

The Counterfactual Life Cycle: Cyclicity, Pragmatics and Modality

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Abstract

Whereas most research has exclusively focused on counterfactual conditionals from a synchronic and/or typological perspective, I provide a synthesis of the life cycles of counterfactual constructions. They first develop (1) past-referring counterfactuality, subsequently develop (2) non-past counterfactuality, and, lastly, become (3) unstable, which may trigger reinforcement, loss of counterfactuality or substitution. Based on corpus evidence from the history of Ancient Greek (VIII BCE – III CE) and Indo-European languages, I show that different types of counterfactual constructions go through all three stages of the life cycle, are subject to different diachronic processes (e.g. innovation, insubordination, reinforcement, contact-induced change), pragmatic mechanisms (e.g. quantity implicature, temporal implicature semanticization, expressive enrichment), and ‘spread’ their usage throughout the synchronic system of a language, especially via (analogical) spread to new syntactic contexts and pragmatic extension to indirect inferential patterns. Also, I show that the speed of substitutions depends on factors such as mood syncretism and prescriptivism.

Keywords: counterfactuality, cyclicity, pragmatics, modality, Ancient Greek, Indo-European languages, diachronic typology, insubordination, implicature

1 The Life Cycles of Counterfactuals

Counterfactual constructions come in many different grammatical forms, not only across languages but also within the same language. They are used by speakers to refer to an event (broadly defined) which could not take place in the past or the non-past, e.g. *You should have called yesterday*, *If only he knew what was going on*, or *If he had called, he would have known*. Most research on counterfactual constructions has adopted a synchronic approach and has almost completely restricted itself to counterfactual conditionals; much work for example focuses on particular dimensions of these conditionals, such as their truth status (e.g. Lewis 1973; Starr 2022 for an overview of theories within logic and formal linguistics), their pragmatics (Karttunen 1971; Stalnaker 1975; Dancygier and Sweetser 2005), their formal marking in conditional protases and apodoses (Lazard 1998; Haiman and Kuteva 2002; Olguín Martínez and Lester 2022; von Prince, Krajinović, and Krifka 2022) and their tense and aspect (Fleischman 1995; Iatridou 2000; 2009; Karawani 2014; von Prince 2019). Despite such work,

there seem to be no easy typological generalizations when it comes to counterfactuals, or counterfactual conditionals for that matter (cf. Olguín Martínez and Lester 2022). Earlier research had suggested more or less universal elements, such as the use of past-tense forms (e.g. James 1982) or of the imperfective (e.g. Fleischman 1995). More recent research has rightly pointed out that it is not just the past tense which is responsible for counterfactual meaning (cf. Dahl 1997) nor do counterfactuals consistently use the imperfective cross-linguistically (Van linden and Verstraete 2008, 1882). Instead, some consensus seems to have emerged that counterfactual constructions typically consist of different elements which combine in specific constructions to generate a counterfactual meaning, such as the perfect and a modal element (as in *should have called*), the past and a modal element, as with *would* (Lazard 1998; Van linden and Verstraete 2008).¹

Yet, diachronic work on counterfactuals is much more limited, especially work based on diachronic corpus studies. Instead, researchers focusing on the diachrony of counterfactuals tend to provide diachronic overviews based on synchronic snapshots from historical grammars or previous studies.² Examples of this approach are Dahl (1997), Yong (2018) and Patard (2020); they offer synthesizing overviews and respectively describe the evolution of counterfactuals as a counterfactual *life cycle* as the result of a grammaticalization process, a counterfactual *spiral* or a counterfactual *cycle*. Dahl contrasted counterfactual conditionals in stages of the history of Germanic languages and Bulgarian, Yong incorporated these as well as additional diachronies from the secondary literature, such as English (Molencki 1999), and Patard (2020) analyzed counterfactual conditionals from Latin into French. The two most important findings from their work are:

- the development of counterfactual constructions goes through at least the following pathways of change: from (i) past-referring to (ii) non-past referring counterfactuality after which they (iii) may be strengthened or replaced, and
- this temporal reference change has typological validity, regardless of the specific temporal-aspectual system of a language (cf. the evidence offered from aspect prominent Bulgarian versus tense prominent English).

In several recent corpus studies I have expanded the empirical support for this developmental trajectory: the analysis of different counterfactual constructions (incl. conditionals, wishes, modal verbs) from Archaic to Classical Greek (VIII – IV BCE) has confirmed the pathway from past-referring to non-past-referring counterfactuality (la Roi 2022a; 2024a, b, c), as well as indicated previously unknown paths out of the counterfactual domain, such as from past-referring counterfactuality in Archaic into past-

¹ Actually, Givón (1990; 2001, 2:333) had before already noted that “counterfact clauses crosslinguistically tend to be marked by a combination of two semantically conflicting verbal inflections:

- the prototypically realis past, perfective or perfect.
- the prototypically irrealis future, subjunctive, conditional or modal.”

² Cf. Dahl (1997, 109).

referring habituality in Classical Greek (Ia Roi 2023b) and within Classical Greek from non-past-referring deontic modal uses with a counterfactual dimension (e.g. *you should be silent*) into uses without a counterfactual dimension (e.g. *you should come tomorrow*).³

At the same time, there are still many open theoretical and descriptive questions with respect to the development of counterfactual constructions; I address these in this contribution using corpus evidence from the history of Greek and a diachronic survey of Indo-European languages. First, I discuss the theoretical differences in how the evolution of counterfactuals has been conceptualized, resp. as a life cycle resulting from a grammaticalization process, a spiral and a cycle. I suggest that the evolution of counterfactuals may but need not be cyclical, which is why the label *counterfactual life cycle* is more apt as a neutral descriptive umbrella term. In fact, the life cycle of counterfactuals is governed by a diverse set of diachronic mechanisms which cannot be simply explained as a more general grammaticalization process (section 2). In section 3, I turn to the corpus evidence from the history of Ancient Greek (VIII BCE – III CE), discuss the evidence from the two major constructional groups for the stages of the counterfactual life cycle, and illustrate the impact of different diachronic processes (e.g. insubordination, innovation and reinforcement) as well as synchronic factors (esp. pragmatics of usage, language contact and language ecology) on the evolution of counterfactual constructions. Because it is demonstrated that the role of cyclicity in the counterfactual life cycle can only be properly evaluated when counterfactuals are compared across millennia, I turn in section 4 to a diachronic survey of counterfactual conditionals from ancient to modern Indo-European languages; I show briefly that cyclical processes of substitution take place at various speeds in different languages, as they are influenced by system-internal factors and prescriptivism. Section 5 concludes this contribution.

2 The counterfactual life cycle

Following a suggestion by Jespersen, Dahl had suggested that pluperfects in counterfactual conditionals are first used with past temporal reference after which some come to be used with non-past temporal reference (e.g. *If I had had money (now)* in English or Swedish). He comments: “We thus see that a construction with the original function of a counterfactual with past time reference may be reinterpreted as a counterfactual without time restrictions. This kind of development on one hand looks like a fairly well-behaved case of grammaticalization” (Dahl 1997, 108). What remains rather unclear is the specific types of diachronic processes that he envisaged as playing a role (other than a form of bleaching away of the past temporal reference). For example, his tentative life cycle of counterfactuals is clearly couched in grammaticalization terms such as “optional”, “obligatory” and “constraint”:

³ In fact, the former developmental pathway may have typological significance. Cross-linguistically, the same markers which are used to mark (past) counterfactuality often also mark past habituality (Cristofaro 2004; Mauri, Barotto, and Mattioli 2023), which thus may suggest similar paths of development.

“(1) In the first stage, the marker would be (a) restrained to past time reference, (b) imply counterfactuality in the strict sense (dependence on a condition known to be false), (c) be optional.

(2) In the second stage, the marker would become obligatory in past counterfactual contexts.

(3) Then, the constraints on its use would be gradually relaxed. The first thing to go would be the temporal condition, with examples like (20-21) coming first.

(4) Once the construction has become possible with non-past reference, the risk that the counterfactuality constraint is also relaxed will be imminent.”(Dahl 1997, 109)

Yet, I would argue that this grammaticalization trajectory, whereby an optional element becomes obligatory, does not do justice to the synchronic and diachronic variation which we find in counterfactual systems; for example, even in English other markers such as modal *wolde/would* continued to be used in the same counterfactual environments (Molencki 1999). Moreover, new markers may provide an *innovation*⁴ to the counterfactual system, such as the use of the pluperfect indicative in counterfactuals in Ancient Greek, which is an innovation with respect to the inherited optative strategy that could not be used in this aspectual configuration in Archaic Greek (Ia Roi 2022a, 239 note 7).

Yong (2018) provided further typological testing of Dahl’s life cycle and suggested that other languages, too, seem to document similar evolutionary stages. From a theoretical perspective, however, the picture offered by Yong is decidedly vague, as the terms *life cycle*, *cycle* and *spiral* are all used to describe the diachronic development of counterfactual markers. The process is called a cycle several times, but no supporting evidence is offered for this interpretation other than pointing to Jespersen’s cycle in negation. The picture offered is that of a “spiral evolutionary path”, as the quote shows:

“Stage I: The form (i) is employed in the CF sentences with past time references, (ii) implies counterfactuality with the help of pragmatic contexts (dependence on a condition known to be false), and (iii) is optional.

Stage II (grammaticalization: reanalysis): The form becomes obligatory in the past CF sentences and the generated counterfactuality is less influenced by pragmatic inference.

Stage III (grammaticalization: analogy): Then, with the gradual relaxation of temporal constraints, the marker extends to the CFs with non-past references.

Stage IV (grammaticalization: reanalysis): The form becomes obligatory in the non-past CF sentences.

⁴ I take ‘innovation’ to refer to “a mechanism whereby a new grammatical category is created for which earlier there was no conventionalized category in the language concerned”, Narrog and Heine 2021, 142.

Stage V (renovation by reinforcement): The counterfactuality is weakened after extending use of the forms. Then another form from TAM inventory is needed to emphasize the counterfactuality in the past reference. Then Stage I, II III, IV will be repeated again.”

(Yong 2018, 195)

Aside from the notable absence of corpus evidence for some stages (esp. stage IV and V), the life cycles of counterfactuals are indeed likely to be better interpreted as having a spiral-like shape, due to their potential to renew existing systems (as discussed above with respect to the pluperfect). Also, it is useful that Yong indicated more specific grammaticalization processes thought to be relevant at each stage (e.g. analogy, reanalysis), even though not all diachronic changes to counterfactuals can be explained under these more general headers (see section 3 below on the role of insubordination, reinforcement and language contact).

Patard (2020) provides a similar theoretical picture, as a process whereby counterfactual markers start with a context-inferred counterfactual meaning which conventionalizes across usage contexts, but she usefully points out the relevance of quantity implicatures in the generation of counterfactual meanings of the imperfect (based on Ziegeler 2000; Van Linden and Verstraete 2008). Moreover, she offers the important insight that previously counterfactual markers which already had obtained a non-past reference may obtain non-past non-counterfactual uses (which she calls “unlikely” usages), as reportedly shown by the hypothetical use of the imperfect indicative in Late Latin. A point where I disagree, however, is her conceptualization of the evolution of counterfactual imperfects in different Romance languages as several separate *cycles*: on the one hand, a spiral path provides a more accurate view (due to the possibility of innovations); on the other hand, the continued variation between inherited and replacing imperfect strategy which we observe diachronically in Latin, French and Italian can hardly be different cyclical processes when the origins of the replacement process had already started in Latin for French and Italian (la Roi forthcoming b, see section 4).

Having demonstrated some major theoretical and descriptive limitations in the conceptualization of the evolution of counterfactuals, I now provide an alternative proposal. First of all, I suggest using the term *life cycle* to describe the diachrony of counterfactual markers. The most important reason for this is that not all counterfactual markers go through every stage of the life cycle (as shown by the relative absence of full documented spirals across counterfactual constructions). Secondly, I suggest simplifying the stages of the counterfactual life cycle, reducing them to three in order to avoid viewing the complex histories of counterfactuals through a rather general ‘grammaticalization process’ lens: by specifying only three stages that are not defined by one single diachronic process of ‘grammaticalization’ (in the broader sense), we are able to pinpoint several different diachronic processes that play a role in each stage and to specify the different pragmatic mechanisms and synchronic factors which (co)determine the developmental trajectories of counterfactuals. As such, I propose the following *counterfactual life cycle*:

- Stage 0 Construction A does not have a counterfactual usage
- Stage 1 Construction A has a past-referring counterfactual usage
- Stage 2 Construction A has a non-past referring counterfactual usage
- Stage 3 Construction A has an unstable counterfactual usage which reveals itself in that:
 - a) construction A develops a post-counterfactual function with non-past reference
 - b) the counterfactual usage of A is reinforced with additional marking,
 - c) counterfactual usages of A are substituted by another construction,

Thirdly, I would argue that a three-stage system with discrete usage differences is a parsimonious solution, because it accounts for the fact that counterfactual markers with similar functions (but likely different pragmatic motivations⁵) coexist synchronically and that substitutions replace older strategies usage by usage (see la Roi 2022a for examples from Ancient Greek) and that different diachronic processes may shape the creation of each stage (cf. section 3 below). Fourth and finally, the open tail end of the life cycle intentionally shows the different paths which evolved counterfactual markers may take, underlining that a spiral-like substitution is but one of the options.⁶ In the following section, I use the diachronic corpus evidence for the two major constructional schemas in Ancient Greek (VIII BCE – III CE) to illustrate how different (i) pragmatic factors (e.g. implicature, expressive enrichment), (ii) diachronic processes (e.g. reinforcement, innovation, contact-induced change) and (iii) language-ecological factors (e.g. alternatives and their frequency in the synchronic system) codetermine the progress of constructions along the stages of the counterfactual life cycle.

3 Diachronic evidence from the history of Ancient Greek (VIII BCE – III CE)

3.1 Overview

This corpus evidence provides novel insights into the synchronic and diachronic factors involved in the counterfactual life cycle because Ancient Greek has many different counterfactual strategies, as well as a rich textual record in which their development can be traced. To maximize the value of our results, I discuss the following two major constructional schemas that provide the bulk of counterfactual strategies.⁷

⁵ As a parallel, we may consider the pragmatically restricted status of negators in Jespersen’s cycle (cf. Schwenter 2006; Hansen & Visconti 2009).

⁶ *Substitution* refers to the replacement of expression A by largely equivalent expression B once expression A has fallen into disuse (Narrog and Heine 2021, 139–41).

⁷ I cannot discuss the complex trajectory of the so-called counterfactual wish particle here (cf. Allan 2013; Revuelta Puigdollers 2017; la Roi 2022a, 266–77).

- i. inflectional mood combinations: the inherited optative mood and the innovative past indicative, which have to occur with the modal particle in matrix and subordinate clauses, except in conditional protases (see la Roi 2022c) and when the counterfactuality of the matrix clause is transferred to the temporal and causally dependent subordinate clause (la Roi 2023a)
- ii. modal verbs in the past imperfective: boulomaic, deontic and epistemic modal verbs

Moreover, these strategies have received recent attention in scholarship (e.g. Gerö 2001; Allan 2013; Revuelta Puigdollers 2017; Ruiz Yamuza 2021; la Roi 2022a; 2024a, b, c) though most have focused on the earlier stages (esp. Classical Greek), with only few paying attention to Post-Classical Greek (cf. e.g. la Roi forthcoming a). For the glossing of the examples, I have relied on the Leipzig glossing system, but added labels where necessary (e.g. mod=the modal particles *án/ke/ken*, ptc=discourse particle, plpf=pluperfect, opt=optative mood, ao=the perfective aorist). Since Ancient Greek has a complex TAM system, I specify the tense-aspect only for past indicative forms, glossing optatives only as *opt*. The past indicatives used as an inflectional mood strategy may occur in the imperfect(ive), the aorist (perfective) and the past perfect, i.e. pluperfect. The translations used in this contribution are based on the Loeb translations, unless mentioned otherwise.⁸ To refer to individual authors in examples, I use the conventions of the LSJ dictionary.⁹ The text for the Ancient Greek examples comes from the *Thesaurus Linguae Graecae*.¹⁰ To facilitate cross-comparison, I now discuss their evolutionary progress stage by stage.

3.2 *Stage 1 in the life cycle of counterfactual past indicatives*

As for inflectional mood combinations, we find two coexisting systems in Archaic Greek, since the counterfactual usages of the optative (inherited from Proto-Indo-European¹¹) are still being replaced by the innovative counterfactual indicative (la Roi 2022a): the optative is at the end of its counterfactual life cycle and consequently already used for both past and non-past counterfactuality, but the innovative indicative is mostly limited to past-referring counterfactuality, although we find some more limited evidence for stage 2 as well. As explained by la Roi (2022a), the fact that this process is still ongoing is the reason for the overlap in distributional patterns, especially in the Archaic Greek epic of Homer, who mixed diachronic varieties in his orally composed epic. To illustrate, one may find examples such as (1), where the inherited and replacing strategy are used side-by-side to express past counterfactuality.

⁸ These translations can be consulted online at <https://www.loebclassics.com/> (last accessed: 16.04.2024).

⁹ These too can be consulted online: <https://www.stoa.org/abbreviations.html> (last accessed: 16.04.2024).

¹⁰ See <https://stephanus.tlg.uci.edu/> (last accessed: 16.04.2024).

¹¹ Brugmann 1916, 589–91, la Roi 2022a, 276, 2024c.

(1) <i>ô philoi</i>	<i>Argeiôn</i>	<i>hēgētores</i>	<i>hēdè</i>	<i>médontes</i>	<i>ei</i>
VOC friends-VOC	Argive-GEN	leaders-NOM	and	consultants-NOM	if
<i>mén tis</i>	<i>tòn óneiron</i>	<i>Akhaiôn</i>	<i>állos</i>	<i>énispe</i>	
PTC INDF	ART	dream-ACC	Achaean-GEN	other-NOM	tell-AO-3SG
<i>pseûdós</i>	<i>ken</i>	<i>phaîmen</i>	<i>kai</i>	<i>nosphizoímetha</i>	<i>mállon</i>
lie-ACC	MOD	say-OPT-1PL	and	turn-away-OPT-1PL	rather

My friends, leaders and rulers of the Argives, **if** anyone else of the Achaeans **had told** us this dream, **we would have said** it was a lie and rather turned away from it (Il. 2.79–81)

At the same time, one encounters examples where only the innovative counterfactual indicative (see ex. 2) or only the inherited counterfactual optative strategy (see ex. 3) is used. There are distributional limitations on the inherited strategy: in conditional protases the occurrences only refer to the non-past (as in ex. 3), demonstrating that the past indicative had already taken over these functions in these contexts as part of a larger *substitution* process.

(2) <i>ei dè</i>	<i>phthenksaménou</i>	<i>teu</i>	<i>è</i>	<i>audésantos</i>		
if	PTC	utter-a-sound-PTCP-GEN	someone-GEN	or	speak-PTCP-GEN	
<i>ákouse</i>	<i>sún</i>	<i>ken</i>	<i>áraks</i>	<i>hēméōn</i>	<i>kephalàs</i>	<i>kai</i>
hear-AO-3SG	with	MOD	hurl-AO-3SG	ours-GEN	head-PL	and
<i>néia</i>	<i>doûra</i>	<i>marmárōi</i>	<i>okrióenti</i>	<i>balón:</i>		
ship-ACC	wooden-ACC	marble-DAT	sharp-DAT	throw-PTCP-NOM		

And had he **heard** one of us uttering a sound or speaking, **he would have hurled** a jagged rock and crushed our heads and the timbers of our ship. (Od. 9.497–499)

(3) <i>ei keinón g'</i>	<i>ithákēnde</i>	<i>idoíato</i>	<i>nostēsanta</i>		
If	he-ACC	PTC	Ithaca-ALL	see-OPT-3PL	return-PTCP-ACC

Were they to **see** him returned to Ithaca, ... (Od. 1.163)

Yet, the optative was still used for past counterfactuality in other contexts such as declarative main clauses (see ex. 1), interrogatives (one occurrence, Il. 19.90) and wishes (see ex. 4 below). Note again how the example attests to the *layering*¹² of counterfactual functions in the optative strategy, as respectively present-referring and past-referring counterfactuality are expressed in the same sentence by the optative.

¹² As defined by Narrog and Heine (2021, 46): “Layering means that new layers of structure arising via grammaticalization may coexist with older layers within a broad functional domain of a language, with the two, or more kinds of layers interacting with one another”. The notion originates with Hopper 1991.

(4) <i>Nûn</i>	<i>mèn</i>	<i>mēt'</i>	<i>eīēs,</i>	<i>bougáie,</i>	<i>mēte</i>	<i>génoio,</i>	
Now	PTC	nor	be-OPT-2SG	braggart-VOC	nor	be-born-OPT-2SG	
<i>ei dē</i>	<i>toútón</i>	<i>ge</i>	<i>troméeis</i>	<i>kai</i>	<i>deídias</i>	<i>ainós,</i>	
if	PTC	DEM	PTC	tremble-PRS-2SG	and	fear-PRF-2SG	terribly
<i>ándra</i>	<i>géronta</i>	<i>dúēi</i>	<i>arēménon,</i>	<i>hē</i>	<i>min</i>	<i>hikánei.</i>	
man-ACC	old-ACC	woe-ACC	heavy-ACC	rel	he-ACC	reach-PRS-3SG	

Braggart, **I wish you did not exist now, nor had ever been born**, if (it is true that) you tremble before this fellow and fear him so terribly—an old man, overcome by the woe that has come upon him. (Od. 18.79–81)

Furthermore, other diachronic processes, too, are involved in the genesis of stage 1 counterfactuals, such as the process of *insubordination*. Insubordination refers to the diachronic conventionalization of main clause uses by formally subordinate clauses (Evans 2007, 367). The key distinction between insubordinate constructions and subordinate clause constructions is that insubordinate constructions are discursively independent (D’Hertefelt 2018, 182-183, la Roi 2021, 6-9); their illocutionary force is not co-constructed with parts of the linguistic context, such as syntactically independent usages of subordinate clauses anchored to previous utterances in dyadic contexts. The impact of insubordination on the counterfactual domain of wishes should not be underestimated for at least¹³ two reasons: (1) the inherited usage evidenced in example 4 was replaced by an insubordinate strategy that made use of the optative as well, as shown in example 5; (2) the optative in these constructions is diachronically replaced by different mood combinations with the past indicative (see la Roi 2022a, 266–75 for an overview).¹⁴

(5) <i>ei gàr</i>	<i>egôn</i>	<i>hoútō</i>	<i>ge</i>	<i>Diòs</i>	<i>páis</i>	<i>aigiókhoio</i>
if-only	I-nom	so	PTC	Zeus-GEN	child-NOM	aegis-wearing-GEN
<i>eīēn</i>	<i>émata</i>	<i>pánta,</i>	<i>tékoι</i>		<i>dé</i>	<i>me</i>
be-OPT-1SG	days-ACC	all-ACC	conceive-OPT-3SG	PTC	I-ACC	
<i>pótnia</i>	<i>hērē</i>					
queen-NOM	Hera-NOM					

For my part **I wish that I lived** all my days as surely the son of Zeus who bears the aegis, and the queenly Hera **had conceived** me (Il.13.825–826)

¹³ Additionally, there is cross-linguistic evidence that insubordination can create counterfactual wishes, e.g. *If only* English, *Si (seulement)* French, *Wenn nur* German, *Que* Spanish, *Bare* Danish, *Als (maar)* Dutch (as shown by the overview provided by la Roi 2021, 6).

¹⁴ See similarly la Roi 2022e on Archaic and Classical Latin.

Also, as mentioned briefly above, we find some evidence of *innovation*, “a mechanism whereby a new grammatical form is created for which there was no earlier conventionalized equivalent” (Narrog and Heine 2021, 336): the innovation in the aspectual domain of the pluperfect where the inherited optative strategy only had the option of the aorist or imperfect (cf. Il. 8.454 and Hes. *Th.* 703 for a periphrastic and a non-periphrastic example from Archaic Greek).

Finally, pragmatics, too, seems to play a crucial role at stage 1 of their counterfactual life cycle. The most productive syntactic context in which the innovative indicative is found in Archaic Greek is that of the conditional protasis, especially in pragmatically marked contexts; 83 of the total of 93 counterfactual conditionals in Archaic Greek occur the way that they occur in example 6 or 7.

(6) <i>Kaí nú</i>	<i>ken</i>	<i>énth'</i>	<i>apóloito</i>	<i>ánaks</i>	<i>andrōn</i>	<i>Aineías</i>
And PTC	MOD	then	die-OPT-3SG	lord-NOM	men-GEN	Aeneas-NOM
<i>ei mē</i>	<i>ár'</i>	<i>oksù</i>	<i>nóēse</i>	<i>Diòs</i>	<i>thugatēr</i>	
if NEG	PTC	quickly	notice-AO-3SG	Zeus-GEN	daughter-NOM	

And now the lord of men, Aeneas, **would have perished, had not** the daughter of Zeus quickly **noticed** (i.e. and prevented it, being a god) (Il. 5.311-312)

(7) <i>Kaí nú</i>	<i>ken</i>	<i>énth'</i>	<i>ho</i>	<i>gérōn</i>	<i>apò</i>	<i>thumòn</i>	<i>óllessen</i>
And PTC	MOD	then	art-NOM	old-man-NOM	from	heart-ACC	lose-AO-3SG
<i>ei mē</i>	<i>ár'</i>	<i>oksù</i>	<i>nóēse</i>	<i>boēn</i>	<i>agathòs</i>	<i>Diomédēs</i>	
if NEG	PTC	quickly	notice-AO-3SG	war-cry-ACC	good-at-NOM	Diomedes-NOM	

And now the old man **would have lost his life** there, **had not** Diomedes, good at the war cry, been quick to notice (i.e. and prevented it) (Il. 8.90-91)

Rather than presenting two related events as counterfactual in an iconic way (e.g. *If I had taken an umbrella, then I would have stayed dry*), these conditional protases rather present the epistemic basis, as it were, for the counterfactuality of the death reported in the matrix clause. In pragmatic terms, these conditional sentences are direct inferential sentences where *p* provides the epistemic source for *q* (Declerck and Reed 2001, 42–44). From a communicative perspective, these pragmatic structures are useful to the Homeric narrator to generate suspense and emphasize the power of certain actors in the story: it is true that it was only due to person X that person Y did not die. Also, example 7 provides the innovative alternative formula with the past indicative for the older formula with the optative in example 6,.

3.3 Stage 2 in the life cycle of counterfactual past indicatives

For stage 2 of their counterfactual life cycle, we find some evidence in Archaic Greek, but most comes from Classical Greek, as the counterfactual usage of the indicative conventionalizes within the synchronic language system especially in Classical Greek. Example 8 provides an illustrative example of the role played by aspectual implicature in the early origins of stage 2 in Archaic Greek: the imperfect offers an unbounded viewpoint on the event of ‘not having much to say’, which pragmatically implicates that this ‘incomplete’ event continued from the past (i.e. when Odysseus had perished already in the eyes of the speaker and the addressee had been urging Telemachus on) into the present, where the addressee is still doing that. Note also the layering of different diachronic variants observable in example 8 of the present-referring counterfactual optative and indicative being used in the same context.

(8) [As for Odysseus, he has perished far away, as you also should have perished with him.]

<i>ouk àn</i>	<i>tóssa</i>	<i>theopropéōn</i>	<i>agóreues,</i>	
NEG MOD	so-much-ACC	prophesize-PTCP-NOM	proclaim-IPFV-2SG	
<i>oudé</i>	<i>ke</i>	<i>Tēlémakhon</i>	<i>kekholōménon hōd’</i>	<i>anieíēs</i>
nor	MOD	Telemachus-ACC	angry-ptcp-ACC this-way	urge-on-OPT-2SG

Then you would not **have** so much **to say** in your reading of signs, or be urging Telemachus on in his anger (Od. 2.182-185)

Additionally, the diachronic corpus evidence shows that examples such as (8) have been instrumental in another way, too: atelic events are not only the origins of temporal reference change (as in ex. 8), but continue to be the source for non-past usages of counterfactual indicatives; in Classical Greek, we find 272 atelic (96%) versus 11 telic (4%) present-referring *imperfects* in counterfactual conditional protases, which provides a stark contrast to the only 17 present-referring aorists and 9 pluperfects in the same syntactic context in Classical Greek.

By the same token, aspectual semantics may provide an answer to why the perfective (i.e. aorist) comes to be used (in stage 2) to express non-past events, as its bounded viewpoint might have been thought to make this unlikely. In both examples 9 and 10, we find present-referring usages of the aorist in examples from resp. Classical and Early Post-Classical Greek. A motivation for the development of this perfective non-past counterfactual use may have been *expressiveness* (cf. Narrog and Heine 2021, 162–66), as these uses present a counterfactual present event which is presented as ‘complete’, as it were; in ex. 9 the addressee could not have produced the document now (as he does not have it) and in ex. 10 the speaker of the Psalm signals that it is counterfactual that the Lord wants to see the speaker complete a sacrifice (the perfective of the stative predicate ‘want’), because the speaker is already praising him extensively in his Psalm.

(9) [‘As I cite these decrees, Aeschines, you must cite some decree by proposing which I became responsible for the war.]

all' ouk àn ékhois; ei gàr eíkhes,
 But NEG MOD can-OPT-2SG if PTC can-IPFV-2SG
oudèn àn autoû próteron nunì paréskhou.
 in-no-way MOD it-GEN sooner now provide-AO-2SG

But you cannot cite one; if you could, there is no document which you **would produce more readily now**. (D. 18.76.1–4)

(10) *ei êthélēsas thusían, édōka án·*
 if want-AO-2SG sacrifice-ACC give-AO-1SG MOD
 If you **wanted** a sacrifice **I would give** it you (LXX Ps. 50.17-18)

In fact, the equivalent examples given by Jespersen (1925, 266) and Dahl (1997, 106) of a present counterfactual expression with an ‘unexpected’ temporal-aspectual marker (ex. 11 and 12) seem to occur in a similar context of expressive strengthening: one would use such expressions to more explicitly deny having money, i.e. forcing a bounded reading on an atelic event.

(11) If I had had money enough (at the present moment), I would have paid you (now). (English)

(12) Om jag hade haft pengar nu, skulle jag ha betalat dig; (Swedish)

Secondly, we find the counterfactual indicative in novel contexts in which it could not have been found before, such as in so-called indirect inferential conditionals or ad absurdum conditionals (see la Roi 2022b, 283–91 for the Ancient Greek evidence). This type has been defined by Declerck and Reed (2001, 61) as “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..” In English, one could think of examples such as *If he were rich, he would not drive around in such a cheap car* or *If he were rich, why would he drive around in such a cheap car?*. In both cases, the main clause serves to point out the counterfactuality of the presupposition in the preceding protasis. The same pragmatic structures occur in Classical Greek examples such as ex. 13, where the speaker presents it as counterfactual that he has financial means.

(13)
ei gàr ekektēmēn ousían, ep' astrábēs àn ōkhoúmēn,
 if PTC owe-PLPF-1SG wealth-acc on saddled-GEN MOD go-IPFV-1SG
all' ouk epì toùs allotrióus híppous anébainon
 but NEG on art-ACC other-people's-ACC horses-ACC mount-IPFV-1SG
If I were a man of means, I would ride on a saddled mule, and **would not mount**

other men's horses. [But in fact, as I am unable to acquire anything of the sort, I am compelled, now and again, to use other men's horses] (Lys. 24.11)

These conditionals make up 26% of all counterfactual conditionals in Classical Greek (la Roi 2022b, 283), which would suggest that this function was expressively important.

Third and finally, we find morphosyntactic evidence for the conventionalized status of the counterfactual use of the indicative in Classical Greek: the counterfactual indicative has, on the one hand, taken over the syntactic contexts in which the counterfactual use of the optative was found before (e.g. in declarative and interrogative main clauses) and, on the other hand, spread beyond those contexts, esp. to other subordinate clause types such as relative, result and temporal clauses (la Roi 2022a, 254).

3.4 Stage 3 in the life cycle of counterfactual past indicatives

For the final stage of their counterfactual life cycle, there seems to be some limited evidence for a process of *strengthening*, albeit only in (i) written language contact settings and (ii) the specific morphosyntactic context of in subordinate wishes in Middle Post-Classical Greek. In the language of the Septuagint translations, we find alternative strategies to express the counterfactual apodosis alongside the use of the modal particle: negation, adverbs and inferential particles (see ex. 14 for *nûn* and *oûn* and ex. 15 for doubling up on negation in both the protasis and apodosis). La Roi (forthc.a) shows that this pattern is the result of written language contact with Biblical Hebrew in which the modal particle was lacking (cf. also Tjen 2010). Moreover, such contact-induced patterns have only been transmitted from the Septuagint to the New Testament (see example 15).

(14)

<i>kai ei</i>	<i>mè:</i>	<i>ekséklinen,</i>	<i>nûn</i>	<i>oûn</i>	<i>sè</i>	<i>mèn</i>
And if	NEG	turn-away-AO-2SG	now	PTC	you-ACC	PTC
<i>apékteina,</i>	<i>ekéinēn</i>	<i>dè</i>	<i>periepoiēsamēn.</i>			
kill-AO-3SG	it-ACC	PTC	keep-safe-AO-1SG			

And if it had not turned away, **now surely I would have killed you** but kept it alive (LXX Nu. 22.33)

(15) <i>ei mē</i>	<i>ēlthon</i>	<i>kai</i>	<i>elálēsa</i>	<i>autoîs,</i>	<i>hamartían</i>	<i>ouk</i>
If	NEG	come-AO-1SG	and	speak-AO-1SG	them-DAT sin-ACC	NEG
<i>eíkhosan</i>	<i>Nûn</i>	<i>de</i>	<i>próphasin</i>	<i>ouk</i>	<i>ékhoucin</i>	<i>peri</i>
have-IPFV-3PL	now	PTCL	excuse-ACC	NEG	have-PRS-3PL	about
<i>tēs</i>	<i>hamartías</i>	<i>autô:n</i>				
art-GEN	sin-GEN	them-GEN				

If I had not come and spoken to them, they **would not be guilty** of sin; but now they have no excuse for their sin. (NT *Ev.Jo.* 15.22)

Examples such as 14 and 15 have for a long time been hailed as evidence for the loss of the modal particle in Post-Classical Greek counterfactual apodoses (e.g. Horrocks 1995, 165; 2010, 236–38; di Bartolo 2023), but this completely disregards two crucial distributional facts: such patterns only occur in sources affected by written language contact (i.e. the Septuagint and New Testament) and the patterns with the modal particle in the apodosis continue to be the dominant option well into Post-Classical Greek (la Roi *forthc.a*).¹⁵

In fact, the norm of using the modal particle in counterfactual apodoses is likely to be the analogical source for the reinforcement of insubordinate wishes. Reinforcement is usually seen as a “mechanism whereby a grammatical marker A is supported by some additional expression B ‘strengthening’ the meaning of A, the new marker thus being AB” (Narrog and Heine 2021, 121). In Middle Post-Classical Greek there are some novel insubordinate wish patterns that came to use the modal particle analogically this way (la Roi 2021, 24–25).

3.5 *Stage 1 in the life cycle of counterfactual modal verbs*

The past counterfactual use of previously non-counterfactual past modal verbs seems to derive from a particular quantity implicature: in the Gricean context of trying to be as informative as possible, the speaker states the past ‘potentiality’ of an event (expressed in the conjoined infinitive) to invite the addressee to infer the opposite end of the modal scale, i.e. *not* past ‘potentiality’ (Ziegeler 2000, 32–34; Van linden and Verstraete 2008; Wakker 1994, 152 already for Ancient Greek). It is well known that the domain of quantifiers has such a scalar functional organization (cf. how ‘some’ implicates ‘not all’, e.g. *I have some money in my pocket*). A similar scalar organization affects modal expressions, which denote a form of uncertainty, especially when combined with the past, because the past usually involves certainty but not in combination with a modal expression. As discussed more extensively by Van linden and Verstraete (2008, 1877), “modal structures like *would (have) q* can be regarded as the middle point of a scale with the corresponding non-modal structure *q* as its strongest point, and the corresponding conditional structure *if p, would (have) q* as its weakest point”. As a result, when a speaker uses a past potentiality (e.g. *ought to + PAST*), s/he may implicate that this past potentiality was *not* achieved, i.e. the other end of the scale.¹⁶ ‘Potentiality’ should here be seen as a cover term for the different modal values which can be found in counterfactuality, in particular deontic (e.g. *I ought to have*), epistemic

¹⁵ They also state that the use of epistemic modal verbs in apodoses without the modal particle would be an innovation, but this is again not true, as they could already occur without modal particles in Classical Greek (see la Roi 2022c).

¹⁶ As Van linden and Verstraete 2008, 1878 put it: “Given that a modalized version of *p* is weaker than an unmodalized version, using the modalized version implicates the negation of its unmodalized counterpart”.

(e.g. *I would have*) and boulomaic modality (e.g. *I wished*). In Classical Greek, we witness the development of counterfactual functions of modal verbs belonging to these three subdomains (cf. la Roi 2024a and 2024b for an overview), meaning that they have a counterfactual function without the necessity of adding the modal particle (but see below on occurrences with it). Besides this more general pragmatic mechanism, the counterfactual meaning of a past modal verb may also be signaled in the linguistic common ground: note how in example 16 the counterfactual reading of the modal verb combination (viz. *I ought to have died*) is evoked by the preceding words of the speaker (viz. *I did not die*).

(16)

kágōg' *ár'* *ouk* *éthnēiskon* *hoû* *m'* *ekhrēn* *thaneîn*
 and=I PTC NEG die-IPFV-1SG rel-GEN I-ACC ought-IPFV-3SG die-INF

I did not die, it now appears, **when I ought to have died** (E. *Hec.* 231)

Moreover, these counterfactuals seem to fulfil specific expressive needs on the part of the speaker, as they are used, for example, to express forms of reproach or epistemic assessment. In example 17, the boulomaic past counterfactual provides a negative assessment of the previous speaker in the form of a complaint. In example 18, Medea uses the deontic past counterfactual to both reproach Jason for his actions and to counterargue that he is actually particularly knavish (as a result of the indirect inferential structure).

(17)

eboulómēn *mèn* *héteron* *àn* *tôn* *ēthádōn*
 want-IPFV-1SG PTC other-ACC MOD art-ACC usuals-GEN
légein *tà* *béltisth'*, *hín'* *ekathémēn* *hēsýkhos*.
 speak-INF art-ACC best-things-ACC so-that sit-IPFV-1SG still

I would have preferred that one of the usual speakers had offered the best counsel, so that I could have sat still. (Ar. *Ec.* 151-152)

(18)

khrēn *s'*, *eíper* *ēstha* *mē* *kakós*,
 ought-IPFV-3SG you-ACC if=PTC be-IPFV-2SG NEG bad-NOM
peísantá *me* *gameîn* *gámon* *tónd'*,
 convinced-PTCP-ACC I-ACC marry-INF marriage-ACC dem-ACC
allà mē *sigēi* *phílōn*.
 but NEG silence-DAT family-GEN

if you were not a knave, you ought to have gained my consent before making this marriage, not

done it behind your family's back. (E. *Med.* 585-586)

3.6 Stage 2 in the life cycle of counterfactual modal verbs

Stage 2 in the life cycle of counterfactual modal verbs reveals itself quickly in the data in Classical Greek, where non-past usages of especially deontic and boulomaic modal verbs are developed rapidly. Consider the present-referring counterfactual usages of the deontic modal verbs (*e)khrēn* ‘should’ and *édei* ‘ought’ in fifth-century versus fourth-century Classical Greek: as detailed in la Roi (2024b), they show a strong preference for occurring as atelic states-of-affairs (e.g. states or activities): (*e)khrēn* occurs in atelic contexts 80% of the time in fifth-century (=34 out of 42) and a 100% (=3 out of 3) in fourth century Classical Greek¹⁷, while the present-referring use of *édei* occurs in atelic contexts 87,5 % of the time in fifth-century and 84% of the time in fourth-century Classical Greek. The application of the unbounded perspective on an event without end (i.e. atelic state of affairs) must have generated the temporal reference shift from the past to the present, not only for modal verbs but also for inflectional moods (cf. la Roi 2022a for the dominance of this group in the data and that comparatively rare future-referring counterfactuals all consist of atelic imperfectives). Besides the conventionalization of this temporal implicature, pragmatics also plays a key role in the use of these modal verbs with reference to the present, something which can be illustrated with example 21 below. The nurse uses this negated counterfactual modal to explicitly reproach Phaedra for doing something that is communicatively undesirable, viz. remain silent. With its present reference, such a usage thus allows the speaker to deny the desirability of ongoing events, rather than events from the past (for which past-referring modal verbs had to be used). Though it has been argued that such past uses of counterfactual modal verbs function as markers of negative politeness such as deference and hedges (Ruiz Yamuza 2021 with respect to these deontic modal verbs in Classical Greek), I would argue that impoliteness plays a more important role for these counterfactual deontic modals, in so far as we often find them in contexts of impoliteness, such as in 20 below or in 19 above, where the deontic modal expresses a form of reproach.¹⁸

(19) *eîhen, tí sigâis? ouk ekhrēn sigân*
 PTC Q be-silent-PRS-2SG NEG ought-IPFV-3SG be-silent-INF

(Phaedra is silent.) Anyway, why are you silent? **You ought not** to be silent, child (E. *Hipp.* 297)

3.7 Stage 3 in the life cycle of counterfactual modal verbs

Due to the speedy temporal reference change of modal verbs in the imperfective (esp. with atelic state of affairs), we find evidence for stage 3 already in Classical Greek: the deontic modal verbs discussed above developed a post-counterfactual usage in Classical Greek, as illustrated by example 20 where the

¹⁷ Examples from my corpus are E. *Med.* 890, *Hec.* 1187, *Hipp.* 297, 925 or Hdt. 1.39.7, 2.20.8, 4.118.8.

¹⁸ See van Olmen 2018 for the reproach function of counterfactual “past imperatives” in several languages.

modal verbs refers to something which ought to happen in the future. The origins of this new usage is likely to lie in the generation of another temporal implicature: moving from a contextual suggestion that something should be the case when it is not (=present-referring counterfactuality) to simply pointing out that something should be the case (=non-past necessity), whether that is the case or not.

(20) *en hôi élegon hōs khrēn humâ:s eulabēisthai mē:*
 when say-IPFV-3PL that ought-IPFV-3SG you-ACC take-care-INF NEG
hup'emoû eksapatēthēte hōs deinoû óntos légein
 by I-GEN be-deceived-AO-2PL that clever-GEN be-PTCP-GEN speak-INF
 when they said that you **must be** on your guard not to be deceived by me, because I am a clever speaker. (Pl. *Ap.* 17a5-7)

However, these usages do not become available to all modal verbs in an equal way, thus demonstrating that these modal verbs have their own individual life cycles: epistemic modal verbs do not develop such uses in the periods considered here (such as hypothetical ‘would’ in English, e.g. *She would win in a marathon*) but boulomaic modal verbs do, although only later.¹⁹ In example 21, we can observe that the counterfactual implication has bleached away in this usage (note the positive answer which follows).

(21) *Eboulómēn kai autòs toû anthrōpou akoûsai.*
 Want-IPFV-1SG also self-NOM art-GEN man-GEN hear-INF
Aúrion, phēsín, akoúsēi autoû.
 tomorrow say-PRS-3SG hear-FUT-2SG he-GEN
 “**I would like to** hear the man myself.” “Tomorrow,” he said, “you will hear him.” (NTActs 25:22)

At the same time, there is considerable evidence for analogical reinforcement of these modal verbs, both in Classical Greek as well as in Post-Classical Greek. Generally, those modal verbs which have conventionalized a counterfactual usage do not need the modal particle to mark their counterfactuality. This contrasts with non-modal verbs that are found in counterfactual main clauses, which do need the modal particle. However, there is an exceptional and relatively infrequent group of occurrences of these productive counterfactual modal verbs *with the modal particle*. I have demonstrated (la Roi 2022c, 123–26, 2023, forthc.b) that the latter group has been created through analogical strengthening, that is, in analogy with the normative use of the modal particle with non-modal verbs that do not conventionalize a counterfactual usage. After all, the corpus evidence from Classical Greek shows that boulomaic, deontic and epistemic modal verbs have developed counterfactual usages without the

¹⁹ In addition, a construction used for counterfactual wishes (*óphelon*+past indicative) extends to the non-counterfactual domain as well in Post-Classical Greek (see Revuelta Puigdollers 2017: 182-184).

modal particle early on in Classical Greek, but are found with the modal particle later on (e.g. *khrēn* ‘should have’ without the modal particle at E. *El.* 357 vs with the modal particle at D. 18.195). Moreover, there are unproductive counterfactual modal verbs that only occur with the modal particle in matrix clauses, such as epistemic modal verbs like *huparkhō* ‘be possible’ or *éneimi* ‘be possible’. As suggested by la Roi 2024b, the low productivity and conventionalization of counterfactual uses of epistemic modal verbs in Classical Greek may have had a language ecological motivation: the past indicative was very productive for epistemic counterfactuals (e.g. in conditional sentences or simple declarative clauses), which, from an expressive point of view, would make epistemic modal verbs only necessary when a speaker wanted to add specific semantic aspects, e.g. of imminence as with *émelle* ‘was about to’ or possibility (with a variety of impersonal epistemic modals).

In Early and Middle Post-Classical Greek, the distributional spread of these patterns seems to have been motivated by the linguistic prescriptivism of Atticism. Linguistic Atticism refers to a prescriptivist movement due to which Post-Classical Greek authors started to imitate the language of Classical Greek authors, thereby ‘atticizing’ their own language. Linguistic atticism gained traction especially in Middle Post-Classical Greek (I – III CE) during the so-called Second Sophistic, with the creation of lexica in which certain words and constructions are prescribed (see la Roi 2022d for a historical sociolinguistic analysis). The data for analogical patterns of the counterfactual modal verb seem to match this trend. In early Post-Classical Greek we find both patterns for modal verbs occurring side by side, even within the same author (cf. Plb. 1.3.7 *édei & án*, 5.37.10 *eboulómēn & án*, D.H. A. R. 9.53.2 *eboulómēn & án* versus Plb. 4.22.10, D.H. A.R. 3.7.5 *édei*, D.H. Dem. 3.18 *eboulómēn*). By contrast, in lower register papyri from Egypt of this period we only find the usage *without* the modal particle. For Middle Post-Classical Greek, we similarly do not find the pattern with the modal particle in the papyri, nor in the middle register texts such as the New Testament, Epictetus or Acts of Thomas, but only in the high register texts of Lucian (e.g. Abd. 20.12 *édei & án* and Herm. 81.19 *eboulómēn & án*) and Aelius Aristides (e.g. Aristid. 505.14 *édei & án* and 151.23 *eboulómēn & án*). Thus, the analogical pattern of the modal particle with these counterfactual modal verbs was perceived as an Atticistic norm which high register authors consciously applied.

3.8 *Synthesizing the life cycles*

Let us now summarize the insights which the linguistic evidence from the history of Ancient Greek has yielded for the counterfactual life cycle.

Stage 1 Construction A has a past-referring counterfactual usage

I have demonstrated that there are different diachronic sources for past counterfactual expressions, viz. past indicative with different aspects and modal verbs of various semantic types. Also, different

diachronic processes are responsible for the genesis of this function, such as *insubordination* and *innovation*, with a particular role being played by pragmatic mechanisms such as quantity implicatures and the innovation of expressive means (cf. the innovative use of the pluperfect or the negated deontic modal verbs for reproach). Contrastively, the two constructional groups discussed also showed differences: whereas the innovative contexts in which the innovative indicative was found were pragmatically marked, the modal verbs did not need to occur in such contexts, as they could pragmatically implicate their counterfactuality without it. Lastly, we should not be surprised by the frequent association of the past tense to generate counterfactuals; after all, exactly because what lies in the past is determined in terms of its fulfilment (cf. Dahl 1997, 101), speakers can use the past to suggest what would have happened, but we know did not.

Stage 2 Construction A has a non-past referring counterfactual usage

The change at stage 2 seems uniformly to be the result of a temporal implicature that semanticized in these markers. The pragmatic motivation for the development of these non-past usages seems to be expressivity as well, as this usage allows speakers to *deny* current events in different ways, e.g. epistemically (speakers disagree about the truth of something), deontically (speakers reproach others for not doing X) and volitionally (speakers specify their incomplete volition with regard to an event to influence addressees), but also to voice ‘complete’ counterfactual present events (with the perfective in Ancient Greek or with the pluperfect in Germanic). Counterfactuals conventionalize in other ways too: the past indicative spreads through analogy beyond the original confines of the optative that it replaced and both come to be used rhetorically in indirect inferentials for counterargumentation.

Stage 3 Construction A has an unstable counterfactual usage which reveals itself in that:

- a) construction A develops a post-counterfactual function with non-past reference
- b) the counterfactual usage of A is strengthened with additional marking,
- c) counterfactual usages of A are substituted by another construction.

The last stage of the counterfactual life cycle is characterized by *instability* (cf. also the evidence for substitutions discussed in section 4). First of all, we found the development of post-counterfactual usages in certain modal verbs, notably two deontic and one boulomaic modal verb. Still, these usages developed in different diachronic periods (viz. deontic non-past usages without counterfactuality in Classical Greek and boulomaic non-past usages without counterfactuality in Middle Post-Classical Greek), demonstrating that these modal verbs go through the life cycle individually. Secondly, we found convincing evidence for different types of reinforcement of counterfactual constructions, esp. the analogical strengthening of modal verbs with the modal particle in Classical Greek, its prescriptive imitation in high register Middle Post-Classical Greek texts and the occasional analogical strengthening

of in subordinate wishes in Middle Post-Classical Greek. Thirdly, I demonstrated the impact of language contact on inflectional counterfactual mood combinations in alleged cases of stage 3 ‘substitutions’; alternative strategies without the modal particle in counterfactual apodoses were created in the context of written language contact of the Septuagint translations and transmitted only to the New Testament through written language contact. Fourth and finally, I have detailed how the substitution of the inherited counterfactual optative is reflected in the corpus evidence from Archaic and Classical Greek, with the optative displaying a layering of past and non-past counterfactual functions and the past indicative replacement initially being restricted to past-referring counterfactual contexts in Archaic Greek. Moreover, the past indicative replacements then went through the same stages of development of the counterfactual life cycle that the optative seems to have already passed through.

To expand the scope of evidence for such spiral-shaped cyclical processes, I now move to a brief diachronic survey of Indo-European languages (based on la Roi 2024c) and discuss the ways in which other Indo-European languages have substituted the inherited optative strategy over time and which factors play a role in this long and complex process.

4 A Diachronic Indo-European survey

The inherited optative (OPT in figure 1 below) seems to have had counterfactual usages already in Proto-Indo-European, has been subject to different diachronic substitutions throughout the history of Indo-European languages (cf. Brugmann 1930, 586 who speaks of “Neuerungen der Einzelsprachen” [innovations of individual languages]). Diachronically, languages have adopted different strategies of substitution; whereas Ancient Greek substituted with a past indicative (IND in figure 1 below), languages such as Sanskrit, Tocharian and Old Church Slavonic substituted the inherited optative with a so-called ‘conditional mood’ (la Roi 2024c), COND in figure 1 below. While all these languages still had the optative, they seem to have repurposed it to the ‘hypothetical’ (see column 3 in figure 1 below), with the optative being used mainly²⁰ for non-past hypothetical reference in Sanskrit and Tocharian, but as an imperative in Old Church Slavonic (la Roi 2024c).²¹ Moreover, the diachronic corpus evidence for Sanskrit reveals a similar replacement process to that found in the Ancient Greek data: in Vedic Sanskrit the inherited optative is used for stage-1 and stage-2 counterfactuality, whereas in Post-Vedic Sanskrit the optative is limited to stage 2 because the ‘conditional mood’ has replaced its stage-1 counterfactuality. Interestingly, the stage-2 use of the optative is only found in the higher archaic register of Epic Sanskrit, not in the lower register of Vedic Prose, where the ‘conditional mood’ actually has stage-1 and stage-2 counterfactual usages (Oberlies 2003, 166). The languages in which the inherited

²⁰ Another usage is for past habituality, a function which must have developed from the past counterfactual use of the optative, as past habituality is expressed by the optative in Tocharian and Epic Sanskrit (la Roi 2024c).

²¹ I have suggested elsewhere that this might be interpreted diachronically as a development of non-counterfactual functions by the optative in stage 3 (la Roi 2024c).

optative has ultimately syncretized its functions into a ‘subjunctive’ (SBJV in figure 1 below), also provide corpus evidence for substitutions: in Classical and Post-Classical Latin the past indicative starts replacing the subjunctive (Patard 2020); in Old English we find both the inherited subjunctive and the innovative past indicative (contrast resp. ‘weope’ and ‘wistest’ in example 23 below).

(23) gif þu **wistest** hwæt þe toward is þonne **weope** þu mid me (ÆCHom i.412.67, Brinton and Bergs 2017, 123))

If you **knew** what is to come to you, then you would weep with me

Note also that Old High German did not replace the inherited subjunctive yet, since their moods stayed morphologically distinct (Lockwood 1968, 128–29 and cf. even Modern German *hätte* and *wäre*), whereas the subjunctive and past indicative underwent morphological syncretism in Old English (Moléncki 1999, 79). Figure 1 below provides an overview of the inflectional counterfactual moods which over time replace the inherited optative in early Indo European languages (see la Roi 2024c for a full account):

Figure 1 A diachronic typology of counterfactual mood in early Indo-European languages

Language		1. Past CF		2. Non-Past CF		3. Hypothetical
Greek	Archaic Greek	OPT	IND	OPT	IND	OPT
	Classical Greek	IND		IND		OPT
Indo-Aryan	Vedic Sanskrit	OPT		OPT		OPT
	Post-Vedic Sanskrit	COND		COND		OPT
Iranian	Avestan	OPT		OPT		OPT
	Old Persian	OPT		OPT		OPT
Germanic	Gothic	OPT		OPT		OPT
	Old English	SBJV	IND	SBJV	IND	SBJV
	Old High German	SBJV		SBJV		SBJV
Latin	Archaic Latin	SBJV		SBJV		SBJV
	Classical Latin	SBJV	IND	SBJV	IND	SBJV
	Post-Classical Latin	SBJV	IND	SBJV	IND	SBJV IND
Irish	Old Irish	SBJV	IND	SBJV	IND	SBJV
Tocharian	Tocharian A & B	COND		COND		OPT
Armenian	Classical Armenian	IND		IND		-
Anatolian	Hittite	IND		IND		-
Albanian	Albanian	IND		IND		-
Slavic	Old Church Slavonic	COND		COND		OPT

Moreover, prescriptivism has played a role in overusing old counterfactual subjunctives in English, even beyond their original confines (see Leech et al. 2009, 70). In fact, even in languages with rich and relatively stable morphological paradigms, the past indicative starts to replace inherited subjunctive strategies, as happens, for example, with the imperfect past indicative in contemporary Italian (Mauri, Barotto, and Mattioli 2023, la Roi forthcoming b). Finally, diachronic comparison shows the replacement of inherited counterfactual moods by various modal formations, such as the future

marker *tha* with the past in Modern Greek (cf. Iatridou 2000) or English *would have*, as illustrated by the contrast between the translations of the past counterfactual in John 11.21 of the New Testament in the King James versus the modern New International translation.

(24) Then said Martha unto Jesus, Lord, if thou hadst been here, my brother **had** not **died** (NT *John* 11.21, King James 1611)

(25) “Lord,” Martha said to Jesus, “if you had been here, my brother **would** not **have died**. (NT *John* 11.21, New International Translation 2011)

To sum up, though by necessity brief, I have outlined the substantial evidence for stage 3 substitution of counterfactual strategies in Indo-European languages (see more extensively la Roi 2024c) and underlined that the speed of these substitutions is governed by different factors such as systemic factors of mood distinctiveness, mood syncretism and social factors of prescriptivism.

5 Conclusions

In this paper, I have outlined how counterfactual expressions can be studied across language histories in a uniform way. First, I demonstrated some major theoretical and descriptive limitations in the conceptualization of the histories of counterfactual expressions. I suggested using the more neutral descriptive umbrella of the *counterfactual life cycle* to describe their evolution, since, on the one hand, counterfactual expressions are subject to different diachronic processes and pragmatic mechanisms and, on the other hand, not all counterfactual expressions show a spiral-like cyclical substitution process, because substitution is but one of the paths counterfactuals may take out of the domain of counterfactuality. After noting the relative scarcity of diachronic corpus based studies, I turned to rich corpus evidence from the history of Ancient Greek (VIII BCE – III CE) and detailed how two major constructional strategies (viz. inflectional moods and past modal verbs in the imperfect) diachronically make their way through the counterfactual life cycle. On the one hand, I pinpointed the specific diachronic processes relevant for the genesis of stage-1 counterfactuality in the past (e.g. innovation, insubordination), stage-2 counterfactuality in the non-past (e.g. temporal implicature semanticization, analogical spread, pragmatic enrichment) and stage 3 (e.g. temporal implicature semanticization, analogical reinforcement, contact-induced change, and substitution). On the other hand, I suggested that pragmatic factors play an important role in every stage of the counterfactual life cycle, such as fulfilling expressive pragmatic needs by novel counterfactual usages. Social factors too are important, such as prescriptivist pressures which endow certain counterfactual usages of modal verbs with prestige. Next, I offered a brief survey of the ways in which Indo-European languages have substituted the inherited optative strategy with past indicatives, conditional moods and modal formations. Comparing the speed with which these substitution processes took place in different Indo-European languages, I have for example discussed cases where the counterfactual strategy underwent mood syncretism and cases where, instead of a full substitution, older counterfactual strategies were strengthened in use due to prescriptivist

pressures (e.g. *were* in English). Also, I suggested that diachronic versions of Bible translations may supplement the synchronic snapshots on which previous work had been based, although space prevented me from providing a detailed diachronic examination at this moment. In sum, what I have sought to underline is that the life cycles of counterfactuals cannot be explained only with recourse to a general grammaticalization process, a single pragmatic motivation or a straightforward pull vs. push chain.²² Rather, different diachronic processes and pragmatic motivations play a role in the genesis of each stage of the life cycle. The productivity and hence the developmental progress of counterfactuals is codetermined by systemic factors (e.g. the availability and productivity of alternative expressions in the system, mood syncretism, analogical pressures) and social factors (e.g. the prestige of morphosyntactic patterns).

²² Reinöhl and Himmelman 2017 problematize pull- and push-chain explanations of forms of renewal, because the causal factors behind the layering and developmental stages remain opaque.

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