

Verum, focus, and certainty*

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Abstract: Various languages enable speakers to express their certainty in the truth value of a statement through pitch accent on verbs or auxiliaries, known as Verum Focus. This prosody requires a particular conversational background, in which the truth of the relevant statement has been questioned. Previous literature is conflicted on whether this effect requires a covert ‘truth’ operator, and to what extent focus alternatives are involved. This paper shows that focus alternatives and truth operators can be identified as two separate phenomena in Verum Focus sentences, with independent consequences: Operators encode various levels of certainty, while focus generates the conversational requirement. Verum Focus effects are explained as a result of focus alternatives strengthening the default certainty levels in assertion.

Keywords: verum focus, alternatives, negation, polarity focus, prosody, scalar implicatures

1 Introduction

Language speakers may have different levels of confidence in the propositions that make their natural speech. One way to communicate this is a cross-linguistic convention that relates pitch accent on the verb or auxiliary with certainty in the truth value of a proposition. To illustrate, in the following German and English examples, the (b) sentences are understood as more confident statements compared to the (a) sentences.

(1) German:

a. Karl liest ein Buch.

(Höhle 1992)

Karl reads a book

‘Karl is reading a book.’

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- b. Karl LIEST ein buch.
 ‘Karl IS reading a book.’

- (2) English:
 a. She left her husband. (Wilder 2013)
 b. She DID leave her husband.

Another quality of sentences (1b, 2b) is that they require a conversational background in which the truth value of (1a, 2a) is questioned. Höhle (1992) was the first to describe this phenomenon, which he labeled Verum (‘truth’) Focus. The term reflects Höhle’s proposal that this construction assigns focus to a silent truth operator rather than to the accented elements (verbs and auxiliaries).

This opened a still ongoing debate into whether a lexical verum term and a focus operation are both needed to explain the (b) sentences above. Goodhue 2018 and Gutzmann, Hartmann, and Matthewson (2020) represent prominent attempts to derive the observed meaning and discourse conditions based solely on focus or verum, respectively.

My main claim in the current paper is that these three lines of analysis do not compete but rather capture different aspects in the linguistic expression of certainty. More specifically, I argue that while verum and focus are, in a sense, both active in (1b) and (2b), they constitute two separate phenomena that are better described by their respective reductionist accounts.

1.1 Certainty varies

The key evidence for this claim comes from contexts that demonstrate the effects of the pitch contour independently of verum operators, and vice versa. I will argue that verum operators encode the level of certainty in the truth of a proposition (not the truth value itself), while focus places the proposition in a conversational background that challenges its truth value. These concepts are closely related, yet it is possible to express certainty in a proposition with no negotiation of its truth value, or to resolve a negotiation without certainty.

I rely on three types of environments to make this point. The first is contexts where the pitch contour from (1b, 2b) occurs under overt expressions that encode the speaker’s certainty in the assertions’ truth value, such as the underlined words below.

- (3) a. She clearly DID leave her husband.
 b. Maybe she DID leave her husband.
 c. I doubt that she DID leave her husband.

The sentences in (3) show the same prosody as (2b) and assume the same context but are not understood as more certain compared the bare statement in (2a). Instead,

each sentence conveys a different level of confidence determined by the phrases *clearly*, *maybe*, and *doubt*, which are not elevated by the stressed auxiliary.

A possible explanation is that these sentences demonstrate cases of embedded verum focus, as seen in (4).

(4) (MAYBE (VERUM (p)))

However, since there is no difference in the level of certainty compared to ‘maybe p’ with flat prosody, the additional verum expression should be seen as semantically vacuous, making unclear how it could contribute to the observed discourse conditions.

1.2 Relative clauses

Another challenge is raised by occurrences of Verum Focus in constituents that do not affect the truth value of a proposition, such as relative clauses. If stressed auxiliaries targeted verum elements, we would have expected them to be redundant in relative clauses, whose truth value is not up for debate. The following phrase shows that stressed auxiliaries are nonetheless available in relative clauses, which begs the question of what they contribute to these contexts.

(5) the parties that John DOES go to

The phrase in (5) does not refer to parties for which John’s attendance was debated. Rather, it suggests a conversational background in which there is at least one party that John does not go to. An embedded verum operator could arguably support this meaning by requiring the context to include parties for which ‘it is not true that John goes to them’. Yet the accepted meaning is one in which the unattended parties are different from the ones referred to by the relative head, which would require the clause to take higher scope than its own head.

1.3 Hebrew adjectives

A final type of contexts, which completely clashes with an embedded verum analysis, is that of Verum Focus prosody in non-tensed constituents such as Hebrew adjectives. In Hebrew, Verum Focus pitch accent falls on an inserted affirmative particle *ken* ‘yes’, which can take a sentence-level position, as in (6a), or a lower position (6b).

- (6) a. ze KEN ha-of ha-metubal.
It yes DET-chicken DET-seasoned
‘This IS the seasoned chicken.’
b. ze ha-of ha-KEN metubal.
it DET-chicken DET-yes seasoned
‘This is the SEASONED chicken.’

In this minimal pair, (6a) can be understood as ‘it is true that this is the seasoned chicken’, as required in a verum analysis, but (6b) does not mean ‘this is the truly seasoned chicken’. If the described prosody had a verum component, we would need to conclude that it exists in (6a), and not in (6b).

1.4 Summary

To summarize the puzzle, Verum Focus is argued to contribute to certainty, but there is no overlap between the semantic effect and the relevant prosody: focus leads to certainty in bare assertions, but this effect disappears under overt verum and certainty operators, and becomes completely irrelevant for the same contour in adjectives and relative clauses. The typology is summarized in Table 1.

	Focus	Verum operator	Certainty
(1) Flat assertions: <i>She left her husband.</i>	–	?	Weak
(2) Overt verum: <i>She truly/clearly left her husband.</i>	–	✓	Strong
(3) Focused assertions: <i>She DID leave her husband.</i> <i>This is KEN the seasoned chicken</i>	✓	?	Strong
(4) Focused modifiers: <i>the parties John DOES go to</i> <i>the KEN seasoned chicken</i>	✓	–	N/A

Table 1 The distribution of verum operators, auxiliary focus, and certainty

The main question going forward is how lexical mechanisms and focus operations combine to generate different levels of speaker certainty. More specifically, I will examine the idea that the certainty levels in flat and focused assertions can be traced back to a covert verum operator, which I link with the conversational operator ASSERT (Krifka 1992).

The following section presents the basics of the classical Verum Focus analysis and the main arguments of accounts that sought to reduce it focus mechanisms or lexical verum terms. I show that reductive accounts capture various aspects of these phenomenon more accurately, and yet that both are needed to explain the dataset in (3-6). Specifically, I will show that verum accounts are needed to explain the certainty

effects that follow from the prosody in question (Section 2.1), while focus accounts explain the import of this prosody in non-truth-conditional contexts (Section 2.2).

Section 3 will present the current analysis, by which focus and verum are two separate phenomena with independent consequences: verum expressions encode various levels of speaker certainty, while association of focus to negative and affirmative particles restricts the conversational background. The rise in certainty between flat assertions and focused ones will be explained by a strengthening of a default ASSERT operator through focus.

2 Background

The pitch contour known as Verum Focus due to Höhle 1992 presents a challenge for focus theories in that it requires explaining how stressed verbs or auxiliaries convey speaker certainty. Höhle's answer was that the elements that carry the accent on the surface are not the ones being targeted semantically. The real target of focus in this proposal is a silent verum expression with the denotation in (7).

- (7) $\llbracket \text{VERUM}(p) \rrbracket = \text{it is true that } p$
(Höhle 1992, quoted in Gutzmann and Castroviejo Miró 2011)

The verum operator selects a proposition and returns a statement that this proposition is true. Höhle argued that this meaning contribution is on its own trivial, and yet that emphasizing the verum operator through focus reinforces the speaker's commitment to the truth value of a statement.

The verum operator received various formal interpretations in later works, as a modifier akin to *really* (Romero and Han 2002), a phase feature (Lohnstein and Stommel 2005), a QUD operator (Gutzmann and Castroviejo Miró 2011), and a presupposition trigger of epistemic conflicts (Bill and Koev 2021). Additional accounts refer to the negative version, a FALSUM operator, which falsifies the proposition it selects (Krifka 2015; Frana and Rawlins 2019; Bhatt and Homer forthcoming).

These analyses successfully account for the core properties of Verum Focus (certainty effects, lack of interaction with the focused element), and provide various mechanisms to derive the necessary discourse condition. Others asked whether relying on both a covert expression and a focus operation is redundant (Richter 1993; Goodhue 2018; Gutzmann, Hartmann, and Matthewson 2020). Since lexical encoding can convey certainty on its own, it is not obvious that it should depend on focus to be interpreted. Similarly, if focus brings forward the truthfulness of the assertion, it should not need additional lexical matter. The remainder of this section presents prominent attempts to reduce Verum Focus to one or the other components, which pertain to the more conceptual question of what type of linguistic phenomenon Verum Focus is: a focus phenomenon, or a lexical device to encode

certainty. The following subsections present these views in a respective order and conclude that their combination is crucial to capture the diverse nature of certainty expressions.

2.1 Focus analyses

Richter (1993) aimed to connect Höhle's data with formal theories of focus (Partee 1991; Rooth 1985, 1992). His main claim is that Verum Focus, which he refers to as polarity focus, divides the discourse into new and given information, on a par with the information structure imposed by focus elsewhere. This term goes back to Gussenhoven 1983, who argued that negative sentences situate the entire assertion as the conversation background and the negative polarity as the focus.

Following this lead, Richter argued that marking polarity as new information resolves a debate on a proposition's truth value without resorting to a verum term that literally states that 'p is true'. As evidence for this claim, Richter shows that Verum Focus contour prevents adding information to the sentence, indicating that all non-accented material should be given. To illustrate, in (8), Verum Focus prosody may be used to confirm A's statement that Karl is reading a book, but clashes with additional information such as the author's name (B2).

- (8) A: Ich glaube, Karl liest ein Buch. (Richter 1993: 21)
 I believe Karl reads a Book
 'I believe Karl is reading a book.'
- B1: Karl liest ein Buch (von Krifka).
 Karl reads a book by Krifka
 'Karl IS reading a book by Krifka.'
- B2: Karl LIEST ein Buch (??von Krifka).
 Karl reads a book by Krifka
 'Karl IS reading a book (?? by Krifka).'

One question Richter leaves open is concerned with the structure of the alternatives that contribute to the semantic value of Verum Focus. In alternative-based theories of focus, an operation that targets the polarity of a proposition p should generate a set of propositions that contrast in the focused element (following Rooth 1992; Wagner 2005, 2006, 2012), or substitute it with an expression of the same type (Katzir 2007, 2013; Alonso-Ovalle and Hirsch 2018). Defining Verum Focus as polarity focus explains how stressing the verb *read*, for example, does not evoke alternatives like *write*, *burn*, etc. If the polarity is the target rather than the verb itself, it would introduce for *read* the alternative *not read*. The focus semantic value of a proposition p would then be the set in (9).

(9) $\llbracket p \rrbracket^f = \{p, \neg p\}$.

The set of alternatives should determine the appropriate context for prosody in question. In this respect, previous focus analyses are divided on whether Verum Focus prosody responds to the negative alternative (Goodhue and Wagner 2018; Goodhue 2018), or to a polar question (Richter 1993; Wilder 2013; Samko 2016)

This split mirrors a broader debate on the licensing conditions of free focus, which contests anaphoric theories (Wagner 2006; Schwarzschild 2020; Goodhue 2022) and questions theories (Katzir 2013, 2022; Büring 2019). In short, anaphoric theories argue that focus accent is fed by a contrastive alternative in the previous context, while questions theories require that focused elements would present an answer to a salient question.

Accumulated data from Verum Focus in English and German invites a licensing-by-question analysis, in the sense that the prosody does not require a particular antecedent, as shown in (10). However, an anaphoric approach can still be maintained by explaining that a polar question contains the negative alternative in its Hamblin set, as Goodhue (2018) argues.

- (10) A₁: Mary thought that [Sue might (not) leave her husband], and / but . . .
A₂: They insisted that [Sue (not) leave her husband], and / but . . .
A₃: Mary expected [Sue (not) to leave her husband], and / but . . .
A₄: Mary counted on [Sue (not) leaving her husband], and / but . . .
A₅: Mary believes that [Sue left her husband].
B: She DID leave him. (Wilder 2013: 55-56)

What remains unclear in any focus analysis is the capacity of focus operations to induce the level of certainty that Verum Focus utterances appear to convey. Focus requires a negotiation of the assertion's truth value, but this does not have to be resolved by a decisive answer. To the contrary, responding to an epistemic conflict with expressions of low certainty such as *possibly* or *arguably* makes a perfectly coherent discourse, unless they follow phrases that show Verum Focus prosody. This is illustrated in (11).

- (11) A: I'm not sure if the US could subsidize healthcare for all citizens.
B₁: It is (arguably) the richest country in the world.
B₂: It IS (#arguably) the richest country in the world.

In sum, reducing Verum Focus effects to focus provides a straightforward explanation for its discourse requirement, but compromises the certainty effect. This suggests that the verum component should not be removed from the analysis, and opens up the possibility that contra to intuition, it could be the focus operation that is redundant.

2.2 Verum analyses

The accounts presented so far all share a view of Verum Focus as a focus-based phenomenon, as suggested by its prosodic manifestation. Gutzmann et al. (2020) challenge this assumption, describing Verum Focus as a lexical operator that only superficially resembles focus. Gutzmann and colleagues proposed that the prosodic contour of Verum Focus introduces a lexical verum predicate that operates on non-truth-conditional levels and prevents ‘not p’ from being recorded into the common ground. This analysis models the verum element as a tool of negotiation of epistemic conflicts, without pertaining to a focus operation.

The authors argue that Verum Focus prosody sounds like focus accent in German and English, and yet that the two are distinguishable in other languages. In particular, they show that several Chadic languages employ different particles for focus and verum utterances, as illustrated in (12) for Bura.

(12) Bura (Chadic):

a. Focus:

Kilfa **an** tí Kubílí másta akwa kwasúku.
 fish FOC REL Kubili buy at market
 ‘It’s FISH that Kubili bought at the market.’

b. Verum:

A’á, Pindár (**kú**) sá mbal náha.
 yes Pindar VERUM drink beer yesterday
 ‘Yes, Pindar DID drink beer yesterday.’

The association of *klifa* ‘fish’ with focus in (12a) is marked by the particle *an*, while the Verum Focus meaning in (12b) is marked by *kú*. Gutzmann et al. (2020) take this to indicate that focus alternatives and verum expressions are different functions that turn out as homophonous in Germanic languages. They argue further that a negative alternative in the context is not a sufficient condition for Verum Focus prosody, but rather that the speaker must also be convinced in a proposition’s truthfulness to use it.

We have seen conflicting evidence for this claim in the data shown above. On the one hand, an expression of low certainty, such as *arguably*, clashes with Verum Focus prosody in (13). On the other hand, there is no contradiction in combining the same prosody with a similar expression that takes a higher position (14).

- (13) a. The US is (arguably) the richest country in the world.
 b. The US IS (#arguably) the richest country in the world.
- (14) a. Maybe she left her husband.
 b. Maybe she DID leave her husband.

The fact that a stressed auxiliary contradicts with the uncertainty expression in (13) but not (14) poses a general question to theories that connect stressed auxiliaries with a verum element. If accent on the auxiliary introduces a verum expression (as in Gutzmann et al. 2020) or assigns focus to it (as in Höhle 1992 and other Verum Focus accounts), a contradiction is expected in (14b) as well.

Another question for verum accounts concerns the role of a verum expression in non-assertive elements such as relative clauses. It is not obvious that the meaning of the relative clause in (15) is equivalent to (16), where an overt truth expression replaces the stressed auxiliary.

(15) the parties that John DOES go to

(16) [the parties that (it is true that) John goes to]

In fact, the prosody in (15) does not encode any level of certainty – weak or strong – because it is not part of a proposition, which means there is no truth value to negotiate. Accordingly, it does not require the conversational background to contain an epistemic conflict regarding John’s going to parties.

Instead, the requirement that (15) places on the discourse is a presupposition that there are parties that John does *not* go to. The following example shows that John’s absence from some parties can be rolled back in flat assertions (17a) but not in focused ones (17b).

(17) a. As for the parties John goes to, (actually, he goes to every party)...

b. As for the parties John DOES go to, (#actually, he goes to every party)...

Another type of contexts that make a similar point comes from Modern Hebrew, which holds a unique combination of properties with respect to Verum Focus utterances. The first is that Hebrew Verum Focus falls on affirmative particles, which are inserted in positions that otherwise host negation, as seen in (18).

(18) A: xašavti še-Amal lo ohevet marak. (Bassel 2022)

think.PST.1SG COMP-Amal NEG like.PRTC.F soup

‘I thought Amal didn’t like soup.’

B: amal {lo/KEN} ohevet marak.

Amal NEG/AFF likes soup

‘Amal doesn’t/ DOES like soup.’

Second, Hebrew enables the phenomenon known as constituent negation, which means its negative marker is not limited to clauses. To illustrate, in (19), lowering the negation marker from the clause (19a) to the adjective (19b) changes the scope of negation and generates a different meaning.

- (19) a. ze lo me'od raxok. b. ze me'od lo raxok.
 this NEG very far this very NEG far
 'It's not very far.' 'It's very much not far.'
 [NEG > very] [very > NEG]

Stressed *ken* takes the position of negation and can therefore modify adjectives and deliver a different meaning and discourse conditions than sentence-level *ken*. Attested examples are given in (20).

- (20) a. ze ha-of ha-**KEN**metubal.
 it DET-chicken DET-yes seasoned
 'This is the SEASONED chicken.'
 b. tamid jihiju ele še-ja'adifu et ha-gever ha-**KEN**metupax.
 always exist DEM that-prefer ACCDET-man DET-yes well-kept
 'There will always be the ones who would go for the well-kept man.'

In both examples, exchanging stressed *ken* with a verum expression equivalent to 'truly' would lead to a different meaning than intended. *ken* does not rely on an epistemic conflict with respect to the chicken being seasoned or the man being well-kept, but rather on the existence of objects with the reverse properties (an unseasoned chicken, sloppy men).

To demonstrate this contrast, consider the chicken example in (20a) with *ken* occurring in the clause level, as seen in (21).

- (21) ze KEN ha-of ha-metubal.
 it yes DET-chicken DET-seasoned
 'This IS the seasoned chicken.'

This sentence does not differ from (20a) in its basic truth conditions. Both sentences refer to seasoned chicken. Yet they require different conversational backgrounds. In (21), the sentence is understood as responding to the negative claim 'this isn't the seasoned chicken', while (20a) requires the existence of an unseasoned chicken in the background. The certainty effect only emerges in (21).

To conclude, we have seen two types on environments in which certainty effects emerge selectively: when Verum Focus prosody occurs under an overt verum expression, and in non-propositional constituents, including relative clauses and Hebrew adjectives.

This pattern presents a challenge to the general idea of lexical verum operators. If we adopt Hohle's view that the verum operator is a regular component in assertions, we should expect flat assertions to convey certainty similarly to focused assertions. If, instead, we accept Gutzmann et al. 2020's suggestion that the verum meaning is delivered by prosody, then certainty should arise anywhere this prosody is observed, including relative clauses and adjectives.

3 Proposal: A scale of confidence

To conclude the previous section, we have seen that discourse conditions on Verum Focus prosody and the certainty effects that follow from it do not always coincide. For English, a stressed auxiliary always poses restrictions on the context, but the certainty effect emerges only in a subset of these cases, namely in asserted clauses that are not selected by an overt verum marker, as summarized in Table 2.

	Certainty	Discourse condition
Flat assertions: p	×	×
Focused assertions: [p] ^f	✓	Epistemic conflict
Focused relative clauses: [<i>that</i> p] ^f	×	Non-empty complementing set

Table 2 Certainty and discourse effects in plain and focused clauses

I take the distributed nature of these effects to mean that the term Verum Focus covers two separate phenomena: the focus structure poses discourse conditions in any level of certainty, while verum operators, which are actually certainty operators, encode the degree of certainty irrespective of the context.

The remainder of this section aims to show how the combination of focus and lexical operators derives the typology in Table 2. Section 3.1 suggests that the different discourse conditions on assertions and relative clauses follow from the position of polarity particles that feed the set of focus alternatives. Section 3.2 shows that the surge in certainty between flat assertions and their focused counterparts is explained if we assume that assertions start out with weak certainty, as recently suggested by Mandelkern and Dorst (2022).

3.1 Polarity focus

Sections 1-2 showed that English stressed auxiliaries dictate a particular conversational background, demonstrated below for assertions (22) and relative clauses (23).

- (22) a. The students DID pass the exam.
 b. Background: it was claimed that the students did not pass the exam.
- (23) b. [the students that DID pass the exam]
 a. Background: there are (other) students that did not pass the exam.

I assume that the discourse conditions in both cases should follow from the notion of polarity focus, as described by Richter (1993) and Goodhue (2018).

However, these analyses refer specifically to the polarity of propositions (type *t*), and we have seen that Hebrew allows Verum Focus prosody in adjectives (type *(e,t)*). To accommodate such instances, I will define polarity focus as a cross-categorical phenomenon, as in (24).

- (24) Polarity focus: Focus that targets the polarity of a constituent *p* and generates the set of alternatives $\{P, \neg P\}$

By this definition, the notion of polarity does not refer only to the positivity or negativity of clauses, but to any constituent that can host negation. This calls to rethink the element that focus is assigned to, which Goodhue (2018) assumes to be a polarity component of the clausal periphery. Continuing this line of analysis, I suggest that polarity is represented by affirmative (or negative) particles that take the position of negation in the relevant language.

This is conceptually justified, since negation particles are themselves polarity items that determine whether an assertion is negative or positive through their presence or absence. Moreover, there is overt evidence from negative sentences with Verum Focus prosody, where it is the negative particle and not the auxiliary that is accented, as shown in (25).

- (25) The students did NOT pass the exam.

Further indication arrives from languages that employ overt affirmative particles for Verum Focus utterances, as seen for Hebrew. It could have been claimed that Hebrew resorts to these particles since it lacks overt auxiliaries that could carry the pitch accent. However, the same pattern exists in Spanish and Yiddish, which have overt auxiliaries. The following Spanish examples illustrate that these languages exhibit polarity focus on the negative and the positive particles.

- (26) Spanish:

- a. ella NO había bailado antes.
she NEG had danced before
'She had NOT danced before.'
- b. ella SÍ había bailado antes.
she yes had danced before
'She HAD danced before.'

I will therefore assume that polarity focus is associated with negative or affirmative particles, and that the affirmative variants may be overt (as in Hebrew and Spanish) or covert (German and English). This means that an English sentence like (22a) has the structure seen in (27).

- (27) The students did AFF pass the exam.

This idea goes back to Chomsky 1957 and provides a straightforward explanation to the surface manifestation of polarity focus in these languages. Pitch accent shifts to the auxiliary when the polarity particle is phonetically reduced (as in 28a) or covert (28b). It also explains why English Verum Focus triggers *do*-support, unlike the German counterpart, in accordance with the formation of negative sentences in these languages.

- (28) a. They DIDn't pass the exam.
 b. They DID AFF pass the exam.

With these definitions in mind, and the assumption that focus generates alternatives that replace accented constituents with non-weak elements of the same type (Katzir 2007; Fox and Katzir 2011), polarity focus is correctly predicted to form different alternatives for assertions and relative clauses. Focused assertions generate the set of positive and negatives assertions, seen in (29), while focused relatives activate the complementing nominal set (30). This computation leads each case to the discourse conditions listed in Table 2.

- (29) Alt (28) = {the students passed the exam, the students didn't pass the exam}
 (30) Alt (23) = {the students that passed, the students that didn't pass}

The same logic derives the discourse conditions shown for the Hebrew examples in (20-21) above based on the position of the affirmative particle. The following examples show that the position of stressed *ken* dictates the scope of negation in the structural alternatives.

- (31) a. This is KEN the seasoned chicken.
 b. Alt = {this is the seasoned chicken, this **isn't** the seasoned chicken}
 (32) a. This is the KEN seasoned chicken.
 b. Alt = {this is the seasoned chicken, this is the **un**seasoned chicken}

When *ken* modifies the entire proposition (31), the emerging alternative is 'this isn't the seasoned chicken', which leads to an epistemic conflict with respect to the dish's identity. This conflict can naturally be resolved with an answer like 'no, it's something else' (e.g., vegan special), as seen below in (33a). However, when *ken* directly modifies 'seasoned', focus requires an unseasoned chicken in the background. In these conditions, an 'it's something else' continuation sounds off (33b).

- (33) *Context: A waiter has brought various main courses to the table, following individual requests from guests. The food comes out very stylish and guests have a hard time relating each dish with their choice from the menu.*
 a. ze KEN ha'of ha-metubal (lo ha-spešel ha-tiv'oni).
 'it IS the seasoned chicken (not the vegan special).'

- b. ze ha'of ha-KEN metubal (#lo ha-spešel ha-tiv'oni).
 'it is the SEASONED chicken (#not the vegan special).'

This shows again that a cross-categorical definition of polarity focus predicts the correct discourse conditions of Verum Focus prosody across different environments.

3.2 Confidence operators

We have seen that the cross-categorical definition of polarity focus explains the discourse conditions of this prosody. It could be argued further that this concludes its semantic contribution, since any effect of certainty could potentially follow from the discourse background. Intuitively, the speaker's signaling that they are aware of a background conflict in itself adds confidence to an assertion.

However, if awareness led to certainty, we would have expected a similar effect in relative clauses, which generally does not happen. A sentence like *The students that DID pass the exam are invited for dinner* does not convey more certainty in the students' passing than its unfocused version. For this reason, I will devote this final subsection to the possibility that those cases of polarity focus that show elevated certainty are indeed affected by lexical operators.

Note first that the existence of verum terms is in itself unquestionable: Gutzmann et al demonstrated the use of overt verum particles in Chadic languages, and there are many lexical ways to convey truth and certainty across languages. The question I am asking following the cited literature is how speakers' claim to be speaking the truth is represented in cases that *lack* such overt operators.

In my understanding, the certainty effects demonstrated above justify a covert operator hypothesis, though not a truth operator per se but one that conveys the commitment that speakers express to the truth of a proposition by asserting it, known elsewhere as ASSERT (Krifka 1992, 1994; Anand and Hacquard 2014; Grosz 2020, among others).

ASSERT captures the general intuition that speakers acting in good faith say what they think to be true, and that addressees interpret the act of assertion as reflecting this mindset. Having said that, it is clear that speakers are not obligated to the highest standards of certainty in every sentence, and that they often make assertions based on indirect evidence, estimates or guessing (Mandelkern and Dorst 2022). For the current purposes, the content of ASSERT should be compatible with low certainty expressions in plain assertions (see 11a, repeated below as 34a), and their becoming contradictory under polarity focus (11b, repeated as 34b).

- (34) a. It is (arguably) the richest country in the world.
 b. It IS (#arguably) the richest country in the world.

Could this variability be reduced to a single operator? In possible worlds

semantic (Kratzer 1981), this pattern can be derived by defining ASSERT as a weak operator that undergoes strengthening to a higher certainty. Such proposals were previously made for the Hebrew universal quantifier (2014), for homogeneity effects (Magri 2014; Bar-Lev 2021), for comprehension of disjunction in children (Singh et al. 2016), and for the Greek imperative (Oikonomou 2023). In general lines, these analyses explain cases of variable force in linguistic phenomena by assuming that their weaker occurrences are the ones reflecting their basic meaning.

Applying this reasoning to ASSERT enables a simple explanation of why and where polarity focus leads to elevated certainty. To see how this may work, assume that ASSERT is an epistemic modal stating that there is at least one world in which p is true. For plain assertions, ASSERT p would mean the speaker at the very least commits to the possibility of p . There are two readily available ways to strengthen Assert: (i) inserting a stronger certainty operator such as *clearly*, or (ii) accenting polarity particles to enforce logical strengthening. In the latter case, polarity focus would generate alternatives in which negative and affirmative particles replace each other: $\{\diamond p, \diamond \neg p\}$.

At this point, the mechanism of scalar implicature would negate the alternative proposition, ruling out the possibility that $\neg p$ may be true in the eyes of the speaker. I assume that this step involves an exhaustification operator (Fox 2007), but the same result should follow from Gricean discourse conventions (Grice 1975, Geurtz 2009). For instance, for the propositions *The students DID pass the test*, focus activates the alternatives {the students passed, the students didn't pass}, leading to a scalar implicature ' \diamond The students passed $\wedge \neg \diamond$ The students failed'. The exhaustive reading is available regardless of prosody, but becomes obligatory under polarity focus, which explains the clash with low-certainty expressions.

In contrast, focused relatives present a case in which polarity focus does not interact with certainty, since the polarity particle occurs in a lower constituent. For the sentence *The students that DID pass the test are invited for dinner*, the alternatives formed by switching *did* with *didn't* will not generate a negative proposition, but rather switch the modified noun with its complement set 'the students that didn't pass'. In this case, polarity focus would feed EXHAUST with different propositions (\diamond *the students that passed are invited*, \diamond *the students that didn't pass are invited*), rather than the proposition and its negation, leading to the inference that the students who did not pass are not invited. The certainty implicature is also available, but since it does not interact with focus, it remains optional as in plain assertions.

4 Conclusion

I have demonstrated that verum operators and polarity focus have separate consequences: verum operators, which I describe as certainty operators, encode the confidence of the speaker in the truth value of a proposition p , while polarity focus

places p in a discourse background that includes the polar alternatives $\{p, \neg p\}$. These alternatives are generated through association of focus with affirmative particles, which are covert in English and German and overt in Spanish and Hebrew. The well-known effect of certainty follows from an interaction between polarity focus and a hearer strategy that assigns assertions a default certainty level, captured by the operator ASSERT. Defining ASSERT as a weak epistemic modal explains its compatibility with modifiers of different certainty levels, particularly in plain assertions. An inference of certainty arises when ASSERT is included in the alternatives formed by polarity focus, which forces an exhaustive reading that negates the possibility of the alternative of the opposite polarity.

References

- Alonso-Ovalle, Luis, and Aron Hirsch. 2018. Keep Only Strong. In *Semantics and Linguistic Theory (SALT)* 28:251–70. <https://doi.org/10.3765/salt.v28i0.4439>.
- Anand, Pranav, and Valentine Hacquard. 2014. Factivity, Belief and Discourse. *The Art and Craft of Semantics: A Festschrift for Irene Heim* 1: 69–90.
- Bar-Lev, Moshe E. 2021. An Implicature Account of Homogeneity and Non-Maximality. *Linguistics and Philosophy* 44 (5): 1045–97. <https://doi.org/10.1007/s10988-020-09308-5>.
- Bar-Lev, Moshe E, and Daniel Margulis. 2014. Hebrew Kol: A Universal Quantifier as an Undercover Existential. *Sinn und Bedeutung* 18:60–76.
- Bassel, Noa. 2022. Affirmative Focus. *North East Linguistic Society (NELS)* 52.
- Bhatt, Rajesh, and Vincent Homer. forthcoming. Negation of Disagreement in Hindi-Urdu'. In *Perspectives on Negation: Views from Across the Language Sciences*, edited by Frances Blanchette and Cynthia Lukyanenko. Berlin, Boston MA: De Gruyter Mouton.
- Bill, Cory, and Todor Koev. 2021. Verum Accent IS VERUM, but Not Always Focus. *Proceedings of the Linguistic Society of America* 6 (1): 188–202. <https://doi.org/10.3765/plsa.v6i1.4959>.
- Büring, Daniel. 2019. Focus, Questions and Givenness. In *Questions in Discourse*, edited by Malte Zimmermann, Klaus von Stechow, and Edgar Onea, 6–44. Leiden: Brill.
- Chomsky, Noam. 1957. *Syntactic Structures*. Mouton de Gruyter. <https://doi.org/10.1515/9783112316009>.
- Fox, Danny. 2007. Free Choice and the Theory of Scalar Implicatures. In *Presupposition and Implicature in Compositional Semantics*, 71–120. New York NY: Springer. https://doi.org/10.1057/9780230210752_4.
- Fox, Danny, and Roni Katzir. 2011. On the Characterization of Alternatives. *Natural Language Semantics* 19 (1): 87–107. <https://doi.org/10.1007/s11050-010-9065-3>.
- Frana, Ilaria, and Kyle Rawlins. 2019. Italian ‘Mica’ in Assertions and Questions. *Sinn Und Bedeutung* 20: 234–51.
- Geurts, Bart. "Scalar implicature and local pragmatics." *Mind and Language* 24 (1) (2009): 51-79.

- Goodhue, Daniel. 2018. On Asking and Answering Biased Polar Questions. PhD dissertation, McGill University.
- Goodhue, Daniel. 2022. All Focus Is Contrastive: On Polarity (Verum) Focus, Answer Focus, Contrastive Focus and Givenness. *Journal of Semantics* 39 (1): 117–58. <https://doi.org/10.1093/jos/ffab018>.
- Goodhue, Daniel, and Michael Wagner. 2018. Intonation, Yes and No. *Glossa: A Journal of General Linguistics* 3 (1). <https://doi.org/10.5334/gjgl.210>.
- Grice, Paul. 1975. Logic and Conversation. In *Syntax and Semantics 3: Speech Acts*, edited by Peter Cole and Jerry L. Morgan. New York: Academic Press.
- Grosz, Patrick G. 2020. Discourse Particles. In *The Wiley Blackwell Companion to Semantics*, 1–34. <https://doi.org/10.1002/9781118788516.sem047>.
- Gussenhoven, Carlos. 1983. Focus, Mode and the Nucleus. *Journal of Linguistics* 19 (2): 377–417. <https://doi.org/10.1017/S0022226700007799>.
- Gutzmann, Daniel, and Elena Castroviejo Miró. 2011. The Dimensions of Verum. *Empirical Issues in Syntax and Semantics* 8: 143–65.
- Gutzmann, Daniel, Katharina Hartmann, and Lisa Matthewson. 2020. Verum Focus Is Verum, Not Focus: Cross-Linguistic Evidence. *Glossa: A Journal of General Linguistics* 5 (1). <https://doi.org/10.5334/gjgl.347>.
- Höhle, Tilman N. 1992. Über Verum-Fokus Im Deutschen. *Beiträge Zur Grammatik Des Deutschen: Gesammelte Schriften von Tilman N. Höhle*, 381–416.
- Katzir, Roni. 2007. Structurally-Defined Alternatives. *Linguistics and Philosophy* 30 (6): 669–90. <https://doi.org/10.1007/s10988-008-9029-y>.
- Katzir, Roni. 2013. A Note on Contrast. *Natural Language Semantics* 21: 333–43. <https://doi.org/10.1007/s11050-013-9095-8>.
- Katzir, Roni. 2022. On the Roles of Anaphoricity and Questions in Free Focus. *Natural Language Semantics* 32: 65–92. <https://doi.org/10.1007/s11050-023-09214-z>.
- Kratzer, Angelika. 1981. The Notional Category of Modality. In *Words, Worlds, and Contexts. New Approaches in Word Semantics*, edited by Hans J. Eikmeyer and Hannes Rieser, 6:38–74. Research in Text Theory. Berlin and New York NY: De Gruyter.
- Krifka, Manfred (1992). A Compositional Semantics for Multiple Focus Constructions. In: Informationsstruktur und Grammatik. Linguistische Berichte Sonderhefte (4), edited by Joachim Jacobs. 17-53. Wiesbaden: Springer https://doi.org/10.1007/978-3-663-12176-3_2
- Krifka, Manfred. 1994. The Semantics and Pragmatics of Weak and Strong Polarity Items in Assertions. In *Semantics and Linguistic Theory (SALT)* 4, 195–219. <https://doi.org/10.3765/salt.v4i0.2462>.
- Krifka, Manfred. 2015. Bias in Commitment Space Semantics: Declarative Questions, Negated Questions, and Question Tags. *Semantics And Linguistic Theory (SALT)* 25: 328–45. <https://doi.org/10.3765/salt.v25i0.3078>
- Lohnstein, Horst, and Hildegard Stommel. 2005. Verum Focus and Phases. *Linguistic Analysis* 35 (1): 109.
- Magri, Giorgio. 2014. An Account for the Homogeneity Effect Triggered by Plural Definites and Conjunction Based on Double Strengthening. In *Pragmatics, Semantics and the Case of Scalar Implicatures*, edited by Salvatore Pistoia Reda, 99–145. London: Palgrave Macmillan UK. https://doi.org/10.1057/9781137333285_5.

- Mandelkern, Matthew, and Kevin Dorst. 2022. Assertion Is Weak. *Philosophers' Imprint* 22: 19. <https://doi.org/10.3998/phimp.1076>.
- Oikonomou, Despina. 2023. Detecting Variable Force in Imperatives: A Modalized Minimal Approach. *Natural Language & Linguistic Theory* 41 (3): 1201–56. <https://doi.org/10.1007/s11049-022-09554-1>.
- Partee, Barbara H. 1991. Topic, Focus and Quantification. In *Proceedings of the First Semantics and Linguistic Theory Conference*, edited by Steven Moore and Adam Zachary Wyner, 159–88. Cornell University: Cornell University Working Papers in Linguistics. <https://doi.org/10.3765/salt.v1i0.2918>.
- Richter, Frank. 1993. Settling the Truth: Verum Focus in German. *Manuscript, University of Massachusetts, Amherst*.
- Romero, Maribel, and Chung-hye Han. 2002. Verum Focus in Negative Yes/No Questions and Ladd's $p/\neg p$ Ambiguity. In *Semantics and Linguistic Theory*, 12:204–24. <https://doi.org/10.3765/salt.v12i0.2874>.
- Rooth, Mats Edward. 1985. Association with Focus (Montague Grammar, Semantics, Only, Even). University of Massachusetts Amherst.
- Rooth, Mats Edward. 1992. A Theory of Focus Interpretation. *Natural Language Semantics* 1: 75–116. <https://doi.org/10.1007/BF02342617>.
- Samko, Bern. 2016. *Syntax & Information Structure: The Grammar of English Inversions*. PhD dissertation, University of California, Santa Cruz.
- Schwarzschild, Roger. 2020. The Representation of Focus, Givenness and Exhaustivity. *Making Worlds Accessible. Essays in Honor of Angelika Krazter*, 167–92.
- Singh, Raj, Ken Wexler, Andrea Astle-Rahim, Deepthi Kamawar, and Danny Fox. 2016. Children Interpret Disjunction as Conjunction: Consequences for Theories of Implicature and Child Development. *Natural Language Semantics* 24 (4): 305–52. <https://doi.org/10.1007/s11050-016-9126-3>.
- Wagner, Michael. 2006. Givenness and Locality. In *Semantics and Linguistic Theory (SALT)* 16:295–312. <https://doi.org/10.3765/salt.v16i0.2938>.
- Wilder, Chris. 2013. English 'Emphatic Do.' *Lingua* 128: 142–71. <https://doi.org/10.1016/j.lingua.2012.10.005>.

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