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A Taxonomy of Noncanonical Uses of Interrogatives

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Abstract

The aims of this paper are (i) to provide a detailed taxonomy of noncanonical uses of interrogative sentences, i.e. when they are used not to ask a question but to convey some information, or to ask a question albeit not that expressed by the interrogative sentence exploited in the act, (ii) to identify properties of circumstances where an interrogative sentence is being used in this way, and (iii) to propose some maxims that govern the rational use of questions. Four main categories of such cases are presented, and a few further subclasses are differentiated. I show how these types are interrelated, and what logical features differentiate them. I also propose a hypothesis for when an interrogative sentence is not being used in its primary mode. Studies on circumstances in which questions are used in other ways can shed light on maxims that govern asking and questioning in a rational conversation; therefore, some possible maxims of this kind are proposed.

Keywords Questions · Taxonomy of questions · Implying questions · Implicatures of questions · Indirect questions

1 Introduction

Not all of our utterances are direct; not all of them are to be taken literally. Sometimes we use a declarative sentence to express a question (e.g. "I wonder when Berlin became the capital of Germany"), and hence we ask a question indirectly. Sometimes we use an interrogative sentence to inform someone about some state of affairs (e.g. "Don't you think that is beautiful?") or to express a different question, for it happens that a sentence of one kind is used in order to communicate something which is not part of its literal meaning (e.g. "I like you" or "Can't we change the subject?" in response to "Do you still love me?") or to perform some other speech act, albeit indirectly. All these facts are well-known. Since the famous and influential

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works of Grice (1975) and Searle (1970), there have been a few theories that have aimed to describe the mechanisms responsible for providing information by using sentences that, semantically, don't express it; or have tried to explain how one can perform one speech act indirectly. Even if they explicitly acknowledge that interrogatives can also be used intentionally to convey some information rather than just pose a question (see, for a prominent example, Bach and Harnish 1979) or to pose a question different to the one uttered, when discussing conversational implicating the focus has been especially on declaratives and their assertions. Naturally, there is much recent research dedicated to semiotics (e.g. Ginzburg and Sag 2000; Mayer 1988; Brożek 2007, 2011; also, Ajdukiewicz 1978) and the logic of interrogatives (e.g. Belnap and Steel 1976; Harrah 1975; Kubiński 1980; Szaniawski 1973; Tichy 1978; Wiśniewski 1994, 1996,2001; Groenendijk and Stokhof 1997; Wiśniewski and Leszczyńska-Jasion 2015) and to indirect answers to questions and their logic (Łupkowski 2015; Łupkowski and Leszczyńska-Jasion 2015); there is also some insightful legal literature concerning the topic of loaded and leading questions (e.g. Keane and Fortson 2011; Muscio 2011; Schuman and Presser 1996; Bain and Baxter 2010); some taxonomies of interrogatives and questions have been presented as well (e.g. Brożek 2011; Hamblin 1967; Wiśniewski 1995; or Harrah 2002), mainly from the linguistic perspective (e.g. Askin Balci 2015). Those classifications usually take into consideration the formal or lexical properties of interrogatives (like, for example, interrogative particles or properties of their proper answers). Unfortunately, however, much less effort is dedicated to clarifying and classifying them from a pragmatic point of view (cf. Ajdukiewicz 1978; Wilson and Sperber 2012), especially taking into consideration issues decisive for nonliteral or indirect usages of interrogatives (cf. Braun 2011).

The aim of this paper may seem modest; however, it is important from an analytical philosophy of language perspective. Namely, I would like to draw attention to the diversity of noncanonical uses of interrogative sentences and propose a classification based on some logical properties of their contents and usages. By the canonical use (or mode) of interrogatives I hereinafter understand using them in order to learn which of their proper answers are true, viz. the usage when one utters an interrogative sentence just to ask a question of the semantic content expressed by the interrogative. In consequence, noncanonical use of interrogative will be those cases in which the primary force of an utterance of an interrogative sentence is not that of asking a question, or when one tries to get an answer to a different question from that which one actually asks. Although I will describe how, by asking one question, it is possible to indirectly ask another, it is not the main objective of the paper. Rather, I will expose some modes of use of interrogatives and explain from what logical features they stem. The proposed distinctions will pertain to the content of an interrogative sentence and its relationship with intentionally conveyed content. The criterion of typology that will underline the proposed taxonomy will be the logical relationship between the content of an interrogative sentence and its communicative purpose in use. I also hope to demonstrate clear connections, similarities and differences, among specified subcategories. The second aim is to address a challenging problem: if there are so many types of usages of interrogatives, how can an addressee grasp what kind of usage she is dealing with? What helps us to recognize

that an interrogative sentence is being used noncanonically in a given context? I will give an answer to these questions. I will maintain that there are specific properties of an act of uttering an interrogative sentence that indicate that the sentence is probably not being used in the canonical manner. These properties are of the syntactical, semantical and pragmatical kind.

2 Preliminaries

Let us begin with some clarification. It is commonly believed that the term "question" is ambiguous (cf. Lyons 1981; Huddleston 1994). One might consider it to denote a specific kind of sentence of a given language, i.e. an interrogative sentence. Its specificity is usually marked by syntactical, morphological, or phonetic means. In writing, we usually use question marks; in verbal conversation we can use intonation (usually rising) to signal that the sentence we are uttering is erotetic and should be taken as expressing a question. Sometimes—depending on the language—we recognize an erotetic sentence solely by its grammatical form (e.g. in English in the case of "yes/no" questions or when the main verb is "be") or an occurrence of an interrogative particle (like, in English, "who", "what", "where", "why", "how", etc.). From that point of view, a sentence like "Do you like Alice or Robert?" or "Do you like Robert or Alice?" and its direct translation into Polish "Czy lubisz Alicję czy Roberta" or in Spanish "¿Te gusta Alicia o Roberto?" are all different questions. However, one may maintain that these different interrogative sentences constitute in fact one question, i.e. they express the same question for they have the same content. This is the reason for introducing the notion of the (semantic) content of a question (or, to be more precise, of an interrogative sentence). I will define this notion shortly.

Therefore, for example, if it is said that someone, by producing some speech act, conversationally implicated a question, the term "question" will be understood in this specific sense, i.e. as the semantic content of a specific interrogative sentence. However, when I say that someone conversationally implicated something by asking a question, a third meaning of "question" will be in force. According to this meaning, a question is a specific speech act or an intended result of such act governed by apt felicity conditions (they specify what circumstances must obtain for a speech act (here, asking a question) to be well formed or appropriate, and what counts as canonical use of interrogatives). That is, when two different persons utter two different interrogatives (questions in the first meaning) "Where were you born?" and "¿Donde usted nacio?", expressing the same content (question in the second sense) and they do that to learn from me where I was born, each of them performs a different act but of the same type (question in the third sense). To that end they can even use a declarative sentence like "I wonder if you could tell me where you were born" or "I don't know where you were born but I would like very much to know it and you to tell me that" intending that I recognize that they are asking me about my place of birth. Thus, one can maintain that, although a declarative sentence was used, a question (in the third sense) was asked. However, if they utter the interrogative "Where were you born?" to acquire this information, they use it in its direct, standard or canonical way. They ask the question about my place of birth directly.

When the term "question" will be used hereinafter, the context will specify whether it is used as a syntactic, semantic or pragmatic term.

Before I define the notion of the (semantic) content of an interrogative, let us adopt a few auxiliary terms. As was observed, if one has understood an interrogative sentence, one may not yet know what its true answer will be, one knows, however, the answer's structure. This is to say that any true answer will be a substitution of the propositional function which is uniquely determined by the interrogative sentence itself. *Datum questionis* of a question is the propositional function coordinated with each interrogative sentence which forms the schema of answers to this question. The relevant *datum questionis* is uniquely determined, as Ajdukiewicz (1978, pp. 156–157) once noticed, partly by the fragment of the sentence contained in the question, and partly by the interrogative particle which indicates where the incomplete sentential expression is to be supplemented by a variable. As for the notion of a proper answer to a given question (interrogative to be precise), it can be understood as Ajdukiewicz (1974, pp. 85–87) once proposed (see also Ajdukiewicz 1978; Harrah 1961)[1]:

> (Def. Proper answer).
> D is a proper answer to Q iff D is a proper substitution of the *datum questionis* of Q.

To illustrate,

> *Why did you eat all the apples?*
> *When did Tom visit Peter?*
> *Is Laura Polish?*

have the following *datum questionis*:

> *I ate all the apples, because p* ('p' represents an English sentence).
> *Tom visited Peter in/on* x (x ranges over moments or periods).
> *Laura x Polish* (where x = '*is*' or x = '*is not*').

Therefore, proper answers to these questions include, for example, the following:

> *I ate all the apples, because they looked delicious and I was hungry*
> *Tom visited Peter when he was in Berlin*
> *Laura is not Polish.*

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[1] For some types of questions (sometimes called "open questions") it might seem that they don't determine a form of proper answer. For it may seem that one can answer "Why did you do it?" with "I couldn't be compelled not to do it" or "Tom told me to do it", etc. which don't seem to have anything particular in common. However, I see these replies as conveniently abbreviated proper answers: "I did it, because I couldn't be compelled not to do it", "I did it, because Tom told me to do it". All of them are of the form "I did it, because p".

However, the following:

> *I ate all the apples not because I was hungry*
> *It was Friday or Saturday when Tom visited Peter*
> *Laura is Spanish and no one can be of two nationalities*

are not examples of proper answers to the respective questions. Should one wish to have a convenient label for them, one might dub the first two partial answers, for they either provide some information that allows one (given the assumptions of the questions) to exclude at least some direct answers to their respective questions or are logical consequences of respective proper answers (Ajdukiewicz 1978, p. 160).

The last answer could be considered indirect with respect to the question. This is so because an indirect answer to a question Q is usually defined as any sentence (or proposition expressed by it) that entails a proper answer to Q and which is not a proper answer itself. In the last case, a proper answer "Laura is not Polish" follows from "Laura is Spanish and no one can be of two nationalities".

Sometimes the term "answer to the question" is reserved solely for sentences that are logically related to its proper answers. That is to say that not all responses to a question are considered answers to it. When someone asks me "Where is John?", my reply that "I saw Mary going to the cinema" may not seem, at least to some theorists, to be an answer of any kind, merely a reply, even if, in some appropriate circumstances, it were meaningful, informative, and relevant. For all the issues that will be discussed here, however, this level of subtlety is not necessary. From everything that has already been said, it follows that, as for the nature of answers, I am in agreement with the famous postulates formulated by Hamblin (1958). Namely, I take for granted that answers are statements, i.e. assertions of declarative sentences. Some respected linguists and logicians, however, have argued against that view (e.g. Hintikka 1976; Tichy 1978). Without a doubt, there are intelligible replies to questions that are not statements (e.g. noun phrases, nods), however, I assume that all of them are coded or elliptical answers that are to be treated as abbreviations of statements.

2.1 Content of a question

Bearing in mind all the notions evoked so far, we are ready to propose a definition of the (semantic) content of a given question Q, or of an interrogative Q to be precise. Of all the potential definitions of that notion, I prefer to adopt the classic one (see Harrah 2002, p. 7). According to it, the content of a question (i.e. interrogative sentence) is the set of all propositions expressed by all proper answers to it.

> (Def. Content of a question).
> A proposition p is part of the semantic content of a question Q iff there is a sentence S that (1) S expresses p, and (2) S is a proper answer to Q.

For the sake of convenience, however, sometimes I will refer to the content of a question as the set of all its proper answers instead of the set of all propositions of all such answers to it. Furthermore, I will not even try to explicate what it takes for a sentence to express a proposition or what propositions are: it is assumed henceforward that these high-profile issues are resolved. I believe that the generality of the following account allows for remaining neutral on these controversial topics.

As was mentioned before, the idea behind the definition is to preserve the intuition that two different interrogatives can have the same content, i.e. can express the same question. Although the following interrogatives.

> *Is Warsaw the capital of Poland?*
> *¿Varsovia es la capital de Polonia?*
> *Czy Warszawa jest stolicą Polski?*

don't share the same proper answers to them—for they are expressions of different languages—if there is a proposition expressed by any proper answer to the first, there is a proper answer to each of the others which expresses exactly the same proposition. Therefore, they have the same content in the stipulated sense.

It is not controversial to assume that any question has at least two proper answers to it. However, the content of some interrogatives is potentially infinite, e.g. "Why is the train late?". Also, there are questions with an unknown number of answers ("Where will I go on vacation?"). But there are some questions that have a countable finite set of answers, e.g. "What month were you born?", or "Did you find your book?". For convenience, however, I will restrict the scope of my remarks to questions with finite content (i.e. a finite set of propositions expressed by proper answers).

Interrogative sentences can be used with different intentions. Therefore, one can differentiate several types of questions (i.e. uses of interrogatives to be precise) based on differences in intentions of a speaker, since it is her intention that determines what kind of speech act she performs.

3 Canonical and rhetorical modes

Let us begin with what is probably the least controversial and what is being called here canonical usage of interrogatives. What does it mean to use a question (or, to be precise, interrogative sentence) in this mode? We may stipulate the following:

> (Def. Canonical Question).
> If the content of a question Q is $\{p_1, \ldots, p_n\}$, then Q is used canonically iff Q is used mainly to find out whether $p_1, \ldots,$ or p_n.

The qualitative term "mainly" is to point out that sometimes a given speech act is produced with some other different intentions in mind, but only when the described intention prevails can it be categorized as a conventional usage of the interrogative Q. In this mode, an interrogative is uttered just to perform the act of asking a

question, viz. just to find out with the help of its receiver which of its proper answer is true. The conventional function of interrogatives, i.e. direct acts of asking questions, is governed by standardly described felicity conditions (cf. Searle 1970, p. 66).

What follows from the stipulated definition is that an interrogative sentence Q is used noncanonically iff Q is not used mainly to that end, i.e. not to find out which proper answer to Q is true. There are plenty of reasons why someone can use interrogative sentences (e.g. to make a friend laugh, to raise some problem, to defuse a tense atmosphere, to mislead, and many others). However, the objective is to describe the most common practices resulting from utterances of interrogative sentences which could be linked to some logical relations between their content and the content of what is intended by the speaker. From now on, I will try to describe these modes of using interrogatives when they don't perform the conventional or standard function, i.e. when they don't only perform direct acts of asking questions. To that end, I will differentiate some indirect speech acts performed in making direct acts of asking a question. It will be shown that there are important and significant differences in the broad category of noncanonical uses of questions and the differences between them can be attributed to the differences between the logical relations between the content of interrogatives used and that of the intended acts.

Let us begin with positive rhetorical questions. As I will show shortly, on some occasions an interrogative sentence $Q = \{p_1, ..., p_n\}$ is used such that:

(1) There is a $p_k \in Q$: Q is used to inform that p_k.[2]

If that is the case, it allows for the introduction of the notion of a positive rhetorical question, as defined[3]:

(Def. Positive rhetorical question).
If the content of a question Q is $\{p_1, ..., p_n\}$, then Q is used as positive rhetorical question iff there is a $p_k \in Q$: Q is used to inform that p_k.

One can argue that in that kind of case no question is being asked, for a speaker does not use such a sentence in order to learn anything specific from anyone, even if the use involves conventionalized tools typical of questions. These kinds of utterances are specific enough that one who intends to use an interrogative sentence to that end

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[2] An anonymous referee pointed out that issuing a rhetorical question is not to inform the hearer that p, but rather to remind him that p, since in the case of a rhetorical question both the speaker and the hearer know the answer to it (cf. Wilson and Sperber 2012, p. 222). But this is only sometimes the case. On some occasions, especially when rhetorical use of interrogatives is signaled by a dramatic intonation, it is rather to present that p as evident, undeniably true, no matter if the hearer concurs with this assessment. Isn't it? However, I concur that it would possibly be most accurate, yet wordy, to substitute "inform" by "inform, remind, or present as evident".

[3] If it were not the case, the stipulated term would turn out vacuous. However, on the traditional account of definitions it is required that a defined term is not referentially empty. I concur with this account, therefore, I assume that only if (1) is satisfied, will the definition be correct.

may signal this intention with dramatic intonation, negative forms (e.g. "Didn't I tell you not to do it?") or archaic forms of interrogative articles (e.g. in Polish "Czyż nie mówiłem?" instead of "Czy nie mówiłem?", "Didn't I tell you so?" would be meant as "I told you so"). However, rhetorical questions come in different kinds, for sometimes an interrogative sentence $Q = \{p_1, \ldots, p_n\}$ is used in such a way that:

(2) There is a $p_k \in Q$: Q is used to inform that it is not the case that p_k,

which allows us to speak of negative rhetorical questions. So, accordingly, I propose the following:

(Def. Negative rhetorical question).
If the content of a question Q is $\{p_1, \ldots, p_n\}$, then Q is used as negative rhetorical question iff there is a $p_k \in Q$: Q is used to inform that it is not the case that p_k.

When in the famous "Monty Python's Life of Brian" the character Reg utters:

What have the Romans ever done for us?

he ostensibly tries to communicate that any proper answer to that question is false (apart from the sanitation, medicine, education, wine, public order, irrigation, roads, fresh water system and public health).[4]

4 Questions conveying propositions

There are usages which are not of kind (1) or (2) and yet an interrogative is used to inform about something. For example, if someone dramatically utters:

Does Al really think that cats can reason?

she may intend to inform her addressee that cats can't reason. That information is distinct from the propositions which constitute the content of that sentence. The *datum questionis* of that question is of the form:

Al really x think that cats can reason, where $x = \{$"*does*", "*doesn't*"$\}$.

The intended information (that cats can't reason) doesn't follow from any proper answer to that question (for its content is {addressee thinks that cats can reason, addressee doesn't think that cats can reason}).

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[4] This particular example can exemplify narrower class of negative rhetorical questions when an interrogative is used to inform that all its proper answer are false.

This observation motivates adding another type of noncanonical usage of interrogatives. This specific use of interrogatives, Questions Conveying Propositions (QCP) as I propose to call it, satisfies the following:

(3) There is a $p_k \notin Q$: an interrogative sentence with the content $Q = \{p_1, \ldots, p_n\}$ is used to inform that p_k.

More precisely:

(Def. Implying question) If the content of a question Q is $\{p_1, \ldots, p_n\}$, then Q is used as a Question Conveying Proposition (QCP) iff there is a $p_k \notin Q$: Q is used to inform that p_k.

Within this category, I propose the following distinction which enables one to differentiate between two distinct cases where an interrogative sentence $Q = \{p_1, \ldots, p_n\}$ is used in such a way that:

(3.1) There is a $p_k \notin Q$: Q is used mainly to inform that p_k, and p_k and some member of Q are logically related.[5]
(3.2) There is a $p_k \notin Q$: Q is used mainly to inform that p_k, and p_k and each member of Q are mutually logically independent.

Therefore, we may stipulate the following definition:

(Def. QCP by logical means).
If the content of a question Q is $\{p_1, \ldots, p_n\}$, then Q is used as a QCP by logical means iff there is a $p_k \notin Q$: Q is used to inform that p_k, and p_k and each member of Q are mutually logically independent.

and

(Def. QCP by nonlogical means).
If the content of a question Q is $\{p_1, \ldots, p_n\}$, then Q is used as a QCP by nonlogical means iff there is a $p_k \notin Q$: Q is used to inform that p_k, and p_k and each member of Q are mutually logically independent.[6]

Usages of the first type (3.1) are less controversial than the second, for every question has its cognitive content which enables one to convey some information not included in its semantic content (Pelc 1991; Keenan and Hull 1973). When a

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[5] Two propositions p, q are logically related iff at least one of the following holds: (i) p is a consequence of q, (ii) q is a consequence of p, (iii) the negation of p is a consequence of q, or (iv) p is a consequence of the negation of q. Propositions p, q are mutually logically independent iff p and q are not logically related.

[6] Please be aware that "logical" in "by logical means" is meant to be taken lightly or as merely a technical term, i.e. only as a term to differentiate two kinds of usage.

question is asked, we usually assume that there is at least one proper answer to it which is true and, on the other hand, that there is at least one proper answer that is false. The first kind of assumption is called a positive—and the second a negative—assumption of question (cf. Ajdukiewicz 1978, pp. 158–159). On some special occasions we don't take these assumptions to be true, like during an exam, for we are well aware that a question asked by a teacher can be tricky, misleading, or malicious. However, by default, when someone asks:

What day of the week is Peter in Paris?

we can take for granted that—according to the speaker—Peter is in Paris on Monday or Tuesday or Wednesday or … On the other hand, we can also take for granted that Peter is not in Paris on Monday or is not there on Tuesday or … That is to say that when we ask that question, we assume that there is at least one day during the week when Peter is in Paris, and there is at least one day during the week Peter is not in Paris.

Also, there are some shared analytical consequences which follow from any proper answer to a question. These are called the presuppositions of a question (Belnap and Steel 1976, pp. 119–120; see also Harrah 2002, p. 27; Keenan and Hull 1973). Thus, by definition, a proposition p is a presupposition of a question Q, if an only if p is an analytic consequence of any proper answer to Q. For example, from any proper answer to:

Which marked trail did Peter use to climb Triglav in the Julian Alps?

it follows that, for instance,

Peter climbed Triglav,
Peter was in the Julian Alps.

All the assumptions and presuppositions of a questions form the cognitive content of that question.

Attentive readers have probably already noticed that if one wanted to inform someone that Peter climbed Triglav or that there is a marked trail Peter didn't use to climb Triglav, one could use.

Which marked trail did Peter use to climb Triglav in the Julian Alps?

and that usage of this sentence would fall within category (3.1).[7] That would be the case because all the presuppositions of a question are by definition logically related with propositions which constitute the content of the question (for a presupposition

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[7] An anonymous referee noted that some more general mechanism may play a role in the interpretation of the"Triglav example", i.e. the one which Langton (2018) and Witek (2019) would call a 'back-door speech' act that exploits the mechanism of accommodating presuppositions.

of a question, by definition, is entailed by each of its direct answer, therefore it is entailed by their set). Also, it is the case with the assumptions of a question: a positive assumption is entailed by any proper answer to the question, a negative one is entailed by any negation of such an answer to the question.[8]

Someone skeptical about the rationality of using interrogatives belonging to category (3) may express a worry: why use these sentences to inform someone instead of being direct? Are there really cases where we inform others by means of interrogative sentences rather than declarative ones? One potential reason sticks out. Namely, sometimes it feels less hurtful to deliver some information in the guise of a question. Sometimes saying something in a straightforward manner, directly, may be taken as offensive or cruel. Therefore, there might be a temptation to act as though some information was already known to the hearer or was even common and tacit knowledge. For example, if we are aware that X is in love with Y, but X doesn't realize that Y just got married, we might prefer to inform X about that matter by asking X if Z was present at Y's wedding yesterday instead of directly telling them that Y got married yesterday.

One can find even more interesting cases in category (3.2), for there is no logical connection between the content of an interrogative sentence and the intended information delivered. A natural and imminent problem arises: how is it possible to ask a question with some specific content but to inform someone about something completely different? Before I try to address that problem, let me give some examples to illustrate this category of usages.

Firstly, Puczyłowski and Ziembicki (2018) pointed out that, in Polish, typical uses of interrogatives of the form:

Czy nie uważasz/sądzisz, że p?
[*Don't you think/believe that p?*].

implicate that, according to its speaker, it is the case that *p*. The same seems to be the case for its literal English translation. When one asks.

Don't you think that Berlin is a nice city?

one implicates that one believes that Berlin is a nice city. This proposition (that Berlin is a nice city) is logically independent of any proposition which is part of the content of that question. For its content is {that the addressee doesn't believe that Berlin is a nice city, that the addressee believes that Berlin is a nice city}. For the sake of a subdivision I would like to propose within this category, it is worth noting that the proposition implicated is not conversationally implicated. It would have seemed strange if one had tried to cancel this implicature by saying:

Don't you think that Berlin is a nice city? I don't think that it is, but don't you?

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[8] Even if the positive assumption of Q can be considered as one of Q's presuppositions, the negative one can't, since it doesn't follow from any proper answer to Q.

or

> *I don't think so, but don't you think that Berlin is a nice city?*

Rather, it seems that there must be some lexicalized convention that is operative in the case of that type of interrogative. This observation justifies introducing the following subclass:

> (Def. QCP by conventional means).
> If the content of a question Q is $\{p_1, \ldots, p_n\}$, then Q is used as a QCP by conventional means iff there is a $p_k \notin Q$: Q is used to inform that p_k, and p_k and each member of Q are mutually logically independent, and is not conversationally implicated by an assertion of any proper answer to Q.

When we encounter these kinds of usage, an interrogative sentence $Q = \{p_1, \ldots, p_n\}$ is used in such a way that:

> (3.2.1) There is a $p_k \notin Q$: Q is used mainly to inform that p_k, and p_k and each member of Q are mutually logically independent, and is not conversationally implicated by an assertion of any proper answer to Q.

However, it seems that there are some usages of interrogatives of kind (3) where an assertion of any of their proper answers will conversationally—rather than conventionally—implicate some propositions. For the sake of illustration, imagine a scenario where someone asks:

> *How long has Jon been interested in ballet?*

and hears in response:

> *How long has he been in love with Mary?*

It is not hard to comprehend that in this case the response can be taken as if it were to inform that Jon has been in love with Mary as long as he has been interested in ballet or, at least, that these events are temporally connected.

Alternatively, imagine that someone states:

> *The trip to Disneyland was very successful*

to which someone replies:

> *So why did some of the children try to return home on the very first day?*

which clearly suggests that the trip was not so successful.

Also, if one replies:

> *Have you noticed the white Ford parked at the Smiths?*

to the question.

> *Where is Mary right now?*

we are right to suspect that (according to the speaker) Mary is probably at the Smiths.

I propose dubbing this category of use of interrogatives "QCP by conversational means" or just "conversationally implying questions":

> (Def. QCP by conversational means).
> If the content of a question Q is $\{p_1, \ldots, p_n\}$, then Q is used as a QCP by conversational means iff there is a $p_k \notin Q$: Q is used to inform that p_k, and p_k and each member of Q are mutually logically independent, and is conversationally implicated by an assertion of any proper answer to Q.

We encounter these kinds of usages when an interrogative sentence $Q = \{p_1, \ldots, p_n\}$ is used in such a way that:

> (3.2.1) There is a $p_k \notin Q$: Q is used mainly to inform that p_k, and p_k and each member of Q are mutually logically independent, and is not conversationally implicated by an assertion of any proper answer to Q.

Why bring up the notion of conversationality? For some readers, these examples may be reminiscent of the phenomenon of conversational implication (Grice 1975; Levinson 2000). And rightly so, for imagine a context where the following question is asked:

> *How long has Jon been interested in ballet?*

to which one replies:

> *He has been in love with Mary since April.*

By saying this, one clearly and undoubtedly conversationally implies a proposition that one thinks that Jon has been interested in ballet since April, i.e. one conveys some information not coded in the sentence uttered by exploiting the assumption of the rationality of the exchange. Also, if in response to someone's opinion that:

> *The trip to Disneyland was very successful,*

an agent said:

> Some of the children tried to return home on the very first day because they were hungry

she would conversationally implicate that she doesn't share that opinion. For another example, imagine that to the question:

Where is Mary right now?

someone answers:

The white Ford has been parked at the Smiths for a while.

By answering in that manner, she clearly implies that Mary is probably at the Smiths. It is worth noticing that, in the case of a conversationally implying question, any of its proper answers would conversationally implicate a proposition if it were used in the context where the question was posed. However, that is not to say that the question would implicate the same proposition. Sometimes a conversationally implying question implicates a different proposition from the proposition that would have been implied had a proper answer been used instead. Clearly, the following cases differ in terms of the implicatures the answers (A) generate:

Q: *How long has Jon been interested in ballet?* A: *How long has he been in love with Mary?*
Q: *How long has Jon been interested in ballet?* A: *He's been in love with Mary since April.*

Finally, it is worth pointing out that loaded and malicious questions seem to fall within this category. However, making a separate category for them in this taxonomy would require consideration of another factor: the truth value of conveyed information (or, at least, an audience's or speaker's attitude towards it). For a question can be loaded only if the intended information is considered unjustified or false. As for a malicious question, we can put a tricky question only if we believe that its positive assumption is false, i.e. there is not any true proper answer to it.

5 Questions conveying questions (QCQ)

The fact that by asking a question someone can conversationally implicate something is well-acknowledged, and there are some works dedicated solely to that topic (Braun 2011; Puczyłowski and Ziembicki 2018). Undeniably, in addition to declarative statements or assertions, questions (in the third sense) are legitimate steps in rational conversations. These are questions that often determine the direction or purpose of conversations: they allow one to determine which statements are relevant and to what extent. Since assertions in rational conversations are regulated by specific maxims, it would be highly surprising if asking were not regulated in a similar fashion. These conversational maxims make it possible to communicate propositions by way of statements whose literal meaning is different than the content implied. Therefore, by analogy, one can expect that there must be similar maxims regulating rational acts of asking questions, and these

maxims would be helpful in explaining how it is possible to ask a question to convey a proposition or ask another question. However, the right formulation of conversational maxims is not yet clear. Also, there is no consensus so far on how to determine not only what the content of an implicature of a question is, but how to establish whether it is a question (in the second meaning) or a proposition that is conversationally implicated by asking a question to begin with. For sometimes we use interrogatives to imply a question rather than a proposition. This leads to the last category of noncanonical usages of interrogatives: Questions Conveying Questions. We encounter them when an interrogative sentence $Q = \{p_1, \ldots, p_n\}$ is used in such a way that:

(4) Q is used to learn which of $\{q_1, \ldots, q_m\} = IQ$ is the case and $Q \neq IQ$.

If there are such cases, they license the introduction of the following notion:

(Def. Question Conveying Question (QCQ)).
If the content of a question Q is $\{p_1, \ldots, p_n\}$, then Q is used as a question conveying question (QCQ) iff there is a question $IQ = \{q_1, \ldots, q_m\}$: Q is used to learn which of $\{q_1, \ldots, q_m\}$ is the case and $Q \neq IQ$.

One can loosely say that in that case one question is used instead of another. Alternatively, it may be said that we ask one question but intend to get an answer to another. Hereafter, I will refer to the "question asked" as Q and to the "question intended" as IQ.

As with the categories described earlier, I would like to stipulate here some subcategories which are based on similar logical features. The first one is the general QCQ category.

(Def. General (QCQ)).
If the content of a question Q is $\{p_1, \ldots, p_n\}$, then Q is used as a general QIQ iff there is a question $IQ = \{q_1, \ldots, q_m\}$: $\{q_1, \ldots, q_m\} \subset \{p_1, \ldots, p_n\}$.

We can speak of general QCQ when it is the case that an interrogative sentence $Q = \{p_1, \ldots, p_n\}$ is used to learn which of $IQ = \{q_1, \ldots, q_m\}$ is true and

(4.1) $IQ \subset Q$.

i.e. any proper answer to an intended question will be such an answer to the question asked, and yet they are questions with different contents. For example, imagine that a teacher enters a classroom and asks her pupils (let's assume that the class consists of only Peter, Mary and Ann):

Who can do the homework?

She intends to ask which of the proper answers to a question having the content

{Peter can do the homework, Mary can do the homework, Ann can do the homework}.

is true. This is to say, the intended question could be expressed by "Which one of you can do the homework?". However, the content of the question asked is broader, i.e.

{x can do the homework: x ∈ the set of all people}.

Naturally, the teacher expects in that context that the pupils will grasp her intention and not respond with, for example, "You can" (which is a completely legitimate, i.e. proper answer to the question asked).

The second, probably more interesting, type of QCQ is QCQ in the strict sense.

(Def. Strict QCQ).
If the content of a question Q is {p_1, …, p_n}, then Q is used as QCQ in the strict sense iff there is a question IQ = {q_1, …, q_m}: if x ∈ Q, then x ∉ IQ.

That is to say that we would be dealing with a QCQ in the strict sense if the content of the question intended were completely different from the content of the question asked, i.e. an interrogative sentence Q = {p_1, …, p_n} used to learn which of IQ = {q_1, …, q_m} is true but

(4.2) if x ∈ Q, then x ∉ IQ.

There are at least three interesting subcategories to differentiate within this class. For it could be the case that an interrogative sentence Q = {p_1, …, p_n} is used to learn which of IQ = {q_1, …, q_m} is true and

(4.2.1) there is a q ∈ IQ and there is a p ∈ Q: q is a consequence of p and some proposition accepted by the speaker.
(4.2.2) there is a p ∈ Q and there is a q ∈ IQ: p is a consequence of q.
(4.2.3) for all q ∈ IQ and for all p ∈ Q: q is not a consequence of a conjunction of p and any proposition accepted by the speaker.

Let's illustrate those different cases. Let's say Peter knows that Mary visits her father iff she travels to Berlin. If Peter had wanted to know whether Mary had recently visited her father, and had not wanted to expose his true intentions, he would have asked her indirectly:

Have you been to Berlin recently?

Any proper answer to that Yes/No question would have provided such an answer to the question intended. Therefore, the question asked clearly falls within

(4.2.1). This case differs from others in an important way. To deliver information which is required by the sender, the receiver must only answer the question asked. The addressee would be perfectly cooperative by answering the uttered question instead of the one which the speaker had on her mind.

To exemplify (4.2.2), imagine that a teacher enters a classroom and asks her three pupils (Peter, Mary and Ann).

Has anyone solved the problem?

Notice that this is another Yes/No type of question, so its content is

{Someone solved the problem, Nobody solved the problem}.

However, the content of the question intended is completely different, i.e.

{Ann solved the problem, Mary solved the problem, Peter solved the problem}.

Obviously, for any proper answer to the question intended, there is an answer to the question asked that follows from it (e.g. "There is someone who has solved the problem" follows from "Ann solved the problem").

The most interesting cases are probably of type (4.2.3), for they can once again connect the issue of indirect and nonliteral questions with the theory of conversational implicature. To illustrate that kind of nonliteral question, imagine that someone asks:

Excuse me, can you tell me what the time is?

The proper answers to this Yes/No question are "Yes, I can" and "No, I can't". They are logically independent from any proper answers to the question intended:

What time is it?

Also, if you come home late in the night and your spouse asks you.

Is that lipstick on your cheek?

you are asked indirectly rather, for example,

Have you cheated on me?

And the proper answers to those intended questions are, clearly, logically independent from the proper answers to the question asked.

6 Hypothesis and final remarks

How can one recognize that a given interrogative is being used noncanonically? In some cases it would not be necessary for successful conversation to solve this issue: any proper answer to the question asked will provide an answer to the question intended [as in (4.2.1)]. In other cases, however, we need to recognize that the question asked is not the one that is intended, or we should grasp that it conveys some information rather than positing a question alone. I suppose that at least in some cases, some syntactic, semantic or pragmatic properties of questions will indicate that they are used not to ask about the content of the interrogative used.

Let me formulate a hypothesis addressing that issue in closing:

(Hypothesis about sufficient conditions for noncanonical uses of interrogatives).
A question is used noncanonically in a context C if any proper answer to it (or affirmative answer to a Yes/No question) is

(a)   contextually irrelevant in C,

for an apparently irrelevant answer suggests looking for an interpretation under which the utterance is cooperative. Look at the replies in the following examples:

Is he cheating on his wife?—Would you like to have some cake?
Shall we do it?—Are you out of your mind?
Can we buy this couch?—When are you getting paid?

Any proper answer to them would be apparently irrelevant to the issue defined by the opening questions. However, the replies must contribute to the topic, provided speakers are cooperative; therefore, they cannot express only a request to learn something from others.

(b)   blatantly false, unjustified or ostensibly true or trivial (i.e. does not convey enough contextually relevant information):

All rhetorical questions and some QIQ in the strict sense can be recognized by that feature. Let's look at some examples:

Am I the Emperor of China?
Does anyone know the solution?

In the first case, the negative answer is obvious, in the second the positive answer can be under some circumstances trivial. In rational conversation, however, there is no need to ask about something trivial or apparently known to all participants

of a conversation. Therefore, by posing a question to which an answer is obvious or trivial, its sender must have something other on her mind, provided she is being cooperative.

(c)   conversationally implicating something in C.

The rationale for this is similar as for case a), so it could be argued there is no need to differentiate between the two categories. However, I would like to separate these two cases, for it seems to me that any proper answer to A clearly would conversationally implicate a proposition in the circumstances of the following dialogue:

Q: *How long has Jon been interested in ballet?* A: *How long has he been in love with Mary?*

which is not so apparent in the case:

Q*: Let's do it!* A: *Are you out of your mind?*

had "You are not out of your mind" been used in reply (i.e. instead of "*Are you out of your mind?*").
   Also, it doesn't seem that all proper answers to the second question (i.e. question posted as A) would be irrelevant:

Q: *Did John succeed in summiting Triglav?* A: *Did he try to summit it?*

Positively, both proper answers would be relevant and informative; and yet in some circumstance the reply A would express some doubt about John's determination in reaching the summit; without doubt the positive and negative answers would conversationally implicate something in these settings. Therefore, it would be better to separate (a) and (c) cases.

(d)   question more lexically complex than it needs to be.

If a rational and cooperative speaker, having at her disposal two sentences of the same content, decides to use the more complex, there must be some reason for that, i.e. one can assume that she is trying to communicate something else or something additional. Therefore, if one uses.

Don't you think that p?

instead of the briefer.

Do you think that p?

it is rational to assume that a need to learn what the receiver thinks about p is not all that is communicated. For, assuming otherwise one can't explain this extra effort by the speaker.

(e)   somehow not fully grammatical:

The last point is the most controversial. However, if we agree that a proper answer to

   Why am I even listening to you?

 is a sentence of the form.

   I am even listening to you, because …

and that it is a form of grammatically correct sentence, we can agree that the question is not to be taken literally and directly. This conclusion stems from the assumption that a speaker is rational and would not use an ungrammatical sentence without a good reason.

   Studies on circumstances in which questions are used noncanonically have not only practical but theoretical merit, for they can shed light on maxims that govern asking and questioning in a rational conversation. Therefore, if the hypothesis turned out to be not without support, it would establish a good argument for the following maxims of rational asking and questioning (cf. Braun 2011):

(a)   don't ask if a true proper answer is mutually well-known.

If a cooperative speaker ostensibly intentionally disobeys this maxim, she invites the receiver to take her question in noncanonical way, since taken in that way it would violate an assumption that the sender wants to acquire some information. If someone in the same room as me utters "Are you with me?" or "Are you here", she must have something other in mind than to receive a proper answer to her question, for it is obvious where I am.

(b)   don't ask if it is known that there is no true answer.

When it is known that there is not any true proper answer, it must be assumed that the speaker requires an answer to a different question or tries to convey some information, provided she is being cooperative.

(c)   don't ask if some proper answer will not provide the right amount of information or will not be relevant.

When someone asks "Where is it?" pointing at a mountain on the picture, she must have some more specific question on her mind, for some direct answer, e.g. "On Earth" would provide far less information than would be contextually relevant.

(d)   keep your question brief, intelligible, unequivocal and ordered.

When one cooperative speaker asks "Don't you think that p?", which could have been asked more briefly by the question with the same content "Do you think that p?", then probably she has to have some communicative reason for this extra effort besides a need to learn what the receiver thinks with regard to p.

The other challenge is how to determine what the propositions intended by QCP are or what the content of an intended question is. Unfortunately, I must sadly admit that I don't see any promising and general solution to that issue yet.

One can also speculate whether all the possible noncanonical usages of interrogatives have been described here. Definitely not! This taxonomy is not meant to be an exhaustive classification and its elements are not necessarily disjoint.

To see that the taxonomy is not exhaustive it suffices to carefully examine the quantification used in the descriptions of the cases [especially for type (4.2) or (2)]. Surely, there are some possibilities to pursue in obtaining a more detailed and refined classification. For example, one can wonder if leading questions should be included in this taxonomy. They are used with a singular purpose, namely, they are used to ensure that an addressee answers in a specific way. However, I doubt that the kinds of questions which prompt a desired answer should fall within this taxonomy, for they are used canonically but to some specific end. Interestingly enough, Wilson and Sperber (2012, pp. 221–229) describe a few interesting types of questions to point out that interrogatives can be literally and seriously used without requesting information, i.e. not in the standard way. Among others, they specify guess question, exam question, surprise question, self-addressed question, and speculative question. Therefore, to improve the taxonomy, it might be worth considering extending it with the categories discussed by the authors. The first approximation could be as follows:

If the content of a question Q is $\{p_1, \ldots, p_n\}$, then.

(5) Q is used as an exam question iff there is an agent A: Q is used to learn which proposition of $\{p_1, \ldots, p_n\}$ A takes to be true;

(6) Q is used as a surprise question iff there is $p_k \in Q$: Q is used to express the surprise that p_k is true;

(7) Q is used as a guess question iff Q is used to let the addressee guess which proposition of $\{p_1, \ldots, p_n\}$ is true;

(8) Q is used as a speculative question iff Q is used to learn whether there exists a true proper answer to Q or to engage the addressee in a pursue of the true answer to it.[9]

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[9] I suppose that a self-addressed question is a type of canonical use of questions. It is asked to learn which proper answer is true, but the difference is that the addressee of the question is the speaker.

That the categories of noncanonical usages of interrogatives are not disjoint is clear if we realize that intentions during conversations can be different and numerous. It is especially clear in the case of negative and positive rhetorical modes. If a Yes/No question {p, ¬p} is used as positively rhetorical, then it can be argued that it is simultaneously used as negatively rhetorical one, since informing that p, by the assumption of consistency of the speaker, entails that she believes the second proper answer to be false. Nonetheless, even if the taxonomy is not yet exhaustive, I hope that the described kinds of noncanonical usages of interrogatives will help in further investigations in the field of erotetics and philosophy of language and non-literal or nondirect communication. To enhance our understanding of roles which interrogatives can play in our communication further studies are still needed.

Compliance with ethical standards

References

Ajdukiewicz K (1974) Pragmatic logic. Reidel Pub Co, Dordrecht-Boston

Ajdukiewicz K (1978) Interrogative sentences (1934/1938). In: Giedymin J (ed) The scientific world-perspective and other essays 1931–1963. Springer, Dordrecht, pp 155–164

Askin Balci H (2015) A study of classification of question sentence formed with interrogative particles in terms of pragmatic perspective. Int J Lang Linguist 2(5):192–202

Bach K, Harnish RM (1979) Linguistic communication and speech acts. MIT Press, Cambridge

Bain SA, Baxter JS (2010) Interrogative suggestibility: the role of interviewer behavior. Leg Criminol Psychol 5:123–133. https://doi.org/10.1348/135532500168029

Belnap N, Steel TB (1976) The logic of questions and answers. Yale University Press, Yale New Haven

Braun D (2011) Implicating questions. Mind Lang 26(5):574–595

Brożek A (2007) On Ajdukiewicz's theory of questions: analyses and improvements. In: Horecka A (ed) Logic, methodology and philosophy of science at Warsaw University (5). Wydawnictwo Naukowe Semper, Warszawa, pp 28–46

Brożek A (2011) Theory of questions: erotetics through the prism of its philosophical background and practical applications. Rodopi, Amsterdam-New York

Grice HP (1975) Logic and conversation. In: Ezcurdia M, Stainton RJ (eds) The semantics-pragmatics boundary in philosophy. Broadview Press, Peterborough, pp 47–59

Groenendijk J, Stokhof M (1997) Questions. In: van Benthem J, ter Meulen A (eds) Handbook of logic and language. MIT Press, Cambridge USA, pp 1055–1124

Hamblin CL (1958) Questions. Australas J Philos 36 (3):159–168

Ginzburg J, Sag I (2000) Interrogative investigations: the form, meaning and use of english interrogatives. CSLI, Stanford

Hamblin Ch (1967) Questions. In: Edwards P (ed) The encyclopedia of philosophy, Vol 7. Macmillan, New York, pp 49–53

Harrah D (1961) A logic of questions and answers. Philos Sci 28:40–46

Harrah D (1975) A system for erotetic sentences. In: Anderson A, Barcan Marcus R, Martin RM (eds) The logical enterprise. Yale University Press, Yale New Haven, pp 235–245

Harrah D (2002) The logic of questions. In: Gabbay DM, Guenthner F (eds) Handbook of philosophical logic, vol 8. Springer, Dordrecht, pp 1–60

Hintikka J (1976) The semantics of questions and the questions of semantics: case studies in the interrelations of logic, semantics and syntax. North-Holland Publishing Company, Amsterdam

Huddleston R (1994) The contrast between interrogatives and questions. J Linguist 30:411–439. https://doi.org/10.1017/S0022226700016704

Keenan E, Hull RR (1973) The logical presuppositions of questions and answers. In: Petöfi J, Franck D (eds) Präsuppositionen in Philosophie und Linguistik. Athenäum-Verlag, Frankfort/M, pp 441–466

Keane A, Fortson R (2011) Leading questions: a critical analysis. Crim Law Rev 279:280–295

Kubiński T (1980) An outline of the logical theory of questions. Akademie-Verlag, Berlin

Muscio B (2011) The influence of the form of the question. Br J Psychol 1904–1920(8):351–389. https://doi.org/10.1111/j.2044-8295.1916.tb00138.x

Levinson SC (2000) Presumptive meanings: the theory of generalized conversational implicature. MIT Press, Cambridge MA

Lyons J (1981) Language, meaning, and context. Fontana, London

Langton R (2018) Blocking as counter-speech. In: Fogal D, Harris D, Moss M (eds) New work on speech acts. Oxford University Press, Oxford, pp 144–164

Łupkowski P (2015) Logic of questions in the wild: inferential erotetic logic in information seeking dialogue modelling. College Publications, London

Łupkowski P, Leszczyńska-Jasion D (2015) Generating cooperative question-responses by means of erotetic search scenarios. Logic Log Philos 24:61–78. https://doi.org/10.12775/LLP.2014.017

Mayer M (ed) (1988) Question and questioning. Walter de Gruyter, Berlin, New York

Pelc J (ed) (1991) O poznawczej roli pytań (On the Cognitive Role of Questions). In: Prace z pragmatyki, semantyki i metodologii semiotyki. Ossolineum, Wrocław, pp 191–200

Puczyłowski T, Ziembicki D (2018) O implikaturach konwersacyjnych pytań (On Conversational Implicatures in Questions). Filozofia Nauki 26(1):23–48. https://doi.org/10.14394/filnau.2018.0002

Schuman H, Presser S (1996) Questions & answers in attitude surveys. Sage Publications, Thousand Oaks, CA

Searle JR (1970) Speech acts : an essay in the philosophy of language. CUP, Cambridge

Szaniawski K (1973) Questions and their pragmatic value. In: Bogdan R, Niiniluoto I (eds) Logic language, and probability. D.Reidel, Dordrecht, pp 121–123

Tichy P (1978) Questions, answers, and logic. Am Philos Q 15:275–284

Wilson D, Sperber D (2012) Relevance and meaning. Cambridge University Press, Cambridge

Wiśniewski A (1994) Erotetic implications. J Philos Log 23(2):173–195. https://doi.org/10.1007/BF01050342

Wiśniewski A (1995) The posing of questions: logical foundations of erotetic inferences. Kluwer Academic Publishers, Dordrecht–Boston–London

Wisniewski A (1996) The logic of questions as a theory of erotetic arguments. Synthese 109(1):1–25. https://doi.org/10.1007/BF00413820

Wiśniewski A (2001) Questions and inferences. Logique et Analyse 173–175:5–43

Wiśniewski A, Leszczyńska-Jasion D (2015) Inferential erotetic logic meets inquisitive semantics. Synthese 192(6):1585–1608. https://doi.org/10.1007/s11229-013-0355-4

Witek M (2019) Accommodation and illocution in the functioning of presumptions. Synthese. https://doi.org/10.1007/s11229-019-02459-4