

Quexistentials and Focus

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Many languages have words that can be interpreted either as question words or as existentials. We call such words *quexistentials*. It has been claimed in the literature (e.g., Haida 2007) that, across languages, quexistentials are (a) always focused on their interrogative interpretation and (b) never focused on their existential interpretation. We refer to this as the *quexistential-focus biconditional*. The article makes two contributions. The first is that we offer a possible explanation for one direction of the biconditional: the fact that quexistentials are generally contrastively focused on their interrogative use. We argue that this should be seen as a particular instance of an even more general fact—namely, that interrogative words (quexistential or not) are always contrastively focused—and propose an account for this fact. The second contribution of the article concerns the other direction of the biconditional. We present evidence that, at least at face value, suggests that focus on a quexistential does not necessarily preclude an existential interpretation. Specifically, we show that it is possible for Dutch *wat* to be interpreted existentially even when it is focused. We attempt to explain this phenomenon.

Keywords: quexistentials, focus, interrogatives, indefinites

1 Introduction

Many languages have words that can be used either as question words or as existential indefinites (e.g., Ultan 1978, Haspelmath 1997, Bhat 2000, Haida 2007). We call such words *quexistentials* (question + existential). An example is the Dutch word *wat*, which can mean either ‘what’ or ‘something.’¹

(1) Wat heeft Miranda gegeten?

QUEX has Miranda eaten
‘What has Miranda eaten?’

For their generous help with ideas and/or judgments, we thank Byron Ahn, Paul Boersma, Tanya Bondarenko, Ben Bruening, Seth Cable, Ömer Demirok, Donka Farkas, Edward Flemming, Hana Kalpak, Jo-Wang Lin, Flavia Naehrlich, Hella Olbertz, Roger Paul, Gertjan Postma, Omer Preminger, Norvin Richards, Sergei Tatevosov, Igor Yanovich, Hedde Zeijlstra, and audiences at an NYI seminar in St. Petersburg, an InqBnB workshop at the University of Amsterdam, and colloquia at the University of British Columbia, Princeton University, and Seoul National University. We are also grateful to the development and support team of Praat (Boersma and Weenink 2020), which proved a very useful tool for this project. Finally, we gratefully acknowledge financial support from the Netherlands Organization for Scientific Research (NWO), the European Research Council (ERC, grant 680220), the Royal Dutch Academy of Science (KNAW, grant UPS/RB/3991), and the MIT MISTI fund (grant 1491731). The authors are listed in alphabetical order.

¹In (2), we translate *wat* as ‘something’. We should note, however, that *wat*, unlike *something*, is underspecified for number. In particular, unlike *something*, it can be the argument of collective predicates.

- (2) Miranda heeft wat *ge*eten.
 Miranda has *QUEX* eaten
 ‘Miranda has eaten something.’

It has been claimed (see, e.g., Haida 2007:47, 51, 169, 182, and many references cited there) that the presence or absence of focus typically determines whether a quexistential is interpreted as a question word or as an existential indefinite. In particular, it has been claimed that in many languages, possibly universally, quexistentials are interpreted as question words if and only if they are focused. We will refer to this generalization as the *quexistential-focus biconditional* (*QF biconditional* for short). For instance, the Dutch quexistential *wat* can only be interpreted as a question word in (3), where it is focused, and can only be interpreted as an existential indefinite in (4), where it is not focused.

- (3) Wie heeft hem *WAT* gegeven?
 who has him *QUEX* given
 ✓‘Who gave him what?’
 ✗‘Who gave him something?’
- (4) Wie heeft hem *wat* *ge*GEven?
 who has him *QUEX* given
 ✗‘Who gave him what?’
 ✓‘Who gave him something?’

The fact that quexistentials are always focused on their interrogative use should be seen as a particular instance of a more general fact: namely, that interrogative words (quexistential or not) are always focused. We propose to account for this fact by generalizing the common view on contrastive focus in a way that incorporates both an external and an internal notion of contrast. On the other hand, we will show that the issue of the (non)focusability of quexistentials on their existential use hides many complications.

The article is organized as follows. Section 2 provides some general background on quexistentials; section 3 lays out the basic empirical facts on how quexistentials interact with stress and focus; section 4 explores in more depth how focus relates to the interrogative use of quexistentials, and to question words more generally; and section 5 explores in more depth how focus relates to the existential use of quexistentials, and to existential indefinites more generally. It also argues in favor of reinterpreting the Dutch facts so that they do not form a counterexample to the QF biconditional. Finally, section 6 concludes.

2 Background on Quexistentials

In English and many other languages, interrogative words look different from existential indefinites.

- (5) a. **What** did he eat?
 b. He ate **something**.

In other languages, existential indefinites are morphologically composed from interrogative words, as in Greek.²

- (6) a. *Ti efages?*
 what ate.2SG
 ‘What did you eat?’
- b. *Efages kati.*
 ate.2SG something
 ‘You ate something.’

The paradigm is completely productive in Greek, as illustrated in (3).

- (7) a. *pios* ‘who’ ⇒ *kaios* ‘someone’
- b. *pote* ‘when’ ⇒ *kapote* ‘sometime’
- c. *pou* ‘where’ ⇒ *kapou* ‘somewhere’

What we call quexistentials are words that can be used either as question words or as existential indefinites, without any additional overt morphology. We have already shown one example of a quexistential: the Dutch word *wat*. Another is the Russian word *kto*, which can function as interrogative ‘who’ or as existential ‘someone’.

- (8) *Kto prišel?*
 QUEX came
 ‘Who came?’
- (9) *Možet, kto prixodil.*
 maybe QUEX came
 ‘Maybe someone came.’

One might wonder why we use the term *quexistential* given that a few related terms are already in use. For instance, Kuroda (1965) coined the term *indeterminate pronouns* for certain lexical items in Japanese that, like quexistentials, participate in both interrogative and existential constructions. This term has been used in much subsequent work for similar items in other languages. We do not use it, however, because there are morphosyntactic differences between the interrogative and existential uses of indeterminate pronouns. Japanese indeterminate pronouns are accompanied by the particle *ka* both on their existential and on their interrogative use. However, on the existential use the particle must appear locally on the indefinite noun phrase, while on the interrogative use it must appear in clause-final position. Moreover, on the interrogative use, in matrix questions the particle is optional and can only appear in the presence of a politeness marker (Miyagawa 1987, 2017, Uegaki 2018). On the other hand, on the existential use the particle’s presence is obligatory and not dependent on the presence of a politeness marker.

² This is even true for English, though only in a few specific cases: *where-somewhere, how-somehow*.

- (10) Dare-ka-ga hashitta.
 INDET-KA-NOM ran
 ‘Someone ran.’
- (11) Dare-ga ki-*(mas)-u ka?
 INDET-NOM COME-POLITE-PRS KA
 ‘Who will come?’

Such differences between the two uses set indeterminate pronouns in Japanese apart from the kind of lexical items that we call *quexistentials*. In the case of *quexistentials*, there is no difference in spell-out between the existential and the interrogative use.

We do not adopt the term *wh-indefinite* (e.g., Bruening 2007) either, because it is used to refer only to the existential use of items that also have an interrogative use (in this case, the item is a *quexistential*) or to indefinites that are morphologically based on interrogative words with additional morphology (as in the Greek examples above).

Nor do we take over the term *ignorative*, coined by Karcevski (1941:70), which is meant to indicate that the speaker lacks knowledge of the referent when using a *quexistential*. Since there are languages in which *quexistentials* can also be used for referents known to the speaker, this term is not fully appropriate either.

Thus, we use the term *quexistentials* to refer to lexical items that permit existential and interrogative uses without any differences in spell-out. We refer to the interrogative reading of a *quexistential* as the *qu of quex* and to the existential reading as the *ex of quex*. The latter two terms are names for interpretations, while the term *quexistential* is used for the lexical item itself. In glosses, we use *QUEX*, regardless of the meaning the sentence ends up having.

As far as we have seen, all languages that have *quexistentials* also have dedicated question words and dedicated existential indefinites. Dutch, for example, has only one *quexistential*, *wat* (interrogative ‘what’/existential ‘something’). It does not have a *quexistential* that can mean both ‘who’ and ‘someone’. Rather, it has a non*quexistential* interrogative *wie* meaning ‘who’ and a non*quexistential* indefinite *iemand* meaning ‘someone’. German has many more *quexistentials* than Dutch but still has purely interrogative words and purely existential indefinites as well.³

³ *Quexistentials* on the *ex of quex* reading should not be confused with what have been called modal existential constructions (MECs) and modal possessive constructions (MPCs).

- (i) Ik heb wat te eten.
 I have what to eat
 Roughly: ‘There is something that I can eat if I want/have to eat.’
- (ii) Er is wat te eten.
 there is what to eat
 Roughly: ‘There is something to eat if one wants/has to eat.’

While these can be observed in Dutch and Russian, which also have *quexistentials*, they are clearly different constructions altogether. For one, the typological lines don’t cut correctly: Greek and Bulgarian (Roumyana Pancheva, pers. comm.) have MECs and MPCs but not *quexistentials*; Mandarin (Jo-Wang Lin, pers. comm.) does have *quexistentials*, but lacks MECs and MPCs. Moreover, MECs and MPCs are possible with a very small class of verbs, including ‘have’ (existential/possessive) and ‘find’. MECs are analyzed by Izvorski (1998) and Šimík (2011), among others, and MPCs, with an emphasis on Russian, by Livitz (2012). What these accounts have in common is that the interrogative word contributes a variable to the representation. The existential force comes from the environment, specifically the embedding verb. That is, these authors take these constructions to involve embedded questions of sorts (the accounts differ on the source of the modality, but that is not relevant here).

The main mystery about quexistentials is how one and the same word can yield an interrogative or an existential interpretation. Several answers to this question have been proposed. Some of them treat quexistentials as variables (e.g., Cheng 1994, Postma 1994, Bruening 2007), others as expressions generating Hamblin alternatives (e.g., Yanovich 2005), and yet others as existential quantifiers with obligatory domain alternatives (Liao 2011, Chierchia and Liao 2015). On the first two approaches, the *ex* of *quex* arises when the variable or the alternative set generated by the quexistential is bound by an existential closure operator, and the *qu* of *quex* arises when it is bound by a question operator. On the third approach, the *ex* of *quex* arises when the domain alternatives generated by the quantifier are evaluated by an exhaustification operator, and the *qu* of *quex* arises when they are evaluated by a question operator. The pros and cons of these proposals are discussed in some detail in Hengeveld, Iatridou, and Roelofsen 2019. For present purposes, however, it does not matter by which mechanisms the two readings of a quexistential arise. All that matters are the final products of these mechanisms, the two readings. It is the interaction of these two readings with focus that we are concerned with here.

In Hengeveld, Iatridou, and Roelofsen 2019, the languages that have quexistentials are divided into three groups depending on the licensing conditions of the *ex* of *quex*:⁴

- *Polarity-sensitive languages*. In these languages, the *ex* of *quex* is possible only in environments that can be roughly characterized as ones licensing negative polarity items (NPIs). This group has been argued to include Mandarin (e.g., Huang 1982, Cheng 1994, Lin 1998, 2004, Chierchia and Liao 2015, Liu and Cui 2019), Russian (Yanovich 2005), and Vietnamese (Tran and Bruening 2013).
- *Undique languages* (from the Latin word meaning ‘everywhere’). In these languages, the *ex* of *quex* is licensed everywhere except in the fronted position where interrogative words move to if the language has overt *wh*-movement. This group includes Passamaquoddy (Bruening 2007, Bruening and Tsai 2009) and Korean (Yun 2019).
- *Topological languages*. We will distinguish a third category here, assuming for the moment that Postma (1994) is correct that there are languages in which the *ex* of *quex* is licensed only inside the VP (but see footnote 39). This group would include Dutch and German, according to Postma (1994).

Below we illustrate the distribution of the *ex* of *quex* in one language from each of these groups (Russian, Passamaquoddy, and Dutch).

2.1 The Polarity Group: Russian

Russian is in the polarity group, which means that in this language the *ex* of *quex* is not possible in affirmative episodic sentences.

- (12) Vasja s’jel čto.
 Vasja ate QU_{EX}
 x’Vasja ate something.’

⁴ Cable (2010a) discusses quexistentials in his work on questions in Tlingit, though it is unclear where the Tlingit profile of the *ex* of *quex* falls typologically (also Seth Cable, pers. comm.).

The ex of quex is possible in Russian in yes/no questions, provided that the quexistential is not fronted, because then it is interpreted as an interrogative word.

- (13) a. Prišel kto?
 came QUEX
 ✓‘Did somebody come?’
 ✗‘Who came?’
 b. Kto prišel?
 QUEX came
 ✓‘Who came?’
 ✗‘Did somebody come?’
- (14) a. Vasja s’el čto?
 Vasja ate QUEX
 ✓‘Did Vasja eat something?’
 ✗‘What did Vasja eat?’
 b. Čto Vasja s’el?
 QUEX Vasja ate
 ✓‘What did Vasja eat?’
 ✗‘Did Vasja eat something?’

The ex of quex is also possible in the antecedent of a conditional.

- (15) a. Esli (kto) pridet (kto), daj mne znat’.
 if (QUEX) comes (QUEX) give me know
 ‘If somebody comes, let me know.’
 b. Esli (kogo) uvidiš (kogo), daj mne znat’.
 if (QUEX) see (QUEX) give me know
 ‘If you see somebody, let me know.’

But it is not possible in the consequent (one would have to use a nonquexistential indefinite).

- (16) *Esli on ne pridet, ja ub’ju kogo.
 if he NEG comes I will.kill QUEX
 Intended: ‘If he does not come, I will kill somebody.’

Finally, in Russian, *wh*-questions do not license the ex of quex.

In Russian, then, the ex of quex is polarity-sensitive, just as it is in Mandarin according to Huang (1982), Cheng (1994), and Lin (1998), among others, and in Vietnamese according to Tran and Bruening (2013).⁵

⁵ Note that in Russian the modal *možet*, as illustrated in (9), licenses NPIs. This can be shown with the following examples, containing the NPI *kto-nibud’* ‘somebody’ (Mitya Privoznov, pers. comm.):

- (i) Možet kto-nibud’ prixodil.
 maybe somebody came
 ‘Maybe somebody came.’

2.2 *The Undique Group: Passamaquoddy*

Compared with Russian, Passamaquoddy has a much more unconstrained distribution of the ex of quex. Bruening (2007) cites the following sentences:

- (17) a. Kesq yaq pemacqim-a-htit otuhk-ol, on keq (')-nutom-oni-ya.
 while QUOT drag-DIR-3PCONJ deer-OBV then QUEX 3-hear-N-3P
 'While they were dragging the deer, they heard something.'
 (W. Newell 1974:5)
- b. On yaka wesuwiy-apasi-htit, wot yaq wen pemi
 then then.FUT going.back-walk.away-3PCONJ this.AN QUOT QUEX IC.along
 sakhiya-t.
 come.into.view-3CONJ
 'Then, on their way back, something [animate] came into sight.'
 (I. Newell 1979:25)
- c. Keq (')-nomihtu-ni-ya etoli-macetutomuwi-k kci ponapsku-k tama al
 QUEX 3-see-N-3P IC.there-move-ICONJ big rock-LOC QUEX UNCERT
 tekkapimok.
 as.far.as.one.can.see
 'They see something moving on a big rock [somewhere] near the horizon.'
 (Mitchell 1976:22)

As is obvious, none of the constructions in (17) would be possible in Russian, since the ex of quex does not appear in a polarity environment here, and the Russian ex of quex is polarity-sensitive.

Our own fieldwork on Passamaquoddy adds the following cases, which would not be possible in Russian either:⁶

- (18) a. Piyel 'kisotomon keq.
 Piyel ate QUEX
 'Piyel ate something.'
- b. Piyel nomiyal Roger-ol tama.
 Piyel see Roger-OBV QUEX
 'Piyel sees Roger somewhere.'

(ii) *Kto-nibud' prixodil.
 somebody came
 'Somebody came.'

Note that this is not specific to Russian; it can be found in, for instance, Greek as well. As argued in Zwarts 1995 and Giannakidou 2002, among other works, licensing of NPIs is partly determined by the degree of veridicality of the licenser, and in some languages modals expressing possibility are sufficiently nonveridical to license NPIs.

⁶ Many thanks to Roger Paul for the data and discussion of the data. Many thanks to Norvin Richards for all his help and support in the Passamaquoddy part of this project.

- c. 'Kisomal wen opanol.
ate QUEX bread
'Somebody ate the bread.'⁷
- d. Wen nemihtaq keq?
QUEX saw QUEX
'Who saw something?'
- e. Keq nemihtaq wen?
QUEX saw QUEX
'What did someone see?'

These cases confirm the observations reported by Bruening (2007) with respect to the broad availability of the ex of quex.

Unsurprisingly, even though the Passamaquoddy quexistentials do not need negation (or any other downward-entailing environment) to appear in the ex of quex reading, they are fine in such environments.

- (19) Piyel mate 'kisotomuwon keq.
Piyel not ate QUEX
'Piyel did not eat anything.'

According to our consultant, (19) can only have the translation shown and cannot be taken to mean 'There is something that Piyel did not eat'. This is consistent with Bruening's (2007) argument that the existential interpretation of the Passamaquoddy quexistential always takes narrow scope.

Thus, Passamaquoddy belongs to the undique group.

2.3 The Topological Group: Dutch

As mentioned in section 1, Dutch has one quexistential, *wat*, which can mean either 'what' or 'something'.

- (20) a. Wat heb je gegeten?
QUEX have you eaten
'What have you eaten?'
- b. Ik heb wat gegeten.
I have QUEX eaten
'I have eaten something.'

The ex of quex is clearly not polarity-sensitive in Dutch, as it can appear in positive past episodic sentences such as (20b).⁸

⁷ Indefinite subjects prefer to appear postverbally in Passamaquoddy (Norvin Richards, pers. comm.).

⁸ *Wat* cannot appear adjacent to negation. The same holds for the nonquexistential indefinite *iets*. Presumably this is because of blocking by the negative indefinite *niets* 'nothing'.

(i) *Ik heb niet wat gegeten.
I have not QUEX eaten
✗ 'I haven't eaten anything.'

The go-to article for quexistentials in Dutch (as well as German) is Postma 1994. Postma argues that Dutch and German quexistentials are variables at birth. When the syntactic conditions for question formation are met (e.g., movement to the left periphery), the variable is bound by an interrogative operator. When the quexistential stays inside the VP, the variable is bound by an existential closure operator, as proposed in Heim 1982 and Diesing 1992 for indefinites in general (not specifically for quexistentials).⁹ Specifically, Postma follows the proposal in Diesing 1992, whereby the syntactic domain of the existential closure operator is the VP. As a result, it is predicted that the ex of quex is possible only inside the VP. When an indefinite outside of the VP is needed, Postma predicts that only nonquexistential *iets* ‘something’ is possible.

Some of Postma’s data are the following.¹⁰ As (21b) shows, the ex of quex is not possible in subject position (not even of an unaccusative), and instead the nonquexistential *iets* must be used.

- (21) a. *Iets* is gevallen.
 something is fallen
 ‘Something has fallen.’
 b. *Wat* is gevallen?
 QUEx is fallen
 ✓‘What has fallen?’
 ✗‘Something has fallen.’

Furthermore, taking the adverb *snel* ‘quickly’ to be situated at the VP border, Postma notes that the quexistential *wat* cannot appear to its left, while the nonquexistential indefinite *iets* can.

- (22) a. Jan heeft **snel** **iets** opgeschreven.
 Jan has quickly something written.down
 ‘Jan has quickly written something down.’
 b. Jan heeft **snel** **wat** opgeschreven.
 Jan has quickly QUEx written.down
 ‘Jan has quickly written something down.’
 c. Jan heeft **iets** **snel** opgeschreven.
 Jan has something quickly written.down
 ‘There is something that Jan has quickly written down.’
 d. *Jan heeft **wat** **snel** opgeschreven.
 Jan has QUEx quickly written.down
 ✗‘Jan has quickly written something down.’

In general, Postma argues that the ex of quex is not possible when the quexistential has moved out of the VP by scrambling or extraposition.¹¹

⁹ This is similar to Cheng’s (1994) proposal for Mandarin.

¹⁰ We have slightly adapted the English translations, to indicate when the existential receives a wide scope interpretation and when it receives a narrow scope interpretation.

¹¹ In (23b), the existential has only a wide scope interpretation.

- (23) It is difficult to get Teun's attention.
- a. Hij zit steeds over iets/wat na te denken.
 he sits constantly about something/QUEX after to think
 'He is constantly thinking about something.' (VP-internal)
- b. Hij zit over iets/*wat steeds na te denken.
 he sits about something/*QUEX constantly after to think
 'There is something that he is constantly thinking about.' (scrambled)
- c. Hij zit steeds na te denken over iets/*wat.
 he sits constantly after to think about something/*QUEX
 'He is constantly thinking about something.' (extraposed)

For Postma, then, the lexical status of quexistentials in Dutch and German is that of a variable, and by appealing to the VP location of Diesing's (1992) existential closure, he predicts a topology for the ex of quex in these languages: it is only possible inside the VP. For this reason, for now we will refer to these two languages as the *topological* group. We return to Dutch in some detail in section 5.

2.4 *The Aim of the Current Article*

So far, we have discussed two factors that affect the distribution of the existential reading of quexistentials in some languages but not in others: polarity sensitivity, and sensitivity to syntactic structure, in particular the VP boundary. However, there is also a factor that has been argued to affect the interpretation of quexistentials in a very similar way across all languages: namely, as mentioned in section 1, it has been argued that quexistentials are interpreted as question words if and only if they are focused.¹² We refer to this generalization as the *quexistential-focus biconditional* (QF biconditional for short).

The central point of investigation in this article is the QF biconditional. In other words, we will not investigate the lexical semantics of quexistentials, nor the syntactic/semantic source of their interrogative/existential duality. We remain neutral here with respect to the various proposals that have been made in this regard (e.g., Cheng 1994, Postma 1994, Lin 1998, Yanovich 2005, Bruening 2007, Tran and Bruening 2013, Chierchia and Liao 2015) and pursue an understanding of the QF biconditional that does not hinge on assumptions made in any of these competing proposals.

Moreover, since the QF biconditional appears to cut across the polarity divide, we will remain neutral here as to what makes quexistentials polarity-sensitive in some languages but not in others, and we will attempt to understand the QF biconditional independently of that opposition.

¹² The term *focus* has been used in the literature to cover both "new information focus" and "contrastive focus." We will follow Kratzer and Selkirk (2018) and others in assuming that at least in the Germanic and Slavic languages, new information focus does not have distinctive phonological effects. Only contrastive focus does (and givenness). Items that are discourse-new and not contrastively focused are subject to the default prosody of the language. From now on, then, *focus* will stand for "contrastive focus." Note that by "new information focus" Kratzer and Selkirk mean broad focus in the sense of Hanssen, Peters, and Gussenhoven (2008), who show that narrow focus (i.e., the kind of focus typical of an answer to a *wh*-question) behaves the same way as contrastive focus. This ties in nicely with the view of question words as intrinsically carrying contrastive focus that we will defend below.

3 The QF Biconditional: Basic Observations

The QF biconditional, as explicitly stated by, for instance, Haida (2007:47, 51, 169, 182) and adapted to our terminology, is as follows:

(24) *The QF biconditional*

Quexistentials are interpreted as question words if and only if they are focused. In short: qu of quex \Leftrightarrow focus on quex.

Haida (2007) provides the following examples from German, a language from the topological group:

(25) Wer sieht WEN?

QUEX sees QUEX
 ✓‘Who sees who?’
 x‘Who sees someone?’
 (Haida 2007:180)

(26) Wer SIEHT wen?

QUEX sees QUEX
 x‘Who sees who?’
 ✓‘Who sees someone?’
 (Haida 2007:182)

Russian, a representative of the polarity group, exhibits the same pattern.

(27) Vasja ČTO s’el?

Vasja QUEX ate
 ✓‘What did Vasja eat?’
 x‘Did Vasja eat something?’

(28) Vasja čto S’EL?

Vasja QUEX ate
 x‘What did Vasja eat?’
 ✓‘Did Vasja eat something?’

And finally, in Passamaquoddy, a language in the undique group, the pattern obtains as well (though note that the Passamaquoddy stress system is quite different overall; see LeSourd 1993).

(29) Wen peciptaq KEQ?

QUEX C.brought QUEX
 ✓‘Who brought what?’
 x‘Who brought something?’

(30) Wen peCIptaq keq?

QUEX C.brought QUEX
 x‘Who brought what?’
 ✓‘Who brought something?’

The QF biconditional consists of two conditionals.

(31) *qu of quex* \Rightarrow focus on *quex*

(32) focus on *quex* \Rightarrow *qu of quex*

Haida (2007:169) provides a long list of languages that support (31), with references to previous work providing more detail on each of these languages. We indeed accept it as a universal property of *quexistentials*. Obviously, it is of high importance to understand why *quexistentials* across languages, and across the three different groups we have described, have this particular property in common.

We will show, however, that the universal status of (32) appears to be counterexemplified in Dutch, even if it seems to be supported by the above examples in German, Russian, and Passamaquoddy. The *ex of quex* can in fact be contrastively focused in Dutch, as shown in (33) (*VF = verum focus*; we will use \downarrow and \uparrow to indicate falling and rising pitch accents, respectively).¹³ Korean facts also point in this direction.¹⁴

- (33) A: Heeft Miranda haar huiswerk ingeleverd?
 has Miranda her homework submitted
 ‘Has Miranda submitted her homework?’
 B: Nou, ze heeft WEL[↑] WAT[↑] ingeleverd maar NIET[↑] VEEL[↓].
 well she has VF QUEX submitted but not much
 ‘Well, she did submit something but not much.’

Moreover, the QF biconditional leads us to expect that a *quexistential* on its existential reading should be able to receive stress by virtue of default prosody, as long as it does not receive focal stress. This is not the case, however, at least not in Dutch, German, or Russian. In Dutch default prosody, a sentence like (34) has stress on the object.¹⁵

¹³ Like new focus, contrastive focus in Dutch is expressed by higher scaling of the pitch contour and lengthening of the onset of the stressed syllable. The falling movement after the stressed syllable is steeper with new and contrastive focus than it is with broad focus (Hanssen, Peters, and Gussenhoven 2008).

¹⁴ Yun (2019) presents experimental data arguing that in Korean, *quexistentials* can also receive prosodic prominence while still being interpreted existentially. The data presented by Park (2019) seem to confirm this view, as she shows that indeed the *ex of quex* in Korean can be contrastively focused. The main phonetic manifestations of focus in Korean, as noted by Jun (1993), are (a) a phrase boundary preceding the focused constituent and (b) dephrasing of postfocal material. Obviously, Korean needs to be studied in more detail before we can know for sure whether, and how, it is a potential counterexample to the generalization regarding contrastive focus and the *qu of quex*. Interestingly, Yun claims that her data show that prosodic prominence on the *ex of quex* increases the *quexistential*’s ability to take exceptional wide scope (specifically, to scope out of an ‘if’-clause, which is a scope island for nonexistential quantifiers). This is not the case for Dutch. On the other hand, we are not entirely certain about the conclusion regarding wide scope in Korean: Yun (2019) discusses only one such environment, and the experiment was conducted by asking the participants ‘to choose whether it was about a specific entity (i.e., a wide scope indefinite) or an arbitrary entity (i.e., a narrow scope indefinite)’ (p. 639). We suspect this test may not suffice and hope to conduct a larger experiment in the future.

¹⁵ We assume that default prosody is the prosody that obtains in out-of-the-blue contexts (see Büring 2016:sec. 1.2 for useful background discussion on the notion of default prosody). In (34), we use the word *kwark* ‘cottage cheese’ as direct object because of its prosodic similarity to the *quexistential wat*. Note that (35) is marked with a # rather than a *. This is because the sentence is not ungrammatical, but its prosody is not the one we find in out-of-the-blue contexts.

- (34) Miranda heeft **KWARK** gegeten.
 Miranda has cottage.cheese eaten
 ‘Miranda has eaten cottage cheese.’
- (35) #Miranda heeft **kwark** geGEten.
 Miranda has cottage.cheese eaten
 Intended: ‘Miranda has eaten cottage cheese.’

But when the object is a quexistential on its existential use, stress falls on the verb rather than on the object.

- (36) Miranda heeft wat geGEten.
 Miranda has **QUEx** eaten
 ‘Miranda has eaten something.’
- (37) *Miranda heeft **WAT** gegeten.
 Miranda has **QUEx** eaten
 Intended: ‘Miranda has eaten something.’

Ruling out focus-induced stress on the quexistential will not suffice to rule out stress by virtue of default prosody. Whatever we might say about focus, then, we would need to say something in addition about the fact that the ex of quex cannot receive stress by virtue of default prosody in cases like (36). We will therefore discuss the relation between quexistentials and default stress separately from the relationship between quexistentials and focal stress.

Now that we have given some background on quexistentials and made some basic observations concerning their interaction with stress and focus, we will proceed as follows. First, in section 4 we will further examine how the *interrogative* use of quexistentials relates to stress and focus. We will propose that quexistentials on their interrogative interpretation—and question words in general—are typically marked as contrastive foci because questions characteristically put forward a set of contrasting propositions (resolutions/answers). The existence of such contrasting propositions results in the use of focal stress. Making this idea more explicit and precise requires a generalization of the common view on contrastive focus, but one that we think is very natural.

Second, in section 5 we will further examine how quexistentials on their *existential* use interact with stress and focus. In particular, we will consider some possible explanations for the fact that the ex of quex cannot receive stress by virtue of default prosody, and we will show in some detail that the ex of quex *can* receive focal stress in certain cases in Dutch, though not in other languages that we have considered. We also offer an account of this crosslinguistic difference.

4 Stress and Focus on the Qu of Quex

4.1 *In-Situ Interrogative Words Must Be Stressed*

In this section, we will show that the qu of quex behaves just like other interrogative items. That is, once the quexistential has been set to its interrogative guise, it behaves just like nonquexistential

interrogative words (as we said in section 2, we do not think that the mechanisms by which the *qu* of *quex* or the *ex* of *quex* are derived affect the current discussion). This holds for the postmovement position in the left periphery, but, much more interestingly, for in-situ positions as well.

First, a quick word about suitable testing environments: the interrogative use of a *quexistential* in a *wh*-movement language like Dutch is best explored by inspecting the second (or third) interrogative word in a multiple *wh*-question, and not the one that has moved to the left periphery. This is because in the in-situ position the interrogative use of a *quexistential* can be compared with the existential use. Once *wat* has moved to the left periphery, it enters a territory where it is very hard for the *ex* of *quex* to survive, as we noted in section 2.3. So our simplest initial testing ground is the *quexistential* in object position of a multiple *wh*-question, where the *quexistential* can in principle be interpreted as an interrogative or an existential, and where we have already shown that absence of stress blocks the *qu* of *quex*.

- (38) *Wie heeft haar wat geGEven?*
 who has her QUEX given
 x‘Who gave her what?’
 ✓‘Who gave her something?’

Moreover, even though Dutch permits focal stress on the *ex* of *quex* when the alternatives are overtly mentioned, as in example (33b), in their absence stress on the *quexistential* blocks the *ex* of *quex*.

- (39) *Wie heeft haar WAT gegeven?*
 who has her QUEX given
 ✓‘Who gave her what?’
 x‘Who gave her something?’

The first question that needs to be asked is whether the interrogative *quexistential* behaves similarly to non*quexistential* interrogative words in this respect. The answer to this, at least for Dutch, is yes. Dutch non*quexistential* interrogative words like *wie* ‘who’ also necessarily receive stress in this environment.

- (40) a. *Wie heeft haar aan WIE voorgesteld?*
 who has her to who introduced
 ‘Who introduced her to whom?’
 b. **Wie heeft haar aan wie VOORgesteld?*
 who has her to who introduced
 Intended: ‘Who introduced her to whom?’

The same is also true, however, for referring (noninterrogative) object DPs.

- (41) a. *Wie heeft haar aan JAN voorgesteld?*
 who has her to Jan introduced
 ‘Who introduced her to Jan?’

- b. #Wie heeft haar aan Jan VOORgesteld?
 who has her to Jan introduced
 Intended: ‘Who introduced her to Jan?’

The next question, therefore, is whether the *qu* of *quex* (and the nonquexistential interrogative) receives stress in (39) simply because it is in a position that receives stress in default prosody, as *Jan* does in (41), or whether there is something special about its being an interrogative word. To determine this, we must look at slightly more complex examples.¹⁶

Consider the following question:

- (42) Wie heeft het museum [een schilderij van REMbrandt] gegeven?
 who has the museum [a painting by Rembrandt] given
 ‘Who has given the museum a painting by Rembrandt?’

Here, nuclear stress falls on the object (as predicted by theories of nuclear stress) and on the rightmost constituent inside the object (also as predicted). But the contour in the multiple *wh*-question version of (42) is different: the in-situ *wh*-phrase *welk schilderij* ‘which painting’ in (43) must receive stress, unlike the indefinite *een schilderij* ‘a painting’ in (42).

- (43) Wie heeft het museum [WELK schilderij van Rembrandt] gegeven?
 who has the museum [which painting by Rembrandt] given
 ‘Who has given the museum which painting by Rembrandt?’

Quexistentials behave similarly in this respect: if we replace *welk schilderij* by *wat* and we still want to express a multiple *wh*-question, *wat* needs to be stressed (see figure 1).¹⁷

- (44) Wie heeft het museum [WAT van Rembrandt] gegeven?
 who has the museum [QUEx by Rembrandt] given
 ‘Who has given the museum what by Rembrandt?’

If stress is placed on *Rembrandt* instead of *wat* (see figure 2), only the existential reading is possible.

- (45) Wie heeft het museum [wat van REMbrandt] gegeven?
 who has the museum [QUEx by Rembrandt] given
 ‘Who has given the museum something by Rembrandt?’

¹⁶ One might wonder at this point whether the stress on *WIE* ‘who’ in (40a) and the stress on *JAN* in (41a) have the same phonetic properties. That is, does the stress on *WIE* in (40a) have exactly the same phonetic profile as nuclear stress under default prosody? We have not undertaken a phonetic study to determine this, but it will soon become clear in the main text that this question reduces to the question of whether stress under contrastive focus (which is what *WIE* gets in (40a)) is phonetically distinguishable from nuclear stress under default prosody (which is what *JAN* gets in (41a)). As there is considerable leeway in the accent possibilities for both, the question in turn reduces to whether the limits in the two cases are significantly different. We leave this question open here.

¹⁷ The pitch tracks come from one of the authors, who is a male native speaker of Dutch. They were collected and analyzed using the Praat software package (Boersma and Weenink 2020).

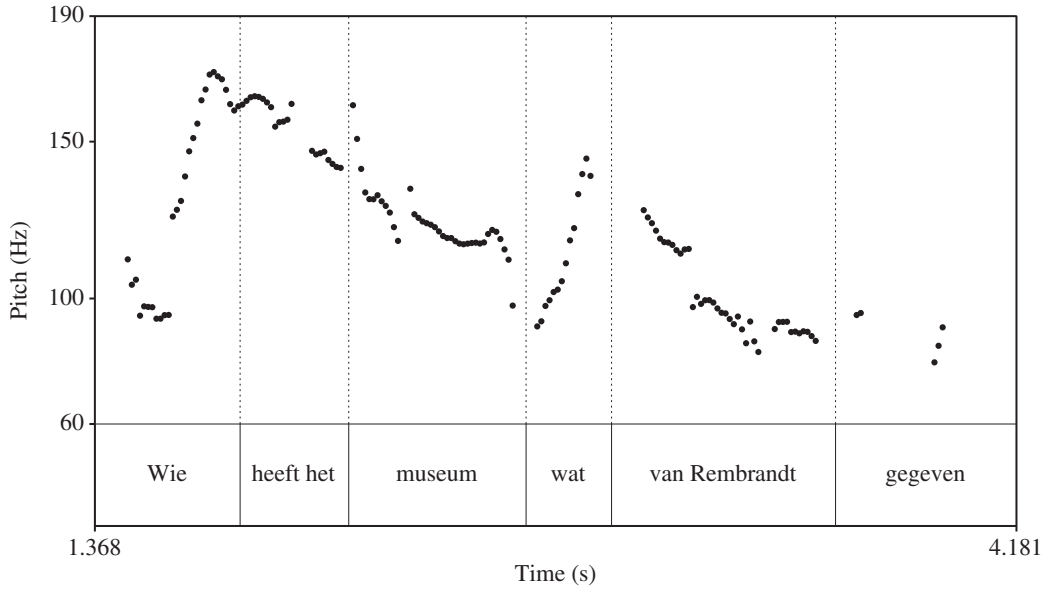


Figure 1
Pitch track of example (44), where *wat* is stressed

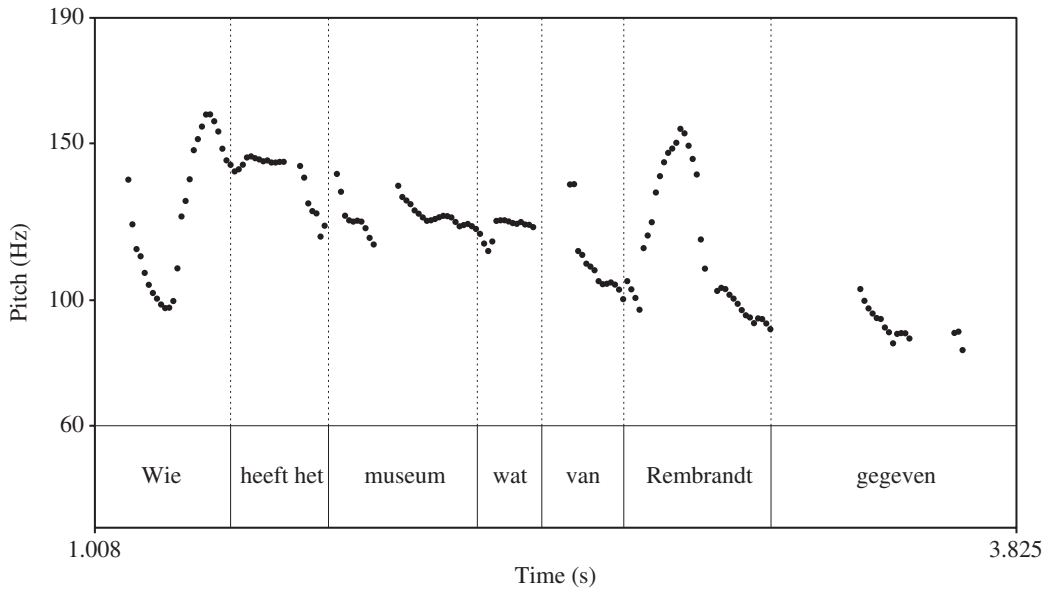


Figure 2
Pitch track of example (45), where *Rembrandt* is stressed

To sum up so far, in-situ quexistentials on the qu of quex reading and nonquexistential interrogative words behave alike: they both need to be stressed, even if they are not in a position that attracts stress due to the rules of nuclear stress placement. The next question is, what could be the difference between indefinites like *een schilderij* ‘a painting’ and interrogative words such as *welk* in *welk schilderij* ‘which painting’ such that the latter, unlike the former, must be stressed when in situ?

4.2 Interrogative Words Require Contrastive Focus Marking

According to Haida (2007) and the body of earlier work he surveys, interrogative words in languages like Dutch, German, and English are always stressed when in situ because such words must generally be marked as contrastive foci.¹⁸ Before we address the question of why interrogative words would be marked as contrastive foci, let us first consider whether this hypothesis is compatible with the prosodic patterns we find in Dutch, and then turn to some languages in which focus is not (only) expressed prosodically, but (also) by means of movement or a specific focus particle.

Consider example (42) again, but now in a context in which *een schilderij* ‘a painting’ is contrasted with something else, namely, *een ets* ‘an etching’ by Rembrandt.

- (46) a. Sommige sponsors hebben het museum [een ETS van Rembrandt] gegeven.
 some sponsors have the museum [an etching by Rembrandt] given
 ‘Some sponsors have given the museum an ETCHING by Rembrandt.’
- b. Maar wie heeft het museum [een SCHILDERIJ van Rembrandt] gegeven?
 but who has the museum [a painting by Rembrandt] given
 ‘But who has given the museum a PAINTING by Rembrandt?’

In this case, *een schilderij* must be stressed in order to mark contrastive focus.¹⁹ The stress that marks contrastive focus in (46) is perceived to be very similar to the stress on the quexistential in (44). This similarity is also visible in the pitch contours displayed in figures 1 and 3.²⁰ While

¹⁸ We should note that according to Truckenbrodt (2013), the prosodic effects of focus on in-situ interrogative words in German and English are “reduced” in a particular way. In short, while in-situ interrogative words must always be accented, subsequent words are not necessarily completely deaccented. Other foci do generally require deaccenting of subsequent given material. For Japanese, Ishihara (2003) and others have argued that the prosody accompanying interrogative words is completely parallel to the prosody in cases of contrastive focus. Truckenbrodt (2013) suggests that this difference between German and English on the one hand and Japanese on the other is due to the fact that the former are *wh*-movement languages while the latter is a *wh*-in-situ language. We will briefly return to this in footnote 34, but must leave a more careful investigation for future work.

¹⁹ If (46a) and (46b) are uttered by the same speaker, then it is most natural for that speaker to stress not only *schilderij* ‘painting’ in (46b) but also *ets* ‘etching’ in (46a), presumably to signal “forward-looking” contrastive focus. However, if (46a) and (46b) are uttered by different speakers, then it is most natural for *ets* not to be stressed (unless it contrasts with something else in the preceding discourse).

²⁰ In figure 3, instead of *een schilderij* ‘a painting’ we have used *watten* ‘cotton wool’ as the contrastive element so as to make it phonologically similar to *wat*—the fact that the resulting question does not make much pragmatic sense is irrelevant for the purpose of comparing the pronunciation of the two cases. We are grateful to Paul Boersma for helpful suggestions in constructing these examples.

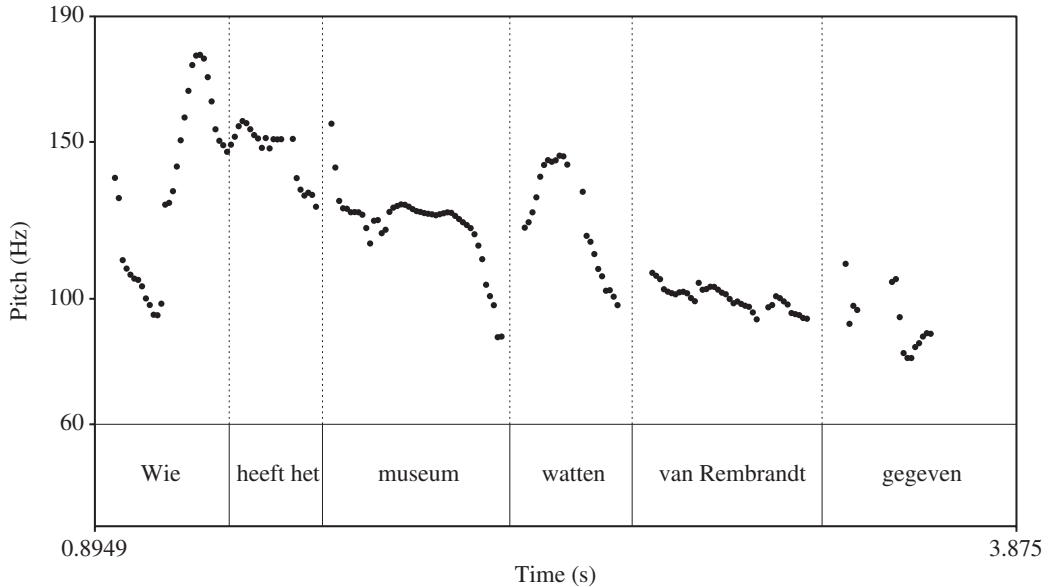


Figure 3

Pitch track of a variant of example (44) in which the quexistential *wat* has been replaced by the contrastively focused plural indefinite *watten* ‘cotton wool’

more systematic empirical work is evidently required here, we take this to provide initial support for the hypothesis that question words (whether quexistential or not) require contrastive focus in Dutch.

Now let us consider two languages where contrastive focus is not (only) marked prosodically. In Hungarian, contrastive foci are placed in a designated focus position. In Gungbe, on the other hand, they are accompanied by a focus particle. We will start with Hungarian, discussed for instance in É. Kiss 1992 and Haida 2007:sec. 7.2.2. First consider the following sentence, without focus (examples below from Dóra Takász, pers. comm.):

- (47) Marcsi meg-hív-ta Bálint-ot.
 Marcsi PART-call-PAST.3SG Balint-ACC
 ‘Marcsi invited Balint.’

Contrastive focus on the object requires deviance from the baseline order in (47). The object must move to a preverbal position, and the verb itself moves in front of its particle (*meghívni* ‘to invite’ is a particle-verb in Hungarian).

- (48) Marcsi Bálint-ot hív-ta meg, nem Péter-t.
 Marcsi Balint-ACC call-PAST.3SG PART not Peter-ACC
 ‘Marcsi invited Balint, not Peter.’

The same two relevant order effects obtain in the corresponding question.

- (49) a. Marcsi ki-t hív-ott meg?
 Marcsi who-ACC call-PAST.3SG PART
 ‘Who did Marcsi invite?’
 b. Ki-t hív-ott meg Marcsi?
 who-ACC call-PAST.3SG PART Marcsi
 ‘Who did Marcsi invite?’

While (49a) and (49b) differ in the position of the subject, they share the necessity for a preverbal object, and verb-particle order.

Turning now to Gungbe, the examples in (50) show that question words and (other) contrastively focused constituents are marked by means of the same focus particle (Aboh and Pfau 2011).

- (50) a. Mènù wè wá?
 who FOC came
 ‘Who has come?’
 (Aboh and Pfau 2011:93)
 b. Màrí wè yró Márcù é mà nyín Pítà.
 Mary FOC call Marc it NEG COP Peter
 ‘MARY called Marc, not Peter.’
 (Enoch Aboh, pers. comm.)

What is important here is that, even though the strategy for marking contrastive focus differs across Dutch, Hungarian, and Gungbe, in each case interrogative words are marked in the same way as contrastive foci. This supports what we will call the *contrastive focus requirement on interrogative words*.²¹

²¹ Richards (2010:145) proposes a closely related generalization, namely, that “every language tries to create a prosodic structure for *wh*-questions in which the *wh*-phrase and the corresponding complementizer are separated by as few prosodic boundaries as possible.” Note that this generalization is independent of the contrastive focus requirement, although if both hold, then their effects will sometimes be difficult to tease apart in languages where contrastive foci are marked prosodically. Yun (2019) emphasizes the importance of Richards’s generalization for the interpretation of quexistentials in Korean. She argues that the *qu* of *quex* in Korean involves both a prosodic prominence on the quexistential and the absence of prosodic boundaries between the quexistential and the corresponding interrogative complementizer. Yun also claims, however, that in interpretation, the absence of prosodic boundaries between the quexistential and the interrogative complementizer is a much more important factor in ensuring a question interpretation than the presence of prosodic prominence on the quexistential. Yun argues that her experiments are to be interpreted as showing that when there is no prosodic prominence, the absence of prosodic boundaries gives rise to a question interpretation in 66% of the cases tested, while in the presence of prosodic boundaries, prosodic prominence gives rise to a question interpretation in only 10% of the cases.

The production of Korean quexistentials is clearly in line both with Richards’s prosodic boundary generalization and with the contrastive focus requirement. Yun’s experimental data regarding prosodic effects on the interpretation of quexistentials are, we believe, also compatible with both generalizations. For this, however, it is crucial that the contrastive focus requirement only goes in one direction. Interrogative words need to be marked as contrastive foci. But this in itself does *not* imply that quexistentials, when contrastively focused, must be interpreted interrogatively. In many languages this does seem to be the case, but it is not forced by the contrastive focus requirement.

(51) *Contrastive focus requirement on interrogative words*

Interrogative words are generally marked using the same strategies that are used to mark contrastive foci.

Above we have shown that languages may use syntactic (Hungarian), morphological (Gungbe), and prosodic (Dutch and Korean) means to mark contrastive foci. And where languages use prosodic means, these may vary across languages again, as shown above for Dutch (see footnote 13) and Korean (see footnote 14). The important point is, however, that we predict that, whatever the strategy used to mark contrastive focus, interrogative words will be marked the same. Furthermore, we should note that in *wh*-movement languages fronted interrogative phrases are not necessarily accented the way contrastive foci are. In fact, in many cases they can be left completely deaccented. Following Truckenbrodt (2013), we assume that in these languages, fronting of a *wh*-word to a designated position in the left periphery is in itself a way to mark contrast.²² This is in line with the observation that in many languages, contrastive foci can or even must appear in exactly this position in the left periphery (see, e.g., Rizzi 1997, Aboh 2016).

We thus assume that in *wh*-movement languages like Dutch and English, interrogative phrases generally require marking of contrastive focus, but that there are two ways of doing so, movement and prosody. Independently, there is a requirement in these languages that in *wh*-questions, exactly one interrogative phrase moves to the left periphery. This interrogative phrase, then, does not require prosodic contrastive focus marking, while in-situ interrogative phrases do.

²² Haida (2007) offers a different account. Namely, he assumes that the prosodic requirement on contrastively focused constituents is that they receive the strongest pitch accent within their domain, and he suggests that this requirement is trivially satisfied even in the absence of a prominent pitch accent if a *wh*-word moves to the left periphery, because in that case the *wh*-word comes to form a focus domain on its own. In support of this proposal, Haida (2007:sec. 7.2.6) points out that in German, even interrogative words that have moved to the left periphery sometimes require a prominent pitch accent—namely, if they are part of a larger phrase that has been fronted as a whole, which means that they do not form a focus domain on their own. Haida uses the following contrast to illustrate this:

- (i) a. WAS aus Gold mag er?
 QUEX out.of gold likes he
 'What does he like that is made out of gold?'
 b. Was aus GOLD mag er.
 QUEX out.of gold likes he
 'He likes something that is made out of gold.'
 (Haida 2007:186)

It is not clear what predictions this account would make for a multiple question involving three *wh*-constituents ('Who gave what to whom?') since the last two *wh*-constituents may end up being in the same domain. We leave a detailed comparison of Haida's and Truckenbrodt's approaches for future work.

A reviewer rightly points out that in cases like (ii), the two *wh*-phrases must receive a prominent pitch accent, even though both are fronted in their respective clauses.

- (ii) Mary knows WHAT to read, but not WHEN.

We assume that in such cases there is an *external* contrast across the two clauses, in addition to an *internal* contrast inside each clause (see section 4.4). The external contrast concerns the sortal restrictions of the two *wh*-phrases. To account for the obligatory prosodic emphasis in such cases, we have to assume that the signaling of external contrast always requires prosodic focus marking, even if the focused element moves to the left periphery.

If there is indeed a general requirement for interrogative phrases to be marked as contrastive foci, we would of course like to understand *why* this is the case. To this we turn next.²³ In section 4.3, we discuss existing accounts that aim to understand the relation between interrogatives and contrastive focus. We then turn to our proposal in section 4.4.

4.3 Existing Accounts of the Contrastive Focus Requirement

There are several existing accounts of the contrastive focus requirement (either as a language-particular constraint or as a crosslinguistic pattern). Most of these are *synchronic* accounts; one is *diachronic*. The synchronic accounts can be divided into *syntactic* and *semantic* ones, and among the semantic ones a further distinction can be made between two major approaches: one that is based on the assumption that questions involve a question operator in the left periphery that operates on focus alternatives generated by the associated *wh*-elements (and crashes if those *wh*-elements do not generate focus alternatives), and one based on the assumption that focus “activates” the latent inquisitive content of *wh*-elements. A schematic overview of the various accounts is given in figure 4. We will discuss each in turn, starting with the syntactic ones.

4.3.1 The Diachronic Syntactic Approach Eckardt (2007) provides a diachronic account of the focus requirement on question words. Specifically, she proposes that question words are etymologically rooted in focused deictic elements. This proposal is motivated as follows:

Let us assume for a moment that we are speakers of a language which possesses deictic elements (*this*, *HE*) and a way to form polar questions, but no *wh*-pronouns. What could be reasonable ways to ask constituent questions? We could resort to polar questions with a focus like those in [(52)].

- [(52)] a. Do you want THIS?
- b. Is the key HERE?

(Eckardt 2007:220)

Suppose that the deictic *this* in (52a) refers in a given context to some object *a*. Then the question in (52a) asks whether or not the addressee wants *a*. At the same time, however, by virtue of the focus on *this*, a range of alternative polar questions are evoked as well: whether the addressee wants *b*, whether she wants *c*, whether she wants *d*, and so on. Eckardt suggests that there are two possible reasons for a speaker to evoke this range of alternative polar questions:

²³ We can't but remark on the following curious absence of circumstances. Haspelmath (1997) shows that in many languages, an indefinite is constructed on the basis of an interrogative word by the addition of extra morphology. Such is the case of Modern Greek, for example, as seen in (7). Moreover, Haspelmath claims that the reverse is not observed. That is, there is no language where the interrogative is constructed from the indefinite with the addition of some extra morphology. As far as we know, no counterexample to this claim has been put forth. So now, imagine that there is a language that, like Gungbe, marks focus with a particle but, unlike Gungbe, has quexistentials. Then, if focus on the quexistential is necessary for the qu of quex, we would expect the reverse-Haspelmath pattern: for the ex of quex we would have the plain quexistential, but for the qu of quex we would have the quexistential plus some added morpheme (the focus particle). As just noted, no such language seems to have been found. This could be coincidental, in that no language with quexistentials happens to have overt focus particles of this sort. But of course one is always wary of coincidences. Moreover, we should point out that the generalization that the qu of quex requires focus can itself also be described as standing in tension with Haspelmath's generalization: while in the domain of overt morphology, the indefinite generally has “more” than the interrogative, when it comes to quexistentials, the qu of quex has “more” (i.e., focus) than the ex of quex.

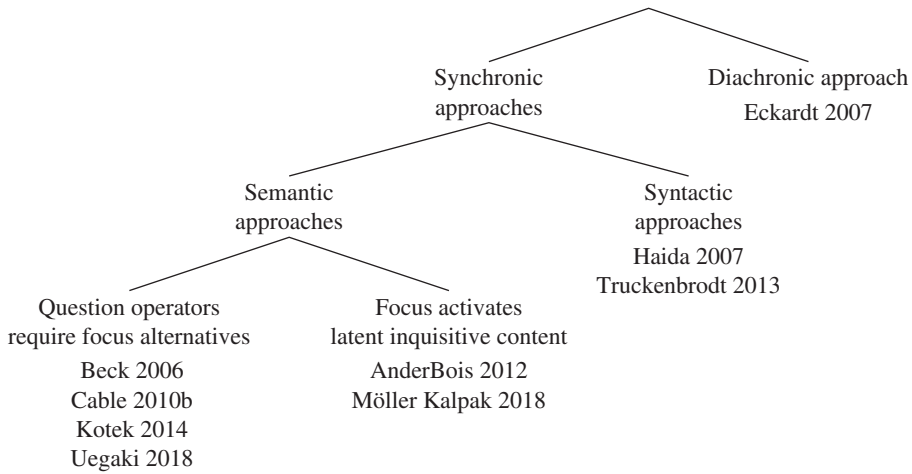


Figure 4
Existing approaches to capturing the contrastive focus requirement

She might indicate that she intends to cover the alternative questions until she receives at least one positive answer. Or she might indicate that she intends to cover the whole set of alternatives, asking for exhaustive information. (Eckardt 2007:220)

Thus, the overall communicative effects of the focused polar questions in (52) are very similar to those of the corresponding *wh*-questions in (53).

- (53) a. What do you want?
b. Where is the key?

Eckardt proposes that it is plausible to expect that speakers of the restricted language, without *wh*-questions, will over time reanalyze the pragmatic effects of polar questions with focused deictic elements to be part of the *conventional*, semantic content of such constructions. The focused deictic element would then form the basis for the corresponding question word.²⁴

If this is how question words come into existence, Eckardt proposes, it is to be expected that they retain, at least to some extent, the formal features that realize focus in the language at hand (prosody, a focus particle, or movement to a dedicated focus position). She refers to this as *lexical focus* and distinguishes it from *bona fide focus*. The lexical focus on question words reflects their diachronic roots, but does not contribute anything to their synchronic semantic interpretation. In particular, question words with lexical focus do not generate focus alternatives, unlike items with *bona fide focus*.

Finally, Eckardt (2007:222–223) proposes that question words, as interpreted in her framework, may receive the interpretation of an existential indefinite through a simple shift in semantic

²⁴ This approach predicts a typological affinity between question words and deictic elements. Eckardt (2007:221) suggests that some evidence supporting this prediction can be found in sign languages.

type.²⁵ She discusses the fact that the existential interpretation of question words generally requires the *absence* of any formal features realizing focus. She notes, however, that this is not predicted on her account: the shift in semantic type from question words to existential indefinites is not connected in any way on the proposed account to a loss of lexical focus.

Let us now comment on the various aspects of Eckardt's proposal. First, while Eckardt provides interesting motivation for the idea that question words are etymologically rooted in focused deictic elements, if this were the *only* way for question words to come into existence, one would expect to see a stronger typological affinity between question words and deictic elements. On the other hand, if the route that Eckardt describes is *just one* way for question words to come into existence, we would expect to see a considerable number of languages in which question words are not necessarily focused. But at present there is no evidence that such languages exist.

Second, if question words are formed on the basis of focused deictic elements, it is plausible that they would initially retain the formal features that realize focus. However, one would expect that these formal features would in many cases *erode* over time. Certainly, in languages where focus is realized prosodically, it would be natural for the prosodic features that question words would initially inherit from their deictic ancestors to disappear in later stages of grammaticalization. However, if this is indeed a natural possibility, the theory does not lead us to expect question words to be focused across so many languages today. Rather, it would predict that question words would only involve lexical focus in languages that have resisted erosion.

Finally, as noted by Eckardt herself and already mentioned above, the account does not explain why question words with lexical focus would lose their lexical focus property when used as indefinites.

4.3.2 Synchronic Syntactic Approaches The proposals by Haida (2007) and Truckenbrodt (2013) are syntactic in nature as far as the contrastive focus requirement on interrogative phrases is concerned. Essentially, they assume that interrogative phrases must enter into an Agree relation with a question operator in the left periphery. Moreover, this Agree relation requires the presence of an F-feature on the interrogative phrase, which has the same prosodic reflexes as the F-feature on contrastive foci. We should say at the outset that neither account explains why the F-feature should be necessary to mediate this Agree relationship (other than the fact that we know that focus is present on *wh*-words).

While both Haida and Truckenbrodt assume that interrogative phrases and contrastive foci must carry an F-feature with the same prosodic reflexes, there are also differences between the two accounts. In particular, for Haida the F-feature on an interrogative phrase must be accompanied by a *wh*-feature; otherwise, an Agree relationship with the question operator is not possible. This prevents non-*wh* contrastive foci from being interpreted as standing in an Agree relationship with a question operator. In other words, in Haida's account the F-feature, while necessary, is not suf-

²⁵ We do not discuss the details of this semantic type shift here, since they are not immediately relevant for our purposes and would require an exposition of the particular type-theoretic framework that Eckardt introduces. While interesting in its own right, this would take us too far afield here.

ficient to establish an Agree relationship between the question operator and the *wh*-word; a *wh*-feature must be present as well.

Truckenbrodt does not assume *wh*-features in addition to F-features. However, on his account the F-feature on interrogative phrases has a completely different syntactic and semantic status from the F-feature on contrastive foci. What they share is just their prosody.

These proposals, while capturing the empirical generalization, do not explain *why* interrogative words would have to be marked as contrastive foci.

Moreover, an empirical issue for Haida's account is that it predicts focus on *wh*-words to be both *necessary* and *sufficient* to yield an interrogative interpretation. As already briefly mentioned in section 3 and discussed in much more detail in section 5, this prediction is at first sight not always borne out. For instance, in example (33), repeated here, focus on Dutch *wat*, which might be a *wh*-item on Haida's assumptions, is not always sufficient to force an interrogative interpretation.

- (33) A: Heeft Miranda haar huiswerk ingeleverd?
 has Miranda her homework submitted
 ‘Has Miranda submitted her homework?’
 B: Nou, ze heeft WEL[↑] WAT[↑] ingeleverd maar NIET[↑] VEEL[↓].
 well, she has VF QUEx submitted but not much
 ‘Well, she did submit something but not much.’

4.3.3 First Synchronic Semantic Approach: Question Operators Require Focus Alternatives We now turn to a possible semantic account of the focus requirement on question words, based on the work of Beck (2006).²⁶ We should note at the outset that Beck herself did not present her proposal as an account of the focus requirement on question words; rather, she viewed it as an account of so-called *focus intervention* effects in questions. However, when viewed from a slightly different angle, the proposal may be seen as providing an account of the focus requirement on question words as well—and this interpretation of the proposal is of course the one that is most relevant here.

We will first briefly present the original motivation for Beck's proposal, and the core assumptions of the account. Then we will clarify how it could be viewed as providing an account of the focus requirement on question words. Finally, we will critically discuss the proposal, both as an account of intervention effects and as an account of the focus requirement on question words (with the caveat, again, that Beck herself never claimed to provide an account of the latter).

Let us first illustrate what focus intervention effects in questions are. Consider the examples in (54) and (55) (we use German examples here because demonstrating focus intervention effects in English requires more complex constructions; see Pesetsky 2000, Beck 2006, and Kotek 2019 for discussion).

²⁶ See also Cable 2010b, Kotek 2014, and Uegaki 2018 for further elaborations of Beck's (2006) theory of the semantics of questions.

- (54) Wen hat Karl wo getroffen?
 who has Karl where met
 ‘Who did Karl meet where?’
 (adapted from Beck 1996:4)
- (55) *Wen hat nur Karl wo getroffen?
 who has only Karl where met
 Intended: ‘Who did only Karl meet where?’
 (Beck 1996:31)

While (54) is interpreted as a multiple *wh*-question, inserting the focus-sensitive operator *nur* ‘only’ in (55) makes this interpretation unavailable. Such intervention effects have been observed to arise in many typologically unrelated languages (e.g., Kim 2002, Beck 2006). According to Beck (2006), this is because a *wh*-word generates focus alternatives, and these alternatives must be visible to the interrogative complementizer (more specifically, the complementizer turns these focus alternatives into alternatives in the ordinary semantic value of the question, representing its inquisitive content). Focus-sensitive operators like *nur* ‘only’ “consume” any focus alternatives that are generated within its scope, and make these focus alternatives invisible for operators outside of its scope. Thus, in a configuration like (55) *nur* ‘only’ makes the focus alternatives generated by *wo* ‘where’ invisible for the interrogative complementizer. Beck proposes that this gives rise to uninterpretability.²⁷

On Beck’s account of intervention effects, then, for a lexical item to function as a question word, it *must* generate focus alternatives. After all, if an interrogative complementizer receives no focus alternatives as input, it will never output a set of alternatives in the ordinary semantic value of the sentence representing the inquisitive content of a *wh*-question. Thus, the proposal explains why question words need to be focused.

We will discuss two issues for Beck’s proposal (see Eckardt 2007, Mayr 2014, and Li and Law 2016 for further critical discussion of the approach). The first issue concerns the original motivation for the proposal based on intervention effects. For the approach to deliver an account of focus intervention effects in questions, it is crucial that focus-sensitive operators like *only* are assumed to be *unselective*—that is, that they operate on *all* focus alternatives that are generated within their scope. However, as Beck (2006: sec. 5.2) herself discusses, the validity of this assumption is controversial. Consider example (56).

- (56) a. John only introduced SUE to his mother.
 b. He also only introduced SUE to his FATHER.
 (adapted from Krifka 1991:130)

²⁷ While Beck’s account of focus intervention effects in questions has been very influential, various alternative accounts have been proposed as well. For instance, some have argued that a semantic anomaly (a type mismatch or a logical contradiction) arises when a *wh*-word appears in the scope of a focus-sensitive operator like *only* or *even* (Haida 2007, Eckardt 2007), and still others have proposed that *wh*-words generate alternatives in the ordinary semantic value of a sentence (rather than focus alternatives) and that a clash arises when these interact with focus alternatives in the compositional interpretation of a question (Li and Law 2016, Kotek 2017).

In (56b), *only* associates with the focus alternatives generated by *SUE*, while *also* associates with the focus alternatives generated by *FATHER*. Krifka (1991) and Wold (1996), among others, have concluded from such observations that focus-sensitive operators can be *selective*; that is, they do not necessarily associate with all focus alternatives generated within their scope. If this conclusion is valid, Beck's account of focus intervention effects in questions cannot be right.

However, there is no full consensus yet as to whether the conclusion is indeed valid. Beck (2006:sec. 5.2) surveys further literature on this topic and also presents a small empirical study. The results of this study are mixed. Whether unselective association is possible seems to depend both on the specific focus-sensitive operators involved and on the language/dialect under consideration (Beck tested in English and German, and found variation between the two languages as well as within each language among different speakers/dialects). Of course, it may be that focus intervention effects in questions arise exactly with those focus-sensitive operators and for those speakers that do not allow for selective association with focus alternatives. This, however, remains to be investigated. For now, it is an open issue whether focus intervention effects in questions correlate with the impossibility of selective association.²⁸

The second issue for Beck's proposal that we will discuss pertains both to the underlying motivation based on intervention effects and to the explanation of the focus requirement on question words. The crucial observation is that focused non-*wh*-words cannot be interpreted as question words. For instance, (57a) can only be interpreted as a polar question, not as a *wh*-question, and (57b) can only be interpreted as a single *wh*-question, not as a multiple *wh*-question.

- (57) a. Did BILL vote for you? \neq Who voted for you?
 b. Who did BILL vote for? \neq Who voted for whom?

This means that generating focus alternatives is *not sufficient* for an item to be interpreted as a question word. As a consequence, it must be assumed under Beck's approach that the interrogative operator, let's call it *Q*, is a *selective* focus-sensitive operator: it can only associate with focus alternatives generated by *wh*-words, not with focus alternatives generated by non-*wh*-words. This

²⁸ A possible additional issue for Beck's theory of intervention effects in questions concerns the assumption that focus-sensitive operators like *only* always "reset" the focus semantic value, making the focus alternatives that they operate on invisible outside of their scope. Schwarzschild (1993) and Büring (2016:sec. 10.5.4) have argued that this assumption is not valid. Consider the following example:

- (i) a. John once only drank CIDER for a whole week.
 b. He also once only drank WINE for a whole week.
 (adapted from Büring 2016:291)

In (ib), both *also* and *only* seem to associate with the focus alternatives generated by *WINE*. This would be impossible if *only* made the alternatives that it operates on invisible for *also*. This is problematic for Beck's account of focus intervention effects, because the account crucially assumes that when *only* appears in a question, it makes all the focus alternatives that are generated within its scope invisible for the interrogative complementizer. Under this view, one would expect to see similar intervention effects in examples such as (ib).

A possible response to this criticism, however, would be that *also* in (ib) in fact does not necessarily associate with focus alternatives generated by *WINE*. Another possibility might be that, besides the narrow focus on *WINE* there is also broad focus on the entire VP, *only drank WINE for a whole week*. The additive presupposition that *also* generates would then not be that there is something else, besides wine, that John once drank for a whole week; rather, it would be that there is some other weird/extreme thing, besides only drinking wine for a whole week, that John once did. The satisfaction of this presupposition is ensured by (ia).

weakens the motivation for the proposal based on intervention effects. After all, the account needs to assume that *Q* is selective, while other focus-sensitive operators such as *only* are not. Apart from the fact that the empirical validity of the latter assumption is controversial (as discussed above), the presumed difference between *Q* and other focus-sensitive operators would have to be explained.

At the same time, the fact that *Q* can only associate with alternatives generated by *wh*-words also undermines the explanation of the focus requirement on question words. On the proposed account, *Q* is looking for focus alternatives, so question words need to provide such alternatives. This entails their focus requirement. However, since “*wh*-related focus alternatives” must be separated from other focus alternatives (so as to avoid the possibility that all focused items could be interpreted as question words), there is nothing really substantial about the fact that “*wh*-related focus alternatives” are treated as a kind of focus alternatives. The account may just as well assume, for instance, that *wh*-words are variables (unrelated to focus) and that *Q* generates alternatives in the ordinary semantic value of the question corresponding to the possible values of the associated *wh*-variables. This account would derive the same semantic values for questions as Beck’s original account, except it would not entail a focus requirement on question words. This means that the original account does not really provide an explanation for the focus requirement either.

4.3.4 Second Synchronic Semantic Approach: Focus Activates Latent Inquisitive Content The proposals of AnderBois (2012) and Möller Kalpak (2018) are also semantic in nature, but differ substantially from Beck’s (2006). For concreteness, we focus here on AnderBois’s proposal, though our main concerns also apply to Möller Kalpak’s.

AnderBois argues that in Yucatec Maya, *wh*-questions are formed using quexistentials marked as contrastive foci.²⁹ If these quexistentials are not marked as contrastive foci, they are interpreted as existentials. AnderBois proposes that quexistentials have both informative content, conveying that there is some individual with a certain property, and inquisitive content—namely, the issue of which individual it is that has the given property (see Groenendijk and Roelofsen 2009). He proposes, however, that the inquisitive content is in some sense latent: the issue is only raised if the informative content of the sentence is trivial in the context of utterance. For instance:

- (58) Yan máax t-u yuk’-aj le sa’-o’.
exists QUEX PFV-A.3 drink-STATUS DEF atole-DISTAL
‘QUEX drank the atole.’
Informative content: ‘Someone drank the atole.’
Latent inquisitive content: ‘Who was it?’
(AnderBois 2012:361)

²⁹ It is not clear to us whether Yucatec Maya has quexistentials in the strict sense in which we have defined the term, since the relevant elements seem to always be accompanied by some additional morphology on their existential reading. However this may be, AnderBois’s proposal is very relevant here, since we are interested in the contrast requirement on interrogative phrases in general (quexistential or not).

Against this background, AnderBois proposes that when contrastive focus is placed on the quexistential, it contributes an existential presupposition (i.e., the presupposition that some individual has the given property), which renders the informative content of the sentence contextually trivial. This, in turn, “activates” the latent inquisitive content of the sentence, which results in an interrogative interpretation.

So on AnderBois’s proposal, a semantic reflex of contrastive focus that has been independently argued for in other work (see, e.g., Geurts and van der Sandt 2004)—namely, an existential presupposition—makes it possible, and is in fact necessary, for a quexistential to get an interrogative interpretation in Yucatec Mayan.

However, when applied to other languages this type of account encounters a number of challenges. One question that the account leaves unanswered is why nonquexistential interrogative phrases generally require contrastive focus marking just as much as quexistential interrogative phrases. Since nonquexistential interrogative phrases are always interrogative (i.e., do not allow for a plain existential interpretation), it would be natural to assume that their inquisitive content is not “latent” but surfaces automatically. Why, then, do such phrases still need contrastive focus marking?

Let us make this point in somewhat more general terms. One of the fundamental ideas behind AnderBois’s account is that contrastive focus is necessary in order for quexistentials to receive an interrogative interpretation. So the assumed causal connection between contrastive focus and interrogative interpretation is as follows:

(59) contrastive focus \Rightarrow interrogative interpretation

Our point is that, if this is indeed the causal connection, it is unclear why purely interrogative (nonquexistential) phrases require contrastive focus marking as well.³⁰

4.4 Our Proposal: Inverting the Causal Connection

We propose that the causal connection between contrastive focus and interrogative interpretation is as in (60) (i.e., the opposite direction from (59), repeated here).

(59) contrastive focus \Rightarrow interrogative interpretation

³⁰ Moreover, even if we consider just quexistentials, AnderBois’s account encounters a difficult challenge when we consider multiple *wh*-questions with in-situ quexistentials in languages like Dutch. For instance:

- (i) Wie heeft hem wat/WAT gegeven?
 who has him QUEx given
 ‘Who gave him something/WHAT?’

The problem that such cases present for AnderBois’s account is the following. A central assumption of the account is that the inquisitive content of a *wh*-word is “activated” if and only if the informative content of the sentence in which it appears is trivial in the context of utterance. Now, the inquisitive content of *wie* in (i) is always activated, no matter whether the quexistential *wat* is focused or not. So, apparently, the informative content of the sentence is always trivial, in any context of utterance. But then, the inquisitive content of the quexistential should also always be activated, no matter what its prosody is like. This, however, is not the case. The quexistential is only interpreted as a question word when stressed in sentences like (i).

(60) interrogative interpretation \Rightarrow contrastive focus

In other words, contrastive focus does not automatically and necessarily yield an interrogative interpretation. Rather, it is the other way around: phrases that receive an interrogative interpretation must generally be marked as contrastive foci. This in fact naturally follows, we propose, from only a slight generalization of existing theories of contrastive focus.

To develop this idea, we must first briefly review what we take to be a common view on contrastive focus. To do so, we consider a simple case that involves contrastive focus but has nothing to do with interrogativity.

- (61) A: Tom married Kim.
 B: No, Tom married SAM.

B’s response, *Tom married Sam*, contrasts with A’s initial statement, *Tom married Kim*, and this contrast is signaled by the focal stress on *Sam*. Many theories of contrastive focus (from Rooth 1992 to Büring 2016 and Kratzer and Selkirk 2018) essentially hold that in order to mark some constituent *E* as contrasting with another constituent *E'*, a speaker places focus on subconstituents of *E* in such a way that the focus semantic value of *E* (*F*) has the ordinary semantic value of *E'* (*O*) as one of its elements. This is exactly what happens in (61), because the focus semantic value of B’s response is as shown in (62), and this set contains the ordinary semantic value of A’s initial statement.

$$(62) \llbracket \text{Tom married SAM} \rrbracket^F = \left\{ \begin{array}{l} \llbracket \text{Tom married Sam} \rrbracket^O, \\ \llbracket \text{Tom married Kim} \rrbracket^O, \\ \llbracket \text{Tom married Lyn} \rrbracket^O, \\ \dots \end{array} \right\}$$

Let us make this a bit more general and precise. The basic effect of marking a constituent *E* with contrastive focus is to evoke a set of alternatives to the ordinary semantic value of *E*. These alternatives, together with the ordinary semantic value itself, make up the focus semantic value of *E*. Marking a constituent with contrastive focus and thereby evoking alternatives may be done for a number of reasons. For instance, the alternatives may serve as input for focus-sensitive operators like *only*. But another reason to evoke focus alternatives, most relevant here, is to signal the presence of contrasting alternatives in the discourse. It is assumed that speakers should signal the presence of contrasting alternatives in the discourse by means of focus whenever they can, while on the other hand they should never “overfocus”—that is, they should not focus constituents without any purpose (e.g., Schwarzschild 1999).

In (63), we summarize the three main tenets of the common view on the use of focus to signal the presence of contrasting alternatives.

- (63) a. *Focus semantics*: Every focused expression has both an ordinary semantic value and a focus semantic value. The focus semantic value of a sentence is a set whose elements are called focus alternatives.

- b. *Using focus to signal the presence of contrasting alternatives in the discourse:* Placing focus on a constituent can be done for several reasons. One of them is to signal that an expression *E* contrasts with another expression *E'* in the discourse. This is done by placing focus on a subconstituent of *E* in such a way that $[[E]^F$ contains $[[E']^O$.
- c. *Pragmatics of focus placement:* Whenever the presence of a contrasting expression in the discourse can be signaled by means of focus, this should be done. On the other hand, overfocusing should be avoided; that is, constituents should not be focused without a reason.

Note that this view as such does not account for the contrastive focus requirement on interrogative words. Suppose A walks up to her colleague B and says the following:

- (64) a. I may want to attend the workshop that you are organizing next week.
 b. WHO will be presenting WHAT?

Clearly, there is no sentence in the discourse that the question in (64b) could possibly be taken to contrast with. So at first blush, there seems to be no reason for the (optional) contrastive accent on *who* and the (obligatory) contrastive accent on *what*.³¹

However, we will propose a generalization of the common view that provides an explanation for these facts. The crucial observation underlying this generalization is that it is implicitly assumed in (63b) that the type of contrast that speakers signal by means of focus is always a contrast between two different expressions. In our example above, these two expressions are *Tom married Kim* and *Tom married Sam*. The ordinary semantic value of each of these expressions is usually taken to be a proposition. So the contrast is taken to involve two propositions. Focus is placed on a subconstituent of the second sentence, *Sam*, such that the focus semantic value of this sentence contains both of the contrasting propositions.

Now consider the question in (65).

- (65) Who did Tom marry?

This question can be resolved in a number of ways: by providing the information that Tom married Sam, that he married Kim, that he married Lyn, and so on. We propose that it is natural to think of these possible resolutions as contrasting with each other in much the same way as *Tom married Kim* and *Tom married Sam* contrast with each other in the dialogue in (61).

To make this more precise, let us assume—in line with theories of questions based on Hamblin 1973, Karttunen 1977, or Groenendijk and Stokhof 1984, as well as more recent theories based on inquisitive semantics (Ciardelli, Groenendijk, and Roelofsen 2018)—that the ordinary

³¹ We noted in section 4.2 that in English, *wh*-phrases that have moved to the left periphery are often not stressed. This is true in particular for single *wh*-questions like *Who will be presenting the results?* However, in multiple *wh*-questions like (64b), it seems most natural for the *wh*-word in the left periphery to be stressed, just like the in-situ *wh*-word. Truckenbrodt (2013) notices this fact, but also states that there still seems to be optionality and that the exact data are unclear. Like him, we will leave further exploration of this issue for future work.

semantic value of a question is (or at least determines) a set of propositions, each corresponding to a minimal piece of information resolving the question. For (65), this set of propositions is given in (66). Note that it contains exactly the same propositions as the focus semantic value of *Tom married SAM*, which was given in (62).

$$(66) \llbracket \text{Who did Tom marry?} \rrbracket^O = \left\{ \begin{array}{l} \llbracket \text{Tom married Sam} \rrbracket^O, \\ \llbracket \text{Tom married Kim} \rrbracket^O, \\ \llbracket \text{Tom married Lyn} \rrbracket^O, \\ \dots \end{array} \right\}$$

The idea is that these propositions (i.e., these alternative resolutions of the question) contrast with each other, and that this contrast must be signaled by contrastively focusing a subconstituent of the question in such a way that the focus semantic value of the question contains the contrasting propositions. This means contrastively focusing *who* (under the assumption that the focus alternatives of *who* are Sam, Kim, Lyn, etc.)—for, if *who* is focused, the focus semantic value of the question becomes the following:³²

$$(67) \llbracket \text{Who}_F \text{ did Tom marry?} \rrbracket^F = \left\{ \begin{array}{l} \llbracket \text{Tom married Sam} \rrbracket^O, \\ \llbracket \text{Tom married Kim} \rrbracket^O, \\ \llbracket \text{Tom married Lyn} \rrbracket^O, \\ \dots \end{array} \right\}$$

Note that, indeed, as a result of focusing *who*, the contrasting propositions in the ordinary semantic value of the question, given in (66), are all elements of the focus semantic value of the question in (67). So focusing *who* successfully signals the presence of contrasting propositions.

As discussed above, we assume that in languages like English and Dutch, contrastive focus on *wh*-words manifests itself either as movement to a designated position in the left periphery, or prosodically, or both. So in (65), prosodic marking of focus is not necessary because the *wh*-word has moved to the left periphery, but in the case of in-situ *wh*-words prosodic marking of contrastive focus *is* necessary.

What does it mean, then, for a speaker uttering an expression *E* in a context *C* to signal contrast by means of focus? As reviewed above, Rooth (1992) and others have proposed that this means for the speaker to place focus on a subexpression of *E* in such a way that the focus semantic value of *E* includes the ordinary semantic value of some other expression *E'* that has been used in context *C*.

We propose something slightly more general: namely, that in order to signal a contrast, a speaker places focus on a subconstituent of *E* in such a way that the focus semantic value of *E* includes at least two (nonidentical) alternatives α and β such that α is an element of the ordinary semantic value of *E*, and β is an element of the ordinary semantic value of some expression used

³² We assume here that the ordinary semantic value of an expression is not an element of the focus semantic value of that expression. However, our account of the focus requirement on question words does not hinge on this assumption.

in C , which may be either E itself or some other expression E' .³³ Given this general notion of what it means to signal a contrast by means of focus, we can identify two special cases:

(68) *Internal contrast*

When β is an element of the ordinary semantic value of E itself, we say that the signaled contrast is internal.

(69) *External contrast*

When β is an element of the ordinary semantic value of some expression other than E , we say that the signaled contrast is external.

External contrast is exactly the same as the standard Roothian notion of contrast. On the other hand, internal contrast is the one that is relevant for questions. The fact that both are subcases of a single more general notion makes it natural for languages to mark them in the same way, although it is also imaginable that certain languages mark them differently.³⁴

Let us return now to the common view on contrastive focus, whose three main tenets we summarized in (63). What we propose is to leave the first and third tenets untouched, but to slightly adapt the second one in view of our more general notion of contrast. That is, we propose to replace (63b) by (70).

(70) *Using focus to signal contrast (generalized)*: Placing focus on a constituent can be done for several reasons. One of them is to signal a contrast. This is done by placing focus on a subconstituent of an expression E in such a way that $\llbracket E \rrbracket^F$ includes at least two (nonidentical) alternatives α and β such that α is an element of $\llbracket E \rrbracket^O$ and β is an element of the ordinary semantic value of some expression used in the context, which may be either E itself or some other expression E' .

Together with the pragmatics of focus placement in (63c), this generalized notion of contrast accounts for the fact that interrogative words (whether quexistential or not) generally must be focused. On this account, the focus on interrogative words signals an internal contrast. Depending on the way(s) in which focus is generally expressed in a given language, the focus on interrogative words may manifest itself through movement, prosody, a focus particle, or a combination of these.

Let us sum up what we have established so far on how the qu of quex interacts with stress and focus. First, we have shown that an in-situ qu of quex in a language like Dutch always re-

³³ For this to make sense not just in case E and E' are interrogatives but also when they are declaratives, we must assume that both declaratives and interrogatives express sets of propositions. This assumption is made both in Hamblin semantics (Hamblin 1973) and in inquisitive semantics (Ciardelli, Groenendijk, and Roelofsen 2018). In Hamblin semantics, declarative sentences express singleton sets of propositions; in inquisitive semantics, they express sets of propositions with a single maximal element. For instance, in Hamblin semantics $\llbracket \text{Bill left} \rrbracket^O$ is a set containing a single proposition—namely, the proposition that Bill left, $\{\{w \mid \text{Bill left in } w\}\}$. In inquisitive semantics, $\llbracket \text{Bill left} \rrbracket^O$ is the set of all propositions entailing that Bill left, $\{p \mid \forall w \in p : \text{Bill left in } w\}$. Our proposal can be implemented naturally in either of these frameworks. For comparison of the two, see Ciardelli and Roelofsen 2017, Ciardelli, Roelofsen, and Theiler 2017, and Ciardelli, Groenendijk, and Roelofsen 2018.

³⁴ Recall from footnote 18 that according to Truckenbrodt (2013), the prosodic effects of focus on in-situ interrogative words in German and English are “reduced” in a particular way. We speculate that in these languages, reduced prosodic focus effects signal internal contrast while nonreduced prosodic effects signal external contrast. However, this is a mere speculation at this point. Further investigation is needed.

quires focal stress. Second, following Haida (2007) and others, we have suggested that this fact is a particular instance of a much more general pattern—namely, that interrogative words (whether quexistential or not) always require contrastive focus marking. We have argued that existing accounts of this generalization are not fully satisfactory, and we have offered an alternative account.

We should (re)emphasize that while our proposal predicts a tight connection between contrastive focus and *wh*-questions, we do not run the risk of being confronted with questions like “Why isn’t it the case that focus on any pronoun/noun yields a question?” The reason is that we do not take contrastive focus to be an ingredient in the construction of inquisitiveness. In this article, we say nothing about the source of the latter. What we do say is that once inquisitiveness enters the picture, contrastive focus follows it (in the case of *wh*-questions; polar questions are a different matter and remain to be explored from this perspective, possibly in relation to the expression of *verum focus*).

We now turn from the *qu* of *quex* to the *ex* of *quex*.

5 Stress and Focus on the Ex of Quex

We have shown that a quexistential in the *qu* of *quex* interpretation behaves just like any nonquexistential interrogative word when it comes to stress and focus. In this section, we will ask a related question for the *ex* of *quex*: to what extent does the *ex* of *quex* behave like nonquexistential indefinites when it comes to stress and focus?

We already argued in section 3 that an account of how the *ex* of *quex* relates to focus will not be sufficient on its own to capture the relation between the *ex* of *quex* and stress in general. This is because we would expect that in an out-of-the-blue context, without focus on any particular constituent, the *ex* of *quex* should receive stress when it is in a position that normally receives stress in default prosody. But this is not the case, as we already illustrated with Dutch examples (36) and (37), repeated in (71) and (72).

- (71) Miranda heeft wat geGEten.
 Miranda has QUEx eaten
 ‘Miranda has eaten something.’
- (72) *Miranda heeft WAT gegeten.
 Miranda has QUEx eaten
 Intended: ‘Miranda has eaten something.’

This means that we are faced with two tasks: to understand the relation between the *ex* of *quex* and stress in default prosody, and separately from that, to understand the relation between the *ex* of *quex* and focus. Starting with the first question, we will show that the *ex* of *quex* behaves like nonquexistential indefinites.

5.1 The Impossibility of Stress on the Ex of Quex in Default Prosody

In this section, we discuss the *ex* of *quex* as it relates to stress in default prosody. In the following sections, we will look at focus. We propose that (72) is ruled out by general prosodic constraints, which prohibit stress in default prosody falling on existential quantifiers across the board. Indeed,

the Dutch nonquexexistential existential *iets* ‘something’ shows the same behavior. It does not receive a pitch accent in default prosody even when it is in the position where that accent is usually placed; instead, the accent shifts to the verb.³⁵

- (73) Miranda heeft iets geGEten.
 Miranda has something eaten
 ‘Miranda ate something.’
- (74) #Miranda heeft IETS gegeten.
 Miranda has something eaten
 Intended: ‘Miranda ate something.’

The fact that existential quantifiers resist a pitch accent in default prosody is known. It also manifests itself in English. The examples in (75) show that the existential quantifier does not receive stress in default prosody even when it appears in a position where such stress is usually placed, as seen in (75c).

- (75) a. I SMELL something.
 b. #I smell SOMETHing.
 c. I smell DUMPLings.
 (Büring 2016:146, adapted)

Why would this be? One proposed line of reasoning is that the existential is a functional item and thereby incapable of receiving stress in default prosody, which is reserved for lexical items (see Büring 2016 for discussion and references). One difficulty for this hypothesis is that one would have to assume that *just* existential quantifiers are functional items, because other quantifiers (e.g., English *everything* or Dutch *alles*) have no problem receiving stress in default prosody (see also Wagner 2006 for a critique of accounts based on the existential’s not being able to receive stress because it is a functional item).

At least two alternative proposals exist. Wagner (2006) argues that existential quantifiers are always deaccented because they trivially meet the requirements for givenness, and given items are generally deaccented. Ahn (2015), on the other hand, provides an account that relies on the assumption that the syntax of existentials like *something* differs from that of DPs like *dumplings* in a way that is relevant for the mechanism that assigns stress in default prosody.

Whatever the right account of this general phenomenon is, it is clear that the pattern involving quexistentials on their existential use should be seen as a particular instance of it. There is no reason to believe that there is something special about the inability of quexistentials on their existential use to receive stress in default prosody. The contrast in (71)–(72) is due to something that is not specific to quexistentials, but rather is common to all existential quantifiers (their inherent givenness status if Wagner (2006) is right, or their syntactic status if Ahn (2015) is right).

The next question is whether it is possible for the ex of quex to receive stress due to contrastive focus rather than default prosody. We address this question in the next two sections.

³⁵ We use # to mark examples whose stress pattern diverges from default prosody; see also footnote 15.

5.2 Contrastive Focus on the Ex of Quex

The QF biconditional as stated by Haida (2007) and others appears to stand on firm empirical ground. Haida shows that the part of the biconditional that precludes focus on the ex of quex holds for German, and we have found that it also holds for Russian.

When it comes to the ex of quex not being able to receive nuclear stress in default prosody, the facts in German and Russian are the same as in Dutch: like other existential indefinites, the ex of quex resists it.

As for contrastive focus, the ex of quex in German and Russian also abides by the QF biconditional: namely, it never receives stress due to contrastive focus.³⁶

(76) *German*

Sie hat was/*WAS abgegeben, aber nicht viel.
 she has QUEX submitted but not much
 ‘She did submit something but not much.’

(77) *Russian*

Možet, on ?čto/*ČTO pročital, no ne očen’ mnogo.
 maybe he QUEX read but not very much
 ‘Maybe he read something but not very much.’

In German, it is possible to use stress to signal the contrast in (76), but only if it is placed either on the auxiliary *hat* ‘has’ or on a nonquexistential existential quantifier, *etwas* ‘something’.

- (78) a. Sie HAT was abgegeben, aber nicht viel.
 she has QUEX submitted but not much
 ‘She did submit something but not much.’
- b. Sie hat ETwas abgegeben, aber nicht viel.
 she has something submitted but not much
 ‘She did submit something but not much.’

Russian behaves the same way as German: while the ex of quex cannot be contrastively focused, the language has a series of other indefinites that can.

³⁶ Superficially, the same pattern holds for Passamaquoddy.

(i) *Kisuwikhomon keq/*KEQ, ma tehpu wikhikon.
 he.wrote.it QUEX not only book
 ‘He wrote something, but not a book.’

However, Passamaquoddy should not be treated on a par with German or Russian in this discussion. The reason is that while Passamaquoddy does have nonquexistential indefinites, for the meanings ‘someone’ and ‘something’ it only has quexistentials, no nonquexistential indefinites. As a result, it is not possible to compare the ex of quex with a nonquexistential indefinite. In a way, then, this example shows that no indefinite can be stressed in Passamaquoddy, not just the ex of quex. So we leave Passamaquoddy out of this discussion for now, or at least until we have learned more about the expression of contrastive focus in this language (as mentioned earlier, the Passamaquoddy stress system is quite different overall from that of languages like English and Dutch; see LeSourd 1993).

So far, then, the relation between quexistentials and focus does appear to be a biconditional. We have proposed an explanation for why the *qu* of *quex* requires focus (and in this we showed that the *qu* of *quex* behaves like other interrogative words). We have shown that on the *ex* of *quex* interpretation, the quexistential resists stress associated with default prosody (and in this we showed that the *ex* of *quex* behaves like other existentials). Finally, in this section we showed that in German and Russian, the *ex* of *quex* cannot receive contrastive focus either (in this, the German and Russian quexistentials differ from other indefinites in those languages). It would seem, then, that this is the last part of the QF biconditional that needs an explanation.

However, it may be that the conclusion that the *ex* of *quex* cannot be contrastively focused is too hasty, and that the “QF biconditional” is not a biconditional at all, but a one-way entailment. In other words, before we try to explain a phenomenon as universal, or at least as being of significant crosslinguistic stability, we need to make sure it is indeed that. In the next section, we show that Dutch provides a potential counterexample to this part of the QF biconditional. We will thus find ourselves faced with two logical possibilities: either we decide that the relation between the *ex* of *quex* and contrastive focus is not captured by the QF biconditional (in which case we will need to investigate the difference between German and Russian on the one hand and Dutch on the other), or we try to find grounds for removing Dutch as a counterexample. We attempt this in section 5.4.

5.3 Focal Stress on the Ex of Quex in Dutch

In this section, we will give several examples involving focal stress on the *ex* of *quex* in Dutch. Since all these examples will involve *verum focus*, we should start with a general point about *verum focus* in Dutch. In corrective statements such as (79B), *verum focus* is expressed using the particle *wel* with a strong falling pitch accent.³⁷

- (79) A: Miranda is niet weggegaan.
 Miranda is not left
 ‘Miranda didn’t leave.’
 B: Ze is WEL[↓] weggegaan.
 she is VF left
 ‘She DID leave.’

Note that this is different from English, which expresses *verum focus* by means of an accented auxiliary verb, as in *She DID leave*, *She HAS left*, *She IS studying*. This is impossible in Dutch.

The same pattern occurs in response to a question that is biased toward a negative answer.

- (80) A: Miranda is niet weggegaan toch?
 Miranda is not left right
 ‘Miranda didn’t leave, did she?’

³⁷ The term *verum focus* goes back to Höhle 1992. For more background on the use of Dutch *wel*, see Hogeweg 2009. After Sassen 1985, Hogeweg analyzes *wel* as a double negation.

B: Ze is WEL[↓] weggegaan.
 she is VF left
 ‘She DID leave.’

When the question is neutral, stressed *wel* is not felicitous. Unstressed *wel* is possible but only as part of a more elaborate answer that itself involves a contrast.

- (81) A: Is Miranda weggegaan?
 is Miranda left
 ‘Did Miranda leave?’
 B: *Ze is WEL[↓] weggegaan.
 she is VF left
 ‘She DID leave.’
 C: Ze is (wel) WEGgegaan[↑] maar NIET[↑] op TIJD[↓].
 she is (VF) gone but not in time
 ‘She did leave, but not in time.’

With this background in mind, let us turn to contrastive focus on the ex of quex.

5.3.1 Responses to Negative Assertions and Negatively Biased Questions In response to a negative assertion or a negatively biased question, stressed *wel* appears again. The stress on *wel* here is the falling pitch accent of contrastive focus. Moreover, the quexistential again behaves the same as a nonquexistential existential in that neither can be focused.

- (82) A: Miranda heeft niks ingeleverd.
 Miranda has nothing submitted
 ‘Miranda has not submitted anything.’
 B: Ze heeft WEL[↓] wat/iets ingeleverd.
 she has VF QUEX/something submitted
 ‘She DID submit something.’
 C: *Ze heeft (wel) WAT[↓]/IETS[↓] ingeleverd.
 she has (VF) QUEX/something submitted
 Intended: ‘She DID submit something.’

However, both the quexistential and the nonquexistential indefinite can be contrastively focused if they contrast with a subsequent denial of a stronger or more specific alternative. In this case, *wel* and *niet* are marked as contrastive topics by means of rising pitch accents, while the contrastively focused quexistential or nonquexistential indefinite receives the falling pitch accent characteristic of contrastive focus.³⁸

³⁸ For discussion of the mapping of contrastive topic and focus to rising and falling pitch accents, respectively, see Büring 2016 and references given there.

(83) *A case where the ex of quex is marked as contrastive focus*

- A: Miranda heeft niks ingeleverd.
 Miranda has nothing submitted
 ‘Miranda didn’t submit anything.’
- B: Nou, ze heeft WEL[↑] WAT[↑]/IETS[↓] ingeleverd maar NIET[↑] VEEL[↓].
 well she has VF QUEX/something submitted but not much
 ‘Well, she did submit something but not much.’
- C: Nou, ze heeft WEL[↑] WAT[↑]/IETS[↓] ingeleverd maar het was NIET[↑] wat we
 well she has VF QUEX/something submitted but it was not what we
 verWACHT[↓] hadden.
 expected had
 ‘Well, she did submit something but it was not what we had expected.’

In addition, both the quexistential and the nonquexistential indefinite can be marked as contrastive topics, with a falling focus accent on *ingeleverd* ‘submitted’.

(84) *A case where the ex of quex is marked as contrastive topic*

- A: Miranda heeft niks ingeleverd.
 Miranda has nothing submitted
 ‘Miranda didn’t submit anything.’
- B: Nou, ze heeft wel WAT[↑]/IETS[↓] INgeleverd[↓] maar het was NIET[↑] VEEL[↓].
 well she has VF QUEX/something submitted but it was not much
 ‘Well, she did submit something but not much.’
- C: Nou, ze heeft wel WAT[↑]/IETS[↓] INgeleverd[↓] maar het was NIET[↑] wat we
 well she has VF QUEX/something submitted but it was not what we
 verWACHT[↓] hadden.
 expected had
 ‘Well, she did submit something but it was not what we had expected.’

Again, in (84b) and (84c) the nonquexistential *iets* can appear with the same prosody as the quexistential *wat*.

5.3.2 Responses to Neutral Questions In a response to a neutral question, unstressed *wel* can optionally be used, but it cannot be marked as contrastive focus. As for the quexistential and the nonquexistential indefinite, if they are not contrasted with any stronger or more specific alternative in the response, they must be left unstressed.

- (85) A: Heeft Miranda gegeten vandaag?
 has Miranda eaten today
 ‘Has Miranda eaten today?’
- B: Ja, ze heeft (wel) wat/iets gegeten.
 yes she has (VF) QUEX/something eaten
 ‘Yes, she did eat something.’

- C: *Ja, ze heeft WEL[↓] wat/iets gegeten.
 yes she has VF QUEX/something eaten
 Intended: 'She DID eat something.'

However, just as in responses to negative assertions and questions, they both can be contrastively focused if they contrast with a subsequent stronger or more specific alternative. In this case, *wel* and *niet* are marked as contrastive topics by means of rising pitch accents, while the quexistential or nonquexistential indefinite is marked as a contrastive focus by means of a falling pitch accent.

(86) *A case where the ex of quex is marked as contrastive focus*

- A: Heeft Miranda haar huiswerk ingeleverd?
 has Miranda her homework submitted
 'Has Miranda submitted her homework?'
 B: Nou, ze heeft WEL[↑] WAT[↓]/IETS[↓] ingeleverd maar het was NIET[↑] VEEL[↓].
 well she has VF QUEX/something submitted but it was not much
 'Well, she did submit something but not much.'

Alternatively, both the quexistential and the nonquexistential indefinite can be marked as contrastive topics, with a falling focus accent on *ingeleverd* 'submitted'.

(87) *A case where the ex of quex is marked as contrastive topic*

- A: Heeft Miranda haar huiswerk ingeleverd?
 has Miranda her homework submitted
 'Has Miranda submitted her homework?'
 B: Nou, ze heeft wel WAT[↑]/IETS[↑] INgeleverd[↓] maar het was NIET[↑] VEEL[↓].
 well she has VF QUEX/something submitted but it was not much
 'Well, she did submit something but not much.'

So the *ex of quex* in Dutch can receive either a falling or a rising contrastive pitch accent, depending on whether it is marked as a contrastive focus or a contrastive topic. It behaves just like the nonquexistential indefinite in this respect. In other words, Dutch appears not to conform to both parts of the QF biconditional: it is possible to manipulate the environment in such a way that focus and the *ex of quex* are compatible.

5.3.3 *Two Additional Environments* Contrastive focus on the *ex of quex* in Dutch seems possible in two further environments as well. First, in the context of sluicing it again behaves exactly as a nonquexistential indefinite does.

- (88) Hij heeft WEL[↑] WAT[↓]/IETS[↓] ingeleverd maar ik weet NIET[↑] hoeVEEL[↓].
 he has VF QUEX/something submitted but I know not how.much
 'He did submit something but I don't know how much.'

Second, it can be stressed, presumably due to contrastive focus, when it appears as the associate of the scalar NPI *ook maar* (literally 'also but', roughly equaling *even* in English), which compares its argument with amount alternatives and requires that its argument be the endpoint on some

amount scale, similar to English *even*. Of course, focused *wat* can only appear with *ook maar* in environments where the latter is licensed. As an NPI, it is not licensed in plain positive environments.

- (89) *Maria heeft ook maar WAT/IETS verkeerd gedaan.
 Maria has also but QUEX/something wrong done
 Intended: ‘Maria has done something wrong.’

But when *ook maar* is licensed, the ex of quex reading of *wat* is compatible with focus.

- (90) a. *Yes/No questions*
 Heb ik ooit ook maar WAT/IETS verkeerd gedaan?
 have I ever also but QUEX/something wrong done
 ‘Have I ever done even the slightest thing wrong?’
- b. *Antecedent of a conditional*
 Als je ook maar WAT/IETS verkeerd doet, moet je alles overdoen.
 if you also but QUEX/something wrong do must you everything redo
 ‘If you do even the slightest thing wrong, you have to redo everything.’
- c. *Restrictor of a universal*
 Iedere leerling die ook maar WAT/IETS verkeerd doet moet alles
 every student who also but QUEX/something wrong does must everything
 overdoen.
 redo
 ‘Every student who does even the slightest thing wrong has to redo everything.’

In short, we have shown again that the ex of quex can be made compatible with focus in Dutch, and as such again behaves just like the nonquexistential indefinite.

5.3.4 *A Case Where Qu and Ex of Quex Have Similar Prosody* The above discussion leads one to expect that it should be possible to set up a case where the qu of quex and the ex of quex have similar prosody. Specifically, when the ex of quex is contrastively focused, it should exhibit the same intonational contour as an in-situ qu of quex, which is always contrastively focused. This expectation is indeed borne out, as can be seen by comparing (91) and (92). The pitch contours for these sentences are displayed in figures 5 and 6, respectively. Note that these contours are very similar.

- (91) WIE[↓] heeft WAT[↓] ingeleverd bij WELke[↓] docent?
 who has QUEX submitted at which lecturer
 ‘Who has submitted what to which lecturer?’
- (92) WIE[↓] heeft WAT[↓] ingeleverd maar NIET[↑] ALLES[↓]?
 who has QUEX submitted but not everything
 ‘Who has submitted something but not everything?’

In Dutch, then, the behavior of the qu of quex with respect to stress and focus is just like that of other question words (always contrastively focused), and the behavior of the ex of quex is just

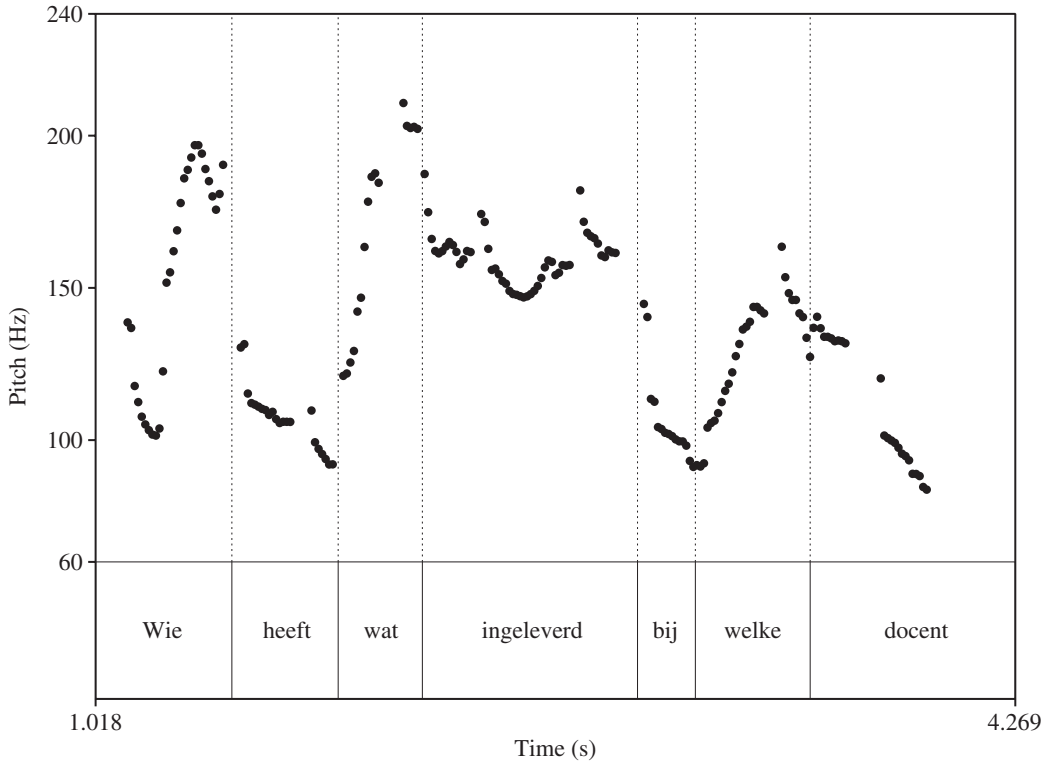


Figure 5
Pitch track of (91)

like that of other existentials (never stressed due to default prosody, but possibly stressed due to contrastive focus or topic marking).

So the Dutch reality is not captured by the QF biconditional “qu if focused, ex if not focused.” We are confronted with a choice, then: either we treat the relation between quexistentials and contrastive focus as not being as universal as the QF biconditional would have us believe (and therefore start to explore its parameterization), or we look deeper into Dutch for grounds to explain it away as a counterexample and thereby maintain a stronger belief in the potential universality of the QF biconditional. We attempt the latter in the next section.³⁹

³⁹ We should point out here that contrastive focus and contrastive topic on the ex of quex shows that Postma (1994), according to whom the ex of quex is not possible outside of the VP, does not derive the right facts. First, (i) and (ii) show that when the ex of quex is contrastively focused, it can appear to the left of the VP-edge adverb *snel* ‘quickly’.

- (i) Hij heeft WEL¹ WAT¹ snel opgeschreven maar NIET¹ ALLES¹.
he has VF QUES quickly written.down but not everything
‘He did quickly write down something but not everything.’
- (ii) Hij heeft WEL¹ WAT¹ snel opgeschreven maar NIET¹ waar we om GEVRAAGD¹ hadden.
he has VF QUES quickly written.down but not what we for asked had
‘He did quickly write down something but not what we had asked for.’

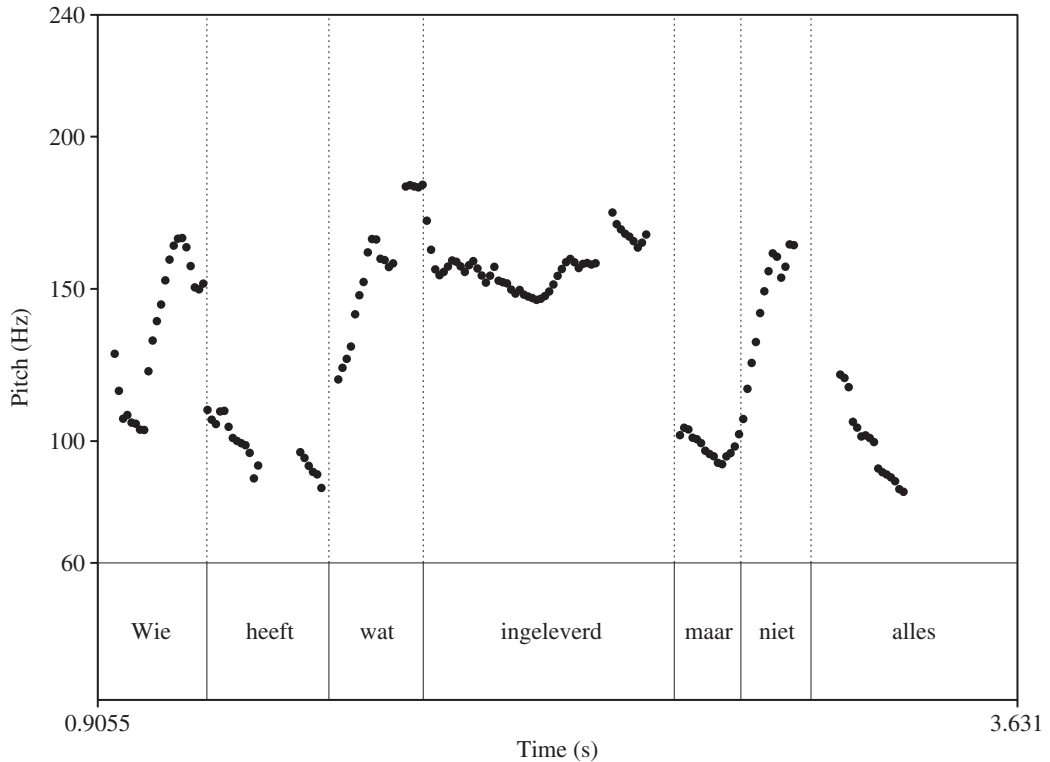


Figure 6
Pitch track of (92)

Similarly, the ex of *quex* is also possible outside of the VP when it is a contrastive topic. This is exemplified by the following examples, in which the *quex* existential appears in subject position (iiib) and in first position of a verb-second sentence (ivb).

- (iii) a. VEEL¹ van wat ik op het bord geschreven had was weg ...
 much of what I on the board written had was gone ...
 'Much of what I had written on the board was gone ...'
 b. ... maar WAT¹ stond er nog wel.
 ... but QUEX stood there still VF
 '... but SOMETHING was still there.'
- (iv) a. De nieuwe strategie van het bedrijf heeft de hoge verwachtingen niet echt waargemaakt ...
 the new strategy of the company has the high expectations not really made.true
 'The new strategy of the company did not really fulfill the high expectations ...'
 b. ... maar WAT¹ heeft het wel opgeleverd.
 ... but QUEX has it VF delivered
 '... but SOMETHING it did deliver.'

For more details, see Hengeveld, Iatridou, and Roelofsen 2019.

Several of these observations hold for German as well. However, as mentioned by a reviewer and confirmed by our consultants, there is a further context in this language in which *quex* existentials are allowed outside of the VP—namely, embedded clauses, as shown in (v).

- (v) ... weil was passiert ist.
 ... because QUEX happened is
 '... because something happened.'

5.4 A Possible Reanalysis of Dutch

In this section, we will attempt to find a difference between Dutch on the one hand and Russian—and in particular the closely related German—on the other, so that we can explain Dutch away as a counterexample to the QF biconditional. If an orthogonal (to the QF biconditional) difference can be found that is responsible for the Dutch pattern discussed earlier, then we do not have to give up faith in the crosslinguistic stability of the biconditional and try to explain it. We will be explicit with the details, so that future research might find any gaps in our argumentation.

So what difference(s) are there between Dutch and German/Russian⁴⁰ that may cause the different behavioral patterns when the *ex* of *quex* is contrastively focused?⁴¹

One difference between Dutch and German is that Dutch *wat*, unlike German *was*, can function as a determiner, as in (93) with a plural count noun and in (94) with a mass noun. It cannot function as a determiner on a single count noun; see (95).⁴²

- (93) Hij heeft *wat* bloemen geplukt.
 he has *QUEX* flowers picked
 ‘He has picked some flowers.’
- (94) Hij heeft *wat* water gedronken.
 he has *QUEX* water drunk
 ‘He has drunk some water.’
- (95) *Hij heeft *wat* broodje gegeten.
 he has *QUEX* bread eaten
 ‘*He has eaten some roll.’

The German quexistential *was* cannot function as a determiner, as seen in (96) and (97).

- (96) *Er hat *was* Blumen gepflückt.
 he has *QUEX* flowers picked
 Intended: ‘He has picked some flowers.’

⁴⁰ One might think that a difference between Dutch and German that plays a role here is that the two languages express *verum focus* in different ways: Dutch necessarily uses the particle *wel*; German uses stress on the finite verb or the complementizer (Höhle 1992). According to a reviewer, however, there are varieties of German that do use a *verum focus* particle where it is still extremely difficult to stress the quexistential in the presence of this particle, unlike in Dutch. In preliminary fieldwork, we have found that for some consultants the quexistential *was* ‘what/something’ *can* be stressed in such constructions, as in (i).

- (i) Sie hat schon *WAS* gegeben, aber nicht viel.
 she has *VF* *QUEX* given but not much
 ‘She has given something, but not much.’

It seems that for some of these speakers the use of *was* as a determiner is marginally possible too. However, we leave further empirical research on this issue for future work.

⁴¹ Yun (2019) describes Korean quexistentials as permitting focus under their existential reading, just like quexistentials in Dutch. We leave a detailed discussion of Korean for another occasion.

⁴² That a quantifier would take plural count nouns and mass nouns as arguments but not singular count nouns is not a coincidence according to Chierchia (1998). He argues that plural count nouns and mass nouns are closed under sum formation and so form a natural class that a quantifier can select for. On the other hand, singular count nouns and mass nouns do not share a property to the exclusion of plural count nouns that a quantifier can select for.

- (97) *Er hat was Wasser getrunken.
 he has QUEx water drunk
 Intended: 'He has drunk some water.'

Could this be part of the reason why the Dutch *ex* of *quex* permits focal stress while the German one does not (e.g., contrast with other determiners would be more straightforward ('some but not much'))? If the question is put in these terms, the answer cannot be affirmative because this distinction does not cut along the correct crosslinguistic lines: the Russian *quexistential* *kakoj* can be used as determiner, but still cannot receive focal stress on its existential reading.

However, maybe it is possible to press this point further: what if Dutch *wat* as a determiner is not a *quexistential* at all, while when Russian *kakoj* is a determiner, it is still a *quexistential*? Then we would be looking at the following situation: when *wat* accepts contrastive focus, it is always and only a non*quexistential* determiner and, as such, its relationship to focus is irrelevant to the QF biconditional, whose domain is only *quexistentials*.

The first reason to suspect that *wat* as a determiner is not a *quexistential* is that sentences like (98) and (99) are ungrammatical. In other words, determiner *wat* cannot function as an interrogative word, as one would expect of a *quexistential*.

- (98) *Wat bloemen heeft hij geplukt?
 QUEx flowers has he picked
 Intended: 'What/Which flowers did he pick?'
- (99) *Wat water heeft hij gedronken?
 QUEx water has he drunk
 Intended: 'What/Which water did he drink?'

If the determiner *wat* were a *quexistential*, one would expect (98) and (99) to be grammatical as questions.

Similarly, consider the following examples:

- (100) Wie heeft wat bloemen geplukt?
 who has QUEx flowers picked
 ✓'Who picked some flowers?'
 x'Who picked which flowers?'
- (101) Wie heeft wat water gedronken?
 who has QUEx water drunk
 ✓'Who drank some water?'
 x'Who drank which water?'

These sentences lack a multiple question interpretation, unlike their counterparts with independent *wat*.

- (102) Wie heeft wat geplukt?
 who has QUEx picked
 'Who picked something/what?'

- (103) Wie heeft wat gedronken?
 who has QUEx drunk
 ‘Who drank something/what?’

This is further evidence that when *wat* is a determiner, it is not a quexistential.

Moreover, determiner *wat* with an overt restrictor can appear unproblematically in the contrastive environments that we have already illustrated: with a mass noun, as in (104)–(105), and with a plural count noun, as in (106)–(107).

- (104) a. Heeft hij brood gekocht voor de lunch?
 has he bread bought for the lunch
 ‘Has he bought bread for lunch?’
 b. Nou, hij heeft wel WAT brood gekocht maar niet genoeg voor iedereen.
 well he has VF QUEx bread bought but not enough for everyone
 ‘Well, he did buy SOME bread but not enough for everyone.’
- (105) a. Heeft hij brood gekocht voor de lunch?
 has he bread bought for the lunch
 ‘Has he bought bread for lunch?’
 b. Nou, hij heeft wel WAT brood gekocht maar niet dat lekkere brood waar ik
 well he has VF QUEx bread bought but not that tasty bread where I
 om gevraagd had.
 for asked had
 ‘Well, he did buy SOME bread but not that tasty bread that I had asked for.’
- (106) a. Heeft hij bramenstruiken geplant in de moestuin?
 has he blackberry.bushes planted in the kitchen.garden
 ‘Has he planted blackberry bushes in the kitchen garden?’
 b. Nou, hij heeft wel WAT bramenstruiken geplant maar niet veel.
 well he has VF QUEx blackberry.bushes planted but not many
 ‘Well, he did plant SOME blackberry bushes but not many.’
- (107) a. Heeft hij bramenstruiken geplant in de moestuin?
 has he blackberry.bushes planted in the kitchen.garden
 ‘Has he planted blackberry bushes in the kitchen garden?’
 b. Nou, hij heeft wel WAT bramenstruiken geplant maar niet die met die
 well he has VF QUEx blackberry.bushes planted but not those with those
 lekkere grote bramen.
 tasty big blackberries
 ‘Well, he did plant SOME blackberry bushes but not those with the big tasty black-
 berries.’

The above are cases in which *wat* is stressed and clearly functions as a determiner. What then if *wat*, when it carries focal stress but has no overt nominal restrictor, is still a determiner but with a null noun as restrictor (or null NP; we will not distinguish these here)? (For arguments in favor

of the existence of null nouns, see Postal 1969, Panagiotidis 2003, and Corver and Van Koppen 2011, among others. For a possible account of why such nouns are null, see Kayne 2005.)⁴³

If this hypothesis is correct—that is, if every occurrence of focused *wat* is indeed an occurrence of it as a nonquexistential determiner—then Dutch would not constitute a counterexample to the crosslinguistic generalization that the ex of quex is incompatible with focal stress: any stressed occurrence of *wat* would be an instance of the nonquexistential determiner. But how safe is this conclusion?

One could counter the claim that *wat* as a determiner is not a quexistential by arguing that there are in fact cases in which *wat* receives an interrogative interpretation in determiner position, specifically in the somewhat famous *wat voor* construction, as illustrated in (108) and (109).

- (108) *Wat voor bloemen heeft hij geplukt?*
 what for flowers has he picked
 ‘What kind of flowers did he pick?’
- (109) *Wat voor water heeft hij gedronken?*
 what for water has he drunk
 ‘What kind of water did he drink?’

The rationale would be as follows: According to Heck (2009) and Huhmarniemi (2012), among others, when an interrogative XP moves to the left periphery of a clause (e.g., the specifier of CP), there is also XP-internal *wh*-movement to the left periphery of that XP.

⁴³ One might wonder whether examples like (33b), where we presumably see the determiner *wat* without an overt restrictor, are instances of NP-ellipsis, instead of a determiner followed by a null noun. However, there are at least two arguments against NP-ellipsis. When *wat* is a determiner, it can go with a human NP.

- (i) *Ik heb wat studenten gezien.*
 I have QUEx students seen
 ‘I have seen some students.’

This is not possible with bare *wat*. (ii) cannot mean that I saw some person(s). Only an inanimate interpretation is possible.

- (ii) *Ik heb wat gezien.*
 I have QUEx seen
 ‘I have seen something.’

Note that (iii) is fully grammatical, while when the NP *studenten* ‘students’ is missing the sentence is odd; compare (iii) and (iv).

- (iii) *Ik heb wel WAT studenten gezien maar niet VEEL.*
 I have VF QUEx students seen but not many
 ‘I have seen some students but not many.’
- (iv) *#Ik heb wel WAT gezien maar niet VEEL studenten.*
 I have VF QUEx seen but not many students
 ‘I did see something but not many students.’

Example (iv) is as odd as the English translation: *wat* can only refer to something inanimate, which means that no ellipsis of *studenten* has taken place.

So if (va) were the result of NP-ellipsis from (vb), as indicated, then we would expect (iv) to be as good as (iii) with NP-ellipsis.

- (v) a. **Ik heb wel WAT gelezen maar niet alle kranten.*
 I have VF QUEx read but not all newspapers
 ‘I have read something but not all newspapers.’

(110) $[[_{XP} wh_m \dots t_m \dots]_k \dots t_k \dots]$

Moreover, following Bennis (1995), *voor* in the *wat voor* construction is an interrogative complementizer. Putting everything together, one could conclude that *wat voor bloemen* ‘what kind of flowers’ and *wat voor water* ‘what kind of water’ in (108) and (109) are the qu of quex equivalent of the ex of quex in (93) and (94), with the element *voor* appearing for orthogonal reasons.

(111) $[[_{XP} wh_m voor \dots t_m \dots]_k \dots t_k \dots]$

One piece of evidence for this is that *wat voor bloemen* and *wat voor water* cannot be used as existential expressions.

(112) *Hij heeft wat voor bloemen geplukt.
 he has what for flowers picked
 Intended: ‘He picked some flowers.’

-
- b. Ik heb wel WAT (kranten) gelezen maar niet alle kranten.
 I have VF QUEX (newspapers) read but not all newspapers
 ‘I have read some newspapers but not all newspapers.’

Another reason to exclude the NP-ellipsis in (vb) as the source of (va) is that its meaning is not ‘I have read some but not all newspapers’, which it should be if ellipsis were involved. Instead, it is ‘I have read something but not all newspapers’.

When the determiner *wat* does not have an overt restrictor, then, we are dealing not with NP-ellipsis but with a null noun. The null noun could in principle just stand for ‘thing(s)’ (count) or ‘stuff’ (mass). Alternatively, it could get its content from the context.

- (vi) a. Heeft hij eten gekocht voor de lunch?
 has he food bought for the lunch
 ‘Has he bought food for lunch?’
 b. Nou, hij heeft wel WAT gekocht maar niet genoeg voor iedereen.
 well he has VF QUEX bought but not enough for everyone
 ‘Well, he did buy SOME things/food but not enough for everyone.’

This type of anaphora would not be required, though, even in the presence of an explicit possible antecedent. In (vii), the interpretation of the null noun could revert to something vague like ‘stuff’ or ‘things’, since interpreting it as ‘books’ would lead to a contradiction.

- (vii) a. Heeft hij de boeken langsgebracht?
 has he the books brought
 ‘Did he bring the books?’
 b. Nee, hij heeft wel WAT langsgebracht maar geen boeken.
 no he has VF QUEX brought but no books
 ‘No, he did bring SOME things/stuff but no books.’

Interestingly, contrastive focus on the possessor *mijn* ‘my’ in (viii) strengthens the possibility that the alleged null noun stands for ‘books’ (as opposed to no contrastive focus in the second clause, which forces the reading in which the null noun refers to ‘things’).

- (viii) a. Heeft hij jouw boeken langsgebracht?
 has he your books brought
 ‘Did he bring your books?’
 b. Nee, hij heeft wel WAT langsgebracht maar niet MIJN boeken.
 no he has VF QUEX brought but not my books
 ‘No, he did bring SOME books but not MY books.’

This can be explained by the fact that, if the alleged null noun were to be interpreted as ‘things/stuff’, then the contrastive focus on *mijn* ‘my’ would not be licensed—focus would instead fall on the entire DP *mijn boeken* ‘my books’, with stress on *boeken*.

- (113) *Hij heeft wat voor water gedronken.
 he has what for water drunk
 Intended: 'He drank some water.'

The *voor* item appears only in questions, arguably for orthogonal reasons, as we said.

If this rationale is correct, then we are not forced to conclude that when it is a determiner, *wat* is a pure existential rather than a quexistential: the determiner *wat* is indeed a quexistential, since it permits both ex of quex and qu of quex readings (albeit the latter with an added interrogative *voor* that must appear for language-specific purposes). This would mean that Dutch is indeed a counterexample to the QF biconditional, since under this scenario, it does have a quexistential that can be contrastively focused without becoming an interrogative.

To pronounce a verdict on the debate at this point, we must ask whether the above rebuttal (which aims to establish that determiner *wat* is a quexistential after all) is unassailable.

The answer is no. There are in fact a few weak points: there is an important semantic difference between the ex of quex and the *wat voor* construction that does not reduce to the difference between the ex of quex and the qu of quex readings. Namely, the only available readings of (108) and (109) are about *kinds* of flowers and *kinds* of water.

- (114) What kind of flowers did he pick?
 (115) What kind of water did he drink?

These questions do not ask the addressee to identify specific entities, unlike the following:

- (116) Which flowers did he pick?
 (117) Which water did he drink?

However, the ex of quex in general is not restricted to kind readings. So it would be difficult to maintain that *wat voor bloemen* and *wat voor water* are the qu of quex equivalents of the ex of quex phrases *wat bloemen* and *wat water*. Moreover, the qu of quex reading of the Russian quexistential *kakoj* when used as a determiner is not restricted to kind readings. That is, the kind reading is not a necessary consequence of interpreting a quexistential determiner interrogatively. Finally, the German *was für* construction behaves the same way as the Dutch *wat voor* construction with respect to the points just mentioned. So the *wat voor/was für* construction does not rely on the possibility of *wat/was* being a determiner, which it is in Dutch, but not in German.

So the previous hypothesis still stands: it is quite possible that Dutch *wat*, qua determiner, is not a quexistential. And, as we said, this conclusion brings out the possibility that when *wat* receives focal stress, it always does so as a nonquexistential determiner. This would mean that Dutch is not a counterexample to the crosslinguistic generalization that the ex of quex is incompatible with focal stress. The QF biconditional would still stand.

Under this scenario, Russian would show the regular pattern, as the determiner use of its quexistential does not force a kind reading and has the expected qu of quex reading. The nonfocusability of its quexistential determiners would then be par for the course. So are we ready to declare that Dutch is not a counterexample to the QF biconditional, since focused *wat* is a focused nonquexistential determiner and the biconditional holds sway only over quexistentials?

We would indeed like to adopt this hypothesis as the one that has the most support: Dutch is not a counterexample to the QF biconditional since focus on determiner *wat* is not focus on a quexistential.

Of course, challenges remain. We have shown that the conclusion that focused *wat* is not a quexistential but a nonquexistential determiner is fully compatible with the data. But we have not shown that focused *wat* is *never* a quexistential DP. Such a negative existential statement is very hard to prove, possibly like most negative existential statements.

Another remaining question pertains to the interaction of the nonquexistential determiner *wat* with Postma's (1994) observation that an ex of quex reading is possible in Dutch only in certain syntactic environments—specifically, only inside the VP. We have shown that focused *wat* is fine outside the VP, contra Postma's generalization (see footnote 39). However, if we are right that determiner *wat* is not a quexistential, one might expect that this determiner can appear outside the VP even without focus.

But this is not what we find. Unfocused determiner *wat* is not possible in subject position. For example:

- (118) **Wat* studenten zijn gekomen.
 _{QUEX} students are come
 'Some students have come.'

But inside the VP, it is fine, as we have already shown.

- (119) Ik heb *wat* studenten gezien.
 I have _{QUEX} students seen
 'I have seen some students.'

One could thus ask whether the inability of unfocused determiner *wat* to appear outside the VP might not be an argument in favor of the quexistential status of determiner *wat*, contra our earlier conclusion. The answer is no—*especially* if Postma is correct that the restriction to the VP is an indication that *wat* needs to be bound by existential closure, as in the work of Heim (1982) and Diesing (1992). Heim and Diesing argue that certain determiners lack quantificational force of their own, obtaining it by an existential quantifier that is inserted as a last resort operation on a syntactically defined domain, which, according to Diesing, is the VP.⁴⁴ In other words, being subject to existential closure is a characteristic not of quexistentials but of certain determiners that lack quantificational force of their own and are introduced into a sentence as variables. After all, the original proposals, like Heim's and Diesing's, were about nonquexistential determiners. In other words, if indeed determiner *wat* is introduced into the sentence as a variable and requires default existential closure, this does not mean that it is therefore a quexistential. Under the relevant assumptions, it would only mean that it lacks its own quantificational force.

⁴⁴ For Heim (1982), it is the IP but that is because she is not assuming VP-internal subjects. Semantically, both Heim and Diesing define the domain of existential closure as the nuclear scope of an operator.

Having said this, we are not asserting that Dutch *wat*, whether as a quexistential or a nonquexistential determiner, is in fact subject to existential closure. We remain at best agnostic about that in the current context. In Hengeveld, Iatridou, and Roelofsens 2019, we argue that even for the ex of quex, Postma's (1994) proposal for existential closure meets with difficulties, because *wat* cannot be caught by other quantificational elements in the sentence, the way indefinites can in Heim's and Diesing's work.

(120) Norwegians are usually/rarely blond \Leftrightarrow Most/Few Norwegians are blond

On the other hand, Dutch *wat*, with or without a nominal restriction, cannot be bound by adverbs of quantification.

- (121) a. *Jammer genoeg maakt wat mij vaak bang.
 unfortunately enough makes QUEx me often afraid
 'Unfortunately something often makes me afraid.'
 Intended: 'Many things make me afraid.'
- b. *Gelukkig maakt wat mij zelden bang.
 fortunately makes QUEx me seldom afraid
 'Fortunately something seldom makes me afraid.'
 Intended: 'Few things make me afraid.'

These sentences are fine on the intended meaning with bare plural *dingen* 'things'.

In this article, then, we do not take a position on the relationship of existential closure to Dutch *wat*. What we wanted to point out is that the fact that determiner *wat* is not acceptable in subject position does not mean that it should be considered a quexistential.

Note that when *wat* is preceded by certain degree modifiers, it is acceptable in subject position.

- (122) Heel wat / Nogal wat / Tamelijk wat studenten zijn gekomen.
 many QUEx / quite QUEx / fairly QUEx students are come
 'Many/Quite a few/A fair number of students have come.'

It is possible that these form complex determiners. We leave them for future research.

6 Conclusion

In this article, we explored the conditions under which quexistentials can or must be focused, depending on their interrogative or existential interpretation. We did not address the issue of how these two readings come about, nor what the nature of a quexistential must be so that it can yield these two interpretations in different environments.

Previous literature has suggested that quexistentials are always focused on their interrogative use, and never on their existential use. We argued that the first part of this generalization is correct and proposed that the obligatory focus of the qu of quex is a particular instance of a more general fact—namely, that interrogative words (quexistential or not) are always contrastively focused. We proposed an account of this more general fact, based on the idea that focus is used to signal not only external but also internal contrasts.

The second part of the generalization, which holds that the *ex of quex* is incompatible with focus, took us to Dutch, which appeared to violate it. We identified a number of environments where Dutch *wat* can receive focal stress without turning into an interrogative item. This could have meant that the second part of the QF generalization does not hold (i.e., it would not be a biconditional), but we proposed an analysis under which Dutch is not a counterexample after all. In short, while we explained only one part of the QF biconditional and did not explain the part that relates to the incompatibility of the *ex of quex* with focus, we removed one possible counterexample to it, leaving the biconditional open for explanatory accounts.

A natural next step in this investigation would be to look for and examine other languages where the *ex of quex* is compatible with prosodic prominence. We already noted that Korean appears to permit focus on the *ex of quex* (see footnotes 14 and 21) and therefore should be closely examined soon to determine whether it is indeed a counterexample, unlike Dutch. Further crosslinguistic investigation of the relation among quexistentials, prosodic prominence, and focus will doubtless play an important role in investigating the phenomenon of quexistentials at large.

References

- Aboh, Enoch. 2016. Information structure: A cartographic perspective. In *The Oxford handbook of information structure*, ed. by Caroline Féry and Shinichiro Ishihara, 147–164. Oxford: Oxford University Press.
- Aboh, Enoch, and Roland Pfau. 2011. What’s a *wh*-word got to do with it? In *Mapping the left periphery: The cartography of syntactic structures, vol. 5*, ed. by Paola Benincà and Nicola Munaro, 91–124. Oxford: Oxford University Press.
- Ahn, Byron. 2015. There’s nothing exceptional about the Phrasal Stress Rule. Ms., Boston University.
- AnderBois, Scott. 2012. Focus and un informativity in Yucatec Maya questions. *Natural Language Semantics* 20:349–390. <https://doi.org/10.1007/s11050-012-9084-3>.
- Beck, Sigrid. 1996. Quantified structures as barriers for LF movement. *Natural Language Semantics* 4: 1–56.
- Beck, Sigrid. 2006. Intervention effects follow from focus interpretation. *Natural Language Semantics* 14: 1–56.
- Bennis, Hans. 1995. The meaning of structure: The *wat voor* construction revisited. *Linguistics in the Netherlands* 12:25–36.
- Bhat, Darbhe Narayana Shankara. 2000. The indefinite-interrogative puzzle. *Linguistic Typology* 4:365–400.
- Boersma, Paul, and David Weenink. 2020. Praat: Doing phonetics by computer [computer program]. Version 6.1.36, retrieved 6 December 2020.
- Bruening, Benjamin. 2007. *Wh*-in-situ does not correlate with *wh*-indefinites or question particles. *Linguistic Inquiry* 38:139–166.
- Bruening, Benjamin, and Yaping Tsai. 2009. *Wh*-words as indefinites: Passamaquoddy-Maliseet versus Mi’kmaq. Handout presented at the Conference on Endangered Languages and Cultures of Native America (CELCNA).
- Büring, Daniel. 2016. *Intonation and meaning*. Oxford: Oxford University Press.
- Cable, Seth. 2010a. *The grammar of Q: Q-particles, wh-movement, and pied-piping*. Oxford: Oxford University Press.
- Cable, Seth. 2010b. Notes on the possible treatment of imperatives in inquisitive semantics. Ms., University of Massachusetts Amherst.
- Cheng, Lisa Lai-Shen. 1994. *Wh*-words as polarity items. *Chinese Languages and Linguistics* 2:615–640.

- Chierchia, Gennaro. 1998. Plurality of mass nouns and the notion of “semantic parameter.” In *Events and grammar*, ed. by Susan Rothstein, 53–103. Dordrecht: Kluwer.
- Chierchia, Gennaro, and Hsiu-Chen Daphne Liao. 2015. Where do Chinese *wh*-items fit? In *Epistemic indefinites: Exploring modality beyond the verbal domain*, ed. by Luis Alonso-Ovalle and Paula Menéndez-Benito, 47–62. Oxford: Oxford University Press.
- Ciardelli, Ivano, Jeroen Groenendijk, and Floris Roelofsen. 2018. *Inquisitive semantics*. Oxford: Oxford University Press.
- Ciardelli, Ivano, and Floris Roelofsen. 2017. Hurford’s constraint, the semantics of disjunctions, and the nature of alternatives. *Natural Language Semantics* 25:199–222. <https://doi.org/10.1007/s11050-017-9134-y>.
- Ciardelli, Ivano, Floris Roelofsen, and Nadine Theiler. 2017. Composing alternatives. *Linguistics and Philosophy* 40:1–36.
- Corver, Norbert, and Marjo van Koppen. 2011. NP-ellipsis with adjectival remnants: A micro-comparative perspective. *Natural Language and Linguistic Theory* 29:371–421.
- Diesing, Molly. 1992. *Indefinites*. Cambridge, MA: MIT Press.
- Eckardt, Regine. 2007. Inherent focus on *wh*-phrases. In *Proceedings of Sinn und Bedeutung 11*, ed. by Louise McNally and Estela Puig-Waldmüller, 209–228. <https://ojs.ub.uni-konstanz.de/sub/index.php/sub/issue/view/18>.
- É. Kiss, Katalin. 1992. Logical structure in syntactic structure: The case of Hungarian. In *Logical structure and linguistic structure*, ed. by C.-T. James Huang and Robert May, 111–147. Dordrecht: Kluwer.
- Geurts, Bart, and Rob van der Sandt. 2004. Interpreting focus. *Theoretical Linguistics* 30:1–44.
- Giannakidou, Anastasia. 2002. Licensing and sensitivity in polarity items: From downward entailment to nonveridicality. In *CLS 38: Papers from the 38th Annual Meeting of the Chicago Linguistic Society, Parasession on Polarity and Negation*, ed. by Maria Andronis, Anne Pycha, and Keiko Yoshimura, 1–21. Chicago: University of Chicago, Chicago Linguistic Society.
- Groenendijk, Jeroen, and Floris Roelofsen. 2009. Inquisitive semantics and pragmatics. Paper presented at the Workshop on Language, Communication, and Rational Agency. Stanford, CA. <https://projects.illc.uva.nl/inquisitivesemantics>.
- Groenendijk, Jeroen, and Martin Stokhof. 1984. Studies on the semantics of questions and the pragmatics of answers. Doctoral dissertation, University of Amsterdam.
- Haida, Andreas. 2007. The indefiniteness and focusing of *wh*-words. Doctoral dissertation, Humboldt University.
- Hamblin, Charles L. 1973. Questions in Montague English. *Foundations of Language* 10:41–53.
- Hanssen, Judith, Jörg Peters, and Carlos Gussenhoven. 2008. Prosodic effects of focus in Dutch declaratives. In *Proceedings of the 4th Conference on Speech Prosody*, ed. by Plinio Almeida Barbosa, Sandra Madureira, and Cesar Reis, 609–612. Campinas: Editora RG/CNPq.
- Haspelmath, Martin. 1997. *Indefinite pronouns*. Oxford: Oxford University Press.
- Heck, Fabian. 2009. On certain properties of pied-piping. *Linguistic Inquiry* 40:75–111.
- Heim, Irene. 1982. The semantics of definite and indefinite noun phrases. Doctoral dissertation, University of Massachusetts Amherst.
- Hengeveld, Kees, Sabine Iatridou, and Floris Roelofsen. 2019. Quexistentials: Polarity-sensitivity and topological restrictions. Ms., University of Amsterdam and MIT.
- Hogeweg, Lotte. 2009. The meaning and interpretation of the Dutch particle *wel*. *Journal of Pragmatics* 41:519–539.
- Höhle, Tilman. 1992. Über Verum-Fokus im Deutschen. In *Informationsstruktur und Grammatik*, ed. by Joachim Jacobs, 112–141. Wiesbaden: Springer Fachmedien.
- Huang, C.-T. James. 1982. Logical relations in Chinese and the theory of grammar. Doctoral dissertation, MIT.
- Huhmarniemi, Saara. 2012. Finnish A’-movement: Edges and islands. Doctoral dissertation, University of Helsinki.

- Ishihara, Shinichiro. 2003. Intonation and interface conditions. Doctoral dissertation, MIT.
- Izvorski, Roumyana. 1998. Non-indicative *wh*-complements of possessive and existential predicates. In *NELS 28: Proceedings of the 28th Annual Meeting of the North East Linguistic Society*, ed. by Pius N. Tamanji and Kiyomi Kusumoto, 159–173. Amherst: University of Massachusetts, Graduate Linguistics Students Association.
- Jun, Sun Ah. 1993. The phonetics and phonology of Korean prosody. Doctoral dissertation, Ohio State University.
- Karcevski, Serge. 1941. Introduction à l'étude de l'interjection. *Cahiers Ferdinand de Saussure* 1:57–75.
- Karttunen, Lauri. 1977. Syntax and semantics of questions. *Linguistics and Philosophy* 1:3–44. <https://doi.org/10.1007/bf00351935>.
- Kayne, Richard. 2005. A note on the syntax of quantity in English. In *Movement and silence*, 176–214. New York: Oxford University Press.
- Kim, Shin-Sook. 2002. Intervention effects are focus effects. In *Japanese/Korean Linguistics 10*, ed. by Noriko Akatsuka and Susan Strauss, 615–628. Stanford, CA: CSLI Publications.
- Kotek, Hadas. 2014. Composing questions. Doctoral dissertation, MIT.
- Kotek, Hadas. 2017. Intervention effects arise from scope-taking across alternatives. In *NELS 47: Proceedings of the 47th Annual Meeting of the North East Linguistic Society*, ed. by Andrew Lamont and Katerina Tetzloff, 153–166. Amherst: University of Massachusetts, Graduate Linguistics Students Association.
- Kotek, Hadas. 2019. *Composing questions*. Cambridge, MA: MIT Press.
- Kratzer, Angelika, and Elisabeth Selkirk. 2018. Deconstructing information structure. *Glossa* 5(1), 113.
- Krifka, Manfred. 1991. A compositional semantics for multiple focus constructions. In *Proceedings of SALT 1*, ed. by Steven K. Moore and Adam Zachary Wyner, 127–158. <https://journals.linguisticsociety.org/proceedings/index.php/SALT/issue/view/136>.
- Kuroda, S.-Y. 1965. Generative grammatical studies in the Japanese language. Doctoral dissertation, MIT.
- LeSourd, Philip S. 1993. *Accent and syllable structure in Passamaquoddy*. New York: Garland.
- Li, Haoze, and Jess H.-K. Law. 2016. Alternatives in different dimensions: A case study of focus intervention. *Linguistics and Philosophy* 39:201–245.
- Liao, Hsiu-Chen. 2011. Alternatives and exhaustification: Non-interrogative uses of Chinese *wh*-words. Doctoral dissertation, Harvard University.
- Lin, Jo-Wang. 1998. On existential polarity-*wh*-phrases in Chinese. *Journal of East Asian Linguistics* 7: 219–255.
- Lin, Jo-Wang. 2004. Choice functions and scope of existential polarity *wh*-phrases in Mandarin Chinese. *Linguistics and Philosophy* 27:451–491.
- Liu, Mingming, and Yanyan Cui. 2019. Situating Mandarin *wh*-indefinites in the typology of modal indefinites. *Journal of Foreign Languages* 42(3):26–37.
- Livitz, Inna. 2012. Modal possessive constructions: Evidence from Russian. *Lingua* 122:714–747.
- Mayr, Clemens. 2014. Intervention effects and additivity. *Journal of Semantics* 31:513–554.
- Mitchell, Lewis. 1976. *Mikic* [Turtle]. Indian Township, ME: Wabnaki Bilingual Education Program. Edited and updated version of text in J. D. Prince, *Passamaquoddy texts*. Volume X of the Publications of the American Ethnological Society (1921).
- Miyagawa, Shigeru. 1987. LF affix raising in Japanese. *Linguistic Inquiry* 18:362–367.
- Miyagawa, Shigeru. 2017. *Agreement beyond phi*. Cambridge, MA: MIT Press.
- Möller Kalpak, Hana. 2018. Inquisitive logical triviality and grammar. MSc thesis, University of Amsterdam.
- Newell, Irene. 1979. *Kehtaqs* [Ghost stories]. Indian Township, ME: Wabnaki Bilingual Education Program.
- Newell, Wayne. 1974. *Kukec* [Game warden]. Indian Township, ME: Wabnaki Bilingual Education Program.
- Panagiotidis, Phoevos. 2003. Empty nouns. *Natural Language and Linguistic Theory* 21:381–432.
- Park, Jeemin. 2019. Quexistentials in Korean and Yucatec Maya. Term paper, Department of Linguistics, University of Amsterdam.
- Pesetsky, David. 2000. *Phrasal movement and its kin*. Cambridge, MA: MIT Press.

- Postal, Paul. 1969. On so-called pronouns in English. In *Modern studies in English*, ed. by David Reibel and Sanford Schane, 201–224. Englewood Cliffs, NJ: Prentice-Hall.
- Postma, Gertjan. 1994. The indefinite reading of *wh*. *Linguistics in the Netherlands* 11:187–198.
- Richards, Norvin. 2010. *Uttering trees*. Cambridge, MA: MIT Press.
- Rizzi, Luigi. 1997. The fine structure of the left periphery. In *Elements of grammar*, ed. by Liliane Haegeman, 281–337. Dordrecht: Kluwer.
- Rooth, Mats. 1992. A theory of focus interpretation. *Natural Language Semantics* 1:75–116.
- Sassen, Albert. 1985. Ontkenning ontkend: Over uitroepende zinnen en zinnen met *wel* [Negation negated: About exclamative sentences and sentences with *wel*]. *Spektator* 14:363–368.
- Schwarzschild, Roger. 1993. The contrastiveness of associated foci. Ms., Hebrew University of Jerusalem.
- Schwarzschild, Roger. 1999. GIVENness, AvoidF and other constraints on the placement of accent. *Natural Language Semantics* 7:141–177.
- Šimík, Radek. 2011. Modal existential *wh*-constructions. Doctoral dissertation, University of Groningen.
- Tran, Thuan, and Benjamin Bruening. 2013. *Wh*-phrases as indefinites: A Vietnamese perspective. In *Linguistics of Vietnamese*, ed. by Daniel Hole and Elisabeth Löbel, 217–241. Berlin: Mouton de Gruyter.
- Truckenbrodt, Hubert. 2013. An analysis of prosodic F-effect in interrogatives: Prosody, syntax, and semantics. *Lingua* 124:131–175.
- Uegaki, Wataru. 2018. A unified semantics for the Japanese Q-particle ‘ka’ in indefinites, questions and disjunctions. *Glossa* 3(1), 14.
- Ultan, Russell. 1978. Some general characteristics of interrogative systems. *Universals of Human Language* 4:211–248.
- Wagner, Michael. 2006. Givenness and locality. In *Proceedings of SALT 16*, ed. by Masayuki Gibson and Jonathan Howell, 295–312. <https://journals.linguisticsociety.org/proceedings/index.php/SALT/issue/view/93>.
- Wold, Dag E. 1996. Long distance selective binding: The case of focus. In *Proceedings of SALT 6*, ed. by Teresa Galloway and Justin Spence, 311–328. <https://journals.linguisticsociety.org/proceedings/index.php/SALT/issue/view/103>.
- Yanovich, Igor. 2005. Choice-functional series of indefinite pronouns and Hamblin semantics. In *Proceedings of SALT 15*, ed. by Efthymia Georgala and Jonathan Howell, 309–326. <https://journals.linguisticsociety.org/proceedings/index.php/SALT/issue/view/94>.
- Yun, Jiwon. 2019. Meaning and prosody of *wh*-indefinites in Korean. *Linguistic Inquiry* 50:630–647.
- Zwarts, Frans. 1995. Nonveridical contexts. *Linguistic Analysis* 25:286–312.

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