Why-Questions and Island Effects

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Abstract: The goal of this paper is to show that from the semantic and pragmatic point of view we have more than one type of *why*. I will identify different readings of *why* via an analysis of different types of answers it can receive. This will allow presenting in a new light the old syntactic puzzles related to different possible and impossible extractions of *why* across various types of islands. More particularly, I will show that from the semantic and pragmatic viewpoint, the phenomenon of islands involving *why* comes out as a result of a subtle interplay between several factors: (i) the semantics and pragmatics of two readings of *why*-questions (basic and epistemic), (ii) the semantics and pragmatics of propositional attitudes embedding the clausal complements, (iii) the ontological dependencies between the objects denoted by the propositional attitudes and embedded propositions, and (iv) the complementizer *that* which is semantically and pragmatically underspecified.

Keywords: *why*, *because*, island effects, propositional attitudes

1. Introduction

The objective of this study is to reexamine the old syntactic puzzle of asymmetries of adjunct extraction in different grammatical environments. However, it should be underlined that the emphasis of the present analysis is not laid on providing syntactic

solutions to these puzzles[1], but rather on shedding light on their semantic and pragmatic interpretations related to different meanings of *why*, which have gone unnoticed so far.

In this paper, I will consider a series of puzzling data composed of complex constructions involving *why*, such as the ones fitting into the following general pattern.

(1) Why + matrix verb + clausal complement (embedded proposition)

    e.g., Why do you believe/regret that q?

In general terms, the problem is the following. When a complex structure as the one in (1) is present, two types of situations are observed: (i) ambiguous cases in which *why* can target the matrix verb (high reading or long distance *why*) or it can target the embedded proposition (low reading or short distance *why*), and (ii) non-ambiguous cases in which *why* cannot target the embedded proposition (only high readings are attested). The question is what allows for the ambiguity when both readings are available, and equivalently, what prevents low readings to appear in the non-ambiguous cases.

The problem schematically described above is known in the syntactic literature as the problem of extraction from islands. The ambiguous or non-ambiguous readings reflect syntactic asymmetries with respect to adjunct extraction (such as *why* or *how*) across several types of elements constituting different kinds of islands. Some of these elements, like factive predicates, adverbs and negation, form what is called *weak islands* because they restrict the possibilities of extraction, giving rise to exclusively non-ambiguous readings. Other elements, such as bridge verbs (e.g. *believe*, *think*, *say*) or manner of speech verbs, do not form weak islands, as they allow for both high and low readings (i.e. ambiguous readings). In the next section, a quick overview of puzzling data will be provided.

2. Puzzling Data

Let us start by factivity as it is often suspected to be one of the culprits involved in restriction of adjunct extraction. On the one hand, as it is reported in the literature, ambiguous readings are often coupled with the presence of bridge verbs that are non-factive, as is illustrated in (2).

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[1] For syntactic solutions of *why* in various island effects, see for instance Bromberger 1966, Collins 1991, Rizzi 1999, McCloskey 2002, Ko 2005, Tsai 2008, Soare 2009, Shlonsky and Soare 2011.

(2) a. Why does Mary believe/think that there are unicorns in the garden?

   b. Why does she believe/think so and so?

   c. Why are there unicorns in the garden?

   Also, directives are not factive and exhibit the possibility of both readings as in (3).[2, 3]

(3) a. Why did you ask Mary to fix the car?

   b. Because, between the two of us, she knows more about cars than I do.

   c. Because it was broken.

   The non-ambiguous reading, on the other hand, is attested with factive verbs such as *to regret*, whose presence seems to block the low reading of *why*, as shown in (4).

(4) a. Why does Mary regret that John left?

   b. Why does she regret…?

   c. *Why did John leave?

   Therefore, at first glance it seems that the property responsible for the asymmetry in readings is factivity. However, there are other examples exhibiting similar kinds of asymmetries in which the property of factivity does not suffice to offer a complete explanation.

   For instance, a verb such as *to hope*, which clearly is not factive allows only the non-ambiguous reading only, as illustrated in (5).

(5) a. Why does Mary hope that John left?

   b. Why does she hope?

   c. *Why did John leave?

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[2] A similar example is discussed in Shlonsky and Soare (2011:657).

[3] It should be noted that the regular *ask* does not behave in this way. One can answer the question *Why did you ask Mary if Bob left?* with *Because she knows him* but not with #*Because he was angry*. Moreover, it is worth noting that from the pure syntactic point of view, the directive *ask* requires in English an infinitive embedded clause and it is known that infinitive clauses are more 'permeable' to extraction than tensed clauses (Genoveva Puskas, pers. comm.).

Interestingly, as we will see, according to some classifications both *to hope* and *to regret* do belong to the same class of propositional attitudes, namely emotive ones. Also in the case of manner of speech verbs, which are claimed to be factive, only the high reading is available, as in (6).[4]

(6) a. Why did Mary whisper that John should come to the party?

b. Why does she whisper so and so?

c. *Why does John come to the party?

Hence, so far it seems that the property of factivity is not enough to explain the asymmetries in the behaviour of these types of verbs in combination with *why*.[5] Different properties should be looked for.

In order to find the characteristics arising from these asymmetries, I will pinpoint different readings of *why*-questions (basic and epistemic) and will analyze the semantic and pragmatic properties of the involved verbs as representing different semantic classes of verbs (different propositional attitudes and other types) (see Table 2). This means in practice that, instead of focusing on the property of factivity, I will focus on the emotive propositional attitudes (emotive PA), as they seem to display similar behaviour (see (4) and (5)). Also, instead of bridge verbs, I will make the analysis in terms of doxastic propositional attitudes (doxastic PA) which will show their usefulness in the definition of the concept of epistemic *why* and, as we will see, the distinction between basic and epistemic *why* will help to solve some of the puzzling data as well. The last class I will look at are directives.

Table 1. The summary of the asymmetries in the readings of why in different grammatical environments.

	Doxastic PA	**Emotive PA**	**Directives**
Examples	*Why +* *to believe*	*Why +* *to regret*	*Why +* *to ask*
High reading	√	√	√
Low reading	√		√

[4] Due to the lack of space, I will not treat manner of speech verbs here. See Blochowiak (2014: Ch. 8) for an analysis of manner of speech verbs, adverbs of manner, quantificational adverbs and negation.
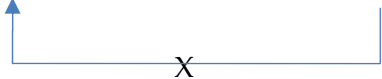
[5] This observation is in accordance with some recent claims according to which factivity is a pragmatic factor and hence not part of the semantic properties of predicates (*inter alia*, Baunaz and Puskas 2014).

From the syntactic point of view, Rizzi (1999) argues that *why* is a special wh-element which is merged high in the left periphery of the clause, namely, Spec IntP, which thus accounts, for instance, for its insensitivity to negation. This is schematically represented below.

(7) [ForceP [TopP [IntP why [TopP [FocP … [IP …[vP …]]]]]]

In the case of the low reading, recall that according to Rizzi (1999), *why* has a special behaviour in that it patterns with any other wh-element (it is incompatible with a focused element in matrix clauses, requires I to C movement, etc.). In other words, in such cases, it targets Spec FocP of the matrix clause. So, with emotive verbs, movement from the lower IntP position to the higher Spec FocP is blocked and thus only the higher reading is available.

(8) [ForceP [TopP [IntP [TopP [FocP … [IP … [vP … [ForceP [TopP [IntP [TopP [FocP … [IP … [vP …]]]]]]]]]]]]

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Summing up, in what follows, I will first show that taking into account the differentiation between basic and epistemic *why* is crucial for a better understanding and interpretation of the puzzling examples. I will then propose to study the asymmetries between different readings by further analyzing the semantic and pragmatic properties of predicates, and the ontological dependencies between objects denoted by matrix verbs and objects denoted by the complements of these predicates, in accordance with the basic-epistemic distinction.

3. *Why*s and *Because*s

An answer to a *why*-question is obviously a sentence with the connective *because*. Two big families of sentences with *because* can be identified. The first one which I call *basic because* describes *how things are in the world*, more particularly it *explains states of affaires in the world*, as for instance stating that there exists a particular causal relation between two eventualities, as in (9).

(9) a. John fell because Mary pushed him.

   b. CAUSE (Mary pushed John, John fell)

However, not all *because*s describe how things are in the world. There exists a special type of *because* – called the *epistemic because* – whose aim is to provide reasons that the speaker has in entertaining some propositional attitude, such as, believing something, holding an opinion, etc. Consider (10a).

(10) a. The neighbours are at home because the lights are on.

    b. *CAUSE (the lights are on, neighbours are at home)

    c. REASON (the lights are on, BEL_x [the neighbours are at home])

Crucially, the lights do not *cause* the presence of the neighbours (10b) but the fact that the lights are on is a reason for a speaker x to believe (BEL) that the neighbours are at home. Therefore, (9a) and (10a) do not query for the same kind of thing. In other words, (10a) does not answer the question *why* the neighbours are at home but *why the speaker believes* that they are at home.

One could be tempted to provide an analysis of epistemic *because* using the operator CAUSE, as in (11b).

(11) a. The neighbours are at home because the lights are on.

    b. CAUSE (the lights are on, BEL_x [the neighbours are at home])

However, as I have argued elsewhere (Blochowiak 2014), this solution is inadequate since it blurs the difference between the reasons for believing (expressed with epistemic *because*) and genuine causes of a mental state of believing (expressed with basic *because*), like in (12). I will come back to this issue later.

(12) a. Why did you believe these elephants were pink?

    b. Because I took some hallucinogenic mushrooms.

    c. CAUSE (x took some hallucinogenic mushrooms, BEL_x [these elephants are pink])

In the next section, I argue that there exists a special question which is specifically dedicated to elicit an epistemic *because*, as in (10a), namely, the epistemic *why*. Before we continue, one important property of *because* need to be put forward.

Contrary to what is usually tacitly assumed in many approaches to *because*, the concept of causality is not the most important in relation to *because*. Even if the causal type of relations is probably the most frequently present in *because*-sentences, it is not the only one (see (13)) and the extrapolation that is usually made from causal cases to

all other ones has led to some misunderstandings in linguistic literature as the one I have pointed out in (11) and (12).

(13) a. John is a bachelor because he does not have a wife. (DEFINITION)

    b. Max trains very hard because he aims at becoming a pilot. (PURPOSE)

    c. Jim must be in his office because his car is in the parking slot. (REASON)

Based on the seminal work by Bernard Bolzano (1837), who worked out the concept of *ground-consequence* relation that, according to him, pinpoints the concept hidden behind *because*, I use the term *grounding* in order to name the family of different relations expressible by *because*. *Grounding* is defined as a higher order predicate GROUND denoting the class of relations that is partially defined by their common formal properties which are: *irreflexivity*, *asymmetry* and *transitivity*. In sum, at a most general level, *because* is defined as denoting a *grounding* kind of relation (14).

(14) q because p   iff   GROUND (p, q)

Now, of course, for the sake of simplicity, in concrete cases it is possible to use any member of the grounding class of relations (as cause or purpose) to correctly describe a concrete case of *because*-sentence.

3.1. Epistemic *Why*-Questions

The concept behind epistemic *why*-questions is one of the concepts that do not have a single lexical item dedicated to it. 0 shows a sample of examples of epistemic *why*-questions.

(15) a. Why do you believe that q?

    b. Why do you claim that q?

    c. Why do you suspect that q?

    d. How do you know that q?

    e. How can you prove that q?

    f. What is the evidence for your claim that q?

    g. What are the reasons for your maintaining that q?

    h. Do you believe that q?

      …

As these examples demonstrate, what I label epistemic *why*-questions refer to a category of expressions which can be seen as complex locutions. All these expressions seem to be quite heterogeneous. However, I would like to claim that all of them share a common semantic meaning which allows giving them the same analysis.

In parallel to *because*, basic *why* asks *how things are in the world* and epistemic *why* asks *how we know that things are as we claim they are*. And these are, of course, two dramatically different things to ask for, as the examples below illustrate.

(16) a. Why did Mary fall?
  Because Johnny pushed her.

  b. Why the neighbours are at home?
  Because they got a bad cold.

(17) a. Why do you believe that Mary fall?
  Because Betty told me.

  b. Why do you believe that the neighbours are at home?
  Because the lights are on.

While (16) presents examples of basic *why*-questions, with the speaker aiming to learn an *explanation* of some eventuality (e.g. a cause), (17) is a query for *reasons* or *justification* of somebody's belief or claim or opinion, etc. In other words, it is not a question concerning reality external to the speaker but it is a question about the speaker's system of beliefs, and, in particular, about the sources of her knowledge. The reasons the speakers can have to justify their opinions can be of different types, such as direct evidence, hearsay or inference.[6]

Now, the concept of epistemic *why* is complex, as the expressions referring to it are composed of two parts: a question word, and a verb referring to a propositional attitude of the addressee. Such complexity inevitably involves differences in the meaning of these expressions. To better grasp the different colours of meaning of the epistemic *why*, I will take a closer look at different question words entering the composition of epistemic *why* in Section 3.2, and in Section 3.3, the corresponding propositional attitudes will be examined.

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[6] One should note that there is a difference between reasons and justifications. A speaker can have a reason for accepting a proposition *p* as true but it does not mean automatically that she is *justified* in believing that *p*. A reason for believing in the truth of *p* constitutes a justification if it is a *good* reason (e.g. it has been obtained as a result of a valid reasoning). For the purpose of our discussion, I do not differentiate between the two cases.

3.2. Question Words Composing the Epistemic *Why*-Questions

There are several question words that can compose the epistemic *why*-questions. I am going to demonstrate that the meaning of all these question words in expressions composing the epistemic *why*-questions is the same and, more importantly, it is different from their standard meaning (with the exception of *why*).

First, we should note that the problem does not arise for locutions such as *What are the reasons…?* or *What is the evidence for…?* since they ask explicitly for reasons or evidence for someone's claims or opinions.

More interesting is the case of the *Do you believe that…?* question which in principle is an ordinary *whether*-question requiring a *yes/no* type of answer. However, it is very easy to imagine dialogues where such a question will receive an answer with *because*, as in (18).

(18) a. Do you believe the neighbours are at home?

b. I believe they are at home because the lights are on.

c. I believe they are not at home because their car is not there.

What does this mean? Since with one interrogative sentence, it is possible to address more than one question, and in addition, the nature of doxastic attitudes as *to believe* is such that they call for rationale, we can interpret the question in (18a) as asking two questions: (i) Do you believe neighbours are at home? and (ii) What are the reasons of your believing that they are (or are not) at home (depending on the answer to the first question).[7]

However, the most interesting case is the one involving *how*, since in expressions composing epistemic *why*-questions, its meaning departs from the standard one. Two

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[7] One could think that the question in (18a) does not really address two questions but that one single question for some reasons gives rise to a complex answer, as (18b) or (18c). And, moreover, that the *because*-clause as a part of answer to *yes/no* question is just due to the meaning of the predicate *believe* involved in the question, as in fact I argue in this paragraph for that particular case. (I thank an anonymous reviewer for indicating this point to me). However, the phenomenon is of a more general nature as there are examples of questions with no *believe*-type of predicates, which still allows an answer containing *because*-clause:

(i) Are the neighbours at home?

  The neighbours are at home, because the lights are on.

In this type of examples, one is forced to admit that an interrogative sentence can be seen as addressing more than one question (even if semantically this is not necessary) and this fact is not due to a *believe*-type of predicates contained in the question but to general pragmatic principles and maxims of conversation ('Make your contribution as informative as is required').

basic types are traditionally distinguished: the instrumental *how*, as in (19), and the *how* of manner, as in (20).

(19) a. How did you come?

   b. By bus.

(20) a. How did the party go?

   b. Very well.

In the first type, the answer gives an instrument or a mean by which an action is accomplished, and in the second family of *how*s, the answer most often requires an adverb of manner or an adverb of degree. Yet, none of these *how*s is a good candidate for the meaning of *how* in the question *How do you know that q?*. Even if some marginal possibilities exist, the answers providing a mean or manner appear as infelicitous because they fail to answer the question that was asked.

(21) a. How do you know that the neighbours are at home?

   b. ??By hearsay.

   c. ??Very well.

Answers that are fully felicitous in the context of *how do you know…?* are exactly the same as in the case of *why do you believe…?*, as illustrated in (22).

(22) a. How do you know that the neighbours are at home?

   b. #Why are the neighbours at home?

   c. Because the lights are on.

   d. Because I called them at home.

   e. Because the housekeeper told me.

Therefore, questions of the type *Why do you believe that q?* as well as questions of the type *How do you know that q?* request similar answers, namely, the ones providing a justification of somebody's knowledge, that is, they are epistemic *why*-questions.

3.3. Propositional Attitudes Composing the Epistemic *Why*-Questions

This section aims at determining what type of propositional attitudes can enter the composition of epistemic *why*-questions.

One typical property usually studied with respect to propositional attitudes is factivity. Note, however, that the property of factivity does not seem to play a direct role in epistemic *why*, since it is possible to find factive as well as non-factive predicates in the set of expressions referring to it (see (15)). Factivity seems to matter only at the level of composition of question words with predicates, as in the famous puzzle noted by Austin (1946), Wittgenstein (1969), Hintikka (1989) and reported here in (23) and (24).

(23) a. How do you know that q?

      b. *Why do you know that q?

(24) a. Why do you believe that q?

      b. *How do you believe that q?

Indeed, in order to obtain the reading about the justifications of one's opinions, *to know* can only combine with *how*, while *to believe* has to combine with *why*. However, a solution to this particular problem, which I proposed elsewhere,[8] would only explain to us why *how* has the tendency to combine with factive verbs and *why* with non-factive ones, and it would not allow us to identify the class of verbs entering the composition of epistemic *why*-questions.

Perhaps the easiest way to start identifying the class of verbs composing epistemic *why*-questions is to focus on their main pragmatic role in epistemic contexts. As it is already suggested by what was said before, this role consists in reporting speaker's opinions. So, let us call them *doxastic propositional attitudes*.

To better delimit the class of doxastic propositional attitudes, it is worth comparing them with other categories of propositional attitudes and with expressions embedding propositional complements in general. Some authors put forward an opposition between propositional vs. emotive attitudes (Léger 2006) or cognitive vs. emotive attitudes (Baunaz and Puskas 2014). Emotive propositional attitudes are the ones that include an emotional dimension, for instance: *to regret that p*, *to hope that p* or *to fear that p*. For the purpose of comparison, it is useful to add the class of evidential verbs, such as *to see that p*, *to hear that p* or *to be told that p*. Table 2 summarizes the types of verbs we will briefly analyze here.

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[8] A solution that I proposed in Blochowiak (2007, 2012) took into account not only the property of factivity but also the aspectual differences between *to know* and *to believe*.

Table 2. Types of propositional attitudes with examples and their property of factivity.

Type of pr. attitude (PA)	Examples	Factive no/yes
Doxastic PA	to know that p to believe that p to think that p to suppose that p …	yes no no no
Emotive PA	to regret that p to hope that p to fear that p …	yes/no ('semifactive'[9]) no no
Evidential PA	to see that p to recall that p to hear that p …	yes yes no

As we can see, the verbs expressing doxastic propositional attitudes are indeed the only ones required by epistemic *why*. Two related questions arise with respect to this observation. First, why only doxastic propositional attitudes can compose epistemic *why*-questions? And, second, are there some characteristics (beyond the property of composing the epistemic *why*) that can legitimate the existence of the new class of verbs expressing doxastic propositional attitudes?

To answer these questions, we should better grasp and compare the characteristics of the different families of verbs listed in the above Table. Firstly, all these verbs express speaker's attitude towards the proposition they take as their complement. However, this is not the only information they provide. Typically, emotive propositional attitudes say in the first place something about the emotional state of the speaker towards the state of affairs described by the propositional complement. The role of evidentials, as it is often argued (Ifantidou 2001), is to provide speaker's commitment to the information expressed by the propositional complement and, at the same time, to give the source of this information. The functions are not independent since the more reliable a source of information is (as for instance direct perception), the greater the degree of the speaker's commitment will be. Now, doxastic propositional attitudes are interesting for our discussion as their first and unique function is to provide the degree of speaker's certainty towards the content of the propositional complement. In this sense, they can be seen as direct reporters of

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[9] There are verbs as *find out* or *discover* that are labelled as semifactive (Karttunen 1971).

knowledge, beliefs, opinions, etc., without any additional component elaborating on the emotional state of the speaker or about the source of the speaker's knowledge. This observation is crucial with respect to epistemic *why*, because the only type of propositional attitude allowed in the context of epistemic *why* is precisely the one provided by such one-dimension opinion reporting verbs.

Therefore, we can conclude that the second component of the epistemic *why* refers to doxastic propositional attitudes and the nuances of the meaning of epistemic *why* come from the fact that every doxastic propositional attitude reports a varying degree of speaker's commitment to the content of the embedded proposition.

4. *Why* and Doxastic Propositional Attitudes

In this section, I will analyze various possible readings of the question *Why do you believe that q?*. Given that this question is composed of the question word *why* and a doxastic propositional attitude expressed by the verbs such as *to believe* or *to think*, one could conclude *prima facie* that we deal here with epistemic *why*. In fact, one of the possible interpretations of this question indeed corresponds to the epistemic *why*. However, there are two more readings. In sum, the apparently simple question *Why do you believe that q?* is three-way ambiguous. We will isolate the three possible interpretations by examining types of possible answers that can be given to this question.[10] The first observation is that *why* can target the verb *to believe* (high reading) or it can target the embedded proposition *q* (low reading).

Let us start by analysing the *why about believing* interpretation. There are still two possible readings for it. The first is just a simple basic *why* about causes of one's believing, as in (25).

(25) a. Why do you believe that there are unicorns in the garden?

b. Because I was on drugs.

c. Because I am stupid.

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[10] Indeed, one could think that a *why*-question receives an epistemic reading due to the predicate (e.g. *to believe*) with which *why* interacts in the question. However, as I argue in this section, the combination of *why* and *to believe* does not give rise automatically to the epistemic reading of a *why*-question, since with this configuration we can also have two sub-types of the basic reading (see (25) and (33)). So, it is not the presence of a predicate (here *believe)* which is crucial for deriving one reading or another. What determines the meaning of a question is the set of its answers (true or possible, depending on a theory of questions one adopts) which is ultimately fixed by a context. I thank an anonymous reviewer for bringing to my attention the necessity to underline this point.

In these cases, *being on drugs* or *being stupid* are just simple causes of the speaker's mental state of *believing that so and so*. We could paraphrase these examples as follows: *The drugs caused him to believe that there are unicorns in the garden* or *His stupidity caused him to believe that there are unicorns in the garden*. One very important characteristic of basic *because* is that it constraints the order of presentation of causes and consequences (I limit my discussion to causal cases here), namely: consequence-cause, as presented in (26).

(26) Basic *because*

  a. [Mary fell]$_{cons}$ because [John pushed her]$_{cause}$ Q_{cons} because P_{cause}

  b. *[John pushed Mary]$_{cause}$ because [she fell]$_{cons}$ *Q_{cause} because P_{cons}

Thus, in the case of our reading about causes of somebody's believing (as in (25)), the only possible configuration is the one where *because* introduces a cause of one's believing and not a consequence (27):

(27)   a. Why do you believe that Q?   (basic *why*-question)

   b. [I believe that Q]$_{cons}$ because P_{cause}

   c. *[I believe that Q]$_{cause}$ because P_{cons}

The second reading of *why about believing* corresponds precisely to the epistemic *why*, where the answer provides a reason, a justification (but not a cause, an explanation) of somebody's opinion according to which *q* is true. In brief, one type of answer to the epistemic *why* (one type of justification) consists in providing a (possible) cause or consequence of the event described by *q*, since both giving a cause or a consequence can constitute a good justification of one's beliefs.[11] For instance, (28b) gives as an answer to (28a) a consequence of rain, namely, the ground being wet, while (28c) provides as an answer to (28a) a possible cause: the presence of huge dark clouds.

(28)   a. Why do you believe it has rained?

   b. Because the ground is wet.

   c. Because there had been huge dark clouds in the sky.

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[11] Recall that there are different kinds of reasons the speakers can have to justify their opinions, such as direct evidence, hearsay or inference. In the type of examples discussed here (such as (28)), we deal with inferential type of reasons where the speaker may infer an unknown cause on the basis of a known consequence or, *vice versa*, an unknown consequence on the basis of a known cause.

We can represent it more formally as in (29).

(29) a. Why do you believe that Q?   (epistemic *why*-question)

   b. [I believe that Q$_{cause}$] because P$_{cons}$

   c. [I believe that Q$_{cons}$] because P$_{cause}$

A good indicator of epistemic *because* is the paraphrase with *how do you know*, which explicitly and non-ambiguously queries for reasons of one's beliefs.[12] As (30) illustrates, the first reading identified as basic cannot be paraphrased with *how do you know*, whereas it is possible for the second reading, as attested by (31).

(30) a. How do you know that there are unicorns in the garden?

   b. *Because I was drugged.

   c. *Because I am stupid.

(31) a. How do you know it has rained?

   b. Because the ground is wet.

   c. Because there had been huge dark clouds in the sky.

In the epistemic readings (of our examples), providing a cause or a consequence of some event serves as a justification (reason) of the speaker's beliefs that the event consequence or cause, respectively, happened.

Beyond the two readings concerning *why about believing*, there is still another reading for *Why do you believe that q?*, which is a special kind of basic *why*. I will label it *conjectural why* because it goes hand in hand with the *conjectural because* that has been identified and discussed in Blochowiak (2010, 2014). Briefly, the conjectural *because* is just a basic *because*-sentence embedded under a doxastic propositional attitude. For instance, if a speaker wants to say that what caused Mary's falling in his opinion was her slipping on the banana skin, she can use the conjectural *because* as in (32).

(32) I believe that [Mary fell because she slept on the banana skin]. But I am not sure about it; it might be that she fell because John pushed her.

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[12] The epistemic *why* could be in fact what Rizzi (1999) has identified as a special case of *why* that is syntactically base-generated (externally merged) in Spec,IntP (Valentina Bianchi, pers. comm.).

Now, the easiest way to introduce the conjectural *why* is to consider its paraphrase:

(33) Why, according to you, *Q* happened?   (conjectural *why*)

Similar to *because*, the conjectural *why* is a species of basic reading of *why*, i.e., it must be about the causes of an event (in causal cases). Its specificity consists in the speaker's attitude towards the proposition describing the event. As with conjectural *because*, this attitude expresses the degree of uncertainty of the attitude holder with respect to possible causes of the event under discussion. Let us consider a concrete example in more details.

(34) a. Why, according to you, Mary fell?

b. What are the causes of Mary's falling, in your opinion?

(34a) obviously is not a query for one's reasons of believing that something is true but it is a question about causes of some event in one's opinion, as the paraphrase in (34b) makes it explicit. It is possible to see that the conjectural *why* is distinct from the epistemic *why* by considering its possible answers where only providing the cause is acceptable.

(35) a. Why do you believe that Mary fell?   (conjectural *why*-question)

b. According to me, Mary fell because John pushed her.

c. *According to me, Mary fell because she is hurt.

Contrary to epistemic *why*, the scope of conjectural *why* is different and also the order of presentation of causes and consequences is constrained. This is illustrated in (36).

(36) a. Why do you believe that Q?   (conjectural *why*-question)

b. I believe that [Q_{cons} because P_{cause}]

c. *I believe that [Q_{cause} because P_{cons}]

In other words, this means that the answer required by conjectural *why* belongs to the category of basic (conjectural) *because* since events can be only presented in consequence-cause order, which is indeed typical for basic *because* (see (26)).

To sum up, the question word *why* in composition with a doxastic propositional attitude such as expressed by *to believe* does not automatically give rise to epistemic *why*. As we have shown in this section, there are three distinct readings for *Why do you believe that q?*. Table 3 summarizes the three types of cases.

Table 3. Three readings of *why* with doxastic propositional attitudes represented by *to believe*.

Why do you **believe** that Q?	**Why** do you believe that **Q**?

(i) basic *why*
 	
    [I believe that Q]$_{cons}$ because P$_{cause}$
 	
    *[I believe that Q]$_{cause}$ because P$_{cons}$
	(iii) conjectural *why*
	
	    I believe that [Q$_{cons}$ because P$_{cause}$]
	
	    *I believe that [Q$_{cause}$ because P$_{cons}$]

(ii) epistemic *why*
 	
    [I believe that Q$_{cons}$] because P$_{cause}$
 	
    [I believe that Q$_{cause}$] because P$_{cons}$	

In the case where *why* targets the verb *to believe* (see left column of the table), it is possible to have a basic reading of *why* querying causes (and not reasons) of somebody's beliefs (i), or an epistemic *why* asking for reasons (and not causes) of somebody's beliefs (ii). In the case where *why* targets the content of the embedded proposition (see right column of the table), we deal with conjectural *why* (which belongs to the category of basic *why*s), and the verb embedding the proposition (*to believe*, for example) serves to express the speaker's doxastic attitude towards the possible answer to the question that expresses the occurrence of a cause. In other words, in conjectural cases, the doxastic marker scopes over the entire *because*-sentence and the embedded *because*-sentence is of the basic type. For this reason, the answer can only provide a cause for the event-consequence under question.

To summarize, I have identified in this section the three readings for the question *Why do you believe that q?* which allowed us to discover that the high reading can be identified with basic or epistemic *why* and the low reading corresponds to basic (conjectural) *why*. At this point, we have just seen how to interpret the ambiguous readings of *why* coupled with a doxastic propositional attitude, but we have still not answered the question of why the ambiguity is possible. This last question will be addressed by comparing it with emotive propositional attitudes in the next section.

5. *Why* and Emotive Propositional Attitudes

Contrary to doxastic propositional attitudes, emotive propositional attitudes, represented here by *to regret*, can have only one reading: in (37), *why* can be only about Mary's regretting (high reading) and not about John's leaving (low reading).

(37) *__Why__ does Mary regret that **John left**?

     As we saw earlier, other emotive propositional attitudes exhibit the same kind of behaviour, even if they are not factive. Recall the following examples.

(38) a. *__Why__ does Mary hope that **John left**?

     b. *__Why__ does Mary fear that **John left**?

     Why in (38) can only be about *hoping* and *fearing*, and cannot directly target the embedded propositions. The question is to know whether there is something special concerning emotive propositional attitudes, so that they do not allow for the long distance readings.

     In order to tackle this question, I will try to determine what kind of relation subsists between the representations of propositional attitudes and the representations of the propositions they embed. This relation is denoted by the matrix predicate together with the complementizer *that*.[13] The claim is that a complementizer such as *that* is semantically underspecified with respect to the relation it contributes to convey.

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[13] The main point is that there are different relations between denotations of the matrix clause and of the embedded clause in a sentence and the matrix clause is the root of such differences (I thank an anonymous reviewer for this suggestion). With *that* such relations are implicitly present, as its main role is to introduce the second argument of the relation without specifying the kind of the relation we deal with. In this sense, if the complementizer *that* can be seen as partly denoting a relation, it is underspecified with respect to the kind of relation it denotes. Whether *that* can denote a relation as in *I'm sad that Mary left* (synonymous to *I'm sad because Mary left)* or to which extent it can do it remains an open question. We can say at least that the complementizer in such constructions is sensitive to the kind of the relation existing between the matrix clause and the embedded clause since there are languages that have different complementizers depending on the type of the matrix predicate used. For instance, Modern Greek uses *oti* with verbs of communication and *pu* with verbs of emotion and epistemic verbs and Serbo-Croatian employs *da* with epistemic verbs and verbs of communication and *što* with verbs of emotion (see Baunaz 2015, and citations therein). Therefore, I will assume that *that* is at least partly responsible for the relation existing between matrix clause and embedded clause, being nevertheless aware that this assumption is not crucial for my analysis. The fact that the relation is driven exclusively by the matrix predicate is compatible with my approach.

In particular, it may come in several flavours depending on the type of predicates and the objects it selects for.[14]

Let us start with emotive propositional attitudes. As we have already mentioned, the particularity of the emotive propositional attitudes is that their main role is to provide information about the emotional state of the speaker towards the state of affairs described by the embedded proposition, and not just to simply provide the degree of the speaker's certitude towards the content of proposition, as it is the case for doxastic propositional attitudes. Now, let us consider emotional states more closely.

Emotional states are states that an experiencer is in with respect to some state of affairs. In other words, the emotional states are in most cases intentional, having some state of affairs as their object. The sentences such as the ones in (39) express relations between an agent, an emotional state and the object of this emotional state, which can be an eventuality (a state of affairs in general).

(39) a. Mary regrets that John left.
         experiencer: Mary;
         emotional state: Mary's regretting;
         object: John's leaving.

      b. Mary is glad that John left.
         experiencer: Mary;
         emotional state: Mary's gladness;
         object: John's leaving.

In general, an emotive propositional attitude describes the emotional state, and its complement (the embedded proposition) makes reference to the object of this

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[14] Different flavours of complementizers have been also proposed by some recent syntactic theories which study subjunctive embedded clauses (Baunaz and Puskas 2014; Baunaz, forthcoming). They propose to explain different properties of subjunctive clauses embedded under verbs belonging to different categories by postulating featural ambiguity of the French complementizer *que*. In particular, they observe that the indicative/subjunctive alternation is only indirectly responsible for the degree of the permeability of subjunctive clauses with respect to the phenomenon of *wh*-extraction. They propose that the mood selection and the complementizer selection are two independent properties of the main predicate. While the indicative/subjunctive distribution can be explained in terms of different predicate properties (such as cognitive-emotive property of the matrix predicate), the island effects are related to the properties of the selected complementizer. More precisely, "the possibilities of extraction of a *wh*-phrase from an embedded clause can be accounted for by the size of the complementizer that acts for as a more or less stronger blocker for *wh*-extraction from the clause it selects." Similar considerations apply to Hungarian complementizer *hogy* (see Puskas 2013) and also to Serbo-Croatian complementizers *da* and *što* (see Baunaz 2015).

emotional state. Before we look at our problem, two more observations should be made about emotional states concerning their intentionality and their polarity.

First, emotional states can be classified in two big families with respect to their intentionality. Most of the emotional states are intentional, that is, they have an object, as we have seen earlier. However, there are some emotional states that can be possibly objectless. For instance, one can be just happy or just sad without any specification of an object of his or her happiness or sadness. Now, this second observation has some impact on the syntactic and semantic behaviour of emotive propositional attitudes. As (40a–b) attests, a speaker can felicitously say that she is happy or sad without specifying the object of her emotional state (which can mean that there is no specific object of the emotional state, or just that the object has not been specified). However, emotional propositional attitudes such as regretting or hoping are by definition intentional, so omitting their object is impossible, as shown in (40c–d).

(40) a. I am happy.

   b. I am sad.

   c. *I regret.

   d. *I hope.

The presence of negation preserves this asymmetry, as is demonstrated in (41).

(41) a. I am not happy.

   b. I am not sad.

   c. *I do not regret.

   d. *I do not hope.[15]

For the same reason, in (42) below, a *why*-question that is underspecified for the object can be felicitously formulated only with respect to the possibly objectless emotional state.

(42) a. Why are you happy?

   b. Why are you sad?

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[15] "I do not hope" can be asserted in some contexts with no apparent object. Its meaning could be paraphrased as: *I do not have any hope* which probably aims at saying something like: *I do not have hope concerning any state of affairs*. In other words, this expression seems to quantify over all the states of affairs (contextually relevant for the speaker), so, after all, it is not objectless.

c. *Why do you regret?

d. *Why do you hope?

All the properties exemplified in (40), (41) and (42) suggest that some emotive propositional attitudes, such as *to regret* or *to hope*, imply the existence of their object, and some others, such as *to be happy* or *to be sad*, do not.

Second, we can say, somehow simplifying the picture, that emotional states can also be divided in two big families with respect to their polarity: negative vs. positive emotional states. For instance, *regretting* belongs to the first category (if one regrets something, one is in a negative emotional state towards the object of regretting), while *happiness* belongs to the second one (if one is happy about something, one is in a positive emotional state towards the object of one's happiness). This is epitomized in (43), where the sign of equality is used to indicate a possible paraphrase.

(43)   a. John is happy that Mary left. = John is in the positive emotional state w.r.t. Mary's leaving.

b. John regrets that Mary left. = John is in the negative emotional state w.r.t. Mary's leaving.

The oversimplified analysis of emotional states presented in (43) will allow us to better grasp the relation that exists between emotional states on the one hand and their objects on the other hand.

As we mentioned, from the syntactic point of view, the complementizer *that* plays the role of relator between the matrix verb (denoting the emotional state in emotive PA) and its embedded clause (denoting the proposition describing the object of the emotional state). The whole question now is to identify what is this relation, and, thus, to determine the semantic relation denoted by the complementizer *that* in emotive PA.

I would like to argue that the relation denoted by the complementizer *that* in the emotive propositional attitudes is the relation of grounding which is best expressed by means of the connective *because*. Briefly, any intentional emotional state can be seen as caused or explained or sometimes justified by its object: if I am happy that Mary left, then what *causes* my state of happiness is the event of Mary's leaving, or if I regret that Mary left, then what *causes* my negative emotional state of regretting is the event of Mary's leaving. (44) summarizes this idea.

(44)   a. John is happy that Mary left. = John is in a positive emotional state **because** Mary left.

b. John regrets that Mary left. = John is in a negative emotional state **because** Mary left.

We have almost all the elements needed to shed some light on our initial puzzle. The suggestion is that the asymmetry with respect to adjunct extraction observed between doxastic propositional attitudes and emotive propositional attitudes (see (37)) is due to the different semantic flavours of the complementizer *that*. As we have just seen, in the case of emotive propositional attitudes, *that* points to the grounding kind of relation (e.g. causal one) (see (44)).

But now, what is the flavour of *that* in the presence of doxastic propositional attitudes? The relation it denotes is much simpler. When the speaker is in some doxastic state towards a proposition, we deal with two things that are not related by any grounding-like relation: it is not true that a given proposition (or its truth, or the subsistence of the state of affairs described by this proposition) *causes* a given doxastic state, but rather there is a doxastic state of some speaker towards a proposition, and this state is *independent* of the truth value of that proposition (even if people more often believe true propositions). That is, the flavour of *that* in doxastic environments corresponds to the relation referring to a simple concatenation of two eventualities, which can be made explicit by conjunction, as in (45).

(45) John believes that Mary left. = John is in some doxastic state towards the proposition P **and** (P is true or P is not true).[16]

Given the two different semantic flavours of *that*, the puzzle can be explained as follows. In the case of adjunct extraction, both readings are available for doxastic propositional attitudes, because *that* is paraphraseable by *and*, while only one reading is available for emotive propositional attitudes, because the complementizer *that* does not correspond to a simple *and* but points to a more complex grounding-like relation (expressible by *because*) which is asymmetric. That is why the question can only be about the main clause of *because* which is about the emotive state itself in the case of emotive propositional attitudes.

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[16] From a syntactic point of view, the relation between the matrix verb and its complement clause is the one of C-command (I would like to thank Luigi Rizzi for pointing out this option to me). Therefore, I believe that one could see the semantic relation between them as a kind of part-whole relation. However, what is important for my purpose here is that there is no causal relationship between the propositional attitude of believing that a proposition is true and the truth of this proposition, that is, they are causally independent, what is underlined in my proposal that uses the connective *and*.

So far, we have seen the asymmetry inherent to emotional states and their objects, according to which the objects of emotions (denoted by the proposition embedded in the emotive PA) have the power of explaining the emotional state itself (denoted by the emotive PA) but not *vice versa*. The problem that still remains open is to know what we really question when we ask a *why*-question about somebody's emotional state. In other words, what is the *why* about emotions really about? In this section, some elements will be provided to address the question of the interpretation of *why* about emotions.

As we saw, the first coarse-grained structure of an emotional state could be described as follows: the experiencer *x* is in an emotional state *s* towards an eventuality *e*.

(46) a. *x* is in an emotional state *s* towards some eventuality *e*

  b. eventuality *e*

However, this first structure is not enough when it comes to asking *why*-questions. Indeed, the question *Why is x in an emotional state s?* cannot receive the answer *Because e*, since *e* is already explicitly mentioned in the embedded proposition. And, in fact, as we have argued in the last section, this answer is somehow encoded in the complementizer *that*. Thus, it is necessary to give a more fine-grained structure of emotional states to discover what the possible answers to *why* about emotions could refer to.

As it will be demonstrated, a more detailed analysis of emotional states should include at least two more ingredients: the speaker's bouletic attitude towards the eventuality which is the object of an emotion, and an axiological evaluation of this eventuality. Formally, they will correspond to operators.

Let us start by determining the bouletic operator. As we have already seen, any emotional state has its polarity, that is, it can be positive or negative. This polarity, in turn, tells us something about the experiencer's wishes, that is, her bouletic attitude, which inherits the polarity of emotional states, with respect to the eventuality described by the embedded proposition. If the experiencer is in a negative emotional state towards some eventuality, then most probably she does not wish that this eventuality occurs, and *vice versa* for positive emotional states. For instance, if John regrets that Mary came late, it means that John *wishes* that the event of Mary's coming late would have not occurred. In other words, the polarity of John's bouletic attitude towards this event matches with the polarity of his emotional state of regretting, which is negative. (47) summarizes this idea in a simplified formalization, where *Wish* refers to the bouletic attitude of an experiencer *x* towards an eventuality *e*.

(47) a. John regrets that Mary came late.

   b. $\exists$e1 $\exists$e2 [e1 = Late (Mary) $\wedge$ e2 = Regret (John, e1) $\wedge$ Wish (John, $\neg$e1)]

Beyond the bouletic attitude of the experiencer towards the object of her/his emotional state, there is an axiological evaluation of the eventuality. Independently of the experiencer's wishing, a given eventuality may be recommended as good to do or not with respect to some corpus of rules, such as the rules of politeness. The corpus of rules with respect to which a given eventuality is evaluated is provided by the context. For instance, Mary's arriving late could be evaluated with respect to the rules of politeness, but it could also be evaluated with respect to her goals. (48) completes (47), where *Recommended* refers to the axiological operator stating that an eventuality *e* is recommended with respect to some law or rule *L*.

(48) $\exists$e1 $\exists$e2 $\exists$L1 [e1 = Late (Mary) $\wedge$ e2 = Regret (John, e1) $\wedge$ Wish (John, $\neg$e1)

$\wedge$ Recommended ($\neg$e1, L1)]

Of course, in many cases, the experiencer's wishes are in accordance with generally accepted axiological rules concerning a given situation. For instance, if John regrets that Mary came late, his wish of Mary's coming on time can be rooted in the axiological rules of politeness according to which coming on time is good.

Nonetheless, wishes do not always match axiological rules, and in these situations, *why*-questions will naturally arise. For instance, if John regrets that Mary is happy in her marriage, the following *why*-question naturally arises: *Why does John regret that Mary is happy in her marriage?*. According to our analysis, John wishes that the state of affairs of Mary's happiness in her marriage would not obtain. However, according to generally adopted axiological rules, being happy in one's marriage is a good thing. Thus, in absence of additional contextual information, a *why*-question arises here because of the conflict between the experiencer's wishes towards some eventuality and axiological rules concerning this type of eventuality.

Now, all the ingredients necessary for the analysis of emotional states are gathered. They are summarized below.

(49) a. *x* is in an emotional state *s* towards some eventuality *e*

   b. eventuality *e*

   c. *x* wishes or not that *e* occurs   (bouletic operator)

   d. *e* is desirable or not w.r.t. some corpus of rules   (axiological operator)

In sum, an emotional state can be explicable in at least the three following manners. First, as we have seen earlier, the object of an emotional state is its primary explanation, as summarized in (50).

(50) x is in an emotional state s (positive or negative) because of an eventuality e
    (49a) because (49b)

Second, an emotional state can be explained by the bouletic attitude of the speaker towards the object of her emotional state, as in (51).

(51) x is in an emotional state s (positive or negative) towards an eventuality e because
    x wishes (or not) that e occurs
    (49a) because (49c)

And finally, an emotional state is frequently explainable by reference to some axiological rules, as in (52).

(52) x is in an emotional state s (positive or negative) towards an eventuality e because
    the occurrence of e is desirable (or not desirable)
    (49a) because (49d)

Moreover, what is important to note is that there is a relation between the bouletic attitude towards an eventuality and its axiological evaluation. In particular, bouletic states are in general grounded in their axiological evaluations. Therefore, one wishes an event to occur because the occurrence of this type of events is judged to be good with respect to some corpus of rules:

(53) x is in an emotional state s (positive or negative) towards an eventuality e becaus x
    wishes (or not) that e occurs and x wishes (or not) that e occurs because the
    occurrence of e is desirable
    (49a) because (49c) and (49c) because (49d)

It should be noted, however, that it may happen that people have wishes without any axiological grounding. This is the case of capricious or whimsical persons. It should be underlined, however, that having axiological rooting for one's wishes provides one with a justification for his or her emotions and actions, providing an answer to a *why*-question. At this state, let us define the Principle of Emotional

Rationality which holds precisely when one's wishes are in accordance with one's axiological rules.

(54) Principle of Emotional Rationality

   x is rational experiencer iff *x* is in emotional state *s* and there exists a reason *r* instantiating some axiological rule *L* for which *x* is in the emotional state *s*

   Summing up, *why*-questions concerning emotional states behave in the similar way as all other *why*-questions, that is, they arise as result of broken expectations with respect to some laws (for more details, see Blochowiak 2014). Their emergence and the different answers they can receive can be analyzed by considering the interplay between bouletic and axiological operators coupled with the laws tacitly evoked. In particular, the conflict between axiological rules concerning some event and the bouletic attitude of the experiencer towards this event will generate a *why*-question. On the contrary, no specific configuration between an emotional state and the object of the emotion itself will give rise to a *why*-question. This translates the idea that objects of emotions are not independent; they are, so to speak, encapsulated under emotions, which makes their extraction impossible. And this explains why low readings of *why* coupled with emotive PA are prohibited.

6. *Why* and Directives

Another example of puzzling *why* reported in the syntactic literature concerns examples such as the one mentioned in Section 2 and reported here in (55).

(55) a. Why did you ask Mary to fix the car?

   b. Because between the two of us, she knows more about cars than I do.

   c. Because it was broken.

   The standard interpretation given to the two possible answers is that the one provided in (55b) answers a short construal *why* (about *asking*), whereas the answer given in (55c) answers a long construal *why* (about *fixing the car*).[17]

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[17] In the case of a short construal reading (55b), there is a possibility of presence of focus on *Mary* (Why did you ask MARY to fix the car?) (see Bromberger 1966 for more details on *why* and focus). I will not discuss this specific option here, as it is also possible to find natural examples involving directives without focus, like below:

Let us first clarify what kind of examples we deal with in (55) from the semantic and pragmatic viewpoint. The kind of question in (55a) is a typical trigger of answers with what I labelled practical *because* (Blochowiak 2014). In short, practical *because* provides motives and/or reasons of human actions[18], and its syntactic particularity is that it can be composed of speech acts. (56) provides some examples of practical *because*. Some of them contain speech acts (56a–c), and some of them do not (56d–f).[19]

(56) a. Hurry up! Because we are late.

b. What are you doing this evening? Because there is a good movie.

c. Could you fix my bike? Because it is broken.

d. I asked John to close the window because I was freezing.

e. I told Mary to repair the car because she knows much more about cars than I do.

f. I ordered the children to shut up because I have a headache.

Practical *because* is located between basic and epistemic *because* as it has some properties from basic and some others from epistemic *because*. Sometimes it is considered to constitute a separate category as *speech act because* in Sweetser (1990). Nevertheless, practical *because* bears more formal similarities with basic *because* and in fact, basic and practical *because* can be seen as constituting a continuum (Pander Maat and Degand 2001 argue for a similar solution). To make a long story short, in my approach, practical *because* is a sub-type of basic *because* reporting motives and/or reasons of human actions.[20]

(i) a. Why did you ask Mary to read you the newspaper?

b. Because I cannot see well. (I have a problem with my eyes.)

c. Because I want to have some news.

[18] Motives are psychological entities composed of desires and beliefs. Contrary to motives, reasons are not psychological, but propositional. In practice, motives are those for which an agent really acted, while (normative) reasons are those for which one should really act. Sometimes they match together, sometimes they do not. I will not differentiate them here. For more details on motives, reasons and also purposes, intentions and justifications of actions in relation to *why* and *because*, see Blochowiak 2014.

[19] In discourse relations theories, the type of *because* containing speech acts is called *speech act because* (see Sweetser 1990 and her followers). As I have argued in Blochowiak 2014, *because*-sentences containing speech acts are just one sub-type of a larger category of *because*-sentences whose aim is to report on motives of human actions in general, speech acts being a grammatically well visible sub-class of human actions.

[20] It is interesting to ask whether the relation between actions and motives and reasons has a causal nature. In Wittgensteinian tradition this relation is not causal; while for Davidson (1963, 1980) and his followers it is. I will not pursue this debate here.

Coming back to the initial problem, what is important here to observe is that the *because*-sentences in (56) are cases of practical *because*, that is, they are answers to *why*-questions involving directives of the form given in (57).

(57) Why did you ask/tell/demand/order *x* to G?

(58) are the paraphrases of (57) that make explicit the two possible interpretations of (57).

(58) a. What were the motives of your action of demanding of G-ing by *x*?

b. Why G should be done by *x*?

Now, we can take a closer look at the eventive structure of directives, which is composed of two eventualities: the embedding eventuality, that is, the one of giving a directive, and the embedded eventuality, that is, the directed one. This type of eventualities in fact refer to actions, since in all of the cases, we deal with a volitional contribution of an agent. Therefore, we can say that from an ontological point of view, directives denote actions embedded under other actions. For instance, an order can be decomposed into two actions: *x*'s action *a* of ordering another action *a'*, and the ordered action *a'*, which will (or will not) be accomplished usually by another agent *y*. This is summarized below.

(59) a. *x*'s action *a* of ordering an action *a'*

b. action *a'*

In fact, the structure of embedded actions is similar to the one of embedded emotions seen in the previous section. Recall that in order to analyze *why*-questions concerning emotional states, we postulated the existence of two (usually) hidden operators: the bouletic *Wish* and the axiological *Recommended*. Do we also need them for the analysis of *why*-questions about human action?

To answer this question, we need to consider a *why*-question about human embedded actions and possible answers to it, as the one in (60).

(60) a. Why did you order Mary to leave?

b. Because I wanted her to leave.

c. Because I wanted her to learn discipline.

d. Because I can order her to do whatever I wish, she is my daughter.

e. Because she was late for her piano lesson.

It seems that similarly to emotional states, the two additional components can be distinguished. First, as the examples of answers provided in (60b–d) suggest, an agent who gives a directive (an order, a permission or an interdiction) has a bouletic attitude towards the directed action. For instance, if the agent gives an order to make some action, she wishes this action to be accomplished, and if the agent, say, forbids an action, she wishes the action would not come about. Hence, we can see here the similarity to emotional states in which the polarity of bouletic operator comes from the polarity of the emotional state itself. However, there is a small difference, as there might be cases with directives where the polarity seems to be neutral. For instance, there is no clear direction of polarity associated with permission. Even if in majority of cases, permission is associated with positive bouletic attitude towards the permitted action, there might be cases where this attitude is negative. In such situations, the polarity of bouletic operator will be fixed by the context. Now, the answer given in (60e) goes beyond agent's wishes. It says why the ordered action should happen, independently of one's wishes about it. Why an action should or should not happen corresponds to an axiological evaluation. In our example, the action of Mary's leaving is recommended in view of her arriving at time for her piano lesson, with respect to rules of politeness and of school discipline. Therefore, the axiological operator should also be postulated for directives.

Thus, as our analysis suggests, the structure of directives is similar to emotive PA in that it requires two (usually) hidden operators whose presence is necessary to explain *why*-questions and the answers with *because* they concern. So, (61a) can be represented as in (61b), where *a1* and *a2* are variables for actions.

(61) a. John ordered Mary to leave.

b. $\exists a1 \ \exists a2 \ \exists L1 \ [a1 = \text{Leave (Mary)} \land a2 = \text{Order (John, } a1) \land \text{Wish (John, } a1)$

$\land \text{Recommended (} a1, L1)]$

To establish what kinds of dependencies exist between all these components, let us first recapitulate them. (62) summarizes all the ingredients necessary for the analysis of directive actions.

(62) a. *x*'s action *a* of directing *a'*   (e.g., *a* = action of ordering)

b. action *a'*   (e.g., *a'* = ordered action)

c. *x* wishes that *a'* happens

d. *a'* is recommended or not w.r.t. some corpus of rules

The first two components are exactly of the same type as in emotional states. One's action *a* of desiring another action *a'* can be explained either by one's wish that *a'* happens, or by the fact that *a'* is desirable with respect to some corpus of rules. Usually both components are mixed, so that one's wishes are grounded in an axiological rule. These relations are summarized in (63), (64) and (65) below.

(63) *x* makes an action *a* in view of an action *a'* because *x* wishes that *a'* occurs
    (62a) because (62c)

(64) *x* makes an action *a* in view of an action *a'* because the occurrence of *a'* is desirable
    (62a) because (62d)

(65) *x* makes an action *a* in view of an action *a'* because *x* wishes that *a'* occurs and *x* wishes that *a'* occurs because the occurrence of *a'* is desirable
    (62a) because (62c) and (62c) because (62d)

So far, we have seen what is really requested for by *why*-questions about embedded actions. In fact, similar mechanisms can be observed as for emotional states. The *why*-question will arise when there is a conflict between one's wishes concerning an action and generally admitted axiological rules concerning the given action.

Nevertheless, contrary to emotive PA, a possibility of double reading (high and low) of *why*-questions with directives exists. Why is this? The answer to this problem will be provided by the analysis of the relation left unspecified so far, namely, the relation between the embedding action (e.g. ordering action) and the embedded one (e.g. ordered action).

As we have seen for emotive propositional attitudes, the specification of the relation existing between an emotion and its object is one of grounding type, that is, *x* is in some emotional state because of the object of his emotion. This ontological specification helps in turn to specify the relation partially conveyed by the complementizer *that*.[21]

Interestingly, the relation between the embedding and embedded actions, as it is attested in directives, is of grounding nature as well. However, and crucially, the order of relata is inversed.

The dependencies between the ordering action and the ordered action can be schematically represented as follows. Provided that general conditions concerning orders are satisfied (see Searle 1983): if *x* ordered *y* to make an action *a'*, and if the

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[21] It should be noted that syntactically, there is a complementizer *that* in the structure of directives: *John ordered Mary to leave* is equivalent syntactically to *John ordered that Mary leave*.

action *a'* has been accomplished by *y*, then *y* made the action *a'* because *x* ordered him to do so. In other words, it is not that *x* ordered an action *a'* because this action has been done, but, the other way around, the action *a'* has been accomplished because *x* ordered to do it (66).

(66) If *y* made an action *a'*, *y* made the action *a'* because *x* ordered *y* to make the action *a'*
    (62b) because (62a)

In other words, the action described by the complement of the directive corresponds to the main clause of *because* and not to its subordinated part, as it was the case for emotive propositional attitudes (cf. (50)). That is why the motive or reason given for the action described by the complement of a directive (the ordered action) may be independent of the motive of the action described by the matrix verb (the ordering action) and it can be questioned (and hence answered) separately.

Summing up, in the case of directives, we can obtain the two readings for *why*-questions because the complement of the action is not ontologically dependent on the main action, but, on the contrary, the main action is dependent on the complement of the action.

7. Conclusions

In this paper, I have shed new light on some puzzling data involving islands' ambiguities by revealing the existence of two different meanings of *why*-questions and by examining the different classes of propositional attitudes (PAs) composing the puzzles and the ontological relations behind them.

First, I have shown that, similarly to *because*, there exist two big families of *why*s: (i) basic *why* (about explanation of some state of affairs) and epistemic *why* (about justification of speaker's beliefs or opinions). In many cases of ambiguities involved in islands, the low readings are typically basic *why*-questions while the high readings the epistemic ones (or conjectural).

Second, as we saw in Section 2 the property of factivity, which is often invoked as an explanation for the (im)possibility of extraction from islands, cannot provide all the details necessary for the elucidation of the mechanisms behind the puzzling constructions. In this paper, I have presented a new line of argumentation that explains the differences between doxastic PA, emotive PA and directives through an analysis of the ontological dependencies between the objects they denote and the objects denoted

by the propositions they embed. The general idea is that in the case of complex *why*-questions, *why* can target only a state of affairs which is ontologically independent.

Table 4 below presents schematically the possible readings (marked in bold font in the middle column) and the corresponding ontological dependencies represented with the help of connectives (right column). I use the metavariables α and β to refer to objects denoted by predicates and objects denoted by the complements of predicates, respectively.

Table 4. Ontological dependencies between PA and the propositions they embed.

Propositional attitude	Possible readings (in bold)		Ontological dependencies
doxastic PA	**α**	**β**	α and β
emotive PA	**α**	β	α because β
directives	**α**	**β**	β because α

Asking the question about the matrix verb (here represented in the middle column by α) is naturally unproblematic (high readings are always available). The puzzling question concerns the embedded propositions (β), that is, why some grammatical environments allow low readings (doxastic propositional attitudes and directives) and some others do not (emotive propositional attitudes). A solution I proposed consists in determining the ontological dependencies between objects denoted by propositional attitudes (α) and objects denoted by their complements (β).

In doxastic propositional attitudes, the state of affairs denoted by the matrix verb and the state of affairs described by the embedded proposition are indeed ontologically independent. They can be seen as linked by simple conjunction. That is why both readings are available.

In the case of emotive propositional attitudes and directives, the ontological dependencies are of the grounding type, what is represented with the connective *because*. The main characteristic of a grounding relation is asymmetry, and this is what is reflected in the syntax of *because* with two types of clauses: the main clause and the subordinate one. Naturally, the object of the subordinate clause is not independent and therefore it should not be possible to question it with a *why*-question. And indeed, this is what we observe.

The complement of the emotive propositional attitudes is the object of subordinate clause of *because*. The state of affairs denoted by the matrix verb (e.g., *John's regretting*) is causally dependent on the state of affairs denoted by the embedded proposition (e.g., *Mary's leaving*), which can be expressed by the following *because*-sentence: *John is in the state of regretting because Mary left*. For this reason, it is not extractable and thus questionable.

In directives, there is also a relation expressible with *because*, but it is constructed so that the clausal complement (e.g., *Mary's leaving*) of a directive (e.g., *John's ordering*) constitutes the main clause of a *because*-sentence: *Mary left because John ordered her to leave* (provided that general conditions governing orders are satisfied).

This solution supports the idea proposed by Baunaz and Puskas (2014) and Puskas (2013) (see footnote 14), according to whom complementizers (such as *que* in French or *hogy* in Hungarian) come in different flavours depending on the type of predicate used.

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