria is tall
'Is Maria tall?'
B: SE *é!*
whether is
'(Yes, and) how tall she is!'

(19) A: *Ist Maria groß?*
is Maria tall
'Is Maria tall?'
B: *Und* OB*!*
and whether
'(Yes, and) how tall she is!'

However, if the predicate in question is not typically gradable, as in (20) and (21) (adapted from Oppenrieder 1989: 209; B′ is our addition), the intuitive meaning of the *whether*-exclamative is not that 43 is a prime number to a high degree since *prime number* is not scalar. Rather, B emphasizes the truth of *p* (=⟦*43 is a prime number*⟧).

(20) A: *43 é um número primo?*
43 is a number prime
'Is 43 a prime number?'
B: *((É,) e)* SE *é!*
is and whether is
'(Yes,) you bet it is!'
B′: *É.*
is
'Yes.'

(21) A: *Ist 43 eine Primzahl?*
is 43 a prime.number
'Is 43 a prime number?'
B: *(Ja,) und* OB *(es eine*
yes and whether it one
ist)!
is
'(Yes,) you bet it is!'
B′: *Ja.*
yes
'Yes.'

In fact, we will show in Section 3.3 that verum is responsible for rendering the *whether*-exclamative felicitous despite the non-gradable predicate in a degree construction (exclamative). Nevertheless, the main takeaway is that while both B and B′ are felicitous in the same environment, B conveys extra emphasis or certainty as compared to B′, in a way that parallels the contrast between a verum strategy in English and the corresponding plain declarative, as exemplified in (22).

(22) A: *Is 43 a prime number?*
B: *It* IS *(a prime number).*
B′: *Yes.*

It is this contrast between the meaning of the *whether*-exclamative and that of the plain declarative which drives us to look deeper into the mechanisms at play.

3 Properties of verum

Given the motivation presented in the previous section, we lay out the claims we adopt about verum and how *whether*-exclamatives fit them. They are the following:

verum affects use conditions rather than truth conditions (Section 3.1); verum is infelicitous out of the blue (Section 3.2.2); verum strategies can be preceded by a variety of moves (?*p*, ¬*p*, and *p*), provided they make the alternative proposition (¬*p*) available to be made salient (Section 3.2.2); and anteceding lexical material must be available in the preceding move to the verum strategy (Section 3.2.3). We show that *whether*-exclamatives align with all these assumptions. Furthermore, in Section 3.3 we propose that they make available two interpretations: the verum reading, or emphasis on the truth of the proposition, and a high degree reading, meaning that the construction conveys a high degree of the property in question. Which reading is more accessible depends on whether the predicate is typically gradable, typically non-gradable, or easily coerced into gradability, as well as other contextual factors.

3.1 Verum is use-conditional

After Romero and Han's (2004) proposal of verum as a semantic operator, undesirable implications have been observed. This is particularly the case for infelicity with outer denial (Gutzmann and Castroviejo Miró 2011; Romero 2005, 2015). In their early account, denying VERUM(*p*) predicts ¬VERUM(*p*) rather than the negation of *p* alone, as shown in (23) (test adapted from Gutzmann and Castroviejo Miró 2011: 153).

(23) A: Does Maria want to go to Mars?
B: SE *quer!*
whether wants
'(Yes, and) how much/... she wants to!'
C: No, that's not true. She doesn't even like flying.
⇒ Denial of the inner proposition (=⟦*Maria wants to go to Mars*⟧)
C′: #No, that's not true. You are not sure about that.
#⇒ Denial of VERUM(*p*).

It is clear from the infelicity of C′ that denying VERUM(*p*) should only target the propositional content, as in C. An outer denial of verum makes the wrong predictions since it is not the speaker's certainty that is challenged. This motivates keeping verum separate from the truth conditions of an utterance. Gutzmann and Castroviejo Miró (2011) (GCM henceforth) treat it as a use-conditional operator, Romero (2015) as a Common Ground management operator, and Goodhue (2018) as a pragmatic inference resulting from information structure. They all converge on the view, however, that verum is of a pragmatic rather than semantic nature.

This furthermore suggests that any verum strategy under the scope of its operator VERUM must be, at the truth-conditional level, equivalent to a plain assertion of the proposition *p*. In examples (24) and (25), the truth conditions of the *whether*-

exclamatives (in B) are the same as the unmarked affirmation counterparts (in B′) in what regards answering ?*p* with *p*.

(24) A: *Gostaria de ir a Marte?*
like-3P.SG.COND of go to Mars
'Would she like to go to Mars?'
B: SE *gostaria!*
whether like-3P.SG.COND
'(Yes, and) how much/... she would!'
B′: *Gostaria.*
like-3P.SG.COND
'Yes.'

(25) A: *Würde sie gerne zum Mars fliegen?*
would she gladly to.the Mars fly
'Would she like to go to Mars?'
B: *Und* OB*!*
and whether
'(Yes, and) how much/... she would!'
B′: *Ja.*
yes
'Yes.'

A concern may arise regarding the equivalence between the *whether*-exclamatives as part of a complex structure and the unmarked affirmation due to the proposal by Amido and Buchczyk (2022), that when uttered after a polar question their triggered antecedent is a phonologically null assertion of *p*. Furthermore, one might suspect that the B-answers in (24) and (25) actually add something more since we obtain a high degree reading from the exclamative. Thus, saying *yes* after *Would she like to go to Mars?* might not have the same truth conditions as a declarative with an additional exclamative such as *SE gostaria!* or *und OB!*; an affirmative *yes* does not necessarily entail that one wants to go to Mars *very much*, whereas the *whether*-exclamative does. However, looking at A's question again, the correct assumption is that A did not ask about *how much* or *how intensely* one would like to go to Mars in the first place. A's question of ?*p* merely requires an update of either *p* or ¬*p* in order to be fully answered. In using a *whether*-exclamative, B is further elaborating on how much she wants to go to Mars, given that *p* (=⟦*she wants to go to Mars*⟧). Additionally, the unmarked affirmation *yes* does not preclude that B would like to go to Mars very much. We can also observe this truth-conditional equivalence in (20) and (21), where no high degree reading is available in B. Accordingly, we can state that between a plain assertion of *p* and the corresponding *whether*-exclamative there are no differences with regard to the truth conditions linked to the strict answer of ?*p*.

3.2 Licensing moves

Having looked at the environments in which *whether*-exclamatives can felicitously occur in Section 2.2, we now look at how they translate in terms of discourse moves. In

order to do this, we briefly introduce the Questions Under Discussion (QUD henceforth) framework, list the possible moves that can precede verum, and describe a further licensing condition, which is the requirement of anteceding lexical material.

3.2.1 Moves in a QUD framework

For the subsequent claim about verum, we adopt the QUD framework (Farkas and Bruce 2010; Ginzburg 1994; Roberts 2012, i.a.). In this framework, dialogue is represented as a partially ordered stack of questions under discussion; at the top of the QUD stack is the maximal question, the one that is currently being addressed (raised or answered). As dialogue enfolds, the QUD is updated and downdated. It is updated when a question is made maximal by raising it. Questions are raised when an interlocutor explicitly asks a question, but also when they make an assertion that would answer the implied question. So whether an interlocutor asks ?*p*, asserts *p*, or asserts ¬*p*, then ?*p* is raised to the top of the stack (Farkas and Bruce 2010). Once a proposition is accepted by all interlocutors and added to the Common Ground (Stalnaker 1978), the QUD is downdated, meaning the top question is removed from the stack by virtue of having been answered. Therefore, any current move in the discourse necessarily addresses the topmost question in the QUD and either updates or downdates it.

3.2.2 Possible moves preceding verum

It has been observed that verum strategies cannot occur out of the blue (Goodhue 2018; Gutzmann and Castroviejo Miró 2011; Gutzmann et al. 2020). We observe in (26) and (27), adapted from GCM's example (2011: 159), that *whether*-exclamatives are not felicitous in such contexts either.

(26) *Ouviste falar ((da altura) da Maria)? #*SE *é!*
hear-2P.SG.PFV talk of.the height of.the Maria whether is
∼'Have you heard (about Maria('s height))? How tall she is!'

(27) *Hast Du es schon gehört? #Und* OB *Maria groß ist!*
have-2P.SG.PRS you it already hear-PTCP and whether Maria tall is
∼'Have you already heard it? And how tall Maria is!'

Crucially, the infelicity is not attributed to sentence mood since other exclamatives are felicitous in the same context. In (28), a *wh*-exclamative substitutes the *whether*-exclamatives in (26) and (27).

(28) *Have you heard about Maria? How tall she is!*

Therefore, we can conclude that the infelicity of the *whether*-exclamatives in an out-of-the-blue context is mapped to verum and not to sentence mood.

The prediction that verum is infelicitous out of the blue for Gutzmann et al. derives from their proposal that verum is employed by the speaker to prevent the downdating of ?*p* with ¬*p* (2020: 39). Consequently, ?*p* must be maximal in QUD before the expression that carries verum is uttered (Gutzmann and Castroviejo Miró 2011: 161). This means that felicitous preceding moves are either an explicit question ?*p* or an assertion *p* or ¬*p*, both of which raise ?*p* to the top of the stack (see Section 3.2.1).

Likewise, Goodhue (2018) observes that ?*p*, ¬*p*, and *p* are all moves that verum is licensed to succeed because they make the polar alternative (¬*p*) of the verum strategy available to be made salient. In his focus-based approach, the verum effect is precisely derived from the information structure of focus, in that polarity/verum focus on *p* makes the contrasting alternative ¬*p* salient (and so emphasizes its truth as contrasted with the alternative's falsity). While ?*p* makes both *p* and ¬*p* available by virtue of being a question and thus denoting the set {*p*, ¬*p*} (following Hamblin 1973), assertions of *p* or ¬*p* can also make both alternatives available by virtue of raising ?*p*. What is not licensed to precede verum, while still licensing a non-verum exclamative like (28), is an out-of-the-blue context. *Whether*-exclamatives are felicitous following all three moves: in (29) and (30), A and A′ explicitly raise ?*p*; A″ asserts *p*; in (31) and (32) A asserts ¬*p*.

(29) A: *A Maria é alta?*
the Maria is tall
'Is Maria tall?'
A′: *A Maria não é alta?*
the Maria not is tall
'Is Maria not tall?'
A″: *A Maria é alta.*
the Maria is tall
'Maria is tall.'
B: SE *é!*
whether is
'(Yes, and) how tall she is!'

(30) A: *Ist Maria groß?*
is Maria tall
'Is Maria tall?'
A′: *Ist Maria nicht groß?*
is Maria not tall
'Is Maria not tall?'
A″: *Maria ist groß.*
Maria is tall
'Maria is tall.'
B: *Und* OB*!*
and whether
'(Yes,) and how tall she is!'

(31) A: *A Maria não é alta.*
the Maria not is tall
'Maria is not tall.'
B: SE *é!*
whether is
'She IS though!'

(32) A: *Maria ist nicht groß.*
Maria is not tall
'Maria is not tall.'
B: *Und* OB*!*
and whether
'She IS though!'

Note that while the *whether*-exclamative in B is always felicitous following these moves, its translation differs slightly in that, after the polar questions or a positive declarative, as in A, A′, and A″ in (29) and (30) it conveys affirmation or confirmation (*Yes, and how tall she is!*), and after a negative declarative, as in A in (31) and (32), it reverses the polarity of the asserted proposition (*She* IS *though!*). Our data thus align with claims put forth by LOT (Gutzmann and Castroviejo Miró 2011; Gutzmann et al. 2020) and FAT approaches (Goodhue 2018).

3.2.3 Anteceding lexical material

A further property of verum strategies is that there must be anteceding lexical material available in the move(s) that precede(s) the verum expression. GCM and Goodhue (2018) follow Richter (1993) in that for verum to be licensed, the subject, verb, and object must be given (Goodhue 2018: 17). Compare the (in)felicity of the utterances by B, B′, and B″ in examples (33) and (34).

(33) A: *A Maria faz exercício?*
the Maria does exercise
'Does Maria exercise?'
B: *Ela corre.*
she runs
'She runs.'
B′: #SE *corre!*
whether runs
'(Yes, and) how much/... she runs!'
B″: SE *faz!*
whether does
'(Yes, and) how much/... she exercises!'

(34) A: *Macht Maria Sport?*
does Maria sports
'Does Maria exercise?'
B: *Sie läuft.*
she runs
'She runs.'
B′: *#Und* OB *sie läuft!*
and whether she runs
'(Yes,) and how much/... she runs!'
B″: *Und* OB *sie Sport macht!*
and whether she sports does
'(Yes,) and how much/... she exercises!'

According to Roberts, who follows Groenendijk and Stokhof (1984), we can speak about question and answer entailment relations in the following way: "a question q_1 entails another question q_2 iff answering (…) q_1 yields a complete answer to q_2" (2012: 12). Asserting that Maria runs (corresponding to q_1) yields a complete answer to whether Maria exercises (q_2) because running entails exercising. Therefore B's answer to q_1 felicitously answers A's q_2, forming a felicitous question-answer pair. But while the unmarked affirmation that entails an answer to A's question is felicitous, verum applied to the same proposition, as uttered by B′, is not. This is because

the lexical content of the VP *A Maria corre*/*Maria läuft* is not explicit in the preceding move, i.e. A's question. In contrast, when B″ utters a *whether*-exclamative whose lexical antecedent, the VP *A Maria faz exercício*/*Maria macht Sport*, is explicit in A's question, this creates a verum licensing context. Therefore, uttering the *whether*-exclamative which explicitly refers to Maria's exercising is felicitous. So, like other verum strategies, *whether*-exclamatives require anteceding lexical material to be given in order to be felicitously uttered.

3.3 Available readings of *whether*-exclamatives

Verum has generally been interpreted as emphasis on the truth of a proposition (Höhle 1992), which goes hand in hand with speaker certainty about the truth of a proposition (Gutzmann and Castroviejo Miró 2011; Romero and Han 2004) and a strategy to decisively settle a dispute (Gutzmann et al. 2020). Exclamatives, on the other hand, are defined by the high degree reading of the gradable predicate, where the latter is either explicit or contextually derived (Rett 2012). Since *whether*-exclamatives are both a verum strategy and an exclamative, both readings are, in principle, always available: the emphasis/certainty (verum) reading and the high degree reading (see Rett 2012 for initial speculations on a verum reading for inversion exclamatives). When the latter is not available due to the lack of a gradable predicate, the felicity of the *whether*-exclamative is attributed to verum.

Looking at the *whether*-exclamatives in (35) and (36), in which the predicate *tall* is typically gradable, we interpret that Maria is very tall.

(35) A: *A Maria é alta?*
the Maria is tall
'Is Maria tall?'
B: SE *é!*
whether is
'(Yes, and) how tall she is!'

(36) A: *Ist Maria groß?*
is Maria tall
'Is Maria tall?'
B: *Und* OB*!*
and whether
'(Yes,) and how tall she is!'

However, we also interpret that Maria is certainly tall (verum reading). In fact, an utterance commenting on the high degree of Maria's tallness intuitively guarantees the certainty of her being tall. In contrast, when we have a typically non-gradable predicate such as *prime number* we would expect it to be either very odd or even infelicitous (Amido and Buchczyk 2022; Villalba 2003) because the exclamative construction induces the gradability of the property. Compare B's *whether*-exclamative in (37) and (38) with the *wh*-exclamative in B′.

(37) A: *43 é um número primo?*
43 is a number prime
'Is 43 a prime number?'
B: SE *é!*
whether is
'(Yes,) you bet it is!'
B′: *#Sim, e quão primo é!*
Yes and how prime is
∼'Yes, and how prime-like it is!'

(38) A: *Ist 43 eine Primzahl?*
is 43 a prime.number
'Is 43 a prime number?'
B: *Und* OB *(es eine ist)!*
and whether it one is
'(Yes,) you bet it is!'
B′: *#Und wie (es eine ist)!*
and how it one is
∼'(Yes,) and how prime-like it is!'

Just like other exclamatives, *whether*-exclamatives yield a high degree reading. Yet it is the additionally available verum reading which sets them apart from other exclamatives and allows for felicity with typically non-gradable properties as well.

What makes it clear that both readings are equally available are typically non-gradable predicates which are easily coerced into gradability. Take (39) and (40).

(39) A: *O Mehmet é alemão?*
the Mehmet is German
'Is Mehmet German?'
B: SE *é!*
whether is
'(Yes, and) how German he is!'
B′: *Sim, e quão alemão é!*
yes and how German is
∼'Yes, and how German he is!'

(40) A: *Ist Mehmet deutsch?*
is Mehmet German
'Is Mehmet German?'
B: *Und* OB *(er deutsch ist)!*
and whether he German is
'(Yes,) and how German he is!'
B′: *Und wie (deutsch er ist)!*
and how German he is
∼'(Yes,) and how German he is!'

In both examples, *German*, a typically non-gradable predicate can be interpreted in just that way, giving rise to a verum reading; the speaker emphasizes the truth of Mehmet's being German. But it can also be coerced into a gradable predicate in that we interpret that Mehmet fulfils many of the stereotypes of being German. In other words, a high degree reading, that Mehmet is very German, is also available, as exemplified by the felicity of the *wh*-exclamative in B′. This suggests that the coerced gradability of non-gradable predicates is always a consequence of an exclamative because of its high degree reading (as argued also in Amido and Buchczyk 2022). The degree reading is more or less salient depending on the ability to retrieve it through context.

The example below shows that manipulation of the context (in this case through specification of the question under discussion) can more easily bring out one of the two readings.

(41) A: Is Mehmet German at all?
B: *Und* OB*!*
and whether
'(Yes,) you bet he is!'

(42) A: Is Mehmet very German?
B: *Und* OB*!*
and whether
'(Yes,) and how German he is!'

If the question explicitly asks which of the two propositions is true, p (=⟦*Mehmet is German*⟧) or $\neg p$, as in A in (41), the more salient reading from the *whether*-exclamative in B is the verum reading. If the question induces a scale on the property in question (how German Mehmet is), as in A in (42), the high degree reading is then more salient.

While *whether*-exclamatives behave just like other exclamatives in that they result in a high degree reading, they are also a verum strategy. Therefore, even if the predicate at hand is not easily coerced into gradability, the expression is still felicitous on account of the verum reading.

An interesting question is whether verum can also coerce a high degree reading when it interacts with gradable predicates. The speculation arises due to the observation that we also find the availability of both readings if we have a typically gradable predicate in a run-of-the-mill English declarative with verum focus. In (43), B's utterance can convey that Maria is certainly tall but also that she is very tall.

(43) A: *Is Maria tall?*
B: *She* IS *(tall).*

We leave this question open for future work.

4 Compositional ingredients of *whether*-exclamatives

This section is dedicated to a formal analysis of *whether*-exclamatives. In Section 4.1, we define EXCL, a modified illocutionary operator based on Rett's E-FORCE. Section 4.2 is about the formal definition of GCM's VERUM operator. In Section 4.3, we motivate the coordination of speech acts based on Krifka's (2001) idea of a non-Boolean operator '&'. Equipped with these formal tools, we propose a first analysis for *whether*-exclamatives in Section 4.4.

4.1 EXCL as an illocutionary operator of exclamatives

Rett (2012) strives for a plausible way to explain the mismatch between questions and exclamatives on a pragmatic level. She therefore proposes an illocutionary force for exclamatives which she calls E-FORCE in order to explain that the mismatch of E-FORCE and the illocutionary force of questions results in infelicity since they "are not the right sort of speech act for answering" (2012: 415). She motivates the choice of E-FORCE based on restrictions that exclamatives have: firstly, they denote a gradable property; secondly, the degree of said property must exceed a contextual standard and is therefore unexpected (Rett 2012: 415). Example (44) from Rett (2012: 428) is intended to reflect these characteristics.

(44) *(Wow), did Sue win that race!*
⇝ the degree to which Sue's winning of the race was exciting/intense was unexpected.

Taking this into account, Rett (2012: 429) proposes a definition of E-FORCE in (45), drawing on a certain context *C* that includes a speaker (S_c), and a world (w_c).

(45) E-FORCE(p), uttered by S_c, is appropriate in a context C if p is salient and true in w_c. When appropriate, E-FORCE(p) counts as an expression that S_c had not expected that p.

According to Rett (2012: 431), E-FORCE is a function that takes a proposition of type $\langle s, t\rangle$ as its argument. However, a degree property such as *Sue's winning of the race* in (44) is of type $\langle d, \langle s, t\rangle\rangle$ (Rett 2008: 5) which is why she proposes a two-step process to convert it into a proposition of type $\langle s, t\rangle$: in the first step, the context provides a degree property denoted by the exclamative, which is of type $\langle d, \langle s, t\rangle\rangle$, where *d* is a degree variable. In order to bind that variable, Rett suggests ∃-to obtain as a second step in order to get a proposition of type $\langle s, t\rangle$ to serve as an input for E-FORCE. There are two aspects in Rett's analysis which remain unclear: firstly, Rett does not lay out explicitly how the transformation from degree properties to propositions is achieved; secondly, she does not specify when ∃-closure should take place. This leaves us with two options: either ∃-closure occurs after or before the application of E-FORCE. We will assume the latter. In Section 4.4, we will further formalize this application.

What we adopt from E-FORCE, then, is that (i) exclamatives denote degree properties, (ii) we convert degree properties into a proposition, the degree argument in the degree property is bound via ∃-closure, and (iii) the illocutionary operator applies to this proposition (which, for our examples, happens after the application of a verum operator, see Section 4.4). Consequently, EXCL, our operator for exclamatives is defined as follows:

(46) EXCL(p), uttered by S_c, is appropriate in a context C if p is salient and true in w_c.

We left out the idea of unexpectedness because Rett does not formally implement it in her analysis.[1]

4.2 Verum as a use-conditional operator

Motivated by the ramifications for treating verum as a truth-conditional operator, as shown in Section 3.1, GCM propose that verum must be treated as a use-conditional operator. First, they suggest to make a distinction between *e* and *t* as truth-conditional, and *u* as use-conditional types. Verum, then, is treated as a hybrid use-conditional function from truth-conditional arguments of type ⟨*s*, *t*⟩ to use-conditional content of type *u*, formally expressed in (47).

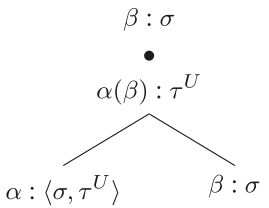
(47) $\text{VERUM} \rightsquigarrow \lambda p_{\langle s,t\rangle}.\text{VERUM}(p) : \langle\langle s,t\rangle, u\rangle$

The gist of this proposal is to treat the truth-conditional content ⟨*s*, *t*⟩ as independent from the use-conditional content *u*. Thus, a sentence such as *Karl* IS *writing a book* consists of a truth-conditional tier (T-C), *write*(*book*) (*Karl*) of type ⟨*s*, *t*⟩, and a use-conditional tier (U-C), VERUM(*write*(*book*) (*Karl*)) of type *u*.

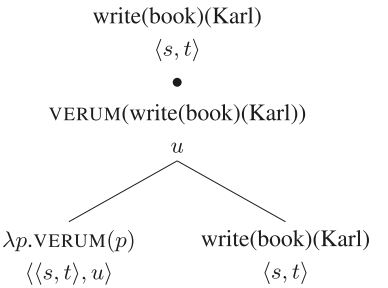
To implement the analysis of verum in a semantic parsetree, GCM propose a hybrid use-conditional application rule, mainly inspired by Potts (2005). In this formalization, the metalogical '•' takes on the role of ensuring the separation between use-conditional and truth-conditional content. By isolating the use-conditional meaning after function application, the truth-conditional content is passed further up the semantic parsetree, ignoring the use-conditional content in the further calculation (Gutzmann and Castroviejo Miró 2011: 157). This operation is central to GCM's analysis of verum. The formalized hybrid use-conditional application is given in (48), where σ stands for a truth-conditional type, whereas τ indexed by U marks a use-conditional type.

1 Another puzzling observation is that E-FORCE refers to unexpectedness of propositions, not degrees. Indeed, Rett defines unexpectedness as S_c having not expected that *p*. However, when she talks about unexpectedness in exclamatives, it turns out it is not about the truth or falsity of the propositional content, but rather about the degree to which a property is unexpected (Rett 2012: 422). Note that unexpectedness in this sense does not rule out the verum reading. Therefore, while we don't believe it a necessary component for our analysis, had Rett formalized unexpectedness as part of E-FORCE, it may have, in principle, been applicable to *whether*-exclamatives.

(48)



(49)



(49) represents the concrete application of (48) to 'Karl IS writing a book'. We apply VERUM, a function of the hybrid-type $\langle \langle s, t \rangle, u \rangle$, to the proposition p of type $\langle s, t \rangle$. The VERUM function, then, yields a purely use-conditional type u. The purely truth-conditional content of type $\langle s, t \rangle$ is passed further up via '•' to separate the independent use- and truth-conditional expressions.

What this suggests is that any verum strategy under the scope of its operator VERUM must be, at the truth-conditional level, equivalent to a plain assertion of the proposition p, as mentioned in Section 3.1.

4.3 Conjoining speech acts

As a third ingredient for our analysis, we adopt parts of Krifka's (2001) analysis in which he suggests a type a for speech act types and a non-Boolean operator to coordinate speech acts, '&', which we take as type $\langle a, \langle a, a \rangle \rangle$.

The motivation to settle for a non-Boolean operator '&' comes from Krifka's observation that there are no natural cases of speech act disjunctions; coordinations are well-defined operations for speech acts, disjunctions are not. Consequently, speech acts do not comprise a Boolean algebra but a simpler algebraic structure with just one operation, *viz.* conjunction (Krifka 2001: 16–18). He draws on various examples that show this ban on disjunction.

(50) *#I hereby baptize you John, or I hereby baptize you Mary.*

(51) *Al made the pasta, or Bill made the salad.*
   a. I assert: *Al made the pasta or Bill made the salad.*
   b. #I assert: *Al made the pasta*, or I assert: *Bill made the salad.*

(52) *Get out of here or I will call the police.*

Krifka explains that (50) clearly does not define a proper baptism. In (51), the disjunction is interpreted as a disjunction of the asserted propositions but not as a

disjunction of the assertions themselves, as the contrast between (51a) and (51b) suggests. Lastly, (52) is not a disjunction of a command and an assertion, as one would assume, but a command that is backed up by a threat.

For our data, there is also no leeway regarding the choice of disjunction or conjunction operators. In fact, disjunctions in lieu of conjunctions in EP and SG *whether*-exclamatives lead to ill-formed expressions, as (53) and (54) both illustrate.

(53) A: *A Maria é alta?*
the Maria is tall
'Is Maria tall?'
B: *#Ou* SE *é!*
or whether is
∼'Yes or how tall she is!'

(54) A: *Ist Maria groß?*
is Maria tall
'Is Maria tall?'
B: *#Oder* OB*!*
or whether
∼'Yes or how tall she is!'

A negative criterion of speech act conjunction pointed out by Krifka is the ban on commutativity. That is, it does not hold for any speech acts *A* and *A′* that *A & A′* = *A′* & *A*. In reference to our schematics that we sketched out in (11) in Section 2.1, we would have to buy the constraint in (55) for our analysis.

(55) ASSERTION & EXCL ≠ EXCL & ASSERTION

Looking at SG, the omnipresent *und* in *whether*-exclamatives will always entail the presence of a coordinated structure of two speech acts. But, importantly, this conjunction is very rigid in its order and bans commutativity of the speech acts, see (56) and (57).

(56) A: *A Maria é alta?*
the Maria is tall
'Is Maria tall?'
B: *#*SE *é e é.*
whether is and is
∼'How tall she is and she is tall.'

(57) A: *Ist Maria groß?*
is Maria tall
'Is Maria tall?'
B: *#*OB *(sie groß ist) und sie ist groß.*
whether she tall is and she is tall
∼'How tall she is and she is tall.'

The impossibility of changing the order of conjoined speech acts is the result of the linguistic facts that we have collected for *whether*-exclamatives, *viz.* exclamatives cannot be taken as direct answers to questions.

In summary, then, we submit that the conjunction in the complex structure of *whether*-exclamatives is of a non-Boolean algebraic nature. In Section 4.4, we will complete the picture of an analysis for *whether*-exclamatives, putting all the ingredients we have listed so far together.

4.4 Towards an analysis

We now have all the necessary building blocks to perform our analysis. Firstly, we determine our recursive rules departing from GCM and enriching them with the speech act type and non-Boolean operator from Krifka (2001).

I. Basic types:
   a. *e*, *t*, *s*, *a* and *u* are basic types
   b. *e* and *t* are truth-conditional types
   c. *u* is a use-conditional type
   d. *s* is a world type
   e. *a* is a speech act type

II. Derived types:
   a. If σ and τ are truth-conditional types, then $\langle\sigma, \tau\rangle$ and $\langle s, \tau\rangle$ are truth-conditional types.
   b. If σ is a truth-conditional type and τ is a hybrid or pure use-conditional type, then $\langle\sigma, \tau\rangle$ and $\langle s, \tau\rangle$ are hybrid use-conditional types.
   c. If σ and τ are hybrid or pure use-conditional types, then $\langle\sigma, \tau\rangle$ and $\langle s, \tau\rangle$ are pure use-conditional types.
   d. If σ and τ are speech act types, then $\langle\sigma, \tau\rangle$ is a pure speech act type.
   e. If σ is a truth-conditional type and τ is a speech act type, then $\langle\sigma, \tau\rangle$ is a hybrid speech act-type.
   f. The set of types is the union of the basic, truth-conditional, speech act, and all use-conditional types.

III. Operators:
   a. Boolean operators can only be combined with truth-conditional types
   b. non-Boolean & can only be combined with pure speech act types

In the following, we will provide an analysis of a standard example of a *whether*-exclamative in EP (1). We will also divide the analysis into individual steps. In each step, we will specify the interpretations and then represent them in a semantic parsetree. From our previous considerations, we have concluded that the order of application is such that first, the degree is converted into a proposition through ∃-closure, followed by the application of our VERUM operator and, lastly, by the illocutionary operator EXCL.

The first step of our compositional analysis is the combination of degree properties and ∃-closure in order to obtain a proposition that can be picked up by EXCL further up in the compositional tree. First, we interpret $[\![\text{SE } \textit{(a Maria) é (alta)}]\!]^c$ as a degree property of type $\langle d, \langle s, t\rangle\rangle$ (Rett 2012: 431) with *d* being the degree of Maria's height in the context *C*. (58), then, states that in a contextually set standard for tallness (s_c) in *C*, Maria's degree of tallness *d* is higher than (>) s_c (see, e.g., Kennedy 1999; Kennedy and McNally 2005 and references therein).

(58) $[\![\text{SE } \textit{(a Maria) é (alta)}]\!]^c = \lambda d.[\lambda w_s.[alta_w(m,d) \wedge d > s_c]]$

Note that our entry is the result of a previous function application of $[\![\textit{alta}]\!]^c$ of type $\langle \langle s, e\rangle, \langle d, \langle s, t\rangle\rangle$ to $[\![\textit{a Maria}]\!]^c$ of type $\langle s, e\rangle$, which we have deliberately skipped for reasons of space. The roof in the tree in (62) and in the trees that follow indicate that some further composition, not being crucially relevant for the current analysis, has been suppressed. Also note that we are currently dealing with a degree property, just as in Rett's analysis, which we still have to convert into a proposition through ∃-closure. Here, we adopt the idea from Landman (2000) for events where ∃-closure is a type-shifting rule from bare event types to truth types (we refer the interested reader to Section 2.2.4.4 in Landman 2000 for further details of this rule).

(59) a. ∃-closure: $pow(e) \rightarrow t$
b. ∃-closure$[\alpha] = \exists e \in \alpha$

Setting the world parameter aside for now, all we need for our analysis is a default type-shifting rule from degrees of type *d* to *t*. For that, we apply the very same rule in (59) to degree properties instead of events. We also directly insert our exclamative (1) for *α*. Via Landman's ∃-closure, we then get an expression of type *t* expressing that there is a degree *d* of Maria being taller than the contextually set degree of being tall.

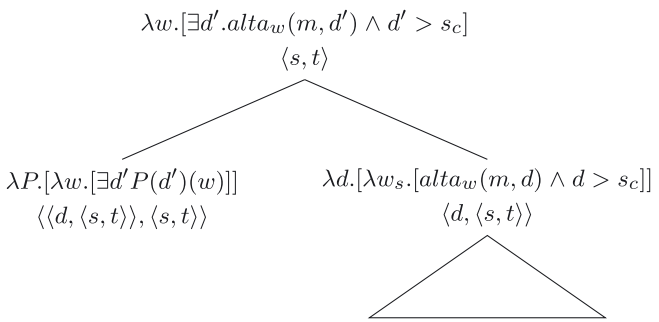
(60) a. ∃-closure: $pow(d) \rightarrow t$
b. ∃-closure[SE *(a Maria) é (alta)*] $= \exists d \in$ SE *(a Maria) é (alta)*

For our compositional analysis, we can reformulate and intensionalize this rule as follows: *P* is any predicate of type $\langle \tau, \langle s, t\rangle\rangle$, and we will insert *d* for the metavariable *τ*.

(61) $[\![\exists\text{-closure}]\!] := \lambda P_{\langle \tau, \langle s,t\rangle\rangle}.\lambda w_s.[\exists x_\tau P(x)(w)]$

With our two entries from (58) and (61), we reflect Rett's proposal of exclamatives as degree properties that are converted into propositions of type $\langle s, t\rangle$ through ∃-closure.

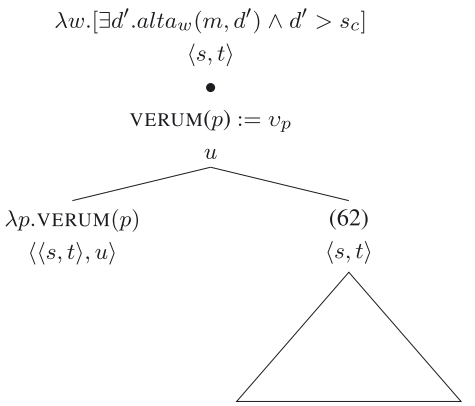
(62)



What we accomplish, then, is that in *C*, Maria's degree *d'* of tallness exceeds that of the contextual standard s_c. Through ∃-closure, we manage to capture Rett's idea of obtaining the degree from the context. However, this might pose a potential problem for EXCL (and for E-FORCE), because it only establishes the degree *d'* in our context *C* but not that EXCL itself contributes to s_c being especially high. What turns out to be positive for the analysis, on the other hand, is that through ∃-closure at this stage, we can focus more on the contribution of verum, i.e. S_c is sure that we should add the fact that Maria's height exceeds some threshold to the Common Ground (see Romero and Han 2004).

\We now take the VERUM function in (47) and apply it to the proposition of type ⟨*s*, *t*⟩, which we previously calculated in (62). We get the output *u* on the use-conditional level, and ⟨*s*, *t*⟩ on the truth-conditional level. For a proposition *p* of type ⟨*s*, *t*⟩, we define VERUM(*p*) := v_p where *v* is the set of use conditions of *p*.

(63)

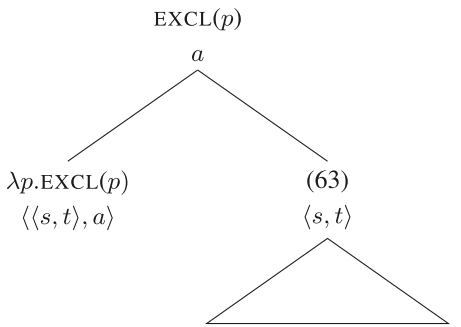


Having obtained both use and truth conditions, the next step is to apply the illocutionary operator EXCL to our truth-conditional expression, as done in (65), where we apply EXCL to $[\![$*SE (a Maria) é (alta)*$]\!]^c$ of type ⟨*s*, *t*⟩ and get a speech act of type *a*. We then formally propose EXCL to be a function from propositions to speech acts, a function of type ⟨⟨*s*, *t*⟩, *a*⟩.

(64) EXCL $\rightsquigarrow \lambda p_{\langle s,t \rangle}$. EXCL$(p)$

Our parsetree in (65) displays the application of the steps described above based on our previous calculation from (63).

(65)

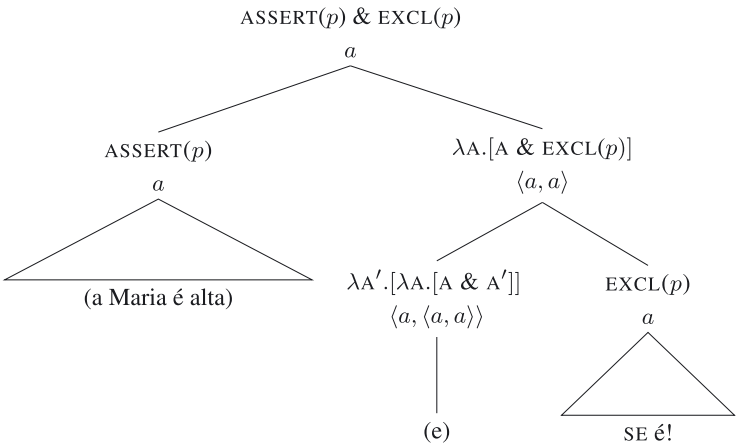


What follows is the coordination of the two speech acts, ASSERT and EXCL. What we now need is a formal definition of our non-Boolean operator '&', lexicalized as *and*, a function of type $\langle a, \langle a, a\rangle\rangle$. We provide the interpretation of a non-Boolean *and* in (66).

(66) $[\![and]\!] = \lambda_a \mathrm{A}'.[\lambda_a \mathrm{A}.[\mathrm{A} \,\&\, \mathrm{A}']]$

With (66), we can now properly analyze how *whether*-exclamatives are structured at the speech-act level. (67) is the final step in our compositional analysis of a *whether*-exclamative.

(67)



In sum, our analysis suggests that whenever a speaker *S* utters an *und ob*-sentence in SG or *se*-sentence in EP, such sentence makes a conjoined speech act that consists of two parts: firstly, they assert that Maria is tall and, secondly, they exclaim that she is tall to a high degree. This latter speech act has the use conditions that the speaker is certain that Maria is very tall. The truth conditions, on the other hand, say that Maria exceeds some contextually specified degree of height.

The analysis is likewise applicable to typically non-gradable adjectives for reasons we already provided in Section 3.3, namely that the verum reading and the high

degree reading are always available. We assume that contextual conditions determine which one is more salient. That is, for a typically non-gradable predicate such as *prime number*, the retrieval of a degree reading is generally difficult given our world knowledge. Consequently, the verum reading becomes more salient in relation to the degree reading. This is a property that other exclamatives, e.g., *wh*-exclamatives, do not have and therefore may result in their infelicity, while *whether*-exclamatives remain felicitous. To reiterate, it is not only when the degree reading fails that we fall back on the verum reading. Both readings are always available, but their salience varies according to contextual factors.

5 Conclusions

Our analysis of *whether*-exclamatives has shown that this construction aligns with assumptions in the literature about verum. We began with the intuition that *whether*-exclamatives parallel with other verum strategies in their meaning contrast with non-verum utterances. *Whether*-exclamatives have then been shown to affect use conditions in the same way as other verum expressions and furthermore pattern with the latter in what concerns discourse conditions. Interaction between exclamative and verum properties within the *whether*-exclamative structure has been shown to make available both a high degree and a verum reading, where the latter is responsible for the felicity of the exclamative when the gradability of the predicate cannot be coerced.

We have used data from EP and SG (Amido and Buchczyk 2022) and a framework extracting GCM's use-conditional operator, extending it with the EXCL operator (based on Rett's E-FORCE) and speech act coordination (Krifka 2001). We have provided a compositional analysis with a set of recursive rules and types to interpret *whether*-exclamatives. Verum in exclamatives has been hinted at by Rett (2012) and analyzed in Taniguchi (2018), who applies Romero and Han's (2004) still semantic notion of verum to negative inversion exclamatives. However, we provide the first analysis of verum as a pragmatic notion to (*whether*-)exclamatives.

On a broader perspective, the observations in this paper demonstrate that verum is a phenomenon seen across all sentence moods, namely in declaratives, interrogatives, imperatives, as well as exclamatives.

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