

# **Inquisitive Semantics**

## **a cross-linguistic study**

Sterre Leufkens, 0416754  
Sterre.leufkens@student.uva.nl  
Tutorial Inquisitive Semantics  
Teacher: prof. dr. J.A.G. Groenendijk  
February – August 2009

## Table of Contents

1	Introduction .....	3
2	Inquisitive semantics .....	5
3	Method .....	6
4	Results .....	6
	Disjunction .....	6
	Indefinites.....	10
	Ignorative verbs.....	11
5	Conclusion.....	12
6	References .....	13

# 1 Introduction<sup>1</sup>

A syntactic category that one finds in virtually every language is that of the declaratives, in which information is stated. Sentence 1 is such a declarative.

- 1 Manfred and Ursula fell of the stairs.

Another syntactic category is called interrogatives, or informally: questions. These can be split up in the categories of polar (example 2) and content (3) interrogatives.

- 2 Did Manfred fall of the stairs?
- 3 Who fell of the stairs?

In polar interrogatives, the question is whether the information is true or false. In content interrogatives, the hearer is required to fill in certain missing information.

Apart from syntactic categories, semantic categories are also discerned. Some sentences are said to have assertive meaning, that is, the information in it is stated to be true. Other sentences have inquisitive meaning, which means that information is requested.

It is often thought that declaratives have assertive meaning and interrogatives have inquisitive meaning. The syntactic (formal) categories thus map onto semantic categories in a straightforward way. But is there really such a one-to-one relationship? In natural language we find examples that break this rule. Take a look at 4 and 5.

- 4 Manfred or Ursula fell of the stairs.
- 5 Somebody fell of the stairs.

Both sentences are declarative in form. But are they assertive? If that would be so, information would be stated and assumed to be true. But in these sentences, clearly some information is missing. The sentences are in that sense more like the interrogatives in 2 and 3.

---

<sup>1</sup> I am grateful to Paul Boersma and Cecilia Odé for helping me in the field of prosody. Floris Roelofsen helped me with the technical aspects of recording and putting information online.

The resemblance is even more apparent when we look at possible replies to 4 and 5. These replies are given in 6 and 7.

- 6        Manfred fell of the stairs.
- 7        Manfred.

These replies constitute compliant reactions to the declaratives as well as to interrogatives. The main point in the reactions seems to be the filling in of missing information. The main point of both the declaratives and the interrogatives then, is that some information is missing and that the hearer is asked to fill in that information. Despite the formal differences, both types of sentences have *inquisitive* meaning, they question something.

The one-to-one relationship that is often assumed between declaratives and assertiveness and between interrogatives and inquisitiveness does not hold. A new mapping of these concepts has to be construed, to account for inquisitiveness in declarative sentences.

Recently, Groenendijk and others have started to study inquisitiveness in language. They are designing so called ‘inquisitive semantics’: a formal language where the one-to-one relationship explained above is not assumed. A recent paper in this area is Groenendijk & Hengeveld (2008). In this paper, the consequences of inquisitive semantics for linguistic research are studied.

The writers claim that inquisitiveness in natural language can cross-linguistically be found in ignorative elements, i.e. linguistic elements that have in their meaning an aspect of uncertainty or not-knowing. Examples of ignoratives are disjunction ( $p \text{ or } q$ ), indefinites (some  $p$ ) and evidentials (presumably  $p$ , I heard that  $p$ ). Also, certain verbs can be seen as ignorative, for instance in English ‘to doubt’, ‘to wonder’, etc. Groenendijk & Hengeveld pose the idea that ignoratives can have assertive meaning, inquisitive meaning, or both at the same time (hybrids). They expect that these different versions of ignoratives are discernable by their form or in formal aspects of their contexts. One of the questions these authors pose is:

**‘Is there cross-linguistic evidence for an ‘assertive’ and an ‘inquisitive’ version of disjunction and indefinites (...) ?’** (Groenendijk & Hengeveld, 2008)

In this small-scale study, I tried to find an answer to that question. I looked for instances of inquisitive meaning in ignoratives in as much languages as possible. I will discuss my findings in this report.

In the next section, I will elaborate on the theory of inquisitive semantics. In section 3, I will elaborate on how I searched for evidence. Then in section 4, I will present my findings, which I will summarize in section 5.

## 2 Inquisitive semantics

Traditionally in the study of semantics, sentences are said to contain information. This information can be true or false. If a speaker wants to question the truth of information, she will use an interrogative sentence to do that. The hearer will then (if possible) give an answer, i.e. assert or refute the information.

In inquisitive semantics, the starting point is quite different. A sentence can be purely informative (i.e. contain data), purely inquisitive (i.e. question data) or both (a hybrid sentence). Apart from this, a sentence also raises issues or keeps them alive. In a conversation, a sentence is not an object on its own. It relates to earlier sentences by relating to the issues in those sentences. A compliant reaction to a sentence is thus formed by a sentence that relates to the issues raised before. The meaning of a sentence thus contains not only information on the world, but also conversational meaning.

Inquisitive semantics is new in so far that it includes conversational meaning in semantics, whereas this is usually seen as pertaining to the realm of pragmatics. Meaning is not only information about the world, but also information about the communication process – a process at the core of natural language. A conversation is not only an exchange of information, but a dynamic process of raising, mediating, and resolving issues.

In this light we can understand the appropriateness of replies such as 6 and 7 to sentences that formally do not ask for an answer. The inquisitiveness of the preceding sentence defines the compliant reaction: an answer to the question, the filling in of information. The speaker has raised an issue and the hearer replies to this by resolving the issue.

That interrogatives work like that was already acknowledged. Inquisitive semantics claims that not only interrogatives, but also ignoratives contain inquisitive meaning.

### **3    Method**

To acquire information on ignoratives in natural language, I made use of several sources of information. I started out by consulting the Typological Database System (TDS). This is an online resource that combines many typological atlases and databases. I was able to query the existence of certain forms or constructions in the many languages available through that system.

When I found relevant facts in the TDS, I further explored them through the reference grammars of specific languages. However, these turned out not always to be very informing for my study. The problem is that reference grammars are written in order to describe formal aspects of the language: when to use what word or construction. Semantic aspects are not always thoroughly described. Under the caption ‘disjunction’ for instance it is discussed how to form a disjunctive construction, but not which replies are possible to a disjunctive construction. Corpus material would be necessary to find such information, but that is to my knowing almost only available for a few large languages such as English, Spanish and Dutch. The information that I needed was not information about those languages.

A source of information that did prove very helpful was to consult native speakers of languages. In this way I was able to get detailed information on mainly English and Basque. I am very grateful to Tom Marshall for the information I acquired on English. Núria Alturo Monne provided me with inside information on Catalan.

### **4    Results**

#### **Disjunction**

In disjunction in English, two elements are juxtaposed with a disjunction word in between them (‘Alf or Bea’). It was expected that there are two versions of disjunction: an assertive one and an inquisitive one. If the meaning of a disjunction is fully inquisitive, only one of the elements is true and the speaker does not know which one. A compliant reaction is to assert the truth of one of the elements. In a fully assertive version, both elements might be true. Though that version looks formally the same as the inquisitive one, the difference is that a reply with the confirmation of the truth of one of the elements would not be compliant.

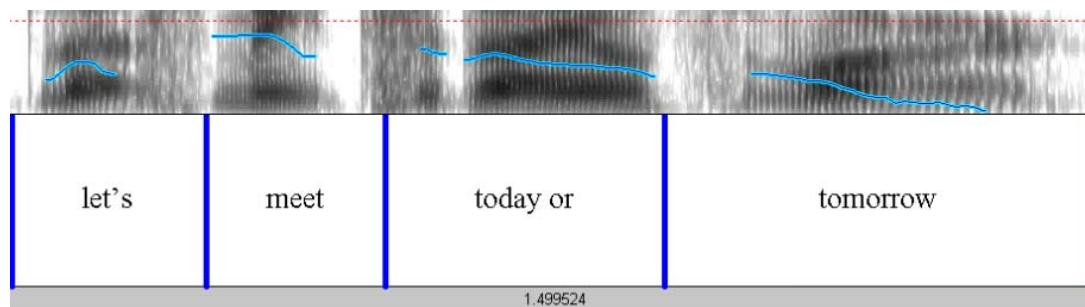
In my study I found evidence for the existence of two formally separate versions of disjunction. As said, the form of those versions is the same as to the words and their order, but there is a difference in the intonation patterns of English<sup>2</sup>.

A native speaker of English read a number of sentences and was asked to pronounce them as naturally as possible. All sentences contained a disjunction, placed in different places in the sentence and with different syntactic functions. The English speaker then was asked to pronounce the same sentences again, but now as a part of a conversation that elicited a specific version of disjunction. Finally, I explained the difference I was looking for to the native speaker and he read the sentences again with exaggerated prosody.

The native speaker used clearly distinct intonation patterns for the different versions of disjunction. I will discuss the properties of those patterns below. He used them in the first round already, so without any explanation or clue about what I was looking for. This confirms that the patterns are used naturally and not an artificial construct. The speaker did not always use the distinct patterns but also pronounced some intermediate forms. I will discuss the relevance of those below as well.

The assertive version of disjunction has a so called flat pattern (Figure 1<sup>3</sup>). In the first disjunction element, the pitch rises slightly. The disjunction word ‘or’ is immediately attached to the preceding word. The pitch falls in the second element of the disjunction. Since the three words are attached (there is almost no pause in between), we can see this disjunction construction as a whole. The usual sentence intonation (interrogative or declarative) is imposed on the construction as a whole, as if it is one word.

**Figure 1: Intonation pattern of the assertive version of disjunction**

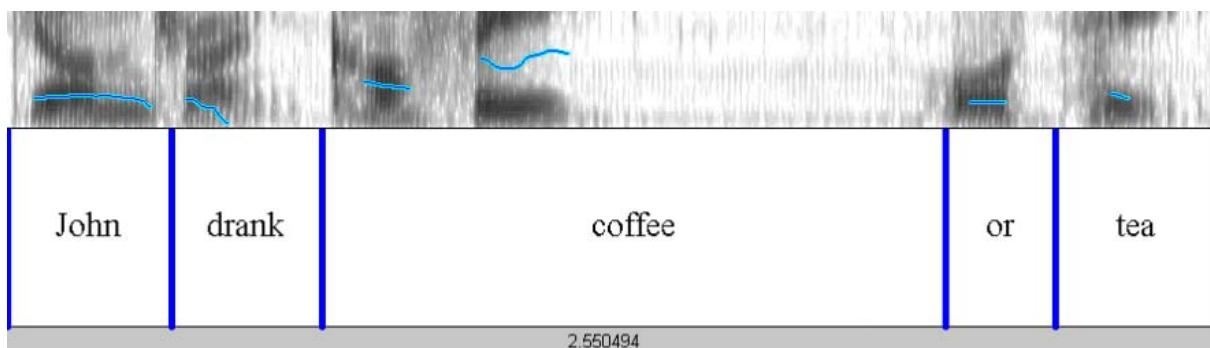


<sup>2</sup> Presumably, other languages make this prosodic difference as well. Although I did not study it, as a native speaker of Dutch I would say that Dutch shows the same pattern as English. Maybe other Germanic or West-European languages do as well.

<sup>3</sup> The curved blue lines in this figure represent the pitch at which the words were pronounced. The lines stop when there is a pause between sounds.

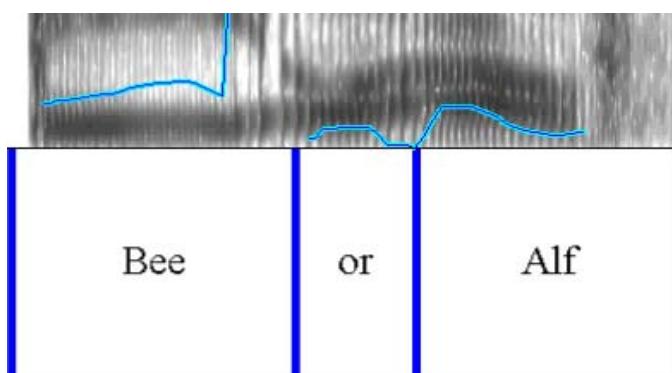
The inquisitive version of disjunction is pronounced with a contrastive intonation pattern (Figure 2). The first disjunction element rises strongly. Then there is a long pause before the disjunction word ‘or’ is pronounced. The second element is attached to ‘or’ and its pitch falls slightly. This pattern is in English also present in polar interrogatives, also questions with two options. The resemblance is striking: formally, a declarative inquisitive disjunction behaves exactly like a polar interrogative. This is a strong argument in favour of the idea that declarative sentences can have a question-like meaning element.

**Figure 2: Intonation pattern of the inquisitive version of disjunction**



As said, not all pronounced sentences fitted in these distinct patterns. The native speaker also used some intermediate forms. An intermediate form shows a rising first part of the disjunction, as we find in the contrastive intonation. There is a very small pause before ‘or’ – it is not attached but there is also no extreme contrastive pause. The second part of the disjunction starts a little higher, again holding the middle between a contrastive high start and a flat contour.

**Figure 3: Intermediate intonation pattern of disjunction**



The existence of intermediate forms could indicate that the inquisitive meaning element in disjunctions is not grammatically coded but merely a pragmatic addition. The speaker then does not choose between two distinct meanings, but can stress either the assertive or the inquisitive part of the meaning by using the separate intonation patterns. If she does not want to stress one particular reading, the intermediate form is used. The theory of inquisitive semantics does not account for this since it assumes that the two patterns are due to a different semantics instead of different pragmatics.

However, the intermediate intonation pattern used for a hybrid disjunction could have a conversational function. Maybe it just maintains the informativity of the issue – it is not assertive or inquisitive. The speaker does not want to claim the possibility of the truth of both elements, nor wants to ask which one is true. The only ‘meaning’ is a conversational one: to keep the issue alive.

There is another finding that indicates that there are two semantic versions of disjunction. This finding has to do with the disjunction word ‘or’. In logic, two possible meanings for this word are known: so called ‘inclusive’ and ‘exclusive or’. Both can be used when one of the elements of the disjunction is true, so when  $p=1 \& q=0$  and when  $p=0 \& q=1$ . Inclusive ‘or’ is also true when both elements are true ( $p=1 \& q=1$ ), but exclusive ‘or’ is in that case false. In natural language, the difference can be shown in the possibility of using ‘yes’ (8) or ‘no’ (9).

- |   |   |            |
|---|---|------------|
| 8 | John drank coffee or <sub>incl</sub> tea. | Yes, both. |
| 9 | John drank coffee or <sub>excl</sub> tea. | No, both.  |

There has been much debate as to which of the two ‘or’s’ is actually used in natural language. Some languages are even claimed to have different forms for the different versions. If that is true, it would mean that the difference between inquisitive and assertive disjunction comes down to the semantics of ‘or’ rather than to the semantics of disjunction. Surely, sentence 8 is a typical case of assertive disjunction, whereas sentence 9 is typically inquisitive disjunction.

I have studied several languages that are said to have two words for inclusive and exclusive ‘or’, but upon closer look, I found no examples of it. The difference often only existed in written language or in archaic forms of a language. In my opinion, that shows that the inclusive/exclusive difference is an artificial difference that people can make if they want to,

but is not present in natural language. I therefore do not believe that the disjunction word possibilities are at the base of the inquisitive/assertive difference. It appears that there are really two separate semantic categories of disjunction. The disjunction word used of course has to fit the meaning of the construction, but does not constitute the meaning of disjunction as such.

## Indefinites

Indefinite forms are underspecified forms. In English, some well-known indefinites are ‘someone, somewhere, anybody’, etc. They can be used if certain information is not known, which is of course why they are grouped in the category of ignoratives.

In English, indefinites are used in declarative sentences (10). When a speaker wants to specify an indefinite (wants more information), she will ask a question replacing the indefinite for a wh-word (example 11).

10 Someone did this.

11 Who did this?

In many languages though, there is no formal difference between indefinites in declaratives and Wh-words in questions (Gärtner, 2009), e.g. German, Classical Greek, Mandarin Chinese and Danish<sup>4</sup>.

12 Nǐmen zuò shénme?

You do what?

‘What are you doing?’

13 Nǐ xiǎng chī shénme jiu mǎi shénme.

You desire eat something then buy something.

‘You can buy whatever you desire to eat.’

(Li & Thompson, 1981 in: Groenendijk & Hengeveld, 1998)

---

<sup>4</sup> These languages have all different properties as to the proper use of Wh-words and indefinites, thoroughly described in Gärtner (2009). I group them because for the purpose of this report it is only important that the difference has nothing to do with the declarative/interrogative difference.

As we see in 12 and 13, there is no difference between indefinites and Wh-words (in this case ‘something’ and ‘what’) used in declarative or interrogative context. There is thus no indefinite/interrogative ambiguity in such languages, no contrast between declarative ignoratives and interrogativeness. Indefinites are used in interrogatives to question the precise nature of the person, place or time underspecified in the indefinite.

This is yet another example of an ignorable element resembling or behaving the same as a question element. It is another example of the inquisitive nature of ignoratives, whether used in interrogative or in declarative context.

### **Ignorable verbs**

A feature present in many languages is the possibility of embedding sentences, that is, placing a sentence within a sentence. The embedded sentence is called a complement. Languages show great formal variety in complement constructions. A well-known phenomenon is the use of a complementizer, i.e. a word that signals an embedded sentence.

Some languages have a single complementizer, but we also know of many languages that use different complementizers with different meanings. English for instance, uses in most cases ‘that’, but also has ‘whether’ and ‘if’. The latter is only used with ignorable verbs: those verbs that contain an element of uncertainty or not-knowing.

14 I know that Pete kissed Bob.

15 I don’t know if Pete kissed Bob.

In languages that have a complementizer similar to ‘if’, we see that its form often resembles the form of the disjunction word. A case in point is Dutch.

16 Ik weet dat Piet Jan gezoend heeft.  
I know that Pete Jan kissed has

17 Ik weet niet of Piet Jan gezoend heeft.  
I know not if Pete Jan kissed has

In this case, two ignorative constructions use the same word, showing the overlapping meaning of disjunction and ignorative verbs. Since we know that disjunction is linked to inquisitiveness, we can now recognize the inquisitive meaning in ignorative verbs as well.

## 5 Conclusion

There are several indications that ignorative elements can have assertive as well as inquisitive meaning. Intonation patterns in English disjunction show how two separate versions of an ignorative element exist, an assertive one and an inquisitive one. The inquisitive version show great resemblance to interrogatives, in form (contrastive intonation pattern) as well as in meaning (same compliant responses).

The inquisitiveness of ignoratives in declarative context is furthermore indicated by another phenomenon. Several languages do not make a distinction between indefinites (a category of ignoratives) and Wh-words (question-words). This show once again that ignorative elements are at least partly similar to questions. The missing information that lies at the core of a question, is also a prominent feature of ignoratives. This constitutes the inquisitive element of their meaning.

The resemblance in many languages between the disjunction word ‘or’ and the complementizer for ignorative verbs, is another piece of evidence that there is no one-to-one link between interrogatives and inquisitive meaning. Declarative sentences can have inquisitive meaning as well.

Speakers can express not to know something. Several formal strategies can be used in different languages to do that. These strategies have in common that there is some resemblance between them and strategies to formulate questions. Whether inquisitive sentences are of a declarative or an interrogative form, there is always an element of missing information. A compliant reply to an ignorative is thus to give the missing information, in other words: to give an answer.

## **6 References**

Boersma, Paul & Weenink, David (2009). Praat: doing phonetics by computer (Version 5.1.03) [Computer program]. Retrieved March 19, 2009, from <http://www.praat.org/>

Gärtner, Hans-Martin (2009). More on the indefinite-interrogative affinity: The view from embedded non-finite interrogatives. *Linguistic Typology* 13, 1-37

Groenendijk, Jeroen & Hengeveld, Kees (2008). *Ignorativity and inquisititivity*. Unpublished paper.

Website Inquisitive Semantics: <http://sites.google.com/site/inquisitivesemantics/>

Typological Database System: <http://languagelink.let.uu.nl/tds/index.html/>