

Polarity reversal constructions and counterfactuals in Ancient Greek

Between implicature and conventionalization

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Polarity reversal has recently been argued to be the defining characteristic of counterfactuality. Ancient Greek had a diverse set of constructions which bring about polarity reversal that is not the direct result of a negation marker nor do they all express a counterfactual meaning. It is the aim of this paper to detail the major differences between these constructions synchronically and especially diachronically, focusing on counterfactual mood forms, counterfactual modal verbs, avertives (almost+past (im)perfective), non-counterfactual rhetorical questions and non-standard wishes. As a historically varied constructional group, these constructions bring about polarity reversal in different ways with different implicatures (e.g., counterfactual, contradictory, undesirable), but they most importantly differ in their diachronic conventionalization of polarity reversal. Whereas counterfactuals conventionalize their polarity reversal in various ways (e.g., changing temporal reference, counterfactual implicature transfer), non-counterfactual polarity reversal constructions create polarity reversal as a synchronic implicature through pragmatic means (e.g., a rhetorical question identifying a contradictory presupposition in the common ground or a non-standard wish evaluating an undesirable outcome to the speaker).

Keywords: polarity reversal, counterfactuality, implicature, illocutionary force, Ancient Greek

1. Polarity reversal and counterfactuality

A sentence or clause is generally called contrary-to-fact or counterfactual¹ when it is implied or assumed by the speaker that what is said does not hold in the actual world (cf. Declerck & Reed 2001: 7; Dancygier 2006: 25). It has been known for some time that counterfactuals bring about a polarity reversal, e.g., the conditional *If I had a million now* implies that *I do not have a million now* or the main clause *he should have helped* implies that he did not help (Karttunen 1971). As noted by Penka (2015: 303), polarity is the notion referring to “whether a statement is negative or affirmative” and interacts with the presence of items that are sensitive to polarity, e.g., *anybody* in a negative versus *somebody* in a positive statement in English (Penka 2020). As such, polarity is closely related to negation, which generally refers to the linguistic ways in which a polarity difference can be marked, e.g., sentential, constituent, lexical and metalinguistic negation (Penka 2015: 304–306). Van linden and Verstraete used this polarity reversal feature of counterfactuals as their main criterion for identifying counterfactual markings in their influential typology of counterfactuals in simple clauses: “as soon as a particular structure has a *standard interpretation* that involves the *reverse of the polarity that is formally marked in the structure*, we have a case of counterfactuality” (2008: 1869, my italics). More recently, Verstraete and Luk (2021: 288) have argued that the effect of polarity reversal is an integral part of the definition of counterfactuals. Although counterfactuals do indeed display polarity reversal of the polarity marked in the structure (i.e., from positive to negative and negative to positive, cf. the negated Example (1) where Phaedra *is* silent), they are not the only constructions with this feature. In Ancient Greek, I have identified four possible constructions that display polarity reversal of the polarity marked in their sentence, even though they have not traditionally been described as counterfactuals. The problem therefore arises of their classification in light of the above-mentioned cross-linguistic definition of counterfactuals. After all, the constructions exemplified in Examples (2) to (4) display polarity reversal of the polarity *marked in their sentence*. This last qualification is crucial, since my focus on polarity reversal constructions which receive polarity reversal but not due to a negation marker, makes it possible that the polarity reversal is caused by the construction itself (instead of a negation marker with something else). This avoids constructions which are marked by a negation but have different polarity functions, for example because

1. This definition is close to the alternative view on counterfactuality presented in detail by Klein (2021a, 2021b) in a recent special issue on counterfactuality, as I discuss at the end of this paper.

- (2) *ô géron, ê olígou se kúnes diedēlēsanto eksapínēs, kaí kén moi elenkheíēn katékheuas*
 VOC VOC PTCL almost you-ACC dogs-NOM tear-apart-3PL-AOR at-once and
 MOD me-DAT grief-ACC shed-2SG-AOR
 ‘Old man, truly the dogs **would have torn** you to pieces in an instant, and on me **you would have shed** reproach.’ (Od. 14.37–14.38)
- (3) *ei toínun sphi khóre ge mēdemía hupêrkhe tí*
 if PTCL they-DAT land-NOM PTCL no-NOM exist-3SG-IMP F Q
periergázonto dokéontes prótoi anthrōpōn gegonénai
 waste-labour-3PL-IMP F think-PTCP-NOM first-NOM humans-GEN be-INF
 ‘Then if there was no land for them, **it was an idle notion** that they were the oldest nation on earth’
 [literally: Then if there was no land for them, why do they waste labour thinking that they were the oldest of mankind?] (Hdt 2.12–15)
- (4) *oloíman, phrónēsín ei tánd’ ékhō*
 die-OPT thought-ACC if DEM-ACC have-1SG-PRS
 ‘May I die unblest, if I **have that thought**’ (S. OT 662)

In Example (2), a combination of a scalar adverb with a negative implication (*olígou* ‘almost’) and a past perfective (=aorist) indicative yields the implicature that they did not tear the other into pieces,⁶ as is also confirmed by the paratactically connected counterfactual indicative with the modal particle *kén*. This construction qualifies as an avertive construction in expressing “non-realization of [a] once imminent, past verb situation where the verb situation is viewed as a whole (i.e., perfective)” (Kuteva et al. 2019: 852). The rhetorical question in Example (3) is a so-called *indirect* inferential wh-question (Declerck & Reed 2001: 61)⁷ in which the hearer is made to infer the falsity of the preceding conditional (see Section 5). In this example, it is implied that they (sc. the Egyptians) in Herodotus’ view waste their labour (*tí periergázonto*) on the idea that they are the oldest nation, since there was a time that their land did not exist yet and this makes it unlikely that they did. The non-standard wish structure in Example (4) is used to stress the reverse of the positively marked State-of-Affairs (henceforth

6. For the relation between scalarity and polarity reversal, cf. the scalar implicature of an indefinite with negation such as “she didn’t give a red cent”= “she gave nothing at all” (Haspelmath 1997: 115).

7. “Indirect inferential: an inferential conditional in which the inference goes from Q to P. The communicative purpose of an indirect inferential is to make the hearer draw an inference about the truth of P. This inference is indirect in that the conclusion is not explicitly asserted, but is to be inferred from Q and the conditional sentence as a whole.”

SoA) in the conditional clause; its communicative value may be paraphrased as a negated assertive speech act *I certainly do not have that thought!*

However, it would seem that not all these constructions bring about this polarity reversal in the same way as the counterfactual modal verb in Example (1) which has semanticized a counterfactual implicature (cf. the “standard” in the definition by Van linden and Verstraete). In other words, with the counterfactual modal verb, the polarity reversal derives from the marker alone (cf. the symmetrical role of negation triggering a reversal of the polarity reversal rather than a negated past necessity) as opposed to a close interplay with other pragmatic factors in the other constructions (e.g., the combination with a conditional clause in Examples (3) and (4)). This could point to a diachronic difference between these polarity reversal constructions. Moreover, Herodotus does not strictly speaking imply that wasting labour is counterfactual (i.e., assumed by the speaker to be different from (incompatible with) the actual world), but rather a contradictory action on their part. In addition, there are differences in illocutionary force between the polarity reversal constructions, as, for example, in (2) there is a declarative illocution by default, whereas in the others another illocutionary force is available, e.g., an assertive speech act in Examples (3) and (4) (see Sections 5 and 6) or a directive in Example (1) “speak up!” (Rijksbaron 2006: 25).

This paper assesses such semantic and pragmatic differences, and pinpoints how these polarity reversal constructions (i) generate a polarity reversal, (ii) contextually create their implicature with regard to the proposition and (iii) design the illocutionary force of the clause. To that end, I focus on 4 research questions that can help us disentangle the various components of these constructions both synchronically and diachronically:

1. Is the polarity reversal the result of markers of polarity in the structures such as negation?
2. What kind of implicature is generated with respect to the proposition?
3. Is the illocutionary force of the clause conventional(ized)?
4. Are there diachronic changes indicative of conventionalization of implicature or illocutionary force?

The hypothesis put forward in this paper is that, though these constructions behave similarly synchronically in creating polarity reversal, they differ from each other diachronically. These research questions also tie in directly with findings from recent research on counterfactuals, especially those discussed in the special issue on counterfactuality in *Theoretical Linguistics* (2021). First of all, Van linden (2021) has pointed out the need for a usage-based analysis of counterfactuality, and Fabricius-Hansen (2021) rightly noted that the new model proposed by Klein (2021a, b) is incomplete with respect to the role played by contextual

features. Verstraete and Luk (2021) suggested that counterfactuals differ in modal domain (e.g., boulomaic, deontic, epistemic). Yet, the empirical focus in research on counterfactuals has been on epistemic ones (e.g., conditionals), a lack of attention that the constructions above have also suffered. These are areas to which the analysis of the pragmatics of polarity reversal and counterfactual constructions in their usage contexts would add further depth. Van linden too noted the illocutionary variability of counterfactuals, but in my view this variability is more widespread than the counteridenticals “if I were you, I would X” (Declerck & Reed 2001: 100–102) that she discusses and is in need of further investigation. Finally, Verstraete and D’Hertefelt (2014) had already usefully suggested that polarity reversal is not uniform for the insubordinate constructions that have it, something which I think could be extended to the polarity reversal constructions discussed in this paper. In sum, using the Ancient Greek corpus data, this paper seeks to incorporate these developments in our understanding of counterfactuals and tease apart both the synchronic and diachronic role of polarity reversal for counterfactuality.

As for the Ancient Greek data, the texts are generally divided chronologically in two periods, Archaic Greek (VIII–VI BCE) and Classical Greek (V–IV).⁸ Ancient Greek had a complex verbal system both in terms of moods and tense-aspect. It inherited the counterfactual optative mood from PIE and was used in counterfactual wishes, statements and conditions in Archaic Greek (see la Roi 2022a) but lost its counterfactual functions by the time of Classical Greek because it turned into a non-past referring mood used for realizable possibilities, e.g., in conditions, wishes, potential statements (see la Roi 2022a for the history and van Emde Boas et al. 2019: 438–446 for a grammatical description of the usages in Classical Greek). As for the aspectual system, the past indicative aorist is used in perfective contexts, providing a bounded construal of the event (e.g., completed past events, ingressive states or summarizing an event period), whereas the imperfect is used in imperfective contexts, giving an unbounded perspective on the event (e.g., ongoing events in the past, events of continuing relevance) and the pluperfect is used to express a moment in the past as the effect of a past event.⁹

The data for this paper stem from a corpus analysis of these constructions in Archaic Greek (Homer, Hesiod and Homeric Hymns) and Classical Greek (the three tragedians, Aristophanes, the histories of Thucydides, Herodotus and Xenophon, the authentic Platonic dialogues and the orators Lysias, Isocrates,

8. Cf. Bentein (2016: 6–9).

9. A grammatical description of tense and aspect in Archaic Greek can be found in Napoli (2006). An overview of Classical Greek tense and aspect is provided by van Emde Boas et al. (2019: 404–427).

Isaeus and Demosthenes). I collected the data for this analysis by means of two methods. For counterfactual mood forms and rhetorical questions, I used proximity searches in the *Thesaurus Linguae Graecae* to collect the relevant constructions (e.g., condition marker + past indicative form maximally 7 words apart or past indicative and modal particle maximally 5 words apart). For the other constructions, I made use of lemma searches and analyzed all occurrences in the authors of my corpus.

The paper is divided into separate sections which all focus on one of the types of polarity reversal constructions: Section 2, counterfactual indicative mood forms; Section 3, counterfactual modal verbs; Section 4, avertive almost+past; Section 5, rhetorical questions and Section 6, non-standard wishes. Section 7 provides a synthesis of the findings on polarity reversal and counterfactuality and discusses the implications for the definition of counterfactuality in terms of polarity reversal.

2. Counterfactual indicative mood forms

In Ancient Greek (i.e., Archaic and Classical Greek), the past indicative was used counterfactually on its own in conditional clauses (cf. Example (5)) or obligatorily with a modal particle (*án/ke(n)*) in the main clause in declarative and interrogative illocutions (among others, see Wakker 1994: 144–155; la Roi 2022a with further evidence and references). In (5), it is obvious that the state of affairs (henceforth SoA) in the conditional clause produces a counterfactual implicature (i.e., the speaker supposes that the event could not have taken place, note the bounded construal with the aorist), because they did in fact not manage to kill all Magi. The polarity reversal of the past conditional clause thereby is not the result of the negation, since the interpretation is positive (i.e., the night did stop them). The counterfactual implicature from the conditional clause thus transfers to the matrix clause (Wakker 1994: 301; Declerck & Reed 2001: 107–108).

- (5) *ei dè mē nùks epelthoûsa éskhe, élipon àn*
 if MOD NEG night-NOM come-PTCP-NOM get-3SG-AOR leave-3PL-AOR MOD
oudéna mágon
 no-ACC magus-ACC
 ‘if nightfall had not come they would have left no Magus alive’ (Hdt 3.79.11)

Still, not all conditionals with a past tense in Ancient Greek are counterfactual, since the past is used in a host of pragmatic types of conditions (see la Roi 2022b), which are from a grammatical point of view not counterfactual, although (as discussed below) non-counterfactual indirect inferentials come very close: direct

inferential (*if he was there yesterday, then he must have seen something*, e.g., D. 31.3.3), indirect inferential (*if he was not there, why does he know about this?*, e.g., Is. 11.24.2–9), illocutionary (*if any of that constituted negligible behaviour, I plead guilty*, e.g., D. 18.190.7), metalinguistic (*he was my friend, if he ever was*, E. Ph. 1596) or generic past conditionals (e.g., S. Ph. 292), i.e., if as *whenever s/he did X* (see Declerck & Reed 2001 for these types in English). In fact, counterfactual mood forms (and counterfactual modal verbs, see Section 3) also occur in various conditional sentence types and outside conditional sentences, but these factors are unfortunately not always taken into account. To illustrate, Verstraete and Luk (2021: 288–289) discuss a conditional structure that they call more complex than regular conditional counterfactuals, namely “*If he’d invited her, she would have come. Could you check if she received an invitation? [‘not sure if he invited her’]*”. To them a problem is that the conditional cannot be considered clearly true or false as the contrary-to-factness is suspended in some way, i.e., the counterfactual status of the conditional being at issue. However, from a pragmatic perspective such a conditional is actually an indirect inferential: it uses the counterfactuality of the matrix clause (i.e., she would have come but evidently has not) to let the hearer infer the counterfactuality of the conditional clause (Declerck & Reed 2001: 61).¹⁰ As noted by Declerck and Reed, in such conditional sentences, the counterfactual implicature operates in the reverse direction from predictive counterfactuals (predictive being: if X happened [*p*], then (temporally and causally iconic) Y would have happened [*q*]). In the example, the speaker thus makes the hearer draw the conclusion that she cannot have been invited and subsequently challenges the invitation further by asking to check for the invitation. A definition of counterfactuality in terms of considered false by the *speaker* would more naturally explain such a more subjective example (see Section 7).

Furthermore, such examples underline the utility of the concept of counterfactual implicature, since, as shown in the table below, counterfactuals occur in a variety of pragmatic types which crucially differ in the direction of counterfactual implicature transfer (see the arrows in the third column of Table 1, taken from la Roi 2022c). The predictive usages in (1), which is by far the most frequent environment in which the counterfactual past indicative mood form is found (344 out of 592 counterfactual conditionals in Classical Greek), predict the actualization of the *q* clause, implying that if *p* is realized *q* will be realized (Dancygier 2006: 25–61). Thus, in this usage there is a temporal sequentiality

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(Dancygier 2006: 73) and logical causality between the actualization of *p* and *q*. This causality is absent for other conditional types such as inferential conditionals in (2), where one could merely speak of logical link between two epistemic states, i.e., the knowledge of *p* guarantees the knowledge of *q* or the reverse (see Dancygier 2006: 87). The examples in type (3), discussed above, use the assumed counterfactuality of the matrix clause to let the hearer deduce the counterfactuality of the proposition in the conditional clause. Finally, type 4 and 5 operationalize counterfactuality on a more pragmatic level, to indirectly qualify the appropriateness of the speech act in the matrix clause (type 4) or provide an indirect metalinguistic evaluation of what is said immediately before.

Table 1. Pragmatic Typology of Counterfactuals

Pragmatic type	English examples	Pragmatic direction	Ancient Greek examples
(1) predictive	[if he had left earlier,] he would have been here on time.	$p \rightarrow q$	<i>E. Hipp.</i> 700 <i>E. El.</i> 40
(2) direct inferential	(a) He would have won the race, if he had not slowed down at the end. [=because he slowed down he did not win the race]	$q \leftarrow p$	<i>Il.</i> 21.544 <i>S. Aj.</i> 447
	(b) Why would he have done that, if he did not need the money? [=because he did not need the money, he did not do it]	$q \leftarrow p$	<i>Il.</i> 22.202
(3) indirect inferential	(a) If that were true, they would have changed it by now. [=they haven't changed it so it is not true]	$p \leftarrow q$	<i>Lys.</i> 24.11 <i>Ar. Nub.</i> 1056
	(b) If he was absent at the time, how could he have known about it? [=he knew so he cannot have been absent]		<i>Is.</i> 3.25.2 <i>D.</i> 27.56.1
(4) illocutionary	It would be justified to guess, if someone who could easily solve the riddle wasn't present now.	$q \leftarrow p$	<i>A. Supp.</i> 244
(5) metalinguistic	I do not care a tiny rat's ass, if that weren't too rude of an expression.	$q \leftarrow p$	<i>Pl. Ap.</i> 32d1-3

With regard to the illocutionary force of the sentence, the illocutionary force of the matrix clause is essential: counterfactual declarative illocutions maintain their conventional interpretation (cf. Example (5)), but counterfactual interrogative illocutions typically turn into assertoric questions (i.e., rhetorical questions,

for which see Table (1) above) rather than standard information seeking interrogatives. Assertoric questions present an informative message and are therefore more similar to declarative illocutions despite being marked as an interrogative illocution (Declerck & Reed 2001: 41, 60), e.g., *who would have thought/done X? = nobody would have thought/done X*. To illustrate, in Example (6) the speaker is stating that Admetus could not have held a good funeral without mourners, as mourners were an essential part of ancient funerals in Greece.

- (6) *pôs àn érēmon táphon ádmētos kednēs àn éprakse*
 Q MOD desolate-ACC grave-ACC Admetus good-GEN MOD do-3SG-AOR
gunaikós
 wife-GEN
 ‘How would Admetus have held the funeral of his good wife without mourners?’
 (E. Alc. 96–97)

There are often linguistic cues that accompany such assertoric counterfactual illocutions that signpost the illocutionary interpretation of the question, e.g., emphatic evaluation ‘*incredible*’ (see Example (7)), ‘*this is not true*’ (e.g., Dem. 21.115.5) or subjective tag questions ‘right?’ (e.g., Pl. Grg. 514a7).¹¹ In addition, the assertoric nature of these counterfactual interrogatives is especially clear in the frequent use of counterfactual interrogatives (yes/no and open)¹² in an indirect inferential pragmatic structure. Such a structure uses the *given* counterfactuality of the matrix clause to make the hearer infer the counterfactuality of the conditional clause (see Example (7)). Thus, since everyone normally desired the despot’s throne (the present-referring counterfactual imperfect past *epethúmoun* in Example (7)), the SoA in the conditional clause is considered counterfactual (sc. that the despot has far fewer pleasures than modest citizens). The counterfactual implicature thus transfers from the matrix clause to the subordinate conditional clause in indirect inferential counterfactual conditional structures ($q \leftarrow p$), whereas in predictive counterfactual conditionals it transfers from the conditional to the matrix clause (see Example (5), $p \rightarrow q$).

11. For the role of tag questions in Ancient Greek, see Shalev (2001).

12. The preference for the order p, q in this type can be explained by the fact that indirect inferential structures have as their main goal to let the hearer make an inference about p by virtue of the value of q , which is why p would first need to be established before it can be attacked with q .

- (7) *ei gàr hou̓tōs taút' eíkhe, pôs àn polloì mèn*
 if PTCL SO DEM-NOM be-3SG-IMPF Q MOD many-NOM PTCL
epethúmoun turanneîn [...];
 desire-3PL-IMPF rule-INF
 [“Incredible!” exclaimed Simonides.] ‘Were it so, how should a despot’s
 throne be an object of desire to many’ [, even of those who are reputed to be
 men of ample means? And how should all the world envy despots?”]
 (X. *Hier.* 1.9.1–2)

Diachronically, there are various indications that the counterfactual implicature in counterfactual indicative mood form (e.g., in conditionals, declaratives and interrogatives) is conventionalizing. First, the counterfactual indicative has at least since Archaic Greek been replacing the counterfactual optative mood inherited from Proto-Indo-European (Brugmann 1930: 586; Strunk 1984: 145–146) in these constructions;¹³ the counterfactual indicative came to be used to refer especially to the counterfactual past in Archaic Greek, but extended to the counterfactual present (occasionally in Archaic Greek with the unbounded imperfect aspect (twice, *Od.* 2.184 and 19.283) but across different aspects in Classical Greek, e.g., aorist D. 18.76.1, cf. Wakker 1994: 133) and, eventually, more rarely the counterfactual future (with imperfects, see *E. Alc.* 295). To illustrate, see the historical summary of temporal reference extensions in Table 2 provided in la Roi (2022a: 257), showing the complete loss of counterfactual meaning by the optative in Classical Greek. Whereas the inherited counterfactual optative had already extended its temporal reference before our attested texts, the innovative indicative replacement especially extended its temporal reference in Classical Greek. Thus, the diachronic temporal reference extension of the counterfactual indicative attests to the increased schematicity (cf. Bybee 2015: 127) of the counterfactual indicative in which the counterfactual meaning has become entrenched.

As argued in la Roi (2022a), these extensions are constrained diachronically by aspectual semantics, as the imperfect’s unbounded construal offers temporal reference extensions first (cf. the two present-referring examples of a counterfactual indicative already in Homer’s Archaic Greek) after which the extensions are allowed by the aorist and pluperfect which do not have an unbounded construal.

13. This form of renewal would constitute a type of semasiological cycle (see Mosegaard Hansen 2018 with references) where a function is first expressed by one form but replaced by another expression, for which see la Roi (2022a). Note that I follow the recent view put forward in la Roi (2022a). It discusses the different existing accounts (2022: 235–240) and shows with which steps the counterfactual indicatives took over from the inherited counterfactual optative. This analysis contrasts to other suggestions that, for example, there was no replacement at all (e.g., Willmott 2007: 48–52), despite the fact that the inherited counterfactual optative is filtered out across early Indo-European languages.

Table 2. The Replacement of the Counterfactual Mood Forms in Ancient Greek Declaratives

Declarative illocutions	Counterfactual mood forms		
	Optative		Indicative
	<i>Archaic Greek</i>	<i>Archaic Greek</i>	<i>Classical Greek</i>
Past-referring	18	146	309
Present-referring	11	2	400
Future-referring	11	–	2

These diachronic constraints explain the mixed temporal reference distribution that we find in Classical Greek, for example in declarative illocutions (Table 3).¹⁴

Table 3. Aspect and Temporal Reference in Classical Greek Declaratives with Counterfactual Indicatives

Form	Temporal reference		
	<i>Past</i>	<i>Present</i>	<i>Future</i>
Aorist	217 (83%)	45 (17%)	0
Imperfect	82 (19%)	347 (80%)	2 (1%)
Pluperfect	10 (56%)	8 (44%)	0

Another diachronic sign of the conventionalization of counterfactual implicature is illustrated by the phenomenon known as counterfactual mood attraction in Ancient Greek (see Napoli 2014 for a status quaestionis). Counterfactual mood attraction traditionally refers to the counterfactual use of the indicative without the expected modal particle in non-conditional subordinate clauses (see Kühner & Gerth 1898:259 for this rule) which is triggered by a counterfactual indicative in the matrix clause, e.g., ‘He should have called, so that *I would have known*’ (=past indicative). La Roi (Forthcoming) proposes that this phenomenon is actually pragmatically conditioned and can be compared to counterfactual implicature transfer in predictive counterfactual conditionals (e.g., *If I had eaten more at breakfast, I would not be starving now*). I pointed out that the counterfactual implicature of the counterfactual mood in the matrix clause (in Example (8) *à n*

14. There are further nuances to these evolutions, e.g., the role of atelic SoAs in temporal reference extension or the role of explicit pragmatic context in the earliest counterfactual uses of the indicative, but the confines of this article prevent me to discuss these aspects. See la Roi (2022a) where I discuss the diachronic relevance of these factors.

epaúsato) transfers to the subordinate clause. For this reason, the non-conditional subordinate clause does not need to be marked by a modal particle even though this is the morphosyntactic rule for non-conditional counterfactual subordinate clauses in Ancient Greek.

- (8) *ei mèn nun émathe hóti en taútēi pléoi Artemisíē, ouk àn epaúsato proteron ē heílé*
 If PTCL PTCL learn-3SG-AOR that in this.DAT ship.DAT Artemisia.NOM NEG MOD
epaúsato proteron ē heílé
 stop-3SG-AOR sooner than capture-3SG-AOR
 ‘If he had known that she was in that ship, **he would not have stopped earlier than that he captured it**.’
 (Hdt. 8.93.5–6)

I similarly report that the counterfactuality of a conditional clause can transfer to the subordinate clause dependent on it (e.g., ‘If he had been alive *so that he could have helped me* (=past indicative), I would have gotten out of this mess’). Thus, the transfer of counterfactual implicature to the subordinate clause reveals the conventionalization of counterfactual implicature.¹⁵

Finally, the illocutionary force of counterfactual mood forms with the modal particle in declaratives seems to be conventional diachronically, except for those cases where a modal verb is used in the construction with the modal particle. To illustrate, the boulomaic modal verb *boúlomai* ‘wish,’ used in the first person, is interpreted by Neoptolemus as a negative comment suggesting that he should stop with his words (which he suggested repeating in the preceding line). Thus, while formed as a declarative illocution, the illocutionary force of this counterfactual indicative is a wish which invites backchannel (cf. also Example (1) above).

- (9) Od. *arkèn klúein àn oud’ hápaks eboulómēn*
 at.all.ADV hear-INF MOD NEG ONCE wish-1SG-IMPF
 Neopt. *eú nún epístō pánt’ akēkoōs lógon*
 well now know-2SG-IMP all-ACC hear-PTCP-NOM story-ACC
 Odysseus ‘**I would have wished** to rather not have heard it at all, not even once!
 Neoptolemus ‘Be certain now that you have heard all I have to say!’
 (S. Ph. 1239–1240)

There are more instances of counterfactual modal verbs being used in this declarative construction with a modal particle with an additional illocutionary force such as *édei* (directive), which underlines the multi-layered make-up of counterfactuals and the pragmatic effects created by this. Why such counterfactual modal

15. Nevertheless, we do occasionally find special examples which illustrate the presence of a counterfactual implicature because the speaker references it, e.g., Pl. *Lg.* 632d1 ‘I would have wanted that and still want now.’

verbs are marked additionally by the modal particle in this construction but not consistently in their counterfactual use is discussed in the following section. The table below summarizes the observations made above.

Table 4. Counterfactual Indicatives as Polarity Reversal Construction

Polarity reversal construction	Polarity symmetry	Propositional implicature	Illocutionary variability	Historical conventionalization
Counterfactual indicative moods	+	Counterfactual	+/-	– temporal reference extension – counterfactual implicature transfer – pragmatic context extension

3. Counterfactual modal verbs: *eboulómēn* ‘wanted’, *édei* ‘ought’, *(e)khrēn* ‘should’ and *eksēn* ‘was possible’

In this section, I limit myself to the discussion of the counterfactual uses of these four modal verbs, as discussing all modal verbs which are used counterfactually in Ancient Greek lies beyond the scope of this paper. A benefit of choosing these four counterfactual modals is that they all acquire a counterfactual meaning in Classical Greek instead of earlier such as the past imperfect of *méllō* “was likely/about to→would have” in Archaic Greek (cf. Basset 1979: 187–189).¹⁶ As discussed above, in the cases of the counterfactual modals under discussion in this section, their polarity reversal is the result of the conventionalization of counterfactual implicature of a past modal form with an infinitival complement in its scope. They follow the diachronic path presented by Van linden and Verstraete where a past marker expressing a form of potentiality (viz., boulomaic, deontic or epistemic modality) combined with the infinitival complement in its scope acquires a conventionalized counterfactual meaning through a Gricean quantity implicature: by stating the past potentiality of an event in an attempt to be as informative as possible, one invites the addressee to interpret the opposite end of the modal scale, i.e., not past potentiality of the event.¹⁷ As the past concerns typically knowable events, this

16. Yet, this meaning is not mentioned by Bartolotta and Kölligan (2020), who discuss *méllō* and counterfactual indicatives in Homeric Greek.

17. See Van linden and Verstraete (2008:1876–1878), who base themselves on Ziegeler (2000:32–34). For Ancient Greek, this connection with a quantity implicature was already made by Wakker (1994: 152).

construction will be interpreted counterfactually more easily from a diachronic point of view, whereas its present version would not be interpreted this way in dealing with yet unrealized events, e.g., *he wants to have cereal now* (and may still be able to) vs. *he wanted to have cereal yesterday* (inviting the inference that he could not have them yesterday).

Still, there are distinct differences between these modal verbs as to how strongly their counterfactuality has conventionalized in the polysemy of the past modal verbs and when. These differences, I suggest, can be observed from a variety of linguistic factors: (1) their relative frequency as counterfactual, (2) their temporal reference distribution, (3) loss of counterfactuality and (4) the role of the modal particle in producing a counterfactual reading. The following table summarizes the frequencies from the corpus mentioned in Section 1. To show the developments in Classical Greek, I split the corpus evidence between 5th century and 4th century Classical Greek authors (cf. Bentein 2012).¹⁸

Table 5. Counterfactual Implicature Conventionalization of Counterfactual Modal Verbs

Counterfactual modal verbs	5th century Classical Greek		4th century Classical Greek	
	<i>Relative frequency of counterfactuality</i>	<i>Past versus present counterfactual reference</i>	<i>Relative frequency of counterfactuality</i>	<i>Past versus present counterfactual reference</i>
<i>eboulómēn</i>	34 (23%) out of 145	(50%) vs. 17 (50%)	56 (25%) out of 225	33 (59%) vs. 23 (41%)
<i>édei</i>	24 (22%) out of 107	16 (67%) vs. 8 (33%)	62 (31%) out of 197	37 (60%) vs. 25 (40%)
<i>(e)khrên</i>	109 (51%) out of 215	67 (61%) vs. 42 (39%)	40 (55%) out of 72	37 (93%) vs. 3 (7%)
<i>eksên</i>	5 (20%) out of 25	3 (60%) vs. 2 (40%)	19 (32%) out 59	15 (79%) vs. 4 (21%)

Crucially, as shown by the temporal reference range of these counterfactual modal verbs, they had already fully developed non-past usages in 5th century Classical Greek, the speed of which may partly be attributed to the role of imperfective aspect in temporal reference extension (see la Roi 2022a). This explains the relative similarity in distributions across the two centuries. As with the counterfactual indicative discussed in Section 2, the counterfactual usage of these modal verbs originally referred to the counterfactual past, but their past temporal reference extended to the present and lost reference to the past, as visible in Example (1) *ouk ekhrên sigân*= ‘[you are silent but] you should not be silent now’. Many grammarians of Ancient Greek propose an interpretation of temporal reference in such counterfactual modal verbs in logical terms, but that does not do justice to

18. The group of 5th century Classical Greek authors consists of Aeschylus, Sophocles, Euripides, Herodotus, Thucydides, Aristophanes and Lysias. The group of 4th century Classical Greek authors are Isocrates, Xenophon, Plato, Isaeus and Demosthenes.

the usage of present-referring counterfactuals. Grammarians typically state that in such present-referring counterfactual modal verbs the realizability of the necessity expressed by the modal verb belongs to the past, but has still not been realized or the moment of realization is lost.¹⁹ Instead, I suggest that it is the present state of affairs (i.e., modal verb plus complement) which is presented as unrealizable in the present, i.e., you are silent but ought not to be now. Thus, the present-referring counterfactual usages are better viewed as a relaxation of the temporal constraint, in accordance with how counterfactual mood forms extend to present reference regardless of aspectual constraints (Section 2). Note also that the contrastive data in the table suggests that past counterfactual usages are more stable diachronically, because when the counterfactual meaning becomes more prominent in the polysemy of these modal verbs (contrast the relative frequencies from the 5th and 4th century), the past counterfactual usages take up a relatively larger portion as shown by the data for *eboulómēn* and *eksên* (cf. Narrog 2012: 65–66 for diachronic saliency of meanings in polysemy).

Furthermore, I would like to propose that the relative distribution numbers in Table 4 also hide another development relevant to the interpretation of the distributional evidence for counterfactual modal verbs: the counterfactual modal verbs (*e)khrên* and *édei* have also already lost their counterfactuality and been ‘modalized’.²⁰ When a marker has lost its temporal reference restriction to the past, it typically becomes a past form without past temporal reference and therefore starts to be at risk of losing its counterfactuality (as tentatively hypothesized by Dahl 1997: 109). This has happened to (*e)khrên* and *édei* as they became used in Classical Greek without past temporal reference and without counterfactuality, as in Examples (10) and (11).²¹ For example, in (11) Xanthias is already carrying the baggage now, which is why it cannot be counterfactual anymore here.

19. See Kühner and Gerth (1898:205), Brugmann and Thumb (1913:511), Schwyzer and Debrunner (1950:308), Rijksbaron (2006:25) and Allan (2013: passim).

20. I adopt the term from Krug (2000), who uses the term to refer to the process whereby lexical modal verbs turn into modals in English (e.g., *want to* > *wanna*) and undergo changes on semantic, formal and syntactic levels. For a parallel from the history of English modals such as *should*, see Bybee (1995).

21. Note that Ruiz Yamuza (2021:280) already observed that not all of these uses were counterfactual. She explains those non-counterfactual uses from a politeness perspective, as counterfactual modal forms are coopted for politeness purposes (cf. Patard 2019). I underline here that they are the result of the loss of counterfactuality as a later stage in the life-cycle of counterfactual modal verbs.

- (10) *en hōi élegon hōs khrên humâs eulabeîsthai mē hup'*
 when say-3PL-IMPF that should-3SG-IMPF you-ACC take-care-INF NEG by
emoû eksapatēthete hōs deinoû óntos légein
 me-GEN be-deceived-2PL-AOR that clever-GEN be-PTCP-GEN speak-INF
 [But I was most amazed by one of the many lies that they told –] ‘when they
 said that you **should be on your guard** not to be deceived by me, because I
 was a clever speaker.’ (Pl. *Ap.* 17a5–7)
- (11) *tí dêt' édei me taûta tà skeuē pherein eî per*
 Q PTCL ought-3SG-IMPF me-ACC DEM-ACC ART baggage-ACC carry-INF if PTCL
poiēsō mēden hōnper Phrúnikhos eíothe poieîn;
 do-1SG-SBJV NEG REL-GEN Phrynichus-NOM be-wont-3SG-PRF do-INF
 ‘Then **why ought I** carry this baggage, if I will not do any of the stuff Phryn-
 ichus always does?’ (Ar. *Ran.* 12–14)

These post-counterfactual usages already occur in 5th century Classical Greek, 52 times (=24% of all uses) for (*e*)*khrên* and 10 times (=9% of all uses) for *édei*. Their slightly increased saliency in the polysemy of these modal verbs in 4th century Classical Greek (23 times (=32% of all uses) for (*e*)*khrên* and 34 times (=17% of all uses) for *édei*) could explain the low frequency of present-referring counterfactual usages in 4th century Classical Greek, as the ambiguity of counterfactual or non-counterfactual reference will have contributed to the loss in saliency of the present counterfactual meaning. Moreover, reinterpreting the numbers in Table 4, above, with these later post-counterfactual usages included, this means that, in 5th century Classical Greek, (*e*)*khrên* was actually only used in its original non-counterfactual past-referring meaning in 25% of the cases (i.e., 54 times), whereas *édei* in 68% of the cases (i.e., 73 times); in 4th century Classical Greek, the original non-counterfactual past-referring usage took up 12% (9 times) of (*e*)*khrên* and 51% (101 times) of *édei*. The relative distribution of those post-counterfactual usages thus helped illustrate the decrease in semantic prominence of the original past deontic value. Conversely, the counterfactual and post-counterfactual meanings which these modal verbs had developed had already strongly entrenched themselves in these modal verbs already in Classical Greek. The following figure illustrates the diachronic path taken by these past imperfect deontic modal verbs:

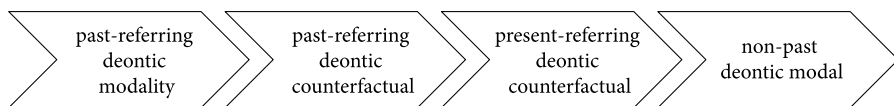


Figure 1. The Life Cycle of Deontic Counterfactual Modal Verbs in Classical Greek

Finally, an explanation is needed for why the modal particle starts to show up with these counterfactual modal verbs in Classical Greek. In grammars, one generally finds what may be called the double counterfactuality explanation for this phenomenon. The hypothesis states that in cases where a modal particle is found with a counterfactual modal verb such as *édei* ('it was necessary/ought') not only was the target of the necessity [i.e., its complement, *ELR*] not realized, but the necessity [i.e., expressed by the modal verb, *author*] itself did not exist.²² Rijksbaron (2006:26) thus qualifies the following example as indicating that the necessity did not even exist.

- (12) *ei dè prosekhōrésamen próteron tōi Médōi (...) oudèn àn*
 if PTCL join-1PL-AOR earlier ART-DAT Medes-DAT NEG MOD
édei éti humàs mè [...] naumakheîn [...]
 ought-3SG-IMPf longer you-ACC NEG fight-at-sea-IMPf
 'But if we had gone over to the Persians earlier in the war,' [through fear of losing our territory, as others did, or afterwards had lacked the courage to embark on our ships, in the conviction that we were already ruined,] 'it would from that moment have been unnecessary for you to fight at sea' [with your inadequate fleet, but the Persian's plans would have moved on quietly just as he wished.] (Th. 1.74.4.1–6)

However, this interpretation confuses the different semantic and pragmatic layers of interpretation relevant to this example. Most importantly, the fact that there was no necessity in the past is expressed with a negation marker *oudèn*,²³ and the absence of the necessity actually only follows from the polarity reversal of the preceding counterfactual conditional. In other words, because they did *not* act as the others did (etc.), there was a necessity to fight at sea in the past, and therefore, if they had acted as the others (which they did not), there would have been no necessity to fight at sea. The negated SoA in the matrix clause thus targets the polarity reversal of the preceding conditional clause. It does not express another type of counterfactuality than the polarity reversal of counterfactual mood forms described in Section 2, except for its deontic modal domain of course. After all, such an explanation of the modal particle with counterfactual modal verbs would carry the unwanted implication that all uses of the modal particle with a counterfactual modal verb deny both the target (i.e., the complement) and the existence of the modal feature. Yet, the point of counterfactual modals (with or without modal

22. This idea is still found in current grammars (Rijksbaron 2006:26; van Emde Boas et al. 2019:444) and research (Ruiz Yamuza 2008:127) but taken over from earlier grammars (Goodwin 1889:404–409; Kühner & Gerth 1898:206; Stahl 1907:357; Schwyzler & Debrunner 1950:309; Smyth & Messing 1968:521).

23. In fact, of the 18 occurrences of counterfactual *édei*, 14 (78%) have a negation with it.

particle) is rather to stress the pointlessness or unrealizability of the entire SoA, which is expressed by the modal verb and its infinitive combined ('the target' in their terms). To illustrate, Odysseus in (13) states that he would have wanted to not even have heard it once in the past, yet not wanting to hear it was unrealizable in the past. In other words, a past volition would have been realizable but the volition of not wanting to have heard is not. Thus, counterfactuality does not belong to the modal verb alone but to its meaning in combination with its infinitive.

- (13) Od. *arkhèn klúein àn oud' hápaks eboulómēn*
 at.all.ADV hear-INF MOD NEG ONCE wish-1SG-IMPF
 Neopt. *eû nûn epístō pánt' akēkoōs lógon*
 well now know-2SG-IMP all-ACC hear-PTCP-NOM story-ACC
 Odysseus 'I would have wished to rather not have heard it at all, not even once!
 Neoptolemus 'Be certain now that you have heard all I have to say!
 (S. Ph. 1239–1240)

A more fruitful explanation of the use of the modal particle with these counterfactual modal verbs is, I think, that they were added through *analogy*, since from a systemic perspective they flout the Ancient Greek syntactic rule of a counterfactual sentence being marked with a past indicative and a modal particle unless concerning a modal verb. Because they do have a relatively conventionalized counterfactual meaning, they receive the modal particle through proportional analogy (Campbell 2013: 92), e.g., *dive: dove* based on the rule of *ride: rode*, even though *dive*'s original past form was *dived*. This analogy would also explain why the modal particle is not a strict rule with these counterfactual modal verbs, but occurs across authors nonetheless. The already counterfactual modal verb *édei* occurs with the modal particle in main clause 17 times and gains prominence over time in Classical Greek: in *5th century Greek*, we do not find it very often yet (e.g., in Herodotus, Aristophanes and Sophocles, 1 time without vs. 0 with, in Thucydides 1 time without vs. 2 with), but it occurs relatively more frequently in *4th century Greek*, e.g., in Demosthenes (8 times without vs. 5 with) and in Plato (8 without vs. 7 with). For the same reason, we find that other counterfactual modal verbs which were already used counterfactually without the modal particle start to occur with the modal particle as well: *eksên* Hdt. 7.56.8 without vs. Lys. 4.13 with it; *khrehn* without E. *El.* 357 vs. D. 18.195 with it; or *eboulómēn* Aeschin. 3.2 without vs. S. *Ph.* 1239 with it.²⁴ Finally, we should of course take into account

24. Of course, we should also take into account the fact that our textual tradition may in some cases obscure linguistic reality, especially since the modal particle has in certain modal contexts

the role of textual transmission for these analogical patterns, because it is conceivable that such analogical patterns, though expected from the perspective of what we know about language change, are not only the result of diachrony but also of faulty textual transmission. Those transmitting the text may have overapplied the general rule of a counterfactual indicative in non-conditional clauses needing a modal particle in Classical Greek, inadvertently mixing in the pattern of counterfactual modal verbs which did not need it with those that did. After all, there is growing evidence that grammarians have adopted similar prescriptive lines of explanation, as their denial of modal patterns with the modal particle in Classical Greek (e.g., future indicative or potential optative without the modal particle) conflicts with the corpus facts (see la Roi 2022b for an overview of the issues).

With regards to the illocutionary force of these counterfactual modal verbs, the modal domain has its impact, as deontic (*(e)khrên* and *édei* are used for a variety of directive speech acts (see above and Ruiz Yamuza 2021), boulomaic *eboulómên* in declarative clauses for wishes, but epistemic *eksên* is limited to the conventional illocutionary force of its clause. It ought to be noted here, however, that both the type of modality and person marking play a major role in the creation of additional illocutionary forces. The deontic modal verbs, by virtue of expressing a necessity, naturally invite the addressee to cooperate in fulfilling the needed goal. For the boulomaic modal verb *eboulómên*, the speaker's indication of his/her personal wishes for the past/present could potentially serve as invitation to those addressees overeager to fulfil his/her wishes, but this use is absent in our data.²⁵ Stating a counterfactual epistemic possibility with *eksên* is restricted to the illocutionary force with which it is marked (e.g., D. 23.93.3 or 57.53.2). Since deontic and boulomaic have to do with desirability, this is probably why they acquire additional illocutionary forces diachronically, whereas the epistemic modal verb does not, again pointing to the need to pay attention to the multi-layered modal character of counterfactuals.

For those counterfactual modal verbs that do get an additional illocutionary force diachronically (i.e., *(e)khrên*, *édei* and *eboulómên*), person marking is also essential: with the deontic modal verbs, the modal verb is always in the impersonal third person where a targeted addressee can be added optionally (i.e., it would have been necessary that *you*, in accusative case in Ancient Greek), but the use of the deontic modal verb already invites interpretation as directive. With

been known to be edited in and out in Classical Greek texts (see la Roi 2019: 62 with further references).

25. In the corpus evidence, however, we instead normally find forms of backchannel (e.g., expression of compassion in response Ar. V. 960 or S. Ph. 1239) or continuance of discourse (e.g., Pl. Phdr. 228a3).

eboulómēn used for wishes, the verb is always in the first person singular because only then is the volition to be ascribed to the speaker and thus functions as wish (contrast the grammaticalized use of third person wish optative to express the speaker's wish).

Now, there are various diachronic indications for conventionalization of counterfactual implicature both with respect to the counterfactual proposition and the illocutionary force. As discussed above, the changing temporal reference, the increasing frequency of counterfactual usage, the analogical extension of the modal particle and the subsequent loss of counterfactual meaning through modalization substantiate the diachronic conventionalization of a counterfactual implicature with regards to the proposition. There are also morpho-syntactic indications that counterfactuality has been entrenched in these modal verbs. The counterfactual modal verbs start to occur in the main clause of indirect inferential conditional sentences and are used to infer the counterfactuality of the preceding conditional clause, as in Example (14) (and (7) above). Here Hippolytus infers that Zeus did not want to propagate the human race, since (in Hippolytus' eyes) baneful women should not have been brought to life on earth by him, but they have. This extended usage reflects the context extension common to grammaticalizing elements (Narrog & Heine 2021: 57–65).

- (14) *ei gār bróteion étheles speírai génos, ouk ek*
 if human-ACC wish-2SG-IMPF propagate-INF race-ACC NEG from
gunaikôn khrên paraskhés-thai tóde
 women-GEN should-3SG-IMPF provide-INF DEM-ACC
 [O Zeus, why have you settled women, this bane to cheat mankind, in the light
 of the sun?]
 'If you wished to propagate the human race, it was not from women that you
 should have provided this.' (E. Hipp. 618–619)

In addition, (*e*)*khrên*, *édei* and *eboulómēn* are found in syntactic contexts of so-called pragmatic counterfactuality transfer (see discussion above), where the counterfactuality of the matrix clause transfers to the subordinate clause which, as a result, does not need the modal particle for distinctive counterfactual marking. In the indirect inferential sentence, the counterfactuality of *ekhrên embaleîn* "ought to have been put" implicates the counterfactuality of reaching a decision which is expressed in the counterfactual purpose clause.²⁶

26. So the counterfactuality technically transfers in both directions, as the counterfactuality of the main clause transfers to the subordinate clause, but that counterfactuality also implicates the counterfactuality of the preceding conditional.

- (15) *oukoûn eíper alēthès ên, ekhrên autò tò*
 PTCL if genuine-NOM be-3SG-IMP should-3SG-IMP DEM-ACC ART-ACC
grammateíon eis tôn ekhínon embaleîn kai tòn
 document-ACC in ART-ACC box-ACC put-in-INF and ART-ACC
parékhonta martureîn, hín' ek tês alētheías kai toû
 provide-PTCP-ACC testify-INF so-that from ART-GEN truth-GEN and ART-GEN
tà sēmeí' ideîn hoi mèn dikastai tò prágm'
 ART-ACC seals-ACC see-INF ART-NOM PTCL judges-NOM ART-ACC matter-ACC
égnōsan
 judge-3PL-AOR
 'Then, if it was genuine, the document **ought to have been put** into the box,
 and the one producing it should have so testified, **in order that the jurymen**
might have reached a decision in accordance with the truth and after an
 inspection of the seals' (D. 45.17.4–7)

In addition, there is one formal indication of the conventionalization of counterfactual wish usage of *eboulómēn*: the counterfactual wish meaning is reflected in the following unique example where the infinitive is formed as a counterfactual conditional clause (see the present-referring counterfactual imperfect *égen* "were leading [now]"):

- (16) *Eboulómēn d' àn, ei kasígnētós me sòs es*
 Wish-1SG-IMP PTCL MOD if brother-NOM NEG your-NOM to
eutukhoúntas égen eutukhôn dómous
 prosper-PTCP-ACC lead-3SG-IMP prosper-PTCP-NOM house-ACC
 'But I wish your brother, returned to prosperity, were leading me into his prosperous house' (E. El. 397–398)

In Table 6 below, I summarize the findings from our discussion above.

4. Avertive

According to Kuteva et al. (2019:852, 858, 868–869), as mentioned above, the *avertive* expresses the non-realization of a once imminent past situation.²⁷ They also contend that the avertive construction will, in languages where an imperfective-perfective distinction is made, be construed in its totality, that is, in

27. Previously, the term *action narrowly averted* was used to cover similar constructions (Kuteva 1998).

Table 6. Counterfactual Modal Verbs as Polarity Reversal Constructions

Polarity reversal construction	Polarity symmetry	Propositional implicature	Illocutionary variability	Historical conventionalization
Counterfactual modal verbs	+	counterfactual	+	<ul style="list-style-type: none"> – temporal reference extension – counterfactual implicature transfer – pragmatic context extension – additional illocutionary forces – analogical renewal – loss of counterfactuality

the perfective.²⁸ Yet, in Ancient Greek, though most frequent with the perfective aorist (1 in Archaic Greek and 25 in Classical Greek),²⁹ we also find the construction once with the imperfect (see Example (18)), the theoretical implications of which I discuss below. In the Ancient Greek avertive construction (cf. Example (2) above and (17) below), we find the combination of a scalar adverb (*olígou, mikroû* “almost”, a meaning deriving from its original meaning “little”) with a past tense. There are also non-avertive examples of course, where the adverb has scope over other parts of the sentence such as an approximate quantity of people/things (e.g., Th. 5.66.4.1 ‘almost the whole Lacedaemonian army’, Th. 1.124.1.8 or Is. 3.55.4).³⁰ As illustrated by Examples (2) and (17), the polarity reversal is not the result of a marker of negation, but the combination of a past perfective tense signalling an event viewed in its totality and a scalar adverb with a negative implication: the clash between these two elements causes the polarity reversal (cf. Ziegeler 2016 for English “counterfactual *almost*”). When the speaker uses the combination to assert that something really almost happened, the speaker is using the past immi-

28. They add the following typological caveat “This means that for expressing the avertive, not only are perfectives used in the languages that have them but also that the avertive entails semantic perfectivity also in the languages that do not mark it grammatically (with thanks to an anonymous reviewer).” (Kuteva et al. 2019: 858–859).

29. As mentioned below, the construction can be found across genres, e.g., in histories (Hdt. 7.10.29 or X. *HG.* 4.6.11.8), comedy (Ar. *Th.* 935, V. 829), philosophical dialogue (Pl. *R.* 563b9, *Euthd.* 303b3) and rhetoric (D. 19.234.2, Lys. 14.17.7).

30. Cf. the use of the adverbs *engús* ‘nearly’ and *skhedón* ‘nearly’ for the same non-counterfactual purposes in Archaic and Classical Greek.

nence of the non-realized situation³¹ for specific pragmatic goals. For example, in (17), Socrates' use of the combination effectively invites his addressee, Meno, to reconsider his behaviour since Meno nearly deceived him (note the use of perfective aspect to suggest that Meno had).

- (17) *Panoûrgos eî, ô Ménōn, kai olígou eksēpátēsás me*
 Rogue-NOM be-2SG-PRS Menon-VOC and almost deceive-2SG-AOR me-ACC
 'You are a rogue, Meno, and **had almost deceived me**'. (Pl. *Men.* 80b7)

Yet, communicative context to some extent determines the pragmatic effect which a speaker wants to generate with the avertive, because, for example, in historical narrative the construction merely characterizes the effectiveness of actions, as in (18).

- (18) *kai metà toûto es tēn Knídon katapleúsantes kai*
 and after DEM-ACC to ART-ACC Cnidus-ACC sail-PTCP-NOM and
proshalóntes têi pólei atekhístōi oúsēi olígou
 attack-PTCP-NOM ART-DAT city-DAT without-walls-DAT be-PTCP-DAT almost
heílon
 capture-3PL-AOR
 'After this they sailed to Cnidus, and attacking the city, which was without walls, almost captured it'. (Thuc. 8.35.3.4–6)

The avertive use of the construction is most often found in a hyperbolic environment referring to an event which is undesirable to the speaker. As such, it would at least to some degree overlap with apprehensionals in their undesirability characteristic of the event, which is the avertive's functionally neighbouring construction in the overview provided by Kuteva et al. (2019: 862). For example, Socrates uses the construction to signify that he *almost* forgot what to say due to craftiness of his verbal opponents, which would have had negative effects on Socrates' status in the verbal contest. Observe also that Socrates adds a post-posed counterfactual conditional to make sure that his matrix clause is interpreted as non-realized (he did not have a chance so he would have slinked away out of shame).

31. Earlier grammars of Ancient Greek deal in different ways with this construction, as some liken it to non-counterfactual categories (e.g., Kühner & Gerth 1898 to a perfect), whereas others argue for the similarity between conventionalized counterfactuals and these structures (esp. Basset 1989: 217). As discussed here, there are some striking differences between this construction and other counterfactual constructions.

- (19) *húp' aiskhúnēs olígon apodràs oíkhómēn, eí*
 due-to shame-GEN almost run-away-PTCP-NOM go-away-1SG-IMPF if
pēi eíkhon
 in-any-way can-1SG-IMPF
 [the greater part of it was not quite so astounding; but when we drew towards
 the close, the beauty of the words and phrases could not but take one's breath
 away. For myself, indeed, I was so conscious that I should fail to say anything
 half as fine, that] 'for very shame **I would have slinked away, had I had any**
chance'. (Pl. *Smp* 198b7–8)

The surprising feature of this construction is the main clause predicate in the imperfect past indicative, as this is not in line with the narrower definition of avertives as perfectives given by Kuteva et al. (*pace* 2019: 858, 868–869). I would rather like to propose that telicity provides an additional crucial guiding factor,³² because all avertives in Ancient Greek (i.e., Archaic and Classical Greek) are telic, except one (Pl. *Euthd.* 303b5–7 *olígon... ethorúbēsan ... kai hēsthēsan* '[the pillars of the Lyceum] almost started to make noise and rejoice'). Paradoxically, the telicity of a past event is used to effectively mark the non-realization of it, because the telic past event clashes with the negative implication in the adverb. In fact, even the imperfective avertive in (19) is a telic past event, viz., go away, that is, not a prototypical imperfect at all. The actionality of the predicate thus plays an equally important role in creating avertive meaning. As for the other exception, there is a contextual reason for its lack of telicity, because the event is both obviously non-realized in concerning applauding pillars and the aorist aspect gives these atelic situations an ingressive reading ('started to X').

When we now compare these avertives to counterfactual indicatives or counterfactual modal verbs, we can also observe some differences (cf. Table 7 below). First of all, these avertives only concern past events, whereas counterfactuals historically have extended their temporal reference to the non-past. Avertives also have, as discussed above, more aspectual and actionality limitations in generating a non-realized event. In addition, avertives have a contextual pragmatic connection to undesirability, because most often they are used to express conversationally noteworthy or face threatening past events, e.g., a death (Example (2), D. 19.273.10, 24.138.5; Ar. *Ach.* 348 or 381) or a shameful action (Example (19) and Pl. *Ap.* 17a3 or *Lys.* 210e2). Finally, unlike the counterfactual constructions exemplified by counterfactual modal forms and modal verbs, this construction is not used with polarity symmetry (i.e., positive to negative and negative to positive),

32. Note that Ayesha Kidway had made this suggestion for Hindi (cited by Kuteva et al. 2019: 867 note 17).

because its polarity only changes in the direction from positive to negative, i.e., almost past=not past.

Table 7. Avertives as Polarity Reversal Construction

Polarity reversal construction	Polarity symmetry	Propositional implicature	Illocutionary variability	Historical conventionalization
Avertive almost+past	–	Counterfactual/ undesirable	–	–

5. Non-counterfactual rhetorical questions

Rhetorical questions typically invite a polarity shift in the answer; but that may vary considerably (see Yang 2018: 11–28 for a recent overview with references). Due to their variety of both form and function, rhetorical questions are notoriously hard to pin down linguistically, not only in Classical Greek³³ but also more generally (cf. Han 2002 on the potentially different patterns of NPIs in rhetorical and non-rhetorical questions). As a result, what has been seen as their distinctive characteristics by some have been discredited as such by others, e.g., critiques that rhetorical questions could still invite an answer or that they display polarity reversal in all their varieties.³⁴ In what follows, we only look at those rhetorical questions in Ancient Greek, which make up the majority of rhetorical questions, that do observe a polarity shift. In such cases, as discussed above, the polarity value of the sentence is the opposite of how it is marked (i.e., with negation is positive and without negation is negative).³⁵ Thus, in Example (20) we find a stream of rhetorical questions in different forms (see i to v), but also with different functions, as is reflected in the translation.

- (20) *Káitoi [i]tí phésomen, ô ándres Athēnaíoi, toúton kúrimon*
 PTCL Q say-1PL-FUT Athenian-men-VOC DEM-ACC authoritative-ACC
tòn nómon eásantes genésthai; [ii]póteron tà
 ART-ACC law-ACC let-PTCP-NOM become-INF Q ART-NOM

33. Cf. the functional typology of different types of questions in Classical Greek offered by Mastronarde (1979: 1–17).

34. Those that do not are typically formulated positively and therefore expect a positive answer based on contextually accessible knowledge (Yang 2018: 25–27).

35. Cf. Dayal (2016: 283): “A rhetorical question presents the mirror image of a declarative question”.

dikastéria, hā dēmokratouménēs tēs póleōs ek tōn
tribunals-NOM REL-NOM govern-PTCP-GEN ART-GEN city-GEN from ART-GEN
omōmokótōn plēroútai, taút' adikémata tois epì
pledge-PTCP-GEN compose-3SG-PRS DEM-ACC crimes-ACC ART-DAT under
tōn triákont' adikeîn; [iii]kai pôs ou deinón; [iv]allà dikaiōs
ART-GEN thirty be-guilty-INF and Q NEG terrible-NOM but justly
epsēphísthai; [v] tínos oún heíneka tòn lúsonta taúta
judge-INF Q PCTL because-of ART-ACC reserve-PTCP-ACC DEM-ACC
nómon thésthai phésomen;
law-ACC enact-INF say-1PL-FUT

‘[i]Then what are we to say for ourselves, men of Athens, if we allow this law to be confirmed? [ii]That our tribunals, composed under popular government of men who have taken the judicial oath, are guilty of the same iniquities as the tribunals of the Thirty Tyrants? [iii] Preposterous! [iv] but they don’t give righteous judgements! [v] Then what reason can we allege for enacting a law to reverse those judgements?’ [Unless indeed we plead that we were out of our minds. We have no other excuse to offer.] (D. 24.58.1–7)

In the first rhetorical question (i) it is strongly implied that they won’t have anything to say for themselves if they allow this to happen (cf. the future-referring *phésomen*). The second rhetorical question (ii) serves as an explication of what they would allow to happen (in the form of a question). Rhetorical question (iii) acts as a declaration of emotional response to this presupposition, which might explain the ellipsis of the main verb. Rhetorical question (iv) similarly responds to this presupposition, stating that the tribunals are by no means fair judges. Finally, rhetorical question (v) states that they will not have any viable excuse to give for such a decision. What these rhetorical questions share is that they are used to point out the contradictory nature of the presuppositions to their choice to allow this law to be confirmed (see (i)). Combining various rhetorical questions that refer to the present and the future, the choice to confirm this law is argued against using what may be referred to as implicatures of contradiction (cf. Declerck & Reed 2001: 301–303), yet none, grammatically speaking, code the situation as counterfactual.

The same contradictory implicature with respect to common ground knowledge is found in contexts where a rhetorical question is found as an indirect inferential structure, a structure that comes closest to a counterfactual, as in Example (21).

- (21) *ei d', hōs légeis, sèn thugatér' ékteinen patér egò*
 if PTCL as say-2SG-PRS POSS-ACC daughter-ACC kill-3SG-AOR father-NOM I
tí s' ēdikēs' emós te súnonos;
 Q you-ACC do-wrong-3SG-AOR my-NOM PTCL sister-NOM
 'But if, as you say, my father killed your daughter, **what wrong did** my brother
 and I **do you?**' (E. El. 1086–1087)

Here Electra stipulates the contradictions in her mother's accusations against her and her brother Orestes. Using the contradictory nature of her mother's accusations as she acknowledged the father as killer, the *wh*-question in fact implies the opposite of what it states, that is, it is improbable that Electra's brother and her did do you any wrong. As such, I would argue that these indirect inferential rhetorical questions differ from their counterfactual variants in epistemic strength, since, as discussed above, in those the past or present counterfactuality makes the reality of something in the past or present impossible (e.g., *If he were poor, would he have driven around in a Ferrari yesterday?*—it is counterfactual that he is poor, since he drove around in a Ferrari yesterday).³⁶

In addition to how contradictory implicatures are created in contrast to available common ground knowledge, it is the variability of form, temporal reference and usage of non-counterfactual rhetorical questions which would not allow easy generalizations of when questions turn into rhetorical questions. Yet, one interesting feature that has been observed in the literature on Ancient Greek rhetorical questions (see van Emde Boas 2005: 17–39 for a list of contextual features which could be used to identify non-standard questions) is that questions with negation are seemingly more often rhetorical (cf. *pōs ou* 'how is it not' in Example (20iii)). This lack of complete symmetry of polarity reversal therefore probably has a pragmatic basis: the negation explicitly draws the contrast with a positive presupposition in the common ground (cf. *pōs ou* "how is it not" in Example (21)) directly generating a certain implicature which can change the question into an assertion).

There are very few works dedicated to the diachrony of rhetorical questions (as an exception, see Rhee 2003 on the grammaticalization of rhetorical questions into discourse markers), but there may be some corpus evidence supporting the lack of polarity symmetry for non-counterfactual rhetorical question strategies in Ancient Greek. While rhetorical questions are frozen into idiomatic expressions (cf. van Emde Boas et al. 2019: 480), the negated versions are far more productive as communicative shorthand on its own. As positive rhetorical question idioms we find *pōs gár* "for how=certainly not" in Sophocles 1 time, never in Euripides and in Plato 7 times, but in its negative version *pōs gár ou(k/ghi)* "of course" in

36. See Declerck and Reed (2001: 284–304) for the distinctions when applied to English indirect inferential conditionals.

Sophocles 5 times, in Euripides 2 times and in Plato an astounding 191 times (cf. Example (22) below).

(22) *Sunkhōreîs è ouí; Pôs gàr ouík; éphē.*

Agree-2SG-PRS OR NEG Q PTCL NEG say-3SG-IMPF

“Do you agree, or not?”

“Of course I do,” he said.

(Pl. *Phd.* 104b4–5)

Similarly, *why not (ti ouí(k))+past interrogatives* very often serve non-interrogative functions such as requests or suggestions in Classical Greek (van Emde Boas et al. 2019: 485), whereas the same functions have not been reported for their positive variants.

By contrast, the usage of rhetorical questions with the counterfactual indicative shows the contrast in conventionalization, since counterfactual rhetorical questions are symmetrical in polarity reversal, as revealed by Example (23) of a counterfactual indirect inferential *wh*-interrogative.

(23) *Eíta epì taútēn àn tēn marturían, ei ên alēthēs ouk*

PTCL to DEM-ACC MOD ART-ACC deposition-ACC if be-3SG-IMPF true-NOM NEG

àn hápantas toús oikeíous toús heautoû parakaleîn ekeínos

MOD all-ACC ART-ACC friends-ACC ART-ACC POSS-GEN call-INF he-NOM

ēksiōse;

deem-right-3SG-AOR

‘To attest a deposition like this, if it were really true, would he not have thought fit to summon all his own friends?’

[=Most assuredly he would have done so, I should have thought, if the deposition had been genuine.]

(Is. 3.24.6–8)

In la Roi (2022a: 263–265) I suggest that the predominant use of counterfactual indicatives in interrogatives as rhetorical question might explain their slower temporal reference extension (in comparison to declaratives), because 68% (69) still refers to the counterfactual past, and only the imperfect (27) and aorist (5) refer to the present (32%) on some occasions. Since counterfactual rhetorical questions seek to declare something and have the illocutionary force of declaratives, they would typically concern knowable events and therefore prototypically completed past state of affairs.

To summarize, (non-counterfactual) rhetorical questions do not display full polarity symmetry in Ancient Greek, whereas counterfactual rhetorical questions do (cf. Table 8 below). Also, even though these rhetorical questions show polarity reversal, they do not all code a counterfactual implicature, but the non-counterfactual variants instead point to a contradictory presupposition in the common ground. Their illocutionary functions may vary greatly, as it is well

known that non-counterfactual rhetorical questions can express different illocutionary forces (e.g., requests or commands) indirectly.

Table 8. Non-Counterfactual Rhetorical Questions as Polarity Reversal Constructions

Polarity reversal construction	Polarity symmetry	Propositional implicature	Illocutionary variability	Historical conventionalization
Rhetorical questions	+/-	contradictory	+/-	- fossilization of negated variants

6. Non-standard wishes: Commissives, assertives and directives

In what I call non-standard wishes, what is formulated as a wish serves to create another illocutionary force as either assertive or commissive (promise or threat).³⁷ In Example (24), the chorus swears to the gods that they do *not* have that thought (sc. that they are seeking exile or death for Oedipus, see S. *OT* 660). This non-standard wish thus serves to emphatically deny the veracity of this presupposition. Wakker (1994:189) calls this non-standard wish use “a rhetorical device used by the speaker to invite the addressee to draw the following inference from the fact that *q* is disadvantageous for the speaker: the speaker cannot really wish *q*; therefore, the speaker must imply that *p* is not-true”. As such, it is pragmatically stronger than simply stating that the presupposition is not true.

- (24) *epei átheos áphilos hó ti púmaton oloíman,*
 PTCL godless-NOM friendless-NOM REL-ACC INDF worst-ACC die-OPT
phronēsin ei tánd' ékhō
 thought-ACC if DEM-ACC have-1SG-PRS
 [No, by the foremost of the gods, the Sun!] ‘May I perish in the most awful
 fashion, given up by gods and friends, if I harbour this thought!’
 [=I do not have that thought!] (S. *OT* 661–663)

There are further aspects to this non-standard wish construction which are relevant not only for the dimension of polarity reversal but also for its creation of an illocutionary force that is different from a standard wish. First of all, these non-standard wishes are used as assertives (Examples (24) and (25)) as well as different types of commissives (Examples (26), threat,³⁸ and (27), directive), as

37. For the subtypes of commissives, see Kissine (2013:148). See Revuelta Puigdollers (Forthcoming) for a detailed analysis of these structures.

38. See Kissine (2013:162) who notes that “threats are (almost) always implicitly or explicitly conditional on some action of A’s.”

illustrated by the functional paraphrases in squared brackets. Secondly, the different illocutionary forces are both the result of person to indicate the affected person (1st person for an assertive speech act and a commissive promise vs. 2nd for a commissive threat) and the type of verb found in the subordinate clause, viz., cognition verb in assertives (e.g., have and share thought in (24) and (25)) and action verb in commissives (e.g., stop bacizing in (26) and ask in (27)). Thirdly, the subordinate clause which is the source for the polarity reversal in assertives or commissive promises need not be a conditional clause (see Example (25)) nor precede the wish optative (see Example (27)). What is linguistically relevant is the undesirable outcome of the projected scenario for the speaker or hearer, e.g., I die if/when I have that thought (Examples (24) and (25)), I die if I ask again (Example (27)), I die if I lie (Example (28)). By the same token, this undesirable outcome to the hearer makes (26) a threat: you may die if you do not stop. Conversely, in Example (28) the second wish *mè thánoimi d' èn* 'May I not die if' cannot receive this polarity reversal nor a change from wish illocution to commissive promise, because not dying is desirable (see la Roi 2020: 229).³⁹

(25) *oloíman égōge prìn sân, phíla, katanúsai phrenôn*
die-1SG-OPT I-NOM before POSS-GEN friend-VOC share-INF thoughts-GEN
'May death take me, my friend, before I come to share your thoughts!'
[=I will never come to share your thoughts!] (E. *Hipp.* 364–365)⁴⁰

(26) *eksólēs apóloi, ei mē paúsaio bakízōn*
completely-NOM die-2SG-OPT if NEG stop-2SG-OPT bacize-PTCP-NOM
'Damn and blast you, if you don't stop Bacizing!'
[=stop Bacizing or else!] (Ar. *Pax* 1072)

(27) *Euripídion, ô glukúaton kai phíltaton, kákist' apoloímēn, eí*
Euripidoodle-VOC, VOC sweetest-VOC and dearest-VOC badly die-1SG-OPT if
tí s' aitésaím' éti, plēn hén mónon, touti mónon, touti
INDF you-ACC ask-1SG-OPT yet, except one only, DEM-ACC only DEM-ACC
mónon
only
'My sweetest, dearest Euripidoodle, a wretched death be mine if ever again I
ask you for anything – save just one thing, only this one, only this one: give me
some chervil from your mother's store.'
[=I will not ask any more than this] (Ar. *Ach.* 475–477)⁴¹

39. Similarly, in S. *El.* 127, a third person death wish is followed by a conditional which cannot change the force of the wish because it functions as a metalinguistic evaluation of the wish: "May the doer perish, if it is right for me to speak this word!"

40. Other examples are Ar. *Ach.* 151 and V. 630.

41. Other examples are Ar. *Eq.* 768 and D. 54.41.

- (28) *hōs hén g' akóusas' ísthi, mē pseudōs m' ereîn.*
 that one PTCL hear-PTCP-NOM know-2SG-IMP NEG lie-ACC me-ACC say-INF
pseudē légōn dē kai mātēn enkertomōn, thánoimi.
 lies-ACC say-PTCP-NOM PTCL PTCL in-vain deceive-PTCP-NOM die-1SG-OPT
mē thánoimi d', èn sōsō kórēn
 NEG die-1SG-OPT PTCL if save-1SG-SBJV daughter-ACC
 'Be assured that you have heard this: I shall never speak falsely. **If I ever lie or deceive anyone, may I die!** But may I live if I save your daughter!'
 [=I will never lie and speak falsely] (E. IA 1005–1007)

Given the illocutionary variability of these non-standard wishes, we would be hard-pressed to point out any conventionalization in polarity reversal or usage. Also, contrasting the evidence from Classical Greek with that from Archaic Greek, we already find two similar usages, one as a threat (Example (29)) and one as a commissive promise (Example (30)). In (29), we find Odysseus threatening Ther-sites by reference to the undesirable outcome that he would not be Odysseus any more (i.e., father of his son Telemachus), again signalled by a negated postposed conditional clause.

- (29) *eí k' éti s' aphraínonta kikhésomai hōs nú per hôde,*
 if MOD still you-ACC be-foolish-PTCP-ACC find-1SG-SBJV as now PTCL so
mēkét' épeit' Odusēi kárē ómoisin epeíē, mēd' éti
 NEG then Odysseus-DAT head-NOM shoulders-DAT be-on-3SG-OPT NEG still
Tēlemákhōio patēr keklēménos eíēn ei mē egó
 Telemachus-GEN father-NOM be-called-PTCP-NOM be-1SG-OPT if NEG I
se labōn apò mèn phíla heímata dúso [...]
 you-ACC take-PTCP-NOM from PTCL beloved-ACC clothes-ACC strip-1SG-SBJV
 'If I find you again playing the fool, as you are doing now, then may the head of Odysseus rest no more on his shoulders, and **may I no more be called** the father of Telemachus, **if I do not** take you and strip off your clothes, your cloak and tunic, that cover your nakedness, and send you yourself wailing to the swift ships, driven out of the place of assembly with shameful blows'
 [=don't play the fool again or I'll strip you, punch you and send you wailing to the ships!] (Il. 2.258–264)

- (30) *ei dé ti tônd' epíorkon emoì theoì álgea doïen*
 if PTCL INDF DEM-GEN false-NOM me-DAT gods-NOM woes-ACC give-3PL-OPT
pollà mál' hóssa didoùsin hótis sph' alítētai
 many-ACC very REL-ACC give-3SG-PRS REL-NOM they-DAT sin-3SG-SBJV
omóssas.
 swear-PTCP-NOM
 'And if anything in this oath be false, may the gods give me many woes, all
 those that they are used to give to anyone who sins against them in his swear-
 ing'
 [=I am not speaking a false oath!] (Il. 19.264–265)

In Example (30), Odysseus promises that he is not lying by use of the commissive wish construction. In fact, wish optatives are also used by themselves for promises in oaths (Ar. *Lys.* 237) or promises of future actions (E. *El.* 280), as these non-standard wishes are as well (e.g., D. 54.41 or Ar. *Eq.* 768), making use of the psychological commitment expressed by wishes with the wish optative (la Roi 2020: 226).

Summarizing, these non-standard wishes synchronically display a polarity reversal which does not seem to be the result of diachronic conventionalization of implicature, for which see Table 9. Instead, the various illocutionary usages are characterized by specific linguistic characteristics (e.g., person, undesirable alternative SoA, wish optative). They do not display the polarity symmetry that we find in counterfactual mood and modal forms, as not every usage can be modified by negation for the same effect.

Table 9. Non-Standard Wishes as Polarity Reversal Construction

Polarity reversal construction	Polarity symmetry	Propositional implicature	Illocutionary variability	Historical conventionalization
Non-standard wishes	–	undesirable	+	–

7. Polarity reversal and counterfactuality: A synthesis

This paper has assessed the differences and similarities between the Ancient Greek polarity reversal constructions which do not owe their polarity reversal solely to a form of negation in their structure: counterfactual indicative moods, counterfactual modal verbs, avertive scalar adverb+past, (non-counterfactual) rhetorical questions and non-standard wishes. While these different constructions all express a polarity reversal synchronically, they do not express the same

implicature with regard to the proposition put forward in the clause (cf. the summary in Table 10 below).

Table 10. Counterfactuals and Polarity Reversal Constructions in Ancient Greek

Polarity reversal construction	Polarity symmetry	Propositional implicature	Illocutionary variability	Historical conventionalization
Counterfactual indicative moods	+	Counterfactual	+/-	- temporal reference extension - counterfactual implicature transfer - pragmatic context extension
Counterfactual modal verbs	+	Counterfactual	+	- temporal reference extension - counterfactual implicature transfer - pragmatic context extension - additional illocutionary forces - analogical renewal - loss of counterfactuality
Avertive almost+past	-	Counterfactual/ undesirable	-	-
Rhetorical questions	+/-	Contradictory	+/-	- fossilization of negated variants
Non-standard wishes	-	Undesirable	+	-

Whereas the counterfactual forms express a counterfactual implicature (i.e., the SoA is presented as unrealizable in the speaker's view of the world), non-counterfactual polarity reversal constructions express different implicatures (e.g., contradictory by rhetorical questions or assertively denying a presupposition in the common ground by non-standard wishes). Most importantly, counterfactuals distinguish themselves especially diachronically, as they undergo distinct diachronic changes that evidence their conventionalization of counterfactual implicature such as changing temporal reference, implicature transfer and analogical renewal. The avertive use of a scalar adverb with a past (im)perfective indicative, on the other hand, only referred to the past using factors of aspect

and actionality, did not have polarity reversal symmetry and could still be used non-counterfactually, demonstrating a lack of strong conventionalization. By contrast, non-counterfactual polarity reversal constructions create polarity reversal through synchronic pragmatic means, as indicated, for example, by the existence of the same usage of non-standard wishes as threats and assertives in both Archaic and Classical Greek. Moreover, we found a great variety of formal and functional variation for rhetorical questions, supporting their non-conventionalized analysis, even though rhetorical questions do show some specialization through the use of negation and idiomatic usage *pōs gár ou(k/khi)* “of course” (lit. for how not?).

Now, with these findings in mind, let us reconsider the definition of counterfactuals as a polarity reversal phenomenon by Van Linden and Verstraete (2008: 1869) discussed at the start of this paper: “as soon as a particular structure has a standard interpretation that involves the reverse of the polarity that is formally marked in the structure, we have a case of counterfactuality.” While the polarity reversal constructions all share this polarity reversal feature, they are not all standard: both synchronic pragmatic strategies and diachronic strategies can create a similar polarity reversal pointed out by their definition. Also, not all polarity reversal constructions yield the counterfactual implicature which counterfactuals do, nor do they acquire additional illocutionary functions. Moreover, these polarity reversal constructions differ in the degree to which their polarity reversal is symmetrical which highlights the non-uniform nature of polarity reversal (cf. Klein 2021b). As I argued above, both counterfactual implicature and the distinct diachronic changes undergone by counterfactuals (esp. entrenchment, saliency and increased schematicity of the counterfactual meaning) can help distinguish counterfactuals from pragmatically similar constructions.

Finally, these findings can help elucidate a commentary provided by Klein (2021b: 345) on the idea that polarity reversal is inherent to counterfactuality and ultimately how we could demarcate counterfactuals:

In the examples, sentences without negation stand for positive polarity, sentences with a negation stand for the negative polarity. This is very intuitive. But to my mind, polarity reversal of counterfactuals cannot mean the familiar “truth reversal” by a negation marker such as not in English: *The defendant would have been found guilty* and *The defendant was not found guilty* relate in very different ways to positive *The defendant was found guilty*. [original italics]

He argued that the idea “needs elaboration” and should not be taken in terms factuality/truth, if that was the way it was meant. He goes on to say:

My own analysis of the polarity reversal effect is that counterfactual expressions do not assert anything about the world as it is – the factual, real, actual world. It speaks about a situation in a nonactual world, a world which is imagined, and it

says that in that imaginary world, the defendant was found guilty. From there, we may come to the conclusion that in the actual world, he was not found guilty. But the inference to *He was found guilty* is possible in some contexts, too. As to truth reversal by negation markers like *not*, it is important to keep in mind that it only makes sense when positive and negative sentences speak about the same situation, i.e., under “topic consistency”. The sentences *It was raining* and *it was not raining* may simultaneously be correct, when the first case relates to the weather in Marseille and the second to the weather in Bergen.”

[original italics, my underlining]

Reading this quote through a functionalist lens, we may observe that Klein’s explanation of polarity reversal in terms of topic consistency with respect to what is talked about is in fact a form of truth-functional analysis (note the exemplification in terms of when something *can* be true). Nevertheless, some parts of his phrasing already touch upon how we could define counterfactuality in terms of polarity reversal, implicature and pragmatics on the basis of the findings from this paper: (1) counterfactual and non-counterfactual polarity reversal constructions clearly do not have the same symmetry or usage conditions, and (2) counterfactuality, much like “truth”, is in the eye of the beholder, as counterfactuals concern what is *considered false* by the speaker (i.e., incompatible to what the speaker views as the “actual world”) and how he wants the addressee to interpret the proposition (note Klein’s phrasing “come to the conclusion” and “the inference”). It would therefore seem that the usage of counterfactuals provides the key to a distinct demarcation of counterfactuality from polarity reversal.

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Abbreviations list



AOR	aoist for past perfective indicative form
IMPF	imperfect for past imperfective indicative form
MOD	modal particle
PTCL	particle
OPT	optative

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