

PLURALITY AS THE MARKER OF EXHAUSTIVITY IN TURKISH WH-QUESTIONS

Emrah GÖRGÜLÜ*

Abstract: *This paper is concerned with exhaustivity in Turkish wh-questions. The question addressed is in what ways the exhaustivity reading is achieved. It is shown that the presence of the plural marker –LAr on the wh-word gives rise to the exhaustive reading. The plural marker acts as the exhaustivity marker since it evokes an exhaustivity requirement. Therefore, it is analysed as the presuppositional exhaustivity marker since it is presupposed in the question that there is an exhaustive list of answers. The findings of this study are compatible with those analyses where wh-questions are considered to be not inherently exhaustive.*

Keywords: *exhaustivity; plural marking; wh-questions; presupposition; Turkish.*

Türkçe Kim-Ne Sorularında Kapsamlılık Belirticisi Olarak Çoğulluk

Öz: *Bu makale, Türkçedeki kim-ne sorularında kapsamlılık ile ilgilidir. Cevap aranan soru kapsamlı okumanın dilde hangi yollarla sağlandığıdır. Bu soruya cevap olarak, kim-ne sorularında kapsamlı okumaya yol açan öğenin kim-ne sözcüklerindeki çoğul belirticisi –LAr olduğu ortaya koyulmaktadır. Kim-ne sözcüklerine eklenen çoğul belirticisinin cevapta bir kapsamlılık gereksinimi yarattığı için kapsamlılık belirticisi görevi üstlendiği gösterilmektedir. Bu nedenle, kim-ne sorusunda cevapta verilecek kapsamlı bir cevap listesi olduğu öngörüldüğünden, çoğul belirticisi önsayıtlı bir kapsamlılık belirticisi olarak incelenmektedir. Bu çalışmanın bulguları, kim-ne sorularının doğaları gereği kapsamlı olmadığını savunan çalışmalarla uyum göstermektedir.*

Anahtar Kelimeler: *Kapsamlılık; çoğulluk; kim-ne soruları; önsayıtlı; Türkçe.*

1. Introduction

It is well-attested in previous work that a wh-question has an exhaustive reading if the answer lists or exhausts the set of all the relevant answers satisfying the predicate in a given situation (Zimmermann 2007; Xiang 2016; Fekete et al. 2018). This is exemplified in (1).

(1) Q: Who is eating an apple?

A: Ahmet, Mehmet and Ayşe (are eating an apple).

A': #Ahmet (is eating an apple).

What is important in (1) is that in a situation where Ahmet, Mehmet and Ayşe are eating an apple, the answer to the question in (1) needs to be the one in (1A) where all the relevant answers are provided. On the other hand, the answer in (1A') is not felicitous, albeit not ungrammatical, since it provides only a partial list and does not satisfy the background predicate in question (i.e. eating).

Although exhaustivity is considered to be a universal property of wh-questions and the rules for their interpretation seem to be constant across languages (Schulz 2015), languages still employ various strategies to overtly mark exhaustivity. For instance, the presence of the q(uestion)-particle in languages like Japanese will have an effect on the

* Doç. Dr. İstanbul Sabahattin Zaim Üniversitesi, Eğitim Fakültesi, İngilizce Öğretmenliği, İstanbul / TÜRKİYE. E-posta: emrah.gorgulu@izu.edu.tr, ORCID ID: 0000-0003-0879-1049

interpretation of wh-questions (Miyagawa 2001, in preparation). This is illustrated in (2) and (3) below.¹

- (2) Anata-wa pikunikku-ni nani-o metekkuru *no*?
 you-TOP picnic-to what-ACC bring Q
 ‘What will you bring to the picnic?’

- (3) Anata-wa pikunikku-ni nani-o metekkuru?
 you-TOP picnic-to what-ACC bring
 ‘What will you bring to the picnic?’

Miyagawa (in preparation) argues that the presence of the q-particle in (2) indicates that the speaker is expecting an answer that would exhaustively list the items that the hearer will bring to the picnic (e.g. chicken pie, ice-cream and salad). On the other hand, the omission of the q-particle in (3) indicates that the speaker is not necessarily expecting an exhaustive answer. A partial list would satisfy as an answer (e.g. chicken pie), even though it does not necessarily exclude an exhaustive answer. Nor that Japanese is not the only language that marks exhaustivity in wh-questions. German (Indo-European), Hausa (Afro-Asiatic) and Mandarin (Chinese) are three typologically different languages in which one can find an exhaustivity marker in wh-questions; as illustrated by the examples below, taken from Zimmermann (2007), Hartmann and Zimmermann (2007), Dong (2008) and Xiang (2016).

German

- (4) a. Wer hat bei SuB11 vorgetragen
 who has at SuB11 presented
 ‘Who presented at SuB11?’
 b. Wer hat *alles* bei SuB11 vorgetragen
 who has all at SuB11 presented
 ‘Who all presented at SuB11?’

Hausa

- (5) a. Wàanee ya zoo?
 who 3SG.M.PERF.REL come
 ‘Who came?’
 b. Wàanee-*nee* ya zoo?
 who-EXH 3SG.M.PERF.REL come
 ‘Who all came?’

Mandarin

- (6) a. Shui keyi jiao yuyanxue jichu?

¹ The abbreviations in the glosses are as follows: 2 = second person; 3 = third person; ABL = ablative case; ACC = accusative case; DAT = dative case; EXH = exhaustivity marker; FNOM = factive nominal marker; FUT = future tense; LOC = locative marker; M = masculine; PAST = past tense; PERF = perfect tense; PL = plural; POSS = possessive marker; PROG = progressive marker; Q = question particle; REL = relative clause; REL.CL = relative clitic; SG = singular; TOP = topic marker

who can teach linguistics introduction
 ‘Who can teach introduction to linguistics?’

b. *Dou shui keyi jiao yuyanxue jichu?*
 all who can teach linguistics introduction
 ‘Who all can teach introduction to linguistics?’

The wh-questions in (4-6a) are ordinary wh-questions where exhaustivity are not overtly marked. In that sense, these questions may or may not be interpreted exhaustively. On the other hand, the presence of the so called quantifying question particle *alles* ‘all’ in German, as in (4b), the exhaustive marker *-nèe* in Hausa, as in (5b), and the pre-exhaustification marker *dou* in Mandarin, as in (6b), yields the exhaustive reading in that the answers to these questions need to provide a complete list of individuals. Any other answer that is not exhaustive will not be felicitous as a response to these questions. In the next section, a number of analyses proposed to account for exhaustivity in wh-questions across languages will be reviewed.

1.1 Literature review

It has been known since at least Hamblin’s seminal work (1958, 1973) that knowing the meaning of a question is analogous to knowing what constitutes as an answer. The question that then is how one would be able to derive an exhaustive answer or a non-exhaustive answer as a response to a wh-question. When we consider earlier work on this issue, we observe that there are various analyses that have attempted to account for the exhaustive and non-exhaustive reading in wh-questions. Some of these studies have entertained the idea that the primary distinction lies in the semantics of wh-questions (Reich 1997). On the other hand, others have proposed the idea that the difference is in fact pragmatically motivated. (van Rooy 2003, 2004).

Semantic accounts center around the question whether exhaustivity is part of the inherent meaning of wh-questions (Reich 1997; Beck and Rullmann 1999; Schulz and Roeper 2011; Nelken and Shan 2004). The assumption in this line of work is that wh-questions are ambiguous between the exhaustive and non-exhaustive reading because they are assigned different interpretations based on different underlying representations they are associated with. This accounts for the reason why different languages may refer to strategies to overtly mark exhaustivity.

On the other hand, pragmatic analyses have entertained the idea that wh-questions are in fact underspecified in terms of exhaustivity (Schulz and van Rooy 2006; Zimmermann 2007, 2010; Hartmann and Zimmermann 2007). More specifically, these studies put forward the idea that the inherent meaning of wh-questions does not in fact specify one particular reading as default. It is therefore pragmatic clues that are in play such as the context, the world knowledge or the presence of overt exhaustivity markers that give rise to the exhaustive reading in wh-questions.

It should also be noted that the status of exhaustivity markers such as *alles* ‘all’ in German, *nèe* in Hausa and *dou* in Mandarin is still unsettled. These elements were analysed as evoking some kind of a conventional implicature. Zimmermann (2007) argues that *alles* in German has a presuppositional characteristic. Others such as (Beck and Rullmann 1999) maintain the idea that these markers in fact have their own semantics as they operate on the denotation of questions and return an exhaustive meaning.

To recap, there have been a number of semantic and pragmatic analyses in previous work that have been proposed to account for the issues regarding exhaustivity. However, when we consider previous work, we observe that there seems to be no formal analysis concerning exhaustivity in Turkish *wh*-questions. Therefore, a thorough investigation of the phenomenon seems to be warranted. In other words, it is not a trivial question to ask whether or not it is possible to mark exhaustivity in *wh*-questions in the language.

1.2 Research questions

Based on the issues raised in section 1.1, the main objective of the current work is to address the following research questions:

1. Is it possible to mark exhaustivity in *wh*-questions in Turkish?
2. If this is the case, how do we account for its formal characteristics?

2 Exhaustivity in Turkish *wh*-questions

As noted in the previous sections, exhaustivity is not a phenomenon that is thoroughly investigated in Turkish. Thus the question that remains is how it is achieved, if it is achieved at all? It should be noted at this point, however, that not all languages seem to employ one of the strategies discussed in section 1 to mark exhaustivity in *wh*-questions. For instance, there is no question particle in *wh*-questions in Turkish although there is one in *yes/no* questions, as shown in (7) and (8).²

(7) Ahmet kim-i gör-dü?
 Ahmet who-ACC see-PAST
 ‘Who did Ahmet see?’

(8) Ahmet Mehmet-i gör-dü mü?
 Ahmet Mehmet-ACC see-PAST Q
 ‘Did Ahmet see Mehmet?’

Turkish and Japanese are similar in the sense that they are both head-final languages and have the same word order. However, the absence of the *q*-particle in Turkish *wh*-questions would indicate that exhaustivity must be marked, if it is marked at all, in a way that is different from Japanese. Note also that in Turkish there is no quantifying *q*-particle that appears in *wh*-questions, as in German, or a dedicated exhaustivity marker, as in Hausa, or a universal quantifier-type element that marks exhaustivity, as in Mandarin.

In the absence of the elements that mark exhaustivity in other languages, it is possible to pluralize *wh*-phrases themselves in Turkish without giving rise to ungrammaticality. This is not a trivial observation since it appears that *wh*-questions with plural-marked *wh*-phrases seem to have the exhaustive reading in the language. More specifically, the

² The only way the *q*-particle appears in Turkish *wh*-questions is when the question is an echo question, as exemplified by the exchange between A and B below

(i) A: Ahmet kim-i gör-dü?
 Ahmet who-ACC see-PAST
 ‘Who did Ahmet see?’
 B: Ahmet kimi mi gör-dü?
 Ahmet who-ACC Q see-PAST
 ‘Ahmet saw WHO?’

presence of the plural marker on the wh-phrase itself changes the meaning of the wh-question in terms of exhaustivity. Consider the contrast between (9) and (10) below.

- (9) a. *Pikniğ-e ne getir-ecek-sin?*
picnic-DAT what bring-FUT-2SG
'What are you going to bring to the picnic?'
- b. *Pikniğ-e kim gel-iyor?*
picnic-DAT who come-PROG
'Who is coming to the picnic?'
- (10) a. *Pikniğ-e ne-ler getir-ecek-sin?*
picnic-DAT what-PL bring-FUT-2SG
'What are you going to bring to the picnic?'
- b. *Pikniğ-e kim-ler gel-iyor?*
picnic-DAT who-PL come-PROG
'Who is coming to the picnic?'

What is important in (9a) and (9b) is that a single answer or a partial list will satisfy as an answer even though these questions do not necessarily exclude providing an exhaustive answer. On the other hand, the addition of the plural marker to the wh-phrases in (10a) and (10b) indicates that a single answer or a partial list will not be pragmatically felicitous. In other words, a complete list of answers need to be provided in these cases.³

Note that this is also true in partitive constructions where the wh-phrase *hangi* 'which' is specified for number, as in (11) and (12).

- (11) A: *Öğrenci-ler-den hangi-si sınıf-ta kal-dı?*
student-PL-ABL which-3SG class-LOC fail-PAST
'Which of the students failed the class?'
- B: Ahmet.
'Ahmet.'
- (12) A: *Öğrenci-ler-den hangi-ler-i sınıf-ta kal-dı?*
student-PL-ABL which-PL-3PL class-LOC fail-PAST
'Which students failed the class?'
- B: #Ahmet.
Ahmet
- B': Ahmet, Mehmet, Ayşe ve Ali.
Ahmet Mehmet Ayşe and Ali

In (11), there is no plural marking on the wh-phrase itself and a single (i.e. non-exhaustive) answer is felicitous. On the other hand, the wh-phrase in (12) is plural-marked and here an exhaustive answer is required.⁴

³ The plural marker –lAr can only be used in questions with 'kim' *who*, 'ne' *what* and 'nereye' *where*, but not in questions with 'nasıl' *how* and 'niçin/neden' *why*. This distinction appears to be related to the general argument-adjunct asymmetry observed across languages (see Dong 2009).

⁴ # marks an infelicitous answer.

One last environment in which plural-marked wh-phrases encode exhaustivity in indirect questions. Consider (13) and (14).

- (13) Ahmet *kim-in* gel-diğ-i-ni bil-iyor.
 Ahmet who-GEN come-FNOM-3SG-ACC know-PROG
 ‘Ahmet knows who came.’
- (14) Ahmet *kim-ler-in* gel-diğ-i-ni bil-iyor.
 Ahmet who-PL-GEN come-FNOM-3SG-ACC know-PROG
 ‘Ahmet knows who came.’

As the grammaticality of (14) shows, plural marked wh-phrases can appear in indirect questions. This indicates that this is not only a matrix or root question phenomenon in the language. The indirect question in (13) can be followed by both an exhaustive and non-exhaustive answers (e.g. Ahmet or Ahmet and Mehmet). However, this is not the case for (14) where only an exhaustive answer is possible (e.g. Ahmet, Mehmet, ...).

Recall that *-lar* is the marker of plurality in the language; however, its function seems to be different in wh-questions. Therefore, I propose that exhaustivity is achieved by way of plural marking in Turkish wh-questions. The crucial difference between regular wh-phrases and plural-marked wh-phrases then is that the latter yields the exhaustive reading. In the next section, I will propose a novel account of exhaustivity in wh-questions.

3 A new analysis

3.1 *-lar* as the marker of exhaustivity

Based on the discussion and findings in the previous section, I argue that wh-questions in Turkish are underspecified for exhaustivity. This specification is achieved by way of overt plural marking. Consider the pair in (15) and (16).

- (15) Orada *kim-i* gör-dü-n?
 there who-ACC see-PAST-2SG
 ‘Who did you see there?’
- (16) Orada *kim-ler-i* gör-dü-n?
 there who-PL-ACC go-PAST-2SG
 ‘Who did you see there?’

The bare wh-question without plural marking in (15) has a meaning that has an underspecified meaning in terms of its semantics. The wh-phrase ‘*kimi*’ *who-ACC* is unmarked for number and exhaustivity. On the other hand, the wh-question in (16) is different in that the wh-phrase is overtly marked for plurality. Its semantics differs from the previous one since it is seeking an exhaustive answer. Therefore, the plural marker that is attached to wh-phrases is functioning as the marker of exhaustivity as well as plurality. More specifically, it functions as a presuppositional exhaustivity marker in that the questioner presupposes or assumes that there is an exhaustive list of answers to the wh-question and that the hearer is able to provide the answer. This can be formally represented as in (17).

- (17) a. [[*kim-ler*]] = for which X, x an exhaustive group of people, is it true that...?
 who-PL
- b. [[*ne-ler*]] = for which X, x an exhaustive group of things, is it true that...?
 what-PL

I argue here that the wh-questions in (17a) and (17b) as well as their corresponding answer are specified for exhaustivity in the sense of Hamblin (1973). More specifically, the meaning of the question itself is considered to be a set of answers in this model. Therefore, the answer to the plural-marked wh-phrase needs to contain an exhaustive set. This idea could be better illustrated by a question-answer pair, as exemplified in (18).

- (18) A: Bölüm-de *kim-ler* sözdizimi ders-i ver-iyor?
 department-LOC who-PL syntax class-3SG give-PROG
 ‘Who is teaching syntax in the department?’
 B: #Ahmet.
 ‘Ahmet.’
 B’: Ahmet, Mehmet ve Ayşe.
 Ahmet Mehmet and Ayşe
 ‘Ahmet, Mehmet and Ayşe.’

Basically, a plural-marked wh-phrase in a wh-question comes with two requirements. First, the answer needs to be non-atomic, namely no single/singleton answer is expected. Second, the answer has to be exhaustive in the sense that all the relevant answers need to be provided. By asking the question in (18A), the questioner presupposes that the answer will be non-atomic as well as exhaustive. Thus a single answer as in (18B) will not be felicitous. On the other hand, the answer in (18B’) meets both requirements since it is felicitous and exhaustive. Therefore, it is reasonable to argue that the semantics of plural marking is equivalent to that of exhaustive markers in other languages like German and Chinese. One significant distinction is that while exhaustive markers in those languages are generally free morphemes such as ‘alles’ in German and ‘dou’ in Mandarin, it is morphologically different in Turkish in that it is a bound morpheme that needs to be attached to the wh-phrase.

Following Zimmermann (2007), I argue that the plurality and exhaustivity effects that arise as a result of the presence of plural marking are presuppositional. In other words, the plural marker on the wh-phrase guarantees that the question receives the exhaustive reading thereby satisfying the questioner’s objective. This can be evidenced by the fact that the exhaustivity requirement on the answer can be cancelled by such elements as ‘sadece’ *only*, ‘yalnız’ *only* and ‘tek başına’ *alone* as in (19B) and (19B’) without giving rise to the answer being infelicitous.

- (19) A: Bölüm-de *kim-ler* sözdizimi ders-i ver-iyor?
 department-LOC who-PL syntax class-3SG give-PROG
 ‘Who is teaching syntax in the department?’
 B: Sadece/Yalnız Ahmet.
 only Ahmet
 ‘Only Ahmet.’
 B’: Ahmet tek baş-in-a ver-iyor.
 Ahmet single head-3SG-DAT give-PROG
 ‘Ahmet is teaching (it) alone.’

It should be noted that there is another piece of evidence that wh-questions with pluralized wh-phrases are exhaustive. It appears that embedded wh-questions that include plural-marked wh-phrases do not easily occur along with non-exhaustive matrix verbs in Turkish. This is exemplified in (20).

(20) Ali [parti-de kim-ler-le konuş-tuğ-un-a dair] (??eksik) bir liste yap-tı.

Ali party-LOC who-PL-with talk-FNOM-3SG-DAT about incomplete one list make-PAST

‘Ahmet made an incomplete list of who he talked to at the party.’

It should be also noted that wh-questions are not the only environment that plural marking gives rise to exhaustivity in the language. This is also observed in associative plural constructions, as illustrated in (21) and (22).

(21) *Ahmet-ler* biz-i ziyaret et-ti.

Ahmet-PL we-ACC visit do-PAST

‘Ahmet and his family / associates visited us.’

(22) *Teyze-m-ler* çık-tı.

aunt-POSS-PL leave-PAST

‘My aunt and her family / associates left.’

The examples in (21) and (22) show that plural marking in associative constructions give rise to an exhaustive group reading that includes a focal referent and his/her associates or friends, depending on the context. In the next sub-section, I will discuss exhaustivity in multiple wh-questions in the language.

3.2 Exhaustivity in multiple wh-questions

It is well-attested in previous work that not all languages allow multiple wh-questions. Whereas it is possible to form multiple wh-questions in language like English, German and Russian, this is not the case in Italian and Irish (Dayal 2005). In those languages where it is possible to ask multiple wh-questions, two readings were shown to be possible. These are pair list (PL) reading and single pair (SP) reading (Hagstrom 1998; Krifka 2001; Bošković 2003, among others). However, this is also subject to cross-linguistic variation since some languages such as Japanese and Serbo-Croatian allow both the PL and SP readings while others like English, Bulgarian, German and Russian only allow a PL reading (Bošković 2003). For instance, multiple wh-questions in languages like English presuppose that there is more than one answer and a SP answer is not felicitous. This is exemplified in the sentence below.

(23) A: Who bought what?

B: #Joan bought a house.

B’: Joan bought a house, Mike bought a car and Kate bought a bike.

In a situation where Joan, Mike and Kate each bought something, the question in (23A) needs an exhaustive PL answer as in (23B’). The question that arises is whether multiple wh-questions are possible in Turkish. If that is the case, what readings are allowed in the language? Consider the example in (24).

(24) A: *Kim ne-yi* ye-di?

who what-ACC eat-PAST

‘Who ate what?’

B: #Ahmet elma-yı ye-di.

Ahmet apple-ACC eat-PAST

‘Ahmet ate the apple.’

B’: Ahmet elma-yı, Mehmet armut-u, Ayşe de eriğ-i ye-di.

Ahmet apple-ACC Mehmet pear-ACC Ayşe also plum-ACC eat-PAST
 'Ahmet ate the apple, Mehmet ate the pear and Ayşe ate the plum.'

The grammaticality of the question in (24A) indicates that multiple wh-questions are possible in Turkish. The infelicity of the answer (24B) shows that the SP readings are ruled out. The answer in (24B'), on the other hand, illustrates that an exhaustive PL answer is definitely required in multiple wh-questions. This raises the question whether it is possible to have plural-marked wh-phrases in multiple wh-questions, given that regular multiple wh-questions already require exhaustive pair list answers. Consider (25).

(25) A: *Kim-ler ne-ler-i ye-di?*
 who-PL what-PL-ACC eat-PAST
 'Who ate what?'

B: #Ahmet elma-yı ye-di.
 Ahmet apple-ACC eat-PAST
 'Ahmet ate the apple.'

B': Ahmet elma-yı, Mehmet armut-u, Ayşe de eriğ-i ye-di.
 Ahmet apple-ACC Mehmet pear-ACC Ayşe also plum-ACC eat-PAST
 'Ahmet ate the apple, Mehmet ate the pear and Ayşe ate the plum.'

B'': Ahmet ve Mehmet elma-yı ve şeker-i, Ayşe ve Meryem de
 armut-u
 Ahmet and Mehmet apple-ACC and candy-ACC Ayşe and Meryem also
 pear-ACC
 ve kurabiye-yi ye-di.
 and cookie-ACC eat-PAST
 'Ahmet and Mehmet ate the apple and the candy, Ayşe and Meryem ate the
 pear and
 the cookie.'

As can be observed from the question in (25A), it is possible to ask a multiple wh-question that includes the exhaustivity marker. However, it is not possible to have a single pair answer, as the infelicity of the answer in (25B) indicates. As expected, only exhaustive pair list answers are possible as in (25B') and (25B''). In that sense, there is not much difference in terms of the answer type between multiple wh-questions with and without exhaustivity in the language.

To recap, it was proposed in this section that the exhaustive reading in wh-questions is achieved by way of an exhaustive marker that also functions as the plural marker in Turkish. In that sense, it argues against those analyses that maintain the idea that wh-questions are inherently exhaustive (Groenendijk and Stokhof 1982, 1984). It was shown that there are certain particles such as 'alles' *all* in German (Reis 1992, Zimmermann 2007), '-nèe' in Hausa and 'allemaal' *all* in Dutch (Beck and Rullmann 1999) that function specifically as exhaustive markers. In that sense, the current work is in agreement with the analyses that entertain the idea that wh-questions are not inherently exhaustive (Beck and Rullmann 1999; Zimmermann 2007, among others). In the absence of these dedicated particles in other languages, Turkish was shown to employ plural marking as the marker of exhaustivity that is an element with multiple functions in the language.

4 Conclusion

In this paper, I investigated the phenomenon known as exhaustivity in Turkish wh-questions. I showed that in the absence of a q-particle and any other specific marker in the language, exhaustivity is achieved by way of plural marking attached on wh-phrases themselves. Thus the plural marker itself was analyzed as the exhaustivity marker in Turkish. The fact that plural marking is functioning as exhaustivity marker is not surprising since it carries multiple functions such as additive (regular) plural marker and associative plural marker in the language. It was also shown that there is not a noticeable difference in terms of exhaustivity in multiple wh-questions as they are exhaustive in nature. Further work will surely shed more light on the phenomenon and the ways it is marked in Turkish and other languages.

References

- Beck, S. and Rullmann, H. (1999). A flexible approach to exhaustivity in questions. *Natural Language Semantics*, 7, 249-298. DOI: <https://doi.org/10.1023/A:1008373224343>.
- Bošković, Z. (2003). On the interpretation of multiple questions. *Linguistic Variation Yearbook*, 1, 1-15. DOI: <https://doi.org/10.1075/livy.1.03bos>.
- Caponigro, I., Pearl, L., Books, N., and Barner, D. (2012). Acquiring the meaning of free relative clauses and plural definite descriptions. *Journal of Semantics*, 29, 261-293.
- Dong, H. (2008). 'Dou' in wh-questions. *Manuscript*. Cornell University.
- Dong, H. (2009). *Issues in the semantics of Mandarin questions*. (Doctoral dissertation). Columbia University.
- Fekete, I., Pearl, L., Brooks, N. and Barner, D. (2012). Exhaustivity in single bare wh-questions: a differential analysis. *Glossa: a journal of general linguistics*, 3(1), 1-32. DOI: <https://doi.org/10.5334/gigl.549>.
- Groenendijk, J. and Stokhof, M. (1982). Semantic analysis of wh-complements. *Linguistics and Philosophy*, 5, 175-233. Access: <http://www.jstor.org/stable/25001092>.
- Groenendijk, J. and Stokhof, M. (1984). *Studies on the semantics of questions and the pragmatics of answers*. (Doctoral dissertation). University of Amsterdam.
- Hagstrom, P. A. (1998). *Decomposing questions*. (Doctoral dissertation). MIT.
- Hamblin, C. L. (1958). Questions. *The Australasian Journal of Philosophy*, 36, 159-168. DOI: <https://doi.org/10.1080/00048405885200211>.
- Hamblin, C. L. (1973). Questions in Montague English. *Foundations of Language*, 10, 41-53. DOI: <http://www.jstor.org/stable/25000703>.
- Hartmann, K. and Zimmermann, M. (2007). Exhaustivity marking in Hausa: A reanalysis of the particle *nee/cee*. E. Aboh, K. Hartmann and M. Zimmermann (Ed.), *Focus strategies in Niger-Congo and Afro-Asiatic: On the interaction of focus and grammar in some African Languages* in (pp. 241-263.). De Gruyter.
- Krifka, M. (2001) For a structured meaning account of questions and answers. C. Fery and W. Sternfeld (Ed.), *Audiatur vox sapientia: A Festschrift for Arnim von Stechow* in (pp. 284-319.). Berlin: Akademie Verlag.
- Miyagawa, S. (2001). The EPP, scrambling and wh-in-situ. M. Kenstowicz (Ed.), *Ken Hale: A life in language* in (pp. 293-338.). Cambridge, MA: MIT Press.
- Miyagawa, S. (in preparation). *Syntax in the treetops*. Manuscript. MIT.
- Reich, I. (1997). Wer will wann wieviel lesen? Eine Untersuchung verschiedener Frage-Antwort-Bedingungen im Deutschen. In *Arbeitspapiere des SFB 340: Sprachtheoretische Grundlagen für die Computerlinguistik* 89. Stuttgart. u.a.
- Reis, M. (1992). The category of invariant alles in wh-clauses: on syntactic categories vs. quantifying particles in German. In R. Tracy (Ed.), *Who Climbs the Grammar Tree?* (pp. 465-492.). Tübingen: Niemeyer Verlag.
- Van Rooy, R. (2003). Questioning to resolve decision problems. *Linguistics and Philosophy*, 26, 727-763. DOI: <https://doi.org/10.1023/B:LING0000004548.98658.8f>.
- Van Rooy, R. (2004). Utility of mention-some questions. *Research on Language Computation*, 2, 401-416. DOI: <https://doi.org/10.1007/s1168-004-1975-0>.

- Schulz, P. (2015). Comprehension of exhaustive wh-questions. In S. Armon-Lotem, J. de Jongand, N. Meir (Ed.), *Methods for assessing multilingual children: disentangling bilingualism from language impairment* (pp. 76-94). Multilingual Matters.
- Schulz, P. and Roeper, T. (2011). Acquisition of exhaustivity in wh-questions: A semantic dimension of SLI?, *Lingua*, 121, 383-407. DOI: <https://doi.org/10.1016/j.lingua.2010.10.005>.
- Schulz, K. and van Rooy, R. (2006). Pragmatic meaning and non-monotonic reasoning: The case of exhaustive interpretation. *Linguistics and Philosophy*, 29(2), 205-250. DOI: <https://doi.org/10.1007/s10988-005-3760-4>.
- Shan, N. and Shan. C. (2004). A logic of interrogation should be internalized in a modal logic for knowledge. In K. Watanabe and R. Young (Ed.), *Proceedings of the Fourteenth Semantics and Linguistic Theory. Vol. 14.* (pp. 197-211.). Ithaca. New York: Cornell University Press.
- Xiang, Y. (2016). *Interpreting questions with non-exhaustive answers.* (Doctoral dissertation). Harvard University.
- Zimmermann. M. (2007). Quantifying question particles in German: syntactic effects on interpretations. In E. Puig-Waldmüller (Ed.), *Proceedings of Sinn und Bedeutung 11.* (pp. 627-641.). Barcelona: University of Pampau Fabra.

