Verum focus is verum, not focus
Cross-linguistic evidence

Daniel Gutzmann
University of Cologne
Albertus-Magnus-Platz
50923 Cologne, Germany
mail@danielgutzmann.com

Katharina Hartmann
University of Frankfurt
Norbert-Wollheim-Platz 1
60629 Frankfurt, Germany
k.hartmann@lingua.uni-frankfurt.de

Lisa Matthewson
University of British Columbia
Totem Field Studios | 2613 West Mall
Vancouver, BC Canada V6T 1Z4
lisa.matthewson@ubc.ca

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Abstract The accent pattern known as verum focus is commonly understood as an ordinary alternative focus on the truth of a proposition. This standard view, which we call the focus accent thesis (FAT), can be contrasted with the lexical operator thesis (LOT), according to which the accent pattern that looks like focus in languages like German or English is actually not an instance of focus marking, but realizes a lexical verum predicate, whose function is to relate the current proposition to a question under discussion. Although it is hard to distinguish between the FAT and the LOT on the basis of German or English, a broader cross-linguistic perspective seems to favor the LOT. Drawing from fieldwork on Tsimshianic (Gitksan) and Chadic (Bura, South Marghi), we first show that in none of these languages is verum realized in the same way that ordinary alternative focus is marked. This sheds initial doubt on the unity of verum and focus. Secondly, the FAT predicts that a language cannot have co-occuring verum and focus, if it does not allow multiple foci, and that a language should allow them to co-occur if it allows for multiple foci. Again, while it is hard to find counterexamples in German or English, some of the data from our cross-linguistic investigation favor the LOT.

Keywords: verum; focus; emphasis; accent; question under discussion

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1   Introduction

The goal of this paper is to argue that the term *verum focus*, as commonly used, does not denote what its compositional interpretation suggests; the phenomena it is used to label are actually not instances of *focus*. Moreover, we think that the term is misleading, and comes with the danger of not recognizing phenomena in a variety of non-European languages that would have been classified as expressing verum focus, if the technical term were not bound as strongly to the category of focus.

Our plan for this paper is as follows. In the next section, we outline the traditional understanding of the term 'verum focus' and give examples from English and German to illustrate what phenomena are covered by it. The common understanding of the term assumes that verum focus is a focus on a covert expression *verum*. Hence, we call this the *focus accent thesis* or FAT. Recently, there have been a number of approaches that do not subscribe to this view but instead treat verum as realizing a conversational operator that is not directly related to any focus phenomenon (Romero & Han 2004; Gutzmann & Castroviejo Miró 2011; Repp 2013). We call this type of approach the *lexical operator thesis* or LOT. On the basis of English or German alone, it is not easy to distinguish between these two competing approaches. In order to get a clearer picture of the two theories, we will explicitly spell out the different predictions they make in Section 3. Those predictions are then tested one-by-one in the following three sections. The main sources of cross-linguistic evidence we use to make our case against "verum as focus" come from two Chadic (Afro-Asiatic) languages and one Tsimshianic language. We will also briefly look at a sixth language as a particularly interesting case. As we will show, taking a broader range of languages into account will help us to build our argument against the FAT and show that *verum focus* is not related to *focus*.

Besides English and German, the languages we investigate are the following.

Bura

Bura is a Chadic language belonging to the Biu-Mandara branch. It is spoken by approximately 250,000 speakers in the Nigerian states of Borno and Adamawa (estimation by Ethnologue in 1987). The only systematic linguistic description of Bura is Hoffmann's grammar from 1955. The focus system of Bura is described in Hartmann & Zimmermann (2012). The data in the present article represent the variety of Bura spoken in Garkida, a city in

Adamawa State, Nigeria. The data were mainly elicited from Chris Mtaku, a highly educated Bura speaker born in 1963 in Garkida. All the examples were confirmed by another speaker of Bura, Talatu Wakawa, from the same city.

South Marghi

South Marghi is also a Biu-Mandara language of the Chadic family. It is spoken by about 166,000 speakers (estimation by Ethonologue in 2006) in roughly the same regions as Bura. It has several dialects, which differ considerably from each other (see Hoffmann 1963). The language is basically undescribed. Hoffmann's grammar from 1963 analyses Central Marghi, a related variety. A sketch of some basic grammatical properties of South Marghi is presented in Hartmann (2013). The data presented in this article are from Hajara Njidda, a resident of the city of Maiduguri.

Gitksan

Gitksan is an Interior Tsimshianic language that is spoken in northwestern British Columbia, Canada. The language is highly endangered, currently happrxoimately 500 fluent speakers according to Dunlop et al. (2018). Gitksan and its close relative Nisga'a form a chain of mutually intelligible dialects. The data in this paper come primarily from fieldwork with three speakers, representing three different dialects: Barbara Sennott (from Ansba'yaxw (Kispiox)), Vincent Gogag (from Gitanyaaw (Gitanyow)) and Hector Hill (from Gijegyukwhla (Gitsegukla)). Some data have been checked in addition with Ray Jones (from Prince Rupert and Gijegyukwhla) and Louise Wilson (from Ansba'yaxw, and seasonally Prince Rupert).

Kwak'wala

Kwak'wala belongs to the Northern branch of the Wakashan family. It is spoken in British Columbia, Canada, on northern Vancouver Island, adjacent islands, and the mainland opposite. It is critically endangered. Data and discussion in this paper are drawn from Littell (2016) and from Patrick Littell (p.c.).

Some notes on terminology, before we move on. Since the main aim of this paper is to get rid of the term *verum focus*, because we think its head

focus is misapplied, we do not want to use that expression in the following. Instead, we use the terms *verum marking* to refer to the observable linguistic phenomenon, *verum accent* to talk about the particular stress pattern used in German or English for verum marking, and just *verum* if we want to talk about about the concept itself.

2 Two approaches to verum marking

The notion of verum focus was originally coined, as far as we know, by Höhle (1992) to refer to a particular intonation pattern in German in which – in the most typical case – a heavy H*L accent is placed on the finite verb in verb second position (corresponding to C^0). B's utterance in the following example illustrates a typical case from German.[1]

(1)   A: Ich kann mir nicht vorstellen, dass Peter den Hund getreten
             I   can   me not   imagine   that Peter the dog   kicked
             hat.
             has
             'I cannot imagine that Peter kicked the dog.'
        B: Peter **HAT** den Hund getreten.
             Peter has   the dog   kicked
             'Peter **DID** kick the dog.'

A parallel example can be given for English. The only difference is that in English, the stress is realized on the specifically introduced auxiliary *do*.

(2)   A: I cannot imagine that Peter kicked the dog.
        B: Peter **DID** kick the dog.

The accents in (1) and (2) look like ordinary focus accents. But crucially, the accent neither seems to focus the auxiliary verb in (2B) nor its tense, both of which would be ordinary instances of focus. Instead, Höhle's observation is that these accents are used to emphasize the truth of the proposition in question (in this case, that Peter kicked the dog). According to these basic observations, the common usage of the expression *verum focus* can be given as follows.

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[1] In intonation languages, we mark the position of the pitch accents with capital letters. We use bold letters to highlight relevant information, as e.g. the expression of VERUM in the languages under discussion.

(3)   **Verum focus** (common usage)   (see, e.g., Höhle 1992)
        A special kind of H*L accent that, instead of focusing the accent-
        bearing expression, is used to emphasize the truth of the proposi-
        tional content of a sentence.

Admittedly, this is a rather vague characterization. However – and this is
what we want to battle – the use of *focus* does suggest a particular analysis,
namely to treat the accent under scrutiny as a focus accent, albeit a special
one. We want to discuss this treatment in a bit more detail.

2.1   The focus accent thesis (Fat)

The idea that the verum accent used in German and English for verum mark-
ing amounts to a focus accent is already the position Höhle (1992) takes in
his original paper. We label this way of thinking about the verum accent
the *focus accent thesis* or Fat. The two core assumptions of the Fat, which
Höhle (1992) makes explicitly, are as follows.[2]

(4)   a.   The verum accent is a focus accent.
        b.   It focuses a covert verum predicate which marks the proposi-
             tion expressed by a sentence as true.

In order to make the assumption in (4a) viable, there must be something
independent that is being focused. This is where assumption (4b) kicks in.
Höhle assumes that sentences host a covert VERUM predicate which marks
the proposition expressed by the sentence as true. The basic structure of
the Fat can thus be stated as follows.

(Fat)   verum accent := covert predicate VERUM + focus marking

Given that in many cases, verum is realized by an accent on an element
in C, a first assumption could be that the verum predicate is located there.
However, as Höhle (1992) shows, this cannot be the case, because, under
certain conditions, verum can also be realized in I (in which case the fi-
nite verb in final position in German is accented) or, in the case of relative
clauses in German, in Spec,CP. For that reason, Höhle (1992: 137–138) as-
sumes that the verum predicate is not represented in the syntactic tree, but
instead is introduced during the semantic translation (see Lohnstein (2016)
for an overview and discussion), and an accent on certain elements can then

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[2] For more recent explications of the Fat, see, e.g., Büring (2006); Zimmermann & Hole
(2008); Lohnstein (2012); Stommel (2012).

focus the non-segmentally introduced VERUM predicate.[3] Thus, even without assuming a syntactic location for VERUM (which is nevertheless often assumed, see again Lohnstein (2016) for discussion), the general structure of the FAT holds.

In order to maintain that the verum accent is a focus accent on the (not segmentally located) VERUM predicate and does not, on its own, provide the verum reading, Höhle assumes that the VERUM predicate is present in the logical representation of every sentence, even ones which do not show verum marking. For a simple declarative with a focus accent elsewhere as in (5a), we would thus get a logical form along the lines of (5b), which can be paraphrased in natural language as in (5c).

(5)   a.   Karl is writing a BOOK.
       b.   [VERUM [*Karl is writing* [*a book*]$_F$]]
       c.   It is true that Karl is writing a BOOK.

In such an analysis, a sentence containing a verum accent involves a focus accent that focuses the VERUM predicate and thereby emphasizes the truth of the proposition.

(6)   a.   Karl **IS** writing a book.
       b.   [[VERUM]$_F$ [*Karl is writing a book*]]
       c.   It **IS** true that Karl is writing a book.

What is the semantics of the VERUM predicate? Given that proponents of the FAT assume that VERUM is present in every sentence – whether there is verum accent or not – VERUM must not make an actual contribution to the meaning of a sentence if it is unfocused. That is, in the absence of any verum accent, the following equivalence should hold.

(7) $\llbracket p \rrbracket \Leftrightarrow \llbracket \text{VERUM}(p) \rrbracket$

The paraphrase for VERUM given in (5c) fulfills this. If the propositional argument p is true, then *It is true that p* is also true. If p is false, then *It is true that p* is false. Hence, as suggested for instance by Zimmermann & Hole (2008: 5), VERUM has to be rendered as an identity function on truth values (i.e., the reverse of negation) or, when speaking intensionally, propositions.

(8)   a. $\llbracket \text{VERUM} \rrbracket = \begin{bmatrix} 1 \mapsto 1 \\ 0 \mapsto 0 \end{bmatrix}$
       b. $\llbracket \text{VERUM} \rrbracket = \lambda p \lambda w. p(w) : \langle\langle s, t\rangle, \langle s, t\rangle\rangle$

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[3] Thanks to an anonymous reviewer for highlighting this aspect for us.

This ensures that the truth value (or the proposition) denoted by a sentence is not altered by the presence of VERUM.

Given that VERUM is an identity function, one may wonder where the typical discourse effects induced by verum come from: for instance, that a verum utterance is infelicitous out of the blue and should address the question under discussion (Gutzmann & Castroviejo Miró 2011). This can be achieved by the standard machinery of alternative semantics for focus (Rooth 1992; Büring 1997). The main idea is that each expression has not just an ordinary semantic value $[\![\cdot]\!]^o$ but also a focus semantic value $[\![\cdot]\!]^f$ which represents the alternatives to the extension of that expression. That is, if *Alex* is focused, it invokes the contextually salient alternatives to Alex, say Blair and Chris, as well as Alex. Its ordinary semantic value remains unchanged.

(9) a. $[\![[Alex]_F]\!]^o$ = Alex
     b. $[\![[Alex]_F]\!]^f$ = {Alex, Blair, Chris}

If an expression is not focused, its focus value is just the singleton set of its ordinary semantic value.

(10) a. $[\![Alex]\!]^o$ = Alex
      b. $[\![Alex]\!]^f$ = {Alex}

The focus value of complex expressions is compositionally derived from the focus values of their immediate constituents. That is, if *Alex* is focused, the focus value from (9b) composes with the focus values of the other expressions in the sentence – all of which are singleton sets – to provide the alternatives for the entire sentence.

(11) ALEX loves Blair.

      a. $[\![love(Blair)([Alex]_F)]\!]^o$ = 1 iff Alex loves Blair.
      b. $[\![love(Blair)([Alex]_F)]\!]^f$
      = {Alex loves Blair, Blair loves Blair, Chris loves Blair}

In the case where VERUM – an identify function on truth values – is focused, we only have three possible alternatives.[4]

(12) a. $[\![\text{VERUM}]\!] = \begin{bmatrix} 1 \mapsto 1 \\ 0 \mapsto 0 \end{bmatrix}$ b. $[\![\neg]\!] = \begin{bmatrix} 1 \mapsto 0 \\ 0 \mapsto 1 \end{bmatrix}$

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[4] If VERUM is construed as an identity function on propositions, it may also have other propositional operators as alternatives.

c. $[\![\top]\!] = \begin{bmatrix} 1 \mapsto 1 \\ 0 \mapsto 1 \end{bmatrix}$ d. $[\![\bot]\!] = \begin{bmatrix} 1 \mapsto 0 \\ 0 \mapsto 0 \end{bmatrix}$

Of those, however, only negation (12b) amounts to an actual linguistic alternative to VERUM, since the other two functions are a bit too useless to surface as natural language expressions. That is, the two focus alternatives to VERUM (and negation, for that matter) are VERUM and negation.

(13) $[\![[\text{VERUM}]_\text{F}]\!]^f = \{\lambda p.p, \lambda p.\neg p\}$

With this in place, a declarative sentence with verum accent has as its focus values just the proposition it expresses as well as its negation.

(14)   Alex DOES love Blair.

(15) $[\![\text{VERUM}_\text{F}(\mathit{love(Blair)(Alex)})]\!]^f$

$= \{\text{VERUM}(\mathit{love(Blair)(Alex)}), \neg(\mathit{love(Blair)(Alex)})\}$

$= \{\mathit{Alex\ loves\ Blair}, \mathit{Alex\ doesn't\ love\ Blair}\}$

To see how this focus value can help derive the restrictions on the use of verum accents, we employ a general context condition (adapted from Büring 1997: 43) which links the focus value to the so-called question under discussion (QUD) of a context c (Roberts 1998).

(16)   **Context condition** (question-based)

An utterance of sentence S is felicitous in a context c if $[\![S]\!]^f = \text{QUD}(c)$.

The QUD can be viewed as the immediate guidance of the discourse; it is the most recent issue (or discourse topic) that the interlocutors are trying to address. Technically, the QUD is just a semantic question modeled as a set of propositions. It is part of the larger discourse context and can be thought of as being for questions what the common ground is for assertions: Just as the discourse effect of an assertion can be modeled as an update of the context by contributing its propositional context to the common ground, the discourse effect of a question can be modeled as setting the current QUD. According to this idea, the QUD guides the discourse by determining felicitous discourse moves. For instance, assertions should address the QUD by (at least partially) answering it (Roberts 1996). Note that the QUD does not have to be set by an explicit question, but is often given implicitly, in which case it has to be recovered, e.g. Büring (2003); Zimmermann (2014).

Coming back to a verum-marked utterance like (14), the condition in (16) ensures that it is only felicitous in contexts in which the polar question corresponding to the propositional content of the utterance is the QUD. That is, since the focus value of (14) corresponds to the semantic value of the question whether Alex loves Blair, (16) ensures that the verum-marked utterance is infelicitous if the question whether Alex loves Blair is not the QUD. For instance, (14) is infelicitous in an out-of-the-blue context, where the QUD is more like 'What happened?'. (14) is likewise infelicitous in a context induced by the question of who Alex loves, since here also, the QUD is not equivalent to the focus value of the assertion.

This sketches a very straightforward view of the FAT, based on an approach that directly links focus to the QUD. However, there are some approaches to focus marking that are stronger than the direct QUD-based approach.[5] One of the core ideas of these approaches is that the alternatives to the focused expression must be salient in the discourse context. These approaches thus disentangle the information-structural categories of focus and newness, which (more or less) fall together under the question based-approach. The easiest and, for our purposes, most relevant case to illustrate this is the difference between simple polar yes/no-questions and polar alternative questions.

(17)   a.   Is it raining?
       b.   Is it raining or is it not raining?

In terms of the question being raised, (17a) and (17b) are equivalent as they both give rise to the question whether it rains or not. Under the QUD-based FAT sketched so far, we would therefore expect an answer to both (17a) and (17b) to license verum, as it selects the true alternative out of the two propositions that it is raining and that it is not raining. However, verum as an answer to (17a) seems weird in a neutral context, whereas it seems much more natural in an answer to (17b).

(18)   A: Is it raining?
       B: #It **IS** raining.

(19)   A: Is it raining or is it not raining?
       B: It **IS** raining.

A version of the FAT that is based on the idea that alternatives must be salient in discourse can easily account for the difference between (18) and

[5] See, amongst others, Kratzer (2004); Neeleman & Szendroi (2004); Féry & Samek-Lodovici (2006); Selkirk (2008); Kratzer & Selkirk (2009); Katz & Selkirk (2011); Rochemont (2013).

(19). While both answers provide new information (and relevantly address the QUD), only the context in (19) licenses focus. This is because while both questions introduce the question whether it is raining, only the explicit alternative question makes the alternative that it is not raining salient. Adopting recent ideas from inquisitive semantics (e.g. Roelofsen & Gool 2010; Farkas & Roelofsen 2015; Onea 2016), we may say that while both (18) and (19) introduce the question $p, \neg p$, only (19) makes both alternatives salient; the simple polar question in (18) only makes the positive proposition salient. Using a box to indicate highlighting/salience of propositions, we can illustrate the difference between the polar and the alternative question as follows.[6]

(20)   a.   Is it raining? ⤳ {$\boxed{\textbf{raining}}$, ¬**raining**}

        b.   Is it raining or is it not raining? ⤳ {$\boxed{\textbf{raining}}$, $\boxed{\neg\textbf{raining}}$}

The salience-based view of focus, and hence of the FAT, is stronger than the mere question-based view, since, as just illustrated, not every question is equally able to license focus in an answer. On the flip side, every context that licenses focus under the salience-based view should also license focus under the weaker question-based view. That is, focus contexts under the salience-based view are subsets of the focus contexts of the question-based view. Therefore, let us call the two versions of the FAT that correspond to these two views of focus the weak FAT' and the 'strong FAT' (using FAT when we do not wish to discriminate between the two). Even if we do not want to delve into the question which of the two approaches is more suited to deal with focus in general, we will have to discuss the two if we want to evaluate the FAT.

This concludes a brief outline of two ways in which the FAT may be spelled out more concretely, which we will use for comparing it to the alternative, the LOT. Before turning to the LOT, let us briefly reflect on why the FAT (in both versions) seems so attractive. For languages like German or English, the FAT does not have to assign any special status to an accent that looks like an ordinary focus accent. The only stipulation it has to make is to assume the presence of the VERUM predicate defined in (8b). Beyond

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[6] This technique also helps to distinguish positive polar questions from their negative counterparts. Both denote the same (semantic) question, but they highlight a different cell of the partition, so to speak: {$\boxed{\textbf{raining}}$, ¬**raining**} vs. {**raining**, $\boxed{\neg\textbf{raining}}$}. While inquistive semantics is specifically tailored to account for such differences, they can also be accounted for by using structured propositions, as an anonymous reviewer pointed out. See Krifka (2001) or the discussion in Onea & Zimmermann (2019).

that, the ordinary machinery of focus semantics should derive the contribution the verum accent makes to an utterance. That is, the attractiveness of the FAT is based on two assumptions. First, that the verum accent is just a focus accent and, second, that the predictions made by a focus analysis are all on the right track. We are going to question the validity of both these assumptions in this paper. Before we do so, let us first introduce the alternative contender to the FAT.

2.2   *The lexical operator thesis (LOT)*

The competing thesis to the FAT is not based on the assumption that the verum accent is a focus accent, or that the contribution it makes is related to focus alternatives (neither in terms of relating to the QUD, as in the weak FAT, nor in terms of relating to salient alternatives, as in the strong FAT). Instead this approach assumes that the verum accent is a way to realize a lexical verum expression, which is responsible for the special discourse conditions verum puts on the felicitous use of an utterance. We call this the *lexical operator thesis* or LOT. Instead of assuming that every (positive) sentence involves a VERUM predicate with a trivial meaning, which in interaction with a focus feature gives rise to special discourse restrictions, the LOT builds the contribution of verum directly into a semantic operator which is only present in the semantic representation of a sentence if there is actually verum marking, i.e. verum accent in case of German or English.

(LOT)   verum accent := conversational operator, possibly realized by accent

While the FAT is explicitly stated by its proponents, the LOT is not usually as explicitly argued for. However, there are various proposals that are based on the LOT as they assign special semantics to the verum accent, often in the form of a contentful conversational operator that directly relates the propositional content of the sentence to the QUD (see, among others Romero & Han 2004; Romero 2005; Gutzmann & Castroviejo Miró 2011; Repp 2013; Romero 2015) for different realizations of this idea). Again, as this is crucial, the verum predicate is only present if it is overtly marked (e.g. by verum accent). That is, the verum accent has "lexicalized intonational meaning" (Potts 2004). Despite the common term, the LOT therefore assumes that verum focus is no focus at all! It just happens that in German or English, this operator is realized by the same pitch accent that marks

focus. This is then ultimately a case of homonymy (although it need not be merely accidental homonymy; see Section 8 for discussion).

Another difference between the FAT and the LOT is that the latter is much more flexible when it comes to analysing the semantic and pragmatic contribution of verum marking, since it is neither tied nor limited to whatever a focus-based view is able to derive. However, as a baseline, both versions of the FAT are rather easy to derive within the LOT. We just have to directly build the context condition into the lexical VERUM predicate. However, it is crucial that this contribution is not made at the truth-conditional layer, because that would lead to unwarranted truth-conditions (Romero 2005; Gutzmann & Castroviejo Miró 2011; Gutzmann 2012). Instead, it has to be located at a not-at-issue (Potts 2005), expressive (Potts 2007), or use-conditional (Gutzmann 2015) layer. That is, besides a sentence's ordinary truth-conditions, which remain unaffected by the verum accent, the VERUM predicate realized by the accent puts conditions on the felicitous use of an utterance. We indicate this using a superscribed u for the use-conditional dimension and indicate felicity with the checkmark symbol. For replicating the weak FAT, which ties the verum effect to the QUD, we have something along the following lines.

(21) $[\![\text{VERUM}]\!]^{u,c}(p) = \checkmark$, if $\{p, \neg p\} = \text{QUD}(c)$ (weak version)

The stronger, alternative-based view of the FAT can be rebuilt using the LOT as well. The following is not meant to be a perfectly worked-out analysis, but it shows how the strong FAT can be modeled by the LOT.

(22) $[\![\text{VERUM}]\!]^{u,c}(p) = \checkmark$, if p and $\neg p$ are salient alternatives to p in the utterance context. (strong version)

However, and this is crucial for later argumentation, the LOT is also free to assign more specific semantics to the VERUM predicate, if both the semantics given in (21) and (22) turn out to be insufficient to capture the facts. This is a move that is not available to proponents of the FAT, because they have to work with just what is independently established for focus phenomena. That is, it would be an argument against the FAT and for the LOT if it can be shown that a semantics along the lines of (21) and (22) is not sufficient to capture the restrictions imposed by verum. Previewing the results, we will see that neither the fact that the propositional content of a verum utterance corresponds to the QUD (= weak FAT) nor the fact that $\neg p$ is a salient alternative to p in the utterance context (= strong FAT) are sufficient conditions to license verum. Therefore, we need something more.
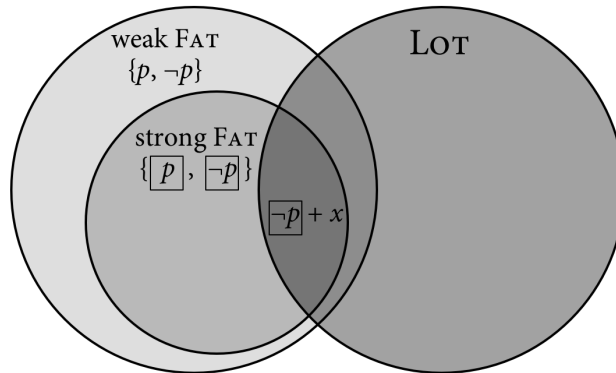
Figure 1: The relation between weak FAT, strong FAT, and (a specific) LOT.

And crucially, the LOT is able to implement such a something that goes beyond the requirement of both alternatives being highlighted. That is, while the alternative-based, strong FAT can be understood as capturing a subset of the contexts that the question-based, weak FAT captures, the specific LOT we have in mind can, in turn, capture a subset of the contexts captured by the strong FAT. What we will propose later on, is the following.

(23) $[\![\text{VERUM}]\!]^{u,c}(p) = 1$, if the speaker c_S wants to prevent that $\text{QUD}(c)$ is downdated with $\neg p$.

Figure 1 illustrates the relation between the weak FAT, the strong FAT, and LOT we have in mind.

To summarize, the FAT assumes that the verum accent is a focus accent that focuses a trivial ever-present verum predicate. Together with an independently motivated focus semantics, this gives rise to discourse restrictions on the use of verum accents. The connection between verum accent and the discourse effects of verum is indirect and mediated by focus semantics. Since there is more than one theory of focus interpretation, there are corresponding varieties of the FAT, of which we sketched two here. The weaker version is based on the idea that the focus value of the sentence should correspond to the QUD. The stronger version in addition requires that the focus alternatives are contextually salient.

In contrast to the two versions of the FAT, the LOT assigns a lexical meaning to the verum accent. While the link to salient alternatives and the QUD is indirect in FAT approaches, under the LOT view, it is the accent itself which introduces the verum predicate into the semantic representation, and this operator alone is responsible for the verum effect, without any ap-

peal to focus mechanisms. Figure 2 illustrates the architecture of the two approaches.
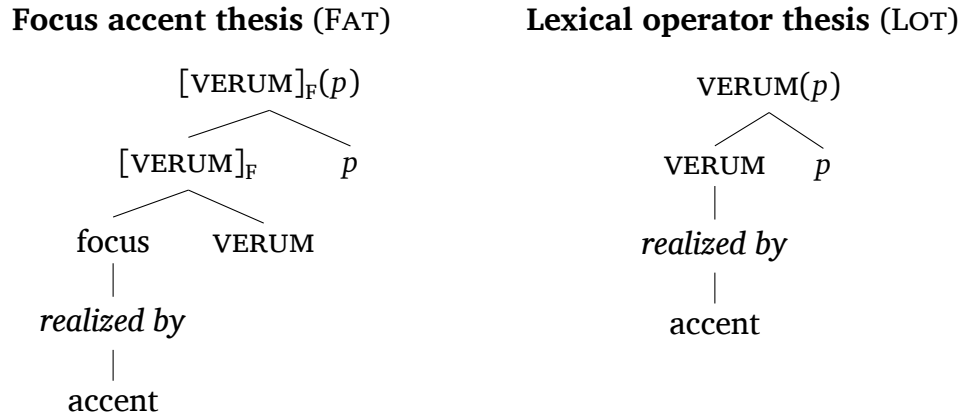
Focus accent thesis (FAT)   **Lexical operator thesis** (LOT)

$$[\text{VERUM}]_{\text{F}}(p)$$ $$\text{VERUM}(p)$$

$$[\text{VERUM}]_{\text{F}} \qquad p$$ $$\text{VERUM} \qquad p$$

focus   VERUM   *realized by*

realized by   accent

accent

Figure 2: Comparing the FAT and LOT.

Despite the fact that the *focus accent thesis* is a thesis about the verum accent pattern in languages like English or German – namely that verum is, semantically and phonologically, just an ordinary focus – we like to think of it as a more universal thesis: according to the FAT, verum is a special case of focus (e.g. focus on the truth-value, or something similar). And as a consequence, it is marked by a focus accent in German or English. In a similar vein, we take the LOT also to be a universal thesis: verum is, semantically, not just focus, not even in the languages in which it happens to be marked by means that otherwise are used to mark focus. That is, we argue for a universal semantic claim, namely that the semantic (or pragmatic) phenomena of verum and focus are separate, instead of verum being a special case of focus. Hence, our claims are not so much about verum and focus having different *forms* in some languages, but about their *semantics* being different. However, we will to some extent use the form of marking as evidence for semantics. In this way we will show that the flip-side of the reasoning that has led to the FAT for German or English ("If it doesn't look like focus, it isn't focus", instead of "If it looks like focus, it is focus") leads to a different result when applied to different languages.[7]

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[7] Thanks to an anonymous reviewer for encouraging us to be more explicit about this.

2.3 Contexts for verum

In order to diagnose the presence of verum in our language sample, we will use specific contexts where the expression of verum is either expected or excluded. The first contexts to be considered are so-called out-of-the-blue contexts. Here, the QUD is either non-existent, or a very broad 'What happened?'. Accordingly, the realization of verum is awkward in such contexts.

(24)   a.   Hey, hast du es schon gehört? #Karl **SCHREIBT**   ein
              hey have you it already heard Carl   writes.VERUM a
              Buch.
              book
              'Hey, have you already heard? Carl IS writing a book.'
        b.   [Telephone call] #Wer **IST**   am   Apparat?
                              who   is.VERUM on.the device
              'Who DO I have on the line?'

Both versions of the FAT and the LOT predict that verum marking is infelicitous here, since the propositional content of the utterance does not correspond to the (maximal) QUD in such contexts. The even stronger condition that there are salient alternatives (e.g. that Carl is not writing a book in (24a) is not fulfilled either of course.

There are different contexts that may help to distinguish the different approaches, as we discuss further below. These are cases where verum marking is optional and has an additional emphatic effect when it is present. The first of these context-types concerns the affirmation of a preceding truth value. In (25), the positive polarity is affirmed, and in (26) it is the negative polarity. The expression of verum is not obligatory as confirmed by the neutral replies. Stress on the auxiliary verbs in English leads to the interpretation of an emphatically confirmational statement. Therefore, the verum variants in (25B′) and (26B′) are only felicitous in a richer context.

(25)   A: Katie was looking good yesterday.
        B: Yes, she was.
        B′:   Yes, she **WAS** (looking good).

(26)   A: Katie wasn't looking good yesterday.
        B: No, she wasn't.
        B′:   No, she **WAS**n't (looking good).

Another context involves answers to yes-no questions. Verum fixes the polarity left uncertain in the question, and in addition adds emphasis on

the polarity of the answer. The first two answer possibilities in (27) are non-emphatic answers; only the last answer contains emphasis on the truth value. This, again, requires a richer context than given here. For example, the verum-marked version of (27B) would be appropriate if the speaker expects that somebody might doubt her ability to sing. Again we will argue that this type of context distinguishes the competing theories.

(27)   A: Do you sing?
        B: Yes. / Yes, I do. / Yes, I **DO** (sing).

A further type of context we use for diagnosing verum are opposite polarity contexts where the truth value of a previous utterance is corrected or denied; for illustration, see the Dutch example in (28) where verum is expressed by the particle *wel*.

(28)   *Dutch* (Laurette Artois, p.c.)
        A: Je   hebt het boek vast   niet gelezen.
              2SG have the book certainly NEG read
              'You certainly didn't read the book.'
        B: Ik   heb het boek **WEL** gelezen.
              1SG have the book PRT read
              'I DID read the book.'

Finally, to see whether the strong version of the FAT is sufficient, we should consider explicit alternative questions, that make both the positive and the negative alternative salient and therefore, according to the strong FAT, directly license verum marking. Consider the following variant of the dialog in (27).

(29)   A: Was Katie looking good yesterday or was she not looking good?
        B: She **WAS** looking good.

The alternative question in (29A) makes both alternatives salient and verum in the answer feels completely natural, in contrast to (25), which indicates that the stronger context condition is more adequate than the pure question-based view. However, it should be noted that this observation does not mean that the contextual salience of alternatives is enough to license verum. In fact, we think there is more going on. As we will outline in more detail below, the alternatives must not only be salient, but there must have been some dispute going on as to which alternative should be accepted as the true one (see also Repp 2013). These seem to be precisely the contexts in which an explicit alternative question like in (29) would be licensed as well;

in out-of-the-blue contexts, they are odd questions to ask. That is, verum may be licensed in the answer here not because the alternative question highlights both possible alternatives, but rather because of the context that licenses the alternative question in the first place. We will keep this in mind.

2.4   Verum contexts and the salience of alternatives

Having introduced a few different contexts that allow verum, let us now briefly discuss the distinction between the weak version of the FAT, its stronger variant, and the LOT, in a bit more detail.

The strong FAT, which requires that the context provides salient alternatives in order for verum to be used, correctly rules out verum in answers to polar questions in neutral contexts. Let us consider a couple of examples in order to make this observation clear. First consider a neutral context again:

(30)   A: Did Chris submit her paper yesterday?
        B: Yes, she submitted her paper.
        B′: #Yes, she **DID** submit her paper.

However, if the question already contains some bias, using verum marking becomes perfectly fine.

(31)   A: Did Chris really submit her paper yesterday?
        B: Yes, she **DID** submit her paper.

This suggests that verum seems to require more than just addressing the QUD (as predicted by the weak version of the FAT). The strong FAT has the potential to perform better here, as it requires that both alternatives be salient.

A similar observation can be made with respect to responses which agree with assertions. As shown in (25) and (26), verum is not obligatory here, but, if employed, requires a more specific context than the version without verum. This poses a problem for the weak, purely question-based version of the FAT. An assertion of the form that p makes the question whether p the question under discussion, since the assertion awaits (explicit or implicit) acceptance or rejection (Stalnaker 1978; Farkas & Bruce 2010). Therefore, the context condition of the weak FAT is satisfied by the assertions in (25A) and (26A) and hence verum in the reaction should be fine. Under the assumption that the focus of an utterance should always match the question under discussion, verum would even be predicted to be obligatory in such contexts, contrary to fact. And even if one took a leaner position and al-

lowed for non-optimal accentuation placement (Schmitz 2008), the use of verum in such cases should not have an additional discourse effect. However, the intuition is that the verum variants in (25B′) and (26B′) are only well-formed in a context in which the question whether Katie was looking good was already being discussed.

Turning to the strong FAT, which requires that both alternatives are salient, we note that the data in (25) and (26) are also challenging for this version. The problem is that in both contexts, only one polar alternative is salient: p in (25) and $\neg p$ in (26). Hence, the strong FAT would require no verum accent in either case. However, the LOT, with its possibilities for finer-grained discourse conditions, has an avenue to account for the difference between the two variants in (30) and (31), without saying that the use of verum is required or ruled out. See § 3.3 for more discussion of the difference between the FAT and the LOT with respect to whether verum is obligatory.

For a slightly different line of evidence that verum marking requires more than ?p being the QUD, consider verum marking inside a yes-no question. As (32) shows, this is infelicitous in a question context in which there are no salient alternatives.[8]

(32)   Hey, Blair. I have to ask you something: #**ARE** morphemes part of syntax?

The strong version of the FAT correctly rules out verum in such contexts, as the negative alternative is not salient in the context. But as already indicated, we think there is more going on than the mere salience of the alternatives. Consider the following context in which the speakers are pondering over linguistic terminology.

(33)   A: Given all these new theories, I become more and more uncertain about basic terminology. Take morphemes for instance. Are morphemes part of syntax or are morphemes not part of syntax?
         B: Oh, I am unsure too. #They **ARE** part of syntax, I would guess. But I might be wrong.

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[8] It is perfectly fine to use *really* in such a context, which speaks against Romero & Han's (2004) assumption that *really* is a lexical expression of VERUM. Similar results hold for German *wirklich* 'really'.

(i)   Hey, Blair. I have to ask you something: Are morphemes **really** part of syntax?

In this context, the two alternatives (*morphemes are part of syntax* and *morphemes are not part of syntax*) are salient in the discourse context. However, the use of verum seems too strong and not completely felicitous. The reason, and this will be elaborated later, is that verum invokes a feeling of emphasis, something that would be unsuitable in the context of (33) in which speaker B is unsure about the question. However, the contextual requirement of the strong Fat is still met, which shows that that is not enough, otherwise (33B) should be completely fine. See also Romero & Han (2004) for the observation that speaker certainty is a factor for the realization of verum.

Another context that illustrates that the mere presence of salient alternatives is not enough to license verum is the following. Imagine a committee of four people who must decide about a Mars mission. Only a unanimous vote will get the mission started. Even if the first three members have already voted for the mission, only with the last vote is the issue settled. Interestingly, if all previous votes have been positive, verum focus is licensed in the last vote, but in none of the previous ones.

(34)   D: Let's vote. Should we start a Mars mission or should we not start a Mars mission?
        A: We start a Mars mission. / #We **DO** start a Mars mission.
        B: We start a Mars mission. / #We **DO** start a Mars mission.
        C: We start a Mars mission. / #We **DO** start a Mars mission.
        D: Alright, we **DO** start a Mars mission.

In this example, the alternatives do not become more or less salient during the first three votes. However, it is the final vote that settles the issue of whether the Mars mission should be started or not. This, we believe, is what licenses verum in an example like this. We think that either an open conflict between salient alternatives or the final settlement of a question (regarding salient alternatives) is what licenses verum, something that goes beyond the mere salience of alternatives, as the strong Fat requires. This is the "something extra" we alluded to in Section 2.2 and what finally sets the Lot apart from the strong Fat, because the Lot is free to incorporate issues like the final settlement of a question into the semantic contribution of the verum expression, whereas the Fat is confined to what a theory of focus interpretation can derive. We will elaborate on this near the end of this paper and suggest a modified lexical semantics for the verum predicate that goes beyond the version given in (22) that was built after the strong Fat.

3   Predictions

On the surface, the LOT and the FAT seem to differ only in how they connect the verum accent and the verum effect: the LOT establishes a direct lexical link, whereas the FAT derives the connection between the two via how focus is interpreted. However, if we dig a bit deeper, the two approaches differ in the empirical predictions they make and the expectations they raise. The differences relate to at least the following three factors:

(i)   Means of focus and verum marking
(ii) Co-occurrence of focus and verum
(iii) Obligatoriness of verum

In the remainder of this section, we outline the different predictions in more detail, before testing them against a diverse set of languages.

3.1   *Means of focus/verum marking (P1)*

The first difference in predictions made by the FAT and the LOT concerns the means by which focus and verum are marked in a language. If verum ultimately is a focus phenomenon, as the FAT states, then the default assumption would be that the same means are used to mark focus and verum. This is obviously the case for German and English (ignoring the *do*-insertion), as this was the main motivation for the FAT in the first place. In contrast, if – as the LOT assumes – verum accent is not related to focus but introduces a use-conditional conversational operator, we should not expect a systematic overlap between verum and focus marking strategies. We will present cross-linguistic data to show that, if we consider a more diverse set of languages, the tight connection between verum and focus in German and English is not a general pattern.

To be clear, we do not claim that, in order for the FAT to be true, verum should always be realized by a (focus) *accent*. As formulated, the FAT is a thesis about languages like German or English in which verum is marked – like focus – by an accent. However, if the FAT were to hold cross-linguistically, similar parallelisms between verum and focus marking would be expected, even if focus is not realized by an accent to begin with. That is, the FAT lets us expect that if a language uses, say, a particle for focus marking, it also uses the particle for verum marking. Likewise, if a language has the option to not mark focus at all, verum focus should also be unmarked. We will discuss a Chadic language, Bura, which has unmarked VP-focus,

but uses an obligatory particle to express verum. We take this fact as strong evidence for the correctness of the Lot.

To strengthen our point, we therefore have to look at languages that do not use accents as their means to mark focus. Of course, it is logically possible that in some languages verum and focus just happen to be realized differently – just like, for instance, predicate focus is often realized differently from ordinary term focus (Zimmermann 2016). Finding languages in which verum marking differs from focus marking is therefore admittedly not a knock-down argument against the Fat, especially if there are morphosyntactic reasons why verum cannot be realized by the same means as ordinary alternative focus.[9] However, it would be surprising if verum were a focus phenomenon but only looked like one in those languages that use pitch accents for focus. Therefore, finding differences between verum and focus marking in languages that do not use accents for them can be indicative for a not-as-close connection between verum and focus as the Fat assumes.

3.2   Co-occurrence of focus and verum (P2)

If the Fat were correct and verum were an instance of focus (on a verum predicate), then verum marking should obey the same restrictions that hold for focus phenomena in a given language. In particular we should observe a correlation between the possibility of having multiple foci and the possibility for verum to co-occur with another focus in the same sentence. That is, if a language exhibits multiple foci, then the Fat predicts that verum and focus can also co-occur, and if a language prohibits multiple foci, verum and focus must not co-occur. Since the Lot does not treat verum as a focus-based phenomenon, we do not expect a correlation between the possibility of multi foci and co-occurrence of verum and focus. That is, if we square the two factors *multiple foci* and *verum + focus*, the Fat predicts that only two of the four possible combinations are attested cross-linguistically, while the Lot in principle allows all four possibilities. This is illustrated in Table 1. The lighter gray cells are the combinations that are possible under both theses, while the darker ones are only expected if the Lot is true.

3.3   Obligatoriness of verum (P3)

The third difference between the Fat and the Lot concerns whether the use of verum is obligatorily mandated by certain discourse conditions, or

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[9] We thank an anonymous reviewer for raising this point.

Table 1: Predictions made by FAT and LOT regarding verum and focus.

	verum + focus: yes	*verum + focus:* no
multiple foci: yes	FAT, LOT	LOT
multiple foci: no	LOT	FAT, LOT

whether it is optional. We already touched on this in § 2.3. To give some background to this discussion, recall that in question-answer pairs, it is required that the focus in the answer matches the target of the preceding question. If there is a mismatch, the answer becomes infelicitous, as the following examples illustrate. (35)A establishes a context in which the subject is new information and thus focus on the subject is required in the answer as in (35)B. In (35)B', the object is focused and hence this stress pattern is infelicitous in the context of (35)A.

(35)   A: Who loves Alex?
        B: BLAIR loves Alex.
        B': #Blair loves ALEX.

Now, if verum accent is focus on the verum predicate (and thus on the truth-value), which contrasts with negation, then the weak FAT expects that verum accent should be required in answers to yes-no questions. In contrast, this is not necessarily the case under the strong FAT, because a simple yes-no question does not make both alternatives salient and therefore does not, without further contextual factors, fulfill the contextual requirement of the strong FAT. However, in answers to explicit alternative questions that combine a positive sentence with its negative counterpart, verum should be expected under the strong FAT. This contrasts with the LOT, according to which the use of verum marking is entirely optional, as it adds additional content to the use-conditional dimension. Furthermore, as already alluded to above, if the conditions that license verum are even richer than those that license a focus-based interpretation, this could easily be implemented by the LOT, while it is hard to see how the FAT could do that without stipulating extra content to verum focus (which would turn it into a special LOT-variant).

Table 2 summarizes the different predictions of the three approaches regarding the obligatoriness/optionality of verum. With *simple polar context* we refer to contexts of assertion or polar questions in which only one side

of a polarity is salient in discourse, while we use *salient polarities context* to refer to contexts in which both alternative polarities are salient in the dicsourse context, as is the case, for instance, with alternative questions.

	simple polar context	*salient polarities context*
weak FAT	verum **obligatory**	verum **obligatory**
strong FAT	verum **prohibited**	verum **obligatory**
LOT	verum **optionally** licensed by other conditions	verum **optionally** licensed by other conditions

Table 2: Predictions made by FAT and LOT regarding the obligatoriness of verum.

While the weak FAT renders verum obligatory in both contexts, the strong FAT only lets us expect verum to be used in the contexts of salient polarities. The LOT, in contrast, says that verum can optionally occur in both contexts, depending what use-conditions it assigns to verum and whether these are fulfilled. That is, the actual predictions of whether verum can be used in a particular context depends on the actual meaning the LOT assigns to lexical verum operator. However, in any case, the LOT does not predict verum to be obligatory.

3.4 Summary

In this section, we considered three areas in which the FAT and LOT lead to different empirical predictions. The FAT leads us to expect a tight connection between verum and focus, and makes the following predictions.

(36) **Predictions made by the FAT**

P1   Verum and focus tend to be marked by the same strategies in a given language.

P2   Verum and focus can co-occur if and only if a language allows multiple foci.

P3   Verum should be obligatorily marked in answers to yes-no questions (weak FAT) or alternative questions (weak and strong FAT).

In contrast, under the LOT there is no direct connection to focus and its interpretation. This leads to the following predictions.

(37)   **Predictions made by the LOT**

P1   There may be differences between verum and focus marking strategies.

P2   There is no correlation between multiple foci and the co-occurrence of focus and verum.

P3   Verum is not required in answers to yes-no questions; if used, it adds additional meaning.

The different predictions made by the FAT and the LOT are also summarized in Table 3.

While it is not easy to come to different conclusions regarding these predictions, and thus to differentiate between the two competing theses, on the basis of German or English alone, languages that differ from the well-studied ones can help to evaluate the analyses. In the next three sections, we will present data from two Chadic languages and the Tsimshianic language Gitksan. The data suggest that it is the LOT which is on the right track.

4   Realization of focus and verum

4.1   Formal (a)symmetries

The first case where the FAT and the LOT make different predictions is in whether ordinary focus and verum marking are realized in the same fashion. In intonation languages like German or English, both focus and verum are realized by the same pitch accent. This is shown in (38a) for object focus, (38b) for verum marking on the auxiliary, and (38c) for subject focus:

	Prediction	FAT	LOT
P1	Same realization	✓	✗
P2	Co-occurrence correlation	✓	✗
P3	Obligatoriness of VERUM	✓	✗

Table 3: Differences in predictions made by FAT and LOT.

(38)   a.   Karl is writing a BOOK.
       b.   Karl **IS** writing a book.
       c.   KARL is writing a book.

As pointed out in Section 2.1, the identity in the expression of focus and verum essentially motivated the FAT. However, the formal equivalence between focus and verum marking does not hold cross-linguistically, not even among European intonation languages (see e.g. the contributions in Breitbarth, De Clercq & Haegeman 2013)). For illustration, consider Dutch. Besides also allowing for a pitch accent realization on the finite verb (similar to German), emphasis on a contrasting truth value is expressed by the multifunctional particle *wel*. In (39) *wel* expresses the denial of the propositional content of the previous utterance.

(39)   *Dutch* (from Sudhoff 2012: example (14); our glosses)

       A: Je   hebt het boek vast   niet gelezen.
            2SG have the book certainly NEG read
            'You certainly didn't read the book.'
       B: Ik   heb het boek **WEL** gelezen.
            1SG have the book PRT   read
            'I DID read the book.'

Affirmative polarity is expressed by a different particle, namely *inderdaad* 'indeed':

(40)   *Dutch* (Laurette Artois, p.c.)

       A: Heb je   het boek gelezen?
            have 2SG the book read
            'Did you read the book?'
       B: Ik   heb het boek **inderDAAD** gelezen.
            1SG have the book indeed   read
            'I DID read the book.'

Note that the particles *wel* and *inderdaad* are obligatorily stressed (Beata Moskal and Laurette Artois, p.c.). Thus, verum marking – both opposite and affirmative – in Dutch can be realized by preverbal particles, yet in combination with prosodic emphasis.[10]

These facts do not follow straightforwardly from the FAT according to which the verum predicate (which, in Höhle's approach, is not syntactically

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[10] Similar arguments can be put forward for German. For instance, Gutzmann (2010) has argued that certain modal particles are only stressed because they also realize verum.

present hence not segmentally located) is focused by accent. In order to explain the particle insertion in Dutch, the FAT would have to assume that in some languages, one (or sometimes maybe *the*) way to focus the null expression is by making available an additional element to put stress on. However, the FAT does not explain why a language would choose this option, especially if – as is the case in Dutch – stressing the finite verb can be employed for this as well.

This already sheds some doubt on the idea that verum is focus, even though, as mentioned above, a discrepancy in the realization of verum and focus does not logically preclude the idea that they are nevertheless the same. However, the fact that in Dutch, the normal method of marking focus could easily be employed to mark verum, but is not, is unexpected given the FAT and should skew our expectations more away from the FAT compared to when we only were looking at German.

In the following sections, we will find even more indications of a disconnect between focus and verum when we discuss non-intonational languages. As alluded to above, if the FAT were true, we might expect similarities between verum and focus marking even in languages in which no accent is used for focus. However, this is not what we find. The LOT, which does not predict any correlation between focus and verum, seems more likely given such differences in marking strategies.

4.2   Chadic languages (Afro-Asiatic)

The formal realization of constituent focus and verum differs in many Chadic languages. In this section we address verum expression in two Central Chadic languages((Bura, cf. Hartmann, Jacob & Zimmermann 2008; Hartmann & Zimmermann 2012), and South Marghi, Hartmann (cf. 2013)). Both languages have SVO as their base order. They are tone languages and differentiate a high and a low tone. In the following, only high tones are represented, by accents on the vowels.

4.2.1   Bura

Constituent focus in Bura is expressed by fronting the focused constituent to the sentence-initial position. Bura exhibits a subject/non-subject asymmetry with respect to the realization of constituent focus.[11] Subject focus

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[11] Such asymmetries between the marking of subject and non-subject focus are common across West African languages, cf. Fiedler et al. (2010).

is obligatorily marked by the focus marker *an*, which follows the subject in wh-questions and answers to them. The focus marker does not appear in out-of-focus forms (cf. Hartmann & Zimmermann 2012).[12]

(41) Q: Wa an tira rí?
          who FOC leave Q
          'Who left?'
      A: Ládí an tira.
          Ladi FOC leave
          'LAdi left.'

Non-subject focus in Bura is marked by a cleft. The wh/focused constituent is fronted and followed by the focus marker *an* as illustrated in (42). The core sentence is a relative clause as evidenced by the presence of the relative marker *tí* which introduces object relative clauses, see (43).

(42) Q: Mi   an [tí Kubílí másta akwa kwasúkú rí]?
          what FOC REL Kubili buy   at   market Q
          'What did Kubili buy at the market?'
      A: Kilfa an [tí Kubílí másta akwa kwasúku].
          fish FOC REL Kubili buy   at   market
          'It's FISH that Kubili bought at the market.'

(43)   bzír tí ga   thlár náha   ni
          son REL 2SG help yesterday DEF
          'the boy you helped yesterday'

Note that, while different, the marking strategies for subject and non-subject focus are obviously related. Both involve the focus marker *an* and both are initial focus configurations.

The expression of non-subject focus is not obligatory in Bura. Focused non-subjects, including non-subject wh-phrases, may remain in their canonical positions, as in (44), a variant of (42). Note that this does not hold for focused subjects / wh-subjects, which are always focus-marked by the strategy indicated above.

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[12] Tones are unfortunately not marked on some of the examples drawn from field notes on Bura and South Marghi. Due to the difficult political situation in the northeast of Nigeria, where Bura and South Marghi are spoken, it has not been possible to elicit the tonal properties of these examples.

(44)   Q: Kubílí másta mí   akwa kwasúkú rí?
             Kubili buy   what at   market   Q
             'What did Kubili buy at the market?'
        A: Kubílí másta kilfa akwa kwasúkú.
             Kubili buy   fish at   market
             'Kubili bought FISH at the market.'

Turning to the expression of verum, it is realized by different morpho-
syntactic means than constituent focus is: the particle *kú* is inserted pre-
ceding the predicate; see Hartmann, Jacob & Zimmermann (2008). Impor-
tantly, verum marking is not realized by focus fronting. In the remainder
of this section we provide evidence that *kú* marks verum.[13]

     The following example shows that *kú* cannot be inserted in out-of-the-
blue sentences. If Peter's visit at Chris's house had not been expected or
denied, *kú* is not well-formed.

(45)   Context: Peter walks down the street and meets his friend Chris.
        Peter says:

             Iya (#**ku**) mwari avi-ya   nki-ri   naha.
             1SG (VERUM) go   home-2SG house-2SG yesterday
             'I went to your house yesterday.'

It is expected that verum may be expressed in both affirmative and opposite
polarity contexts. As shown in Hartmann, Jacob & Zimmermann (2008),
this is indeed the case with *kú*. In (46) and (47), *kú* agrees with the polarity
of the preceding clause. *Kú* is optional in both cases. Its presence expresses
emphasis on the truth value.

(46)   A: Náha   Pindár sá   mbal.
             yesterday Pindar drink beer
             'Yesterday Pindar drank beer.'
        B: A'á, Pindár (**kú**)   sá   mbal náha.
             yes Pindar (VERUM) drink beer yesterday
             'Yes, Pindar DID drink beer yesterday.'

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[13] The expression of verum marking in Bura is only possible in the perfective aspect, a fact
that has led Hoffmann (1955: 317ff) to analyse *kú* as an aspectual marker of perfectivity.
Hartmann, Jacob & Zimmermann (2008) offer a number of arguments against this assump-
tion and in favour of an analysis of *kú* as the realization of verum. The additional evidence
provided in the present paper represents strong support for the analysis in Hartmann, Jacob
& Zimmermann (2008).

(47)   A: Magira sibila   pdaku náha.
              Magira come.out good   yesterday
              'Magira was looking good yesterday.'
        B: A'a tsa (**ku**)   sibila   pdaku.
              yes she (VERUM) come.out good
              'Yes, she DID look good.'

A context of opposite polarity is provided in (48). In response to speaker
B's rejecting utterance, speaker A may use the verum marker *kú* in order to
express that the proposition contained in A's statement should be added to
the common ground.

(48)   A: Iya ngata abur Charlie hara nggwakur.
              1SG hear that Charlie do   sickness
              'I heard that Charlie is sick.'
        B: Nghini adi   jiri wa, tsa adi   hara nggwakur wa.
              this   EXIST true NEG 3SG EXIST do   sickness   NEG
              'This is not true, he isn't sick.'
        A: Tsa **ku**   hara nggwakur.
              3SG VERUM do   sickness
              'He IS sick.'

The particle *kú* is also used in (49) to reject the presupposition tied to the
future temporal marker in the preceding question. *Kú* is not obligatory here;
its use puts more emphasis on the denial of the presupposition.

(49)   Context: The neighbour's car has not been repaired in a long time.
        A: Nawá an   tí   ga   átá namta motá-nga rí?
              when FOC REL 2SG FUT repair car-2SG   Q
              'When will you repair your car?'
        B: Ama íyá **kú**   namta náha   diya.
              but 1SG VERUM repair yesterday already
              'But I DID repair it already yesterday.'

Finally, *kú* may also appear in yes-no questions and answers to them if
they are emphatically interpreted. This is shown in (50). The emphatic
interpretation is expressed by the adverbial 'really' in the translation.[14]

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[14] While *really* is sometimes a good way to make a verum effect explicit in a translation, *really*
does not express verum, as it has a different distribution. See footnote 8 above.

(50)   A: Ga (**ku**)   masta shinkafa ni   ya?
            2SG (VERUM) buy   rice   DEF Q
            'DID you (really) buy the rice?'
        B: A'a, iya (**ku**)   masta.
            yes 1SG (VERUM) buy
            'Yes, I DID buy it.'

In conclusion, we have shown that *kú* serves to express the verum operator. Its presence puts emphasis on the polarity of the clause, just as was observed for English above. Importantly, the expression of verum in Bura differs formally from the expression of constituent focus in Bura, which supports the LOT with respect to prediction P1.

A proponent of the FAT could argue that the formal difference between the representation of constituent focus and verum does not necessarily present a problem for the FAT given that predicate focus is represented differently from focus on nominal categories in many languages; see Zimmermann (2016). Notice, however, that predicate focus is not marked at all in Bura. This is shown for verb focus in (51), which is realized in-situ and cannot be syntactically marked by either fronting or the formation of a cleft; see Hartmann, Jacob & Zimmermann (2008) from which the following example is taken (their (36)).

(51)   Q: Mi án tí   tsá hárá ka   kum ní   rí?
            what FOC REL 3SG do   with meat DEF Q
            'What did she do with the meat?'
        A: Tsá súltá kum ní.
            3SG fry   meat DEF
            'She FRIED the meat.'
        A′: *Súltá án (tí)   tsá kum ní.
            fry   FOC (REL) 3SG meat DEF
            ('She FRIED the meat.')

The fact that predicate focus is not marked in Bura makes it very unlikely that focus on verum – an instance of predicate focus according to proponents of the FAT– should be formally expressed.

4.2.2 South Marghi

South Marghi is closely related to Bura. A regular declarative statement is given in (52). Indirect arguments follow direct objects and are syntactically realized as PPs. Adverbials preferably appear to the right of the VP.

(52)   J-ó   nda pú mbúgútú anú wazha   nyi.
       3SG.S-AUX FUT tell story   to   children POSS
       'She will tell a story to her children.'

Wh-phrases as well as focused constituents are obligatorily fronted and fol-
lowed by a focus marker, the particle 'ŋ' ('ŋa' preceding pronouns, Hart-
mann 2013).

(53)   Q: Mí   ŋa gó   ɗəl á?
           what FOC 2SG.S buy Q
           'What did you buy?'
       A: Úr   ŋá y-á   ɗəl-au.
           groundnut FOC 1SG-AUX buy-AU
           'I am buying GROUNDnuts.'

South Marghi exhibits a phrase structure variation. Apart from the standard
SVO structure given in (54a), the verb (here *usa* 'to greet') alternatively
raises to a high functional head resulting in an inverted VOS structure, as
in (54b).

(54)   a. Yi   úsá-r-nyi.
           1SG.S greet-PFV-3SG.O
           'I greeted him.'   (SVO)
       b. A   úsá-r-nyí-r-y-au.
           AUX greet-PFV-3SG.O-PFV-1SG.S-AU
           'I greeted him.'   (VOS)

(54b) is derived by head movement and adjunction of the V-O complex to
the aspect and agreement heads; see Hartmann (2013) for an analysis.
     Verb raising is used to express verum in South Marghi. It takes place
in all the contexts isolated above that trigger verum interpretations. First,
verb raising appears in cases where the polarity of a sentence is reversed,
i.e. in corrections. In (55B), the verb *wurna* ('finish') precedes the functional
heads which started out structurally higher. This is a result of raising the
verb to the aspectual head *-r* and the agreement head *-ja*, which are both
cliticized to the verb. Movement of the verb only to the Asp head, as shown
in (55B'), is infelicitous in the given context.[15]

---

[15] The data in (55) to (59) are taken from field notes without tones.

(55)   A: Josef ai   wurna duwalkur nyi mai.
            Josef NEG finish service   3SG NEG
            'Josef didn't finish his service.'
        B: A   wurna-r-ja.
            AUX finish-PFV-3SG
            'He DID finish it.'
        B': #Ji   wurna-r(i).
            3SG finish-PFV
            ('He DID finish it.')

Verb raising can also be observed if the polarity of a sentence is confirmed.
In (56B) the verb is raised across the aspectual marker and, crucially, across
the subject clitic. Again, the lack of verb movement is considered infelic-
itous in the context provided by (56A), cf. (56B'), where *naja* is a strong
pronoun.[16]

(56)   A: Mtaku (a)   shili o dab'dza ni   naa.
            Mtaku (AUX) come to meeting DEF yesterday
            'Mtaku came to the meeting yesterday.'
        B: Aŋ, a   shili-r-ja.
            yes AUX come-PFV-3SG
            'Yes, he DID come.'
        B': #Aŋ, naja shili(-r).
            yes, 3SG came(-PFV)
            ('Yes, he DID come.')

A third context where verb raising appears is in answers to yes-no ques-
tions; see (57). Again, the verb is not in its default position but in a posi-
tion preceding both the subject and the object clitics; compare the answer
alternatives (57A) and (57A').

(57)   Q: A   dəlbiya-r-gə morari ta   ya?
            AUX buy-PFV-2SG rice   DEM Q
            'Did you buy the rice?'

---

[16] We pointed out above that the LOT, unlike the FAT, does not predict obligatoriness of
verum marking in contexts where the question whether *p* is the QUD. The obligatoriness
of verb movement in these South Marghi examples requires further investigation. Note,
however, that many languages place extra restrictions on responses which serve to confirm
or deny. For example, in English it is fine to answer *Did he come?* with *He DID come*, while
in German, the corresponding plain *Er IST gekommen* is marked without a *ja* 'yes' first.

    A: Aŋ, a   dəlbiya-ri-yi morari ni.
        yes AUX buy-PFV-1SG rice   DEF
        'Yes, I DID buy the rice.'
    A':#Aŋ, (na)yi dəlbiya-r(i) morari ni.
        yes 1SG buy-PFV   rice   DEF
        ('Yes, I DID buy the rice.')

Finally, verb raising cannot take place in out of the blue utterances, which
typically block the expression of verum. This is illustrated in (58).[17]

(58)   Context: Amadu and Betty are having dinner together. Out of the
        blue, Betty says:

    #Waharda usa-r-'ya-r-ja.
    Waharda greet-PFV-1PL-PFV-3SG
    ('Waharda DID greet us.')

Thus, the expression of verum and constituent focus is completely different
in South Marghi. Whereas the former involves verb movement, the latter is
realized by XP-fronting and the insertion of a focus marker. Notice that verb
movement is excluded as a strategy to mark VP-focus. In (59), the focused
VP is realized in-situ. It can neither be marked by verb movement, nor
by fronting to the sentence- initial position, the latter leading to ungram-
maticality. The unavailability of verb raising as an expression of VP-focus
shows that verum marking categorially differs from VP-focus marking in
South Marghi. According to the LOT, the reason for this asymmetry is that
verum marking does not equal focus marking.

(59)   Q: Mi   Kwalago məl a?
            what Kwalago do   Q
            'What did Kwalago do?'
        A: Ji   usa-r   Ndihyel.
            3SG greet-PFV Ndihyel.
            'She greeted Ndihyel.'
        A':#A   usa-r-ja   Ndihyel.
            AUX greet-PFV-3SG Ndihyel
            ('She greeted Ndihyel.')
        A'':*Usa-r   Ndihyel ŋ   ji.
            greet-PFV Ndihyel FOC 3SG
            ('She greeted Ndihyel.')

---

[17] Note that in (58), *Waharda* is a left-dislocated topic; there has still been verb raising.

In this section we have shown that the marking of verum and constituent focus differ in the two Chadic languages discussed. We take this as an indication that it is the LOT that is on the right track, in contrast to the FAT, which would lead us to expect a possible formal analogy between the marking of these categories within a language. The next section shows that this is not merely an areal property of the Chadic family, but also arises in a language neither genetically nor geographically related.

4.3 *Gitksan*

Gitksan clausal syntax reflects a basic split between 'dependent' and 'independent' clauses, whereby all subordinate clauses, and some main clauses, are dependent. Dependent marking is induced by a set of pre-predicative elements, including some aspectual operators, clausal coordinators, and negation; main clauses with no introductory element are also sometimes dependent. The two clause types are characterized by different patterns of pronominal inflection; see Rigsby (1986); Bicevskis, Davis & Matthewson (2017); Davis (2018) for summary and discussion.

   Gitksan basic word order is rigidly Predicate-Subject-Object(-Adjunct) for full DPs, in both independent (60) and dependent (61) clauses.

(60)   (Rigsby 1986: 261)
       Hlimooy-i = hl hlgu-t'kihlxw = hl lok-om   'wii-gyat = gi.
       help-TR = CN   small-young = CN old̄-ATTR big-man = PR.EVID
       'The child helped the old man.'

(61)   (Rigsby 1986: 328)
       Yukw-t   giba = s   Bruce t   Barbara.
       PROG = 3.I wait = PN Bruce PN Barbara
       'Bruce is waiting for Barbara.'

4.3.1 Focus in Gitksan

Constituent focus in Gitksan is marked by A′-movement to sentence-initial position. Focused DPs, PPs and CPs can all undergo focus-fronting (Davis & Brown 2011; Bicevskis, Davis & Matthewson 2017). The fronting triggers morphological reflexes which also surface with other A′-dependencies, including relativization, wh-question formation, and cleft-formation.

   The morphological reflex of A′-movement differs according to the grammatical function of the fronted constituent. For example, when an intransitive subject is focused as in (62), the verb is marked with a *-Vt* suffix,

glossed as SX for "(intransitive) subject extraction"'. In addition, the determiner =*hl* (called a "connective" in traditional Tsimishianic literature, see Davis 2018 for discussion) introduces the clause from which extraction has taken place.

(62)   (Davis & Brown 2011: adapted from)
        Q: Naa=hl   lim-it?
            who=CN sing-SX
            'Who sang?'
        A: Tyler=hl   lim-it.
            Tyler=CN sing-SX
            'It was TYLER who sang.'[18]

When a transitive object is focused, as in (63), the determiner =*hl* again appears, and the clause is in the independent order, as revealed by the agreement morphology and by a distinctive "transitive" morpheme.

(63)   (adapted from Davis & Brown 2011)
        Q: Gwi=hl   gub-i=s   John?
            what=CN eat-TR=PN John
            'What did John eat?'
        A: Suusiit=hl gub-i=s   John.
            potato=CN eat-TR=PN John
            'It was a poTAto that John ate.'

When the subject of a transitive clause is extracted as in (64), the complementizer *an* (glossed AX for "A (transitive subject) extraction") is used, and the clause from which extraction has taken place is in the dependent order (signaled by the lack of transitive marking on the verb).

(64)   (Davis & Brown 2011)
        Q: Naa [an=t   gup=hl suusiit]?
            who [AX=3.I eat=CN potato]
            'Who ate the potato?'
        A: (T)   John an=t   gup=hl suusiit.
            (PN) John AX=3.I eat=CN potato
            'It was JOHN that ate a potato.'

---

[18] Focus-fronted constructions are often translated into English using clefts, but these examples differ from real Gitksan clefts, on which see below.

The focus-fronting seen in the answers in (62)-(64) is claimed by Rigsby (1986: 302) and Hunt (1993: 248) to be obligatory; Rigsby states that "Good answers to focused constituent questions should themselves be in focused form." Davis & Brown (2011) observe, however, that the two speakers they worked with do not require focus-fronting in the answers to wh-questions, and this is confirmed also in our own fieldwork. This does not affect the point that focus is marked by fronting.

Gitksan also possesses a cleft construction. Clefts display the same reflexes of A′-extraction shown above, and are introduced by the third person singular Series III pronoun *'nit*. The difference in interpretation between cleft structures and the plain focus-fronted constructions above is a matter for future research.

(65)   (Brown 2014)

      A: Naa an=t   gup=hl anaax?
           who AX=3.I eat=CN bread
           'Who ate the bread?'
      Q: 'Nit   Aidan an=t   gup=hl anaax.
           3SG.III Aidan AX=3.I eat=CN bread
           'It's AIdan who ate the bread.'

Finally, predicate focus in Gitksan does not receive any overt marking. Focused predicates appear in the canonical clause-initial position, with no dedicated focus particle, as shown in (66) (Katie Martin, p.c.).

(66)   Nee, gyaa-'y   John, nee=dii=n   di-delx-t.
       NEG see-1SG.II John NEG=FOC=1SG.I COM-talk-3.II
       'No, I only SAW John, I didn't TALK to him.'

4.3.2 Verum marking in Gitksan

Verum in Gitksan is not marked by focus-fronting, but rather by a pre-verbal particle *k̲'ap / ap*. (The difference between the two versions of the particle is primarily a matter of dialect; there are no semantic differences between the two versions, and henceforth in the text we cite it only as *k̲'ap*.)

Turning to the discourse properties of *k̲'ap*, we observe first that *k̲'ap* is bad discourse-initially, just as we expect from a verum marker.

(67)   Context: We are sitting working and Michael is also in the room. Michael suddenly says out of the blue: "I have a headache."

(#**K'ap**)   ban＝hl   t'imges-'y.
(#V̄ERUM) hurt＝CN head-1SG.II
'I (#DO) have a headache.'

(68)   Context: Adam and Betty are eating dinner quietly. Nobody has
said anything yet. Betty suddenly says: "Charlie is sick."

(#**K'ap**)   siipxw＝t Charlie.
(#V̄ERUM) sick＝PN   Charlie
'Charlie is / #IS sick.'

When asked to judge discourse-initial uses of *k'ap*, consultants often sponta-
neously volunteer comments which support the idea that *k'ap* marks verum.
For example, for the version of (67) which contains *k'ap*, a consultant com-
mented: "No. You would use *[(67)]* if you were answering a question, like
if I asked 'Have you really got a headache?'" Similarly, for the version of
(68) which contains *k'ap*, consultants commented: "Maybe he doubts it and
had asked 'Really?' and she says 'Yes, he's really sick.' It probably came up
in the conversation earlier."

The prototypical contexts where *k'ap* is used in declaratives are (a) when
denying the propositional content, entailments or implicatures of a prior
utterance, and (b) in answers to yes-no questions (with emphatic effect).
K'ap is also felicitous in cases where the speaker is emphatically agreeing
with a previous utterance.

A typical verum context is given in (69). Speaker B asserts *p* in the face
of A's assertion of ¬*p*.

(69)   B: Siipxw-t   Tsaalii.
sick-3SG.II Charlie
'Charlie is sick.'
A: Nee＝dii   siipxw＝s Tsaalii.
NEG＝FOC sick＝PN   Charlie
'Charlie isn't sick.'
B: Nee, #(**ap**)   siipxw＝t Tsaalii＝ist!
NEG #(VERUM) sick＝PN Charlie＝QUDD
'No, he IS sick!'

A minimal pair which supports the verum analysis of *k'ap* is given in (70)-
(71). As expected, (70) is bad as it is an out-of-the-blue context. The denial
context in (71) licenses *k'ap*.

(70)   Context: Out of the blue, I suddenly say:

> Oo 'nit Vince. (#**K̲'ap**)   yee 'nii'y goo = hl wilb-in.
> oh 3.III Vince (#V̅E̅R̅U̅M̅) go 1SG.III LOC = CN house-2SG.II
> 'Hello Vince. I went to your house.'

(71)   Context: I'm complaining that you didn't come to visit me.

      A: Nee = dii   'witxw-in   go̲'o = hl wilb-'y.
           NEG = FOC arrive-2SG.II LOC = CN house-1SG.II
           'You did not come to my house.'

      B: **K̲'ap**   'witxw 'nii'y goo = hl wilb-in   gi.
           V̅E̅R̅U̅M̅ arrive 1SG.III LOC = CN house-2SG.II PR.EVID
           'I DID come to your house.'

An emphatic agreement case is given in (72).

(72)   A: Am = hl   wila   jabi = s Katie ky'oots.
           good = CN manner do = PN Katie yesterday
           'Katie was looking good yesterday.'

      B: Ee, **k̲'ap**   luukw'il am.
           yes V̅E̅R̅U̅M̅ very   good
           'Yes, she WAS looking good.'

(73) shows *k̲'ap* in answer to a yes-no question. This is not good in a neutral context; consultants consistently comment that an emphatic context is required.

(73)   A: Guu   limx 'nii'n = aa?
           HABIT sing 2SG.III = YNQ
           'Do you sing?'

      B: Ee'aa, (**ap**)   guu   limx 'nii'y.
           yes   V̅E̅R̅U̅M̅) HABIT sing 1SG.III
           'Yes, I do/DO sing.' (volunteered without *ap*)

           Consultant's comment on *ap*-version: "It's like saying 'Yeah, it's true, I AM a singer.'"

K̲'ap is dispreferred in answers to wh-questions, as shown in (74). The consultant's comment for this example is that the *k̲'ap* requires a context where the addressee had expressed doubt about Fluffy's being a snake, or where the interlocutors are arguing. Notice that verum accent is similarly impossible in English or German in the context given in (74). This follows from the QUD-based characterization of verum given in Section 2.2, since the question whether Fluffy is a snake is not the QUD in this context.

(74)   Context: Michael is telling Katie that he has a pet called Fluffy.
        Katie wonders what kind of animal Fluffy is, so she asks Michael:
        "What is Fluffy?" Michael responds:

    #**K'ap**   lelt/lalt = t Fluffy.
    VERUM snake = PN Fluffy
    'Fluffy is / #IS a snake.'

The next example shows that *k'ap* is felicitous in response to an implicit
question whether p, another well-known verum context (see Gutzmann 2012:
5).

(75)   A: Nee = dii = n   wilaax ji   dim   'witxw = s Henry.
             NEG = FOC = 1SG.I know   IRR PROSP arrive = PN Henry
             'I don't know if Henry is coming today.'
        B: **K'ap**   dim   'witxw = is.
             VERUM PROSP arrive = QUDD
             'He IS coming.'.

Turning now to *k'ap* in yes-no questions, the analysis of *k'ap* as marking
verum predicts that such questions will be non-neutral and will not occur
discourse-initially. This is correct. An example of a felicitous use of *k'ap*
in a yes-no question is given in (76). Here, speaker B is expressing doubt
about A's assertion. (See Section 7 for discussion of how we can analyze
such data in the LOT.)

(76)   A: Siipxw = t Tsaalii.
             sick = PN   Charlie
             'Charlie is sick.'
        B: Oo, **ap**   siipxw = t Tsaalii = aa?
             oh   VERUM sick = PN Charlie = YNQ
             'Is Charlie really sick?'

Similarly in (77), *k'ap* appears inside a yes-no question when this is used
in response to the implicit QUD 'Is Bellingham the capital of Washington?',
expressing the speaker's doubt about the prejacent proposition (examples
adapted from Gutzmann & Castroviejo Miró 2011: 162).

(77)   A: Mahl-di = s T.J. win   Bellingham hlamiinimts'ep Washington.
             say-TR = PN T.J. COMP Bellingham capital   Washington
             'T.J. said that Bellingham is the capital of Washington.'

B: **Ḵ'ap**   Bellingham hlmiinimts'ep = hl Washington = aa?
              V̄ERUM Bellingham capital = CN   Washington = YNQ
              'IS Bellingham the capital of Washington?'

In summary, the set of discourse contexts in which *k'ap* is felicitous support the proposal that it is a verum marker. Since no other form of focus in Gitksan uses *k'ap* or any other sentence-initial particle, we conclude that the marking of verum and of focus are completely distinct in Gitksan.

4.4   *Interim summary*

The formal expression of focus and verum differs considerably in Bura, South Marghi, and Gitksan. This follows immediately given the LOT which does not assume verum to be an instance of focus. This situation is also not incompatible with the FAT, since it could be that verum focus receives different marking from other kinds of focus. However, under the FAT such asymmetries are at least not as expected as with the LOT, where there is no inherent connection between the notions of verum and focus.

5   Co-occurrence of verum and focus

In this section, we consider multiple questions and congruent focus answers and compare the two theories, the LOT and the FAT, with respect to these contexts. We will consider data from our five main languages (English, German, Bura, South Marghi, Gitksan) and will also bring in some data from a sixth language, Kwak'wala (based on Littell 2016).

Since the FAT assumes verum accent to be an expression of focus, it predicts that verum and focus can co-occur in (and only in) languages that allow for multiple focus constructions. In contrast, the LOT does not establish a correlation between multiple focus constructions on the one hand, and focus plus verum on the other. This is summarized in Table 1, repeated here from Section 3.2 above.

We start with a discussion of German and English, which are compatible with the predictions of the FAT and which fall into the top-left cell. German and English both have multiple questions and pair list answers. This is shown in (78).[19]

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[19] We are using this rather unusual form of a wh-question in order to exclude a topic-focus-structure in the question, which would not trigger the desired multiple focus in the answer.

	verum + focus: yes	*verum + focus:* no
multiple foci: yes	FAT, LOT	LOT
multiple foci: no	LOT	FAT, LOT

Table 1: Predictions made by FAT and LOT regarding verum and focus.

(78)   A: **Wer** hat jemanden eingeladen und **wen**?
             who has somebody invited   and whom
             'Who invited whom?'
       B: [**PEter**]$_F$ hat [**MaRIa**]$_F$ eingeladen, [**JUlia**]$_F$ hat [**Alex**]$_F$ eingeladen,
             Peter   has Maria   invited   Julia   has Alex   invited
             …
             …
             'PEter invited MaRIa, JUlia invited Alex, …'

(79)   A: **Who** invited somebody, and **whom** did they invite?
       B: [**PEter**]$_F$ invited [**MAry**]$_F$, [**JUlia**]$_F$ invited [**Alex**]$_F$, …

Verum can co-occur with constituent focus in both languages. This is predicted by the FAT, but it is also compatible with assumptions of the LOT. The examples in (80) and (81) combine constituent focus (contrastive focus on *ich/I*) with verum accent on *habe/did* in German and English.

(80)   Context: The students in my syntax class are sometimes very lazy.
             Not all of them read the assigned papers. Today I asked them:
       Q: Wer von euch **HAT** denn das Paper gelesen und wer von euch
             who of   you has PRT the paper read   and who of   you
             hat es **NICHT** gelesen?
             has it not   read
             'Which of you READ the paper and which of you DIDn't read
             it?'
       A1: ICH **HAbe** es gelesen.
             I   have it read
             'I DID read it.'

Note that this representation also avoids the possibility of a complex focus construction. Due to the coordination structure, the two foci are unrelated in the semantic representation, see Krifka (1992). Thanks to a reviewer for pointing this out to us.

A2: ICH habe es **NICHT** gelesen.
I   have it not   read
'I DIDn't read it.'[20]

(81) Q: Which of you read the paper and which of you didn't?
      A1: I **DID** read it.
      A2: I **DID**n't read it.

Whereas German and English are compatible with both theories, a different picture emerges if we consider a broader cross-linguistic picture. We will see that all four cells are filled, even in a small language sample: while South Marghi and Gitksan are, like English and German, compatible with both approaches to verum, Bura and Kwak'wala seem to be compatible only with the predictions of the LoT.

5.1 Chadic languages

The Chadic languages do not behave alike with respect to the availability of multiple focus. Whereas Bura allows for multiple foci, South Marghi is more restricted in this respect. However, neither of the Chadic languages under discussion allows for the co-occurrence of wh/focus-marking and the expression of verum. We start the discussion with Bura, which falls into the top-right cell in Table 1.

Bura exhibits multiple wh/focus. Just like in German and English, only one wh-/focus phrase may be fronted; all additional wh/focus phrases remain in-situ. This is shown in (82).

(82) Q: **Wa** an másta **mi**   ri?
          who FOC buy   what Q
          'Who bought what?'
      A: [**Kubílí**]$_F$ másta [**mphyi**]$_F$, [**Mtáku**]$_F$ másta [**kwara**]$_F$, [**Magíra**]$_F$
          Kubili   buy   guinea corn Mtaku   buy   donkey   Magira
          tsúwa másta [**mphyi**]$_F$.
          also buy   guinea corn
          'KUbili bought GUInea corn, MTAku bought a DONkey and MaGIra also bought GUInea corn.'

---

[20] Depending on the accent associated with the subject, the subject may receive either a focus interpretation (falling accent), or a contrastive topic interpretation (rising accent). In the latter case, the contrastive topic is associated with the implication that the speaker is able to answer only for himself, and not for the rest of the class; see Büring (1997).

A crucial difference between Bura and German or English consists in the fact that wh- and constituent focus marking in Bura is incompatible with the expression of verum. Under the FAT, which considers verum as an instance of focus, one would as a default expect the availability of verum focus in multiple focus constructions. This is not borne out for Bura. Neither a wh-question (83) (Hartmann, Jacob & Zimmermann 2008: ex. (50c)), nor a focus construction (84) (Hartmann, Jacob & Zimmermann 2008: ex. (51)) may contain the particle *kú*.

(83) *Wán **kú** sá mbal?
      who.FOC VERUM drink beer
      ('Who DID drink beer?')

(84) *Tsír an tí mwala ní **kú** kwasá.
      beans FOC REL woman REL VERUM chew
      ('The woman DID chew the BEANS.')

South Marghi also blocks verum in focus constructions, but unlike in Bura, it does not license multiple focus in general. It thus falls into the bottom-right cell in Table 1 above. Example (85) shows that multiple wh-questions are marginal in South Marghi. A potential reason for the marginality of (85) could be that South Marghi does not license in-situ focus; cf. Section 4.2.2.

(85) ??Wa ŋ shili-na mi a?
      who FOC buy-COMPL what Q
      ('Who bought what?')

South Marghi exhibits an interesting blocking effect: The realization of constituent focus is incompatible with verb raising, which was identified as the means to mark verum in this language in Section 4.2.2. Thus, verb raising is excluded in wh-questions, as illustrated in (86). It is also blocked in answers to wh-questions; see (87). In both examples, the ungrammaticality results from combining wh/focus and raising of the verb *usa* 'to greet' to the subject agreement head (-*ja*). See Hartmann (2013) for more discussion.

(86) a. Wá ŋá ji úsá-r á?
          who FOC 3SG.S greet-PFV Q
          'Who did he greet?'
      b. *Wa ŋ usa-r-j(a) a?
          who FOC greet-PFV-3SG.S Q
          ('Who did he greet?')

(87) Q: Who did Kwalago greet?

    A1: Ndihyel ŋ   Kwalago úsá-ri.
         Ndihyel FOC Kwalago greet-PFV
         'Kwalago greeted NDIhyel.'
    A2:*Ndihyel ŋ   Kwalago usa-r-ja.
         Ndihyel FOC Kwalago greet-PFV-3SG.S
         ('Kwalago greeted NDIhyel'.)

To summarize, although the two Chadic languages investigated here show different strategies to express verum, they are similar in that constituent focus marking is incompatible with the respective expression of verum.[21]

Since Bura allows for multiple focus constructions, these results are in contrast to what is predicted by the FAT. South Marghi does not have multiple focus in the first place, which makes the South Marghi results compatible with both the FAT and the LOT.

5.2 *Gitksan*

Gitksan differs from the two Chadic languages discussed in that it allows the co-occurence of verum marking and focus. It therefore appears on the lefthand side of Table 1 above. Gitksan also allows multiple foci. This makes Gitksan parallel to German and English and places it in the top-left cell in our table.

As evidence that Gitksan allows multiple foci, first we discuss multiple wh-questions. Important background to the discussion is that Gitksan is a language with wh-indefinites. These are not polarity items, but freely appear in all argument positions, usually in combination with the domain-widening element *ligi*.

(88)   a.   (Davis & Brown 2011)
             Ga'a=hl ligi=t   **naa** 'nii'y.
             see=CN DWID=PN who 3SG.III
             'Someone saw me.'

---

[21] The restriction that verum cannot co-occur with wh-questions and focus also holds in Bole and Hausa, both Chadic languages as well. Hartmann (2013) shows that the blocking effect is also observable with negation and relative clauses, both focus related constructions. It appears to be independent of whether the language allows multiple wh-questions or not. Given that verum is expressed differently in all of the languages considered in Hartmann (2013), the blocking effect is not likely to be based on a structural incompatibility of the focus and verum expressions. A proper explanation of this incompatibility has to await further research.

b. Jekw-di=s Lisa=hl ligi **agu**.
    kill-TR=PN Lisa=CN DWID what
    'Lisa killed something.'

Wh-words are obligatorily fronted in wh-questions, and only one may be fronted. A second wh-word must remain in-situ. This leads to an ambiguity, whereby the same string can be interpreted either as a wh-question containing an indefinite, or as a multiple wh-question. This is shown in (89) and (90), where the same string was offered by consultants to convey the two different meanings.

(89)   Context: You're the detective investigating a crime and you come into a room of potential witnesses. You ask: "Who saw something?"

    Naa an=t alp'a gya'a=hl ligi **agwi**?
    who AX=3 RESTR see=CN   DWID what
    'Who saw something?'

(90)   Context: You're a detective. Everyone is yelling out what they saw about the crime. You say: "*Calm down; …":

    Naa an=t alp'a gya'a=hl ligi **agwi**?
    who AX=3 RESTR see=CN   DWID what
    'Who saw what?'

Multiple wh-questions can receive pair-list answers, as shown in (91).

(91)   Context: There was a dance.

    A: **Naa** an=t u'u=hl   alp'a ligi=t   **naa**?
        who AX=3 invite=CN RESTR DWID=3 who
        'Who invited who?'

    B: T **Katie=hl** dii u'u=s   **Luke**, ii=t   **Lucy=hl** dii
        PN Katie=CN FOC invite=PN Luke CCNJ=3 Lucy=CN FOC
        u'u=s   **Aidan**.
        invite=PN Aidan
        'LUke invited KAtie and AIdan invited LUcy.'

Further evidence for multiple foci in Gitksan comes from the example in (92).[22]

(92)   Q: Who wants to speak only Gitxsanimx̲ at the feast?

---

[22] We thank an anonymous reviewer for suggesting that this type of example more conclusively illustrates multiple independent foci than do the multiple wh-question examples.

A: 'Nii'y = hl   hasag̲-at dim   xsa Gitxsanimx̲ dim   hoox-diit
    1SG.III = CN want-3.II PROSP only Gitxsanimx̲ PROSP use-3PL.II
    ts'im   wilp   li'ligit.
    inside house feast
    'I want to speak only Gitxsanimx̲ at the feast.'

Now we turn to the evidence that verum marking can co-occur with focus
in Gitksan. This is shown in (93) and (94) for verum co-occurring with
constituent focus (marked by fronting/clefting).

(93)   Context: It's a feast, and the MC knows that Clarissa is white and
        thinks she might not be able to give our table's speech in the lan-
        guage. So he tells her: "You can say part of it in Giyanimx and part
        of it in English." She says:

        (**K'ap**)   ksax **Giyanimx** hasaga-'y   dim   hoo-'y = ist.
        (VERUM) only Giyanimx want-1SG.II PROSP use-1SG.II = QUDD
        'I want to speak only Giyanimx.'

(94)   A: Limx t   ye'   gyax̲xw.
            sing PN grandfather last.night
            'Grandpa sang last night.'
        B: Nee, (**ap**)   'nit   **dziits'**   limxi = t gyax̲xw
            NEG (VERUM) 3SG.III grandmother sing = 3 last.night
            'No, it's GRANDMA who sang last night.'

        Consultant's comment on *ap*-version of (94B): "If you were arguing.
        If you had to repeat it, then you could say this."

Further evidence for the co-occurence of verum with focus in Gitksan comes
from the fact that the verum marker *k'ap* can, at least marginally, appear
inside wh-questions. An example of this is given in (95).[23]

(95)   Context: We see the dog lying there injured.

---

[23] *K'ap* has been accepted in wh-questions by all our consultants on at least one occasion, but
it has never been volunteered, and it is sometimes rejected. The reason for the marginal
status of *k̲'ap* in wh-questions is a matter for future research.

Me: Nee = dii = t   hlo'os Kyra = hl us, ii   ap   hootii nee = dii = n
   NEG = FOC = 3.I kick   Kyra = CN dog CCN VERUM also   NEG = FOC = 1.I
   hlo'oxs = hl us.
   kick = CN   dog
   'Kyra didn't kick the dog and I also didn't.'

You:**Ap   naa** an = t   hlo'oxs = hl us?
   VERUM who AX = 3.I kick = CN   dog
   'Well, who DID kick the dog then?'

The data in this section have shown that Gitksan patterns just like German and English with respect to multiple wh/focus and the co-occurence of verum and focus – it allows both. These facts are compatible with either the FAT or the LOT.

5.3 Kwak'wala

So far we are missing a language from the final cell in our table, the bottom left: a language which does not allow multiple foci, but does allow verum marking to co-occur with focus marking. The existence of such a language is predicted by the LOT, but not by the FAT. In this sub-section we briefly bring in a sixth language, Kwak'wala, which appears to fill this gap in our typology.

In Kwak'wala, the primary means of marking constituent focus are clefting and nominal predication. These are illustrated in (96) and (97) respectively. In (96B), the nominal 'dog' is the main predicate of the sentence.

(96)   *Kwak'wala* (Littell 2016: 205-206)

   A: ʔəngʷida   gax̌ɛʔ   sux̌ʷda   himaýəx̌?
       ʔngʷ = i = da   gax̌a = aʔ   s = ux̌ʷ = da   himaý = q
       who = 3DIST = DET bring = INVIS OBL = 3MED = DET food = VIS
       'Who brought the food?'
   B: yudux̌da   gəla gax̌ sa   himaýəx̌.
       yu = d = ux̌ = da   gla gax̌ sa   himaý = q
       be.3MED = DET = 3MED = DET bear come OBL food = VIS
       'It's the bear who brought the food.'

(97)   *Kwak'wala* (Littell 2016: 206)

A: ḿaćaⱡƛi　　　　　ćocuʔƛoʔoʔs　　　　　　　　lax̌
　ḿaćaⱡ=ƛ=i　　　　ćo=ćẃ=ƛ=oʔ=uʔs　　　　l=(a)x̌
　what=FUT=3DIST give-PASS=FUT=INVIS=2POSS PREP=ACC
　Jon?
　Jon
　Jon
　'What are you going to give to Jon?'
　(Lit: 'That one given by you to Jon is what?')

B: ẃaćiƛən　　　　　ćocuʔⱡ　　　　lax̌　　　　Jon.
　ẃas-ₕi=ƛ=n　　　ćo-ćẃ=ƛ　　　l=(a)x̌　　Jon
　dog-NMZ=FUT=1 give-PASS=FUT PREP=ACC Jon
　'I will give Jon a dog.'
　(Lit: 'The one given by me to Jon is a dog.')

Multiple marking of constituent focus appears to be disallowed in this language. In support of this we note that '"multiple WH questions cannot be constructed" (Littell 2016: 225; see also Littell 2016: 362).[24] If it is correct that multiple focus is disallowed in Kwak'wala, the FAT would predict that verum marking cannot co-occur with focus marking. However, the verum marker ʔ*m* can co-occur with explicit marking of focus, as shown in (98).[25]

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[24] Littell (2016: 225) does give an example of what he characterizes as multiple focus. In this example, a hypernym ('fish') is questioned and the answer contains a hyponym ('sockeye'):

(i)　　*Kwak'wala* (Littell 2016: 225)

　　A: ʔəngʷida　　　　loƛɛʔ?　　　　　x̌a　K̓utəla?
　　　ʔngʷ=i=da　　　la-w-ƛa=aʔ　　x̌a　K̓utla
　　　who=3DIST=DET go-out-obtain=INVIS ACC fish
　　　'Who caught a fish?'
　　B: loƛux̌　　　　　Masaki x̌a　məⱡik.
　　　la-w-ƛ=ux̌　　　Masaki x̌a　mⱡik
　　　go-out-obtain=3MED Masaki ACC sockeye
　　　'Masaki caught a sockeye.'

However, it is not clear to us that this is an instance of multiple focus.

[25] The argument would be still stronger if combining a DP-focus and a focus on a non-DP constituent such as aspect or tense were ungrammatical in Kwak'wala. Unfortunately, such data are not available to us at the moment. Further research is definitely needed here.

(98)   *Kwak'wala* ([Littell 2016](): 253)
        ẃaćiʔəmx̌eʔe   ʔəx̌ʔɛx̌sdəsəẃɛʔs.
        ẃas = $_h$i = ʔm = x̌a = i   ʔx̌-ʔɛx̌sd-sẃ = ɛʔ = s
        dog-NMZ = VERUM = ADD.FOC = 3PROX do-want-PASS = INVIS = 3POSS
        [Hannah wants a horse and] 'she also wants a [dog]$_F$'.

We therefore tentatively conclude that Kwak'wala is a bottom-left-cell language: it disallows multiple focus, but allows verum to co-occur with focus.

5.4   Interim summary

In this section, we provided further evidence for the independence of verum and focus realization across languages. Investigating multiple focus marking, we showed that the languages in our sample vary on whether verum may co-occur with focus. We found evidence for all possible combinations. Among those languages that have multiple focus constructions, German, English and Gitksan allow focus and verum to combine, whereas Bura excludes this combination. South Marghi does not have multiple focus and disallows the co-occurrence of focus and verum. Our typology also predicts the possibility of languages which do not exhibit multiple focus but allow for the combination of constituent focus and verum. We were able to tentatively identify Kwak'wala as such a language. Table 3 summarizes the results; we see that Bura and Kwak'wala are the languages which provide evidence for the LOT over the FAT.

Table 3: Combinations between verum and focus in the discussed languages.

	verum + focus: yes	verum + focus: no
multiple foci: yes	German, English, Gitksan	Bura
multiple foci: no	Kwak'wala	South Marghi

We conclude this section by stressing once again that the FAT fails to predict the existence of the languages in the dark gray cells in Table 3. There is no reason within the FAT analysis why a language with multiple focus should disallow the combination of focus and verum, or why a language without multiple focus should allow the combination of focus and verum.

6　Obligatoriness of Verum

According to the FAT, verum marking should occur in answers to yes-no questions (weak version) or, at least, in answers to explicit polar alternative questions (both versions), just like ordinary constituent focus is required after a wh-question.

(99)　Q:　Who kicked the dog?
　　　A:　PEter kicked the dog.

(100)　Q:　Wer hat den Hund getreten?
　　　　　who has the dog　kicked
　　　　　'Who kicked the dog?'
　　　A:　PEter hat den Hund getreten.
　　　　　Peter has the dog　kicked
　　　　　'PEter kicked the dog.'

However, in English and German, verum marking is not obligatory after yes-no questions, as we already alluded to in § 2.3. Instead, both a plain non-verum answer as well as a verum answer are possible after simple polar questions.

(101)　Q:　Did Peter kick the dog?
　　　A:　Yes, he did.
　　　A′:　Yes, he **DID** kick it.

(102)　Q:　Hat Peter den Hund getreten?
　　　　　has Peter the dog　kicked
　　　　　'Did Peter kick the dog?'
　　　A:　Ja, er hat den Hund getreten.
　　　　　yes he has the dog　kicked
　　　　　'Yes, he did kick the dog.'
　　　A′:　Ja, er **HAT** den Hund getreten.
　　　　　yes he has the dog　kicked
　　　　　'Yes, he DID kick the dog.'

The optionality of verum marking in these answers is therefore at odds with the weak version of the FAT. In contrast, the strong FAT does not suggest that verum marking is required in contexts like (101) and (102). Actually, if there are no other contextual factors that make the other polarity salient as well (i.e. that Peter didn't kick the dog), the strong FAT rules verum out. As for the LOT, it depends on the actual implementation (to which we will come soon) what kind of additional contextual requirements need to be

fulfilled in order for verum to be used in (101) and (102). At least, there is a robust intuition that the use of verum in (101A′) and (102A′) needs some additional discourse condition to hold in order for it be felicitously licensed.

Let us now turn to explicit alternative questions, which provide an obvious context that should trigger verum under the strong Fᴀᴛ. The observation is that even an alternative question does not force verum marking, showing that even the strong version of the Fᴀᴛ falls short here.

(103)   Q: Did Peter kick the dog or did he not kick the dog?
       A: He did.
       A′: He **DID** kick it.

(104)   Q: Hat Peter den Hund getreten oder hat er den Hund nicht
           has Peter the dog kicked or has he the dog not
           getreten?
           kicked
           'Did Peter kick the dog or did he not kick the dog?'
       A: Er hat den Hund getreten.
           he has the dog kicked
           'He kicked the dog.'
       A′: Er **HAT** den Hund getreten.
           he has the dog kicked
           'He DID kick the dog.'

All this being said, verum marking does not just alternate freely with a non-verum answer: it requires a special context to be licensed, which at least includes some controversy in the question under discussion (or a final settlement). As we saw for English – German behaving analogously – the use of verum marking then adds an emphatic effect to settle that controversy. In the following, we show that the same holds for the non-European languages we studied as well: verum marking always leads to an emphatic interpretation. We will discuss data from Bura (Chadic) and Gitksan to make this final point against the Fᴀᴛ.

6.1 Bura

Verum marking is optional in Bura in answers to yes-no questions. This is shown in (105), repeated from Section 4.2.1, ex. (50). The presence of the verum marker *kú* leads to an emphatic interpretation, expressed by the use of the adverbial *really* in the English interpretation.

(105)   A: Ga (**ku**)   masta shinkafa ni   ya?
             2SG VERUM buy   rice   DEF Q
             'Did you (really) buy the rice?'
        B: A'a, iya (**ku**)   masta.
             yes 1SG VERUM buy
             'Yes, I (really) bought it.'

A further example is given in (106). Again, the presence of the verum marker in the yes-no question and in the answer conveys an emphatic interpretation, which is compatible with the LOT but not with the FAT.

(106)   A: Musa (**ku**)   sinta madankya-r-yeri ni   akwa makaranta ya?
             Musa VERUM bring child-LINK-PL   DEF to   school   Q
             'Did Musa bring the children to school?'
        B: A'a tsa (**ku**)   sinta madanka-r-yeri ni   akwa makaranta.
             yes 3SG VERUM bring child-LINK-PL   DEF to   school
             'Yes, he did bring the children to school.'

The verum marker is also optional in affirmative confirmations of a preceding utterance, cf. (107), repeated from example (46) above. The verum marker, which corresponds to the insertion of the stressed auxiliary in English, puts additional emphasis on B's utterance.

(107)   A: Náha   Pindár sá   mbal.
             yesterday Pindar drink beer
             'Yesterday Pindar drank beer.'
        B: Aá, Pindár (**kú**)   sá   mbal náha.
             yes Pindar VERUM drink beer yesterday
             'Pindar DID drink beer yesterday.'

In the next subsection we show that the optionality of verum marking is also observable in Gitksan, further supporting the LOT which predicts optionality in these contexts.

6.2   Gitksan

Just like in English, German and Bura, in Gitksan verum marking is optional in responses to yes-no questions, as predicted by the LOT but not the (weak) FAT. This is shown in (108). The consultants' comments on the _k'ap_-version of (108B) indicate that the addition of _k'ap_ conveys a verum interpretation, as we expect.

(108)   A: Guu   limx 'nii'n = aa?
             HABIT sing 2SG.III = YNQ
             'Can you sing?'
        B: Ee'aa, **(ap)**   guu   limx 'nii'y.
             yes   (VERUM) HABIT sing 1SG.III
             'Yes, I can/CAN sing.'

Consultant's comment on the version with _k'ap_: "It's like saying 'Yeah, it's true, I AM a singer.'"

(109) similarly shows that _k'ap_ is optional in answers to yes-no questions, and that its presence conveys additional meaning.

(109)   A: Oo, siipxw Charlie = aa?
             oh sick   Charlie = YNQ
             'Is Charlie sick?'
        B: Ee, **(k'ap)**   siipxw 'nit.
             yes (VERUM) sick   3SG.III
             'Yeah, he is/IS sick.'

Consultant's comment on the version with _k'ap_: 'This is where she's telling that it's bad. It's really sick. _K'ap_ means it's really, actually, it's happening, it's not good.'

The consultants' comments show that verum marking with _k'ap_ is not neutral and adds additional emphasis that would not be expected if _k'ap_ were just a way to realize ordinary alternative focus.

7   Towards a stronger semantics for VERUM

In Section 2.2, we illustrated the LOT by assigning a semantics to the VERUM operator that basically replicated the effect derived by the context condition of focus interpretation, as given in (22): in order for verum to be felicitous, the question built from the propositional content of the verum utterance should correspond to the current question under discussion.

(22) $[\![\text{VERUM}]\!]^{u,c}(p) = \checkmark$, if $\{p, \neg p\} = \text{QUD}(c)$

As the discussion of various examples has shown throughout the paper, this pure QUD-linked semantics is not enough to derive all the contextual restrictions that hold on the use of verum in the various languages we have discussed.

One of the approaches to verum that takes a LOT-perspective and that has been very influential is the account developed by Romero & Han (2004). They treat verum as an epistemic, conversational operator that takes the propositional content of the sentence as its argument and states that the speaker is really sure that the propositional content should be added to the common ground.

(110) $[\![\text{VERUM}]\!]^{t,c}(p) = 1$, if the speaker is really sure that p should be added to the common ground.

However, as pointed out by Romero (2005) and discussed in detail by Gutzmann & Castroviejo Miró (2011), this approach is problematic since verum is analyzed at the plain truth-conditional level (hence the superscript 't' in (110)), which makes wrong predictions about the truth-conditions of the utterance, which remain unaffected by the presence of verum. For this reason, Gutzmann & Castroviejo Miró (2011) suggest treating verum as contributing use-conditional content (represented as the superscript 'u' in (111)). As for the use-conditions, Gutzmann & Castroviejo Miró build in a speaker attitude in the form of a wish to *downdate* the QUD.

(111) $[\![\text{VERUM}]\!]^{u,c}(p) = \checkmark$, if the speaker c_S wants to downdate $?p$ from $\text{QUD}(c)$.

However, even if adding such a speaker attitude to the semantics of VERUM leads us in the right direction, it may still not be strong enough to capture the contextual restrictions. For instance, as we saw in (30) and (31), a neutral yes-no question is not sufficient to license verum marking in the answer, whereas a biased yes-no question is.

Similarly, if there is any reason for the speaker to really want to answer the QUD with her utterance, this should license verum marking even in answers to neutral yes-no questions. For instance, if the speaker wants to emphasize that she wants pizza for dinner, the semantics given in (111) would lead us to expect that verum marking is always felicitous in the following context.

(112)   Context: B really wants to have pizza for dinner and will be sad if she does not get any. She already told A that she wants pizza, but A forgot and is not sure anymore.

A: I don't remember what you said. Do you want pizza for dinner?
B: #I **DO** want pizza for dinner.

Examples like this and the ones discussed in the previous sections suggest that there should be some controversy about how the question whether p should be settled (by p or $\neg p$); mere ignorance as in (112) is not sufficient.

Therefore, we propose to alter the semantics in (111) such that it expresses the speaker's wish to prevent that the question $?p$ is downdated with $\neg p$.

(113) $[\![\text{VERUM}]\!]^{u,c}(p) = \checkmark$, if the speaker c_S wants to prevent that $\text{QUD}(c)$ is downdated with $\neg p$.

If a speaker uses verum to explicitly mark that she wants to prevent that the QUD is settled toward $\neg p$, then $\neg p$ should already have been proposed (by an utterance of $\neg p$, for instance) or, at least, this possibility should have been made salient in the discourse context (by a biased question, for instance). In this sense, the condition in (113) encompasses the salient-alternative requirement of the FAT but adds an extra aspect in form of a (maybe forced) conflict resolution.

Let us stress that the semantics given in (113) is just a first sketch of a more adequate semantics for VERUM, and more detailed work has to be done to get all the empirical details right. However, the purpose of this sketch is to show that the LOT can in principle account for more complex contextual restrictions on the use of verum marking. This is in contrast to the FAT, which has to work with what can be delivered by the simple mechanisms of focus interpretation in combination with a trivial verum predicate in the form of an identity function on propositions.

Before concluding, let us briefly discuss three implications of this suggestion for more demanding use-conditions for verum. First, we discuss a specific data point raised by a reviewer, namely the occurence of verum after the verb 'promise'. This is illustrated in (114) and (115) for Gitksan (and for English, as seen in the translations).

(114)   Context: We were waiting for Michael, who specifically promised to come today.

Ee'eesxw Michael dim   g'witxw-t ii   (**k'ap**)   nee = dii   g'witxw-d = is.
promise   Michael PROSP arrive-3.II CCNJ (VERUM) NEG = FOC arrive-3.II = QUDD
'Michael promised to come but he didn't come.'

(115)   (context adapted from Zimmermann & Hole 2008)
Context: We are expecting Aidan and he hasn't shown up yet.

> Ee'eesxw-t dim   'witxw-t, ii   **k'ap**   dim   'witxw-t.
> promise-3.II PROSP arrive-3.ii CCNJ V̲ERUM PROSP arrive-3.II
> 'He promised to come and he WILL come.'

The occurence of verum in (114) is as expected, assuming that an assertion of 'promise p' implicates that p becomes true. The speaker of (114) wishes to prevent the QUD from being downdated with p, hence she uses verum when asserting p's negation. What about (115) – is the QUD in this context really likely to risk being downdated with the proposition that Aidan won't come?[26] We assume that while 'promise p' may as a default implicate the truth of p, contextual factors may override this. In particular, the context in (115) is such that Aidan's promise looks likely to be unfulfilled. In order to prevent the QUD being updated with the proposition that Aidan won't come, the speaker is correctly predicted to be able to use verum.

The second issue for our analysis is whether it manages to predict the restribution of verum marking inside yes-no questions.[27] In cases like (50A) from Bura or (76) (repeated here as (116)) from Gitksan, for example, we need to predict that the presence of verum inside the question correlates with some speaker bias; in this case, that Charlie is not sick (see Romero & Han 2004 for discussion).

(116) A: Siipxw = t Tsaalii.
           sick = PN Charlie
           'Charlie is sick.'
       B: Oo, **ap**   siipxw = t Tsaalii = aa?
           oh VERUM sick = PN Charlie = YNQ
           'Is Charlie really sick?'

The way to derive this from the semantics (113) is technically not trivial and we do want to go into the formal details here, so we just outline the general idea. First note that the verum operator as defined in (22) takes a propositional argument. However, we assumed throughout the paper that questions denote sets of proposition, i.e. $\{p, \neg p\}$ in case of the question whether p. A first idea would be to assume that verum applies to the core prejacent proposition, independently of the semantic effect of the question.

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[26] One possibility, suggested by a reviewer for English, is that the focal stress in (115) is not an instance of verum, but instead involves focus on illocutionary operators ('promise' vs. 'assert', for instance). Here the cross-linguistic evidence from languages with explicit verum particles sheds light on the situation: the presence of k̲'ap in (115) suggests that this is indeed an intance of verum.

[27] Thanks to an anonymous reviewer for encouraging us to consider this issue.

This would mean that in (116). the speaker wants to prevent the QUD from being downdated with the proposition that Charlie is not sick ($\neg p$), and in addition asks the addressee to provide the answer to the question whether Charlie is sick. This, however, predicts a bias of the wrong polarity. The speaker of (116A) seems to be doubtful of Charlie being sick ($= p$), not of the negative proposition, contrary to the prediction. Hence, this cannot be the right direction here.

We can come to a better solution if we take inspiration from other work on how use-conditional items and, more specifically expressives, behave in questions. In a case study on antihonorifics in Japanese, Davis & McCready (2016) show that expressives in questions may behave in two ways. There are some that operate on all alternatives of the question meaning, which corresponds to the Hamblin-style question denotation Hamblin (1958; 1973). However, some expressives only operate on the *true* alternatives of the question meaning, which corresponds to the question denotation proposed by Karttunen (1977). We can apply these insights to our case of verum in yes-no questions. We propose that like some of the honorifics that Davis & McCready discuss, verum applies only to the true answer to the yes-no question.[28] Let us apply this idea to (116). Let us first assume that Charlie is sick ($= p$). Then verum applies to this proposition and expresses that the speaker wants to prevent downdating the QUD with the proposition that Charlie is not sick ($= p$). Now, let us assume that Charlie is not sick ($= \neg p$). Then verum applies to this proposition and expresses that the speaker want to prevent downdating the QUD with the proposition that it is not the case, that Charlie is not sick ($= \neg\neg p$), i.e. that Charlie is sick. In either case, the speaker wants to prevent that the QUD is downdated with the wrong answer. From this, we can derive the observed speaker bias. Since the speaker of (116A) expressed that Charlie is sick, the fact that the speaker questions whether Charlie is sick as well as marking that they want to prevent that the QUD is downdated with a wrong answer, seems only sensible

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[28] Technically, we can achieve this by assuming that in yes-no questions, the verum operator comes with an embedded answerhood operator (see Heim 1994; Beck & Rullmann 1999; Uegaki 2019), that takes a question denotation and returns the conjunction of all true answers, which in the case of a yes-no question is just the one true proposition (with the presupposition that there is at least one true answer).

(i) $\quad$ ANS$_w = \lambda Q_{\langle s,\langle s,t\rangle\rangle} : \exists p. \in Q[p(w)].\lambda w'.\forall p' \in Q[p'(w) \to p'(w')]$

(ii) $\quad$ a. $\quad$ IS Charlie sick?
$\quad\quad$ b. $\quad$ VERUM(ANS$_w$($\{\lambda w.\textbf{sick}_w(\textbf{charlie}), \lambda w.\neg\textbf{sick}_w(\textbf{charlie})\}$))

if the speaker believes that Charlie being sick is the wrong answer to the question whether Charlie is sick. Interestingly, this analysis is compatible with contexts in which the speaker may not have some bias themselves but there is some danger that a wrong answer may downdate the QUD. This is the case when there are two conflicting proposals.

(117)   A: Did Karl kick the dog?
        B: No, Karl didn't kick the dog.
        C: No, he DID kick the dog.
        A: Which is it? DID he kick the dog?

In this dialog, C uses verum in order to try to prevent B's proposal that Karl did not kick the dog to downdate the question. In contrast, A's use of verum indicates that A wants to prevent the QUD being downdated with the wrong answer to their question. Crucially, A's question does not necessarily indicate that A is biased; it just flags that one of the two suggested updates should be prevented. That is, equipped with the independently motivated assumption that use-conditional items can operate on the Karttunen-denotation of a question, the use-conditional meaning suggested for VERUM in (113) can explain that in many contexts, using verum marking in a question expresses the speaker bias, while in contexts like (117), it does not.

   Another aspect that seems to be an intriguing route for further research is that the LOT, again in contrast to the FAT, makes it entirely plausible that there are subtle crosslinguistic differences between the contextual conditions that license verum marking in different languages. First investigations into the question of micro-variation of verum seem to suggest that this is indeed the case (Matthewson et al. 2017).

8   Conclusion

We started this paper by distinguishing two competing theories of what has been called "verum focus" in the literature; a particular stress pattern in intonational languages like English or German in which an element located in C (usually the finite verb) receives a heavy stress accent in order to put emphasis on the truth of the proposition. According to what we called the *focus accent thesis* (FAT), the stress used for verum marking is just an ordinary focus accent which realizes focus on a covert verum predicate (which has to be understood as an identity function on truth values or propositions). In contrast, the competing *lexical operator thesis* (LOT) assumes that the stress accent is not linked to focus, but directly realizes a lexical (use-conditional)

operator that imposes certain discourse conditions on the felicitous use of an utterance. These two approaches were illustrated in Figure 2.

While on the surface, it seems that both approaches are more or less equivalent, we showed in Section 3 that they lead to different predictions regarding (at least) the following three aspects:

> (i)   Means of focus and verum marking
> (ii) Co-occurrence of focus and verum
> (iii) Obligatoriness of verum

Since the FAT assumes a tight connection between verum and focus, it predicts that verum patterns just like other focus phenomena.

(118) **Predictions made by the FAT**
> P1 Verum and focus are marked by the same strategies in a given language.
> P2 Verum and focus can co-occur if and only if a language allow multiple foci.
> P3 (i)   Verum should be obligatorily marked in answers to yes-no questions (weak FAT).
>   (ii) Verum should be obligatorily marked in answers to alternative polar questions (strong FAT).

The LOT does not posit that verum is just a special kind of focus and thus does not predict that verum marking behaves similarly to focus phenomena.

(119) **Predictions made by the LOT**
> P1 There may be differences between verum and focus marking strategies.
> P2 There is no correlation between multiple foci and the co-occurrence of focus and verum.
> P3 Verum is not required in answers to yes-no questions; if used, it adds additional meaning.

In order to tease the FAT and the LOT apart and test these three different predictions, we looked not just at English and German, but at four non-intonational languages: Bura (Biu-Mandara, Chadic), South Marghi (Biu-Mandara, Chadic), Gitksan (Interior Tsimshianic), and (not as deeply) Kwak'wala (Northern Wakashan). Let us summarize what our investigation found regarding the three predictions.

Table 4: Predictions and Results.

	Prediction	weak FAT	strong FAT	LOT	Results
(P1)	Same realization	✓	✓	✗	✗
(P2)	Co-occurence correlation	✓	✓	✗	✗
(P3)	Obligatoriness of verum	✓	✗	✗	✗

(P1) Same realization of verum and focus   All the languages we investigated regarding their strategies to mark verum and focus showed a considerable difference and non-overlap regarding how focus and verum are marked. That is, we do not find that verum and focus are marked by the same means, contrary to what the FAT predicts.

(P2) Co-occurence correlation   If verum marking is just a special instance of focus marking, there should be a correlation between a language allowing multiple foci and the possibility of verum co-occuring with an ordinary focus. While Gitksan and South Marghi are both compatible with this correlation, Bura breaks it. Bura allows for multiple foci, but prohibits verum marking from co-occuring with an ordinary focus. While needing a bit more investigation, Kwak'wala seems to break the correlation in the other direction and thus provides the fourth possible type of language: while it does not seem to allow multiple foci, verum can co-occur with ordinary focus.

(P3) Obligatoriness of verum   The last prediction concerns the question whether verum has to be marked obligarily in contexts in which it is licensed (as predicted by the FAT) or whether it is optional and, if used, adds an additional discourse effect (as predicted by the LOT). Here, data from English and German already favor the LOT over the FAT, but the data from the other languages we looked at confirm this as well. Using verum always puts additional emphasis that goes beyond what is predicted by an alternative-based focus analysis.

The different predictions made by the FAT and the LOT and how they compare to the results from our investigations are summarized in Table 4. The results provide some evidence against the FAT and in favor of the LOT. Since this approach disconnects the notion of verum from that of focus, we think that the concept of "verum focus" should be abandoned, as it was partially motivated by the superficial similarity between verum and focus marking

in languages like German and English. That is, we conclude that what is called "verum focus" is not focus, but just a way to mark verum.

Even if this paper may not convince all readers to abandon the focus part of "verum focus", we hope that it may start explicit discussion of this issue. In addition to what we addressed in this paper, there are many aspects we did not even touch upon that should be investigated in further research. First, in his original paper Höhle (1992) discussed verum not just in declarative clauses, but also, for instance, in subordinate clauses, conditionals, or relative clauses, all aspects we did not talk about in this paper. Having a closer look at them and how the two approaches fare with respect to them will certainly be helpful, as will be a cross-linguistic perspective on how verum can or cannot be realized in these environments.

Second, if we are on the right track and verum is not focus, an interesting question arises: How come in languages like English or German, the focus accent is employed to realize verum? Is this homonymy an accident or could it be that the focus accent was adapted for verum marking because the effect of verum is related to focus effects in terms of the conditions they impose on the use of an utterance? And more generally, even in languages which do not use accent to express focus, why do some of them use the same strategy to mark verum and focus?[29] What is the conceptual connection between verum and focus that can lead to a diachronic development such that the two are sometimes marked similarly? A sketch of an idea, suggested to us by a reviewer for the specific case of German and English, could be as follows: the parallel realisation may be due to more general constraints on the prosodic systems of the languages. Suppose that (i) there must be a nuclear pitch accent in every utterance; (ii) this pitch accent must not be realised on given material (Schwarzschild 1999); and (iii) the core proposition is always given under verum and may therefore not carry accent. A similar idea, suitably adapted, could extend to non-accent languages, and could account for the parallel realisation of verum and focus in some languages without resorting to accidental homonymy. Confirmation of this idea, and further cross-linguistic investigation of this important question, will have to await future research.

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[29] See, e.g., Hyman & Watters (1984) on Aghem (Grassfields Bantu) and Schwarz (2010) on some Gur languages, respectively; thanks to an anonymous reviewer for pointing us to these works.

Abbreviations

1, 2, 3 = indication of person, I/II/III = series I/II/III pronoun, FAT = focus accent thesis, LOT = lexical operator thesis, ACC = accusative, ADD.FOC = additive focus, ATTR = attributive, AUX = auxiliary, AX = A (transitive subject) extraction, CCNJ = clausal conjunction, CN = common noun connective, COMPL = completive, COMP = complementizer, COM = comitative, DEF = definite, DEM = demonstrative, DET = determiner, DIST = distal, DWID = domain widener, EXIST = existential, FOC = focus, FUT = future, HABIT = habitual, INVIS = invisible, IRR = irrealis, LINK = linker, LOC = locative, MED = medial, NEG = negation, NMZ = nominalizer, OBL = oblique, O = object, PASS = passive, PFV = imperfective, PL = plural, PN = proper noun connective, POSS = possessive, PR.EVID = prior evidence, PREP = preposition, PROG = progressive, PROSP = prospective, PROX = proximal, PRT = particle, PRT = particle, PVF = perfective, QUDD = question under discussion downdate, Q = question marker, QUD = question under discussion, REL = relative, RESTR = restrictive, SG = singular SX = S (intransitive subject) extraction, S = subject, TR = transitive, VIS = visible, YNQ = yes-no question.

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Competing Interests

The authors have no competing interests to declare.

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