Research Article

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Rhetorical questions and epistemic stance in an Italian Facebook corpus during the COVID-19 pandemic

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Abstract: This study aims to investigate rhetorical questions (RQs) from the perspective of epistemic stance. The quantitative and qualitative analysis was conducted on a corpus consisting of a set of comments extracted from the Facebook page of a major Italian newspaper (*Il Corriere della Sera*) regarding the news of the suspension of the AstraZeneca vaccine in March 2021. The theoretical framework for analysing the comments containing RQs was the KUB (Knowing, Unknowing, Believing) epistemic model. The main objectives of the study were (1) to analyse the linguistic and epistemic structure of the 75 RQs present in the corpus; (2) to identify the epistemic stance of the questioner, focussing on the implicit assertion of the RQs and demonstrating how it can be not only *strong* (i.e. from a Knowing/Certain position), as commonly claimed in the literature, but also *mitigated* (i.e. from a Believing/Uncertain position), without losing its rhetorical value. Besides addressing these research questions, the study identified three specific types of RQs in addition to the *common* type (the most studied in the literature): *adynatic* (or RQs of impossibility), *deontic* (or RQs of duty/obligation), and *epistemic* (or RQs of belief).

Keywords: rhetorical questions, epistemic positions, implicit assertions, KUB model, certainty/uncertainty, epistemic hyperbole

1 Introduction

Rhetorical questions (RQs) have been extensively studied from various theoretical perspectives, employing different methodologies and research objectives (including works relevant to this study, Bolinger 1957, Sadock 1974, Hudson 1975, Horn 1978, Quirk et al. 1985, Wilson and Sperber 1988, Gutiérrez Rexach 1998, Banuazizi and Creswell 1999, Biber et al. 1999, Ilie 1999, Han 2002, Koshik 2005, Rohde 2006, Caponigro and Sprouse 2007, Biezma and Rawlins 2017, Ilie 2022, Farkas 2023). Epistemic stance has also been widely investigated, including its relationship with plain questions (see below in this section). However, the relationships between RQs and the *epistemic positions* of both the questioner (Q) and receiver (R) have not been explored as widely (see, for instance, Archer 2005, Archer 2020, Linares-Bernabéu 2023) or systematically. An outstanding example is provided by Koshik (2005): in her book on RQs intended as *reverse polarity questions*, Q's epistemic stance in the *strong implicit assertions* of RQs is mentioned as delivering a knowing/certain position; the interrogative form is used to emphasise or highlight that certainty, often for evaluative or corrective purposes. However,

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Koshik does not distinguish between different levels of epistemic strength (e.g. belief vs. knowledge), nor does she address the potential epistemic conflict between the question's form and its assertive meaning. The fact that it is only a hint is justified since the main topic of the book is not the epistemic stance. Her claim that a strong assertion communicates Q's knowing/certain position is widely accepted.

This article uses the terms *epistemic stance* and *epistemic position* synonymously. Their meaning encompasses both epistemic and evidential aspects (see, for instance, Ochs 1996, 410), which are considered two sides of the same coin. Specifically, their meaning refers to both the epistemic and evidential *positions* that speakers/writers take in the here and now of communication, i.e. it refers to both the speakers'/writers' *commitment* towards the truth of the information being communicated and the *source* of, i.e. *access* to, that piece of information. These positions are expressed through the evidential and epistemic *markers*, both lexical and morphosyntactic, that speakers/writers use in the here and now of communication. This clarification is necessary not only because the two terms are used in the literature with varying meanings, as is normal, but also because they sometimes take on an excessively broad meaning that has little to do directly with the narrow one mentioned above.

The two epistemic position models best known in the literature are those of Akio Kamio and John Heritage.

Kamio's *Theory of Territories of Information* (Kamio 1994, 1995, 1997a, b) distinguishes two main forms of communicating information: direct, unmitigated (e.g. *Taroo is ill*) and indirect, mitigated (e.g. *Taroo is probably ill*/*seems to be ill*/*might be ill*, etc.). Whether speakers/writers use one or the other form reflects a different allocation of the information in their territories of knowledge and a different relationship with *politeness*. Kamio (1997a) applied his theory to plain questions, mostly negative yes–no questions and tag questions; the author also deals with RQs, although not in detail.

By distinguishing between epistemic status and epistemic stance, Heritage (2011, 2012a, b, c, Heritage and Raymond 2005) advances Kamio's model of Territories of Information. Interlocutors assign each other epistemic statuses on a continuum from more knowledgeable (K+) to less knowledgeable (K−). When an imbalance arises, one party seeks to drive the K+/K− epistemic seesaw forward by providing epistemically relevant contributions to fill the epistemic gap between them. Within Conversation Analysis, Heritage proposes that the management of epistemic status and stance operates – alongside adjacency pairs – as a key organisational principle of interaction (see also Drew 2018).

Focusing on questions, Heritage introduces the concept of *epistemic asymmetry*, whereby different questioning types (e.g. wh-questions, polar, tag, and declarative questions) instantiate distinct epistemic gradients between a K− questioner and a K+ respondent (Heritage 2010, 2012a, Heritage and Raymond 2012). Although he and colleagues have produced extensive work on questioning (e.g. Clayman and Loeb 2018; Heritage and Raymond 2021; Raymond and Heritage 2021), the application of their theory to RQs has so far remained limited (Heritage 2013). Although RQs are not the central focus of Heritage's framework, they pose a theoretical challenge: RQs, while interrogative in form, do not reflect a true K− → K+ asymmetry; instead, they project a K+ speaker asserting shared or evident knowledge. Therefore, while this model effectively captures the tension between form and stance, it lacks a typology or formal framework that systematically accounts for rhetoricalness.

A similar view regarding the epistemic positioning of Q in RQs is also found in the works of Caponigro and Sprouse (2007), and Biezma and Rawlins (2017). In the first one, the authors argue that RQs are questions whose answers are part of the common ground. From an epistemic perspective, the speaker assumes that the hearer also knows (or should know) the answer. However, this model also lacks tools to capture degrees of epistemic commitment. In the second one, the authors, according to Caponigro and Sprouse's common ground hypothesis, introduce a dynamic, discourse-based model in which RQs are not true question acts but presuppositional discourse moves. Biezma and Rawlins claim that RQs presuppose that the answer is entailed by the context, i.e. it is already mutually known (a fact that marks a fundamental epistemic asymmetry between rhetorical and genuine questions). While information-seeking questions indicate epistemic uncertainty or ignorance, RQs instead project epistemic certainty and common knowledge. As the authors write, RQs "signal the speaker's assumption that the attitude [towards the answer] is (or should be) mutually accepted by all participants" (Biezma and Rawlins, 303). In their view, RQs are epistemically complex: while shaped as inquiries, they function as indirect assertions anchored in epistemic certainty and common ground assumptions. They further argue that rhetoricalness must be explicitly signalled, either prosodically or via contextual cues.

Understanding the complexity of epistemic positioning in RQs is essential for advancing theoretical models and improving discourse analysis tools. The present study addresses the underexplored relationship between RQs and the epistemic stance of interlocutors – primarily the questioner (Q) – through a corpus-based, bottom-up approach grounded in a comprehensive epistemic theory: the Knowing, Unknowing, and Believing (KUB) model (Zuczkowski et al. 2017, 2021).

The KUB framework has previously been applied to various plain question types (Bongelli et al. 2018, Riccioni et al. 2018) and a subset of RQs (Bongelli et al. 2020, Zuczkowski et al. 2021: Chapter 11). In this latest work, questionanswer sequences in fragments of conversations extracted from the Spoken British National Corpus 2014 (Love et al. 2017) were analysed to describe a particular type of RQs featuring a conditional modal verb (*would*, *could*, *should*, etc.).

The present study provides a novel and systematic exploration of epistemic stances encoded in RQs, grounded in a corpus-based, bottom-up approach within a clearly defined theoretical framework. It expands existing theoretical models, which often treat epistemic positioning in binary terms – interrogative form (K−) vs assertive stance (K+), and proposes a typology for analysing rhetoricalness in discourse.

Its *first overall aim* is to investigate the linguistic and epistemic structure of 75 RQs detected in an Italian corpus made up of 627 Facebook users' comments extracted from the official page of the national newspaper *Il Corriere della Sera* [The Evening Courier] at a particularly critical moment in recent history: the COVID-19 pandemic. The comments refer to two posts, published 2 days apart (16 and 18 March 2021), regarding the temporary suspension of the AstraZeneca vaccine a few days after the beginning of its administration in the European Union, as a precautionary measure following rare cases of fatal side effects. As the content of the comments reveals, the uncertainty concerning the handling and attitude towards the communicated information (e.g. concerning the safety of the vaccine, the reliability of political and health authorities, etc.) appears to be closely linked to reactions of fear, but also, in some cases, of anger, mistrust and contempt – in other words, a 'fertile ground' for the emergence of RQs (Riccioni et al. 2024).

The *second particular aim* of the study is to test the hypothesis that implicit assertions (IAs) of RQs communicate not only Q's Knowing but also Believing position; i.e. they can be not only *strong*, as commonly claimed in the literature (e.g. Koshik 2005), but also *mild*, *mitigated*, without losing their 'rhetoricalness'.

Along the way, i.e. during the research, we found that the qualitative analysis of the 75 RQs unexpectedly revealed the presence of recurring linguistic structures in their IAs and allowed the identification of three specific types of RQs, in addition to the *common* type (the most studied in the literature): *adynatic* (or RQs of impossibility), *deontic* (or RQs of duty/obligation), and *epistemic* (or RQs of belief) (Section 3). This finding was completely unexpected and not sought at the beginning of the research. Afterwards, studying these types of RQs became a further research objective, just as important as the initial one.

Therefore, the research objectives lie on two different but entwined grounds: the starting objective is epistemic, and the one acquired during the research itself is typological.

We hereby provide a summary of the four following research questions that this study seeks to address:

1. Of the total number of questions in the whole corpus, how many are rhetorical in the sense of *reverse polarity questions*?
2. How many of these are WHs, alternative, polar, tag, and declarative questions?
3. What is Q's epistemic position in such RQs?
4. Can Q's epistemic stance of IAs be the Believing position and not only the Knowing position?

2 Method

2.1 Corpus

The corpus analysed, split into two sub-corpora, A and B, consists of 106 comments containing 139 questions, selected from a larger corpus of 627 comments responding to two posts published, respectively, on 16 and 18

March 2021, on the public Facebook page of the Italian newspaper *Il Corriere della Sera*, both concerning the potential side effects of the AstraZeneca vaccine. Comments constituting this larger corpus were manually extracted the day after the publication of the two posts so that only comments directed to the posts themselves were included (thus excluding the replies to these comments), to obtain a homogeneous dataset and to avoid confusion between users' reactions to the content of the articles – on which our interest was focussed when we collected the corpus – and the interactions between the different users.

The post published on 16 March is headlined 'Cooke (EMA): The benefits outweigh the risks. Thursday [18 March] the decision on AstraZeneca', carries the short text 'The European Agency: "Thursday the final decision, to date the benefits of the vaccine outweigh the risks"' and includes a link to the open-access article with the declaration by Emer Cooke, director of the EMA. The post published on 18 March reports on the EMA press conference at which the vaccine was declared 'safe and effective'. In this case, only part of the article, readable in full only by subscribers, is quoted in the text of the post. The headline claims, 'The EMA: The AstraZeneca vaccine is not associated with an increased overall risk of thrombosis' (*translated by the authors*).

The selection of the 106 comments, including questions, was jointly carried out by the three authors, manually analysing the entire dataset of 627 comments (by considering the lexical, syntactic, semantic, and pragmatic dimensions, i.e. not merely detecting the presence of question marks). All the comments, including questions, were copied onto Excel spreadsheets to be coded and analysed.

Sub-corpus A, referring to the post of 16 March, consists of 40 comments, including questions, extracted from a larger set of 189 comments. In the 40 comments, 61 questions were identified (24 comments contain only one question; 11 two; 1 three; and 3 four).

Sub-corpus B, referring to the post of 18 March, consists of 66 comments, including questions, extracted from a larger set of 438 comments. In the 66 comments, 78 questions were identified (57 comments containing only one question; 7 two; 1 three; and 1 four).

The quantitative and qualitative analysis presented in this study, therefore, concerned 139 questions, 61 from sub-corpus A and 78 from sub-corpus B.

The term 'corpus' used alone means 'sub-corpus A plus sub-corpus B'. Studying the linguistic differences, if any, between the RQs in A and those in B is beyond the scope of this study. From the point of view of their rhetoricalness and epistemic stance, RQs of both A and B are regarded as belonging to the same corpus.

2.2 Procedures

The research was carried out in two phases. In the first phase, each of the three authors independently analysed the corpus of 139 questions following a shared 'reading grid' with four main items: *plain* questions, *rhetorical* questions, *candidate rhetorical* questions, and *neither plain nor rhetorical* questions. In the second phase, all three authors compared their individual analyses and reflected on the results. The interobserver agreement was calculated using Jamovi (version 2.3.21), a free and open statistical tool built on top of the R statistical language. The overall K Cohen score was highly satisfactory, resulting in 0.959. After discussing their previous coding decisions, a 100% agreement was reached.

During the individual analyses, particular attention was paid to two procedures aimed at clarifying as many methodological problems.

2.2.1 How to establish if a question is rhetorical or not?

As communication analysts reading a question written by someone else, we cannot know what Q's 'rhetorical intentions' are, i.e. whether Q intends to formulate an RQ or simply a plain question or something else. However, as L1 speakers who use the same language as Q, we do have our own intuitive linguistic and communicative competence based on which we can formulate hypotheses about the possible '*rhetorical status*' or *rhetoricalness* of a question, with the simultaneous help of the possible '*clues*' arising from the analysis of the following variables:

– the global, general *context* of the occurrence of the questions: the corpus consists of users' comments on two EMA Declarations in a specific historical period;
– the specific *co-text* in which the question is embedded within each individual comment, i.e. within the sentences, if any, preceding and/or following the question itself;
– within the question, the presence of particular words or expressions and particular punctuation (such as the use of more than one question mark at the end of the question or the addition of exclamation marks to the question mark(s));
– the eventual attribution to the question of an IA having opposite polarity to that of the question itself.

After applying the above four criteria, most questions appeared rhetorical with high probability, if not certainty. In front of a minority of questions, we remained uncertain because, in principle, they could plausibly be read as either plain or rhetorical, and we could not decide whether that specific question in that specific co-text, etc., was used rhetorically or plainly. They were, therefore, labelled in the reading grid as *candidate rhetorical questions*. Finally, questions with IAs but without polarity inversion were classified as *neither plain nor rhetorical* questions.

2.2.2 How to establish the IA of an RQ?

The three authors relied fundamentally on their intuitive linguistic-communicative competence as L1 Italian speakers: at first, each of them, separately from the other two, took note of the IA, i.e. the declarative sentence that immediately and spontaneously arose from the question. Subsequently, each IA was inserted into one or more possible 'epistemic frames', i.e. into one or more possible semantic representations of Q's epistemic stance and including the verb expressions *I know, I do not know, I do not know whether*, and I *believe*, with particular attention to checking which verb expression between *I know* and *I believe* or both were more or less suitable to represent Q's epistemic stance in that specific IA.

Before turning to the results, it is appropriate to provide a more detailed account of the theoretical framework underpinning this study.

2.3 Theoretical framework

In this section, the KUB model is described as briefly as possible but in such a way as to provide sufficient information to the reader unfamiliar with it; it is then applied to the main types of plain (i.e. non-rhetorical) questions.

2.3.1 The KUB epistemic model

KUB is a theoretical model of epistemic stance (Bongelli et al. 2018, 2020, 2023, Riccioni et al. 2014, 2018, 2022, Zuczkowski et al. 2017, 2021), linguistically and empirically grounded, according to which a speaker/writer (S/W) can assume the positions illustrated in Figure 1, each having two sides: one evidential (concerning S/W's access to the information, S/W's source of information while speaking/writing), the other epistemic (concerning S/W's commitment towards the truth of the information conveyed):
• Knowing (K)/Certain Position;
• Not Knowing Whether (NKW) – Believing (B)/Uncertain Position;
• Unknowing (U)/Neither Certain nor Uncertain Position.

Information communicated from a K position, i.e. as known to S/W, is simultaneously communicated as certain, and vice versa, i.e. as something S/W says they know to be true (e.g. *The benefits of the vaccine outweigh the risks*).

Information communicated as uncertain is simultaneously communicated either as something S/W says they *do not know whether* (NKW) it is true or not (*I don't remember if the benefits outweigh the risks*) or as

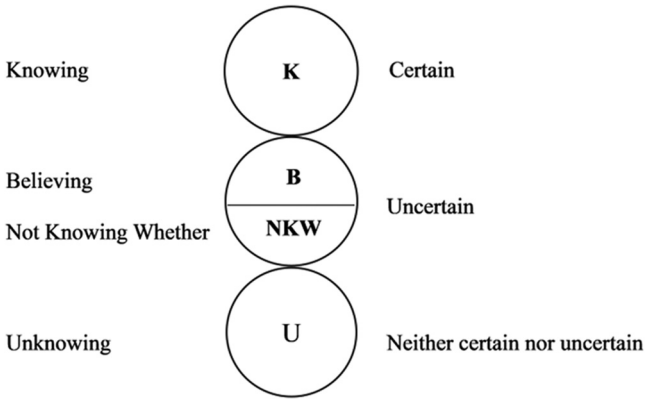

Figure 1: The structure of an S/W's epistemic positions (K, B, NKW, U), each of which may be imagined as a coin having an evidential (left) and an epistemic (right) side. For simplicity, their abbreviated names derive from the former aspects.

something they say they *believe* (B) to be true (*I think that the benefits outweigh the risks*). From the NKW position, both alternatives p (*the benefits outweigh the risks*) and non-p (*the benefits do not outweigh the risks*) are communicated as having the same probability of being true: *I do not know whether* p or non-p (= I am equally uncertain whether p is true or false). It is thus a matter of *doubt* for S/W, in the sense that they communicate *to be in doubt* between p and non-p. From the B position, the explicit, lexicalised alternative (p in this case) is communicated as having more probability of being true than non-p: *I believe that* p (= I am inclined to believe that p is true).

NKW and B are the two sub-positions of uncertainty corresponding to as many poles in the uncertain epistemic continuum between which the different degrees of uncertainty range: NKW represents the maximum uncertainty (S/W's doubt), B the minimum (S/W's belief, supposition, opinion, etc.).

The U position concerns all types of information S/W communicates that they do not possess and have no idea about (*I don't know why the benefits outweigh the risks*): a piece of information *p* is communicated as missing; S/W communicates that they have no evidential access to it. Therefore, they can have no kind of epistemic commitment (neither certain nor uncertain) towards the truth of *p* just because *p* is lacking or absent. The information gap (caused by the absence of the source) characterising this position corresponds to a commitment void: S/W cannot commit to what they do not know.

2.3.2 Questions: Unknowing or uncertain

Following Stivers and Enfield's (2010) terminology and definitions, plain questions are of the following primary types: *wh-questions* (also called *content questions*), *alternative questions*, and *polar questions* (also called *yes-no questions)*. These last are divided into three subtypes: *polar interrogatives* (PIs), *tag questions,* and *declarative questions*.

When the KUB model is applied to these question types (Zuczkowski et al. 2021), they originate from two distinct epistemic positions of the questioner Q: the *Unknowing* and the *Uncertain* (Figure 2):

Wh-questions (WHs) come from the Unknowing position and are thus referred to as *unknowing questions*. The Unknowing position can be hence specified by adding the seven English wh-words introducing WHs: specifically, it is an Unknowing *what–which–who–where–when–why–how* position.

Instead, alternative questions and the three sub-types of polar questions come from the Uncertain position and are thus referred to as *uncertain questions*. They convey different degrees of uncertainty, consequently occupying different points along the epistemic continuum of the Uncertain position: alternative questions and neutral PIs are information-seeking; therefore, they are closer to the NKW pole of maximum uncertainty, while non-neutral PIs, tag, and declarative questions are confirmation-seeking of a belief, supposition, opinion, and the like, so they are closer to the B pole of minimum uncertainty.

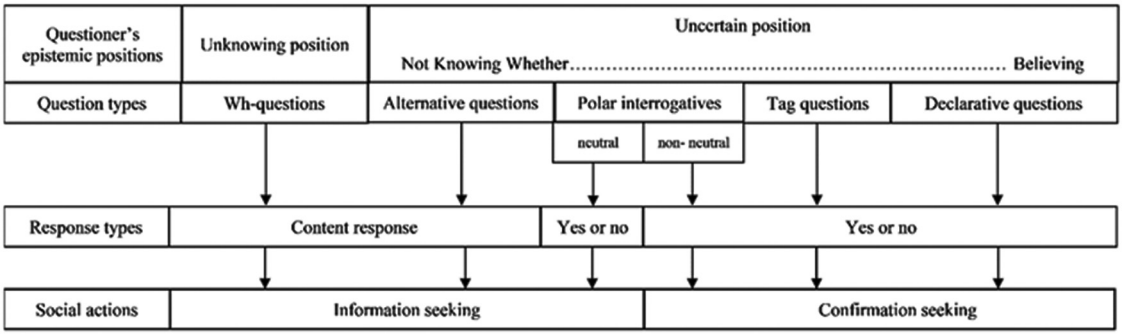

Figure 2: Questioner's Unknowing and Uncertain positions, response types, and social actions of the five primary types of plain questions.

Following the two different but not mutually exclusive readings of PIs given in the linguistic literature since Coleman (1914) and Bolinger (1978), respectively, the KUB model distinguishes between *neutral* and *non-neutral* PIs: in the former, Q is indifferent (neutral) to a yes or no answer since they are seeking information, whereas in the latter, Q is not indifferent (non-neutral) to a yes or no answer, since they are searching for confirmation of a (positive or negative) belief, etc. (Zuczkowski et al. 2021: Chapter 5).

2.3.3 Questions addressed to the Believing position

Plain questions may target not only R's Knowing position (i.e. addressed to someone expected to provide information, e.g. *When will vaccinations start?)*, but also their Believing position (i.e. addressed to someone expected to be able to advance opinion or supposition rather than knowledge (e.g. *When do you think vaccinations will start?*). In the latter case, expressions such as *you think* indicate that Q is interested in R's beliefs, perhaps precisely because R is not expected to know the answer. This issue will be explored further in relation to *epistemic* RQs (Section 3.4).

According to the KUB model, the primary types of plain questions may originate from three epistemic positions: either U (WHs) or NKW (alternative questions and neutral PIs) or B (non-neutral PIs, tag questions, and declarative questions). They may be directed at two possible epistemic targets, either K or B. In other words, as for the epistemic origin of questions, the model explicitly distinguishes a Q asking a question because they *do not know* p (information-seeking/WHs) and a Q being uncertain about p, i.e. asking a question because they *do not know whether p* (information-seeking/alternative Qs and neutral PIs) or because *they believe that p* (confirmation-seeking/non-neutral PIs, tag and declarative Qs). As for the epistemic destination, the model differentiates between a Q seeking R's Knowledge and a Q seeking R's Belief.

The key difference between Heritage's model and the KUB model lies in the treatment of Uncertainty. While Heritage focuses on relative knowledge (K+/K−), the KUB model posits *Not Knowing Whether and Believing* as distinct epistemic positions, thereby introducing *Uncertainty* as an autonomous category with its status, separate from *Knowing* and *Unknowing*.

2.3.4 RQs

As anticipated in Section 1, RQs have been investigated in numerous studies from various theoretical and methodological perspectives and with different research aims. Therefore, we will limit ourselves to presenting those references that we consider relevant to this research.

In this section, RQs are defined as *reverse* (or *inverse* or *opposite*) *polarity questions* (Koshik 2005, but see also Bolinger 1957, Sadock 1974, Horn 1978, Quirk et al. 1985, Gutiérrez Rexach 1998, Biber et al. 1999, Han 2002, Rohde 2006, Caponigro and Sprouse 2007, Biezma and Rawlins 2017) conveying a covert message, i.e. an IA

whose polarity (positive or negative) is contrary to that of the question, and the problem is raised of what is Q's epistemic stance in IAs: are they only *strong* assertions coming from the Knowing position or can they also be *mitigated* assertions delivering the Believing position, which is *less strong* than the Knowing? Even though the *epistemic strength* of the question is a little downgraded, can such questions still function as rhetorical?

RQs defined as reverse polarity questions, show the following four main features (see references above): (1) they are asked and understood not as seeking but as conveying information, (2) corresponding to a (*strong*) IA, (3) of *opposite polarity* to that of the question, and (4) which may or may not have an answer (Hudson 1975, Quirk et al. 1985, Wilson and Sperber 1988, Banuazizi and Creswell 1999, Ilie 1999, 2022, Rohde 2006, Caponigro and Sprouse 2007, Farkas 2023).

2.3.4.1 Polarity inversion

In this section, we consider it useful to begin with an example drawn from the corpus analysed in this study to illustrate the phenomenon of polarity inversion:

Example (1) – A 108[1]
Benefici del vaccino, quali sono? [...]
Benefits of the vaccine, what are they? [...]

Read as plain, this WH presupposes (Heritage 2010, 47) that (it is true that) the vaccine has some benefits, and its purpose is to know what they are. In the KUB model, Q's epistemic stance is represented by a declarative sentence, i.e. an assertion, containing the corresponding indirect question introduced by the negation of the verb *know* in the first person singular: *I* [= Q] *do not know* + what the benefits of the vaccine are. The expression '*I don't know*' signals Q's total lack of knowledge (Unknowing position) about the benefits of the vaccine.

The same question can also be interpreted as rhetorical. In this case, the information communicated, i.e. the IA, would be something like *il vaccino non ha nessun beneficio* [the vaccine has no benefit].

This assertion would be opposite in polarity (negative) to that of the question (positive; this term is used as a synonym of *affirmative* when referring to polarity). This feature of polarity inversion is not optional but decisive, as it allows only questions with an IA with polar inversion to be considered rhetorical (Koshik 2005). Some questions have IAs without polar inversion; i.e. they have the same polarity as the question, like the following excerpt:

Example (2) – B 169
Quante dosi avrebbero dovuto buttare senza questa affermazione?
How many doses would they have had to throw away without this statement?

This WH question, like the previous one, admits both a plain and a rhetorical reading. In the latter case, the IA would be: *without this statement* [= without the EMA's statement 'the benefits of the vaccine outweigh the risks'], *they would have had to throw out many/all the remaining doses.*

The quantifier '*quante*' [how many] becomes '*molte*' [many] or '*tutte*' [all] in the IA, which is thus positive like the question, so it has no polar inversion: such a question cannot be called *rhetorical* in the sense defined above. For practical reasons, in the reading grid used in our research, we called *neither-nor questions* those that, for one reason or another, are *neither* plain *nor* rhetorical in the sense of reverse polarity questions, such as precisely Example 2.

Example (3) - B 74
Però stranamente ai politici non lo [= il vaccino AstraZeneca] fanno perché costa solo 2 euro, loro hanno i più costosi chissà perché

1 The capital letter A or B indicates sub-corpus A or sub-corpus B, followed by the number of the comment (Section 2.1).

But strangely they don't give it [= the AstraZeneca vaccine] to politicians because it only costs 2 euros, they have the more expensive ones who knows why

Read as plain, similarly to Example 1, the wh-question *who knows why* presupposes that (it is true that) *someone* – at least one person – knows why, and its purpose is to know who that someone is. Read as rhetorical, similarly to Example 2, the IA of *who knows why* in this co-text would be *everyone knows why*, meaning that everyone knows politicians are not given the AstraZeneca vaccine simply because they are politicians (i.e. they are privileged people who receive special treatment). The pronoun *someone* in the presupposition becomes *everyone* in the IA, which is thus positive like the question itself; therefore, it involves no polarity inversion and cannot be considered *rhetorical* in the sense defined above.

To avoid considering rhetorical even questions that have no polar inversion despite having an IA, some authors, such as Koshik (2005, 2 and 147), prefer to use the expression *'reversed polarity question'* instead of *'rhetorical question'*. For simplicity, we will continue to use the traditional term *'rhetorical questions'*, intending to refer to reversed polarity questions.

2.3.4.2 Strong IA

What does *strong assertion* mean in terms of Q's epistemic stance?

Quirk et al. (1985, 825) describe RQs using IAs strengthened by the epistemic adverb '*surely*'. For instance, the positive PI *'Is that a reason for despair?'* corresponds to the negative assertion *'Surely that is not a reason for despair'*, while the negative PI *'Isn't the answer obvious?'* corresponds to the positive assertion *'Surely the answer is obvious'*. Although the authors do not explicitly discuss epistemic stance, such uses of *surely* imply a strong assertion. *Surely* can be paraphrased as *I am sure, i.e. I am certain that*, thus signalling, according to the KUB model, Q's Knowing/Certain position.

In further examples, Quirk et al. (1985, 826) do not include the adverb '*surely*' or any similar epistemic booster, to the assertion: the positive WH *'What difference does it make?'* means *'It makes no difference'*, and the negative WH *'Who doesn't know?'* implies the positive assertion *'Everybody knows'*. From a KUB perspective, even without boosters like *'surely'*, all four assertions are declarative sentences in the indicative mood lacking any linguistic markers of uncertainty or unknowledge, and as such, they convey epistemic knowledge/certainty.

This interpretation aligns with Koshik (2005, 12, emphasis added): 'If we look at examples from naturally occurring talk, we see that certain questions do appear to convey strong reversed polarity assertions, thereby *displaying the epistemic stance of the speaker*, i.e. that *the speaker knows the answer to the question and knows it with certainty.'* The author's use of the term *'epistemic stance'* maps onto the Knowing/Certain position in the KUB model. However, Koshik (2005, 13–6) also observes that when a candidate's reverse polarity question conveys *doubt* instead of *knowledge* and *certainty*, i.e. when it displays *weakening epistemic strength*, it cannot function as an RQ but only as a plain question (Koshik 2005, 13–6). In the KUB model, *doubt* concerns the NKW pole of the Uncertain continuum; however, the Uncertain continuum has a second pole, that of Believing. According to this model, we propose that some RQs can be read as conveying reverse polarity assertions of *mild* strength, i.e. *mitigated* assertions coming from the Believing pole of the Uncertain position. Even though the *epistemic strength* of the question is slightly downgraded, the rhetorical function can be preserved.

In Sections 3.1–3.4, examples will be given of both epistemic stance representations, namely with I KNOW and I BELIEVE, and arguments in favour of one or the other.

3 Results

Table 1 presents how many questions are rhetorical (as defined in Section 2.3.4) out of the total number of questions (research question 1).

RQs account for more than half of the questions in each sub-corpus as well as in the corpus as a whole.

Table 1: Question types: frequencies and percentages

	Sub-corpus A		Sub-corpus B		Total	
Question types	**Frequencies**	**%**	**Frequencies**	**%**	**Frequencies**	**%**
Plain	19	31.1	17	21.8	36	25.9
Rhetorical	35	57.4	40	51.3	75	54.0
Candidate	1	1.6	8	10.3	9	6.5
Neither-nor	6	9.8	13	16.7	19	13.7
TOT.	61	100	78	100	139	100

During the second phase of the research, observing and reflecting on the linguistic (lexical, syntactic, semantic, and pragmatic) features of the IAs in connection with their respective questions, we noticed that some of these features were recurrent in such significant numbers as to suggest the emergence of three specific *types* of RQs, in addition to the *common*, traditional ones, such as those mentioned by Quirk et al. (1985, 825–6). The three types are as follows:

- RQs *of impossibility* (or *adynatic* RQs, Section 3.2): they include in the IA the *negative* form of the modal verb *potere* [can] (and often in the question itself the positive form);
- RQs of *duty/obligation* (or *deontic* RQs Section 3.3): they include in the IA the *positive* or *negative* form of the modal verb *dovere* [must/have to] (and often in the question itself the inverse form);
- RQs of *belief* (or *epistemic* RQs Section 3.4): they include both in the question and IA an epistemic verb (*think, doubt*, …) or expression (*in your opinion*, …), or future (*will it be true that…?)* or the verb *volere* [to want] used epistemically, i.e. meaning *think, believe*, in the expression *cosa vuoi che* [*what do you want that*] + verb.

Table 2 provides quantitative data in this regard and highlights differences in the distribution of the four types of RQs across the two sub-corpora: while in A more than half of RQs belong to the common type, in B, epistemic RQs account for most, followed by deontic and adynatic RQs (both 25%), and finally common RQs.

Table 3 addresses research question 2 and shows that, among the primary question types (WHs, PIs, alternative, tag, and declarative questions), WHs are the most used in three types of RQs (common, adynatic, and deontic) but not in epistemic, which are instead mainly communicated in both sub-corpora through PIs. In total, in the two sub-corpora, there are 47 WHs, 26 PIs, one tag, and one alternative question.

The four types of RQs are described in more detail in the next sections, with one example of each type taken from the corpus and its qualitative analysis. Other examples are presented in Section 4.

The examples consist of WHs and PIs, which are almost the only question types used for RQs in the corpus. For each example, *presuppositions* and *semantic representations* of the question read both as plain and rhetorical will be given. Our purpose is to highlight the four components of what we term the rhetorical chain, namely the inextricable tie between (i) plain questions and their presuppositions, on the one hand, and (ii) RQs and their IAs, on the other. As for presuppositions, we refer mainly to Heritage (2002, 2003, 2010) but also to Lyons (1977), Levinson (1983), and Clayman (1993): what WH-questions presuppose is true, what

Table 2: RQ types: frequencies and percentages

	Sub-corpus A		Sub-corpus B		Total	
RQ types	**Frequencies**	**%**	**Frequencies**	**%**	**Frequencies**	**%**
Common	20	57.1	6	15	26	34.7
Adynatic	4	11.4	10	25	14	18.7
Deontic	5	14.3	10	25	15	20.0
Epistemic	6	17.1	14	35	20	26.7
TOT.	35	100	40	100	75	100

Table 3: Question types of RQs: frequencies and percentages

		Sub-corpus A		Sub-corpus B		Total	
RQ types	**Question types**	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**
Common	wh	17	48.6	5	12.5	22	29.3
	polar	2	5.7	1	2.5	3	4.0
	alternative	0	0	0	0	0	0
	tag	1	2.9	0	0	1	1.3
Adynatic	wh	4	11.4	4	10.0	8	10.7
	polar	0	0	6	15.0	6	8.0
	alternative	0	0	0	0	0	0
	tag	0	0	0	0	0	0
Deontic	wh	4	11.4	8	20.0	12	16.0
	polar	1	2.9	2	5.0	3	4.0
	alternative	0	0	0	0	0	0
	tag	0	0	0	0	0	0
Epistemic	wh	1	2.9	4	10.0	5	6.7
	polar	5	14.3	9	22.5	14	18.7
	alternative	0	0	1	2.5	1	1.3
	tag	0	0	0	0	0	0
TOT.		35	100	40	100	75	100

alternative and polar questions presuppose is possibly true. Research questions 3 and 4 will also be answered through potential representations of Q's epistemic stance.

We begin with *common* RQs, as they also provide an opportunity to resume discussing the problem of Q's epistemic stance: Knowing or Believing?

3.1 Common RQs

We refer to this type of RQ as *common* because they are similar to and representative of those most studied in the literature. Typically, its IAs are declarative sentences in the indicative mood, containing neither modal nor epistemic verbs, unlike the other three types found in the corpus.

Example 1 is paradigmatic of this type of RQ. We saw (Section 2.3.4) that the WH *'Benefits of the vaccine, what are they?'* read as plain: originates from Q's U position, targets R's Knowing position, presupposes (that it is true that) *the vaccine has some benefits*, and can be epistemically represented as *I do not know* + what the benefits of the vaccine are.

Read as rhetorical, the IA becomes something like *the vaccine has no benefit,* which negates the *presupposition* of the *plain* question, *'the vaccine has some benefits'.* This feature of reverse polarity questions, where the IA inverts not only the surface question but also its presuppositions, is central, though often underemphasised in the literature. The IA *'the vaccine has no benefit',* being a declarative sentence in the indicative without any uncertain or unknowing marker, originates from Q's K position. Thus, Q's epistemic stance representation would be: *I know* that *the vaccine has no benefit.* To represent the whole *structure* of this RQ, we can write the epistemic stance representations of both the plain WH and the IA one after the other in the following way: I (Q) *explicitly tell you* (R) that *I do not know* what the benefits of the vaccine are [= plain question representation], but I *implicitly tell you* that *I know* that *the vaccine has no benefit* [= IA representation].

This epistemic contrast – from Q's U to K position – appears contradictory and, from a strict epistemic perspective, unacceptable. Nevertheless, it is characteristic of rhetorical WHs in the traditional view (Figure 3, Section 3.1.1, arrows 1 and 2), where rhetoricalness involves both polarity inversion and an epistemic shift: on the one hand, Q uses the question to say that they *do not know* p (what the vaccine benefits are); on the other hand, they use the IA to say that they *know* non-p (the vaccine has no benefits).

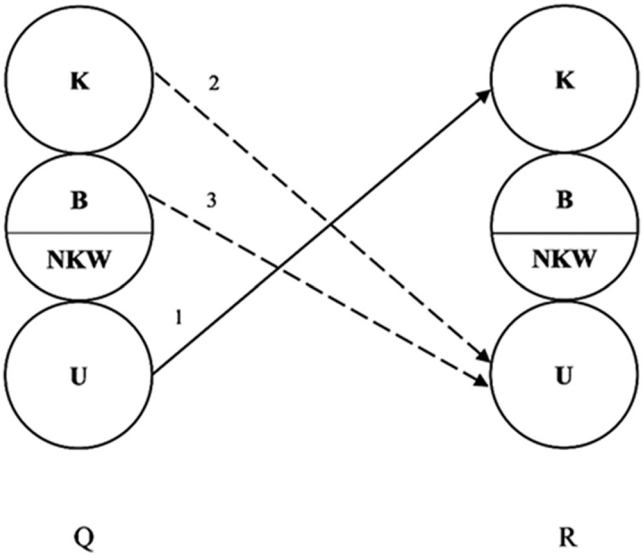

Figure 3: Origin and destination of the plain WH (continuous arrow 1) and two possible IAs (dotted arrows 2 and 3) delivering Knowledge or Belief, respectively. The epistemic destination is supposed to be U.

3.1.1 Knowing or Believing?

In addressing research question 4, we may ask: how can Q (write to) KNOW that the vaccine has no benefit? Could it not be a *belief* rather than *knowledge*? Could it not be I BELIEVE, instead of I KNOW, that the vaccine has no benefit? At least according to our linguistic and communicative competence, such a shift does not seem to undermine the rhetorical nature of the question.

Here, Heritage's notion of *epistemic status* can help us. It concerns "the distribution of rights and responsibilities regarding what participants can accountably know, how they know it, whether they have rights to describe it" (Heritage and Raymond 2005, 15), and it is "based upon the participants' evaluation of one another's epistemic access and rights to specific domains of knowledge and information. The epistemic status is distinct from the epistemic stance that is encoded, moment by moment, in turns at talk" (Heritage 2012a, 7). This distinction between epistemic status and epistemic stance allows us to keep the *cognitive* level (what one actually knows) separate from the *communicative* one (what one actually states to know). As he writes (Heritage 2012b, 33), "the additional concept of epistemic stance is necessary because epistemic status can be dissembled by persons who deploy epistemic stance to appear more, or less, knowledgeable than they really are." This opens space for deceptive communication, where a speaker/writer communicates information other than what they know to be true. Furthermore, as the above quotations suggest, epistemic status is not restricted to information access but is closely related to *epistemic primacy* and *responsibility* (Stivers et al. 2010): simultaneous access to information (e.g. a doctor and a patient looking at an X-ray) does not imply 'epistemic equality' due to the epistemic primacy of one of the interlocutors (the doctor) over the other (the patient).

Returning to Example 1, we know nothing about who Q is. If they were a doctor, scientist, or vaccine expert, the assertion *'the vaccine has no benefit'* should be an *evidence-based* assertion and reflect genuine knowledge. But if Q is a layperson, do they have the epistemic *status* to claim *knowledge*, or merely *belief*? In this case, a more accurate representation of Q's epistemic stance might be: [I explicitly tell you that] *I do not know* what the benefits of the vaccine are, but [I implicitly tell you that] *I believe* that the vaccine has no benefit (Figure 3, arrows 1 and 3).

In this case, the shift in Q's epistemic stance is from U to B, not from U to K, as it was according to the different (*strong*) epistemic reading of the same example given in the previous section. The contrast between U

and B is not a contradiction, as it was above between U and K: it is coherent (to say) *not to know* what the vaccine benefits are and (to say) *to believe* that there are none.

The two representations of Q's epistemic stance given above, with either I KNOW or I BELIEVE signal the difference between strong and mitigated assertion. The latter seems more appropriate to this example: what questioner can KNOW that the vaccine has no benefits?

3.1.2 Epistemic hyperbole

Unless, as proposed above, the basic epistemic feature of rhetorical WHs is just a strong opposition between I DO NOT KNOW and I KNOW (instead of I BELIEVE), i.e. an *epistemic exaggeration*, as if, in this sense, the RQ were a *hyperbole*, fell within the 'rhetorical figure' of *hyperbole*.

The contrast between the U position of the plain question and the K position of the IA (rather than the B position) would be an exaggerated departure from the epistemic reality (I BELIEVE) to reinforce the IA and thereby enhance its credibility. Through exaggeration, reference to epistemic reality is made unbelievable, just to intensify the starting position in the plain question (*I do not know*) to its maximum degree in the IA (*I know*). The incongruity between what the question explicitly asks, i.e. says not to know, and what it implicitly asserts, i.e. says to know, increases the epistemic stance of the IA (I KNOW) beyond the truth (I BELIEVE). The covert message is a *hyperbolic overstatement* from the epistemic perspective: it resembles a lie but not to deceive, only to enhance its power, its strength, by simply going 'beyond the (epistemic) measure', i.e. beyond the boundaries of Believing into those of Knowing.

In Section 3.1 onwards, the example analysed can be considered representative not only of common RQs but also of rhetorical WHs and shows that, for a WH to be rhetorical, at least four shifts are required: (1) a shift from question to assertion, i.e. a change in the linguistic action performed by Q; (2) a shift from positive to negative polarity (or vice versa), as far as question and IA are concerned; (3) a shift from positive to negative polarity (or vice versa), as far as presupposition and IA are concerned; (4) a shift in Q's epistemic position: from U to K or B (epistemic origin).

3.2 Adynatic RQs

The adjective *adynàtic* derives from the rhetorical figure *Adynaton*, which in ancient Greek (ἀδύνατον) means *'impossible thing'*. Adynatic RQs convey *impossibility* in their IAs. Therefore, these questions could be referred to as RQs *of impossibility*, but in assonance with the adjectives *deontic* and *epistemic,* we prefer to use the term *adynatic*, even because so far in the literature, to the best of our knowledge, such a type of RQ is not indicated, if ever, by a standard term.

In our corpus, adynatic RQs include in the question: the verb *potere* [can] in the affirmative, explicitly (8 questions) or implicitly (2 questions); the adjective *possibile* [possible] in the expression *come è possibile* [*how is it possible*] (1 question); the expression *come faccio*/*fate a* + *infinito* [lit. how do I/you make to + infinitive, corresponding to how can I/you + infinitive] (2 questions); the expression *chi mi dice che…* [who tells me that…] (1 question).

Of the 14 adynatic RQs, 8 are WHs and 6 PIs. The following Example 4 is a PI, of which we will give (i) presuppositions, (ii) Q's epistemic stance representations of its reading as neutral, non-neutral, and rhetorical, and (iii) RQ structure representation.

Example (4) – B 176
Potevano dire diversamente *quando in ballo non c'è la salute ma miliardi di euro?*
😡😡😡😡
Could they say otherwise when at stake is not health but billions of euros?
😡😡😡😡

The presence of the angry emoji (repeated four times) not only signals Q's mood but also serves as a clear clue that leads us to interpret this PI as rhetorical and to acknowledge its critical, provocative intent.

Read as neutral (*could they say otherwise [or not]?)*, this PI would be information-seeking, addressing R's K position and expecting either a yes or no answer.

As for presuppositions, they are different in PIs (and in alternative, tag, and declarative questions as well) than in WHs. Following Heritage (2010, 47), a PI like the one in our example would not presuppose that the proposition p *they could say otherwise* is true, but rather that it is *possibly* true, meaning it is also possibly false. Thus, a PI leaves two possibilities open: that p is true, and that p is false. If p is false, then non-p is true, and vice versa. Accordingly, the presuppositions in Example 4 would be (it is possibly true that) *they could say otherwise and they could not say otherwise*. Q's epistemic stance representation would be: *I DO NOT KNOW WHETHER* they could say otherwise (*or not*). The expression *I do not know whether…or…* makes explicit the uncertainty (NKW position) that Q communicates with a neutral PI.

If read as non-neutral, the question would be confirmation-seeking of the opinion expressed by Q (*they could say otherwise*), which is of the same positive polarity as the question. Q's epistemic stance representation would be: *I DO NOT KNOW WHETHER* they could say otherwise (or not), but *I BELIEVE* they could say otherwise. The expression *I believe that…* indicates that with a non-neutral PI, Q is advancing a supposition, etc., coming from the Believing pole of the Uncertain position.

However, in the actual context (the EMA declaration), the rhetorical interpretation, where Q's opinion is opposite in polarity to that of the question, is more plausible: Q implies that *they COULD NOT say otherwise*, given the economic stakes. The IA (*they could not say otherwise*), paraphrasable with *IT WAS IMPOSSIBLE for them to say otherwise*, exemplifies what we term an RQ of *impossibility*. This IA matches one of the plain PI's presuppositions (the negative one), and is of inverse polarity to the positive one expressed in the question.

According to the traditional epistemic reading, the IA would be placed in a *Knowing* frame: I DO NOT KNOW WHETHER they could say otherwise (or not), but I KNOW they COULD NOT say otherwise. Here, the epistemic contrast is between NKW and K. In our view, such a representation appears to be epistemically inconsistent: it is contradictory to state, on the one hand, *I do not know whether p or non-p* and on the other hand, simultaneously, *I know that non-p*. Unless this epistemic contradiction is viewed as hyperbolic, as written in the previous section: I ask you something Uncertain (NKW), but I assert its Known opposite (K). This exaggerated contrast between *not knowing whether* and *knowing* would give strength to the assertion, from a hyperbolic perspective.

An alternative epistemic stance representation, replacing the verb *knowing* with *believing*, would be: I DO NOT KNOW WHETHER they COULD say otherwise (or not) but *I BELIEVE* they COULD NOT say otherwise. This removes the epistemic contrast. Q remains within the *Uncertain* continuum, shifting from NKW (plain PI) to B (IA), without stepping into the *Knowing* position (Figure 1). Such a shift is coherent, since even rhetorical PIs are structurally *uncertain* questions and cannot communicate knowledge, only belief. Belief is the pole of minimum uncertainty, bordering the K position. The difference between NKW and B in PIs is not a contrast like that one between U and K in WHs; it is a displacement within the same uncertain epistemic continuum. Nonetheless, the question retains its rhetorical status.

Thus, as in the previous section, the epistemic stance representations of both the plain PI and the IA can be expressed as: I (Q) *explicitly tell you* (R) that *I do not know whether* they COULD say otherwise (or not) [= plain question representation], but I *implicitly tell you* that *I KNOW/BELIEVE* they COULD NOT say otherwise [= IA representation].

Let us recap what has been described so far in one single figure (Figure 4):

The *social action* performed by a neutral PI is to seek information (arrow 1); that of a non-neutral is to express an opinion and seek confirmation (arrow 2): the opinion is of the same polarity as the question. In contrast, a rhetorical PI has the function of expressing an opinion (mild epistemic reading of the IA, B position) or knowledge (strong epistemic reading of the IA, K position) of opposite polarity to that of the question and to one of the two assertions making up its presupposition.

In Example 4, the polarity of the IA *they COULD NOT say otherwise* is inverse to both the question *COULD they say otherwise?* and one of the two assertions (the positive one) forming its presupposition: *they COULD say otherwise and they COULD NOT say otherwise*. From this point of view, the IA is identical to the negative

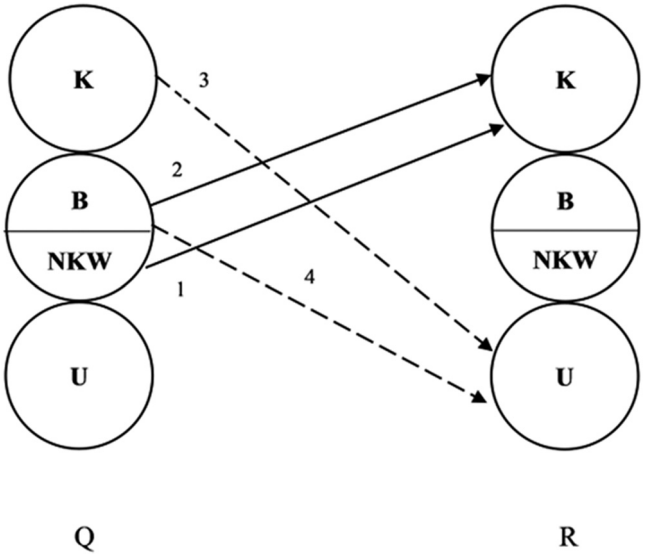

Figure 4: The continuous arrows 1 and 2 refer to the epistemic origin and destination of the plain PI read as neutral and non-neutral, respectively; the dotted arrows 3 and 4 signal two different epistemic origins of the IA. The epistemic destination is supposed to be U.

presupposition *they COULD NOT say otherwise*. This continuity among the four rings composing the rhetorical chain (presuppositionsplain questionRQIA) is outlined in Figure 5.

Being a PI, Example 4 can be considered representative of all rhetorical PIs and shows that, for a PI to be rhetorical, at least four shifts are required: (1) a shift from question to assertion, i.e. a change in the linguistic action performed by Q; (2) a shift from positive to negative polarity (or vice versa), as far as question and IA are concerned; (3) a shift from positive to negative polarity (or vice versa), as far as presupposition and IA are concerned; (4) a shift in Q's epistemic position: from NKW to K or B.

3.3 Deontic RQs

In the corpus analysed, deontic RQs are those whose IAs include a deontic verb either in the affirmative or negative, which may or may not be part of the questions. Of the 15 deontic RQs (12 WHs and three PIs), 3 contain a deontic verb in the question (2 *dovremmo* [we should], 1 *bisogna* [one must]), the remaining 12 only in the IA: 2 of them include the expression *come mai* (lit. how ever = how come) in the question, 2 others *come mai non…* [how come… do not…], as in the following

Example (5) – B 98
Nn diranno maiiiiii che [il vaccino] è la causa [delle morti].
Hanno speso milioni e milioni per questo pessimo vaccino potranno buttarlo??
Allora ecco il crimine dicendo che è sicuro.
BUTTATELO
A Napoli è appena purtroppo deceduta un'altra donna (Nome) (Cognome) ***come mai nn ne parlate?????***

They will never say that [the vaccine] is the cause [of the deaths].
They spent millions and millions on this worst vaccine will they be able to throw it away?
So here's the crime by saying it's safe.
THROW IT AWAY
In Naples just unfortunately died another woman (Name) (Surname) **how come you don't talk about it?????**

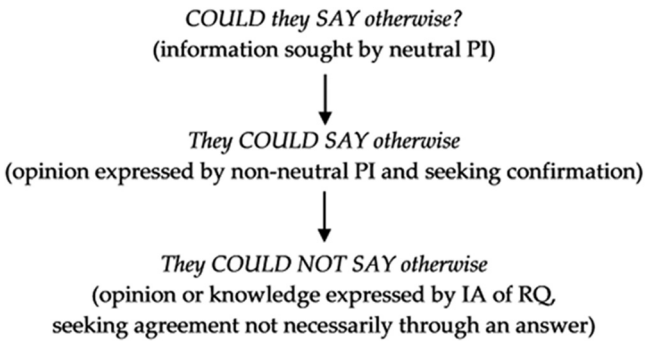

Figure 5: The epistemic continuity of neutral, non-neutral, and rhetorical PI in relation to polarity inversion, presuppositions, and social actions.

The whole content of this comment can be paraphrased as follows: Q urges the disposal of this ineffective vaccine (throw it away!) because, despite the EMA's claims of its safety, Q believes it is the cause of the deaths. The EMA will continue to administer it because its production has been costly. The final sentence (the guilty silence about the latest vaccine victim in Naples) sounds like an accusation, probably directed at journalists.

The comment contains two RQs. The former *potranno buttarlo??* [will they be able to throw it away??] (closed by two question marks) is an adynatic PI, i.e. an RQ of impossibility (Section 3.2). Its IA is *they WILL NOT be able* (= *IT IS IMPOSSIBLE for them*) *to throw it away* (polar inversion: positive→negative). The reason for the impossibility is specified in the preceding sentence: they spent millions and millions on this ineffective vaccine. The second question *come mai non ne parlate?????* [how come you don't talk about it?????] (note the five question marks) is the one we are most interested in because it is a deontic rhetorical WH introduced by a particular expression, both in Italian and English, *come mai* (lit. how ever = how come). In Italian, the peculiarity is that the interrogative adverb *come* [how] is followed by the time adverb *mai* [ever], and in English by the impersonal verb *to come.* In both languages, the expression can be replaced by *perché* [why].

In our rhetorical reading, the IA assigned to the question includes a deontic verb in the indicative or conditional mood, although such a verb does not explicitly appear in the question: *voi dovreste*/*dovete parlarne* [you should/must talk about it]

The first IA that we attributed to the RQ is the one with the deontic verb in the conditional (*should*), and the second is the one in the indicative (*must*); the former seems more in keeping with this example. The difference between the two moods of the deontic verb can be traced to two slightly epistemically different IAs as follows:

1. conditional mood = mitigated IA, I BELIEVE *you should talk about it* = mitigated RQ;
2. indicative mood = strong IA, no epistemic mitigation, I KNOW *you must, you have to talk about it* = strong RQ. The indirect message conveyed by the RQ would be something like: *it is absolutely necessary, dutiful, obligatory to talk about it*.

   Besides the combinations *believe* + *conditional* and *know* + *indicative*, at least in Italian, two other representations are possible, 'mixed' so to speak:
3. I BELIEVE + present subjunctive or indicative: *CREDO che dobbiate/dovete parlarne* [I BELIEVE you must talk about it]. This representation is less mitigated than (1).
4. I KNOW + present conditional: *SO che dovreste parlarne* [I KNOW you should talk about it]. This representation is less strong than (2).

Therefore, if the above four representations are listed in order of decreasing strength (or increasing mitigation), the order is 2, 4, 1, 3. In 2 and 4, the IA is treated as Q's piece of knowledge; in 1 and 3, as Q's belief.

Regardless of whether the IA is an instance of KNOWLEDGE or BELIEF, it has an inverse polarity (1) to that lexicalised in the question (negative →positive) and (2) to the presupposition of the plain WH as well. So we can now give *Q's epistemic stance representation of the RQ*: I explicitly tell you that I DO NOT KNOW how come you

do not talk about it, but I implicitly tell you that I BELIEVE/KNOW you SHOULD/MUST. We omit a further figure, as it would closely resemble Figure 3.

3.4 Epistemic RQs

In the KUB model, plain questions, either unknowing or uncertain, can be addressed not only to R's K but also to the B position, i.e. to somebody who is not expected to know the answer but to be able to advance an assumption, supposition, opinion, and the like (Section 2.3.3). Such questions usually embed an epistemic marker of uncertainty, either lexical or morphosyntactic (Zuczkowski et al. 2021: Chapter 9). For this reason, they can be called *epistemic*.

The 20 *epistemic* RQs (14 PIs, five WHs, and one alternative question) found in the corpus contain both in the question and IA: an epistemic verb (*think, seem*..., 13 questions) or an epistemic expression (*in your opinion*..., two questions) or an epistemic future (i.e. *will it be a casualty that...,* two questions) or the verb *volere* [to want] used epistemically (= meaning *think*, *believe* or *pretend*, *expect*, *presume, suppose*, etc.) in the expression *cosa vuoi che* [what do you want that] + *verb* (three questions).

Q addresses 17 out of the 20 questions to the potential readers of the comment: half of them are addressed to VOI [you plural], two to a generic TU [you singular], two to NOI [we], three to an INDEFINITE PRONOUN (two *qualcuno* [anyone], one *chi* [who]); the remaining three questions employ two epistemic futures and a hypothetical construction.

Example (6) – A 19
e vi sembra poco!!!? intanto per il vaccino quelle povere persone non ci sono più e nessuno risarcisce i parenti di quelle persone ....
and does it seem little to you!!!? meanwhile because of the vaccine those poor people are no longer there and no one refunds the relatives of those people ....

Starting with the IA helps clarify what is new in this type of RQ compared with previous ones. The IA is: [the EMA Declaration 'the benefits outweigh the risks'] DOES NOT seem little to me, and I BELIEVE it does NOT seem little to you either. The novelty is that these RQs involve in their IAs not only the potential readers of the comment (as they explicitly do in the questions) but also Q implicitly.

During the second inter-subjective phase of our analysis (Section 4.3), we realised that the spontaneous IA assigned to all epistemic RQs communicates an opinion of Q (the EMA declaration *DOES NOT SEEM little to me* [...]) and a belief about the potential readers' opinion on the same topic ([...] and I BELIEVE it DOES NOT SEEM little to you either). The polarity of both opinions is inverse to that of the question (DOES it seem little to you?). Let us see this in detail.

The question is a PI embedding the epistemic verb s*eem*. *You* refers to the potential readers of the comment. *It* refers to the EMA Declaration, 'The benefits outweigh the risks.' Context, co-text (in this case, what follows the question), content of the question, and punctuation (three exclamation marks before the question mark) support a rhetorical reading. As usual, the PI will be analysed progressively, first as if it were neutral, then non-neutral, and, finally, rhetorical, as it is, to gain a deeper understanding of the latter's structure.

Read as neutral, the question presupposes two opposite possibilities: it is possibly true that [the EMA Declaration 'the benefits outweigh the risks'] seems little to you, and it is possibly true that it does not seem little to you. Q does not know whether the former or the latter is true and seeks information; the expected answer would indifferently be yes or no. *Q's epistemic stance representation* would be: I DO NOT KNOW WHETHER it seems little to you (or not).

In a non-neutral reading, the question would communicate Q's belief about the potential readers' opinion (I BELIEVE it seems little to you), and that opinion would be present explicitly in the question, that is, it would be the one lexicalised in the question (*it seems little to you*). *Q's epistemic stance representation* would be: I DO NOT KNOW WHETHER it seems little (or not) to you, but I BELIEVE it does.

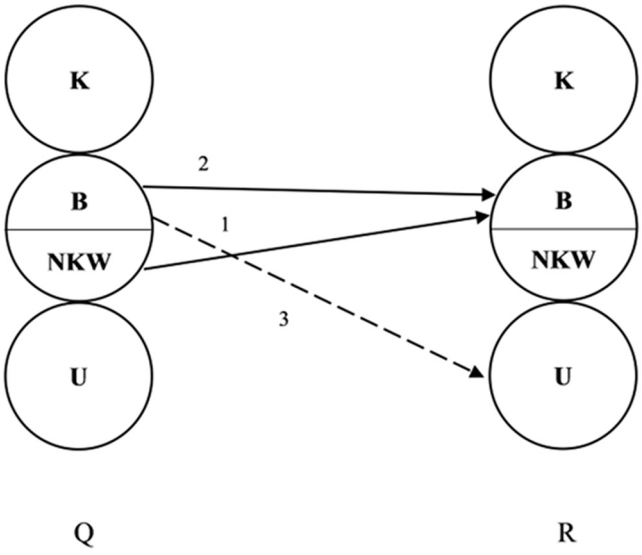

Figure 6: Epistemic origin (NKW) and destination (B) of the question read as neutral PI (arrow 1). Epistemic origin (B) and destination (B) of the question read as non-neutral PI (arrow 2). Epistemic origin (B) and possible destination (U) of the IA of the question read as rhetorical (arrow 3).

In its actual rhetorical reading, the question communicates a Q's belief (I BELIEVE *it DOES NOT SEEM little to you*). *This* belief: (1) is implicit (expressed through the IA), (2) of inverse polarity to the lexicalised question and to one of the two presuppositions (*it seems little to you*), and (3) it concerns both the readers and Q themselves (it DOES NOT SEEM little to me either). Since Q cannot KNOW WHETHER the readers also think as they do, WHETHER they share their opinion, and much less can Q KNOW THAT they also think as they do, in the following Q's epistemic stance representation, we prefer *I BELIEVE* instead of *I KNOW*.

Q's epistemic stance representation: I DO NOT KNOW WHETHER it seems little to you (or not), but it DOES NOT SEEM little to me, and I BELIEVE it DOES NOT SEEM little to you either.

RQ structure representation: I explicitly tell you that I DO NOT KNOW WHETHER it seems little to you, but I implicitly tell you that it DOES NOT SEEM little TO ME, and I BELIEVE that it DOES NOT SEEM little TO YOU either (Figure 6).

At the very moment when Q asks the potential readers their opinion (I ask you if it seems little to you), in the IA Q expresses their own opinion (it doesn't seem little to me) and belief that the other readers share their opinion (I believe that it does not seem little to you either).

4 Discussion

This study pursued two main goals: (1) to analyse the linguistic and epistemic structure of the RQs present in a corpus consisting of a set of comments extracted from the Facebook page of a major Italian newspaper (*Il Corriere della Sera*) regarding the news of the suspension of the AstraZeneca vaccine in March 2021; (2) to identify the epistemic stance of the questioner, focussing on the IA of the RQs and demonstrating how it can be not only *strong* (i.e. from a Knowing/Certain position), as commonly claimed in the literature, but also *mitigated* (i.e. from a Believing/Uncertain position), without losing its rhetorical value. The research methods were both quantitative and qualitative; the latter consisted mainly of a linguistic (= lexical, syntactic, semantic, pragmatic) analysis of each RQ in the specific *co-text* in which it occurs within each comment. The theoretical framework for analysing the comments containing RQs was the KUB epistemic model.

While prior studies on RQs have predominantly analysed spoken or institutional discourse, this research applies a bottom-up, fine-grained qualitative and quantitative analysis to a spontaneous, public, and

emotionally charged online discourse, a type of data that remains underexplored in the study of RQs. This provides fresh insights into the way rhetoricalness and epistemicity intertwine in everyday, non-scripted digital communication. The linguistic context analysed – Facebook comments written in response to the suspension of the AstraZeneca vaccine during the COVID-19 pandemic – constitutes an ideal discursive site for studying RQs and epistemic positioning because it reflects a moment of collective uncertainty, institutional mistrust, and emotionally laden public debate, conditions in which rhetorical questioning thrives.

We can summarise and discuss the main findings of this study in four points.

4.1 Quantitative results

Out of 139 questions in the corpus, 75 are RQs (research question 1), and almost all of these 75 are WHs (47) and PIs (26) (research question 2).

4.2 Four types of RQs

During the research, the qualitative analysis of the 75 RQs revealed the presence of recurring linguistic structures in their IAs allowing the identification of four specific types of RQs: *common* (the most studied in the literature: usually their IAs are made up of declarative sentences in the indicative or conditional without any uncertainty or unknowledge markers), *adynatic* (or RQs of *impossibility*), *deontic* (or RQs of *duty/obligation*), and *epistemic* (or RQs of *belief*). The main difference between them is that, in their IA, the *adynatic* and *deontic* include a modal verb, the *epistemic* an epistemic expression of uncertainty, while the *common* neither. Concerning epistemic RQs, as far as we know, the only one who has dealt with something similar is Lee-Goldman (2006), calling them *think-RQs*, i.e. RQs including *do you think*/*imagine*/*suppose*. He only investigated WH questions and, mainly, their pragmatic function. Han (2002) analyses RQs containing deontic modals from a predominantly logical-semantic perspective, without addressing epistemic stance. Finally, to the best of our knowledge, no studies appear to have explicitly addressed RQs containing verbs or expressions of possibility. As the more detailed quantitative results reveal (Tables 2 and 3), there are clear differences in the amount of RQ types between the two sub-corpora. In sub-corpus A, *common* RQs are the most frequently used, accounting for 57.1% of the total. In sub-corpus B, on the other hand, the most used types of RQs are *epistemic* (35%), followed by *adynatic* and *deontic* (each at 25%); *common* are only 15%. We can assume that these marked differences are related to the content of the two posts commented on by Facebook users. Specifically, the first post (16 March), which emphasises that the benefits outweigh the risks and anticipates a final EMA decision on Thursday 18 March, elicits widespread use of *common* RQs, most of which are WHs (48.6% of all the RQs in sub-corpus A) focussing precisely on questioning 'the benefits outweigh the risks' statement (A 17: *Ma quali benefici?* [But what benefits?]; A 20: *E che significa*? [And what does this mean?]; A 64: *Benefici per chi?* [Benefits for whom?]; etc.). Conversely, the second post (18 March), which claims that the vaccine is 'safe and effective' and without an associated global risk of thrombosis, as shown by the tone of many comments, arouses disbelief, scepticism, anger, and sarcasm (sometimes even conveying radical anti-vaxxer or conspiratorial positions), and solicits comments (mostly in opposition to the communicated content) conveyed by *epistemic, adynatic*, and *deontic* RQs. Particularly: (a) epistemic RQs communicate users' belief and/or certainty about the results of the tests and seem to be oriented towards seeking the consensus of other users, often with direct appeals to potential readers to confirm their own views through PIs (22.5% of RQs in sub-corpus B) (see Example 6, but also: B 41: *Qualcuno aveva dubbi?* [Did anyone have doubts?]; B 341: *Avevate qualche dubbio che Ema desse il consenso per procedere alla somministrazione del vaccino?* [Did you have any doubt that Ema would give consent to proceed with the vaccine?]; etc.); (b) adynatic RQs communicate users' belief and/or certainty regarding the inadequacy of the tests carried out by EMA in only a couple of days and the impossibility of an alternative decision, mainly for economic reasons and interests (see Example 4, but also: B 14: *Si*

poteva affermare il contrario? [Could the contrary be claimed?]; B 215: *E cos'altro poteva dire un comitato che fa tutti gli interessi di Big Pharma?* [And what else could a committee that serves all the interests of Big Pharma have to say?]); (c) deontic RQs communicate users' belief and/or certainty that the information provided by the post (but also more generally by the mass media, journalists, health and political authorities, etc.), in particular with regard to the risks of the vaccine, is incomplete or insufficient, contrary to what it should be (to be convincing) (see Example 5, but also: B 210: *come mai così tanto illustri scienziati non hanno saputo studiare un protocollo di cura????* [why have such distinguished scientists failed to study a treatment protocol????]).

4.3 Epistemic positions and hyperbole

Through the qualitative analysis of four examples of questions (two WHs and two PIs), Q's epistemic position from the KUB perspective was shown in both plain and rhetorical readings of the above questions through plausible semantic representations and figures with circles and arrows (research questions 3 and 4). So far in the literature, the covert message of an RQ is decoded as an assertion, i.e. a declarative sentence usually in the indicative or conditional mood, with no uncertainty or unknowledge markers, thus inevitably decoded as communicating a K position (e.g. Koshik 2005), as it happens with *common* RQs. However, any assertion can be mitigated just by adding a lexical or morphosyntactic uncertainty marker. In the KUB model, the theoretical macro-marker for mitigation is I BELIEVE. We thus showed that (i) any IA can be inserted into an epistemic frame including either I KNOW or I BELIEVE; (ii) mitigation (I BELIEVE) does not cancel the rhetorical status of the question, it only dilutes it; (iii) in the semantic representations of three examples (1, 4, and 6), I BELIEVE seems even more epistemically appropriate than I KNOW; in the remaining example 5, both I BELIEVE and I KNOW seem acceptable. What, then, is the ultimate epistemic structure of an RQ resulting from applying the KUB model to the analysis of the above examples? An RQ is a hybrid not only of two different linguistic actions, as is well known in the literature, but as many (or more) epistemic positions as well: on the one (explicit) hand, a plain question seeks a piece of information p (or non-p) and delivers either a U (in WHs) or an NKW position (in PIs); on the other (implicit) hand, the IA gives an opposite information non-p (or p) and delivers either a K or a B position in both WHs and PIs, i.e. either a piece of knowledge (strong assertion) or belief (mild assertion). Therefore, from the epistemic view, this hybrid consists of four possible combinations of Q's epistemic positions: (i) two epistemically unacceptable contrasts U versus K (in WHs) and NKW versus K (in PIs), which can only be accepted if understood as *hyperbolic* and functional to an IA intended as strong; (ii) two epistemically acceptable, i.e. non-contrasting, non-contradictory, combinations U–B in WHs and NKW-B in PIs, functional to a mitigated IA. The notion of *hyperbole* is thus central to solving the two epistemic contrasts outlined above in (i): they are viewed as an epistemic exaggeration, a trespass from B to K, acceptable only if the IA is considered a *hyperbolic overstatement* empowering itself. There is no epistemic contrast in the other two epistemic combinations outlined above in (ii), U–B in WHs and NKW-B in PIs: when Q DOES NOT KNOW p (in plain WHs) or DOES NOT KNOW WHETHER p (in plain PIs), it is epistemically acceptable to BELIEVE that non-p (in IAs), i.e. to deliver a mild assertion. In the former combination (U–B), Q moves from the U to the B position, not the K; in the latter (NKW-B), Q remains within a single position, the Uncertain one, moving from the NKW to the B pole, a displacement along the same epistemic continuum.

4.4 Presuppositions

In addition to the obvious links between RQs, IAs, and the corresponding plain questions, we felt it relevant to emphasise the less obvious links with the fourth ring of the rhetorical chain, namely the presuppositions of plain questions. We recap WHs first, then PIs. The presupposition of the plain WH *what are the vaccine benefits?* is (it is true that) *the vaccine has some benefits;* the IA (sans the epistemic markers I KNOW or I BELIEVE) is *the vaccine has no benefits*: its polarity is inverse to that of the RQ, as is widely argued in the

literature, but the actual negation (of both the verb and indefinite pronoun, at least in Italian) concerns the presupposition, a feature not as widely emphasised in the literature (Ene 1983): *the vaccine has some benefits* becomes *the vaccine has no benefits*. Similarly, the presupposition of the plain PI *could they say otherwise…?* is (it is possibly true that) *they could say otherwise and* (it is possibly true that) *they could not say otherwise*; the IA is *they could not say otherwise*, which is identical to the negative presupposition and is of inverse polarity to the positive presupposition lexicalised in the question.

The fact that this study is corpus-based and, therefore, that the findings result from a quantitative and qualitative bottom-up linguistic analysis is one of its strengths and originality. However, this very feature could be a limitation but also a stimulus for further applications of the KUB model to RQs. The corpus analysed has some peculiarities: it is of limited size, it is written (or rather, it is an expression of the spoken-written style typical of social networks), and it is in Italian. It might be, therefore, interesting to extend the study to: (a) wider corpora, which would not only enable a bottom-up analysis of a larger number of occurrences of RQs, referring to different contexts (discursive genres, topics, etc.), but could also allow verification of the possible existence of other types of RQs based on the linguistic features of their IAs. It is reasonable to assume that the four types of RQs identified in this study do not exhaust all possibilities. For instance, since adynatic and deontic are concerned with the modal verbs *can* and *must*, respectively, one might assume that another potential type of RQ could involve the third modal verb *want*. From a typological perspective, the present study opens up a new research perspective; (b) spoken corpora, to be able to adopt a conversational and sequential perspective (and, therefore, to consider the management of RQs by the receiver(s), but also by Q themselves). Our next research goal will be to study R's possible replies to Q's RQs in a corpus that identifies sequences where a next turn-proof procedure can be applied. A sequential analysis, including replies to RQs, especially in the presence of epistemic disagreement or conflict between R and Q (Linares-Bernabéu 2023), would make explicit the different epistemic positions (strong or mitigated) that R and Q assign to the same IA; (c) corpora in other languages, to test possible similarities and variations.

Future research may also concern those questions (which we have only mentioned) featuring IAs but without polarity inversion, which were classified as *neither plain nor rhetorical* here.

In summary, this study integrates existing theoretical approaches and deepens our understanding of RQs in discourse. Its findings offer original insights by highlighting the nuanced epistemic positions encoded in RQs and by proposing a novel, corpus-driven typology within a clearly defined theoretical framework. This contribution not only enriches the understanding of RQ usage but also opens new avenues for research at the intersection of linguistic form, speaker stance, and pragmatic effect.

A further element of novelty lies in the application of the notion of *hyperbole* to explain epistemically conflicting configurations as acceptable exaggerations that enhance rhetorical force.

While the empirical, qualitative, and quantitative bottom-up methodology is a major strength of the study, it may also represent a limitation but also a stimulus for further applications of the KUB model to RQs. Further research should aim to test, refine, and expand the findings across larger and multilingual corpora, as well as in spoken interaction, particularly by exploring sequential dynamics and responses to RQs in dialogic settings. Additional types of RQs may emerge, and the model itself could support broader applications in discourse analysis, particularly in contexts involving epistemic asymmetry and conflict in digital and persuasive communication.

By offering both empirical and theory-driven systematic approaches to RQs, this study contributes to linguistic pragmatics, discourse analysis, and epistemic modelling. It also provides tools for analysing implicit communication in complex social contexts, including misinformation, institutional communication, and public opinion formation.

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