

Charles University

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Classical Philology

Dissertation

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Evidential strategies expressing inference in classical Greek

Evidenciální strategie vyjadřující inferenci v klasické řečtině

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2024

I hereby declare that I have written this dissertation independently, using only the mentioned and duly cited sources and literature, and that the work has not been used in another university study programme or to obtain the same or another academic title.

In Prague on October 13, 2024

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Abstract

The submitted thesis investigates selected linguistic expressions in classical Greek that convey inference, employing the framework of Functional Discourse Grammar (FDG). The studied expressions are the complementation strategies with verbs of seeing and knowledge, the modal auxiliaries *ἀνάγκη* 'necessity' and *ἀναγκάϊον* 'necessary', the particle *ἄρα*, and the adverbial *δῆλον ὅτι* 'clearly'. These expressions are considered to be evidential strategies because they are not grammaticalized, they convey evidential meanings by entailment or generalized implicature, and they are discursively secondary. The research corpus comprises the works of the ten Attic orators (the 5th and 4th cent. BCE). Evidential meanings are assumed to belong to a crosslinguistic semantic-functional category of information source, allowing comparison between evidential strategies in classical Greek and evidential expressions in other languages. The study reveals that the distinction between circumstantial inference (i.e. inference based on visible evidence) and assumption (i.e. inference based on known facts), commonly found in languages with grammaticalized evidentiality, also applies to the Greek expressions under examination. Circumstantial inference and visual source can be conveyed through a generalized implicature triggered by participial complements with predicates of knowledge. Assumption is entailed by the epistemic use of *ἀνάγκη* and *ἀναγκάϊον*. Both *ἄρα* and *δῆλον ὅτι* can express circumstantial inference and assumption but involve additional entailments and implicatures. *Ἄρα* entails that the marked proposition is activated in the speaker's consciousness, but the speaker need not accept it as true. This epistemic nuance is apparent when the particle signals assumption. Conversely, the absence of speaker commitment does not apply in the contexts in which *ἄρα* signals the speaker's deferred realization that the marked proposition is true. This use of the particle can give rise to the conversational implicature that the source of information for the proposition is circumstantial inference. Regarding *δῆλον ὅτι*, the adverbial entails that both the speaker and the addressee have access to the evidence and that the speaker is committed to the marked proposition. The use of *ὅτι* 'that' and *ὥς* 'that' with predicates of knowledge is motivated by pragmatic factors. The complementizer *ὅτι* can signal information shared between the speaker and the addressee, whereas *ὥς* is preferred when the marked proposition cannot be readily incorporated into the common ground at the time of utterance. The thesis also investigates the grammaticalization processes through which some of these evidential strategies emerged.

Keywords: classical Greek, evidential strategies, evidentiality, inference, circumstantial inference, assumption, grammaticalization, information source

Abstrakt

Předkládaná disertační práce, jež metodologicky vychází z funkční diskurzivní gramatiky (FDG), zkoumá vybrané jazykové výrazy v klasické řečtině, které vyjadřují evidenciální význam inference. Zkoumanými výrazy jsou různé typy větných a polovětných komplementů závislých na slovesech vidění a vědění, pomocné modální výrazy ἀνάγκη 'nutnost' a ἀναγκάϊον 'nutné', částice ἄρα a adverbialní výraz δῆλον ὅτι 'zjevně'. Tyto jazykové prostředky označujeme jako evidenciální strategie, jelikož nejsou gramatikalizované, evidenciální význam můžou vyjadřovat sémanticky i na základě obecní implikatury, a informace, kterou vyjadřují, je ve výpovědi sekundární. Korpus zkoumaných textů zahrnuje díla deseti attických řečníků (5. a 4. stol. př. n. l.). Práce vychází z předpokladu, že evidenciální významy patří do mezijazykové sémanticko-funkční kategorie zdroje informace (*information source*), což umožňuje srovnání evidenciálních strategií v klasické řečtině s evidenciálními výrazy v jiných jazycích. Práce ukazuje, že rozlišení mezi inferencí založenou na smyslovém vnímání (*circumstantial inference*) a logickou inferencí (*assumption*), jež se projevuje v jazycích s gramatickou kategorií evidenciality, je relevantní i pro zkoumané řecké výrazy. Z výzkumu vyplývá, že participiální komplementy, jež závisí na predikátech vědění, obecně pragmaticky implikují, že zdrojem informace pro danou propozici je smyslové vnímání nebo inference založená na smyslovém vnímání. Naproti tomu se logická inference vyjadřuje epistemickým užitím výrazů ἀνάγκη a ἀναγκάϊον. Jak ἄρα, tak δῆλον ὅτι mohou vyjadřovat oba typy inference ve spojení s dalšími kódovanými významy či implikaturami. Ἄρα sémanticky kóduje, že propozice je aktivovaná ve vědomí mluvčího, ale mluvčí ji nemusí nutně přijímat jako pravdivou. Tento epistemický významový odstín je patrný, když ἄρα signalizuje logickou inferenci. Naopak se netýká kontextů, v nichž ἄρα signalizuje, že mluvčí si s opožděním uvědomil, že daná propozice je pravdivá. Toto použití partikule může též pragmaticky implikovat, že zdrojem informace pro danou propozici je inference, která se zakládá na smyslovém vnímání. Adverbialní výraz δῆλον ὅτι sémanticky kóduje, že mluvčí i adresát mají přístup k důkazům a že mluvčí považuje danou propozici za pravdivou. Užití spojek ὅτι 'že' a ὥς 'že' v klauzích, které závisí na predikátech vědění, je motivováno pragmatickými faktory. Spojka ὅτι může signalizovat informaci sdílenou mezi mluvčím a adresátem, zatímco ὥς je preferována v případě, že danou propozici nelze v čase promluvy snadno začlenit do informační báze, již mluvčí a adresát sdílí (*common ground*). Práce také zkoumá gramatikalizační procesy, jejichž prostřednictvím některé z těchto evidenciálních strategií vznikly.

Klíčová slova: klasická řečtina, evidenciální strategie, evidencialita, inference, inference založená na smyslovém vnímání, logická inference, gramatikalizace, zdroj informace

Contents

<i>List of abbreviations</i>	viii
<i>Acknowledgments</i>	ix
1. Introduction	10
1.1. Information source and evidentiality: Setting the scene	10
1.2. The crosslinguistic category of evidentiality	13
1.3. Evidentials, evidential strategies, and lexical expressions of information source	19
1.4. Expressions studied in this thesis and the research questions	21
1.5. The hierarchical structure of the clause	23
1.6. Evidential expressions and grammatical scope	27
1.7. Evidential expressions and grammaticalization	36
1.8. Research corpus	43
2. Complementation strategies with verbs of seeing and knowledge	45
2.1. Introduction	45
2.2. Existing theories about complementation in classical Greek	47
2.3. Clause layers and complementation	50
2.4. Immediate visual perception in classical Greek	52
2.4.1. Formal and semantic properties	52
2.4.2. Immediate visual perception and information source	54
2.5. Verbs of seeing with AccPtcp used in a cognitive sense	58
2.5.1. Introduction	58
2.5.2. Formal and semantic properties	59
2.5.3. Evidential values associated with perception	62
2.5.4. Visual source	64
2.5.5. Circumstantial inference based on visual perception	66
2.5.6. Circumstantial inference based on direct perception	67
2.5.7. Summary	69
2.6. Verbs of knowledge with AccPtcp	70
2.7. Finite complements with ὅτι and ὡς	76
2.8. Complementation strategies as evidential strategies	82
3. The modal expressions ἀνάγκη and ἀναγκάϊον	85
3.1. Introduction	85
3.2. Evidential extensions of modal markers and grammaticalization	87
3.3. Information source and types of reasoning	94
3.4. Analysis of ἀνάγκη and ἀναγκάϊον	98
3.4.1. Deontic usage	98

3.4.2.	Objective necessity	99
3.4.3.	Instantial induction	104
3.4.4.	Deduction.....	108
3.4.5.	Abduction.....	109
3.4.6.	Diachronic development.....	112
3.5.	Ἀνάγκη and ἀναγκαῖον as evidential strategies.....	115
4.	The particle ἄρα	121
4.1.	Introduction	121
4.2.	Ἄρα in conditional protases	124
4.2.1.	Introduction	124
4.2.2.	Presupposition and felicity conditions in conditionals	126
4.2.3.	Presupposition-suspending conditionals with ἄρα.....	130
4.2.4.	Pragmatic conditionals with ἄρα	133
4.2.5.	Switching between scenarios.....	135
4.2.6.	The position of ἄρα in conditional protases	138
4.2.7.	The semantics of ἄρα in conditional protases	139
4.3.	Ἄρα in embedded clauses.....	141
4.3.1.	Introduction	141
4.3.2.	Ἄρα referring to the embedded speaker/cognizer	143
4.3.3.	Ἄρα referring to the primary speaker	145
4.3.4.	The semantics of ἄρα in embedded clauses.....	147
4.4.	Ἄρα in questions	148
4.4.1.	Introduction	148
4.4.2.	Ἄρα in positive questions.....	149
4.4.3.	Ἄρα in questions with preposed negation	153
4.4.4.	The semantics of ἄρα in questions	158
4.5.	Ἄρα in declarative sentences	159
4.6.	Ἄρα as an evidential strategy.....	163
5.	The predicative and adverbial δῆλον ὅτι	168
5.1.	Introduction	168
5.2.	Evidential adverbs and adverbials	171
5.3.	The etymology of δῆλος	174
5.4.	The predicative δῆλον with a complement	175
5.4.1.	Introduction	175
5.4.2.	Modifications of the predicative construction.....	176
5.4.3.	The predicative construction and the interpersonal level	177

5.4.4.	The semantics of the predicative construction	186
5.4.5.	Summary	193
5.5.	The adverbial δῆλον ὅτι.....	194
5.5.1.	Introduction	194
5.5.2.	Distinguishing δῆλον ὅτι and δηλονότι in modern editions	196
5.5.3.	Scope and distributional properties.....	196
5.5.4.	The adverbial δῆλον ὅτι and the interpersonal level	200
5.5.5.	The semantics of the adverbial δῆλον ὅτι.....	211
5.5.6.	Summary	225
5.6.	The adverbial δῆλον ὅτι as an evidential strategy	226
6.	Conclusions	231
7.	References.....	238

List of abbreviations

ABL	ablative
ACC	accusative
AccInf	accusative with infinite
AccPtcp	participial complement in accusative
ADV	adverbial
ASSERT	assertive
BFOCI	Broad Focus I
BFOCII	Broad Focus II
CL	classifier
CONTOP	Contrastive Topic
DECL	declarative
EPI	episode
EPIST	epistemic
EVID	evidential
FOC	focus
GIVTOP	Given Topic
IMP	imperative
IMPF	imperfective
INFR	inference
INTERSUBJ	intersubjective
INTR	intransitive
NFOC	Narrow Focus
NOMN	nominalization
NomPtcp	participial complement in nominative
NONFIRSTH	non-firsthand
NP	nominal phrase
PERF	perfective
PP	prepositional phrase
PRO	pronoun
PROP	proposition
PST	past
REC.P.ASSUM	recent past assumption
REC.P.INFR	recent past (circumstantial) inference
REC.P.NONVIS	recent past non-visual sensory
REC.P.REP	recent past report
REC.P.VIS	recent past visual
REP	report
SGNF	singular non-feminine
SoA	state-of-affairs
TOP	topic
VCLASS	verbal class

Acknowledgments

I would like to express my gratitude to everyone who supported me during the preparation of this thesis. First and foremost, my thanks go to my advisor, Dagmar Muchnová, for her support and encouragement throughout my studies in Prague. I appreciate the light touch with which she guided me and the trust she placed in my ability to successfully finish a research project of this magnitude. I would also like to extend my thanks to Rutger J. Allan for his time and support during my stay at Vrije Universiteit Amsterdam, as well as for his insightful comments on parts of this dissertation. A previous version of Chapter 2 was presented at the Societas Linguistica Europaea conference in Athens in 2021. I would like to express my gratitude to Camille Denizot and Liana Tronci for organizing a workshop on modality and syntax in Ancient Greek at this conference, and for carefully reading and commenting on my paper, which was later published in the proceedings volume. I am also thankful to the organizers and audience at the International Colloquium of Ancient Greek Linguistics in Madrid in 2022, where I presented an earlier version of Chapter 3. Both papers were later evaluated by anonymous reviewers, to whom I am grateful for their valuable feedback. Over the past two years, I have had the privilege of co-teaching a seminar on research methods at Charles University in Prague with Michal Ctibor, whose insights have helped me become more mindful of potential pitfalls and methodological shortcomings in my own research. Finally, I want to thank my wife Altynay for her unwavering support and for reminding me that there are more important things in life than linguistic puzzles.

1. Introduction

1.1. Information source and evidentiality: Setting the scene

The aim of this thesis is to investigate selected expressions in classical Greek that invite the hypothesis that they convey inference. Every language possesses means to express information source. Specifying how the information conveyed in the utterance has been obtained provides an additional signal to the addressee that is valuable in many communicative situations. In some languages of the world, the indication of information source is an obligatory component in some types of sentences, and the markers that express the relevant meanings are part of the grammatical systems of these languages. Such grammaticalized items are referred to as ‘evidentials’ and the corresponding grammatical category is called ‘evidentiality’. Following Aikhenvald (2004; 2020), this study adopts the convention of distinguishing the semantic-functional category of information source from the grammatical category of evidentiality. This decision is reflected in the use of the relevant terminology throughout this thesis. The only exception is the employment of the adjective *evidential* also in connection with the semantic-functional category, as there is no suitable alternative derived from the term *information source*.

Several assumptions guide the study of evidential expressions in this thesis. These assumptions stem from the functional and cognitive approach to language and communication adopted here. The first assumption is that the semantic-functional category accommodates all the conceivable concepts and cognitive patterns that have to do with indicating the source of information. From this follows that the semantic-functional category of information source is broader than any attested system of grammaticalized evidential markers (Aikhenvald 2020: 29). Regarding the linguistic representation of the relevant meanings, the richness of the conceptual domain is most comprehensively manifested by various lexical items. For instance, the inventory of verbs referring to sensory perception in English allows for more fine-grained indication of information source than evidentials found in the languages that possess the most complex evidential systems. Furthermore, the semantic-functional category is assumed here to be potentially universal, as it is delimited in terms of cognitive patterns and conceptual space (Boye 2012: 7). The universality of the conceptual domain, however, is understood in a rather restricted sense. The assumption is that humans are universally capable of forming mental construals whose substance pertains to information source. With regard to particular concepts that belong within the semantic-functional category, I consider them and their lexical and grammatical representations to be language-specific. The degree of crosslinguistic variability, however, is not limitless because the semantic-functional category is anchored within broader patterns of human cognition and interpersonal communication (Boye 2012: 7–8). The existence of this shared cognitive substance allows for an analysis of language-specific evidential expressions, both lexical and grammatical, that is informed by crosslinguistic comparison. To facilitate such an investigation, it is necessary to propose a descriptive model

of the semantic-functional category that aligns with crosslinguistic data on expressions of information source.

Considering the semantic variability of the lexical expressions that are relevant here, it is preferable to construct a model of the conceptual domain based on more restricted and systematic data. One way to approach this task is to delineate a crosslinguistic descriptive category that conforms to the attested evidential systems in the languages of the world. Boye (2012: 9) defines such a descriptive category as “a notional generalization over distinct but related linguistic meanings which is significant for the description of language-specific phenomena in a number of generically and geographically distinct languages”. Boye stresses that crosslinguistic categories are purely theoretical constructs that only have descriptive significance. Accordingly, they do not explain the structure of grammatical categories in individual languages, nor do they predict which linguistic structures are possible and which are not.

Given that language-specific evidential systems are shaped by the semantic-functional category of information source, which is based on a shared cognitive substance, a crosslinguistic descriptive category of evidentiality should reveal something about the basic concepts that belong within the semantic-functional category, and how these concepts relate to each other. The assumption that we may learn about basic conceptual distinctions in this way stems from the fact that grammaticalized items tend to develop from general and superordinate meanings that are frequently used by speakers (Hopper & Traugott 2003: 101–102). For instance, individual languages may possess large inventories of verbs denoting sensory perception, but evidential systems often lump sensory sources together or differentiate between visual source on the one hand, and every other sensory source on the other. Such groupings and the associated semantic neutralization indicate which concepts are more salient than others.

Despite the existence of such crosslinguistic patterns, descriptive categories should not be interpreted as precise representations of the corresponding semantic-functional categories. Not every meaning included within the descriptive category is necessarily a universal concept that has a linguistic representation, either grammatical or lexical, in every language. Furthermore, a descriptive category based on a generalization over grammaticalized values will necessarily disregard fine-grained conceptual distinctions, which are typically expressed by lexical items. These limitations should be borne in mind when we employ a model of a semantic-functional category that has been constructed by extrapolating from language-specific grammatical systems.

Regarding the methodology employed in this study, the approach to crosslinguistic descriptive categories may be characterized as minimalist. Namely, the assumption is that crosslinguistic descriptive categories provide us with approximate images of semantic-functional categories and their basic conceptual content. This is schematically depicted in the following diagram. The bottom layer represents attested evidential systems in individual languages. The layer in the middle stands for a generalization over the attested systems. This

descriptive generalization is assumed to approximate the conceptual domain of information source, represented at the top.

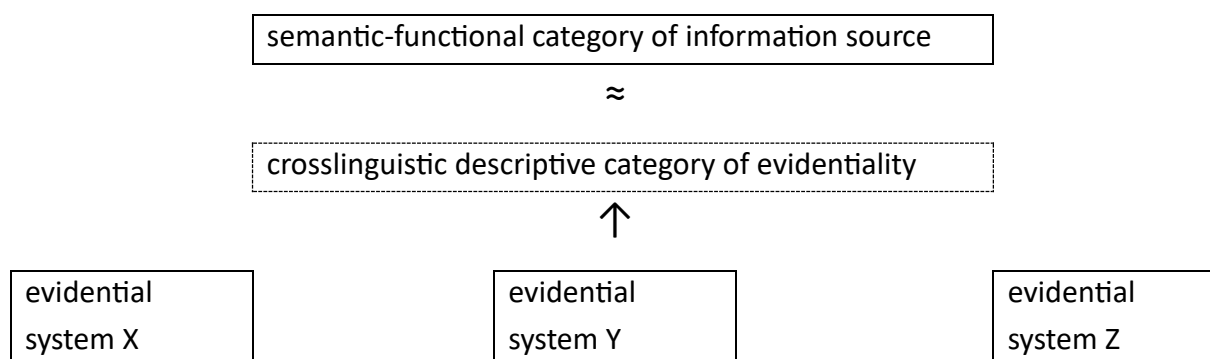


Figure 1 Crosslinguistic descriptive category of evidentiality as a model of the semantic-functional category of information source

An approximate model of the category of information source is analytically useful even if the language being studied lacks grammaticalized evidentiality. The model represents an inventory of evidential meanings, whose possible linguistic representations may be identified and further analyzed. Such an analysis involves, among other things, determining whether the evidential meaning associated with an expression is a semantic entailment or a pragmatic implicature, identifying any domain-specific semantic polyfunctionality, and establishing whether the expression conveys other functional, e.g. modal or pragmatic, meanings. Moving back and forth between the model and specific expressions allows for a theoretically grounded investigation that accommodates both crosslinguistic comparison and language-specific observation. It is worth noting that this approach is not top-down, i.e. the structure of the conceptual domain as described by the model is not presumed to be closely reflected in the linguistic system of the language being investigated. Rather, the model simply indicates which concepts related to information source are crosslinguistically prone to undergo grammaticalization. Thus, the recurrence of certain meanings highlights their communicative usefulness and, consequently, suggests that it is worthwhile to investigate whether and how these meanings are expressed in languages that lack grammatical evidentials.

The remainder of the introductory chapter is structured as follows. The next section presents a description of the crosslinguistic category of evidentiality, which serves as a model of the semantic-functional category of information source in this study. Given that the primary focus of this thesis is on expressions of inference in classical Greek, construals involving this evidential value will be explored in greater detail. Section 1.3 examines the distinctions between grammaticalized evidentials, evidential strategies, and lexical expressions of information source. The semantic and formal properties of evidential strategies serve as the criteria for selecting the Greek expressions analyzed in this thesis. Section 1.4 introduces these expressions and the research questions, while also explaining the rationale for focusing on the evidential subdomain of inference within the context of Ancient Greek linguistics. The analytic framework adopted for this study is Functional Discourse Grammar. Its main features,

including the layered structure of the clause, are presented in Section 1.5. Clause layers accommodate meanings that can be modified by grammatical operators or lexical modifiers, some of which signal information source. The placement of evidential expressions within the layered structure of the clause, i.e. their grammatical scope, is discussed in Section 1.6. The subsequent section addresses the contentive, pragmatic, and formal changes associated with the grammaticalization of evidential expressions and how these changes relate to the development of evidential strategies in a language that lacks dedicated evidential markers. The research corpus is described in Section 1.8.

1.2. The crosslinguistic category of evidentiality

Aikhenvald (2004) identifies six recurrent evidential values in her survey of languages with grammatical evidentiality. The definitions of the terms may be quoted from Aikhenvald (2004: 63–64):

1. VISUAL covers information, or evidence, acquired through seeing.
2. SENSORY covers information obtained through hearing, and is typically extended to smell and taste, and sometimes also touch.
3. INFERENCE based on visible or tangible evidence or result.
4. ASSUMPTION based on evidence other than visible results: this may include logical reasoning, assumption or simply general knowledge.
5. REPORTED (also called HEARSAY), for reported information with no reference to who it was reported by.
6. QUOTATIVE, for reported information with an overt reference to the quoted source.

The most complex evidential systems encode five or slightly more choices, provided that meanings related to speaker-participation or the degree of intersubjective access to evidence are also grammaticalized (Aikhenvald 2004: 60–63). An oft-quoted set of examples from Tariana may be adduced to illustrate the semantic distinctions captured by a system with five choices:

(1) Tariana (Arawakan)

- | | | | |
|----|---|----------|-------------------------|
| a. | Juse | irida | di-manika- ka |
| | José | football | 3SGNF-play-REC.P.VIS |
| | 'José has played football.' (we saw it) | | |
| b. | Juse | irida | di-manika- mahka |
| | José | football | 3SGNF-play-REC.P.NONVIS |
| | 'José has played football.' (we heard it) | | |
| c. | Juse | irida | di-manika- nihka |
| | José | football | 3SGNF-play-REC.P.INFR |

‘José has played football.’ (we infer it from visual evidence)’

- d. Juse irida di-manika-**sika**
 José football 3SGNF-play-REC.P.ASSUM

‘José has played football.’ (we assume this on the basis of what we already know)

- e. Juse irida di-manika-**pidaka**
 José football 3SGNF-play-REC.P.REP

‘José has played football.’ (we were told)

(Aikhenvald 2004: 2–3)

The following discussion focuses on the values of inference and assumption. In languages with fewer evidential choices, two or more values may be expressed by a single marker. A recurrent pattern in the systems that involve up to four choices is that inference and assumption are expressed by a single marker. Aikhenvald (2004) uses the term *inferred* for this grouping. In order to avoid confusion between the term *inferred* used in this broader sense and the term *inference* as it is defined above under point 3, this study employs the term *circumstantial inference* for those inferences that are based on sensory input (i.e. point 3) (see also Anderson 1986: 275; Squartini 2008). Henceforth, the term *inference* and the corresponding adjective *inferential* will be used to refer to the mental process that leads from a piece of evidence to a conclusion regardless of the way the evidence has been obtained. *Assumption* will be used in the sense defined above.

A neuralization of circumstantial inference and assumption is apparent in Nganasan, in which a single suffix covers both values:

(2) Nganasan (Samoyedic)

- a. Təɾədiʔ maʔadʔəmənu tuntirə d'oðür-**hʔatu** ...
 this abandoned.settlement fox go.round-INFR
 t'imimti ləhəra-**hʔaðu**
 tooth break-INFR

‘A fox must have been going round by these abandoned settlements ... it must have broken a tooth.’ (upon seeing a broken-off piece of tooth lying on the ground)

- b. T'eliʔimid'iʔəʔ baarbəðuŋ huntəðuŋ i-**hʔaðu**
 they.braked master authority be-INFR
 ‘They braked (following the master’s order); (one infers that) their master was an authority for them.’

(Aikhenvald 2004: 48 after Gusev 2007)

By contrast, different marking of circumstantial inference and assumption is illustrated by (1)c–d and the following examples from Tsafiki. Assumption is marked by a nominalizing suffix followed by a verbal classifier.

(3) Tsafiki (Barbacoan)

- a. Manuel ano fi-**nu**-e
 Manuel food eat-INFR-DECL
 ‘Manuel ate.’ (the speaker sees the dirty dishes)
- b. Manuel ano fi-**n-ki**-e
 Manuel food eat-NOMN-VCLASS:do-DECL
 ‘Manuel ate.’ (he always eats at eight o’clock and it’s now nine o’clock)
- (Aikhenvald 2004: 54 after Dickinson 1999: 38)

Inferences can also be grouped with meanings outside this narrowly delineated subdomain. Circumstantial inference can be expressed by the same marker as non-visual sensory source. This is the case in Qianq (LaPolla 2003: 66; Aikhenvald 2004: 164) and Kashaya (Oswalt 1986: 38–39; De Haan 2001). By contrast, circumstantial inference is grouped with hearsay in Abkhaz (Chirikba 2003: 246–247; Aikhenvald 2004: 29–30) and Takelma (Sapir 1922; De Haan 2001). A similar neutralization is apparent in the Hill dialect of Patwin, in which a single marker covers circumstantial inference, assumption and hearsay (Whistler 1986: 70; De Haan 2001). In evidential systems with two options that contrast visual sources with everything else, inference is grouped with non-visual sensory source and hearsay. Aikhenvald (2004: 30–31) refers to this grouping as *non-firsthand* and cites languages such as Turkish, Xakas, Megrelian (or Mingrelian), Svan, Mansi, Khanty, and Nenets as examples of this arrangement (see also Boye 2012: 138–140).

Less often, visual evidentials may be used to mark information that has been inferred based on directly perceptible evidence. Tuyuca possesses dedicated markers for visual source and circumstantial inference (Barnes 1984). Despite this, the speaker may use a visual evidential if they first noticed an event through another sense, such as hearing a sound, and later saw evidence that confirmed the initial conclusion. The following passage from Barnes (1984) may be quoted to illustrate this usage:

On one occasion a man returned from his field and, using a visual evidential, told me that a jaguar had killed his dog. In astonishment, I asked him if he had seen the event. He said that he had not, and went on to explain that he had *heard* his dog bark, then yelp, and then there was silence. Suspecting that the dog had been killed by a jaguar, he went to investigate. He found a place where a jaguar had apparently killed the dog and he *saw* marks on the ground where the jaguar had dragged him off. (Barnes 1984: 263)

In addition, Tuyuca possesses a construction consisting of the visual evidential, an auxiliary verb, and a morpheme marking resultative aspect. This construction may be used when the speaker observed the end result of a preceding state-of-affairs that they did not directly witness (Barnes 1984: 259). Aikhenvald (2004: 305–306) describes a similar usage of the visual evidential in Tariana. When the speaker sees clear evidence of a preceding event, they may use the visual evidential, even if they did not see the event itself. A close conceptual link between direct perception and inference is also apparent in the evidential system in Sherpa. When used in a sentence referring to the present, the marker *-nok* expresses direct sensory perception. In sentences with the past tense, the same marker signals perception of a result associated with the described state or event (Woodbury 1986: 195). Furthermore, *-nok* combined with the past tense may also signal hearsay. As a final example of the overlap between sensory perception and inference, we can mention the firsthand evidential in Bagvalal. The marker typically indicates visual and non-visual sensory sources, but it may be extended to cover visible results of events that cannot be directly observed (Maisak & Tatevosov 2001: 310; Aikhenvald 2004: 155).

Regarding the semantic-functional category of information source, the crosslinguistic data discussed above suggest that inference as a concept can be distinguished from both sensory perception and hearsay. A more fine-grained conceptual distinction that appears with some regularity is the contrast between inferences based on direct perception (circumstantial inference) and inferences based on general knowledge and/or logical reasoning (assumption). These two meanings will serve as points of reference in the analysis of the Greek data. We have also observed that inference may be conceptualized as part of a more general construal that involves non-visual sensory sources and hearsay. The broader grouping is likely motivated by the contrast between visual perception and other ways of acquiring information. In this case, inference is conceptualized negatively as a way of acquiring knowledge that does not involve firsthand observation of the described eventuality. Conversely, circumstantial inference is sometimes grouped together with non-visual sensory source or even visual source, which suggests that a single construal may encompass both direct perception of evidence and the inference that builds upon it. Recognizing the importance of these two broader conceptualizations, the investigation of the selected Greek expressions will also examine potential overlaps between inference and sensory perception on the one hand, and inference and hearsay on the other.

The model described above treats information source as a notional domain that primarily concerns the mode of access to information from the perspective of a solitary consciousness. However, evidentials can specify the evidence available to the addressee. For instance, in Meithei, the speaker may assume the perspective of the addressee and use a non-firsthand evidential with a first-person actor to acknowledge that the addressee is not aware of something (Chelliah 1997: 222; Aikhenvald 2004: 233–234):

(4) Meithei (Sino-Tibetan)

əy	čák	čá-ləm-lə-e
I	rice	eat-NONFIRSTH-PERF-ASSERT

‘I have eaten rice’. (for you to know)

(Aikhenvald 2004: 234)

Examples like this and other mismatches between the speaker’s access to evidence and their choice of the evidential lead Bergqvist & Grzech (2023) to question the validity of the traditional analysis of evidentials, which centers around the notion of information source from the perspective of the speaker. Instead, the authors propose that evidential expressions encode ownership of knowledge situated in the pragmatic context that includes the speaker and the addressee. To my mind, the proposal to completely bracket the notion of information source in connection with the crosslinguistic category of evidentiality is too radical. The data presented in Aikhenvald (2004) demonstrate that the speaker’s access to evidence is indeed the key factor that determines the choice of the evidential most of the time. A possible solution is to postulate a separate crosslinguistic category of knowledge ownership, but this is not attractive because the same marker can encode both information source and the ownership of knowledge, or the morphemes that designate the two notions sometimes form a single paradigm. A middle way between the speaker-centered approach to evidentiality, which foregrounds information source, and the pragmatic approach advocated by Bergqvist & Grzech (2023), which focuses on the possession of knowledge in interaction, is to acknowledge the role of pragmatics in specifying the source of information. More specifically, the choice of evidential can be determined by both the source of information and the communicative interface between the speaker and the addressee, including the extent to which they share access to the evidence and the information it justifies.

Regarding the interpersonal meanings that may be expressed by evidentials, an important distinction concerns (inter)subjectivity and knowledge (a)symmetry between the speaker and the addressee. Evans, Bergqvist & San Roque (2018a; 2018b) develop a framework called *engagement*, which describes the degree of mutual cognitive accessibility between the participants of communication regarding individuals, objects, information, and the evidence on which that information is based (see also Bergqvist & Grzech 2023: 18–20; Nuyts 2001: 33–39). In Wola, evidentials coupled with the recent and distant past tense marking express the following contrasts (Sillitoe 2010: 18; Evans, Bergqvist & San Roque 2018b: 152–153):

- I. both speaker and hearer witness;
- II. either speaker or hearer witnesses;
- III. hearer did not witness but heard of previously;
- IV. speaker did not witness;
- V. neither speaker nor hearer witness.

Regarding the conceptualization of inference, knowledge (a)symmetry may relate to access to the evidence that justifies a conclusion. Thus, it is conceivable that some expressions signal inferences that are subjective in the sense that the speaker (or the addressee) is the only one who has access to the evidence, while other expressions are used when the evidence belongs within the common ground. It is worth noting that inferences based on information available in the common ground, defined as the knowledge shared between interlocutors (see Thijs 2021: 81–86 with references), may include both circumstantial inference and assumption. Following Clark & Marshall (1981), Clark (1996), and Verhagen (2015), Thijs (2021: 82–86) distinguishes three types of sources for the common ground: immediate, personal, and communal. The immediate common ground includes the preceding discourse and the extra-linguistic context in which communication takes place. The participants are aware of the physical context through sensory perception. By contrast, the personal and communal components of the common ground represent shared knowledge and beliefs that do not require direct observation. For example, encyclopedic knowledge often consists of facts that are generally assumed to be true. Thus, the analysis of the Greek data will aim to determine whether (a)symmetry in access to evidence influences the use of evidential expressions in this language, and whether shared access cancels the distinction between circumstantial inference and assumption.

A notion related to evidential (a)symmetry is epistemic authority (Bergqvist & Grzech 2023: 20–23). Epistemic authority involves rights to knowledge and responsibility for knowledge. The speaker may claim epistemic authority when the marked proposition concerns some of the following (Bergqvist & Grzech 2023: 21 after Kamio 1997: 39):

- I. internal or direct experience, including the speaker's own actions;
- II. events that concern the speaker, including personal information;
- III. persons, beings, and objects close to the speaker;
- IV. reliable information and facts;
- V. the speaker's professional expertise.

Even though the types of knowledge specified above often involve firsthand perception, epistemic authority need not be based on a single type of information source. Furthermore, the speaker must take into account the addressee's perspective and expectations when asserting epistemic authority over a piece of information. Making a unilateral claim to knowledge may signal to the addressee that they are either unable to access the same information as the speaker or that their knowledge is based on different grounds. Therefore, the investigation of the Greek evidential expressions will seek to determine whether their meaning includes a component of epistemic authority.

For the purposes of this study, it is essential to clarify how the relationship between information source and epistemic modality is understood here. I follow the view that the two domains are independent (De Haan 1999b; Aikhenvald 2004; Cornillie 2009). This follows from

the fact that grammaticalized evidentials need not entail nor imply to what degree the speaker is committed to the modified proposition. At the same time, individual evidentials in some languages may convey an epistemic nuance. For instance, visual evidentials in larger systems sometimes involve certainty (Wiemer 2018: 93). As for inferences, inferred evidentials in three-term systems may imply doubt (Aikhenvald 2004: 165). The same nuance may be conveyed by the assumed evidential in Shipibo-Konibo, which has four evidential choices (Aikhenvald 2004: 176). In smaller systems with two choices, non-firsthand evidentials often signal conceptual distance, which is sometimes manifested as epistemic uncertainty or lack of commitment (Aikhenvald 2004: 157–158; Wiemer 2018: 94).

Evidential extensions of epistemic modal auxiliaries are well-attested in European languages and beyond (see Section 3.1 with references and also Wiemer 2018: 95–96). More specifically, Boye (2012: 149–158) identifies a crosslinguistic tendency in which epistemic necessity, which he subsumes under (strong) partial support for a proposition, extends into indirect evidential meanings, including inference.¹ Extension from epistemic necessity to inference is conceivable if the modal auxiliary profiles necessity based on reasoning, as opposed to subjective commitment. These observations are important for an accurate analysis of modal auxiliaries in Ancient Greek, some of which had grammaticalized into markers of epistemic necessity by the classical period (Allan 2013). The interaction between the notions of necessity and inference is explored in detail in Chapter 3, which investigates the evidential uses of the modal expressions ἀνάγκη ‘necessity’ and ἀναγκάϊον ‘necessary’. Furthermore, the analysis in other chapters will aim to identify any epistemic entailments of implicatures associated with the Greek expressions under study.

To summarize, our descriptive model of the semantic-functional domain of information source includes those evidential values that recur in the evidential systems of languages with grammaticalized evidentiality. In addition, it is acknowledged that conceptualizations of information source may involve interpersonal notions like (a)symmetry of access and epistemic authority. The model also accommodates possible conceptual connections between some evidential values and epistemic modal meanings.

Having introduced the onomasiological inventory and the conceptual domain to be explored in classical Greek, we may now examine the types of expressions that convey the evidential concepts outlined above.

1.3. Evidentials, evidential strategies, and lexical expressions of information source

It has already been stated that while all languages can express information source, only some of them have grammaticalized evidentiality. Anderson (1986: 274–275) outlines four criteria

¹ Van der Auwera & Plungian (1998: 85–86) go as far as to claim that inferences and epistemic necessity completely overlap. This claim is falsified by both those markers of inference that do not convey any epistemic meaning (cf. Aikhenvald 2004: 192), and those epistemic modal auxiliaries that exclusively profile subjective commitment (cf. Section 3.2 with references).

that must be met for an expression to be considered a grammatical evidential. With slight changes in terminology, the criteria are as follows (cf. Boye 2018: 269):

- A. Evidentials show the source of information for a proposition [...].
- B. Evidentials are not themselves the main predication of the clause, but are rather a specification added to a proposition about something else.
- C. Evidentials have the indication of information source as their primary meaning, not only as a pragmatic inference.
- D. Morphologically, evidentials are inflections, clitics, or other grammatical elements [...].

In addition, Aikhenvald (2007; 2020: 19) emphasizes obligatoriness as a criterion for grammatical evidentiality, which relates to point D in Anderson's list. Points A and C concern semantics, while B describes the interpersonal notion of discourse salience. The properties described by the criteria are easily illustrated by the evidential morphemes in (1). Removing one or more of criteria B–D results in arrangements that describe expressions of information source that do not qualify as grammatical evidentials.

Aikhenvald (2004: 105) refers to expressions that fulfill A, B, and D as evidential strategies. These expressions are represented by the grammatical categories that develop a secondary meaning, specifying the source of information. A crosslinguistic survey in Aikhenvald (2004: 105–151) identifies, among others, non-indicative moods and modalities, future and past tenses, resultative and perfect, and passive as the categories that may develop evidential overtones. Furthermore, Aikhenvald (2004: 120–123) includes complementation strategies here, even though they do not represent a grammatical category.

Expressions that fulfill criteria A, B, and optionally C are items that do not exhibit formal properties of grammaticality, but their secondary discursive status (cf. point B) means that they cannot be considered prototypically lexical either. This group primarily includes wide-scope adverbs like *allegedly* and *offensichtlich* 'obviously', and parentheticals like *I hear*. The morphological structure of these expressions often contains derivational morphology, which distinguishes them from particles. Considering that these items are conventionally discursively secondary and can only be modified to a limited extent (e.g. *ganz offensichtlich* 'quite obviously'), I will also refer to them as evidential strategies in order to distinguish them from prototypically lexical expressions of information source.

Finally, expressions that fulfill A and optionally C are lexical elements that convey information source. Lexical expressions belong to open word classes, can potentially have primary discursive status, and they may be modified, focused, and questioned. In any given language, this group is bound to contain more elements than any of the groups mentioned above. Expressions that belong here include verbs of sensory perception, inferential reasoning, and saying. The meaning of these verbs may capture fine-grained conceptual distinctions that evidentials cannot. Furthermore, optional arguments and adjuncts allow the speaker to

further specify the source of information that is expressed by the complement or appears elsewhere in the discourse.

Since classical Greek lacks markers that meet all four of Anderson's criteria (A–D) and Aikhenvald's criterion of obligatoriness, this thesis will focus on expressions that may be considered evidential strategies, as defined above. Given the possible combinations of the four criteria, we can examine individual arrangements in greater detail. Most importantly, the expressions to be studied either fulfill criterion A or can reasonably be hypothesized to do so. Another key feature of evidential strategies is that they are not prototypically lexical, a property ensured by the fulfillment of criterion B or D. Regarding criterion D, it is fulfilled by particles, complementation strategies, and modal auxiliaries. Complement types are relevant insofar as they appear with verbs of perception and knowledge, and it may be hypothesized that they contribute a meaning that belongs within the semantic-functional domain of information source. In these cases, the functional meaning of the complementation strategy combines with the lexical meaning of the matrix predicate. As for the modal auxiliaries in classical Greek, they do not form a morphosyntactically distinct class as in languages like English or German. However, they lack contentive meaning and their contribution is abstract and functional. Since Greek modal auxiliaries developed from pre-modal contentive lexemes through grammaticalization, it is reasonable to consider them peripheral grammatical elements. Regarding criterion B, it is fulfilled by particles and complementation strategies. In addition, discursively secondary status applies to wide-scope adverbials like *ὁῖον* 'obviously'.

Evidential meaning conveyed through semantic entailment, described by criterion C, is not an essential characteristic of evidential strategies. Clarifying whether the studied expressions express information source by entailment or conversational implicature is one of the aims of this study. Pragmatic extensions that primarily interest us are not those that emerge in overly particular discursive contexts but those that are regularly associated with an expression. These conventionalized extensions are referred to as 'generalized conversational implicatures' or 'generalized invited inferences' (Traugott & Dasher 2001: 16; Wiemer 2018: 102–103). In contrast with semantic entailments, conversational implicatures can be canceled.

After clarifying what evidential strategies are and how they differ from evidentials and lexical expressions of information source, we can now introduce the Greek expressions that will be analyzed in this thesis.

1.4. Expressions studied in this thesis and the research questions

This study focuses on selected expressions of inference in classical Greek. The evidential subdomain of inference was chosen for two primary reasons. First, since classical Greek lacks a coherent evidential system, the initial approach to the material must be guided by onomasiological criteria. The fact that inferences can be conceptualized in different ways depending on the mode of access to the evidence ensures that the onomasiological basis for

investigation is relatively broad, while remaining clearly distinct from other evidential values. The conceptual breadth of the subdomain of inference increases the likelihood of identifying multiple expressions that convey the relevant functional meaning while also meeting the criteria to be considered evidential strategies. Second, other evidential meanings such as visual, other sensory, and hearsay have already received attention in the literature. For example, Luraghi (2020) examines verbs of perception and bodily sensations in Homer, De Decker (2016; 2018) explores the possibility that the augment in epic Greek indicates visual source, and Bary (2017; 2018) analyzes the strategies for marking reports. Even though some markers of inference in Ancient Greek have been described in the literature,² a more in-depth treatment of the conceptual domain using a unified methodological approach is lacking. The most theoretically up-to-date study about evidential expressions in Ancient Greek is Van Rooy (2016). This thesis applies a similar but more refined methodology to the Greek material.

The following linguistic units have been selected for analysis:

- complementation strategies with verbs of seeing and knowledge (accusative with participle, finite clauses with ὅτι, and finite clauses with ὥς);
- the modal auxiliaries ἀνάγκη ‘necessity’ and ἀναγκαῖον ‘necessary’;
- the particle ἄρα;
- the adverbial expression δῆλον ὅτι ‘obviously’.

This selection aims to encompass a morphosyntactically diverse range of phenomena. For this reason, other verbs (e.g. δοκέω ‘seem’,³ ἔοικα ‘seem’, and φαίνομαι ‘appear’⁴), particles (e.g. οὐν⁵ and οὐκοῦν⁶), and modal auxiliaries have been excluded, even though their evidential use would also warrant an investigation.

The expressions have been selected based on the assessments available in the literature and crosslinguistic findings. More specifically, verbs of perception are a common diachronic source of evidentials (Aikhenvald 2004: 273–274) and, as we have seen in Section 1.2, visual perception may be associated with circumstantial inference. Furthermore, verbs of perception in classical Greek admit the same complementation strategies as verbs of knowledge, which raises the question as to the semantic differences between the complement types. The modal auxiliaries ἀνάγκη and ἀναγκαῖον were chosen because markers of objective epistemic modality signal inference in some modern European languages (see Section 3.1 with

² See, for example, Basset (1979), Ruijgh (1985), and Bakker (1997: 17–23) on the epic usage of μέλλω ‘it is probable’; Ruijgh (1986) on εἰκός ‘it is probable’ (< ‘it is appropriate’) and ἔοικα ‘seem’ (< ‘resemble’); Bakker (2002) on the inferential use of the future tense; Lillo (2017; 2020) on the optative oblique; Gijbels & Van Rooy (2023) on the particle δήπου; Thijs (2021: 255–258) on the inferential use of the particle δή; Van Rooy (2016: 12–17) on ἄρα, δήπου, δῆτα, οὐκοῦν, and που. Further references relevant to the expressions studied in this thesis are mentioned in the individual chapters.

³ See Jiménez (1990), González (1991), Pardal Padín (2021), and Verano & Pardal Padín (2023).

⁴ See Verano & Pardal Padín (2023).

⁵ See Van Ophuijsen (1993: 89–100), Wakker (2009), and Bakker (2009).

⁶ See Van Emde Boas et al. (2019: 680–681).

references). The inferential use of the particle ἄρα in certain contexts has long been recognized (see Section 4.1 with references). Lastly, the adverbial δὴλον ὅτι is etymologically similar to evidential adverbs that signal inference and hearsay in other languages (see Section 5.2 with references).

The overarching aim of this study is to provide a comprehensive assessment of the meanings conveyed by the selected expressions. The semantic analyses presented in the following chapters have three main objectives. First, provided that the studied expressions are confirmed to express inference, the goal is to establish whether the evidential meaning is part of the semantic entailment or a cancelable conversational implicature. The second objective is a detailed semantic description of the inferential meaning conveyed by each expression. This includes describing the type of inference and the evidence it is based on, determining whether the evidence is intersubjectively available, and identifying any epistemic and interpersonal entailments or implicatures associated with the evidential meaning. Finally, the third objective is to explore how the evidential component relates to the original meaning of the source expression, provided that it is available in the diachronic data, and to understand its relationship with other functional meanings associated with the same expression or construction. A related goal is to investigate the grammaticalization processes that led to the emergence of the linguistic units that can be considered evidential strategies.

Testing whether the meanings conveyed by the studied expressions correspond to the crosslinguistically attested conceptual distinctions in the domain of information source may prove useful in addressing some unresolved issues in Ancient Greek linguistics. For instance, it is unclear what all the factors are that influence the choice of the complementation strategy with predicates of knowledge. Chapter 2 proposes that the observed distribution becomes clearer if we accept that the individual complement types convey evidential nuances. In the case of the particle ἄρα, it is desirable to determine how its inferential meaning in some declarative sentences relates to its function in conditional protases and clausal complements. Chapter 4 addresses this issue by identifying a common semantic feature that underlies the use of the particle across various discursive and syntactic contexts.

The following section introduces the analytical framework applied in this thesis. Sections 1.6 and 1.7 will then discuss two important concepts in relation to expressions of information source: grammatical scope and grammaticalization.

1.5. The hierarchical structure of the clause

The analytical framework adopted in this study is Functional Discourse Grammar (FDG) (Hengeveld & Mackenzie 2008). One of the main goals of FDG is to account for morphosyntactical phenomena in languages based on their semantic and pragmatic functions in communication. The model assumes that morphosyntactical phenomena are functionally motivated. This means that formal linguistic categories in some way reflect underlying patterns of human cognition and interpersonal interaction. In contrast to more formal approaches, FDG

does not purport to study a hypothetical underlying system of ideal linguistic structures governed by rules, which is only indirectly reflected in the verbal output of speakers. Instead, the assumption is that linguistic phenomena become conventionalized and systemic because they effectively meet the communicational needs of speakers, while the emerging linguistic system also aligns with the cognitive constraints common to all humans.

To clearly delineate the phenomena within the purview of FDG, Hengeveld & Mackenzie (2008: 6–12) describe an overall model of verbal interaction that consists of four components: the conceptual component, the grammatical component, the contextual component, and the output component. The conceptual component hosts the communicative intent of the speaker (e.g. describing the world, warning the addressee) and the conceptualizations of the extra-linguistic entities and processes that are relevant to the communicative intent. The grammatical component is responsible for selecting the valid pragmatic and semantic representations that match the content of the conceptual component and for turning them into the corresponding morphosyntactic and phonological representations. FDG assumes that the valid pragmatic and semantic representations and their formal correlates are language-specific. The task of the output component is to produce acoustic or graphic expressions. Finally, the contextual component contains information about the preceding discourse, the communicative setting and the social relationship between the speaker and the addressee. The content of this component influences the processes that take place in the grammatical component. Out of these four components of verbal interaction, the proper domain of study for FDG is the grammatical component.

The grammatical component is conceptualized as a top-down hierarchical structure that contains four levels hosting linguistic representations (Hengeveld & Mackenzie 2008: 12–18). The levels that are higher have scope over those that are localized below them. In addition to that, each level is hierarchically organized into layers. The relations of scope are sometimes iconically manifested by the order or the morphemes that correspond to the pragmatic and semantic values associated with different levels or layers. For instance, in a chain of morphemes, the morpheme that codes illocution, which is hosted at the interpersonal level, will have scope over the morpheme that codes speaker commitment, which pertains to the representational level.

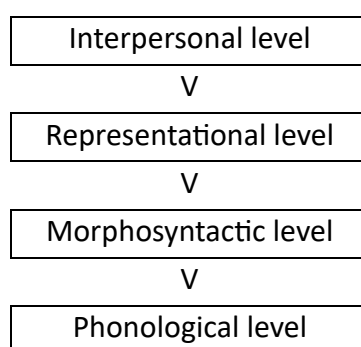


Figure 2 Hierarchical structure of the grammatical component in FDG

Each level is connected to those below it by means of various operations. For instance, both the interpersonal and representational levels are connected to the morphosyntactic level and the phonological level by the operations of morphosyntactic encoding and phonological encoding, respectively.

For the purposes of this study, the interpersonal and representational levels are of greater interest than the two other levels. The interpersonal level hosts the meanings that pertain to the communicative interface between the speaker and the addressee (Hengeveld & Mackenzie 2008: 46–127). To the extent that they are formally represented in the output, the relevant distinctions pertain to the rhetorical and hierarchical structure of the discourse, the illocutionary type of the speech act, and the pragmatic properties that concern the communicated content. The hierarchical structure of the interpersonal level is as follows:

(5) Discourse move > Discourse act > Illocution > Communicated content > Referential subact > Ascriptive subact

Each term represents a pragmatic layer, and it has scope over ('>') the layers located to the right. Pragmatic properties that pertain to each layer may be linguistically expressed by means of grammatical operators or lexical modifiers. For instance, a discourse act may be modified by a sentence adverb like *briefly*. In addition to operators and modifiers, there are also functions, which do not serve to modify a particular linguistic unit but to signal its relation to a different unit.

Discourse moves are autonomous contributions that allow the addressee to react, or they themselves represent such reactions. Discourse acts are defined as “the smallest identifiable units of communicative behaviour” (Kroon 1995: 65). Unlike moves, discourse acts do not prompt the addressee to respond, at least implicitly, with a move of their own. Illocutions are formal means that indicate the speaker’s communicative intent. For instance, the Greek interrogative particle *ἄρα* may be analyzed as an item that pertains to the layer of illocution. Its sentence-initial position indicates that it has a wider scope than the particles that belong within the representational level. The communicated content represents the total sum of the concepts evoked in a message. It may be further analyzed as consisting of two types of communicative subacts. Referential subacts represent the speaker’s attempt to evoke an entity, while ascriptive subacts serve to evoke and ascribe a property to an entity. An example of a pragmatic operation that applies to subacts is the assignment of the information-structural roles like focus and topic. In FDG, reference and ascription are regarded as pragmatic actions whose goal is to enrich and shape the pragmatic information available to the speaker and the addressee. Pragmatic information is in turn defined as ‘all the information (long-term, situational and immediate) that communicators bring to bear upon their interaction’ (Hengeveld & Mackenzie 2008: 107). To illustrate the concept of referential subact, we may consider the expression within the scope of *δῆλον ὅτι* in the following example:

- (6) νῦν δὲ γνησίους υἱοὺς γέγραφεν τῷ Ἀρχιάδῃ ἐκείνῳ εἶναι, τὸν τε αὐτοῦ πατέρα **δῆλον ὅτι** καὶ τὸν κατὰ τὴν ἐξ ἀρχῆς ποίησιν, οὐκ ἐπιλογισάμενος ὅτι ἐπανεληλυθότες ἦσαν.
 ‘But as it is, he has written that the aforesaid Archiades had lawfully born sons, meaning, **of course**, his own father and the one made such by the original adoption, not taking cognizance of the fact that they had returned to their original family.’ ([Dem.] 44.54)

The speaker first evokes the concept referred to by the referential subact γνησίους υἱοὺς ‘lawfully born sons’. Since the identity of the individuals might not be immediately clear to the addressee, he adds a pair of referential subacts, modified by δῆλον ὅτι ‘clearly, of course’, that unambiguously connect the concept evoked by γνησίους υἱοὺς with the referents of τὸν αὐτοῦ πατέρα ‘his own father’ and τὸν κατὰ τὴν ἐξ ἀρχῆς ποίησιν ‘the one made such by the original adoption’.

Whereas the interpersonal level describes actions within the domain of pragmatics, the representational level covers the semantic aspects that pertain to designation of extra-linguistic phenomena (Hengeveld & Mackenzie 2008: 128–281). The structure of the representational level involves the following hierarchical layers:

- (7) Proposition > Episode > State-of-affairs > Configurational property > Lexical property | Individual

Starting from the layer with the narrowest scope, individuals designate objects or living entities that can be located in space. Lexical properties constitute lexical elements that can be evaluated insofar as they are applicable to other entities, i.e. individuals. These two terms fill slots made available by the configurational property. Configurational properties represent predication frames that are usually headed by a lexical verb. Predication frames may be characterized by their quantitative valency and the semantic functions fulfilled by the admissible arguments; the operators that belong to this layer specify grammatical aspect and participant-oriented modality. States-of-affairs designate events and states that can be located in time. They may be evaluated in terms of their occurrence or non-occurrence at a particular time and place. States-of-affairs may be temporally characterized by their relation to other states-of-affairs and are therefore marked by relative tense. By contrast, episodes are situated in time with respect to the time of utterance, which means that their tense marking is not relative but absolute. The episode may be defined as a combination of states-of-affairs that exhibits a unity of time, space, and participants. Note that the episode may minimally consist of a single state-of-affairs. For the sake of simplicity, the term *state-of-affairs* will be used in this study to designate both states-of-affairs and episodes unless it is necessary to keep the two notions distinct. The top-most layer in the representational level contains propositional content. Propositions designate cognitive representations in someone’s, usually the speaker’s, mind. They are not located in time nor space, and they cannot be said to unfold or occur.

Propositions may be evaluated in terms of their truth value and the degree to which the speaker is committed to it. An example of a modifier that applies to propositional content is the English epistemic adverb *certainly*.

Setting the morphosyntactic and phonological levels aside, the hierarchical relation between the interpersonal and the representational level may be depicted as follows. Note that the whole representational level is within the scope of the interpersonal level:

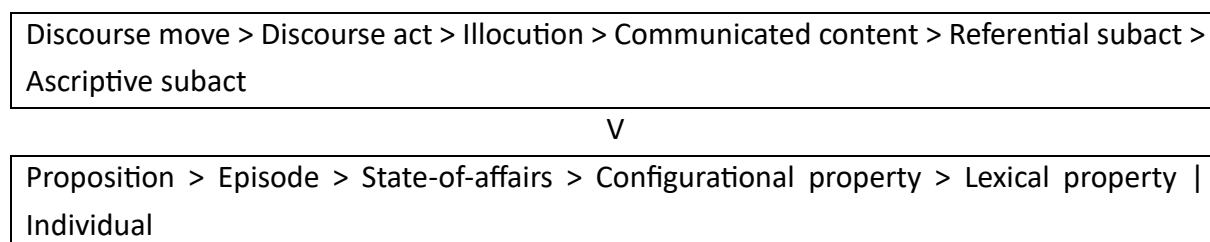


Figure 3 Structure of the interpersonal and representational levels

The distinction between states-of-affairs and propositions is important for an adequate analysis of evidential expressions. Given that there is no scholarly consensus regarding the scope of evidential operators and modifiers, the following section discusses these matters in greater detail.

1.6. Evidential expressions and grammatical scope

Regarding the linguistic units that belong to the representational level, the approach of FDG is denotational. The expressions hosted at individual layers denote entities with different ontological properties. We may consider the following set of examples in order to illustrate some of the properties of propositions and states-of-affairs.

- (8) a. I think [that he is **probably**/??**quickly** a good guy].
 b. I saw [him run **quickly**/??**probably**].

The complex sentences above contain subordinate clauses that formally differ from each other. The complement in (8)a is introduced by a complementizer and contains a finite verb, while (8)b exhibits an accusative with a bare infinitive. The formal differences are motivated by the semantic distinctions that bear on the ontological category denoted by each of the two complements. In (8)a, the governing predicate *think* imposes a constraint according to which the complement must denote a proposition. This follows from the fact that the process denoted by *think* targets cognitive representations. Since cognitive representations cannot be evaluated in terms of their speed, the adverb *quickly* cannot have scope over the complement. As has been stated above, propositions have a truth value, which is compatible with the use of the adverb *probably*. The arrangement in (8)b is the opposite of (8)a. We may physically see states-of-affairs, which happen in the world, but we cannot perceive propositions with our senses. This fact renders the use of *probably* in (8)b agrammatical. Thus, each ontological

category is conceptualized as having specific features that influence the morphosyntactic and distributional properties of the linguistic expressions used to denote that category. While the types of the processes referred to by *think* and *see* in (8) clearly determine the ontological categories expressed by the complements and, consequently, the linguistic scope of the two predicates, identifying the scope of evidential expressions is less straightforward.

Regarding scope, Hengeveld & Hattner (2015) do not treat the domain of information source uniformly. They assign individual evidential values to different layers within the interpersonal and representational levels:

Discourse move	>	Discourse act	>	Illocution	>	Communicated content
						<i>hearsay</i>
V						
Proposition	>	Episode	>	State-of-affairs		
<i>assumption</i>		<i>circumstantial</i>		<i>visual source</i>		
		<i>inference</i>				

Figure 4 Scope of evidentials according to Hengeveld & Hattner (2015)

The proposed distribution is motivated by the ontological properties of the entities that serve as input for each of the evidential values. Visual source entails that the speaker physically perceives a state-of-affairs. Circumstantial inference involves perceiving a state-of-affairs and deducing that a different state-of-affairs must have occurred. As we have seen above, the combination of distinct but thematically connected states-of-affairs corresponds to an episode. Accordingly, circumstantial inference is said to apply to the layer of episode. Assumptions are inferences that proceed from known facts. Since facts are propositions, Hengeveld & Hattner (2015) locate this evidential value at the propositional layer. Finally, reports are lifted from the verbal output of someone else which suggests that hearsay could apply to the communicated content.

There are several reasons why a different solution is preferable. While it is true that the evidential values mentioned above build upon inputs that belong to different ontological categories, their scope concerns something else than the input. Namely, evidential expressions do not have scope over the source itself, but rather over the thing to which the source points. Confusion in linguistic description arises if the scope of evidentials gets conflated with their denotation. Evidentials denote both the type of information source and the cognitive process that manipulates the input acquired from the source. This cognitive process produces an output whose linguistic representation stands within the scope of the evidential expression (see Table 1). For instance, knowing *p* and using this knowledge to infer *q* means that in the utterance '*q*-INFR', the morpheme glossed as INFR denotes the mental process of inference, which in this case builds upon proposition *p*, but the linguistic scope of the morpheme applies to *q*. The output of inference is a piece of information, which corresponds to propositional content.

The relation between the type of information source and linguistic scope is perhaps the most confusing in the case of visual source. The fact that visual evidentials entail direct perception of events and states might suggest that they have scope over the expressions that denote states-of-affairs. However, visual evidentials are used when the speaker intends to signal that a potential fact is supported by visual evidence, as opposed to simply saying that something has been in the senses (Boye 2010a; 2010b). Confusion regarding the scope of visual evidentials may arise because the conceptual content of the clause marked for visual source aligns with the conceptual content of a directly perceived state-of-affairs. It is important to note that the same conceptual content may be evoked by states-of-affairs, understood here as linguistic expressions, and propositions. The difference between them is that states-of-affairs are conceptualized as entities unfolding in space and time, whereas propositions are construed as mental representations. Consider the following examples. The subjects of the predicative constructions in (9) evoke the same conceptual content: (9)a denotes a state-of-affairs, which has a temporal structure, while (9)b involves a proposition, which has a truth value:

- (9) a. [The collapse of the Germans] was gradual.
 b. [That the Germans collapsed] ??was gradual / is true.
 (after Vendler 1967: 132)

In the case of visual evidentials, the source is conceptualized as a perceived state-of-affairs that is mirrored by a proposition within the scope of the evidential. This proposition repackages the conceptual content supplied by perception so that it represents a (potential) belief. The cognitive process that facilitates this repackaging is the realization that something is the case. Regarding other evidential values, cognitive processes like inference, activation of known facts or memories, and retrieval of information from someone else's words are at play.

Evidential value	Denotes		Scopes over
	Source type	Cognitive process	
visual source	perceived state-of-affairs Q	realization	proposition q
circumstantial inference	perceived state-of-affairs $[P]$ within episode $[E]$	realization and inference	proposition q
assumption	known proposition $[p]$	activation and inference	proposition q
hearsay	registered speech act $[\Sigma]$	activation and information retrieval	proposition q

Table 1 Denotation and scope of evidentials

Another indication that evidentials do not have scope over the source is the fact that utterances marked for circumstantial inference, assumption, and hearsay do not specify ([...]’ in Table 1) what is the conceptual content of the source. Consider the following example of assumption:

(10) Cherokee (Iroquoian)

guso-ʔi u-wonis-**eʔi**

Muskogee-at s/he-speak-NON-FIRSTHAND.PST

‘She spoke at Muskogee’ (I knew she planned to speak on Sunday. It is now Monday, and I assume that she spoke as planned.)

(Aikhenvald 2004: 27 after Pulte 1985)

The expression within the scope of the evidential morpheme *-eʔi* does not evoke the idea that someone planned to do something at a specific day, i.e. *p*. Instead, the morpheme entails that the speaker possesses some unspecified knowledge that leads them to infer that someone spoke at Muskogee, i.e. *q*.

The arguments introduced above explain what may lead one to posit the arrangements of scope as those listed in Figure 4 and why this is mistaken. Boye (2010a; 2010b; 2024) introduces further arguments in favor of a default propositional scope of evidential expressions. At the conceptual level, the notion of evidence may apply, as Boye argues, to the entities that are about the world, i.e. propositions, but not to the entities that are couched in the world, i.e. states-of-affairs. This is corroborated by the fact that evidential expressions are not compatible with clauses that denote states-of-affairs:

(11) a. ʔʔI heard [him **obviously/allegedly/apparently** yell].

b. ʔʔJohnny, hold the ball, **obviously/allegedly/apparently**!

(Boye 2010a: 295)

The nature of sensory perception, illustrated by (11)a, has been already touched upon above. Boye stresses that a grammatically correct version of (11)a can pragmatically imply an evidential reading, but it does not entail it, since it does not contain a proposition supported by sensory evidence. Instead, such sentences refer to acts of sensory perception itself, which need not be accompanied by the cognitive process that eventually leads to a realization that something is (potentially) the case (cf. Table 1). Regarding imperatives, the evoked conceptual content is not construed as having a specific referent in the real world. Therefore, (11)b denotes a projected state-of-affairs, but it does not have a truth value. The adverbial expressions from (11) are compatible with clauses that encompass or denote propositions, like the assertion in (12)a and the propositional complement in (12)b. The difference between (8)b and (12)b is that the former expresses direct perception, whereas the latter entails knowledge acquisition based on circumstantial inference or direct perception.

- (12) a. Johnny is **obviously** holding the ball.
 b. I saw [that he was **obviously** very ill].
 (after Boye 2010a: 299)

Furthermore, the order of morphemes in some languages iconically reflects the scope of evidentials over the predication core of the clause. For instance, if the coding of evidentiality is not fused with absolute tense marking, the evidential morpheme tends to occur after the morpheme that expresses tense (Boye 2010a: 300):

- (13) Kewa (Nuclear Trans New Guinea)
 Ira-a-**na**.
 cook-3sg.PST-EVID
 'He cooked it (I saw it)'.
 (Boye 2010a: 300)

Regarding the interpersonal level, most evidential values are conceptually not compatible with having scope over speech acts since it is hardly conceivable that, for instance, the act of posing a question or issuing a command could be inferred or supported by visual evidence (Boye 2010a: 296–298). Accordingly, the presence of an evidential marker in a question usually indicates that the speaker or the addressee has evidence for the proposition within the scope of interrogation:

- (14) Yukaghir
 qodo ti:-t kebej-nu-l'**el**-ŋi?
 How here-ABL go-IMPF-NONFIRSTH-3PL:INTR
 'How do people go away from here?' (the speaker did not see them)
 (Aikhenvald 2004: 244 after Maslova 2003: 228)

Similarly, it is not appropriate to speak of information source with respect to assertions, because it is not the illocutionary function that is supported by evidence, but the proposition encompassed within an assertion.

The only evidential values that are compatible with having scope over an illocutionary operator are hearsay and quotative. This is apparent in questions and commands that are executed on behalf of someone else. Note that in (15), the evidential marker can be interpreted as within or outside the scope of interrogation.

- (15) Cuzco Quechua (Quechuan)
 Pi-ta-**s** Inés-qa watuku-sqa?
 who-ACC-REP Inés-TOP visit-PST

- (i) 'Who did Inez reportedly visit?'
 - (ii) 'Who did Inez visit?, it's asked.'
- (Faller 2002: 230)

- (16) Kham (Sino-Tibetan)
- | | |
|------------|------------|
| ba-n-ke | di. |
| go-2SG-IMP | REP |
- 'Go (you're told)!'
- (Hengeveld & Mackenzie 2008: 105)

Regarding commands, a secondhand imperative may be marked differently from hearsay evidentiality in declarative clauses. Aikhenvald (2004: 250) lists Nganasan, Cavineña, Cora, Lak, and Tucano as languages that exhibit this feature. On the other hand, Tariana, Shipibo-Konibo, and Warlpiri use the same evidential for secondhand commands and hearsay information in declarative sentences (Aikhenvald 2004: 250). As for assertions, languages like Comanche and Cora possess a speech-act oriented quotative that marks verbatim quotations, as opposed to hearsay, which predominantly signals reported information (Aikhenvald 2004: 177–178). Quotatives are used when the original source is named, and when the reporting speaker does not shift the deictic markers to fit the current communicative context. Another possibility is that quotative is not distinguished from hearsay, and the same marker is used in both contexts, which is the case in Tariana.

To summarize, evidentials are normally associated with propositional scope. The contexts in which the evidential has scope over the whole speech act are limited to reports. Secondhand questions and commands may involve markers that formally differ from hearsay evidentials used in declarative sentences. In the absence of distinct marking, contextual and formal cues help disambiguate propositional modification from speech-act modification.

There are also contexts in which the explicit scope of an evidential expression involves a sub-clausal constituent (see also Jacques 2018):

- (17) a. There were three other guys on the train – thieves, **evidently**.
 b. There were three other guys on the train – they were **evidently** thieves.
 (after Boye 2010a: 292)

There are at least two ways to analyze the scope of *evidently* in (17)a. Boye (2010a) argues that even though the explicit scope of the adverb involves a single word, the implicit scope is a proposition that corresponds to a full clause as in (17)b. According to Boye, the property of evidentials is that they coerce the expression within their scope to function as a proposition. Another option is to accept that evidential qualification may apply to referential and ascriptive subacts. In (17)a, for instance, *thieves* represents an ascriptive subact that attributes a property to the referent of *three other guys*. Since subacts are localized at the interpersonal

level (see Section 1.5), stipulating that *evidently* has scope over a subact entails that its contribution belongs at least partly to the domain of pragmatics. To my mind, this solution is preferable in the case of contexts like (17)a because the modified expression is anchored with respect to the available pragmatic information. This anchoring follows from the fact that the modified expression does not introduce a new individual but depends on the conceptual content that has already been evoked. The speaker enhances the already available pragmatic information by specifying the identity of an individual or by ascribing a property to it. We will see in a later chapter that the Greek adverbial *δηλον ὅτι* may have a single constituent within its scope only if this constituent refers to an individual that has already been mentioned or implied within the same utterance (cf. (6)). This constraint suggests that the domain of pragmatics is relevant to the distributional properties of some evidential expressions. Accordingly, we do not find the adverbial *δηλον ὅτι* used in a similar way like *obviously* in the following sentence. The evidential adverb in (18) is within the scope of the operator *an*, which applies to the referential subact, and the modified adjective *misleading* is used attributively. This suggests that *obviously* in (18) pertains to the representational level and that the expression within its scope may be analyzed as subsidiary propositional content. By contrast, the adverbial *δηλον ὅτι* always stands outside the scope of the article, and the modified expression constitutes a separate intonation unit that contributes a chunk of supplemental communicated content.

- (18) Last week he overstated our negotiating strength in an **obviously** misleading way by claiming that the EU was under pressure to strike a deal.
(Kemp & Hengeveld 2022: 590)

As for the conceptual compatibility between evidential qualification and subacts, I propose that the (potential) belief that may be supported by evidence concerns the quality of the ascribed property, as in (17)a, or the identity of the individual that has already been introduced within the utterance but the addressee may be unsure as to its extra-linguistic referent, as in (6).

We may close this section by mentioning an alternative proposal that concerns the contrast between states-of-affairs and propositions. While the approach of FDG focuses on the ontological properties of the denoted entities, Boye (2010b; 2023a) argues that the differences between states-of-affairs and propositions, understood as linguistic expressions, follow from contrastive cognitive construals. According to Boye, states-of-affairs are meanings that are conceptualized as non-referential. This means that they do not stipulate that the evoked conceptual content corresponds to an action or state that actually occurred, occurs, or will occur in a possible world. Note that this definition of states-of-affairs is not contradictory to the denotational approach, according to which states-of-affairs unfold in the extra-linguistic world. It is possible for a linguistic unit to describe an eventuality that has a temporal structure

and is localized in space, while not stipulating that it has an extra-linguistic referent. Consider the following example from Greek:

- (19) ἀλλὰ ταῖς γε διανοίαις ἀποβλέψατ' αὐτῶν εἰς τὰς συμφοράς, καὶ νομίσαθ' ὁρᾶν ἀλικομένην τὴν πόλιν, τειχῶν κατασκαφάς, ἐμπρήσεις οἰκιῶν, ἀγομένας γυναῖκας καὶ παῖδας εἰς δουλείαν, πρεσβύτας ἀνθρώπους, πρεσβύτιδας γυναῖκας ὅψε μεταμανθάνοντας τὴν ἐλευθερίαν, κλαίοντας, ἱκετεύοντας ὑμᾶς, ὀργιζομένους οὐ τοῖς τιμωρουμένοις, ἀλλὰ τοῖς τούτων αἰτίοις ...

‘Behold their disaster in your imagination; imagine that you **see** their city taken, the razing of their walls, the burning of their homes; their women and children led into captivity; their old men, their aged matrons, late in life learning to forget what freedom means; weeping, supplicating you, angry not so much at those who are taking vengeance upon them, as at the men who are responsible for it all.’ (Aeschin. 3.157)

As suggested by the imperative νομίσατε ‘imagine’, the participial complements of ὁρᾶν ‘to see’ are not intended to refer to something that is really happening. Instead, the speaker asks the addressee to imagine the scenes of misery that they could not witness in person. Even though it is clear from the preceding context that the described events did in fact happen, the purpose of (19) is not to convey potential facts but to evoke a series of vivid images that appeal to the emotions of the audience.

In this cognitive approach, the distinctive feature of propositions is that they code referential intent. This component of the construal entails the stipulation that the evoked action or state corresponds to an eventuality in a possible world. Accordingly, the truth value of a proposition is determined by the degree of correspondence between its conceptual content and the state of the extra-linguistic world. Note that referential intent is not interchangeable with speaker commitment. The stipulation that the conceptual content has a referent in the world does not have to align with the subjective stance of the speaker. Among other options, propositions may be presented as hypothetical, counterfactual, or as ones about which the speaker does not have an opinion regarding their truth value.

The notion of referential intent is useful when we need to analyze expressions that have acquired an evidential meaning in the course of grammaticalization. In order to determine where to draw the line between a pre-evidential use and an evidential use of an expression, we ought to ascertain whether the argument within the scope of the expression stipulates that the evoked conceptual content has a referent in the world or not. For the purposes of this study, this criterion is relevant to the modal expressions ἀνάγκη ‘necessity’ and ἀναγκαῖον ‘necessary’ that may exhibit an event-oriented meaning on the one hand, and an epistemic meaning with evidential overtones on the other. In the case of the former, the modal expression has scope over a state-of-affairs that is said to be necessarily brought about by a socio-physical force. As for the epistemic meaning, the modal auxiliary profiles the outcome of reasoning that follows from what is known. Only the epistemic use entails the

stipulation that the described eventuality corresponds to the actual state of the world. The event-oriented usage is illustrated by (20); example (21) contains the epistemic use:

(20) **ἀνάγκη** δὲ τοὺς τοιοῦτοις ἔργοις ἐπιχειροῦντας τυραννικαῖς καὶ ταῖς συμφοραῖς περιπίπτειν, καὶ τοιαῦτα πάσχειν οἷά περ ἂν καὶ τοὺς ἄλλους δράσωσιν.

‘But **it is necessary** that those who attempt such things [= a despot's course] encounter the disasters which befall despotic power and be afflicted by the very things which they inflict upon others.’ (Isoc. 8.91)

(21) **ἀνάγκη** γάρ, ὧ ἄνδρες δικασταί, πρῶτον μὲν ὀρεωκόμον καὶ προηγητὴν ἀκολουθεῖν τῷ ζεύγει, ὃ ἦγεν τὴν γυναῖκα, ἔπειτα δὲ παῖδας τοὺς προπέμποντας αὐτὴν ἀκολουθεῖν καὶ Διώξιππον.

‘There **must** have been attenders, gentlemen of the jury, with the carriage that conveyed the bride: first a muleteer and a guide, and then her escort of boys, and also Dioxiippus.’ (Hyp. 1.5)

The distinction between morphologically similar infinitival complements that express states-of-affairs and propositions in Ancient Greek is usually understood as the opposition between dynamic and declarative infinitives. Prototypical members of the two categories are associated with different classes of matrix predicates, e.g. declarative infinitives with verbs of cognition and dynamic infinitives with verbs of volition. A distinctive feature of declarative infinitives is that they express relative tense, while the temporal reference of dynamic infinitives is always posterior. However, examples like (21) suggest that semantic development need not be mirrored by a corresponding formal change. The reference of the infinitives in (21) is anterior, which suggests that they are declarative, but this fact is not indicated by the aorist stem, which is usually used to mark anteriority in declarative contexts. This points to the conclusion that in analysis of nascent evidential expressions, which also applies to **ἀνάγκη** and **ἀναγκαῖον**, the contexts of their occurrence must be carefully evaluated in order to determine whether referential intent is present or not. In the case of (21), for instance, the relative clause refers to the past, which in conjunction with the present reference of the governing **ἀνάγκη** suggests that the complement refers to a potential fact, as opposed to a state-of-affairs, because necessity in the socio-physical domain cannot act against the flow of time.

The diachronic development of expressions like **ἀνάγκη**, which gradually comes to admit propositional complements, and evidential expressions in general ought to be treated in a way that is compatible with the theoretical framework adopted in this study. Therefore, the following section offers a discussion about the grammaticalization of evidentials within a functional grammatical framework.

1.7. Evidential expressions and grammaticalization

Hopper & Traugott (2003: 18) define grammaticalization as “the change whereby lexical items and constructions come in certain linguistic contexts to serve grammatical functions and, once grammaticalized, continue to develop new grammatical functions”. What lies at the core of this definition is the distinction between lexical and functional items. While it is not difficult to come up with examples that belong to one or the other category, providing a language-neutral definition of lexical and functional items is less straightforward. In the following examples from Kambera, the words denoting the concepts ROUND, OBLONG, and ANIMAL function as classifiers, i.e. grammatical words that specify the class to which an entity belongs. The grammatical status of these items contrasts with the lexical status of the words that denote the same concepts in familiar European languages.

(22) Kambera (Austronesian)

a. tailu	mbua	kajawa	
three	CL:ROUND	papayas	‘three papayas’
b. tailu	mbungu	pena	
three	CL:OBLONG	pen	‘three pens’
c. tailu	ngiu	kamambi	
three	CL:ANIMAL	goat	‘three goats’

(Velupillai 2012: 174 after Klamer 1998: 139)

Given that criteria based on conceptual meaning are not sufficient to capture the differences between lexical and functional items, different parameters to delineate grammaticality have been proposed. Lehmann (2002 [1982]) laid out three parameters of grammaticalization (weight, cohesion, variability) along two axes (paradigmatic, syntagmatic). The resulting six combinations describe the degree to which an item is grammatical, as opposed to lexical. Paradigmatic weight concerns the erosion of phonological, morphological, and semantic substance. Paradigmatic cohesion describes integration of elements into a closed paradigm. Loss of paradigmatic variability means that an element becomes obligatory in particular contexts. On the syntagmatic axis, loss of weight concerns decrease of structural scope, e.g. from periphrasis to a univerted form. Syntagmatic cohesion describes the degree to which the element is attached to its host, e.g. an affix is more cohesive than a clitic. Loss of syntagmatic variability means that an element cannot be freely moved within the clause. Several of these narrowly conceptualized changes may be subsumed under the process of decategorialization, which amounts to “loss in morphosyntactic properties characteristic of lexical or other less grammaticalized forms” (Heine & Kuteva 2002: 2).

Except for loss of semantic weight, the remaining properties outlined by Lehmann situate grammaticalization as a phenomenon that predominantly concerns the form of the linguistic sign. However, crosslinguistic evidence indicates that formal changes are not always associated with emergence of grammatical items. For instance, Bisang (2004; 2011)

demonstrates that grammaticalization in Southeast Asian languages predominantly involves appearance of rigid syntactic patterns, while changes in morphology or emergence of obligatory markers remain marginal. For this reason, the idea that changes in meaning and form in grammaticalization proceed in parallel, defended by Bybee, Perkins & Pagliuca (1994: 20), or that loss of syntagmatic independence is a precondition for an item to become grammatical is of limited validity (see Narrog 2005: 697; 2012: 107–109).

Regarding contentive change, Lehmann's proposal includes loss of semantic weight. The choice of the metaphor is understandable when we consider, for instance, the semantic difference between the Greek verb θέλω 'want' and the future marker in Modern Greek θα, which developed from it. While the lexical verb denotes volition and requires that the subject is agentive or at least animate, the tense marker preserves just the component of being future-oriented. Heine & Kuteva (2002: 2) call this loss of contentive meaning desemanticization or semantic bleaching. Desemanticization is accompanied by extension in the sense that the grammaticalized item may be used in contexts that are not compatible with the source expression. For example, θα is a generalized marker that pairs with inanimate subjects and verbs that do not designate controlled processes.

Despite the frequency with which desemanticization accompanies emergence of grammatical items, it cannot be considered to be a universal component of grammaticalization. For instance, hearsay evidentials often stem from verbs of saying (Aikhenvald 2004: 271–273 with references) with no apparent loss in contentive meaning taking place. Other examples of semantically 'heavy' grammatical items, to borrow Lehmann's metaphor, are furnished by example (22) above.

Since unambiguous cases of grammaticalization need not involve changes in conceptual content or form, it could be argued that there are no universal components of grammaticalization that are independent of the morphosyntactic type of the language. According to this, grammaticalization in individual languages may exhibit some or all of the aforementioned changes that pertain to form and meaning. However, defining grammaticalization in a language-neutral way is possible if pragmatics are included in the picture. Boye (2023b) proposes a definition according to which grammaticalization is "the conventionalization of discursively secondary status" of an element. This definition builds upon a pragmatic distinction between lexical and grammatical elements. According to Boye, the former are by convention potentially discursively primary, while the latter are by convention discursively secondary (cf. criterion B in Section 1.3). Lexical elements may, but need not, constitute the informationally salient point of a syntagm. From this follows that they can be focused, modified, and targeted by interrogation. By contrast, grammatical elements cannot be focused, questioned, or modified (Boye 2023b: 6). When lexical elements appear as discursively secondary within a syntagm, their meaning may involve a salient conversational implicature that is less contentive than the original lexical meaning. Accordingly, the conventionalization of discursively secondary status is in this case accompanied by a promotion of the implicature to an entailment, while the original lexical meaning disappears

in the new usage. Boye illustrates this process by describing the emergence of the future marker *going to* in English:

- | | |
|------------------------------|--|
| (23) a. <i>go</i> | I am going. |
| b. <i>go</i> + purposive INF | I am going (in order) to buy some apples |
| c. <i>going to</i> + INF | I am (soon) going to buy some apples |
| d. <i>going to</i> + INF | It's going (??in order) to rain. |
- (Boye 2023b: 12)

Example (23)b invites the inference that *going to* marks futurity with respect to the meaning of the infinitive. This inference is strengthened in (23)c and appears to be conventionalized in (23)d, which is not compatible with the original lexical meaning of *go*. The verb is informationally prominent in (23)a–b, whereas the infinitive represents the main information in (23)c–d. In the case of some lexical expressions, as we have seen above, the discursively secondary meaning may be conceptually identical with the primary contentive meaning. In this case, grammaticalization involves the conventionalization of the secondary status without any apparent semantic changes.

A further important point in this pragmatic approach to grammaticalization is that there is no lexical-grammatical continuum and, consequently, that there is a discrete boundary between lexical and grammatical elements (Boye 2023b: 13–19). Even though discourse prominence is a continuous variable, the relative prominence of an element is always assessed in relation to the prominence of other expressions within the syntagm or sentence. If an element never surpasses its competitors in discourse prominence within a particular usage (e.g. the future-marking use of *going to*), it may be considered grammatical. Furthermore, formal changes like phonological reduction are said to follow from low discourse prominence of grammaticalized items, as speakers invest less energy into their realization in the output (Boye 2023b: 11).

For the purposes of this study, defining grammaticalization as the conventionalization of discursively secondary status proves analytically advantageous in the case of the development of the adverbial expression *δῆλον ὅτι* ‘obviously’. The adverbial emerged from the predicative usage of (ἐστὶ) *δῆλον* ‘it is clear’ in matrix clauses complemented by a subordinate clause with *ὅτι*. Its development may be described in terms of loss of the potentially discursively primary status of the matrix clause and its subsequent reanalysis into an adverbial. Discourse prominence in classical Greek may be assessed based on the information structure of the utterance (Dik 1995; 2007; Matić 2003; Allan 2014). This heuristic is applied in Chapter 5 to determine the discursive status of the sequence *δῆλον ὅτι* in different structural environments and to identify the contexts in which the expression represents an adverbial, as opposed to a predicative construction with a complementizer. In addition to that, the meaning of the adverbial expression is analyzed in order to ascertain whether its

entailment includes an evidential component and how it relates to the meaning of the lexical item *δῆλον* in the predicative construction.

The adverbial *δῆλον ὅτι* fulfills almost all the criteria of grammaticality mentioned in Boye (2023b) – it cannot be focused or modified, and it cannot be targeted by interrogation or denial. However, in the context of the linguistic system of classical Greek, grammaticality prototypically involves phonological integration and paradigmatic cohesion. In addition to this, particles and conjunctions may be considered as peripheral members of the category comprising grammatical elements due to their distinctive syntactic and morphological properties (see Thijs 2021: 31–33 on particles). Most researchers working on Greek would probably not consider sentence adverbials to be grammatical to the same degree as, say, the postpositive particles that mark the speaker’s stance towards the proposition. For this reason, I refer to the adverbial *δῆλον ὅτι* as a *functional modifier* while retaining the label *grammaticalization* to describe the process that led to its emergence. The adjective *functional* ought to evoke the idea that the expression in question is semantically and pragmatically different from lexical words. It does not independently designate individuals, states-of-affairs, or propositions but modifies the unit within its scope by specifying an aspect of its meaning that is highly abstract and related to the general features of the construal. To use Lehmann’s term, functional modifiers as understood here are synsemantic, as opposed to autosemantic (Lehmann 1995: 1251–1252). Regarding pragmatics, functional modifiers are conventionally discursively secondary. This characteristic fulfills one of the criteria for being classified as evidential strategies.

The foregoing discussion centered around the change from lexical items to discursively secondary functional items. According to the definition of Hopper & Traugott (2003), grammaticalization also involves development of new grammatical functions in the case of existing grammatical items. This also applies to modality, which is relevant to this study because modal expressions may develop evidential meanings or invite evidential implicatures. Before we describe the mechanisms of semantic change that belong here, we need to consider the notion of grammaticality in connection with modality.

Narrog (2012: 6) defines modality as “a linguistic category referring to the factual status of a proposition. A proposition is modalized if it is marked for being undetermined with respect to its factual status, i.e. is neither positively nor negatively factual”. Narrog admits that he is using the term *proposition* loosely in the sense that it may designate propositions and states-of-affairs as they are understood in FDG (Narrog 2012: 6 fn. 2). The substance of the definition is accepted here with the proviso that modality may refer to the factual status of a proposition (i.e. epistemic modality) and to the reality status of a states-of-affairs (e.g. deontic modality). Furthermore, the use of the term *linguistic category* suggests that Narrog considers modality to be a grammatical category, as opposed to a semantic-functional domain. This part of the definition depends on our understanding of grammaticality. If we applied the language-specific criteria traditionally employed in Greek linguistics, grammatical modality would be limited to a subset of meanings marked by the verbal moods (i.e. indicative, subjunctive, and optative).

With respect to Boye's definition of grammaticality, which entails conventionalized discursively secondary status, items that are considered to be modal auxiliaries in Ancient Greek do not fulfill the relevant criterion because they are potentially discursively primary. Note that the same observation applies to modal auxiliaries in English, illustrated by the behavior of *must* in the following example:

- (24) A: Tom **must** have arrived.— B: **Must** he?
(Matthews 2003: 62)

Despite the lack of pragmatic backgrounding, Traugott (2011) considers forms like *must* to be more grammatical than the expression in (25)b, which is unambiguously lexical:

- (25) a. You **must** be happy about the results.
b. I **conclude** you are happy about the results.
(Traugott 2011: 381)

The difference between *must* and *conclude* in (25) appears to be of two kinds. Regarding the form, *must* belongs to the class of auxiliary verbs in English, which have distinct morphosyntactic properties that differentiate them from lexical verbs (see Huddleston & Pullum 2002: 92–102). Regarding the meaning, the contribution of *must* is more functional and abstract than that of *conclude*. The latter expression is referential in that it designates a cognitive process. Despite these differences, Traugott (2011) considers both expressions to be modal because they convey a similar meaning. This follows from the fact that Traugott regards modality as a semantic category, as opposed to a grammatical category.

Regarding modal auxiliaries in classical Greek (see Allan 2013), they belong within the grammatical system only insofar as their meaning is concerned, as they do not independently refer to states-of-affairs or propositions but specify their factual or reality status, respectively. Unlike modal auxiliaries in English, modal auxiliaries in Greek do not exhibit distinct morphosyntactic properties, except for a preference for impersonal constructions. Considering the importance of semantics as a defining feature of modal auxiliaries in Greek, I prefer Traugott's view that modality is a semantic category. At the same time, I accept the rest of the definition of modality as proposed by Narrog (2012: 6).

Given the different notions of grammaticality in the literature, we may draw up a table that contains the expressions investigated in this study and the properties that are associated with grammatical status. Within the chronological boundaries of the research corpus (see Section 1.8), grammaticalization as a change from potentially discursively primary to discursively secondary elements applies to the development of the adverbial *δῆλον ὅτι* 'obviously' from the predicative construction (*ἔστι*) *δῆλον ὅτι* 'it is clear that'. The result of this change is a functional modifier.

	Functional meaning	Discursively secondary	Morphosyntactic dependence
bound morphemes	✓	✓	✓
particles (e.g. ἄρα), complementation strategies (e.g. AccPtcp, ὅτι, ὥς)	✓	✓	(✓)
sentence adverbials (e.g. δῆλον ὅτι)	✓	✓	
modal auxiliaries (e.g. ἀνάγκη)	✓		

Table 2 Properties of grammaticality in classical Greek

In the case of the modal auxiliary ἀνάγκη (and ἀναγκαῖον), grammaticalization primarily concerns changes in its meaning, as its pragmatic and morphosyntactic properties do not correspond to the prototype of grammaticality in Ancient Greek. The first step involves the acquisition of a functional meaning. The original lexical meaning of ἀνάγκη is ‘necessity’, as illustrated by (26). This contentive meaning first led to the emergence of a functional meaning that involved participant-oriented deontic modality, as in (27).

- (26) καί κεν ἐν Ἄργει ἐοῦσα πρὸς ἄλλης ἱστὸν ὑφαίνοις,
καί κεν ὕδωρ φορέοις Μεσσηϊδος ἢ Ὑπερείης
πόλλ’ ἀεκαζομένη, κρατερὴ δ’ ἐπικείσεται **ἀνάγκη**.

‘Then haply in Argos shalt thou ply the loom at another’s bidding, or bear water from Messeis or Hypereia, sorely against thy will, and strong **necessity** shall be laid upon thee.’ (Hom. *Il.* 6.456–468)

- (27) τρέφειν τοὺς τοκέας τοῖσι μὲν παισὶ οὐδεμία **ἀνάγκη** μὴ βουλομένοισι, τῇσι δὲ
θυγατράσι πᾶσα **ἀνάγκη** καὶ μὴ βουλομένησι.

‘It is not **necessary** for sons to support their parents against their will, but for daughters it is **necessary** though they be unwilling.’ (Hdt. 2.35.4)

With respect to the semantic changes that affect functional meaning, there is a broad crosslinguistic tendency in grammaticalization that involves increase in scope and speech-act orientation (Narrog 2017). Within FDG, scope increase corresponds to the development in which semantic units move up within the hierarchical structure of a single level or from a lower level to a higher level (Hengeveld 2017). Note that lexical elements may develop a functional meaning that pertains to any layer. Once an element has grammaticalized in this way, further contentive changes never involve decrease in scope. This is schematically depicted in the following diagram, which includes evidential qualification and different types of modalities. The reasons for assigning the specific modal meanings to the particular layers within the representational level are discussed in Section 3.2.

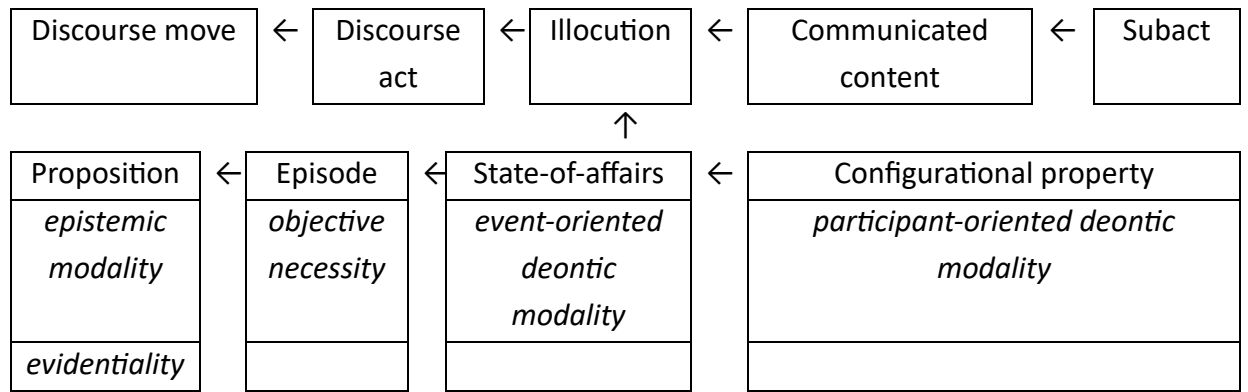


Figure 5 Grammaticalization as scope increase

To illustrate the phenomenon of scope increase, we may consider the scope of ἀνάγκη in (28). In contrast to (27), the individuals that are obliged to perform an action are now within the scope of the modal auxiliary. This follows from the fact that the complement of ἀνάγκη is an accusative with infinitive that designates a state-of-affairs. Therefore, the target of the modal force in (28) is a whole eventuality, whereas in (27) it is an action, designated by a configurational property, to be performed by a specific participant that is syntactically detached from the infinitive.

- (28) ὅς δ' ἂν ἢ αὐτῶν Αἰγυπτίων ἢ ξείνων ὁμοίως ὑπὸ κροκοδείλου ἀρπασθεὶς ἢ ὑπ' αὐτοῦ τοῦ ποταμοῦ φαίνεται τεθνεώς, κατ' ἣν ἂν πόλιν ἐξενειχθῇ, τούτους πᾶσα ἀνάγκη ἐστὶ ταριχεύσαντας αὐτὸν καὶ περιστείλαντας ὡς κάλλιστα θάψαι ἐν ἱρῇσι θήκησι.
 'If anyone, Egyptian or foreigner, is known to have been carried off by a crocodile or drowned by the river itself, the people of the place where he is cast ashore **must** by all means embalm and wrap him as attractively as possible and bury him in a sacred coffin.' (Hdt. 2.90.1)

As has been argued above, evidential meanings predominantly pertain to the layer of proposition. Thus, the hierarchical approach to grammaticalization allows us to trace the development of a functional expression as it reaches the layer where a particular meaning is hosted.

The second tendency regarding contentive changes is increase in speech-act orientation, i.e. subjectification (see Narrog 2012: 71–74 for a discussion). Traugott & Dasher (2001: 30) claim that subjectification is “the semasiological process whereby SP/Ws [speakers/writers] come over time to develop meanings for Ls [lexemes] that encode or externalize their perspectives and attitudes as constrained by the communicative world of the speech event, rather than by the so-called ‘real-world’ characteristics of the event or situation referred to”. Subjectification is apparent, for instance, in the change from event-oriented modality to epistemic modality. The former situates a modal force in the socio-physical domain, whereas the latter profiles the logical reasoning or epistemic commitment of a participant, often coinciding with the speaker. Further hypotheses related to the increase in

scope and subjectification in the case of ἀνάγκη and ἀναγκάϊον and the development of its evidential meaning are presented and evaluated in Chapter 3.

To summarize, the two analytical approaches to grammaticalization discussed above concern the processes that are associated with the emergence and semantic evolution of functional expressions. The pragmatic approach will be applied in Chapter 5 with the aim to investigate the development of the adverbial δῆλον ὅτι. The hierarchical approach together with an analysis of progressing subjectification will serve as a methodological framework for the study of the modal markers ἀνάγκη and ἀναγκάϊον in Chapter 3. As for the various strategies of complementation with verbs of seeing and knowledge discussed in Chapter 2, emphasis will be placed on distinguishing propositional from non-propositional complements. This is partly related to the hierarchical approach, since verbs of seeing exhibit an increase in their grammatical scope when they are used as predicates of knowledge. Additionally, a semantic analysis of the constructions containing different propositional complements will be carried out. The constructions in question represent a blend of lexical and functional elements. On the one hand, the relevant matrix predicates are lexical due to their contentive meaning and pragmatic properties. On the other hand, the meanings expressed by the complementizer or the syntactic form of the complement in conjunction with the matrix predicate are highly abstract and therefore functional. Regarding the particle ἄρα, the pragmatic and hierarchical approaches are of limited value because the item is discursively secondary by convention and exhibits propositional scope by the time it is first attested. For this reason, the analysis presented in Chapter 4 focuses on the synchronic meaning of the particle.

It is worth stressing that grammaticalization of evidential expressions in Ancient Greek does not affect the grammatical system as it is traditionally understood. Evidential expressions in this language are neither obligatory nor organized into paradigms, and they are not morphologically integrated with verbal or other lexical stems. (cf. Table 2). In this context, grammaticalization involves emergence of features that are crosslinguistically associated with grammaticality (cf. Boye 2023b) and semantic changes in the functional meaning of the relevant expressions.

1.8. Research corpus

The linguistic data for the analysis are drawn from the corpus of the ten Attic orators, a collection of forensic, political, and epideictic speeches from the 5th and 4th cent. BCE. In addition, the corpus contains a small number of letters. The earliest author in the corpus is Antiphon, born around 480 BCE, while the latest is Dinarchus, whose last speech, which is not extant, dates to approximately 292/291 BCE (Zimmermann & Rengakos 2014: 854). Spurious speeches have not been excluded from the research corpus, as they are not substantially younger than the authentic texts. The following table shows the size of the research corpus by listing the shares of the individual authors.

	Number of words	Share of the whole corpus
Antipho	20.883	3,27 %
Lysias	60.027	9,41 %
Andocides	19.681	3,09 %
Isocrates	119.641	18,76 %
Demosthenes	294.582	46,18 %
Aeschines	48.298	7,57 %
Isaeus	35.459	5,56 %
Lycurgus	12.870	2,02 %
Hypereides	14.639	2,29 %
Dinarchus	11.800	1,85 %
Total	637.880	100 %

Table 3 Shares of the studied authors in the research corpus. Data from the Perseus Project loaded under PhiloLogic 4

The language of the corpus is the Attic dialect of classical Greek. The term classical Greek refers to a diachronically delimited variety of Ancient Greek, and it is used here to emphasize that Homeric and post-classical Greek are not comprehensively examined in this study. The relatively small size of the research corpus and the uneven representation of the individual authors call for caution when drawing generalizations from the studied material. The observed patterns may reflect the personal idiom of each author rather than classical Greek as a whole. Nevertheless, the corpus is assumed to offer a reasonably accurate representation of the language spoken in Athens during the classical period.

The studied texts mostly comprise monological⁷ discourse characterized by few overt signs of interaction between the speaker and the addressee. When it is informative to illustrate the function of the studied expressions in interactive discourse, examples are drawn from dramatic poetry and Plato's dialogues.

In diachronic analyses, material from earlier and post-classical authors is adduced in order to trace the development of some of the studied expressions.

The Greek examples are cited according to the texts available in the Thesaurus Linguae Graecae (TLG). The database was queried using the application Diogenes (version 4.5). Translations of the examples stem from the Perseus Digital Library, unless stated otherwise. Some of the translations have been adjusted to more accurately reflect the Greek original.

⁷ Monological discourse is produced by one speaker. See also footnote 63 for the distinction between monological and monological.

2. Complementation strategies with verbs of seeing and knowledge

2.1. Introduction

The aim of this chapter is to analyze a group of selected classical Greek verbs of visual perception, knowledge, and the constructions in which they appear. These two classes of verbs, jointly with verbs covering other sensory modalities, are usually treated together under the label *uerba sentiendi* in traditional grammars – i.e. verbs denoting sensory and intellectual perception (e.g. Kühner & Gerth 1904: 50–51). Both classes display a similar complementation pattern in classical Greek in that they admit both participial complements and subordinate clauses introduced by either ὅτι ‘that’ or ὡς ‘that’. This chapter focuses on the semantic differences between the constructions that involve the combinations of the verbs in question with any of the three complements. Accusative with infinitive (AccInf), which is marginal, is excluded for the reasons discussed below.

The exact principles that govern the distribution of complementation strategies in Greek are unclear; the outstanding issues are summarized in the following section. To address the distributional crux, I follow the line of research that purports that some syntactic patterns can be better understood by including the notion of information source in the overall picture. Employing this notion in Ancient Greek linguistics is not entirely new. Neuberger-Donath (1982) applies evidential distinctions to solve the crux of the distribution of ὅτι and ὡς, but her paper at the time could not benefit from the more fine-grained typological accounts of evidential expressions, which came only later. Van Rooy (2016) tests Neuberger-Donath’s proposal on a corpus of selected works by Plato and concludes that evidential distinctions, alongside pragmatics and epistemic modality, play an important role in determining which conjunction is used. This chapter subscribes to the methodological underpinning of these earlier contributions while taking advantage of the recent advances in the study of evidentiality. In this way, a more coherent and typologically corroborated account of the role of information source in classical Greek complementation may emerge.

Regarding the domain in question, constructions governed by verbs of seeing and knowing are a suitable subject of research for the following reasons. Firstly, the lexical semantics of the verb often ensure that the sense of the construction belongs to the domain of information source (Aikhenvald & Storch 2013; Whitt 2010). Given the choice of the studied verbs, the focus naturally lies on the evidential values of visual source and inference. Secondly, the relative variety of the allowed complementation patterns opens the way to a fine-grained semantic analysis of the evidential meanings they potentially convey and the links between them. The hypothesis is that the relations between different complementation strategies with verbs of seeing and knowledge may be explained by comparing their distribution and contexts of use in Greek with the structure of the semantic-functional domain of information source as it is manifested crosslinguistically (see Section 1.2). One of the proposals put forward in this chapter is that the component of immediate perception, which ties visual source and various types of circumstantial inference together, is associated with the use of AccPtcp with verbs of

seeing and knowledge in classical Greek.⁸ Another evidential dimension applied to the data here is the notion of (inter)subjectivity and knowledge (a)symmetry (Nuyts 2001; Evans, Bergqvist & San Roque 2018a; 2018b). It describes the degree to which the evidence that something is the case is shared among the participants of communication. Low intersubjectivity could be one of the factors that contributes to the use of ὥς in some contexts.

The verbs selected for this study are ὁράω ‘see’ and its suppletive aorist εἶδον ‘saw’, which represent verbs of visual perception, and γινώσκω ‘come to know’, ἐπίσταμαι ‘know’, μανθάνω ‘learn’, and οἶδα ‘know’,⁹ representing verbs of knowledge. Complements containing declarative infinitives, being as rare as they are, are not included because they cause the matrix verb to function as a predicate of propositional attitude (see Noonan 2007: 124–126 for this predicate type). Consequently, the studied verbs will interest us only to the extent that they function as predicates of immediate perception or knowledge. Constructions with the matrix predicate in the passive voice (e.g. verb_{pass} + NomPtcp) have been excluded. Rare constructions with NomPtcp, used when the subjects of the matrix clause and the participle are co-referential (Rijksbaron 2006 [1984]: 119) have been likewise excluded. Subordinate clauses with ὥς have been taken into consideration only if the context in which they appear does not readily admit the interpretation ‘how’, which is the original meaning of ὥς.

The counts of analyzed occurrences are listed in Table 4. In the case of the frequent constructions ὁράω + AccPtcp, εἶδον + AccPtcp, γινώσκω + AccPtcp, γινώσκω + ὅτι, οἶδα + AccPtcp, and οἶδα + ὅτι, a sample of the occurrences was selected and analyzed.

	AccPtcp	ὅτι	ὥς
ὁράω	120	29	4
εἶδον	45	23	1
γινώσκω	20	45	17
μανθάνω	1	26	7
ἐπίσταμαι	20	56	2
οἶδα	73	120	14

Table 4 Counts of analyzed occurrences in the research corpus

The structure of the chapter is as follows. Section 2.2 contains a review of the literature on complementation in classical Greek. It identifies the shortcomings of the existing theories

⁸ The verb ἀκούω ‘hear’ may also signal sensory perception and acquisition of knowledge. Sensory perception applies to GenPtcp and AccPtcp, while a cognitive meaning applies to AccPtcp, clauses with ὅτι and ὥς, and AccInf. The evidential values conveyed by AccPtcp are circumstantial inference and (accurate) hearsay, whereas finite complements always express hearsay (Cepiraga 2022a; 2022b). I propose that the hearsay value expressed by ἀκούω + AccPtcp may be attributed to the lexical meaning of the matrix verb. Since verbs of knowledge in classical Greek do not entail auditory perception, I assume that verbs of knowledge + AccPtcp have more in common with verbs of seeing used in a cognitive sense + AccPtcp than with the cognitive usage of ἀκούω + AccPtcp.

⁹ The verb οἶδα ‘know’ is an inherited perfect containing the root *weyd- ‘catch sight of’. The etymological connection to εἶδον ‘saw’ almost certainly does not carry over into the synchrony of classical Greek. The meaning ‘know’ (< ‘having seen’) is a Proto-Indo-European innovation as attested by the cognates in Indo-Aryan, Germanic, Slavic, and Celtic (Kümmel & Rix 2001: 665–667).

and paves the way for the analysis presented later in the chapter. Section 2.3 discusses the differences between the expressions of physical perception and knowledge in terms of the ontological properties of the entity denoted by the complement. The key point is that immediate perception is associated with states-of-affairs, whereas knowledge concerns propositions. The following section focuses on the expressions of immediate perception in classical Greek, which involve AccPtcp, and argues that if the complement denotes a state-of-affairs, as opposed to a proposition, it does not entail an evidential meaning. At the same time, it is observed that participial complements in classical Greek may denote propositions, which is the case if the matrix verb, regardless of its original semantic class, functions as a predicate of knowledge. The constructions consisting of a verb of seeing used cognitively + AccPtcp are investigated in Section 2.5, in which Sections 2.5.3–2.5.6 focus on the evidential values that are associated with these constructions. The interim conclusion, presented in Section 2.5.7, is that AccPtcp may signal facts that are personally discovered by the subject of the matrix verb. The aim of Section 2.6 is to find out whether the same range of evidential meanings applies to the constructions of actual verbs of knowledge with AccPtcp. Finite complements with ὅτι ‘that’ and ὡς ‘that’ are discussed in Section 2.7. The section contains a proposal according to which the distribution of the two conjunctions reflects the status of the marked proposition with respect to the common ground. It is proposed that ὡς usually marks statements that are not accepted by the speaker or the addressee at the time of utterance. Finally, a synthesis of the findings is presented in Section 2.8.

2.2. Existing theories about complementation in classical Greek

The verbs in question admit four patterns of complementation in classical Greek. Infinitival complements, realized as nominative or accusative with infinitive (Acclnf), convey propositions with no existential presupposition (De Boel 1980: 293; Cristofaro 1996: 119; Cristofaro 2008: 578). Thus, verbs of knowledge and more rarely verbs of seeing with Acclnf resemble verbs of opinion, which routinely take this complement (e.g. νομίζω ‘think’, ἡγέομαι ‘consider’). The information in the complement clause is presented by the speaker as an opinion of the subject of the matrix verb, which may or may not be true. Although the now-standard way of describing such constructions involves the relatively recent notion of non-factivity (Huitink 2009: 22–28 with references), the basic difference between the meaning of cognitive verbs with Acclnf and the constructions with AccPtcp, ὅτι, or ὡς is captured in older standard grammars as well (e.g. Kühner & Gerth 1904: 68–72; Schwyzler & Debrunner 1950: 395–396). Since infinitival complements code propositional attitude and not access to propositional content, they will not be given further consideration.

Differences between the other three complement types are less clear-cut. There is an agreement that clauses with ὡς after verbs of saying in Attic may convey reservations on the part of the reporting speaker (Kühner & Gerth 1904: 356; Humbert 1960: 184–185; Van Emde

Boas et al. 2019: 504–505).¹⁰ In addition to that, it has been observed that complements with ὥς are common when the matrix verb is negated, which applies to both verbs of saying and knowledge (Madvig 1847: 172–173, 201–202; Kühner & Gerth 1904: 356). A modal nuance is not ascribed to other types of matrix predicates complemented by clauses with ὥς.¹¹ This produces asymmetry, as ὥς imposes a special modal meaning when used with one type of matrix predicate but not with others. A solution is proposed by Cristofaro (1996: 70–75), who argues that the opposition between factual ὅτι and non-factual ὥς emerged because ὥς signals presupposed content with low informative value. In factual contexts, clauses with ὅτι are said to prototypically carry the characteristics [+focus], [-topic], [-known], while ὥς conveys [-focus], [+topic], [+known]. Thus, in the domain of pragmatics, propositions introduced by ὥς are not asserted and do not advance the flow of communication, while the opposite holds true for ὅτι. The original contrast is supposedly mirrored by the modally distinctive meanings, as low information value can be connected with non-factuality and low speaker commitment. However, Cristofaro admits that the pragmatic distinction is not clear-cut and many contexts allow both conjunctions (cf. also Huitink 2009: 33 fn. 25). Moreover, the proposed semantic extension that requires ὥς as a marker of presupposed and hence true content to signal non-factual and false propositions is problematic.

Neuberger-Donath (1982) attacks the problem of ὅτι and ὥς by employing the notion of information source. She argues that in Homer, Herodotus, and the tragedies, the statements in the clauses with ὥς represent the conclusions available exclusively to the subject of the matrix verb. Clauses with ὅτι, on the other hand, signify that the embedded proposition is based on the evidence that is also available to other interlocutors. Neuberger-Donath describes the opposition between ὅτι and ὥς in terms of ‘objective’ versus ‘subjective’ statements. However, she neither provides much theoretical footing nor offers a crosslinguistic corroboration for her hypothesis, save for a remark about Turkish and the languages of the Balkan *Sprachbund* that possess evidentials. Her theory is taken up and expanded in Section 2.7

In a study that explicitly addresses the issue of evidential expressions in Ancient Greek, Van Rooy (2016: 20–27) tests whether the hypothesis of Neuberger-Donath (1982) holds true for his corpus of selected texts by Plato. He concludes that “when ὥς follows verbs of speaking, showing, judging, and wanting, it marks that the subject of the main predicate constitutes the source of information for the contents of the subordinate completive clause” (Van Rooy 2016: 22–23); verbs of knowledge with ὥς do not occur in his corpus. A single instance of a verb of

¹⁰ Christ (1905), which is a corpus study of the ten Attic orators that investigates the semantics of ὥς with verbs of saying, knowledge, and perception, concludes that ὥς consistently signals doubtful propositions only with λέγω ‘say’, while other verbs of saying and declaring display free variation between ὅτι and ὥς, the latter of which does not necessarily convey doubt.

¹¹ Schwyzler & Debrunner (1950: 664) have nothing to say about the semantics of ὥς after verbs of knowledge, saying, or perception except that the meaning ‘that’ evolved from the instrumental value ‘how’. Humbert (1960: 184–185) agrees with Kühner & Gerth (1904) that ὥς may signal doubt about the content of the subordinate clause, but his examples contain λέγω ‘say’.

perception (ἀκούω ‘hear’) with ὥς is marked by a lack of commitment on the part of the speaker. Complement clauses with ὅτι, according to Van Rooy, signify positive speaker commitment and widely available information. Given the size of the studied corpus, Van Rooy finds it hard to decide whether the pragmatic explanation of Cristofaro (1996; 2008) or the evidential explanation of Neuberger-Donath (1982) provides a better fit for the observed distribution. He tentatively proposes that the evidential explanation captures the difference between ὅτι and ὥς more adequately, but he adds that the opposition between the two complementizers is better understood as an interface phenomenon encompassing subjective epistemic modality, information structure, and information source.

The original purpose of participial complements was to refer to directly perceived states-of-affairs in the constructions governed by verbs of sensory perception. The complement is most often headed by a nominal in accusative or nominative. The latter is reserved for when the subject of the matrix verb and the participle is the same. When the complement appears with verbs of knowledge, its contrastive value is hard to pinpoint.¹² The picture is further complicated by the fact that verbs of seeing may be used in a cognitive sense, which is the only possible interpretation when they are complemented by clauses with ὅτι or ὥς (Cristofaro 1996: 118). However, as Basset (1999) rightly points out, the cognitive reading of verbs of seeing is not limited to finite complements – it also arises with AccPtcp. Thus, the problem of determining the principles behind the distribution of the three complement types concerns predicates of knowledge in general regardless of their lexical verbal class.

Huitink (2009) zooms in on the opposition between AccPtcp and ὅτι when they complement οἶδα ‘know’, ἐπίσταμαι ‘know’, and γινώσκω ‘come to know’ in classical Greek prose. To tease out the principles that regulate the choice of complementation, Huitink employs the notion of presupposition, which is twofold (Lambrecht 1994: 60–65). First, semantic presupposition, which concerns (semi-)factive contexts that contain new and asserted information, is said to be entailed by clauses with ὅτι. Second, pragmatic presupposition is signaled by AccPtcp and means that the information is the topic of the narrative and can be retrieved from the preceding context. This solution takes AccPtcp to be a presupposition marker akin to ὥς in Cristofaro’s interpretation. Even though this theory accounts for many of the occurrences of AccPtcp, there are contexts in which a participial complement conveys a foregrounded proposition. Resorting to a solution that allows a degree of license comparable to that which underpins Cristofaro’s theory would be possible but not entirely satisfactory. Finally, Faure (2017: 562) argues that AccPtcp with predicates of

¹² Kühner & Gerth (1904: 50–51) see the motivation behind the use of participial complements with verbs of knowledge and perception in that the resulting constructions convey intellectual or sensory perception. They do not postulate any differences between AccPtcp and clauses with ὅτι and ὥς when they depend on verbs of knowledge (Kühner & Gerth 1904: 357). Schwyzler & Debrunner (1950: 395) merely contrast the meaning of participial complements with AccInf and describe the former as “factual” and “vivid”. Humbert (1960: 198–199) states that perception and acquisition of knowledge are naturally expressed by participial complements. He draws a distinction between the perception of reality and the cognitive acts that accompany this process. Verbs of knowledge, claims Humbert, can take complements with ὅτι and ὥς if the emphasis lies on the cognitive component, but AccPtc if it is the perceived reality itself that stands in the foreground.

knowledge signifies that the speaker or subject “[has] access to an event that grounds the truth of the proposition p , and [believes] p ”. This essentially agrees with the hypothesis put forward in Section 2.5, which shows that assigning such a meaning to a syntactic pattern is not problematic.

This survey shows that there are two unresolved issues regarding the distribution of the complement types. First, while it is accepted that $\acute{\omega}\varsigma$ with verbs of saying can signal low speaker commitment, nothing of the sort is claimed about verbs of knowledge. This is doubtless because the notion of knowing something is hardly compatible with epistemic distance. Nevertheless, predicates of knowledge do take complements with $\acute{\omega}\varsigma$, but this fact cannot be adequately explained if we are to follow a predominantly pragmatic account of complementation. The second issue concerns participial complements. While the account in Huitink (2009) rectifies some of the misconceptions presented in Basset (1999),¹³ it is not the case that all contexts accommodate an explanation based on the two kinds of presupposition. Propositional content expressed by AccPtc is not always backgrounded or retrievable from the context.

In what follows, I attempt to demonstrate that when information source is factored in, the distributional pattern becomes partially clearer.

2.3. Clause layers and complementation

The following English examples illustrate some of the distinctions that are relevant here:

- (1) Peter sees Thomas reading a book.
- (2) Peter sees that Thomas is reading a book.
‘Peter sees Thomas reading a book and he realizes that Thomas is reading a book.’
- (3) Peter sees that Thomas is reading a book.
‘Peter sees that the light in Thomas’ room is on. Based on this, Peter infers that Thomas is reading a book.’
- (4) Everyone could see that he was to blame.
‘Based on the available evidence, everyone could realize that he was to blame.’

From (1) to (4), the mode of access of the subject to the content of the complement gradually shifts from purely sensory to predominantly cognitive. Besides this, examples (2) to (4) cannot be uttered unless the subject of the matrix clause realizes and believes that the proposition in the complement is true; negating the matrix predicate entails a lack of such realization.

¹³ Basset argues that complements with AccPtc are foregrounded and asserted, whereas clauses with $\acute{\omicron}\tau\iota$ and $\acute{\omega}\varsigma$ remain in the background and shift the emphasis to the matrix clause. This claim is convincingly disproven by Huitink (2009).

Example (1), however, does not entail any positive knowledge or a lack thereof, as example (5)a attests (cf. Dretske 1969: 29):

- (5) a. Peter saw Thomas reading a book, but at the time he thought Thomas was just asleep in the chair.
- b. *Peter saw that Thomas was reading a book, but he thought Thomas was just asleep in the chair.

The uses illustrated in (2) to (4) can be classed together under the rubric *acquisition of knowledge*, while cases like (1) express immediate perception. This twofold distinction may concern types of predicates defined lexico-semantically (e.g. *know* vs *see*) or different constructions containing the same matrix verb (e.g. *see that* + finite verb vs *see* + bare infinitive / participle).

According to Functional Discourse Grammar, predicates of immediate perception and predicates of knowledge take complements that denote entities with different ontological properties (Dik & Hengeveld 1991; see Section 1.5 on the model in general; cf. also a critical assessment in Boye 2010b: 394–401). This fact follows from the hierarchical structure of the clause. Each layer of the hierarchy is occupied by entities of the appropriate kind. The representational level is organized as follows:

- (6) Proposition > Episode > State-of-affairs > Configurational property > Lexical property | Individual

In complex clauses, semantically defined classes of matrix predicates can only take complements that belong within the appropriate layer. Predicates signifying immediate perception take complements denoting states-of-affairs, which are said to occur, unfold or happen and whose properties make them accessible to the senses. Predicates of knowledge, on the other hand, are complemented by propositions, which have a truth value and belong within the domain of cognition, as opposed to sensory perception. In other words, while it is possible to see states-of-affairs, propositional contents can only be accessed and manipulated cognitively.

Constructions of immediate perception impose additional restrictions on the content of the complement (Dik & Hengeveld 1991: 240–242). The situation time of the matrix clause must be simultaneous with the situation time of the complement, which also cannot be modified by any temporal satellites. Furthermore, the state-of-affairs must be perceivable and the verbal form in the complement cannot be negated. Another property of immediate perception is that it does not presuppose the truth of the complement, which results in non-factive reading.

2.4. Immediate visual perception in classical Greek

2.4.1. Formal and semantic properties

Coding of immediate perception in classical Greek conforms to the typological tendency that participial complements are especially common in this context (Noonan 2007: 142; Cristofaro 2003: 105). The most common configuration consists of a nominal phrase in the accusative case in which a noun or pronoun heads a participle (AccPtcp)¹⁴ and serves as the direct object of a verb of perception in the active voice:

- (7) ὁ μὲν γὰρ οὐδένα **ὄρων** διατρέχοντα, πῶς ἂν ἐφυλάξατο μηδένα βαλεῖν;
[The speaker's son] **saw** no one running across, so how could he have taken precautions against striking anyone?' (Antipho 3.4.7)

The requirement of simultaneity narrows the choice of the participle. If the matrix predicate refers to the present time, the aspect of the participle can be imperfective (the present stem) or resultative (the perfect stem). The perfective aspect (the aorist stem) is admissible only if the matrix clause refers to the past. In this case the perfective aspect does not code the action as anterior to that of the matrix clause but rather temporally bounded within the situation time of the matrix predicate (Van Emde Boas et al. 2019: 619).

- (8) καὶ τίς αὐτὸν **εἶδε** πώποτε ἀσχημονήσαντα, ἢ μεθ' ἡμέραν, ὡς σὺ φής, ἐν τῇ πομπῇ τῶν Διονυσίων, ἢ νύκτωρ;
'But whoever **saw** him behaving in an indecent manner, either by day in the Dionysiac procession, as you assert, or by night?' (Aeschin. 2.151)

In (8), the aorist participle ἀσχημονήσαντα situates the action of behaving indecently within the temporal frame of the governing aorist εἶδε 's/he saw'. This construction is very rare in the research corpus, which agrees with the observation made by Van Emde Boas et al. (2019: 617) that the complements conveying immediate perception almost exclusively contain a present participle. Nevertheless, it is unfounded to posit the requirement that the perceived event needs to be ongoing (e.g. Cristofaro 2003: 113 in general; Van Emde Boas et al. 2019: 617 for classical Greek). This piece of terminology often implies durativity, but non-durative achievement verbs are in fact admissible in contexts exhibiting immediate perception:

- (9) He saw the car explode.

It is more appropriate to speak of overlapping temporal frames of the situations described by the matrix clause and the complement. The reason why the aorist stem is excluded if the

¹⁴ Predicates of seeing require a direct object in accusative. Verbs of hearing, e.g. ἀκούω 'hear', may also take objects in genitive, which indicates that the stimulus is physically perceived.

matrix clause contains a verb in the present tense is that the notion of present and temporally bounded events cannot be readily expressed in classical Greek (Bary 2009: 121–132).

A complement with a perfect participle can convey immediate perception only if it describes a visible target state. It is important to note that the development of the Greek perfect in the post-Homeric period often renders it unsuitable to appear in the context of immediate perception. By the middle of the 5th cent. BCE, the semantics of the perfect stem encompassed both resultative and anterior perfects.¹⁵ True resultatives entail a target state of the subject as a result of a preceding action, whereas anterior perfects project the relevance of a past state-of-affairs at the topic time. In contrast to target states, some of which are visible, relevance is not something that can be perceived through the senses. Consequently, immediate perception and anterior perfects are incompatible. Their co-occurrence with verbs of seeing ought to be interpreted as expressing acquisition of knowledge, which presupposes propositional reading of the complement:

(10) νυνὶ δ' **ὄρατε** μὲν δήπου τὰ πλεῖστα τοὺς προδότας ἀπολωλεκότας, οὐδὲν δ' ἐκ παρατάξεως οὐδὲ μάχης γιγνόμενον.

‘But now you must surely **see** that traitors have caused most disasters, and none are the result of a regular pitched battle.’ (Dem. 9.49)

Here, the perfect participle ἀπολωλεκότας ‘having destroyed’ does not imply any target state of traitors but rather the current relevance of their previous actions. Thus, the construction in (10) conveys the acquisition of knowledge on the part of the subject of the matrix verb ὄρατε ‘you see’.

Even the perfects that denote resultant states need not convey immediate perception when they complement verbs of seeing. If the emphasis lies on the visible resultant state and the anterior event that caused it remains backgrounded, the construction conveys visual perception. However, if it is the preceding action and its current relevance that are stressed, the complement represents a proposition, and we are dealing with the acquisition of knowledge.

(11) **ἑώρων** γὰρ τὴν μὲν πόλιν τῶν Θηβαίων οἰκτρῶς ἠφανισμένην ἐξ ἀνθρώπων, τὴν δὲ ἀκρόπολιν αὐτῆς φρουρουμένην ὑπὸ τῶν Μακεδόνων, τὰ δὲ σώματα τῶν ἐνοικούντων ἐξηνδραποδισμένα, τὴν δὲ χώραν ἄλλους διανεμομένους ...

a. ‘[The Athenian troops] **saw** the city of Thebes tragically annihilated from the face of the earth, its citadel garrisoned by the Macedonians, and the persons of its inhabitants in slavery, while others parceled out the land among themselves.’

b. ‘[The Athenian troops] **saw** that the city of Thebes had been tragically annihilated from the face of the earth, that its citadel was garrisoned by the Macedonians, and

¹⁵ The literature on the semantics of the Ancient Greek perfect and how it changed throughout the history of the language is vast. The account here and the use of terminology follows Bentein (2014); Haug (2008) and Allan (2016: 100–113) offer scenarios for how such a change from the resultative to the anterior perfect could have occurred. A comprehensive survey of the literature can be found in Crellin (2016: 11–16).

that the persons of its inhabitants were in slavery, while others parceled out the land among themselves.’ (Hyp. 6.17)

In (11), the perfect participles ἡφάνισμένην ‘destroyed’ or ‘that (it) had been destroyed’ and ἐξηνδραποδισμένα ‘enslaved’ or ‘that (they) had been enslaved’ convey either visible states, i.e. states-of-affairs, or facts, i.e. propositions. The present participle διανεμομένους ‘parceling (viz. the land)’ or ‘that they were parceling (the land)’ is more amenable to a propositional reading, as it is a bit of a stretch to suppose that the Athenians could see with naked eye that the intruders were in the state of parceling the land. At most, they could see the newcomers acting as if they owned the ancestral land of the Thebans, which led the Athenians to infer that the land was being distributed.

This anticipates the point, elaborated in the following section, that the boundary between sensory perception and the acquisition of knowledge is not clear when it comes to participial complements with verbs of seeing in classical Greek.

2.4.2. Immediate visual perception and information source

At first glance, it seems straightforward that classical Greek constructions denoting immediate visual perception in its prototypical form could be matched with the evidential value of visual source – i.e. the subject of the matrix verb knows that something is the case through having seen an event. However, the fact that the Greek constructions contain complements that are not propositional poses a problem. As we have seen above, complements conveying immediate perception denote states-of-affairs and not propositions, as it is only the former that can be perceived through the senses. Boye (2010a) persuasively argues that evidential meanings are associated with propositions as opposed to state-of-affairs (see Section 1.6). On the conceptual level, as Boye claims, the notion of information source cannot concern states-of-affairs couched in the real world; rather, it applies to objects of cognition, i.e. propositions, which are about the real world. This distinction also explains the inadmissibility of epistemic adverbs in complements conveying immediate perception:

- (12) a. *I heard him **probably** yell. [state-of-affairs]
 b. I heard that he was **probably** yelling. [proposition]
 (Boye 2010a: 294)

The fact that propositions are often supported by what is physically perceived should not suggest that the content of sensory perception is somehow equivalent to the content of cognition. On the plane of coded semantic meaning, constructions of immediate perception exclusively denote what is or has been in the senses (Dretske 1969: 20, 29; Schüle 2000: 1–8). Dretske (1969: 20) labels this type of seeing “non-epistemic” and posits the following definition:

(13) S sees_n D

‘D is visually differentiated from its immediate environment by S.’

According to this definition, S is an observer, D an object or event perceived, and sees_n stands for ‘sees in a non-epistemic way’. Even though sensory perception provides us with the raw data we often rely on when we form our judgements, physical perceptions do not entail beliefs or knowledge.

[V]isual differentiation is a pre-intellectual, pre-discursive sort of capacity which a wide variety of beings possess. It is an endowment which is largely immune to the caprice of our intellectual life. Whatever judgments, interpretations, beliefs, inferences, anticipations, regrets, memories, or thoughts may be aroused by the visual differentiation of D, the visual differentiation of D is, itself, quite independent of these accompaniments. (Dretske 1969: 29)

From this follows that expressions of immediate perception lack the key part of the utterances that are marked for the evidential value of visual source. Namely, they do not convey any information that would be supported by visual perception, but instead they denote acts of visual perception itself. Another obstacle that prevents these constructions from being classified as semantically evidential is that the subject of the matrix verb need not believe that what they see is the case (Dretske 1969: 29; Dik & Hengeveld 1991: 241).

Despite the lack of overt evidential semantics in these constructions, analyses of English and German data reveal that an evidential reading may arise as a conversational implicature (Dretske 1969: 166–167; Boye 2018: 271; cf. Whitt 2018: 140–143 for a slightly different analysis and Boye & Harder 2009: 27–30 for a discussion on pragmatically conditioned evidential strategies).¹⁶ Besides describing an act of visual perception, an utterance or its context may pragmatically imply acquisition of knowledge on the part of the subject of the matrix verb.¹⁷ As we have seen, acquisition of knowledge is precisely the

¹⁶ The matter is further complicated by the metaphor UNDERSTANDING is SEEING, which merges the two domains with potentially no traces of physical perception in the target meaning (cf. Sweetser 1990: 33). Such a complete transfer would apply to the constructions with unambiguously propositional complements like ὁράω + ὅτι. By contrast, I assume that the original meaning of the matrix verb remains relatively accessible to the participants of communication if it is compatible with the syntactic type of the complement, e.g. ὁράω + AccPtcp.

¹⁷ Whitt (2018: 140–143), in a study on the scope of evidential expressions in Early Modern German, argues against Boye’s (2010a) claim that complements denoting states-of-affairs can be evidential only through pragmatic implicature. Whitt claims that in such contexts the component of visual source is not merely implied but entailed. This analysis is a result of a different notion of evidentiality employed by Whitt (2018). While Boye (2010a; 2010b) differentiates between visual sources (i.e. perceived states-of-affairs) and pieces of information (i.e. propositions) supported by these sources, Whitt does not keep the two strictly apart. Thus, when Boye claims that an evidential reading is implied, as opposed to entailed, he means that an entailed act of visual perception pragmatically implies a proposition. Whitt, on the other hand, takes the entailment of visual perception as a sufficient criterion to describe the expressions that belong here as semantically evidential. I prefer the analysis of Boye because it takes account of examples like (5). Ultimately, the component of knowledge acquisition depends on the context, including the person referred to by the matrix verb and the tense.

component that is missing in the constructions denoting immediate perception and whose absence precludes such expressions to be understood as evidential. On its face value, the pragmatic analysis may be applied to the following examples:

- (14) οὔτοι δ' ἐπιστάμενοι μὲν τοὺς νόμους ἅπαντας, **ὁρῶντες** δ' ἐμὲ βουλευόντα καὶ εἰσιόντ' ἐς τὸ βουλευτήριον [...], καὶ οὔτοι παρόντες καὶ ἐπιδημοῦντες [...] οὐκ ἤξιουν ἀπογράφεσθαι.

'But [the prosecution], who were perfectly familiar with the laws concerned and could **see** that I was a member of the Council and used the Council-chamber [...], and they were in Athens, they witnessed it, [...] and they did not see fit to register the charge.' (Antipho 6.45–46)

- (15) **ὁρῶντες** γὰρ τὸν Εὐκτῆμονα κομιδῇ ἀπειρηκότα ὑπὸ γήρωσ καὶ οὐδ' <ἐκ> τῆς κλίνης ἀνίστασθαι δυνάμενον, ἐσκόπουν ὅπως καὶ τελευτήσαντος ἐκείνου δι' αὐτῶν ἔσοιτο ἡ οὐσία.

'**Seeing** that Euctemon was completely incapacitated by old age and could not even leave his bed, they began to look about for a means whereby all his property should be under their control after his death.' (Is. 6.35)

In (14), there is an entailment for each complement and an ensuing implicature according to the pragmatic analysis. The participial complements entail that the prosecutors saw the speaker frequent the chamber and discharge the duties of a councilman. From this follows the implicature that they knew that he indeed was a councilman. In (15), the schemers who tried to obtain Euctemon's property witnessed firsthand his poor physical condition. Their subsequent plans imply that they knew that Euctemon was incapacitated. The pragmatic analysis amounts to drawing a distinction between expressed and implied propositions, the latter of which arise through implicature (Boye 2010a: 296). Accordingly, the complement τὸν Εὐκτῆμονα ἀπειρηκότα 'Euctemon being incapacitated' expresses a perceived state-of-affairs, but at the same time it implies a covert proposition 'that Euctemon is incapacitated', which is supported by visual perception. While this analysis seems appropriate for English, which employs different complementation strategies to capture immediate sensory perception and acquisition of knowledge, it is less suitable for classical Greek. Since participial complements in classical Greek are propositional when they appear with actual verbs of knowledge, a more straightforward solution is possible. Rather than claiming that an expressed state-of-affairs pragmatically implies or coerces a proposition, a more fitting description is that the context determines whether the complement is a proposition or not. For instance, the context in (15) requires that the schemers realized that something was the case, hence the complement is to be interpreted as a semantically coded (as opposed to implied) proposition dependent on a verb of seeing that serves as a predicate of knowledge. This interpretation may be corroborated by the presence of the negating particle οὐδέ 'not even' if it has scope over the

participle δυνάμενον ‘being able’. Negated complements are admissible only if they have propositional value and signal the acquisition of knowledge (see Section 2.3).

It thus follows that the construction of AccPtcp with verbs of seeing is ambiguous in classical Greek. Even if an occurrence fulfills all the requirements of immediate visual perception, the governing verb may be interpreted as a predicate of knowledge and its participial complement as denoting a proposition. What is more interesting is that in cases like (15), the propositional content (e.g. ‘that Euctemon is incapacitated’) represents a belief supported by a directly perceived state-of-affairs. In other words, the associated evidential value can be equated with visual source. This illustrates why it is not adequate to treat the relation between cognition and perception as an either-or situation (cf. Basset 1999; Cristofaro 1996: 118). While it holds that seeing does not imply knowing and that knowing cannot be reduced to seeing, both domains may combine in the evidential value of visual source. I will return to this point in Section 2.5, in which I will also discuss the specific cues that can be utilized to disambiguate physical perception from the acquisition of knowledge based on perception.

Expressions of pure immediate perception with no cognitive overtones are hard to identify. The reason is that human experiencers rarely see something without acquiring any knowledge about the world, especially when the situation is deemed worthy of a linguistic representation. Contexts that come close to this prototype emphasize visual imagery, either real or imagined, in which knowledge acquisition plays only a marginal role, if at all.

(16) ἀλλὰ ταῖς γε διανοίαις ἀποβλέψατ’ αὐτῶν εἰς τὰς συμφοράς, καὶ νομίσαθ’ ὁρᾶν ἀλικομένην τὴν πόλιν, τειχῶν κατασκαφάς, ἐμπρήσεις οἰκιῶν, ἀγομένας γυναῖκας καὶ παῖδας εἰς δουλείαν, πρεσβύτας ἀνθρώπους, πρεσβύτιδας γυναῖκας ὅψε μεταμανθάνοντας τὴν ἐλευθερίαν, κλαίοντας, ἰκετεύοντας ὑμᾶς, ὀργιζομένους οὐ τοῖς τιμωρουμένοις, ἀλλὰ τοῖς τούτων αἰτίοις ...

‘Behold their disaster in your imagination; imagine that you **see** their city taken, the razing of their walls, the burning of their homes; their women and children led into captivity; their old men, their aged matrons, late in life learning to forget what freedom means; weeping, supplicating you, angry not so much at those who are taking vengeance upon them, as at the men who are responsible for it all.’ (Aeschin. 3.157)

In (16), for instance, the speaker urges the audience to imagine Thebes befallen by disaster. The individual complements do not represent potential facts but hypothetical events unfolding before the eyes of the audience.

To summarize, participial complements with verbs of seeing can have two values in classical Greek. They denote either states-of-affairs that are directly perceived or propositions that represent acquired knowledge. In the case of immediate perception, the situation time of the governing predicate and the complement are simultaneous or overlap, and the described event is directly perceivable. True cases of immediate perception do not entail any acquisition of knowledge, but signify acts of visual perception, either real or imagined. For this reason,

they cannot entail an evidential meaning. If the context suggests that the subject of the matrix verb does not merely perceive a state-of-affairs, but also realizes that what they see is the case, the participial complement ought to be interpreted as a proposition. Such constructions can be evaluated as evidential.

The picture that has emerged so far suggests that although there is a clear notional distinction between perception and cognition, the two domains may interact. In classical Greek, this intersection does not involve only the meaning but also the form. The same construction of verbs of seeing with AccPtcp may convey immediate visual perception and the acquisition of knowledge. This is ensured by the fact that participial complements in classical Greek can denote both states-of-affairs and propositions. The exact value of the complement is determined by the context.

2.5. Verbs of seeing with AccPtcp used in a cognitive sense

2.5.1. Introduction

As we have seen in the previous section, verbs of seeing in classical Greek can also function as predicates of knowledge. This semantic extension is a crosslinguistic tendency (Sweetser 1990: 32–34; Schüle 2000: 28–33; Dik & Hengeveld 1991: 238). For the equivalents of *see*, Viberg (1984: 157–158) identifies the target senses of ‘understand’ and ‘know’, which also applies to ὁράω ‘see’ and εἶδον ‘saw’. This shift to a different predicate class is often formally marked by a change in complement type. Different marking is motivated by the fact that predicates of knowledge are complemented by propositions, as opposed to states-of-affairs (Dik & Hengeveld 1991: 238). Crosslinguistically, complements that convey propositions tend to include predicates that resemble independent verbal forms (Noonan 2007: 130). This is borne out by the fact that predicates of knowledge in classical Greek, regardless of their lexical source, prototypically take subordinate clauses introduced by either ὅτι or ὡς. This typological tendency, however, does not imply that dependent verb forms are excluded as complements of knowledge predicates or that predicates of perception cannot be complemented by finite verbs (see Schüle 2000: 225–246 for a typological overview; Givón 2001b: 39–43). According to Schüle (2000: 39–41), there seem to be only the following restrictions in place:

- (17) a. If the complement denoting state-of-affairs after a perception verb has a complementizer, then the complement denoting proposition also has a complementizer.
- b. If an independent verb form occurs after perception predicates, then an independent verb form also occurs after knowledge predicates.
- c. If a dependent verb form occurs after knowledge predicates, then a dependent verb form also occurs after perception predicates.

Points (17)a–b do not concern us here, because they do not apply to our data. Point (17)c is borne out by the fact that both predicates of knowledge, as in (18), and perception admit

AccPtcp as their complement in classical Greek. This complementation strategy spread from the verbs denoting physical perception (Cristofaro 2012: 344; La Roi 2020).

- (18) ἵνα δὲ μὴ διατρίβω, πρῶτον μὲν κάλει μοι τοὺς **εἰδότας** Τίμαρχον τουτονὶ
διαιτώμενον ἐν τῇ Μισγόλα οἰκίᾳ ...
‘But not to delay, call first **those who know** that Timarchus here lived in the house of
Misgolas.’ (Aeschin. 1.50)

Propositional complements with predicates of knowledge are not subject to the semantic restrictions that apply to the expressions of immediate perception. The properties of propositional participial complements are discussed in the following section.

2.5.2. Formal and semantic properties

Basset (1999) is perhaps the first to acknowledge that participial complements with the Greek verbs of seeing can have propositional value and signify acquisition of knowledge. This fact has some implications for the semantics of the participles used in these constructions. Van Emde Boas et al. (2019: 617–618) state that the participle can have any stem and that its aspectual value carries a relative-tense implication. This predicts, for example, that aorist participles may refer to anterior events. However, this is rare in the case of verbs of seeing with a cognitive meaning in the studied sample, as there is only one clear instance of an aorist participle with anterior reference after ὁράω:

- (19) [The Ionians prohibited the restoration of the destroyed sanctuaries, in order that
future generations might comprehend the impiety of the Persians,] **ὁρῶντες** αὐτοὺς
οὐ μόνον τοῖς σώμασιν ἡμῶν ἀλλὰ καὶ τοῖς ἀναθήμασι πολεμήσαντας.
‘**Seeing** that they had waged that war not against our persons only, but even against
our votive offerings to the gods.’ (Isoc. 4.156)

Note that the aorist participle πολεμήσαντας ‘waged a war’ may also indicate that the described state-of-affairs is viewed as a temporally bounded eventuality. In any case, the participle refers to a time that precedes the reference time of the matrix verb. Other occurrences of an aorist participle after εἶδον are motivated by the aspectual value of the stem and convey temporally bounded events or the starting point of a state:¹⁸

- (20) ἐκ ποίας δ’ ἂν οἰκίας ἡδίων **εἶδεν** υἱὸν αὐτῷ κατὰ τοὺς νόμους εἰσποιηθέντα μᾶλλον
ἢ ταύτης, ἐξ ἧσπερ καὶ φύσει παῖδας ἐζήτησεν αὐτῷ γενέσθαι;
‘And from what family would he have more gladly **seen** a son adopted according to law
than that from which he sought to beget children of his own body?’ (Isoc. 19.46)

¹⁸ Aorist participles denoting simultaneous bounded events also appear in Isoc. 19.44, Isoc. 14.41, Dem. 19.138, and Is. 11.37.

- (21) ἤδη γὰρ ποτε **εἶδον** μισηθέντας τοὺς τὰ τῶν πλησίον αἰσχροῖς λίσαν σαφῶς λέγοντας.
'For before now I have **seen** people hated who recount too exactly the sins of their neighbors.' (Aeschin. 3.174)

In (20), the participle εἰσποιηθέντα 'adopted' does not mark the action as necessarily preceding the situation time of the matrix verb in the counterfactual expression ἂν εἶδεν 'he would have seen'. Rather, the envisaged act of cognitive perception temporally encompasses the hypothetical adoption in its entirety, which is captured by the perfective aspect of the participle. In (21), the participle μισηθέντας 'became hated', which belongs to the atelic verb μισέω 'hate', can be interpreted as an ingressive aorist.

As for the participial complements with ὁράω and εἶδον that refer to posterior events, there are only two examples in the studied sample:¹⁹

- (22) ἐπειδὴ δ' οὐδ' ὥς ἄνευ ἀγῶνος **έώρα** ἐσόμενα τὰ πράγματα ...
'When he **saw** that even thus he would not get his way without coming into court [...].'
(And. 1.122)

To some degree, temporal depth can be expressed by the complements that contain a perfect participle. As we have seen in Section 2.4, the perfect stem in classical Greek can have the value of the anterior perfect or resultative, both of which entail a preceding event.

- (23) [The ambassadors did not want to have anything to do with Demosthenes,] **ὁρῶντες** αὐτὸν ἐν τῇ προτέρᾳ πρεσβείᾳ πᾶσιν αὐτοῖς ἐπιβεβουλευκότα.
'They had **seen** that he had plotted against them all on the previous embassy.' (Aeschin. 2.97)
- (24) [I am surprised that none of you is angry, men of Athens,] **ὁρῶν**, ὃ ἄνδρες Ἀθηναῖοι, τὴν μὲν ἀρχὴν τοῦ πολέμου γεγεννημένην περὶ τοῦ τιμωρήσασθαι Φίλιππον, τὴν δὲ τελευτὴν οὖσαν ἤδη ὑπὲρ τοῦ μὴ παθεῖν κακῶς ὑπὸ Φιλίππου.
'**Seeing** that at the beginning of the war our aim was to punish Philip, but at the end it is to escape injury at his hands.' (Dem. 4.43)

The participles ἐπιβεβουλευκότα 'having plotted' and γεγεννημένην 'having come to be' refer to past events and their current relevance. Naturally, this way of referring to the past is never divorced from the semantic component of simultaneity. In some occurrences, the perfect participle highlights the current state, while the implied anterior event is of secondary importance:

¹⁹ The other example is Dem. 18.63.

- (25) καίτοι εἰ μὴ θυγατριδοῦς ἡμᾶς ἐνόμιζεν εἶναι καὶ μόνους ἐγγόνους **ἑώρα** λοιποὺς καταλελειμμένους αὐτῷ, οὐκ ἂν ποτε ἐποίει τούτων οὐδέν ...
 ‘Yet if he had not regarded us as his daughter’s children and **seen** in us his only surviving lineal descendants, he would have done none of these things.’ (Is. 8.17)

In contrast to the complements that denote directly perceived states-of-affairs, a complement governed by a predicate of knowledge may contain temporal satellites, e.g. νεωστὶ ‘recently’ in the following example:

- (26) ἐγὼ δ’ εἰ μὲν **ἑώρων** νεωστὶ τὴν περιεργίαν ταύτην ἐν τοῖς λόγοις ἐγγεγεννημένην ...
 ‘If I **observed** that this futile affectation had arisen only recently in rhetoric [...].’ (Isoc. 10.2)

Another characteristic of the constructions that denote the acquisition of knowledge is that the verbal form in the complement can be negated:²⁰

- (27) ... **ὁρῶντες** τὸν πατέρα τὸν ἐμὸν ἀρρωστοῦντα, ἐμὲ δὲ οὐκ ἐπιδημοῦντα, αὐτοὶ καὶ προὔθεντο καὶ τᾶλλα πάντα τὰ νομιζόμενα ἐποίησαν ...
 ‘**Seeing** that my father was ill and I was not at home, they themselves laid out the remains and carried out all the other customary rites.’ (Is. 9.4)

To summarize, the participial complements that denote propositions after ὁράω ‘see’ and εἶδον ‘saw’ in the research corpus exhibit all the properties that are admissible in the constructions that signify knowledge acquisition. However, the majority of the complements contains a present participle that refers to a state-of-affairs that is simultaneous with the situation time of the matrix clause. This suggests that in the 5th and 4th cent. BCE the constructions with AccPtcp governed by the verbs of seeing used in a cognitive sense tend to retain some properties of the constructions that denote immediate sensory perception. The participles in question most often appear in the present stem and convey simultaneity (cf. Duhoux 2000: 171).

Actual verbs of knowledge differ from this pattern. Their complements do not disqualify aorist or future participles with a relative-tense implication (see Section 2.6). Furthermore, present participles can stand in lieu of the imperfect in the corresponding direct speech and refer to a past event. The likely explanation as to why the construction of verbs of seeing used cognitively + AccPtcp often retains the property of simultaneous reference is its affinity to the source construction that denotes immediate sensory perception. This original use, as we have seen above, is compatible with the present and perfect stem participles, which convey simultaneity, and the aorist participles that refer to simultaneous temporally bounded

²⁰ Other examples of a negated participle with ὁράω and εἶδον are Isoc. 4.48–49, Isoc. 10.18, and Lycurg. 1.95.

events. On the other hand, no such limitations apply to the construction of actual verbs of knowledge + AccPtcp.

In the case of the constructions containing a verb of seeing + AccPtcp in which the complement does not carry any formal signs of propositional content, it is sometimes difficult to distinguish the expressions of knowledge from those that denote immediate visual perception. The most useful criterion appears to be the nature of the event referred to in the complement. If it cannot be perceived through the senses, the construction signifies the acquisition of knowledge. This, however, does not exhaust all the possible configurations in which the complement denotes a proposition. Disambiguation is sometimes possible only by gauging whether the subject of the matrix verb realizes that something is the case or not.

2.5.3. Evidential values associated with perception

Constructions governed by verbs of seeing used in a cognitive sense may convey evidential meanings (Whitt 2010; Boye 2018: 271). One of the enabling factors is that these predicates take complements that denote propositions. If we accept the definition according to which evidentials and evidential strategies are linguistic means that express the source of information for a proposition, propositional complements fulfill the information requirement (see Section 1.3). Unlike complements denoting states-of-affairs, a propositional complement refers to a piece of knowledge about a state-of-affairs. This overcomes the hurdle that rules out evidential entailment in the case of pure immediate perception.

Determining the exact type of evidential justification is less straightforward. In the English construction *S sees that p*, the state-of-affairs encompassed in *p* may or may not be visible and the subject of the matrix predicate may or may not have visual access to it. Consider examples (2) and (3), repeated here for convenience, and (30):

(28) Peter sees that Thomas is reading a book.

‘Peter sees Thomas reading a book and he realizes that Thomas is reading a book.’

(29) Peter sees that Thomas is reading a book.

‘Peter sees that the light in Thomas’ room is on. Based on this, Peter infers that Thomas is reading a book.’

(30) The mother saw that her child had a fever.

‘The mother realized that her child had a fever by touching his forehead.’

Both (28) and (29) involve immediate visual perception. In (28), Peter directly witnesses the state-of-affairs that is described in the complement. In (29), on the other hand, he perceives a state-of-affairs and infers that a proposition holds. Finally, (30) does not imply that anything at all is visually perceived.

Dretske (1969: 78–93) classifies the cases like (28) as “primary epistemic seeing” and proposes the following definition, presented in a slightly modified version here:

- (31) (i) B is encompassed in p and p is true.
- (ii) S sees_n B
- (iii) The conditions under which S sees_n B are such that B would not look the way it now looks to S unless it was encompassed in p and p was true.
- (iv) S, believing the conditions are as described in (iii), takes p to be true.

The most important distinction is that B is a directly perceived state-of-affairs (e.g. ‘Peter be reading’), while p is the proposition that refers to a piece of acquired knowledge (e.g. ‘Peter is reading’). Notice that in (28) the conceptual content of the perceived state-of-affairs B is repackaged in proposition p .

In (29), Peter does not directly witness B (= ‘Thomas be reading’) but a different state-of-affairs C (= ‘The light be on’). Seeing C induces the belief q (= ‘The light is on’), which leads Peter to believe p (= ‘Thomas is reading’). Dretske (1969: 153) calls this type of knowledge acquisition “secondary epistemic seeing” and defines it as follows:

- (32) (i) B is encompassed in p and p is true.
- (ii) S sees_n C ($C \neq B$) and sees (primarily) that C is encompassed in q .
- (iii) Conditions are such that C would not be encompassed in q unless B were encompassed in p and p was true.
- (iv) S, believing the conditions are as described in (iii), takes p to be true.

The concept of primary epistemic seeing mirrors the semantics of the evidentials that denote visual source. Secondary epistemic seeing is equal to circumstantial inference that involves inference based on visible signs (Anderson 1986: 274–275; see also Section 1.3).

Sentences that resemble (30) differ from the two types just mentioned. Despite the presence of the verb *see* the subject of the matrix predicate need not have any visual evidence for the information conveyed in the complement (Dretske 1969: 80, 111 fn. 1). This, in turn, leaves unfulfilled point (ii) in the definitions above. Nevertheless, the notion of inference still seems to be of use here, as circumstantial inference involves reasoning that leads from belief q to belief p . The non-visual use of the verb *see* implies that the belief q is arrived at through other means than the sense of sight.

Thus, it suffices to alter requirement (ii) in (32) to accommodate cases like (30):

- (33) (i) B is encompassed in p and p is true.
- (ii) S perceives C ($C \neq B$) and realizes that C is encompassed in q .
- (iii) Conditions are such that C would not be encompassed in q unless B were encompassed in p and p was true.
- (iv) S, believing the conditions are as described in (iii), takes p to be true.

This type of inference will be henceforth referred to as circumstantial inference based on direct (including non-visual) perception.

The evidential values of sensory source and circumstantial inference may be sometimes expressed by a single marker in the languages that have grammaticalized evidentiality (see Section 1.2). This may be explained by the fact that sensory source and circumstantial inference are semantically similar. De Haan (2001) argues that all evidential values can be described by a combination of two features, [+/-direct] and [+/-firsthand]. The feature [+firsthand] refers to event perception and [+direct] points to personal access to evidence. According to De Haan, circumstantial inference is the only value marked by the non-aligned features [+direct] and [-firsthand] – i.e. the speaker does not perceive the event they are referring to [-firsthand], but they have direct access to the evidence [+direct]. In some evidential systems, inference formally patterns with sensory source (both [+direct]) or hearsay (both [-firsthand]). Although De Haan postulates that [+direct] excludes reported evidence, I propose that the feature ought to be understood according to the way in which the evidence is used. If the cognizer²¹ relies on the evidence to independently arrive at a realization, the feature [+direct] is warranted. This modification still produces the original distribution of sensory ([+direct]), circumstantial inference ([+direct]), and hearsay ([-direct]), since the last value entails that the marked proposition and not just the underlying evidence is reported. This framework, as we will see in the following sections, can be applied to explain the meaning of the Greek construction that involves the verbs *ὁράω* ‘see’ and *εἶδον* ‘saw’ with participial complements.

After having discussed these theoretical preliminaries, we may move on to the analysis of the Greek data, in which both visual source and circumstantial inference of both types are attested. It has already been mentioned in Section 2.4.2 that the construction consisting of a verb of seeing + AccPtcp is ambiguous. If the matrix verb functions as a predicate of perception, the construction denotes immediate visual perception. A verb of seeing used in a cognitive sense expresses the acquisition of knowledge. The ambiguity between these two interpretations arises if it is conceivable that the state-of-affairs described by the complement can be physically seen by the subject of the matrix predicate and no formal signs of propositional content are present. With respect to knowledge acquisition, this ambiguity concerns visual source and partially circumstantial inferences based on visual perception.

2.5.4. Visual source

The realization that something is the case may be cast as a proposition that refers to a directly perceived state-of-affairs. This use of the construction can be disambiguated from its non-propositional counterpart in two ways. Firstly, the presence of formal signs of propositional content like negated verbal forms or temporal satellites points towards knowledge acquisition

²¹ I use this term to refer to the semantic role of a person who perceives cognitively or engages in reasoning.

as opposed to immediate perception. Secondly, as some instances of knowledge acquisition or recollection do not formally differ from the contexts that denote immediate perception, the surrounding context may provide hints as to whether the subject of the main predicate acquires any knowledge. If they do, the sentence possibly involves visual source, which is to be equated with primary epistemic seeing. The following example illustrates this arrangement:

(34) [Most men took to flight,] ἓνα δέ τινα τῶν νεωτέρων, **ὁρῶντα** τὸν πατέρα πρεσβύτερον ὄντα καὶ οὐχὶ δυνάμενον ἀποχωρεῖν ἀλλὰ ἐγκαταλαμβανόμενον, ἀράμενον φέρειν.

‘But one of the youths, **seeing** that his father was quite old and could not escape and that he was being overtaken [by the fire], lifted him up and carried him.’ (Lycurg. 1.95)

As for the part τὸν πατέρα πρεσβύτερον ὄντα ‘his father being quite old’ in (34), it can be analyzed as referring to a proposition, perceived state-of-affairs or a perceived individual (τὸν πατέρα) + an adjunct participle with an adjective (πρεσβύτερον ὄντα). Dik & Hengeveld (1991: 250–254) treat equivalents of πρεσβύτερον ὄντα as predicative adjuncts and argue that they a) temporally localize a state-of-affairs (in our case ‘father be old’) relative to the state-of-affairs expressed by the core predication (‘a young man saw’) and b) serve as attributes to their head noun. Thus, expressions like this do imply perception of an individual, but the individual is conceptualized as involved in a state-of-affairs (cf. Rijksbaron 2006 [1984]: 118–119 fn. 2 on Greek). Moreover, the context in (34) suggests that the complement also refers to a realization, which makes it a proposition (cf. Duhoux 2000: 298–305 for a similar interpretation based on different arguments). Similarly, the participle ἐγκαταλαμβανόμενον ‘being caught in’ ultimately refers to a perceived state-of-affairs, but a propositional reading is unproblematic and fits the context at hand. Another example of a propositional participle may be adduced:

(35) **εἶδον** μὲν ἐγὼ καὶ οἱ συμπρέσβεις ἅπαντες ὀμηρεύοντα τὸν υἱὸν τὸν Κερσοβλέπτου παρὰ Φιλίππῳ. καὶ ἔτι καὶ νῦν τοῦθ’ οὕτως ἔχει.

‘I, as well as all my colleagues in the embassy, **saw** the son of Cersobleptes a hostage at Philip's court; and this is still the case.’ (Aeschin. 2.81)

In (35), the remark added after the utterance that describes what the ambassadors saw hints that the participial complement of εἶδον also denotes a proposition. In both (34) and (35), the subject of the matrix verb acquires a piece of knowledge by directly observing a state-of-affairs.

Applying De Haan’s analysis to the construction in question yields the combination [+direct], [+firsthand]. The subject of the matrix verb independently realizes that something is the case, and the state-of-affairs encompassed in the proposition is witnessed firsthand.

2.5.5. Circumstantial inference based on visual perception

Not all occurrences of the construction entail knowledge about an event perceived firsthand. The experiencer may physically see an event, realize that what they see is the case, and infer that something else must be true. The state-of-affairs encompassed in the inferred proposition does not have to be visible or directly accessible to the experiencer. The evidential value that applies here is circumstantial inference based on visual input.

- (36) [My father is not evading his obligations towards the city] ὥσπερ ἑτέρους **ὁρῶ**, τοὺς μὲν εἰς τὴν ἡπειρον ἰόντας καὶ οἰκοῦντας ἐν τοῖς πολεμίοις τοῖς ὑμετέροις ...
'Like those others, some of whom I **see** crossing to the mainland and settling among your enemies' (Antipho 5.78)

The speaker in (36) probably does not mean to say that he can physically see some of the citizens living among the enemies. He rather has firsthand evidence that they are leaving for the mainland, the action expressed by the participle ἰόντας 'going', and infers that they settle in the enemy's land. Arguably, cases like this are not very likely to be confused with expressions of immediate perception or visual source. The surrounding context usually makes clear whether the state-of-affairs described by the complement can be physically perceived by the subject of the matrix verb or not.

Most of the participial complements conveying circumstantial inference can be identified more easily because the state-of-affairs they refer to does not admit immediate visual perception or the subject of the matrix predicate cannot access it visually. In (19) above, the subject of the participle ὁρῶντες 'seeing' could not see the Persians damaging the sanctuaries firsthand. It is rather through seeing the ruins themselves that future generations may infer that the war was waged in a particular way. Further examples of circumstantial inference can be quoted:

- (37) τούτῳ μὲν οὖν **ἑώρα** ἓνα μόνον υἱὸν ὄντα ...
'He **saw** that [my opponent] had only one son.' (Is. 2.10)
- (38) ... **ὁρῶντες** ἀπολλύμενον τὸν οἶκον ...
'[My opponents] saw that the property was going to ruin.' (Is. 6.29)
- (39) τότε δὴ προσίων Λυσίστρατον, Ἡγημόνα, Ἐπιχάρη, **ὁρῶν** φίλους ὄντας ἐμοὶ καὶ χρωμένους ...
'He approached Lysistratus, Hegemon, and Epichares, whom he **saw** to be intimate friends of mine.' (And. 1.122)

It would be a stretch to claim that the states-of-affairs expressed by the complements in the examples above can be visually perceived. In each case, the subject of the matrix verb could not have arrived at the realization that something is the case solely through immediate

perception. In (37), observing the litigant in various life situations leads to the conclusion that he cannot have more than one son. As for (38), seeing individual signs of decay and poor management warrants the belief that the whole property is going to ruin. Similarly, one cannot directly see that some men are bound by friendship. In all these examples, some mental effort on the part of the observer is required that allows them to infer some unobvious truth from what is visually perceived.

The combination of features that describes this usage is [+direct], [-firsthand]. As with visual source, the evidence is directly acquired by the subject of the matrix predicate. The state-of-affairs referred to in the complement is not witnessed firsthand.

It could be argued that cases like (38) and (39) in fact refer to states-of-affairs that are directly witnessed and thus represent visual source. It is true that grammatical inferentials in the languages of the world are often used when the speaker observes some traces after the event itself (De Haan 2001: 195). Such occurrences are clearly non-firsthand because the anteriority of the event entails that it could not be perceived. However, simultaneous inferences are also attested (Aikhenvald 2004: 102). The objection chiefly bears on the question of what can be seen in a primary epistemic way and where the line is between visual source (i.e. firsthand) and circumstantial inference (i.e. non-firsthand) based on visual perception. Both evidential values involve some cognitive effort to get from the content of perception to a piece of information. The approach adopted here allots a wider range of possible meanings to circumstantial inference and reserves visual source for the cases when the output of the visual apparatus closely resembles the belief content and not much deducing is needed. In other words, visual source describes what a naïve observer with limited encyclopedic knowledge might learn about the world by simply observing their environment, while circumstantial inference requires more effort to acquire a piece of knowledge.

The fact that the prototypical cases of visual source and circumstantial inference are coded by the same construction in classical Greek makes the decision where to draw the line between them arbitrary and of secondary importance. Thus, rather than trying to determine the virtual boundary between the opposite values [+/-firsthand] in borderline cases, it is more profitable to capitalize on the presence of the feature [+direct]. So far, independent realization of the experienter that something is the case seems to be the key factor that conditions the use of participial complements with ὁράω 'see' and εἶδον 'saw'.

2.5.6. Circumstantial inference based on direct perception

Some occurrences of the construction refer to knowledge acquisition that is not supported by purely visual perception. The subject of the matrix verb may draw upon all types of sensory evidence to acquire a piece of knowledge. For instance, one can visually observe human behavior and its effect on the physical world while also following what the people in question are saying. This broad evidential basis means that the state-of-affairs encompassed in the complement may be cognitively complex and involve abstract entities:

(40) ὁρῶ δέ, ὦ ἄνδρες, τὴν πλείστην διατριβὴν τῶν λόγων ποιούμενον περὶ τὴν τοῦ παιδὸς οὐσίαν καὶ περὶ τὴν ἐμήν ...

‘I **see**, gentlemen, that [my opponent] embarks on (lit. makes) a lengthy discussion of my fortune and of that of the child.’ (Is. 11.37)

(41) εἴτε βοηθησάντων μόνον ὑμῶν εἰς Ὀλυνθον, ἀκινδύνως ὁρῶν ἔχοντα τὰ οἴκοι, [he will give close and undivided attention to his operations, until at last he overcomes the resistance of the besieged].

‘Or if you confine yourselves to helping Olynthus, [Philip] will **see** that his base is secure (lit. the things at home have it safely).’ (Dem. 1.18)

In (40), the speaker refers to the content of the speech made by the other litigant. Naturally, he cannot physically see what the speech is about, as this can be learnt only by listening to what the opponent has to say. Example (41) illustrates the point that evidence is not limited to the outputs of the visual apparatus but also includes the overall perception of one’s environment. I propose that the AccPtcp here is motivated by the fact that Philip independently infers that something is the case. A similar example may be quoted here:

(42) ἰδὼν δ’ ἐκεῖνος τὸν μὲν Ἀριοβαρζάνην φανερώς ἀφεστῶτα βασιλέως, Σάμον δὲ φρουρουμένην ὑπὸ Κυπροθέμιδος [Timotheus abandoned his intention of helping the satrap].

‘He has **seen** (lit. having seen) that Ariobarzanes was in open revolt from the King and that Samos was garrisoned by Cyprothemis.’ (Dem. 15.9)

Examples like (41) and (42) might suggest that the subject of the matrix verb cannot personally collect all the evidence that supports the proposition in the complement. For instance, Timotheus in (42), a commander of a naval expedition, most probably learned about the developments in Persia from messengers rather than by personally observing signs of revolt. Here, we ought to distinguish between the evidence and the piece of knowledge that follows from it. The feature [+direct] means that the subject collects the evidence and independently infers that something is the case. Evidence may include reports. Collecting the reports that purport *q* and utilizing them to infer *p* is not structurally different from visually perceiving that *q* is the case and inferring *p*. If Timotheus receives a report that the satrap’s army is on the move (i.e. *q*), his evidence for *q* is indeed indirect, because the step from the visual perception of the army to the proposition *q* has occurred in the consciousness of someone else (e.g. the messenger’s or his sources). However, what concerns us here is the proposition *p* that pertains to a different state-of-affairs than the received report. In this arrangement, the report itself is a piece of evidence. The upshot is that circumstantial inference may be based on a broad array of evidence that the subject relies on to independently deduce a conclusion, whereas the evidential value of hearsay concerns reported propositions.

2.5.7. Summary

The classical Greek construction of verbs of seeing used cognitively with AccPtcp follows the feature [+direct], as illustrated in Table 5. The construction signals that the subject of the matrix verb independently realizes that something is the case based on the available evidence. The pattern of polysemy we have examined branches out from the non-evidential use of the construction of verbs of seeing + AccPtcp, which denotes immediate visual perception. The semantic component of direct perception is often retained when the construction denotes knowledge acquisition. As we progress from visual source to circumstantial inference based on direct perception of any kind, the perceptual basis broadens. As the evidence becomes more complex and possibly spreads over space and time, the process of inferring becomes less trivial.

	Complement	Information source	Features
Immediate visual perception	state-of-affairs	No	~[+firsthand, +direct]
Visual source	proposition	Yes	[+firsthand, +direct]
Circumstantial inference based of visual perception	proposition	Yes	[-firsthand, +direct]
Circumstantial inference based of direct perception	proposition	Yes	[-firsthand, +direct]

Table 5 Possible meanings of verbs of seeing + AccPtcp in classical Greek

This analysis reveals the shortcomings of the treatments in Cristofaro (1996) and Basset (1999). While Cristofaro (1996) is right to argue that the participial complements with verbs of seeing denote physical perception, it is not adequate to restrict the cognitive meaning of the verbs in question to the cases when they take subordinate clauses with ὅτι ‘that’ or ὡς ‘that’. Basset (1999), on the other hand, acknowledges that acquisition of knowledge may apply to AccPtcp, but he neglects the component of sensory perception and posits a binary opposition between immediate perception and learning that something is the case.

In order to account for all the meanings that are associated with the construction in question, the analyses of Cristofaro and Basset ought to be combined. The notion of information source provides a theoretical basis to explain how the domains of sensory perception and cognition interact with each other. Namely, the latter may connect to the former and build upon it. Furthermore, the analysis proposed by De Haan (2001) reveals the inner logic of the system that employs the same construction to express a group of distinct but related meanings.

Having obtained this preliminary result, the next step is to test whether this analysis applies to the constructions of verbs of knowledge with AccPtcp. This is pursued in the following section.

2.6. Verbs of knowledge with AccPtcp

Verbs of knowledge complemented by AccPtcp cannot denote pure physical perception because their lexical meaning ensures that the construction expresses knowledge acquisition or recollection. As has already been mentioned, the aorist and future stem participles with a relative-tense implication are more common than in the case of verbs of seeing used cognitively. Additionally, anteriority may be expressed by means of a present stem participle. The following examples may serve as an illustration:

(43) πρῶτον μὲν γὰρ ὑμῖν μάρτυρας παρέξομαι τοὺς **εἰδόμενους** πολλά μοι χρήματ' ἐκ τοῦ Πόντου κομισθέντα ...

'I will present to you first those who **knew** that I had received much money from Pontus.' (Isoc. 17.40)

(44) **ἐπίστασθε** γὰρ ἐν ταῖς ἐφ' ἡμῶν ὀλιγαρχίαις γεγενημέναις καὶ οὐ τοὺς γῆν κεκτημένους ἔχοντας τὴν πόλιν, ἀλλὰ πολλοὺς μὲν αὐτῶν ἀποθανόντας, πολλοὺς δ' ἐκ τῆς πόλεως ἐκπεσόντας ...

'You **know** that in the previous oligarchies of our time it was not the possessors of land who controlled the city: many of them were put to death, and many were expelled from the city.' (Lys. 34.4)

(45) Δημοσθένης δ' ὅταν ἀλαζονεύηται, πρῶτον μὲν μεθ' ὅρκου ψεύδεται, ἐξώλειαν ἐπαρώμενος ἑαυτῷ, δεύτερον δέ, ἃ εὖ **οἶδεν** οὐδέποτε ἐσόμενα, τολμᾷ λέγειν εἰς ὅπότε ἔσται ...

'Demosthenes, when he is cheating you, first adds an oath to his lie, calling down destruction on himself; and secondly, predicting an event that he **knows** will never happen, he dares to tell the date of it.' (Aeschin. 3.99)

Most of the analyzed occurrences are compatible with the hypothesis outlined in the previous section. The individual contexts exhibit one of the three evidential meanings that are also associated with the construction of verbs of seeing + AccPtcp. In (46), the speaker reminds the councilmen of a fact they likely know from their personal experience:

(46) **ἐπίστασθε** δέ, ὦ βουλή, ὅσοι μάλιστα τῶν τοιούτων ἐπιμελεῖσθε, πολλά ἐν ἐκείνῳ τῷ χρόνῳ δασέα ὄντα ἰδίαις καὶ μορίαις ἐλάαις, ὧν νῦν τὰ πολλὰ ἐκκέκοπται ...

'You are **aware**, gentleman – especially those of you who have the supervision of such matters – that many plots at that time were thick with private and sacred olive-trees which have now for the most part been uprooted.' (Lys. 7.7)

In some contexts, there is indirect evidence that the subject of the matrix verb has directly perceived the state-of-affairs referred to by the participial complement. This concerns witness reports and the passages in which the speaker contrasts firsthand knowledge with hearsay:

(47) Τελέδημος Κλέωνος, Ὑπερείδης Καλλαίσχρου, Νικόμαχος Διοφάντου μαρτυροῦσι [...] **εἰδέναι** Αἰσχίνην Ἀτρομήτου Κοθωκίδην συνερχόμενον νυκτὸς εἰς τὴν Θράσωνος οἰκίαν καὶ κοινολογούμενον Ἀναξίνῳ ...

‘Teledemus, son of Cleon, Hypereides, son of Callaeschrus, Nicomachus, son of Diophantus, bear witness that they are **aware** that Aeschines, son of Atrometus, of Cothocidae, comes by night to the house of Thraso and holds communication with Anaxinus.’ (Dem. 18.137)

(48) οὐκ αἰσχύνεσθε, ἄνδρες Ἀθηναῖοι, τὴν κατὰ Δημοσθένους τιμωρίαν ἐκ τῶν ἡμετέρων λόγων μόνων ἡγούμενοι δεῖν κρίνειν; οὐκ **ἴστε** τοῦτον αὐτοὶ δωροδόκον ὄντα καὶ κλέπτην καὶ προδότην τῶν φίλων καὶ τῆς πόλεως ἀνάξιον καὶ αὐτὸν καὶ τὴν περὶ τοῦτον τύχην γεγενημένην;

‘Are you not ashamed, Athenians, that you should think our speeches the only evidence you have on which to determine the punishment of Demosthenes? Do you not **know** yourselves that this man is open to bribes and is both a robber and a traitor to his friends, that neither he nor the fortune which has gone with him is fit for the city?’ (Din. 1.41)

(49) [I am astounded at the shameless spirit shown by my brother.] τὸ διομόσασθαι ὑπὲρ τῆς μητρὸς εὖ **εἰδέναι** μὴ πεποιηκυῖαν²² ταῦτα. πῶς γὰρ ἂν τις εὖ εἰδείη οἷς μὴ παρεγένετο αὐτός;

‘To think that he swore in his mother’s defense that he **knew** she had not done that! How could anyone be sure of what he did not witness in person? (Antipho 1.28)

The deposition of the witnesses in (47) most probably entails that they saw what Aeschines did. Examples (48) and (49) suggest that οἶδα ‘know’ + AccPtcp is warranted when the subject of the verb does not rely on reports but possesses firsthand knowledge. Hearing about something, expressed by ἀκηκόασι ‘they have heard’, is contrasted with ἴσασι ‘they know’ + AccPtcp also in the following example:

(50) [His mere mention of a mother's name does not suffice to make the children legitimate, but he must prove that he is speaking the truth] τοὺς συγγενεῖς παρεχόμενος τοὺς **εἰδόμενους** συνοικοῦσαν τῷ Εὐκτήμενι καὶ τοὺς δημότας καὶ τοὺς φράτορας, εἴ τι ἀκηκόασι πώποτε ἢ **ἴσασι** ὑπὲρ αὐτῆς Εὐκτήμενα λητουργήσαντα ... ‘[...] by producing the relatives who **know** that she was married to Euctemon, and the members of the deme and of the ward, if they have ever heard or **have any knowledge** that Euctemon performed any public services on her behalf.’ (Is. 6.64)

²² The participle is an emendation that is accepted in the editions of Blass (1892) and Blass & Thalheim (1914). The manuscript has the perfect infinitive πεποιηκέναι, which is very rare with οἶδα ‘know’.

The following examples involve circumstantial inference based on visual evidence. The witnesses in (51) infer something about the living arrangement of Timarchus based on observing his whereabouts. A similar context appears in (52):

(51) ἑτέραν γὰρ ἐγὼ γέγραφα μαρτυρίαν τοῖς **εἰδόσι** Τίμαρχον τουτονὶ καταλιπόντα τὴν πατρώαν οἰκίαν καὶ διαιτώμενον παρὰ Μισγόλα ...

‘For I have prepared another affidavit for those who **know** that this man Timarchus left his father’s house and lived with Misgolas.’ (Aeschin. 1.47)

(52) καὶ συνοικοῦσαν αὐτῷ τὴν γυναῖκα σαφῶς **ἐπιστάμενος**, τρεῖς θεραπαίνας ἐξήτησ’ αὐτόν, αἷ συνοικοῦσάν τε τὴν γυναῖκα **ᾗδεσαν** καὶ τὰ χρήμαθ’ ὅτι παρὰ τούτοις ᾗν
‘I **knew**, further, that beyond all doubt the woman was living with Aphobus and I demanded of Onetor three female slaves, who **knew** that the woman was living with Aphobus and that the effects were in the hands of these men’ (Dem. 30.35)

Most of the contexts that contain the studied construction involve circumstantial inference based on direct perception. As has been stated above, the characteristic feature of this use is that the subject of the matrix verb independently infers that something is the case based on the available evidence. This means that the proposition expressed by the complement is not mediated by someone else. In (53), the witnesses rely on sensory data that exceed the purely visual. The complement in (54) describes a personal realization of the speaker.

(53) **ἐπιστάμεθα** Μειδίαν πείθοντα τὸν τε Στράτωνα τὸν διαιτητὴν καὶ ἡμᾶς, ὄντας ἐκεῖνοις τοῖς χρόνοις ἄρχοντας, ὅπως τὴν δίκαιαν αὐτῷ ἀποδιδιτήσομεν, καὶ διδόντα δραχμὰς πεντήκοντα.

‘We **know** that Meidias tried to induce Strato, the arbitrator, and us, who were at that time archons, to reverse the judgement against him, and he offered us fifty drachmas.’ (Dem. 21.93)

(54) [At that time, men of the jury, I thought that Pasion was giving me all this advice because of goodwill toward me;] ἐπειδὴ δὲ πρὸς τοὺς παρὰ Σατύρου διεπραξάμην, **ἔγνων** αὐτὸν ἐπιβουλεύοντα τοῖς ἐμοῖς.

‘But when I had arranged matters with the representatives of Satyrus, I **realized** that he had designs on my property.’ (Isoc. 17.8)

Some contexts include a reference to the piece of evidence or the cognitive process that leads to a conclusion. In (55), the prepositional phrase ἀπὸ τοῦ συνειπεῖν ἐμὲ Φιλοκράτει ‘from my agreement with Philocrates’ represents the grounds for the inference expressed by the complement of γνοὺς ‘having realized’. In (56), the participle ἐκλογιζόμενοι ‘considering’ indicates that the subject of εἰδῆτ’ ‘you will know’ will independently find out that something is the case.

(55) τί δήποθ', ὡς φής, ὦ Δημόσθενες, ἀπὸ τοῦ συνειπεῖν ἐμέ Φιλοκράτει **γνοῦς** οὐδὲν ἡμᾶς ὑγιὲς πράττοντας, τὴν μετὰ ταῦτα πρεσβείαν τὴν ἐπὶ τοὺς ὄρκους συνεπρέσβευσας πάλιν καὶ οὐκ ἐξωμόσω;

'Demosthenes, if, as you say, you really **inferred** from my [i.e. Aeschines's] speech in support of Philocrates that our conduct was thoroughly corrupt, why did you join us on the subsequent embassy to receive the oaths, instead of excusing yourself?' (Dem. 19.171)

(56) ὃ νῆ τὸν Δία καὶ τὸν Ἀπόλλω δέδοικ' ἐγὼ μὴ πάθηθ' ὑμεῖς, ἐπειδὰν **εἰδῇτ'** ἐκλογιζόμενοι μηδὲν ἔθ' ὑμῖν ἐνόν.

'And, by Zeus, that is what I certainly fear will be your experience, when you count your chances and **discover** that there is nothing left for you to do.' (Dem. 9.65)

The hypothesis about the meaning of predicates of knowledge + AccPtcp predicts that the proposition in the complement should not contain information that the subject of the matrix verbs learned from someone else. The information that is unlikely to be acquired through personal experience includes general truths and knowledge about the events that occurred in the distant past. Even though most of the contexts in the research corpus are in accordance with this hypothesis and do not violate the constraint that follows from it, there is a handful of examples that seem to be incompatible with the unmediated acquisition of knowledge. The examples below also include the verb ὁράω used in a cognitive sense.

A subset of the possible counterexamples involves an experiencer that is not limited by the cognitive abilities of regular humans. The contexts that belong here refer to gods, heroes, law-givers, or personified entities like the city of Athens. In (57), the complement of εἰδώς 'knowing' refers to a generic statement, but the subject of the matrix verbs is Theseus. It is possible that the speaker conceptualizes the hero as an experiencer who does not have to rely on the knowledge shared in the community in order to have access to generic truths.²³

(57) [Theseus instituted for his fellow-citizens rivalry for distinction based on merit, confident that he would stand out as their superior in any case, whether they practised that privilege or neglected it] **εἰδώς** δὲ τὰς τιμὰς ἡδίουσας οὔσας τὰς παρὰ τῶν μέγα φρονούντων ἢ τὰς παρὰ τῶν δουλευόντων.

'He **knew** that honors bestowed by high-minded men are sweeter than those that are awarded by slaves.' (Isoc. 10.32)

Another subset of the examples involves a human experiencer that realizes a generic truth or possesses knowledge about the events that happened a long time ago:

²³ Other examples that belong here – with the experiencer listed in the parentheses – are Is. 2.13 (the law-giver), Isoc. 4.48 (Athens), Dem. 36.6 (Solon), Isoc. 10.17 (Zeus), and Isoc. 10.35 (Theseus).

(58) [I will not claim that my knowledge and discernment were gained through anything else than two things, which I will mention.] ἔν μὲν, ὧ ἄνδρες Ἀθηναῖοι, δι' εὐτυχίαν, ἣν συμπάσης ἐγὼ τῆς ἐν ἀνθρώποις οὐσης δεινότητος καὶ σοφίας **ὁρῶ** κρατοῦσαν. 'One, men of Athens, was good luck, which I **know** to be worth all the cleverness and wisdom in the world.' (Dem. 5.11)

(59) **ἡπίστατο** μὲν γὰρ πολλοὺς καὶ τῶν Ἑλλήνων καὶ τῶν βαρβάρων ἐκ ταπεινῶν καὶ φαύλων πραγμάτων μεγάλας δυναστείας κατεργασαμένους ... 'For [the Persian king Artaxerxes II.] **knew** that many men, both Greeks and barbarians, starting from low and insignificant beginnings, had overthrown great dynasties.' (Isoc. 9.59)

(60) **οἶδε** μὲν γε διακοσίαις τριήρεσιν, ὧν ἑκατὸν παρεσχόμεθ' ἡμεῖς, τοὺς προγόνους αὐτοῦ χιλίας ἀπολέσαντας ναῦς, ἀκούσεται δὲ τριακοσίας αὐτοὺς ὑμᾶς νῦν παρεσκευασμένους τριήρεις. '[The Persian king] **knows** that thanks to two hundred galleys, of which we provided one hundred, his ancestors lost a thousand of ships, and he will hear that you have readied three hundred of your own.' (Dem. 14.29)

In example (58), it is conceivable that the speaker learned about the role of luck in human affairs through his personal experience. The other two examples are less compatible with unmediated access to knowledge. It might be the case that the speaker construes the knowledge of the subject, i.e. the Persian king, as personally internalized and not dependent on outer sources. This explanation is somewhat more fitting in the case of the traumatic defeat of the Persian fleet in the battle of Salamis, which, as the speaker assumes, the current king still dwells on.

Finally, there are three examples in which the source of information stems from a report. In (61), the accusers claim they know that the defendant is guilty based on a testimony. The infinitive εἰδέναι 'to know' is embedded in a report so that it is possible that the speaker merely reproduces the statement of the accusers while he distances himself from the way they conceptualize their knowledge about the case. Examples (62) and (63) involve written evidence. In (62), the use of AccPtcp may be explained by the need to portray the embedded statement as a fact that must be immediately recognized by the Athenians, who are urged to accept the *fait accompli* of Philip's campaign. A similar appeal to vividness may be at play in (63).

(61) [Context: The interrogated slave first said that the speaker, who had been accused of murder, was innocent, but later under torture stated that he was the killer.] ἡ μὲν βάσανος, ὧ ἄνδρες, τοιαύτη ἐγένετο, ἥ οὔτοι πιστεύοντες εἴ **εἰδέναι** φασὶν ὑπ' ἐμοῦ ἀποθανόντα τὸν ἄνδρα. 'Such was the examination under torture on which the prosecution rely, gentlemen, when they say that they **know** that I killed the man.' (Antipho 5.52)

- (62) Βασιλεὺς Μακεδόνων Φίλιππος Ἀθηναίων τῇ βουλῇ καὶ τῷ δήμῳ χαίρειν. **ἴστε** ἡμᾶς παρεληλυθότας εἴσω Πυλῶν καὶ τὰ κατὰ τὴν Φωκίδα ὑφ' ἑαυτοὺς πεποιημένους ...
'Philip, King of Macedonia, to the Council and People of Athens, greeting. **Know** that we have passed within the Gates, and have subdued the district of Phocis.' (Dem. 18.39)
- (63) καὶ διεξιόντες **ὁρῶσι** τοὺς μὲν ὑφ' ὧν ἥκιστα χρῆν διεφθαρμένους, τοὺς δ' εἰς τοὺς οἰκειοτάτους ἐξαμαρτεῖν ἠναγκασμένους, τοῖς δ' ἀμφοτέρω ταῦτα συμβεβηκότα ...
'And as people review [the history of monarchs], they **see** that some have been slain by those from whom they least deserved that fate, that others have been constrained to sin against those nearest and dearest to them, and that both of these calamities have befallen yet others as well.' (Isoc. 2.5)

An alternative explanation is that these counterexamples prove that the proposal is not adequate. It may be the case that the closer integration of the complement with the matrix clause is mainly motivated by pragmatic and stylistic factors. For instance, topicalization of the subject of the complement, as in (63), its placement within a relative clause, illustrated by (58), or non-finite matrix verbs may favor the closer integration of the two clauses. At the same time, syntactic integration is sometimes motivated by the nature of the semantic relationship between the matrix clause and the complement. Givón (2001b: 39–40) observes that a strong semantic bond between the two events often conditions more extensive syntactic integration of the two clauses. It seems likely that the speaker may opt for a closer integration for more than one reason. The relative validity of the hypothesis, which is not exceptionless but nevertheless accounts for most of the occurrences, suggests that the evidential component is probably one of the motivating factors behind the use of AccPtcp with predicates of knowledge. Furthermore, most of the counterexamples introduced above seem to be compatible with the component of epistemic authority attributed to the subject of the matrix verb. As we have seen in Section 1.2, epistemic authority can apply to knowledge about events that personally concern the relevant individual, regardless of the information source. This nuance may explain the closer syntactic integration of the complement with the matrix clause in those cases that do not involve direct access to the evidence.

The advantage of the hypothesis proposed in this chapter is that it accounts for the occurrences in which the complement does not contain a pragmatically presupposed information (cf. Huitink 2009). This is especially relevant in the case of the contexts that involve firsthand testimonies, since it is unlikely that the speaker intends to present the content of such statements as presupposed. It seems probable that AccPtcp is compatible with both presupposed and asserted information. The former interpretation may occasionally be a side effect of the direct access to a piece of information profiled by the construction. This orientation towards the subject of the matrix clause sometimes concerns the propositions that are already known to other interlocutors or, alternatively, refer to personal knowledge about

hypothetical events (Faure 2017).²⁴ Thus, participial complements do not entail asserted or presupposed propositions, but rather signal knowledge justified by the personal experience and reasoning of the subject. This means that the construction may occasionally imply strong assertion, as in the witness reports, but it is not a coded semantic property. Furthermore, the component of subjective reasoning explains why general truths are only very rarely expressed by AccPtcp with predicates of knowledge. Rather than with AccPtcp, culturally shared knowledge and the feature of intersubjectivity in general seem to be associated with finite complements, to which we now turn.

2.7. Finite complements with ὅτι and ὡς

While there is a scholarly consensus that clauses with ὡς with verbs of speaking tend to convey low speaker commitment in Attic, the same is not claimed about other predicate types. We have seen above that to account for the overall distribution, explanations couched purely in pragmatics are not sufficient. However, it is possible to re-frame the difference between the two conjunctions in terms of access to information, so that no asymmetry across predicate types arises. I propose that shared access to evidence and shared conclusions are predominantly associated with ὅτι, while non-adverbial ὡς marks propositions whose truth is not accepted in the common ground at the time of utterance (cf. Section 1.2). I agree with Cristofaro (1996: 75) that complements with ὡς are semantically non-assertive, which ultimately follows from the etymological meaning ‘how/by means of’ of the conjunction. Such subordinate clauses, however, do not always convey presupposition. Clauses introduced by adverbial connectors may merely imply that the associated proposition is true, but they do not entail it. This is because the use of a conjunction that refers to the manner of an evoked state-of-affairs means that the complement lacks a referential intent, i.e. the speaker does not necessarily construe the described state-of-affairs as a representation of something in the real world (see Section 1.6).²⁵ Thus, the complements in (64) involve a conceptual representation of some eventuality, but they do not explicitly hook it onto the extra-linguistic world:

- (64) a. He told me how you did it.
 → You did it.
 b. He told me how he was chased by unicorns.²⁶

²⁴ The fact that participial complements cannot be equated with factual statements or real events is also pointed out by La Roi (2020: 201–204), who adduces examples of εὕρισκω ‘find’ + AccPtcp that convey propositional attitude, the meaning usually reserved for AccInf. This likewise indicates that the motivating factors behind AccPtcp are not just pragmatic presupposition or factuality.

²⁵ See Boye (2023a) for a discussion about the concept of referential intent, which was originally used by Givón (2001a: 439). Boye claims that expressions that denote propositions are characterized by a referential intent while those that denote states-of-affairs are not.

²⁶ Arguably, a sentence like this with *that* can also imply that the speaker does not believe that the event described in the complement actually occurred. By using *how* instead, the speaker avoids expressing a referential intent in connection with the complement. This strategy may convey the reporting speaker's incredulous stance toward the reported statement.

→ He was chased by unicorns.

The lack of asserted propositional content also marks complements introduced by non-adverbial *ὥς* ‘that’, and this property may be operationalized in the domain of information source.

An explanation that involves the notions of information source and knowledge (a)symmetry also accounts for low primary speaker commitment with verbs like λέγω ‘say’ + *ὥς*. The statement in the subordinate clause, which is usually reported, is not justified by generally accessible evidence and is not to be accepted by the participants of the communication. Regarding predicates of knowledge, the lack of acceptance at the time of utterance is most often descriptive rather than prescriptive, as it may concern only the audience, while the speaker does not express any misgivings about the embedded proposition. Almost all the contexts with non-adverbial *ὥς* in the research corpus entail that the audience has not yet accepted that something is the case. This interpretation follows from the morphosyntax of the matrix clause, which may display one of the following features:

- a) negated matrix predicate; matrix predicate with negative semantic load;²⁷

(65) καὶ μὴν οὐδ’ ἐκεῖνό γ’ ὁρῶ, ὥς τῇ μὲν πόλει ἀσφαλὲς τὸ τὰ αὐτῆς πράττειν, σοὶ δὲ κίνδυνος, εἰ μὴδὲν τῶν ἄλλων πλέον περιεργάσει ...

‘And there is another thing I **do not see** – that it is safe for the state to mind its own business, but dangerous for you if you do not go beyond your fellow-citizens in meddling with affairs.’ ([Dem.] 10.72)

- b) matrix predicate in the future tense;²⁸

(66) ὥς δὲ ἀληθῆ λέγω, ἐκ τῶν ψηφισμάτων γνῶσεσθε ἃ ἐψηφίσατο ἡ βουλὴ περὶ αὐτῆς. ‘That I am speaking the truth [i.e. that the woman is not a free-born] you **will learn** from the decrees which the Council passed concerning her.’ (Is. 6.50)

- c) matrix predicate as a dynamic infinitive;²⁹

(67) δεῖ δέ [...] μαθεῖν ὑμᾶς ὥς οὐδὲ καθ’ ἓνα νόμον Ἀρίσταρχος εἰς τοὺς φράτορας τοὺς ἐκείνου εἰσῆκται.

‘It is necessary for you to **learn** that no law whatever authorized the introduction of Aristarchus into the ward of the other one [i.e. Aristarchus the elder.]’ (Is. 10.8)

²⁷ Other examples with negation include Dem. 23.123 (εἶδον); Isoc. 14.25, Isoc. 8.32 (οἶδα).

²⁸ The matrix verb in the future tense appears also in Isoc. 17.40, Dem. 1.14 (γινώσκω); And. 2.22, Is. 10.3; [Dem.] 40.52 (οἶδα).

²⁹ Other examples include Isoc. 21.8, Dem. Ex. 1.2 (γινώσκω); Isoc. 18.4, Dem. 27.55, [Dem.] 59.14, Is. 3.67 (μανθάνω).

d) matrix predicate in a purpose clause;³⁰

(68) ἵνα δ' εἰδῇτ', ὧ ἄνδρες Ἀθηναῖοι, καὶ περὶ τῶν ἄλλων, ὥς οὔθ' ὁ πατήρ οὐδὲν ἠδίκηκε περιοικοδομῶν τὸ χωρίον οὔτοί τε κατεψευσμένοι πάντ' εἰσὶν ἡμῶν, ἔτι σαφέστερον ὑμᾶς πειράσομαι διδάσκειν.

'But that you may **know**, men of Athens, on other grounds as well that my father committed no wrong in walling in the land, and that these men have uttered nothing but falsehoods, I shall try to explain to you even more clearly.' (Dem. 55.8)

e) other contexts with the matrix predicate in a non-indicative mood;³¹

(69) ἂν γὰρ τοῦτο μάθῃτε ὥς οὐδὲν ὑπ' ἐμοῦ κακὸν πέπονθεν, ἡγοῦμαι ταῖς τε συνθήκαις ὑμᾶς ἥδιον βοηθήσειν καὶ τούτῳ μᾶλλον ὀργιεῖσθαι.

'If you **learn** that he has suffered no wrong at my hands, I think that you will be more inclined to defend the agreement and be more incensed with him.' (Isoc. 18.4)

I have found only three contexts with non-adverbial ὥς that involve the audience's positively knowing something: Dem. 4.13, Dem. 16.9, and Is. 3.19. Other five instances of factual statements marked by ὥς after a present indicative verb refer to the knowledge of a third party or of the speaker, which is not necessarily accepted by the audience: Dem. 60.30, Is. 7.34, Isoc. 14.34, [Dem.] 11.3, [Dem.] 11.7. There are at least 35 instances, of 45 in total, that conform to the hypothesis presented here.³²

By using ὥς instead of ὅτι with predicates of knowledge, speakers attenuate the proposition without necessarily implying low commitment to its truth. The perspective taken is that of the audience, which may view the facts as not yet established. Presented conclusions are therefore not shared between the participants of the communication at the time of utterance and the addressee may register the proposition as a conjecture. Nuyts (2001: 33–39) argues that such semantics occupies one pole of the opposition between subjective and intersubjective statements, which are evidential in nature. In the case of subjective utterances, "the speaker suggests that s/he alone knows the evidence and draws a conclusion from it" (Nuyts 2001: 34). Nuyts's analysis resembles the theory of Neuberger-Donath (1982), who claims that clauses introduced by ὥς signal that the subject of the matrix clause has exclusive access to the evidence. However, given the behavior of such complements in classical Greek, a slight revision is needed. Rather than pinning the value *subjective* to the actual speaker or the subject of the matrix clause, it is better to define it negatively as a simple lack of intersubjectivity. In this way, it may apply to the speaker who has dominant access to the evidence that something is the case, but it may also pertain to a claim of a third party that is

³⁰ The matrix predicate in the purpose clause appears also in Dem. 55.8, [Dem.] 46.18, [Dem.] 40.5 (οἶδα).

³¹ Isoc. 18.4 (μανθάνω); Isoc. 5.32, Isoc. Ep. 2.15, Dem. 34.47 (γινώσκω).

³² Determining the count exactly is problematic because of the ambiguity between adverbial and non-adverbial ὥς.

neither the speaker nor the addressee. In both cases, the proposition is not (yet) accepted by (some of) the interlocutors, because its truth value is not immediately obvious.

The discourse pragmatic value of *ὥς*, which signals backgrounded and non-essential content, should be considered distinct from the evidential value, which may but need not trigger the implicature of low speaker commitment. Both meanings should be understood as different offshoots of the original non-assertive value of *ὥς*, so that we avoid positing the following problematic development:

(70) presupposed true proposition (~ low informative value) ?> low speaker commitment (~ false proposition)

Instead, I propose the following scenario:

(71) non-assertive *ὥς* ('how') >

- a. presupposed true proposition (cf. (64)a)
- b. evidence and conclusions not available to all interlocutors (+ low speaker commitment) (cf. (64)b)

Propositions under a) are not asserted because this has already been done in the previous discourse, whereas the lack of assertion under b) follows from insufficient justification available to the addressee and/or the speaker. This evidential strategy could have evolved from the etymological meaning 'how' because some nontrivial facts can be accepted only if we first learn *how* something could have happened instead of being simply told *that* it happened. The presented analysis essentially agrees with Van Rooy (2016), who proposes that the opposition between *ὅτι* and *ὥς* ought to be understood as an interface phenomenon covering subjective epistemic modality (i.e. speaker commitment), information structure, and information source. The scenario sketched above illustrates how such an interface could have emerged on the side of *ὥς*.

Clauses with *ὅτι* are not in a complementary relation with clauses introduced by *ὥς*, because they also occur in the contexts associated with the latter. However, *ὅτι* is also used when the embedded proposition is generally accepted by the participants of the communication. This acceptance may concern generic knowledge or specific information that has already been assimilated:

(72) οἶμαι δὴ πάντας **εἰδέναι** ὅτι μάλιστα συκοφαντεῖν ἐπιχειροῦσιν οἱ λέγειν μὲν δεινοί, ἔχοντες δὲ μηδέν ...
'I think that you all **know** that malicious prosecution is most generally attempted by those who are clever speakers but possess nothing.' (Isoc. 21.5)

(73) ὅτι μὲν γὰρ αἰσχρὰ καὶ δεινὰ καὶ οὐ προῖκα τὰ πεπραγμένα, πάντες ὑμεῖς **ἐοράκατε**.

‘That the deeds done were disgraceful, monstrous, and venal, all of you have already **discovered**.’ (Dem. 19.157)

The association of ὅτι with encyclopedic knowledge illustrates the point that pragmatic factors are not the only regulating mechanism at play. Given that generic information is often presupposed and predictable, the pragmatic account of complementation predicts that such statements should be introduced by ὡς. This, however, is not the case. An explanation based on evidential distinctions and knowledge (a)symmetry provides a better fit for the distribution. According to this explanation, clauses with ὅτι may signal that access to evidence and conclusions is generally available to the interlocutors and that the proposition can be integrated into the common ground (similarly Neuberger-Donath 1982).

The proposed semantic distinction can also be described in terms of *engagement* that bears on the relative accessibility of an entity, state-of-affairs or proposition to the speaker and addressee (Evans, Bergqvist & San Roque 2018a; 2018b; Bergqvist & Kittilä 2019: 12–15 and the references therein; see also Section 1.2).³³ Thus, languages like Kogi (Arwako-Chibchan) possess a dedicated set of markers that capture symmetry or asymmetry of knowledge between speech participants. While some engagement systems emphasize the status of the proposition itself, engagement paradigms in languages like Foe (Kutubuan) and Wola (Engan), both spoken on New Guinea, pertain to the mutual (in)accessibility of the source of information (Evans, Bergqvist & San Roque 2018b: 151–153 with references). In the case of ὅτι and ὡς, it is hard to determine whether we are dealing with (a)symmetries pertaining exclusively to the information, its source or both. Given the lack of grammaticalization of this domain in Greek, positing arrangements with different scope in individual contexts does not seem to pose any problems.

The fact that ὅτι can also be used when the speaker merely urges the audience to acknowledge a proposition suggests that evidential meanings are just one facet of the complex semantics of the two conjunctions. Asserting that something is the case, which is the basic meaning of the completive ὅτι, is certainly not limited to the cases when the interlocutors already share their conclusions. The essential evidential difference between the two conjunctions is that when the speaker uses ὡς, they acknowledge that the proposition may not be readily assimilated by the addressee. On the other hand, ὅτι discounts the possibility that some interlocutors might find the proposition unjustified, and it marks the statement as uncontroversial. The choice is “a matter of how the speaker presents it rather than of how it ‘really is’” (Nuyts 2001: 34–35). This account is in accord with the fact that ὅτι from the 4th cent. BCE onwards gradually assumes the position of a general subordinator, which represents the unmarked choice (Cristofaro 1998: 275–276). Thus, the development eliminates the marked strategy that tracks the expectations of the addressee.

A few comments regarding the use of the oblique optative are due. The oblique optative may replace the verbal form in the complement if the matrix verb refers to the past.

³³ This was pointed out to me by an anonymous reviewer of a previous version of this chapter.

It is not clear whether or how the two options differ semantically. Descriptions in the literature usually focus on the occurrence of this device in reported speech, i.e. when the complement depends on a predicate of saying. Van Emde Boas et al. (2019: 509) state that “the optative oblique signals that the reporter presents everything from his own temporal perspective: he puts himself between the original speaker and the addressee, emphasizing his role as mediator”; for this reason, the oblique optative is said to signal less salient information from the vantage point of the original speech situation and its participants. If the mood of the corresponding direct speech is retained, the content of the complement, according to Van Emde Boas et al. (2019: 509), is presented from the perspective of the reported speaker. The faithful representation of the reported speaker’s words, including the retention of the verbal mood, is said to signal distance on the part of the reporting speaker, who may consider the reported statement false or unimportant in the current speech situation, but especially relevant within the context of the original exchange. This explanation is problematic for several reasons. Firstly, given that the oblique optative signals that the reporting speaker has a distinct viewpoint from that of the reported speaker, it is not likely that the use of the optative concerns the stance of the participants of the original speech situation. Secondly, the retention of the original mood obscures the perspective of the reporting speaker. While it can be argued that the reporting speaker chooses to stay invisible because they do not want to take responsibility for the content of the report or they no longer find it important, it is equally possible that the reporting speaker does not emphasize their own viewpoint by means of the oblique optative because they do not intend to distance themselves from the viewpoint of the reported speaker. Accordingly, other explanations for the use of the optative oblique have been proposed.

Several scholars argue that the optative is a distancing device by means of which the speaker highlights the distinct perspectives of the subject of the matrix verb and their own (Neuberger-Donath 1983; Basset 1984; 1986; 1999; Wakker 1994: 299–300; Faure 2014). This property has led some to describe the contribution of the oblique optative in terms of information source. According to this view, the optative signals that the subject of the matrix verb has exclusive access to the evidence and that the proposition in the complement reflects their personal judgement or reasoning, as opposed to the stance of the speaker (Van Rooy 2016: 34–37; Lillo 2017; 2020). Similarly, Méndez Dosuna (1999) and Bary (2018) treat the oblique optative as a marker of reported information, although Méndez Dosuna (1999) emphasizes that the evidential value disappeared in the classical period (cf. also De la Villa 1999 for the view that the optative oblique marks the sequence of tenses).

There are just five occurrences of the oblique optative in the research corpus, which makes it hard to test the proposals introduced above. Nevertheless, the use of the oblique optative seems to be compatible with both the speaker’s distance and subjective access on the part of the subject of the matrix verb. Note that the second property is similar to the proposed function of AccPtcp. In two contexts, the optative oblique is used when the subject of the matrix verb and the verb in the complement are the same. It is possible that the speaker

uses the optative because tauto-subjective AccPtcp does not occur, or in order to retain the possibility of using another participle, as in (74):³⁴

(74) ἐπεὶ τό γε συμφέρον καὶ οὗτος **ἠπίστατο**, ὅτι τότε παύσοιτο στρεβλούμενος, ὅποτε εἴποι τὰ τούτοις δοκοῦντα.

‘Of course, as far as his own advantage was concerned, he **knew**, like the other, that the torture would be over as soon as he corroborated the prosecution.’ (Antipho 5.50)

Regarding the possible distancing function of the optative, the speaker may find the optative preferable when the complement contains a proposition that is not true or no longer true,³⁵ or if it is desirable to highlight that the idea arose in the mind of the subject and no one else:

(75) **ὁρῶντες** ἀπολλύμενον τὸν οἶκον καὶ τὸ γῆρας καὶ τὴν ἄνοιαν τοῦ Εὐκτήμονος, ὅτι εἴη αὐτοῖς ἰκανὴ ἀφορμή, συνεπιτίθενται.

‘**Seeing** that the property was going to ruin and that the old age and imbecility of Euctemon gave them an excellent opportunity, they made a combined plan of attack.’ (Is. 6.29)

Example (75) offers an interesting contrast between AccPtcp and the oblique optative. Both likely signal that the subject of ὁρῶντες has personal access to the evidence that points to a conclusion. In addition to this, the oblique optative signals that the reporting speaker considers the conclusion of the schemers regarding the old age of Euctemon to be alien to his moral or epistemic stance. By contrast, the fact that the property was going to ruin is neutral, so the speaker does not find it necessary to distance himself from it.

If the oblique optative signals distance and subjectivity, it follows that it also contrasts with the proposed meaning of ὥς. While the complementizer signals that the speaker merely does not assert the proposition in the complement, the oblique optative indicates that the speaker does not consider the proposition to be compatible with their subjective stance or the current state of the world.

2.8. Complementation strategies as evidential strategies

This chapter shows that the notion of information source can be applied in the study of complementation strategies in classical Greek to help to account for some difficult distributional patterns. Evidential meanings of the constructions that consist of predicates of knowledge with a propositional complement arise as more or less entrenched implicatures. In the case of AccPtcp, the component of direct perception underlying knowledge acquisition stems from the original locus of the complement, which is to express immediate sensory perception. Accordingly, the Greek construction may express the evidential values of visual

³⁴ The other occurrence is Dem. 36.6.

³⁵ This applies to And. 1.39 and And. 1.86.

source and circumstantial inference. Finite complements introduced by ὅτι or ὡς differ in that the former signals asserted propositions, while the latter does not. This contrast may be exploited by the speaker when they use ὡς to flag some propositions as not yet accepted by themselves or the addressee, which helps manage the flow of communication.

Given the three complementation strategies with predicates of knowledge and the evidential meanings they signal, is it possible to further systematize the cluster of visual source and circumstantial inference (both AccPtcp), generic and accepted propositions (ὅτι), and subjective statements (ὡς)? Squartini (2008) proposes that there are three sub-types of inference, which form a gradient. The associated prediction is that evidential expressions that convey more than one meaning span a contiguous space on the gradient:

(76) circumstantial inferences — generic inferences — conjectures

Circumstantial inferences are defined in the same way as in this study. Generic inferences and conjectures represent different types of assumption. The former involve reasoning based on previously accepted or general world knowledge, while the latter are marked by a lack of evidence based on either sensory input or general knowledge. According to Squartini's analysis, the vantage point of each sub-type is the speaker. This gradient may be mapped onto the evidential systems that grammatically distinguish some or all three options. Moreover, Squartini shows that the same descriptive framework also explains the distribution of evidential strategies in French and Italian, in which modal auxiliaries, the future tense, and some evidential adverbs do not span the entire gradient but cover only one or two adjacent segments.

The crosslinguistic validity of the gradient seems to be confirmed by the Greek data if we specify that the vantage point need not coincide with the speaker. Circumstantial inferences are expressed by predicates of knowledge + AccPtcp; the vantage point is the subject of the matrix verb. The two other options in classical Greek include the perspective of the speaker and addressee and signal the status of the marked proposition with respect to the common ground and the available evidence. Squartini's generic inferences are similar to generic and accepted propositions introduced by ὅτι. Conjectures, on the other hand, entail that generally accessible evidence is lacking, which translates to an asymmetrical status of the proposition with respect to the stance of the interlocutors and/or the subject of the matrix verb. This part of the gradient is represented by ὡς in Greek.

The gradient may be combined with the analysis of the markers of visual source and circumstantial inference presented in Section 2.5.3 so that a more complete picture emerges.

visual source	—	circumstantial inference	—	generic/known	—	conjecture
AccPtcp		AccPtcp		ὅτι (ὡς)		ὡς (ὅτι)
subject-oriented		subject-oriented		intersubjective		subjective

[+direct]	[+direct]	[-direct]	[-direct]
[+firsthand]	[-firsthand]	[-firsthand]	[-firsthand]

Figure 6 Evidential distinctions associated with predicates of knowledge and different complements

This scheme captures the distinctive meanings that may be expressed by predicates of knowledge when they take different complement types in classical Greek. The proposed analysis is reconcilable with the crosslinguistic findings, according to which similar contrasts and semantic groupings can be found in the languages of the world with and without grammaticalized evidentiality.

In addition to the languages with grammaticalized engagement systems mentioned in the previous section, some more examples of encoded (inter)subjectivity are adduced by Nuyts (2001: 36). Turkish (Aksu-Koç & Slobin 1986), Lhasa Tibetan (DeLancey 1986), and Chinese Pidgin Russian (Nichols 1986) possess markers that distinguish statements that cannot be easily assimilated into the common ground (cf. $\acute{\omega}\varsigma$) from those that can (cf. $\acute{o}\tau\iota$). Sherpa codes propositions underpinned by direct experiential evidence (cf. AccPtcp) differently than those that are generally known (Woodbury 1986). Finally, Hengeveld & Olbertz (2012) demonstrate that the perspective of the addressee who is confronted with new information can be expressed through grammatical means in many languages of the world.

Note that it is not claimed that the account of complementation in classical Greek presented here supersedes or contradicts the established theories. It merely seeks to supplement them so that more light can be thrown on the obscure principles that govern the choice of the individual complementation strategies. The scheme above represents a set of tendencies that were probably present in the linguistic usage of the speakers of Greek in the 5th and 4th cent. BCE. However, the reported counterexamples suggest that more factors influenced the choice of the complement than just information source, epistemic authority, and common ground management. Ultimately, the distinctions summarized in the scheme may be neutralized in the sentences that contain the unmarked complementizer $\acute{o}\tau\iota$. This indicates that the evidential meanings analyzed in this chapter represent generalized pragmatic implicatures, as opposed to semantic entailments.

3. The modal expressions ἀνάγκη and ἀναγκαῖον

3.1. Introduction

Modal auxiliaries in some languages are polyfunctional and convey deontic and epistemic meanings (Van der Auwera & Plungian 1998; Heine 1995; Van der Auwera & Ammann 2011). For instance, forms like the English *must* may signify that some force compels an agent to bring about a state-of-affairs, or that a proposition is almost certainly true:

- (1) a. You **must** do your homework. [deontic]
- b. The cruiser, which sank, **must** have been hit by missiles. [epistemic]

Such polysemic patterns are often the result of a semantic change whereby originally event-oriented modal auxiliaries acquire epistemic semantics (Traugott & Dasher 2001: 105–151; Narrog 2012: 75–76 with references; Allan 2013 on Ancient Greek).³⁶ Another source of epistemic modal auxiliaries are lexemes that do not belong to the domain of modality proper, but nevertheless designate notions that are conceptually close to or entail the component of necessity, possibility, or resemblance. In Ancient Greek, for instance, pre-modal verbs ἔοικα ‘I resemble’ and κινδυνεύω ‘I am at risk’, both of which allow non-finite verbal arguments, come to convey epistemic possibility by the classical period (Ruijgh 1986; Ruiz Yamuza 2008b).³⁷

In addition to deontic-epistemic polysemy, epistemic modal auxiliaries may convey meanings that belong to the domain of information source (De Haan 1999a; Mortelmans 2000; 2012; Squartini 2004; 2008). For instance, in some modern European languages, epistemic modal auxiliaries convey the evidential values of inference or reported information:

- (2) Le ciel se découvre. Le temps **doit** être en train de s’améliorer. [inference]
‘The sky is clearing. The weather **must** be getting better.’ (Squartini 2004: 875)
- (3) Het **moet** een goede film zijn. [there is evidence that *p*]
‘It is **said** to be a good film.’ (De Haan 1999a: 76)
- (4) Sie wussten sofort, dass etwas Unangenehmes passiert sein **musste**. [inference]
‘They knew immediately that something unpleasant **must** have happened.’ (Mortelmans 2000: 144)

The aim of this chapter is to investigate the role of information source in the epistemic use of the expressions ἀνάγκη ‘necessity’ and ἀναγκαῖον ‘necessary’ in classical Greek. There

³⁶ A critical assessment is available in Narrog (2012: 221–258). Narrog notes that deontic-epistemic polysemy is not particularly common outside of Indo-European languages. For a typological study see Van der Auwera & Ammann (2011).

³⁷ For a comparable semantic development in the case of the German verb *drohen* ‘threaten’ see Diewald & Smirnova (2010: 108–116).

are two main reasons behind the selection of these two related modal expressions. Firstly, their epistemic use is more frequent in the research corpus than in the case of modal verbs like δεῖ ‘it is necessary’, ἐχρῆν ‘it is necessary’, or ὀφείλω ‘must’. This fact ensures that an analysis of the epistemic use of ἀνάγκη and ἀναγκαῖον may rely on a relatively broad set of occurrences. The second reason is that ἀνάγκη and ἀναγκαῖον have not been analysed from a linguistic point of view in a dedicated study.³⁸ Thus, the investigation carried out here ought to contribute to the scholarship about the modal expressions and modality in classical Greek.³⁹ In addition to that, this study offers an account of grammaticalization of ‘evidentialized’ modal auxiliaries⁴⁰ within the framework of Functional Discourse Grammar.

As will be explained in Section 3.2, epistemic modal auxiliaries that have not run the full course of subjectification, as is the case in classical Greek, are especially prone to trigger evidential implicatures. I will argue that the process of subjectification that informs semantic change, i.e. the gradual shift from event-oriented to speaker-oriented meanings, also applies to the shift between different types of inferential reasoning like induction and abduction (cf. Section 1.7). The more objective and hence less speaker-oriented a modal usage is, the more objective the type of reasoning it may convey. This assumption makes it possible to formulate a testable hypothesis about the order in which ‘evidentialized’ epistemic modal auxiliaries gradually come to express different types of inference arranged on the cline objective > subjective. To anticipate the results of the analysis presented in this chapter, abduction seems to be the least common type of inferential reasoning expressed by ἀνάγκη and ἀναγκαῖον in classical Greek. This can be accounted for by the nascent status of the epistemic usage of these modal auxiliaries, which tend to be objective, and the subjective nature of abductive reasoning as opposed to more objective deduction and induction.

The structure of the chapter is as follows. Section 3.2 focuses on the grammaticalization of epistemic modal auxiliaries and identifies the stage that is compatible with evidential implicatures or semantics. Section 3.3 homes in on the different kinds of inferential reasoning like induction and abduction, and proposes how this division may lead to a more nuanced account of grammaticalization of ‘evidentialized’ modal auxiliaries. The theoretical considerations elaborated in these two sections lead to a series of hypotheses that

³⁸ Studies like Schreckenberg (1964), critically reviewed by Gottschalk (1966) and Wooley (1967), and later Ostwald (1988), Munson (2001), and Green (2012) discuss the meaning of ἀνάγκη primarily from a literary and cultural-historical perspective.

³⁹ An overview of modality and the modal markers in Ancient Greek from a cognitive linguistic and functional perspective is available in Allan (2013). The studies about the individual markers that may express an epistemic meaning include Allan (2013) and Ruiz Yamuza (2008a: 37–86) on ὀφείλω ‘must’ (< ‘owe’), Goodell (1914), Benardete (1965), and Ruiz Yamuza (2008a: 87–140) on δεῖ ‘it is necessary’, Goodell (1914), Redard (1953), Benardete (1965), and Ruiz Yamuza (2008a: 141–180) on χρῆ and ἐχρῆν ‘it is necessary’, Ruiz Yamuza (2008b) on κινδυνεύω ‘may’ (< ‘be at risk’), Ruijgh (1986) on εἰκός ‘it is probable’ (< ‘it is appropriate’) and ἔοικα ‘seem’ (< ‘resemble’), and Basset (1979), Ruijgh (1985), Wakker (2006; 2007), Allan (2017), Stüber (2019), and Bartolotta & Kölligan (2020) on μέλλω ‘may’. On the interface between modality and syntax in Ancient Greek see the contributions in Denizot & Tronci (2023).

⁴⁰ The conceptual pair can also be organized the other way around. In Bulgarian, the relevant markers are better described as ‘modalized’ evidentials, since they have grammaticalized from different tense morphemes and their semantics cannot be divorced from the component of speaker commitment (Smirnova 2021).

are subsequently tested in Section 3.4, which contains an analysis of the occurrences in the research corpus. The section is further divided into Sections 3.4.2–3.4.5 that focus on the individual event-oriented and speaker-oriented uses of ἀνάγκη of ἀναγκάϊον in the ten orators. The diachronic development of the two modal auxiliaries is treated in Section 3.4.6. Finally, Section 3.5 contains a discussion about the results and an evaluation of the hypotheses presented in Section 3.3. In addition to that, it offers a synthesis of the semantic development of ἀνάγκη and ἀναγκάϊον.

The research corpus contains 155 occurrences of the nominative ἀνάγκη and 101 occurrences of the form ἀναγκάϊον.

3.2. Evidential extensions of modal markers and grammaticalization

The potential intertwining of information source and speaker commitment, exemplified also by the semantics of modal auxiliaries in some European languages, has led many researchers to postulate an overlap between the grammatical categories of evidentiality and epistemic modality (Chafe & Nichols 1986: vii; Willett 1988; Palmer 2001 [1986]: 24–52; Dendale & Tasmowski 2001; Smirnova 2021: 1–3 with further references). The main motivation for this conceptual merger is that different sources of information may inspire different degrees of commitment on the part of the speaker. For instance, seeing something is often considered more reliable than hearsay. Such merging of the domains, however, is not borne out by crosslinguistic data because mono-functional evidential and epistemic systems abound. A sounder approach is to consider the two domains and the respective grammatical categories to be separate while allowing for pragmatic or even coded overlap in individual languages (see Section 1.2).

Regarding epistemic modal auxiliaries that invite evidential implicatures or encode evidential semantics, the functional overlap appears to depend on the degree of subjectification the modal auxiliary has undergone in its diachronic development. The distinction between objective and subjective modal auxiliaries and their uses may be operationalized in several ways. Let us focus on the role of the speaker first. The two categories differ with respect to the source of a modal force⁴¹ relative to the speaker's viewpoint. Subjective modal auxiliaries or modal uses align the modal force with the stance of the speaker, which need not be grounded in real world events, whereas objective modal uses situate the modal force outside the speaker in the social or physical domain, or otherwise outside of the speaker's subjective purview (Narrog 2012: 23–31). This distinction is applicable to deontic as well as epistemic modality. Regarding deontic modality, the moral obligation to

⁴¹ The application of the concept of force to modality was proposed within the framework of cognitive linguistics (Talmy 1988; Sweetser 1990: 49–75; Langacker 2008: 304–309; Allan 2013 on Ancient Greek). The grammaticalization of epistemic modal uses may be described as a shift in the conceptualization of the modal force. In event-oriented uses, the force acts in the socio-physical domain and brings about a state-of-affairs. In epistemic uses, the force is couched in the mental domain of reasoning and produces propositions or beliefs that pertain to them (Talmy 1988: 80; Langacker 2008: 306; Allan 2013: 9–10).

bring about a state-of-affairs can stem from two sources: diffuse social norms on the one hand, and the speaker's personal authority on the other (Narrog 2012: 25). The former is more objective, while the latter may be described as subjective. Similarly, epistemic modal auxiliaries may be categorized into the two types by analyzing the interplay between the process of reasoning and its outcome. If the modal auxiliary profiles the former, the use in the given context can be characterized as objective because the speaker extrapolates from the available facts to assess the likelihood that a proposition holds. In (5), for instance, the subordinate clause with *ðat* supplies a proposition that forms the basis for the inferred conclusion, marked by *moste* 'must', in the main clause:

- (5) He **moste** kunne muchel of art, | *ðat* þu woldest geve þerof part.
 'He **must** know much of art since you are willing to give part of it.'
 (c. 1300 (?1250), Traugott & Dasher 2001: 129)

Coates (1983: 41–42) paraphrases such objective usage as 'In the light of what is known, it is necessarily the case that *p*'. The active role of the cognizer⁴² is relatively limited because they cannot but reach a certain conclusion. Greater objectivity of such contexts is also illustrated by example (4), in which it is not the speaker who infers something but rather the referent of *Sie*. The modal force in the contexts that belong here is anchored in the perceived patterns of cause, effect, and correlation that connect events couched in the extra-linguistic reality. These patterns are reflected in the cognizer's consciousness and lead to conclusions that are not interchangeable with beliefs to which the cognizer is committed.

By contrast, subjective epistemic modal auxiliaries and uses profile the speaker's commitment to a proposition, while the source of information or the underlying inference remains backgrounded. Coates (1983: 41–42) provides the paraphrasis 'I confidently infer that *p*', which in most cases amounts to 'I am sure that *p*'.

- (6) I think it **must** be very nice.
 (Coates 1983: 41)

In this case, the modal force reflects the stance of the speaker and the degree to which they are willing to take responsibility for the marked proposition.

The distinction between objective and subjective modality is also relevant for the domain of information source. Since evidential qualification is not dependent on the personal stance of the speaker nor interchangeable with epistemic commitment, it follows that it cannot be considered prototypically subjective. Thus, subjective epistemic modal auxiliaries are less compatible with salient evidential implicatures. Conversely, objective epistemic modal

⁴² The process of reasoning is not limited to the speaker but can be also attributed to the addressee or a third person (cf. example (4)). I use the term *cognizer* to cover all three possibilities even though in most cases it overlaps with the role of the speaker.

auxiliaries, which convey possibility or necessity underpinned by observed patterns and logical reasoning, are more amenable to function as evidential strategies. Since subjective modal auxiliaries often originate from more objective markers (Traugott & Dasher 2001), the gradient between ‘evidentialized’, i.e. objective, and subjective epistemic modal auxiliaries may encompass the same modal expression at different stages of its diachronic development. For instance, the Middle English epistemic *must* was often used to convey inference, while its Modern English counterpart mostly expresses speaker commitment without much reference to information source (Goossens 1999; Coates 1983: 41–42). Another example of this tendency is the use of *müssen* ‘must’ in Standard High German. The modal auxiliary is common in contexts that involve inference, and its subjective meaning is less developed than in the case of its Modern English cognate (Mortelmans 2000: 142–143).

The approach described above, which focuses on the involvement of the speaker and the source of the modal force, is different from the notions of objective and subjective epistemic modality in Functional Discourse Grammar (Hengeveld & Mackenzie 2008: 153–154, 174–176). In this framework, the distinction between objectivity and subjectivity primarily concerns the scope of the modal expression. Since each layer in the hierarchical structure of the clause represents a different ontological entity, the two types of modality may be described in terms of the target of the modal force. A simplified scheme of the hierarchy within the representational level according to FDG is as follows (see Section 1.5):

(7) Proposition > Episode > State-of-affairs > Configurational property

Event-oriented deontic modal auxiliaries have scope over states-of-affairs because they express that there is an obligation or permission that some state-of-affairs be brought about. Objective epistemic modal auxiliaries are said to target episodes. They refer to the somewhat quantifiable probability that an event or a chain of events occurs (Hengeveld 2017: 17). By contrast, subjective epistemic modal auxiliaries scope over propositions and denote speaker commitment. This hierarchical model accounts for the combinations like the one in (8), in which *certainly* refers to the commitment of the speaker and scopes over the propositional content of the sentence, whereas *possible* is said to refer to the possible occurrence of the described event.

(8) It is **certainly possible** he did it.

certainly[possible[he did it]_{EPI}]_{PROP}

I hold it for certain that it is possible he did it.

While the inclusion of the target of the modal force enriches the analysis, the treatment of the distinction between objective and subjective modality in FDG appears too rigid. For instance, the framework of Hengeveld & Mackenzie (2008) restricts objective modality to the levels beneath the layer of proposition. Contrary to this view, there is no

reason to assume that in sentences like (6) the modal auxiliary has a proposition within its scope, whereas in sentences like (5) and (4) it scopes over a state-of-affairs or an episode. Instead, it is reasonable to accept that the objective use of epistemic modal auxiliaries pertains to propositional content. Another argument in favor of a broader range of distinctions applicable to the layer of proposition is the fact that propositions are not categorized solely in terms of speaker commitment. The speaker may infer a potential fact from the available evidence, but they need not have formed a subjective epistemic judgment regarding its truth.

At the same time, sentences like (8) show that an epistemic modal expression may be within the scope of another subjectively used modal item. I propose that to account for examples like (8), it is not necessary to assign *possible* to a layer beneath the layer of proposition. Propositions may be conceptualized as potentially recursive, which means they can exhibit a nested structure of a proposition within a proposition. The speaker may indicate their subjective commitment only for the outermost proposition. The embedded proposition may be modified in its own right in order to profile something else than speaker commitment. In the case of (8), *certainly* specifies the subjective epistemic commitment of the speaker, whereas *possible* indicates that the embedded proposition may be true given some objective justification, which remains unspecified.

In addition to deontic and epistemic modality, there is a distinct type of modality relevant here that denotes objective possibility or necessity, the latter of which plays an important role in the grammaticalization of objective epistemic modal auxiliaries (Van der Auwera & Plungian 1998: 94–96; Traugott & Dasher 2001: 120–137). The source of the modal force is situated in the socio-physical domain, and the expression is event-oriented. In contrast to deontic modality, the marked eventuality is not to be brought about by a morally responsible agent. Instead, it occurs automatically depending on some enabling circumstances or due to the inherent properties of the individuals or entities involved (Narrog 2012: 10). In the literature, the subset of this category that refers to necessity is sometimes labeled general objective necessity, as the relevant contexts often refer to general rules (Goossens 1999: 203–205; Goossens 2000: 161). However, contexts with specific reference may also belong here. Two examples will serve to illustrate this type of modality:

- (9) a. We **must** all die one day.
- b. If we surmount the present difficulties, we **must** face something yet more difficult.

In (9)a, the necessity stems from the inherent property of the referent of *we*. In the second example, there is an enabling circumstance, which appears in the subordinate clause. In both cases, the marked eventuality forms a thematically coherent combination with an implied or expressed state-of-affairs (‘Humans be mortal’; ‘We surmount the present difficulties’). This anchoring of the marked eventuality suggests that it is not adequate to describe the modal auxiliaries that belong here as having isolated states-of-affairs within their scope. Rather, modal auxiliaries that express objective necessity occur within combinations of eventualities

or at least evoke such combinations. In FDG, combinations of thematically coherent states-of-affairs represent episodes, which are assigned to a separate layer below propositions in the representational level. Thus, I propose that the expressions of objective event-oriented necessity pertain to this layer. The relatively wide scope of the modal auxiliaries that belong here is also indicated by the fact that the subject is not conceptualized as an agent that brings about a state-of-affairs but as an entity that is directly involved in it. It will be argued in Section 3.4.2 that the contexts characterized by this type of modality may give rise to an epistemic reading in Greek.

Differences in scope are important also for the domain of information source. There are competing theories about the position of evidentials in the layered structure of the clause. Hengeveld & Hattner (2015) locate individual evidential values at different layers – sensory source at the layer of state-of-affairs, circumstantial inference at the episode layer, and assumption at the layer of propositional content (see Section 1.5). Consequently, the following implicational hierarchy of the relevant evidential values emerges:

(10) sensory source $\subset$ circumstantial inference $\subset$ assumption

According to Hengeveld and Hattner, the hierarchy accounts for the structure of the evidential systems in the indigenous languages of Brazil, which the authors examined to validate their hypotheses. Namely, an evidential marker may only acquire a new meaning that is located directly to the right in the implicational hierarchy; developing a meaning that is located to the left, i.e. a decrease in scope, or skipping a value is not possible. Regarding evidential systems more broadly, the existence of an evidential marker is said to imply that the language also possesses markers for the terms located to the left in the hierarchy. Thus, according to the argumentation of Hengeveld and Hattner, the empirical validity of the implicational hierarchy justifies the assignment of the individual evidential values to different layers in the structure of the clause.

However, differences in scope are not the only way to conceptualize the hierarchy above. The order of the three terms is also marked by the increasing role of the speaker from left to right. More specifically, the speaker is least subjectively involved when they perceive a state-of-affairs and most involved when they draw a conclusion from known facts. Circumstantial inference combines the component of perception with the cognitive process of inferential reasoning, which situates it between the two other terms. Thus, the implicational hierarchy may also be explained by the opposition between objective and subjective meanings. Given the unidirectional tendency of subjectification in grammaticalization, the diachronic sequence sensory source $>$ circumstantial inference $>$ assumption seems compatible with it. At the same time, the sequence need not represent the only possible grammaticalization cline in the evidential domain. The extension from sensory source to circumstantial inference seems natural for the evidentials that develop from verbs of seeing. However, evidential extensions of modal expressions probably develop along

different lines without invalidating the implicational hierarchy in (10). I return to this point in Section 3.3.

Furthermore, such an implicational hierarchy need not span several layers in the structure of the clause. For the reasons mentioned in Section 1.6, I prefer the analysis of Boye (2010a; 2010b; 2024), who argues that evidential expressions have propositions within their scope. Therefore, I accept that there is an implicational hierarchy as proposed by Hengeveld & Hattner (2015), but I locate the terms that belong to it at a single layer. Moreover, I understand the hierarchy in a more restricted way in two respects. First, I leave aside its implications for the structure of the evidential system as a whole because evidentiality is not grammaticalized in classical Greek. Second, I assume that evidential extensions of a modal expression need not cover an evidential value that is ‘lower’ in the hierarchy before covering a meaning that is ‘higher’. I propose that the actual constraint is that a new evidential extension does not develop from an evidential meaning that is more subjective. Furthermore, I accept that if a modal auxiliary signals more than one evidential value, they should cover a contiguous space in the implicational hierarchy.

The implicational hierarchy discussed above may be tentatively aligned with the grammaticalization cline of modal markers (Table 6). One of the established trajectories of modal auxiliaries involves the shift from deontic to objective epistemic modality and from there to subjective epistemic modality (Traugott & Dasher 2001: 120–137). The following alignment of the clause layers, types of modality, and evidential values emerges:

<i>state-of-affairs</i>	<i>< episode</i>	<i>< proposition</i>	
deontic →	event-oriented non-deontic (objective necessity) → ↘	objective epistemic →↓	subjective epistemic
		sensory source ⊂ circumstantial inference ⊂ assumption ↗	

Table 6 Clause layers and the associated types of modality and evidential values

Simple arrows indicate the assumed direction of semantic change within a single functional domain. Double arrows represent meaning extension or conversational implicatures that cross the boundaries between the domains of modality and information source. The scheme yields predictions regarding the evidential extensions that could arise at different stages of the grammaticalization cline. For the reasons mentioned above, evidential implicatures or entailments of modal auxiliaries are best reconcilable with the stage of objective epistemic modality. Furthermore, the implicational hierarchy of evidential values proposed by Hengeveld & Hattner (2015) predicts that if an evidential expression covers more types of information source, they appear next to each other in the scheme. This is independently corroborated by Squartini (2008), who, based on a different framework, established that Italian *dovere* ‘must’ may express circumstantial inference and assumption, provided that the

premises are intersubjectively accessible (see Section 2.8). Additionally, the scheme predicts that individual markers do not decrease their scope during grammaticalization nor give rise to implicatures associated with lower levels (i.e. to the left of the current term).

The analysis presented above should not suggest that the layers and the associated semantic values are discrete and clearly demarcated. As argued by Narrog (2012: 96–104), meaning change always involves scope increase, but we need not posit distinct layers and boundaries between them. While there are strong tendencies regarding some categories being higher in the hierarchy than others, we are, as Narrog claims, far from having established a universal hierarchy with very fine granularity. I am sympathetic to this view, but I retain the descriptive framework of FDG.

Besides the overly rigid approach to clause layers, another deficiency of the standard account of grammaticalization in FDG, as has been already suggested above, is that it does not apply the notion of subjectification, although it is reconcilable with it. Here again, Narrog’s integrative approach seems to correctly capture the explanatory power of the concept. He emphasizes that semantic change proceeds towards increased speech-act orientation. One of the components of this universal tendency involves “increasing orientation towards the speaker’s perspective (increased speaker orientation/subjectification)” (Narrog 2012: 105). This is captured by the order of the layers in Table 6, in which the role of the speaker increases from left to right for both modal and evidential meanings.

The tendency of subjectification may also be operationalized specifically for the domain of information source. Nuyts (2001) treats subjectivity as an evidential qualification and applies it to contexts and markers that convey the speaker’s exclusive access to the evidence and the piece of knowledge that follows from it. The notional opposite of subjectivity is intersubjectivity. Intersubjective usage implies wider access to the evidence and knowledge shared among the participants of the communication. Aligning this opposition with the diachronic tendency of increasing the role of the speaker is straightforward. The basic prediction is that ‘evidentialized’ modal markers first give rise to intersubjective evidential meanings and as grammaticalization progresses, more evidentially subjective usage appears (see also Narrog 2012: 105).

Grammaticalization may correlate with changes in form. In our case, formal changes may affect the modal auxiliary itself or its complement. Increased subjectivity may be associated with restricting the time reference of the modal auxiliary to the present so that it refers to the ‘now’ of the speech act. As for the complement, three basic configurations, shown in Table 7, are possible. Deontic modal auxiliaries in classical Greek are complemented by dynamic infinitives, whereas prototypically subjective epistemic constructions (e.g. νομίζω ‘think’) take declarative infinitives. Thus, objective epistemic modal auxiliaries in classical Greek may pattern either with deontic or with subjective epistemic constructions depending on the type of their infinitival complement. There is no distinct type of infinitival complement besides dynamic and declarative infinitive, but a mixed category with features of both basic prototypes is conceivable. Furthermore, we can predict that more subjective usage may

approximate prototypically subjective epistemic contexts with declarative infinitives, whereas more objective usage could employ dynamic infinitives.

Complement	Distinctions in complementation		
<i>Dynamic</i>	deontic > objective epistemic (+ evidential extensions)		> subjective epistemic
<i>Mixed</i>	deontic	> objective epistemic (+ evidential extensions)	> subjective epistemic
<i>Declarative</i>	deontic	> objective epistemic (+ evidential extensions) > subjective epistemic	

Table 7 Possible distinctions in complementation with different types of modality

The discussion so far suggests that the role of the speaker and how it gains prominence during grammaticalization is a crucial component in the development of modal markers. The aim of the following section is to provide a further heuristic for determining the degree of speaker involvement with respect to different types of inferential reasoning.

3.3. Information source and types of reasoning

Recent research suggests that ‘evidentialized’ modal auxiliaries may be sensitive to the type of inferential reasoning that leads to a conclusion. Krzyżanowska, Wenmackers & Douven (2013) argue, based on empirical tests of assertability, that English *must* and Dutch *moet* ‘must’ in conditional apodoses are compatible with abductive reasoning, while English *should* and Dutch *zoe moeten* ‘should’ increase the assertability of conditionals with inductive force. One of the ways to capitalize on these insights is to postulate that different types of reasoning are associated with a different degree of cognizer involvement.

Douven & Verbrugge (2010) provide concise definitions of the three reasoning types:

(11) **Deduction:** “The truth of what is inferred is guaranteed by the truth of the premises from which it is inferred.”

Induction: “The conclusion follows with a certain statistical probability from the premises.”

Abduction: “The conclusion follows on the basis of explanatory considerations because it is thought to be the best explanation of something thought to be known.”

The following simple examples from Krzyżanowska, Wenmackers & Douven (2013) will serve to illustrate the three types of reasoning:

(12) a. **Deduction:** All Indian elephants have small ears.
If Babou is an Indian elephant, then it has small ears.

b. **Induction:** 99% miners develop silicosis.

If Rudolph has worked in the mines for all his life, then he has developed silicosis.

c. **Abduction:** There is a nearby village located in a valley below a dammed reservoir and the dam has been in a rather bad state for some time.

If the village has been flooded, then the dam has broken.

All three types of inferential reasoning according to the definitions given above lead to conclusions about particular eventualities. Note that by induction is not meant the more familiar reasoning type from instances to a general rule but a variant thereof. Kyburg (1990: 59) labels this subtype *instantial induction* and defines it as “[the] inference from a statistical generalization to a conclusion concerning an instance of that generalization”.

When the cognizer has mental access to premises or facts that call for a different type of inference, the degree of the cognizer’s freedom to arrive at a particular conclusion varies for each type. Deductive conclusions are guaranteed; knowing that a predication applies to all members of a category necessarily leads the cognizer to conclude that it also applies to a particular member. The same is not true for induction and abduction. Inductive premises are statistical, which leaves the cognizer to decide whether they will draw a particular conclusion or not. For instance, knowing that most miners develop silicosis does not compel the cognizer to assume that a particular miner will be affected by the disease. Nevertheless, such statistical premises represent entrenched patterns and belong to the general knowledge shared by a community of speakers. By contrast, abductive reasoning is contingent on the knowledge of the cognizer about particulars. It does not involve a general nor statistical premise in the strict sense. When the cognizer engages in abduction, they have the greatest relative freedom to reconcile a fact with other pieces of available knowledge so that an explanation emerges. Therefore, the three types of inference in the order deduction – induction – abduction exhibit increasing degree of subjectivity in the sense of cognizer involvement.

Furthermore, the sequence is marked by increasing subjectivity also in the specifically evidential sense of the word. Deduction is the most intersubjective type of reasoning. A general premise with the quantifier *all* ensures that every rational cognizer should arrive at the same conclusion about a particular member of the category. Statistical premises underlying inductive reasoning also lead to relatively intersubjective conclusions, but it is conceivable that some cognizers would hesitate to draw a conclusion if they evaluated the statistical relationship as too weak. Finally, abductive reasoning leads to conclusions that are the least likely to be shared among the participants of the communication.

Another argument in favor of locating abduction after deduction and induction in a grammaticalization cline is the temporal reference of the expressions denoting deontic modality and objective necessity. These modal expressions, which are the diachronic source of epistemic modal auxiliaries, take complements whose relative tense is posterior. It follows that if they acquire an objective epistemic meaning, it is first restricted to the propositions that refer to the events that occur after the reference time of the modal auxiliary. Out of the

three types of inferential reasoning, only deduction and induction are compatible with the conclusions that refer to the states-of-affairs that are posterior with respect to the event described in the premise. Since abduction aims at explanations, an abductive conclusion may only refer to an eventuality that is simultaneous with or precedes the event that must be explained. Out of the following sentences exhibiting a future-oriented inference, only a) and b) are acceptable:

- (13) a. **Deduction:** He is a human so he **must necessarily die**.
 b. **Induction:** He is a miner so he **must necessarily develop** silicosis.
 c. **Abduction:** ??The village is flooded so the dam **must necessarily break**.

Note that all three types of inference may involve a conclusion that describes a state-of-affairs that is simultaneous with or anterior in relation to the modal verb. Therefore, an abductive usage, in which the complement never refers to future eventualities, can emerge after non-posterior complements have become available within a deductive or an inductive usage.

- (14) a. **Deduction:** He is a human so he **must be** mortal / He is a human so he **must have been born**.
 b. **Induction:** He is a miner so he **must have** silicosis / He is a miner so his lungs **must have been** affected.
 c. **Abduction:** The village is flooded so the dam **must be** damaged / The village is flooded so the dam **must have broken**.

Alternatively, past reference in epistemic contexts may be marked by a modal auxiliary in the past tense in some languages. In this arrangement, the relative tense of the complement remains posterior, but the whole construction refers to the past. The following Slovak example with an abductive conclusion illustrates this:

- (15) Dedina je zatopená, takže priehrada **must-la** prasknúť.
 village is flooded so dam must-PST break-INF.PERF
 'The village is flooded so the dam must have broken.'

Sentences like (15) suggest that an abductive usage need not depend on a non-posterior interpretation of the complement because the past tense of the modal auxiliary overrides the relative future interpretation of the infinitive. However, as will become apparent in Section 3.4, in the case of ἀνάγκη and ἀναγκάϊον, contexts exhibiting an epistemic usage are virtually absent when the modal auxiliary occurs with the past tense verb ἦν 'was'. Thus, reference to past states-of-affairs in epistemic contexts in Greek depends on the relative tense interpretation of the infinitive complement, not the absolute tense of the modal expression, which most often does not contain a tensed verb. Since the infinitive with ἀνάγκη and ἀναγκάϊον was originally dynamic, i.e. future-oriented, the possibility to refer to the states-

of-affairs situated in the past most likely emerged only after the epistemic usage that referred to posterior and simultaneous states-of-affairs became established first. This points to a conclusion that abductive inferences could not be expressed in the initial stages of the epistemic usage of ἀνάγκη and ἀναγκάϊον.

A common characteristic of deduction and induction is that they primarily concern outcomes associated with belonging to a category. Outcomes are also associated with deontic modality and objective necessity. In the case of these event-oriented modal categories, the projected outcome of the action of a socio-physical force, which is profiled by the modal auxiliary, is a state-of-affairs, either performed by a responsible agent or occurring automatically. Outcomes profiled by deduction and induction are also states-of-affairs (e.g. the state of being mortal or having silicosis) brought about by an event-oriented force, but they are encompassed in the corresponding propositions (e.g. the fact that someone is mortal or the fact that someone has silicosis), which are the product of inferential reasoning. Abductive conclusions, on the other hand, describe eventualities that precede or are simultaneous with the event that needs to be explained, so that it is unlikely that a modal auxiliary in the present tense and with an abductive meaning refers, at least partly, to a socio-physical force that acts linearly with respect to the flow of time and brings about a state-of-affairs.

In principle, circumstantial inference also relies on the three types of logical reasoning discussed above. The difference between circumstantial inference and assumption is that the former takes sensory perception as input, while the latter builds upon known facts. If an event-oriented modal auxiliary comes to signify circumstantial inference, it is reasonable to assume to it is first restricted to conclusions about future eventualities, i.e. deduction and induction, as illustrated in (16), before inferences about non-future eventualities are licensed.

- (16) Context: The speaker is watching a football match between France and Luxembourg.
France is leading.
Inductive conclusion: France **must** win.

Note that the implicational hierarchy introduced in the previous section does not exclude the possibility that an expression acquires assumptive meaning without also signaling circumstantial inference and sensory source. The diachronic sequence sensory source > circumstantial inference > assumption makes sense for those evidentials that start off as markers of sensory source, which primarily develop from verbs of sensory perception. By contrast, modal expressions do not denote direct perception so there is no reason to assume that their evidential extensions should follow the same grammaticalization cline as verbs of seeing or hearing. Evidential use of modal verbs is motivated by the component of possibility or necessity. Since these concepts are applicable to inferences based on directly perceived events as well as mentally represented propositions, the diachronic sequence circumstantial inference > assumption is not warranted in the case of evidential strategies stemming from

modal verbs. Therefore, I propose that ‘evidentialized’ modal auxiliaries may signal circumstantial inference or assumption, or both, and that the latter meaning need not develop from the former. I use the symbol V ‘or’ to capture this arrangement in the table below.

This analysis can be combined with the predictions regarding semantics listed in Section 3.2. Different types of reasoning can be subsumed under the evidential values of circumstantial inference and assumption. Given the tendency of subjectification, individual modal markers are predicted to gradually cover deduction, induction, and abduction as the role of the cognizer becomes more prominent.

<i>state-of-affairs</i>	<i>< episode</i>	<i>< proposition</i>	
deontic →	event-oriented non-deontic (objective necessity) → ∞	objective epistemic →↓	subjective epistemic
		circumstantial inference [deduction → induction → abduction] ∨ assumption [deduction → induction → abduction] ↗	
dynamic infinitive → declarative infinitive			

Table 8 Proposed path of grammaticalization of event-oriented modal auxiliaries

Table 8 is a diagrammatic representation of the hypotheses that will be tested on the Greek data. To reiterate, evidential extensions are expected to be associated with the stage of objective epistemic modality. The predicted evidential values are circumstantial inference and assumption. Regarding the type of inference, the expected order of grammaticalization is deduction, induction, and abduction. As for the form, the further right in the scheme, the more it is likely that the complement of the modal expression resembles a prototypical declarative infinitive. The boundaries between the layers and the associated meanings are not discrete.

3.4. Analysis of ἀνάγκη and ἀναγκαῖον

3.4.1. Deontic usage

The basic lexical meanings of the noun ἀνάγκη listed in LSJ are ‘force’, ‘constraint’, and ‘necessity’. When used in the nominative singular with or without a copula and complemented by a dynamic infinitive, the construction conveys a participant-oriented deontic meaning. The modal expression has scope over the configurational property, i.e. the predicate:

- (17) ἐμοὶ ἀνάγκη ἐστὶ πολλὴ βοηθεῖν τῷ τε πατρὶ τῷ ποιησαμένῳ με καὶ ἐμαυτῷ.
‘It is **necessary** for me to help the father who adopted me, and to help myself.’ (Is. 2.1)

The construction conveys that the action expressed by the infinitive must be performed by an agent. The agent may be overtly expressed by an argument in the dative (e.g. ἐμοί in (17)) that is isolated from the predication frame of the dependent infinitive.

Event-oriented deontic modality may be rarely expressed by means of ἀνάγκη or ἀναγκαῖον complemented by an accusative with infinitive (Acclnf). In contrast to the participant-oriented type, event-oriented deontic modality does not apply to specific individuals but concerns general rules of conduct (Hengeveld & Mackenzie 2009: 176):

- (18) ὅς δ' ἂν ἢ αὐτῶν Αἰγυπτίων ἢ ξείνων ὁμοίως ὑπὸ κροκοδείλου ἀρπασθεὶς ἢ ὑπ' αὐτοῦ τοῦ ποταμοῦ φαίνεται τεθνεώς, κατ' ἣν ἂν πόλιν ἐξενειχθῇ, τούτους πᾶσα ἀνάγκη ἐστὶ ταριχεύσαντας αὐτὸν καὶ περιστείλαντας ὡς κάλλιστα θάψαι ἐν ἱρῇσι θήκησι.
'If anyone, Egyptian or foreigner, is known to have been carried off by a crocodile or drowned by the river itself, the people of the place where he is cast ashore **must** by all means embalm and wrap him as attractively as possible and bury him in a sacred coffin.' (Hdt. 2.90.1)

3.4.2. Objective necessity

The modal auxiliaries in question complemented by Acclnf often carry a different nuance. The subject of the infinitive is not conceptualized as “a morally responsible agent” (Lyons 1977: 823; Allan 2013: 3) that must consciously bring about a state-of-affairs. Instead, the referent of the accusative is directly involved in the state-of-affairs that necessarily occurs or is brought about.

- (19) πολλὰ μὲν τούτων ἀνάγκη ἐστὶ καὶ ὑμᾶς καὶ τοὺς πολεμίους παρασχεῖν· σιτοποιεῖσθαι τε γὰρ ἀνάγκη ἀμφοτέρους, κοιμᾶσθαι τε ἀνάγκη ἀμφοτέρους καὶ ἔωθεν ἐπὶ τὰ ἀναγκαῖα σχεδὸν ἅμα πάντας ἴεσθαι.
'Both you and the enemy **must** necessarily offer many opportunities [to get caught]; for instance, you **must** both eat, and you must both sleep, and early in the morning you **must** almost all at the same time attend to the calls of nature.' (Xen. Cyr. 1.6.36)

The less independent role of the notional agent in the construction with Acclnf means that the modal force, couched in the socio-physical domain, directly compels the state-of-affairs to occur. This is exemplified by the physiological functions in (19), which are not fully in control of the subject. The meaning this usage conveys is objective necessity.

There is a distinct rhetorical strategy that utilizes the construction of ἀνάγκη + Acclnf. Speakers may posit that whenever a condition is fulfilled, a state-of-affairs is brought about. As we will see, such formulations of general rules may support assertions about particular instances that fulfill or violate the condition.

(20) ... ἥς ἦν διαμάρτη τις, **ἀνάγκη** τὸν πόλεμον ἀσύμφορον καὶ χαλεπὸν καὶ περιέργον εἶναι.

‘And if one makes any mistake about [war strategy], the war **must** be disadvantageous, difficult, and to no purpose.’ (Isoc. 15.117)

Example (20) illustrates such a general rule. It can be paraphrased as follows:

(21) Whoever is a bad general wages difficult wars. (if x is A, then x entails B)
= Every bad general wages disadvantageous wars. (A entails B)

Thus, contexts like (20) resemble the general premise, similar to (22)a, in a deductive argument:

- (22) a. Every human is mortal. (A entails B)
- b. Socrates is a human. (C is A)
- c. Socrates is mortal. (C entails B)

Expressions of general objective necessity with ἀνάγκη may formally vary, but they have in common that they do not refer to any particular individual or eventuality. This mirrors the semantics of the quantifier *every* in (22)a. In example (20), the speaker achieves the same effect by using an iterative conditional clause with the indefinite pronoun τις ‘anyone’ in the protasis. Other strategies involve iterative temporal clauses (e.g. ὅταν ‘whenever’ in Dem. Ex. 38.1), iterative correlative clauses (e.g. ὅποῦ ἅττα γὰρ ἂν τάπιτηδεύματα ἦ ‘of what sort the actions are’ in Dem. 3.32), indefinite deictic pronouns (e.g. τοὺς τοιούτους ‘such men’ in Isoc. 3.58), nominal phrases with non-specific reference (e.g. τοὺς ὀρθῶς βουλευομένους ‘those who are correctly advised’ in Isoc. 8.2), and genitive absolute (e.g. Θηβαίων τάκείνου φρονούντων ‘if the Thebans stand by [the King]’ in Dem. 14.34). If we disregard the variability of the form, such expression convey that every member of category A is necessarily associated with outcome B. The outcome is brought about by a socio-physical force whose action depends on the circumstances described in the context.

The wider context of such expressions usually contains a reference to a specific situation or individual C that either belongs to category A or not – i.e. C entails A; C does not entail A. The statement about the specific case is paired with the generalization in order to support an assertion about the specific case regarding outcome B – i.e. C entails B; C does not entail B. In this way, a connection between the particular case and the outcome of a socio-physical force, which is evoked in the sentence with ἀνάγκη or ἀναγκαῖον, is established. The wider context of (20) will serve as an illustration:

- (23) a. Timotheus showed his ability in the very things which it is necessary for a good general to know.

- ~ Timotheus (C) was not a bad general (A) – i.e. C does not entail A
- b. And if one makes any mistake about war strategy, **ἀνάγκη** a war to be disadvantageous, difficult, and to no purpose.
- ~ If x is A, then x entails B
- c. Timotheus brought all the wars he waged to a successful end.
- ~ C does not entail difficult wars (B) (Isoc. 15.117–118)

In (23)a, the speaker ascribes the qualities of a good general to Timotheus ($C \neq A$). The general rule regarding bad generals, ‘every A entails B’, is formulated in (23)b. These two premises motivate the statement ‘C does not entail B’ in (23)c. The supporting role of the clauses with **ἀνάγκη** can be emphasized by the particle γάρ:

- (24) πρῶτον μὲν οὐ πάνυ θαυμαστόν ἐστιν, ὧ ἄνδρες Ἀθηναῖοι, τὸ μὴ ῥαδίους τοῖς συμβουλευέειν βουλομένοις εἶναι τοὺς λόγους· ὅταν γὰρ τὰ πράγματ’ ἔχη φαύλως περὶ ὧν δεῖ σκοπεῖν, δυσχερεῖς **ἀνάγκη** περὶ αὐτῶν εἶναι καὶ τὰς συμβουλίας.
 ‘First of all, men of Athens, it is not altogether surprising that those who wish to tender you advice do not readily find the words, because, when the conditions that require consideration are bad, **it is inevitable** that the recommendations made concerning them should also be disagreeable.’ (Dem. Ex. 38.1)

The context of (24) is that Athens are in a difficult position. The semantic presupposition of the first sentence with οὐ πάνυ θαυμαστόν ‘not altogether surprising’ is that public speakers are struggling to provide policy recommendations. The following complex sentence with the iterative temporal clause introduced by ὅταν ‘whenever’ and **ἀνάγκη** in the main clause explains why this is the case. More schematically:

- (25) a. Athens are in a difficult position.
 ~ The current conditions (C) are bad (A) – i.e. C entails A
 b. The speakers are now struggling with disagreeable advice.
 ~ C entails B
 c. Whenever the conditions that require consideration are bad, **ἀνάγκη** that the recommendations made concerning them should also be disagreeable.
 ~ if x entails A, then x entails B

The contexts in (23) and (25) are structurally similar. The statements about the particular states-of-affairs in (23)c and (25)b are motivated by the general rules in (23)b and (25)c, respectively. Note that the marker of necessity **ἀνάγκη** appears in what is essentially a posited general premise, as opposed to an inferred conclusion. This, however, is not the only possible arrangement.

Objective necessity may also be marked as inferred. This is the case in the contexts in which the cognizer extrapolates from particular cases and arrives at a conclusion construed as generally valid.

- (26) a. Poor speakers have often before now been disbelieved because they spoke the truth, and the truth itself has been their undoing because they could not make it convincing.
- b. **ἀνάγκη** οὖν, ὅταν τις ἄπειρος ᾗ τοῦ ἀγωνίζεσθαι, ἐπὶ τοῖς τῶν κατηγορῶν λόγοις εἶναι μᾶλλον ἢ ἐπ’ αὐτοῖς τοῖς ἔργοις καὶ τῇ ἀληθείᾳ τῶν πραγμάτων.
 ‘Thus, whenever one is not a practised pleader, [his life] **must** depend less upon the true facts and his actual conduct than upon the version of them given by his accusers.’
 (Antipho 5.3)

The speaker in (26)a first alludes to a recurring association of A, poor speakers, with B, perilous trials. Based on this, he infers a general rule ‘every A necessarily entails B’ expressed by **ἀνάγκη** + (Acc)Inf and the iterative temporal clause with ὅταν ‘whenever’. While it is tempting to analyze **ἀνάγκη** itself as a marker of inference in a harmonic combination with the discourse structuring particle οὖν, it is more straightforward to interpret it as an event-oriented marker of objective necessity having scope over each potential iteration of the state-of-affairs in question. The paraphrases in (27) illustrate the two conceivable arrangements of scope in (26)b:

- (27) a. Thus, whenever one is one is not a practised pleader, his life **must** (**ἀνάγκη**) depend on the version given by his accusers.
 ἀνάγκη[his live depends ...]_{SOA}
- b. Thus, it **must be the case** (**ἀνάγκη**) that whenever one is one is not a practised pleader, his life depends on the version given by his accusers.
 ἀνάγκη[his live depends ...]_{PROP}

The interpretation in (27)b is important insofar as it is the outcome of a possible reanalysis of (26)b. The reanalysis involves scope increase and increased speech-act orientation of **ἀνάγκη**, which is in line with the theory of grammaticalization outlined in Section 3.2. While contexts like (26)b do not require an inferential reading of the modal auxiliary, they potentially constitute bridging contexts that may lead to such an interpretation through reanalysis on the part of the addressee.

Besides being a bridging context in terms of scope, example (26) involves a different type of reasoning than (23) and (24), which are deductive. The speaker in (26) infers a general rule based on a statistical observation – i.e. standard induction. The inferred generalization in (26)b is that membership in a category (i.e. poor speakers) is associated with an outcome (i.e. a perilous trial). Thus, the potential syntactic reanalysis of **ἀνάγκη** illustrated in (27)b and the

inductive reasoning that informs the meaning of the whole context may lead to the association of inductive inference with the modal auxiliary.

Even the contexts that involve general objective necessity without overt markers of inference may give rise to the implicature of inductive reasoning. When speakers posit that ‘every instance of A is necessarily associated with B’, the conversational implicature, marked by ‘→’ below, is occasionally that they extrapolate from their experience to a general rule. This can be paraphrased as ‘I infer that A is necessarily associated with B’. A further possible step is the same kind of reanalysis as the one outlined in (27)b:

(28) ἀνάγκη δὲ κινδυνεύοντα περὶ αὐτῷ καὶ πού τι καὶ ἐξαμαρτεῖν.

‘A man in personal danger **is bound** to make some mistake.’

→ ‘I infer that a man in personal danger **is bound** to make some mistake.’ ~ ‘It **must be the case** that a man in personal danger makes some mistake.’ (Antipho 5.6)

Note that most of the rules expressed by ἀνάγκη are merely conceptualized as exceptionless as opposed to actually being indefeasible. The rules approximate general objective necessity insofar as speakers posit such combinations of A’s and B’s that are relatively uncontroversial. For instance, the association between being at risk and making mistakes in (28) is intuitively acceptable, but it is not as strong as the premise ‘Every human is mortal’. The intuitive acceptability of such contexts also contributes to the potential implicature of inductive reasoning since the generalizations are sanctioned by recurring associations of cause and effect in the real world. Thus, the addressee that encounters a generalization with ἀνάγκη may surmise that the speaker inferred it and marked it as a necessarily true statement by means of the modal auxiliary. This scenario illustrates scope increase, brought about by the interplay between pragmatic implicature and reanalysis, as the modal ‘climbs’ from the layer of states-of-affair or episodes, which are said to necessarily occur, to the layer of propositional content, which is interpreted as necessarily true. The emerging interpretation is therefore more cognizer-oriented than the coded meaning of the modal auxiliary, which is more descriptive in that the modal force expressed by ἀνάγκη applies to each discrete iteration of the marked state-of-affair.

A brief interim summary can be outlined. We have seen that the original locus of the construction ἀνάγκη + AccInf is to express objective necessity, as in (19). There is a distinct rhetorical strategy that involves positing general objective necessity in order to support a statement about a particular eventuality or individual, as in (23). In the opposite direction leading from the particular to the general, generalizations expressed by ἀνάγκη + AccInf may be explicitly marked as inferred, as illustrated by (26). Besides this, the implicature of inductive inference may arise in simple generalizations, exemplified by (28). A subsequent reanalysis may lead to the association of the modal auxiliary with inferential, more specifically inductive, semantics.

3.4.3. Instantial induction

The next stage in the semantic development of ἀνάγκη + Acclnf is sanctioned by the implicature of inductive reasoning. Standard induction, as we have seen, involves extrapolating generalizations from specific cases. There is a subtype of inductive reasoning that moves in the opposite direction. A statistical generalization leads to a non-guaranteed conclusion concerning an instance of that generalization (Kyburg 1990: 59). The schema is as follows.

- (29) a. Practically all A's are B's.
b. This C is A, so it is also B.

The Greek construction may be used to formulate conclusions that resemble (29)b:

- (30) [My opponents do not produce any iron and ivory. Yet it is impossible that one who possessed so many sofa-makers and so many sword-makers should not also have left iron and ivory,] ἀλλ' ἀνάγκη ταῦτά γ' ὑπάρχειν.
'These things **must** have been/be present.' (Dem. 27.30)

Example (30) concerns the property of Demosthenes's deceased father, who was a manufacture owner. The implicit premise is the common association of manufacture owners with materials like iron and ivory ('Practically all manufacture owners possess iron and ivory'). Based on this, the speaker concludes that the materials must have been present also in the inheritance of the particular manufacturer, his father.

Both standard and instancial induction have the starting point in the observation of a recurrent pattern (recall example (26) above). The former extrapolates from a pattern to a generalization, whereas the latter applies a pattern to a particular instance so that a new piece of information about the particular case is obtained. The role of the cognizer is more prominent than in the case of objective necessity, because the modal auxiliary mainly profiles the result of a cognitive process – an inferred conclusion. At the same time, such conclusions are intersubjective because they are derived from culturally shared knowledge.

A question arises whether the usage of ἀνάγκη in the contexts marked by instancial induction emerged as a discrete extension of standard induction, or whether it was a product of a gradual pragmatic strengthening of the epistemic implicature associated with the event-oriented meaning. The latter scenario is reconcilable with the contexts in which an expression of general objective necessity can be interpreted as an inferred statement about a particular case.

- (31) ἀνάγκη γὰρ τὸν ἀπολογούμενον, κὰν ἐξ ἴσου ἀκροᾷσθε, ἔλαττον ἔχειν.
'For the man who speaks in his defence, even if you give him an impartial hearing, **must** needs be at a disadvantage.' (Lys. 19.3)

The most straightforward interpretation of (31) is that τὸν ἀπολογούμενον ‘the man who speaks in his defense’ is non-specific, which is consistent with the iterative formulation of the concessive κἄν with a verb in the subjunctive mood. However, the statement also indirectly refers, by implicature, to the situation of the speaker who is being prosecuted. The pragmatic implicature is that the general rule is instantiated for a particular ἀπολογούμενος, the speaker, and that its content is inferred. In addition to that, an interpretation with instantial induction may be available when the modal auxiliary does not refer to a general rule but to a specific state-of-affairs that inevitably occurs. In (32), ἀνάγκη is correlated with οὐ ἔστιν ‘it is impossible’, which expresses objective event-oriented modality. The context may invite the implicature that the speaker infers what will happen based on his knowledge of the world.

(32) οὐ γὰρ ἔστιν, οὐκ ἔστι τῶν ἔξω τῆς πόλεως ἐχθρῶν κρατῆσαι, πρὶν ἂν τοὺς ἐν αὐτῇ τῇ πόλει κολάσῃ· ἐχθροὺς, ἀλλ’ **ἀνάγκη** τούτοις ὥσπερ προβόλοις προσπταίσαντας ὑστερίζειν ἐκείνων.

‘For it is impossible, impossible to quell the foes without, until you have punished the foes within your gates, but if you let these stand as stumbling-blocks in your path, you **must** fail against the others.’ ([Dem.] 10.63)

It cannot be excluded that the usage involving instantial induction was sanctioned both by contexts with standard induction, as in (26), and contexts reconcilable with the implicature of instantial induction like (31) and (32).

Regardless of the exact source of the innovative usage, its communicative import is quite different from that of objective necessity. What is at stake in (30) is the need to establish a correlation concerning the particular manufacturer. While the contexts with objective necessity may merely invite the implicature that the content of the complement is inferred, contexts like (30) highlight the inference about the particular case. This move advances the argumentation of the speaker in a significant way.

The innovative character of this usage is also manifested by the semantic properties of the construction. The time reference of the infinitive may precede the time reference of the governing predicate, which is a characteristic of declarative infinitives. Prototypically, anteriority in Greek is encoded by the perfective aorist stem, but imperfective infinitives may also stand in lieu of the imperfect of the corresponding direct speech rendition. This possibly applies to the imperfective infinitive ὑπάρχειν ‘be present’ in (30), which is ambiguous as to its time reference. A clear example of anteriority is the following passage from Hyperides:

(33) **ἀνάγκη** γάρ, ὃ ἄνδρες δικασταί, πρῶτον μὲν ὀρεωκόμενον καὶ προηγητὴν ἀκολουθεῖν τῷ ζεύγει, ὃ ἦγεν τὴν γυναῖκα, ἔπειτα δὲ παῖδας τοὺς προπέμποντας αὐτὴν ἀκολουθεῖν καὶ Διώξιππον· καὶ γὰρ οὗτος ἠκολούθει ...

‘There **must** have been attenders, gentlemen of the jury, with the carriage that conveyed the bride: first a muleteer and a guide, and then her escort of boys, and also Dioxippus. For he was in attendance, too.’ (Hyp. 1.5)

The imperfective infinitives ἀκολουθεῖν ‘to follow’ refer to the time preceding the moment of speech, as manifested by the imperfects ἤγεν ‘(he) led’ and ἠκολούθει ‘(he) followed’. The governing ἀνάγκη is missing a copula but it is unlikely that the past form ἦν ‘was’ was omitted; an ellipsis of the present ἐστὶ ‘is’ is more likely. The passage is an example of instantial induction. Most weddings are correlated with the presence of attenders, from which follows that the particular wedding was also attended by a muleteer, a guide, some escort boys, and Dioxippus, a famous wrestler and chaperon of the bride. The aim of the speaker is to prove that he could not have insulted the bride, given that Dioxippus must have been present.

The possibility of anterior time reference of the infinitive suggests that the use of ἀνάγκη expressing instantial induction is not a mere subtype of objective necessity. General and specific objective necessity never involve anterior time reference of the infinitive, which is a sign of their close connection with the deontic meaning of ἀνάγκη. States-of-affairs in generalizations and statements of specific necessity are posterior in relation to the situation time of the governing predicate, which most often coincides with the utterance time. Therefore, the only possible interpretation of the aorist stem infinitive, whose grammatical aspect is perfective, in a context with general objective necessity is posterior:

(34) πῶς οὖν οὐχ ἅπαντ’ ἀνάγκη καταλυθῆναι τὰ τῆς πόλεως, ὅταν αἱ μὲν τῶν τελῶν καταβολαὶ μὴ ὥς ἱκαναὶ τῇ διοικήσει [...];

‘Isn’t it **necessary** that the whole business of the State goes to ruin whenever the payments on account of taxation are insufficient?’ (Dem. 24.98)

The greater variability of temporal relations between the governing predicate and the complement in the case of instantial induction is also indicated by the use of the perfect stem infinitives. Perfect infinitives in the passive voice are stative, but the extension of the predicate also covers the preceding eventuality that culminated in the resultant state. This layering therefore involves anterior time reference coupled with contemporaneous stativity.

(35) [The very ablest speakers among our citizens have many times addressed you at the public funerals] ἀνάγκη γὰρ τὰ μὲν μέγιστ’ αὐτῶν ἤδη κατακεχρῆσθαι, μικρὰ δ’ ἔτι παραλελειφθαι.

‘The most important topics **must** have already been exhausted, while only unimportant topics have been left for later speakers.’ (Isoc. 4.74)

The argument in (35) is more difficult to formalize than the previous examples, but it is inductive in force. The state-of-affairs described in the complement is an outcome brought

about by the activity of skilled public speakers. At the same time, the complement represents a non-guaranteed conclusion that embeds the said outcome in an inferred proposition. The perfect stem infinitives κατακεχρησθαι ‘to have been exhausted’ and παραλελειφθαι ‘to have been omitted’ partially bear on what has happened before the situation time of the matrix clause, which coincides with the utterance time.

It is important to note that in the outlined scenario of the development of ἀνάγκη + AccInf, the usage with instantial inductive conclusions does not develop from the employment in deductive conclusions, contrary to the hypothesis presented in Section 3.3. In other words, the innovation that produced instantial induction is not due to the weakening of the argument strength from guaranteed to non-guaranteed. We have seen that instantial induction can be traced back to the event-oriented usage of the construction, which signifies objective necessity. The innovation lies in the strengthening of the epistemic and evidential component in the meaning of the construction.

What is then the origin of the non-guaranteed truth status of inductive conclusions expressed by ἀνάγκη + AccInf? As has been stated above, event-oriented objective necessity is ‘objective’ only in the conceptualization of the cognizer. The inevitable occurrence of the marked state-of-affairs is conceptualized as caused by a force couched in the socio-physical domain. This meaning does not entail the component of logical reasoning. The components of objectivity and inevitability in the innovative usage with instantial induction are less prominent for two reasons. Firstly, the inductive usage of the modal auxiliary situates the modal force at least partly in the reasoning faculty of the speaker/cognizer. This means that the acceptability of the complement depends on the addressee’s willingness to accept the speaker’s reasoning. Secondly, the expression within the scope of the modal auxiliary is not conceptualized as a rule but as a statement about a particular case. General rules expressed by event-oriented modal auxiliaries may be easily accepted by a co-operative addressee as objective and indefeasible because they do not refer to any particular or even actual state-of-affairs. This is because the occurrence of the described eventuality is posterior to the reference time of the main predicate, and it is also dependent on the right conditions (e.g. undisputable membership in the relevant category or the existence of precisely those enabling circumstances that are specified by a subordinate clause). Thus, when the modal auxiliary does not point to a specific past or present eventuality, it is not possible to prove that the complement does not correspond to the extra-linguistic reality and to challenge its validity in this way. Note that contexts like (23) move the particular instance outside of the clause with ἀνάγκη and they never involve any discrepancy between the general rule and the particular case. By contrast, an inference about a particular case signaled by ἀνάγκη is precisely such an instantiation whose truth can, in the best case, be tested. In addition to that, the circumstances of the particular case may only approximate the ideal conditions that are supposed to lead to an outcome. Therefore, the addressee may evaluate the quality of the presented argument and eventually demote its conclusion from necessarily true, as the speaker would have it, to non-guaranteed.

Considering examples (30), (33), and (35), it is obvious that the conclusion in each of these contexts cannot be guaranteed because it is conceivable that the opposite of the inferred conclusion could be the case, given some specific, if unlikely, circumstances. This is the diagnostic employed here to differentiate between instantial induction and logical deduction in relation to the meaning of ἀνάγκη + AccInf. The bottom line is that both types of reasoning have in common the direction from the general to the particular and that they are both derived from the usage with objective necessity. If the implied premise cannot be intersubjectively accepted as indefeasible, we speak of instantial induction. If, on the other hand, the premises ensure that the conclusion marked by ἀνάγκη is necessarily true, it is appropriate to label the context as deductive. We now turn to this use of ἀνάγκη and ἀναγκαῖον.

3.4.4. Deduction

On the theory accepted here, the deductive syllogism is a stronger version of instantial induction. Strictly speaking, speakers do not differentiate between defeasible and indefeasible premises when they infer conclusions based on them. They draw attention to the fact that the conclusion, which they conceptualize as necessarily true, follows from an entrenched pattern or correlation. There are a few types of premises that are bona fide exceptionless. They are implied or appear in the arguments based on legal procedures, as in (36), laws, as shown by (37), *terminus post quem*, illustrated by (38), or *terminus ante quem*, and other generalizations that concern a limited number of possible outcomes.

(36) εἰ δὲ τὴν ἀπολογίαν ἐναντίαν τῇ διαμαρτυρίᾳ ποιήσονται, πῶς οὐκ ἢ τὸν λόγον ἀνάγκη ἢ τὴν διαμαρτυρίαν ψευδῆ εἶναι;

‘If they are going to make their defense conflict with the affidavit, **surely** either what they say, or what they swore, **must** be false.’ (Dem. 44.51)

(37) ὁπότε τοίνυν μηδεὶς φαίνεται ζῶν τούτων, τότε ἀνάγκη ἐπικληρὸν τὴν μητέρα ἡμῶν εἶναι.

‘Since, then, it is plain that no one of these [guardians] is living, my mother **must** be an heiress.’ (Dem. 46.19)

(38) εἰ μὲν τυγχάνεις ἀληθῆ λέγων τούτους φάσκων εὐρετὰς γεγενῆσθαι τῶν καλλίστων ἐπιτηδευμάτων, ἀναγκαῖόν ἐστι τοὺς πολλὰς γενεαῖς πρότερον γεγονότας [...] μὴ μετέχειν αὐτῶν, [neither those who made the expedition against Troy nor those who were of the generation of Heracles and Theseus or of Minos, son of Zeus, or Rhadamanthus or Aeacus].

‘If you speak the truth when you assert that [the Spartans] were the discoverers of the best ways of life, then those who lived many generations before [the Spartans settled in Laconia] **must** have had no part in them.’ (Isoc. 12.205)

Example (38) displays several semantic and formal features of the inferential usage of the modal auxiliary. The imperfective infinitive μετέχειν ‘have part in’ is anterior in relation to the reference time of the governing predicate ἀναγκαῖόν ἐστι ‘it is necessary’. In contrast to this semantic feature normally associated with the declarative infinitive, the use of the negative particle μή, instead of οὐ, is a characteristic of the dynamic infinitive, which appears in expressions of deontic modality. This is in line with the tendency that semantic change precedes formal change in grammaticalization. The sentence also illustrates that inference is not a subjective qualification. The speaker does not accept the premise introduced by his interlocutor, but he nevertheless formulates the conclusion, to his mind absurd, that follows from it. Thus, the complement of ἀναγκαῖόν ἐστι does not reflect the stance of the speaker. The premise itself is an example of a *terminus post quem* statement, which posits that something did not exist before a specific time. The premise is essentially exceptionless because it entails that no one living before the time of the Spartans could have enjoyed τὰ κάλλιστα ἐπιτηδεύματα ‘the best ways of life’.

3.4.5. Abduction

The aim of abductive reasoning is to find the best possible explanation of a fact or an observation. Explanations are notionally different from correlated outcomes. Consider the manufacturer from example (30). The inferred conclusion that there must have been iron and ivory in someone’s inheritance does not explain the fact that he was a manufacturer. Similarly, the inference concerning the presence of the attendants at the wedding in (33) is not an explanation of that very event being a wedding. The events or entities in each pair are correlates of each other. Schematically, C is correlated with B, but C does not explain B. By contrast, the relation between C and B in abduction is explanatory. Consider example (12)c, repeated for convenience in (39):

(39) Context: There is a nearby village located in a valley below a dammed reservoir and the dam has been in a rather bad state for some time.

Conclusion: If the village has been flooded, then the dam has broken.

The flooding of the village is a known fact B, which is explained by the inferred proposition C concerning the failure of the dam. Explanation C is a piece of information that is reconcilable with the encyclopedic knowledge of the cognizer.

Despite the differences between instantial induction and abduction, contextual overlap between the two types of reasoning is possible. This is the case when it is not clear

how the speaker conceptualizes the relationship between the inferred fact and the case – on the one hand, the conclusion may be taken to describe the outcome associated with a particular set of circumstances, on the other hand, it may be interpreted as an explanation:

- (40) Context: A 20-year-old Peter lives in Oxford but he doesn't come from the town.
He **must** be studying there. [instantial induction or abduction]

The ambiguity is significant for the grammaticalization of epistemic modal auxiliaries because it constitutes a potential bridge between the uses that express the two types of reasoning. If it is true that abductive reasoning is more subjective than induction, we can predict that the abductive usage develops from the inductive one, based on the tendency of subjectification. The following example represents such a bridging context in classical Greek:

- (41) [What shall we say when a young man leaves his father's house and spends his nights in other people's houses, a conspicuously handsome young man? When he enjoys costly suppers without paying for them, and keeps the most expensive flute-girls and harlots? When he gambles and pays nothing himself but another man always pays for him?] ἔτι ταῦτα μαντείας προσδεῖται; οὐκ εὐδηλον ὅτι πᾶσα **ἀνάγκη** τὸν τὰ τηλικαῦτα ἐπιτάγματα τισιν ἐπιτάττοντα καὶ αὐτὸν ἀντὶ τούτων ἡδονὰς τινὰς παρασκευάζειν τοῖς τὸ ἀργύριον προαναλίσκουσιν;
'Does it require prophetic power? Is it not perfectly plain that the man who makes such demands **must** himself furnish in return certain pleasures to the men who spend their money on him first?' (Aeschin. 1.76)

The passage concerns Timarchus whom the speaker accuses of prostituting himself. On the literal reading, the clause with ἀνάγκη is a postulated general rule with AccInf that contains the non-specific subject τὸν τὰ τηλικαῦτα ἐπιτάγματα τισιν ἐπιτάττοντα 'the man who makes such demands'. However, there is a strong pragmatic implicature that the complement of ἀνάγκη is an inferred conclusion, which applies to Timarchus. On this reading, the living standard of Timarchus suggests that he must be furnishing certain pleasures to other men. This is instantial induction (cf. (31) above). Note that within these two interpretations, the temporal reference of the infinitive in the complement is conceivably posterior in relation to the time of utterance. Additionally, the inductive reading is compatible with the simultaneous relative tense of the infinitive. The implicature of abductive reasoning builds on the implicature of instantial induction by specifying that the inferred fact explains the case. According to this reading, Timarchus's costly lifestyle is explained by his providing of sexual favors. In this case, the relative tense of the infinitive is simultaneous with the governing ἀνάγκη (ἔστι).

In general, abductive conclusions often refer to past events since what is presently observed may be explained on the basis of what happened before. In classical Greek, this

effect can be achieved by using the anterior perfect, which does not denote a resultant state of the grammatical subject but relevance of a past action:

- (42) πῶς οὐκ **ἀναγκαῖόν ἐστιν** τούτους τοὺς μάρτυρας τὰ ψευδῇ μεμαρτυρηκέναι [...];
'Isn't it **necessarily** true that these witnesses have given false testimony?' (Dem. 47.7)

The contentious affidavit in (42) contained the claim that a certain Theophemus was willing to give up a handmaid for interrogation under torture. The woman, however, had not been delivered and the speaker infers that the witnesses must have lied about Theophemus's intentions, which is captured by the perfect infinitive μεμαρτυρηκέναι 'to have given testimony' and its argument. The conclusion thus explains the behavior of the witnesses and their friend Theophemus. Note that the matrix clause is questioned, which suggests a rather intersubjective character of the inference. The modal predicate is not aligned with the stance of the speaker in a straightforward way, even though he accepts the conclusion.

There are three more examples of the abductive use of ἀνάγκη in the corpus:

- (43) οὐκ ἔστ' εἰπεῖν ἄλλην πρόφασιν δι' ἣν οὐκ ἀπέδοσαν, ἀλλ' **ἀνάγκη** ταύτην εἶναι τὴν αἰτίαν, δι' ἣν δοῦναι τὴν προῖκ' οὐκ ἐπίστευσαν.
'It is not possible to suggest any other excuse for non-payment but it **must** be for the [aforementioned] reason that they did not trust [Aphobus] enough to pay him the dowry.' (Dem. 30.13)

While example (43) does not spell out the explanation of non-payment, it is significant that the anaphoric nominal τὴν αἰτίαν, dependent on ἀνάγκη, means 'cause'. The remaining two examples are peculiar in how they handle the abductively inferred conclusion. The possible explanations are supplied by the subject of the infinitive in the form of two extended participial phrases:

- (44) [Aeschines has not put forward any proposals in the Assembly] καίτοι δυοῖν αὐτὸν **ἀνάγκη** θάτερον, ἢ μηδὲν τοῖς πραττομένοις ὑπ' ἐμοῦ τότε ἔχοντ' ἐγκαλεῖν μὴ γράφειν παρὰ ταῦθ' ἕτερα, ἢ τὸ τῶν ἐχθρῶν συμφέρον ζητοῦντα μὴ φέρειν εἰς μέσον τὰ τούτων ἀμείνω.
'Now one of two things **must** be true: either he made no alternative proposal because he had nothing to object to what I was doing, or he did not disclose his amendments because he sought the advantage of the enemy.' (Dem. 18.139)

The speaker claims that there are two possible explanations of Aeschines's not proposing anything. They are expressed by the participial phrases μηδὲν ἔχοντ'... 'having nothing to object to what I was doing' and ζητοῦντα... 'seeking the advantage of the enemy'. The imperfective anterior infinitives μὴ γράφειν 'not to write' and μὴ φέρειν 'not to propose' are

topical and refer to the lack of proposals, mentioned earlier in the discourse. Again, the past time reference of the infinitives and the use of μή demonstrate the tension between the dynamic and the declarative type of the complement.

(45) **ἀνάγκη** δὴ που τοὺς λόγους τούτους Αἰσχίνην πρὸς ὑμᾶς εἰπεῖν τουτονί, τοὺς περὶ τῶν Φωκέων καὶ τῶν Θεσπιῶν καὶ τῆς Εὐβοίας [...] δυοῖν θάτερον, ἢ διαρρήδην ἀκούσανθ' ὑποσχομένου Φιλίππου ὅτι πράξει ταῦτα καὶ ποιήσει, ἢ εἰ μὴ τοῦτο, γοητευθέντα καὶ φενακισθέντα τῇ περὶ τᾶλλα φιλανθρωπία καὶ ταῦτ' ἐλπίσαντα παρ' αὐτοῦ.

'It **must** be the case that one of two suppositions holds: when Aeschines made those speeches about the Phocians and Thespieae and Euboea, he either had taken an explicit promise from Philip that he would do and perform certain acts, or else, being spellbound and deluded by Philip's habitual courtesy, he honestly expected him to do them.' (Dem. 19.102)

In (45), the two possible explanations of Aeschines's behavior are again expressed by the participial phrases, which are in apposition to the accusative Αἰσχίνην τουτονί 'Aeschines here'. The perfective infinitive εἰπεῖν 'to say' is anterior and it is unambiguously declarative.

3.4.6. Diachronic development

To evaluate the validity of the hypothesis and the synchronic analysis presented above, it is essential to examine data from both earlier and later time periods. In older Ionic and Attic prose, exemplified here by the works of Herodotus and Thucydides, there is an absence of epistemic uses of ἀνάγκη and ἀναγκαῖον. Instead, all the non-deontic occurrences fall under objective necessity.⁴³ In these contexts, the modal auxiliary modifies states-of-affairs that are brought about by a physical or social force:

(46) [Egypt is rainless and frostless] ἐπὶ δὲ χιόνι πεσοῦσῃ πᾶσα **ἀνάγκη ἐστὶ** ὕσαι ἐν πέντε ἡμέρησι.

'But after snow has fallen, **it has to** rain within five days.' (Hdt. 2.22.3)

(47) **ἀνάγκη** δὲ ὥσπερ τέχνης αἰεὶ τὰ ἐπιγιγνόμενα [ἐπιτηδεύματα] κρατεῖν.

'Improvements in politics, as in art, **must** always prevail.' (Th. 1.71.3)

An analysis of the two modal auxiliaries in Polybius (altogether ἀνάγκη 33x; ἀναγκαῖον 48x) and Plutarch (altogether ἀνάγκη 98x; ἀναγκαῖον 102x) indicates that their objective epistemic

⁴³ In Herodotus, ἀνάγκη expresses objective necessity in only one out of twelve instances. In Thucydides, it occurs in five out of fifteen instances: (47), Th. 2.89.8, 4.20.1, 6.85.3, 7.14.2. Regarding ἀναγκαῖον, it does not appear as a governing predicate in Herodotus, while all six occurrences in Thucydides are deontic.

usage encompasses a wider range of meanings in post-classical prose.⁴⁴ In Polybius, there are five instances that involve inferences based on counting:⁴⁵

- (48) [I have said that there were six tribunes in each legion, and that each consul had two legions] φανερόν ὅτι δώδεκα χιλιάρχους **ἀνάγκη** συστρατεύειν ἑκατέρῳ τῶν ὑπάτων.
'It is clear that there **must** be twelve tribunes in the army of each consul.' (Plb. 6.27.4)

Another type of epistemic usage is observed in the passages in which Polybius analyses the writings of other historians and infers supplementary information that aligns with their assertions (2x):⁴⁶

- (49) [Callisthenes's description of the battlefield appears to be inconsistent] τῶν γὰρ μισθοφόρων **ἀνάγκη** καὶ τῶν ἱππέων τὴν συναφὴν κατὰ μέσον ὑπάρχειν τὸν τόπον.
'The mercenaries and the cavalry **must** have been in contact in the middle of the field.'
(Translation Robin Waterfield) (Plb. 12.18.10)

Unlike classical prose, contexts informed by instantial induction are absent in Polybius. Abductive usage is represented by four occurrences, including the following:⁴⁷

- (50) εἰ δὲ περὶ μόνους γέγονε Μαντινεῖς ἡ διαφορὰ, φανερόν ὅτι καὶ τὴν αἰτίαν τῆς ὀργῆς **ἀνάγκη** διαφέρουσιν γεγονέναι περὶ τούτους.
'But if [the Achaeans'] treatment of Mantinea was different to that of every other town, it **necessarily follows** that the cause for their anger was also different.' (Plb. 2.58.15)

The polysemic network of epistemic **ἀνάγκη** and **ἀναγκαῖον** in Polybius can be analyzed as a result of ongoing subjectification. Instead of predominantly marking instantial induction, which was the most common epistemic use in classical prose, the two modal auxiliaries now convey less restricted modes of reasoning. They may signal new information that aligns broadly with existing knowledge or known propositions. The speaker achieves this by conceptualizing a scenario that accommodates available information, thus forming a coherent mental representation of a possible world. Abduction, serving explanatory purposes, is not the only cognitive strategy facilitating this process. In the passages where Polybius analyzes accounts of other historians, we find reasoning based on diverse components, such as spatial reconstruction of the landscape and expert knowledge of military tactics. At the same time, the presence of **ἀνάγκη** within the scope of the epistemic qualifier **φανερόν** 'obvious' suggests

⁴⁴ Besides Polybius and Plutarch, Josephus Flavius and Appian were also analyzed, but no epistemic contexts with **ἀνάγκη** or **ἀναγκαῖον** were found in their works.

⁴⁵ Other occurrences of **ἀνάγκη** involving counting are Plb. 18.29.4, 18.29.7 and 22.21.7; **ἀναγκαῖον** in Plb. 12.19.9.

⁴⁶ Another occurrence is Plb. 22.21.7.

⁴⁷ Other abductive contexts with **ἀνάγκη** are Plb. 12.15.5, 22.15.8; **ἀναγκαῖον** in Plb. 1.15.9.

that the modal auxiliary has not grammaticalized into a subjective epistemic marker. It signals reasoning rather than speaker commitment.

The epistemic usage of ἀνάγκη and ἀναγκαῖον in Plutarch is not significantly more subjective than in Polybius, but subtle extensions of meaning can be identified. We encounter both deductive (4x)⁴⁸ and abductive contexts (6x):⁴⁹

(51) ὅθεν ἀνάγκη πᾶσιν, οἷς ἂν τὸ αἰσθάνεσθαι, καὶ τὸ νοεῖν ὑπάρχειν, εἰ τῷ νοεῖν αἰσθάνεσθαι πεφύκαμεν.

‘Then it **must** follow that all creatures which have sensation can also understand, if we are so constituted that we have sensation thanks to understanding.’ (Plu. *Moralia* 961b)

(52) [Given three things approached by the light from the sun: earth, moon, air; if we see that the moon is illumined not as the air but rather as the earth,] ἀνάγκη φύσιν ἔχειν ὁμοίαν ἃ τὰ αὐτὰ πάσχειν ὑπὸ τοῦ αὐτοῦ πέφυκεν.

‘It **must** be the case that the things upon which the same agent produces the same effects are of a similar nature.’ (Plu. *Moralia* 931c)

Two occurrences in Plutarch, (53) and Plu. *Per.* 2.2, loosely resemble instantial induction since they involve evaluations based on category membership. However, evaluative judgements are more speaker-oriented than inferences concerning the actuality of a state-of-affairs. In the following example, the assessment of purposefulness, though negated, is linked with the speaker's perspective:

(53) εὐθὺς οὖν τὸ πρῶτον οὐκ ἀναγκαῖόν ἐστιν, εἰ μὴ κατοικοῦσιν ἄνθρωποι τὴν σελήνην, μάτην γεγονέναι καὶ πρὸς μηθέν.

‘In the first place, if the moon is not inhabited by men, it does not **necessarily true** that it has come to be in vain and to no purpose.’ (Plu. *Moralia* 938c)

Plutarch also uses ἀνάγκη to signal inferences that are supported by analogy (5x):⁵⁰

(54) [If it is the nature of heat to lighten, the lightest object will have most heat; so, if it is also true that the nature of cold is to harden,] ἀνάγκη ψυχρότατον εἶναι τὸ μάλιστα πεπηγός, οἷον ἡ γῆ.

‘It **must** be the case that the hardest object is the coldest, just as the earth.’ (Plu. *Moralia* 954a)

⁴⁸ Deduction is also in Plu. *Moralia* 424b, 429a, and 1074a.

⁴⁹ Abductive contexts with ἀνάγκη are also in Plu. *Moralia* 931c, 1062d, and 1076d; ἀναγκαῖον in Plu. *Moralia* 932a, 1042e.

⁵⁰ Additional contexts with ἀνάγκη: Plu. *Moralia* 953e, 996a, 1001e; ἀναγκαῖον Plu. *Moralia* 947e.

The speaker assumes a similar structure of the categories comprising light and hard objects, thus enabling inferences about the latter. Such analogical extensions accommodate a broader range of inferences compared to the relatively limited use of epistemic ἀνάγκη and ἀναγκάϊον in classical prose.

In Plutarch's prose, evaluations and inferences based on analogy involve subtle functional extensions of the earlier evidential meaning of the investigated modal auxiliaries. The inferred conclusion is not supported by a recurrent pattern, but it follows from a logical connection uniquely established by the speaker. This nuance is also observable in Polybius's usage. By contrast, in the classical period the inference mostly concerns eventualities that are conceptualized as necessarily occurring. In this case, the cognizer reaches a conclusion through analyzing the action of a social or physical force and by identifying its outcome. The outcome brought about by the event-oriented force is a state-of-affairs, which is also encompassed in the inferred proposition. Thus, it may be stated that in the deductive and the inductive usage, which predominate in the classical period, the force profiled by the modal auxiliary targets both states-of-affairs and propositions. The post-classical subjectification of ἀνάγκη and ἀναγκάϊον involves a further shift of the modal force away from the domain of states-of-affairs to the domain of propositional content. In Polybius and Plutarch, the force profiled by the epistemic usage of the modal auxiliaries often does not imply any social or physical necessity that brings about an eventuality. Instead, the modal force is aligned solely with logical reasoning, and its target belongs within the domain of cognitive representations.

Contrary to the prediction stated in Section 3.3, abductive reasoning is not significantly more prevalent in the post-classical texts than in the classical period. The examples above suggest that subjectification in the case of 'evidentialized' modal auxiliaries can proceed in more directions than envisaged in Table 8. Abductive reasoning represents one possible extension that places a modal force more firmly in the domain of propositional content, because the states-of-affairs referred to by explanations cannot be readily conceptualized as posterior outcomes of a social or physical force. In addition to that, the same conceptualization of modal force applies to text-based and arithmetical inferences attested in Polybius and evaluations and analogies that appear in Plutarch. In these post-classical contexts of use, the inference is an outcome of the cognizer's creative combining of existing knowledge to produce new insights through a process that does not depend on the notion of extra-linguistic objective necessity.

3.5. Ἀνάγκη and ἀναγκάϊον as evidential strategies

We are now in the position to evaluate to what extent the hypothesis proposed in Section 3.3 accounts for the use of ἀνάγκη and ἀναγκάϊον with AccInf. The corpus data indicate that the examined modal auxiliaries can convey the evidential value of assumption through conversational implicature and, eventually, as an entailment. The implicature is associated with some event-oriented contexts of use of ἀνάγκη and ἀναγκάϊον that convey objective

necessity. The evidential component becomes part of the entailment when these modal auxiliaries encode objective epistemic modality.

The different frequencies of the three types of reasoning with ἀνάγκη and ἀναγκαῖον suggest that the linguistic system of classical Greek does not treat the domain of inference as a uniform semantic area, which is in line with the conclusions of Krzyżanowska, Wenmackers & Douven (2013). More specifically, abductive usage seems to constitute a minor strategy alongside the more common inductive and deductive uses in the classical period (Table 9). It is not probable that this distribution reflects any supposed rarity of abduction in human reasoning. On the contrary, abduction is frequently employed in everyday life (Douven 2021). Therefore, it is reasonable to assume that the lower prevalence of abduction with ἀνάγκη and ἀναγκαῖον is motivated from within the linguistic system. This is where the hypothesis becomes useful. It predicts that in the semantic development of an originally deontic or otherwise event-oriented modal auxiliary that eventually comes to convey an epistemic meaning with a secondary evidential entailment, the abductive usage becomes available later than deduction and induction.

	Deductive contexts	Inductive contexts	Abductive contexts	Bridging contexts
ἀνάγκη (ἐστὶ) + AccPtc	6 (Dem. 44.51; Dem. 44.54; Dem. 46.19; Lys. 13.92; Is. 3.6; Is. 6.44)	9 (Dem. 27.30; Dem. 28.9; Dem. 44.48; Dem. 19.294; Hyp. 1.5; Lys. Fr. 350.6; Is. 8.9; Is. 8.14; Isoc. 4.74)	3 (Dem. 18.139; Dem. 19.102; Dem. 30.13)	OBJ–Ind (Antipho 5.3; Lys. 19.3) Ind–Abd (Aeschin. 1.76; Is. 8.28)
ἀναγκαῖον (ἐστὶ) + AccPtc	1 (Isoc. 12.205)	3 (Is. 6.15; Dem. 49.40; Dem. 27.37)	1 (Dem. 47.7)	OBJ–Ind (Isoc. 15.174)

Table 9 Different types of reasoning with ἀνάγκη and ἀναγκαῖον in the ten orators

On the other hand, the inductive usage does not seem to have evolved from the deductive usage. The analysis of the research corpus presented in this chapter suggests that there are contexts in which the entailment of event-oriented objective necessity invites the implicature of inductive reasoning. The deductive and instantial inductive usages differ only in the strength of the underlying premise, while the communicative aim, viz. establishing outcomes, is the same for both uses. For this reason, the deductive and the inductive usage should be analyzed as forming a single subdomain in the case of ἀνάγκη and ἀναγκαῖον.

Another prediction of the hypothesis concerns subjectification. The change from objective necessity to deduction and induction conforms to the tendency of increased speaker/cognizer involvement. When the cognizer posits objective event-oriented necessity, their perspective remains backgrounded, because the modal force is couched in the socio-

physical domain. By contrast, when the cognizer engages in deduction or instantial induction, the modal auxiliary predominantly profiles the outcome of their reasoning. The element of subjectification is more elusive in the change from deductive/inductive to abductive reasoning. We have seen that the bridging contexts between induction and abduction invite the implicature that the inferred eventuality does not merely correlate with some already known fact, but that it explains it. Explanatory considerations involve stronger assumptions about the logical nature of the connection between some two eventualities. This is analogous with the grammaticalization of temporal-causal polysemies in the case of some conjunctions, such as English *since*.

In addition, deductive and inductive conclusions describe states-of-affairs that can be conceptualized as posterior outcomes of the action of a socio-physical force. This property makes these inferential conclusions similar to the contexts that exhibit objective event-oriented necessity. The difference is that in the evidential usage, the cognizer does not posit but infers that there is (or was or will be) a resulting state-of-affairs associated with the action of a socio-physical force. Thus, deductive and inductive contexts involve both inferential reasoning and an implicit reference to an event-oriented force. The contribution of the modal expression is that the two components are aligned. Abductive reasoning, on the other hand, produces explanations, which refer to eventualities that precede or are simultaneous with the event that needs to be explained. Since a socio-physical force cannot act against the flow of time, the force profiled by a modal auxiliary that is in the present tense and signals abduction represents solely logical reasoning, which is not constrained by temporal relations between states-of-affairs. The combinations of the relevant features are listed in Table 10:

	Event-oriented socio-physical force	Logical force
Objective necessity	+	- (+)
Deduction	(+)	+
Instantial induction	(+)	+
Abduction	-	+
Modal force target	State-of-affairs	Proposition

Table 10 Two types of modal force and reasoning types combined

The properties of abductive reasoning indicate that this meaning is more aligned with the perspective of the cognizer and thus more subjective. Furthermore, the table shows that some deductive and inductive contexts are compatible with an even-oriented interpretation of the modal auxiliary, whereas abductive contexts are not. In the case of an event-oriented reading, a socio-physical force acts before the described state-of-affairs occurs. Note that if the state-of-affairs occurred before the time of utterance, a prototypical event-oriented modal auxiliary encodes that a force acted in the past as well. This is achieved by a past tense marking of the modal auxiliary in the contexts exhibiting deontic modality or objective

necessity (e.g. ἀνάγκη ἦν ‘it was necessary’). However, the verb εἶναι ‘to be’ is usually dropped in the epistemic use of ἀνάγκη and ἀναγκαῖον so that the reference to a past action of a socio-physical force in the deductive and inductive contexts that describe past states-of-affairs is merely implicit. The lack of a tensed helping verb strengthens the inferential interpretation because the time reference of the modal auxiliary coincides with the time of utterance, which is when inferential reasoning unfolds. There is only one inductive context in which the modal auxiliary appears with the past tense verb ἦν ‘was’. If we leave aside the possibility that the verb marks a counterfactual proposition here, the force profiled by the modal auxiliary can be conceptualized in two ways. On the one hand, ἀναγκαῖον ἦν ‘it was necessary’ explicitly refers to the objective event-oriented necessity in the past that stemmed from the described housing arrangement. On the other hand, the modal auxiliary signals reasoning:

- (55) ἔτι δὲ καὶ γινώσκεσθαι αὐτὴν ὑπὸ τῶν Εὐκτῆμονος οἰκείων **ἀναγκαῖον ἦν** καὶ ὑπὸ τῶν οἰκετῶν, εἴ περ γε συνώκησεν ἐκείνῳ ἢ διητήθη τοσοῦτον χρόνον ἐν τῇ οἰκίᾳ.
 ‘Furthermore, she **must** have been known to the relatives and to the slaves of Euctemon if she had really been married to him and lived so long in the house.’ (Is. 6.15)

The previous example also illustrates that even though deduction and induction are aligned with a future-oriented socio-physical force, deductive and inductive conclusions may concern past events. The outcome of the action of a socio-physical force, which is described in the conclusion, may be situated in the past, but the enabling eventuality that brought about the outcome temporally precedes it. In the case of abduction, the process of reasoning often moves against the flow of time in the sense that the eventuality described in the conclusion precedes the eventuality in the premise. Table 11 represents these relations in a schematic way:

Fact concerning a past state-of-affairs (premise)	Outcome effected in the past (conclusion)
She lived with Euctemon.	She must have been known by his slaves.
socio-physical force → → state-of-affairs	
inductive reasoning → → proposition	
Explanation (conclusion)	Fact (premise)
Aeschines must have agreed with Demosthenes.	Aeschines did not propose anything.
proposition ← ← abductive reasoning	
<i>flow of time</i> → →	

Table 11 Different directions of reasoning in induction and abduction with respect to time

Given the result of the corpus analysis, the hypothesis about the grammaticalization of event-oriented modal auxiliaries from Section 3.3 should be revised in the following way:

(56) objective necessity > deduction | induction > abduction

Furthermore, the post-classical data from Polybius and Plutarch indicate that the abductive usage is not the only meaning that may emerge in the course of subjectification. Arguments based on analogy or assumptions about coherence represent other possible trajectories in the development of originally event-oriented modal auxiliaries. What these meanings have in common with abductive reasoning is that they do not involve the component of objective necessity couched in the socio-physical domain.

Subjectivity, contrasting with intersubjectivity, may also be operationalized as a specifically evidential notion. Generally acceptable premises lead to intersubjective conclusions, while more subjective considerations of the speaker/cognizer may not be immediately acceptable to other participants of the communication. The contexts informed by deduction and instantial induction in the research corpus appeal to culturally shared knowledge and suggest that there is a socially or physically conditioned necessity, which makes the inferred conclusions quite acceptable to the audience. The abductive contexts, on the other hand, are more subjective as they rely on explanatory considerations of the cognizer rather than any objective necessity in the extra-linguistic domain.

Regarding the formal properties of the complement, we have seen that the deontic usage of ἀνάγκη requires a dynamic infinitive, whose time reference is posterior and which implies the active role of an agent. In the case of objective necessity, an agent is not required. Inferential usage admits complements that are even more similar to the prototypical declarative infinite. While the negation particle is still μή, anterior time reference is possible. Anteriority is most often expressed by employing the present or the perfect stem infinitive. In the case of the former, anterior reference follows from the context. The only instance of an anterior aorist infinitive in the corpus appears in a context that exhibits abductive reasoning (example (45)).

With regard to the type of source underlying the process of inference, the inferences signaled by ἀνάγκη and ἀναγκάϊον in the research corpus always build upon known facts or hypothetical premises. This arrangement corresponds to the evidential value of assumption. Inferences based on sensory perception are not attested in the orators and they also do not appear in dramatic poetry. The apparent lack of circumstantial inferences may be explained by the nature of the corpus. Alternatively, it may be the case that ἀνάγκη and ἀναγκάϊον were simply not used to convey circumstantial inference because other expressions like verbs of seeing fulfilled this function.

In addition to expressing objective epistemic modality and information source, ἀνάγκη and ἀναγκάϊον can also trigger a particularized conversational implicature of (strong) partial epistemic commitment. In this case, the speaker is almost certain that the marked proposition

is true. This implicature can be canceled if the speaker does not accept the premise but merely entertains it in order to highlight a proposition, sometimes absurd, that necessarily follows from it (cf. (38)).

4. The particle ἄρα

4.1. Introduction

The particle ἄρα is a discourse marker which is attested at all historical stages of Ancient Greek, including the Mycenaean period.⁵¹ Its relative frequency is highest in the Homeric epics, while its use in later Attic prose and dramatic poetry is comparatively less frequent. Even if we take into account differences between genres, the pattern of attestation suggests that the particle has likely undergone significant semantic changes or a functional specialization in the course of the first millennium BCE. The contexts in which ἄρα potentially signals inferential reasoning become more frequent only in the classical period. In Plato, for instance, we observe a surge of the relative frequency of the particle that is attributable precisely to its use in philosophical arguments. Given this historical pattern and the elusive meaning of ἄρα in the epics, the present chapter does not consider the Homeric data nor the diachronic development of the particle; a summary of the existing theories about its meaning in archaic Greek is presented below. The goal of the current investigation is more modest. Firstly, it aims at gaining a more thorough understanding of the various uses and functions of the particle in a synchronic corpus of Attic Greek rhetorical texts from the 5th and 4th cent. BCE. Secondly, the analysis should throw light on the evidential use of ἄρα and determine whether its evidential meaning is, at least in some syntactic contexts, an entailment or an invited conversational implicature. If the latter turns out to be the case, it raises the question of what are the semantic components of the particle that underlie an evidential interpretation when it is available.

The particle has received considerable attention in the literature. Let us first focus on the theories that concern ἄρα in the epics. According to an influential view, which goes back to Hartung (1832) and was later endorsed, among others, by Denniston (1954: 32–33) and Ruijgh (1971: 435), ἄρα signals new and interesting information. A related but in some ways more radical proposal was offered by Bakker (1993; 1997), who argues that ἄρα marks assertions that are based on the evidence perceived by the speaker. The speaker, as claimed by Bakker, is immersed in the story he narrates to the audience so that the evidence is as if directly perceived when the individual scenes are being reenacted before his eyes. According to a different theory, ἄρα in Homer marks propositions that are already known or naturally follow from the established facts or the immediate context (Grimm 1962: 12–13; more recently George 2018; similarly Kühner & Gerth 1904: 317–318 and Schwyzer & Debrunner 1950: 558–559). According to this view, the capacity to signal known or evident facts motivates the use of ἄρα in descriptions of unfolding scenes, since these communicative contexts involve that some new but predictable information becomes accessible (Grimm 1962: 13). A methodologically updated version of this theory is expounded in a recent article by Jiménez Delgado (2023), who argues that ἄρα in the epics points to the common ground. More specifically, the marked proposition is said to be retrieved from the common ground or, if the information is new, easily accommodated within the given communicative context.

⁵¹ Some possible occurrences in Mycenaean are discussed by Jiménez Delgado (2017; 2023).

The meaning of ἄρα in classical Greek is often analyzed on the level of specific syntactic environments. Generally, there is a tendency to emphasize two main points: first, that ἄρα signals, or at least correlates with, interesting or surprising propositions, and second, that the particle indicates information logically following from what has been said or directly perceived.⁵² The component of interest or surprise is said to be especially salient in questions and conditional protases (Kühner & Gerth 1904: 322–326; Jiménez Delgado 2023: 111–115). Regarding the use of ἄρα in main clauses, it is acknowledged that the components of interest and logical connection often co-occur, but individual researchers often try to establish which component is more basic. Denniston (1954: 32–43) claims that the particle primarily signals interest or surprise when the speaker realizes that something is the case or grasps a new idea. Furthermore, he proposes that more neutral marking of logical inference by means of ἄρα developed from the semantic component of realization. In contrast to this view, Van Ophuijsen (1993) argues that the particle does not entail surprise but signals that the speaker and the addressee cannot but conclude *p* given the available evidence. This proposal is compatible with that of Jiménez Delgado (2023: 117), who argues that the inferential use is related to the more basic capacity of ἄρα to signal that a proposition is compatible with the common ground. At least some scholars who accept the view that ἄρα primarily indicates coherence between the marked proposition and the immediate linguistic and extra-linguistic context see the nuance of surprise as a side effect dependent on this more basic function of ἄρα in main clauses (Van Ophuijsen 1993: 82; Van Emde Boas et al. 2019: 685–686). The idea is that an unexpected conclusion that necessarily follows from the accepted premises or sensory perception often causes surprise.

To simplify the matter a little, the scholarly debate has so far focused on the question whether ἄρα in specific syntactic contexts primarily serves to relate a proposition to the common ground or describe the stance of the speaker. While the existing theories seem to be descriptively sufficient in the case of one or more subsets of the occurrences, there are several recalcitrant facts that challenge the adequacy of the individual proposals. For instance, conditional protases with ἄρα do not contain propositions that naturally follow from what has been said before, nor do they consistently refer to particularly surprising or unlikely eventualities. If the particle relates the proposition within its scope to something, it is the contribution expressed by the main clause. Similarly, clausal complements containing the particle may contain surprising and hard to believe propositions as well as old claims and established facts. Even though seemingly incompatible meanings of the same particle in different contexts are not problematic *per se* and they may be explained by polysemy, it is nevertheless preferable to propose a network of meanings that is characterized by plausible links, which potentially reflect the diachronic development of the particle. This is all the more desirable given that conditional protases and clausal complements with ἄρα represent the majority of the occurrences of the particle in the research corpus.

⁵² See, for instance, La Roi (2019: 79–84), who follows Allan (2015).

I will briefly preview the results of the investigation. One of the main arguments presented in this chapter is that there is one semantic component that characterizes all the occurrences of $\alpha p \alpha$. It involves the speaker (or the subject of the matrix clause) mentally activating or envisaging a proposition, while also prompting the addressee to do the same. In this way, the participants of the communication form a mental image of the marked proposition and keep it active in their consciousness without necessarily adding in to the common ground. This cognitive and communicative operation serves various purposes. In the case of conditional protases with $\alpha p \alpha$, the speaker may wish to activate a proposition to explore a scenario or make a contribution, expressed by the main clause, that makes sense only if a subsidiary proposition is entertained for a moment. In clausal complements, envisaging p is a way to introduce a statement of someone else so that the speaker may react to it. In main clauses and questions, $\alpha p \alpha p$ may help the speaker to track and negotiate with the addressee the inferences that arise as the communication progresses. Alternatively, $\alpha p \alpha p$ may serve to activate a proposition just to signal that it is untenable or that the described eventuality is undesirable. This proposal is compatible with the observation that $\alpha p \alpha$ often appears in contexts characterized by low speaker commitment, but not necessarily disbelief, regarding p (Van Ophuijsen 1993: 83, 103, 109; Wakker 1997: 232; Oréal 1997: 239–242; Tronci 2017: 217). Envisaging p is precisely the kind of mental operation that does not presuppose that the speaker has formed any judgement with respect to the truth value of p (Dryer 1996). The contexts that do invite the interpretation that the speaker accepts p seem to combine the component of activation with the nuance of realization that something is or was the case. Thus, on the one hand, the activation of p may tip over into acceptance that p is true. On the other hand, envisaging an idea may also happen in contexts marked by incredulity.

Concerning the possibility that $\alpha p \alpha$ points to the common ground or signals inferences that follow from it, it appears that these two related nuances, as far as the research corpus is concerned, represent conversational implicatures that are characteristic of the use of the particle in some syntactic contexts. Both nuances arise in an interplay with the basic function of $\alpha p \alpha$, which signals that a proposition is now active. Regarding the evidential reading, it becomes discursively salient if the activation of p is facilitated by inferential reasoning based on contextually available evidence. Relegating the inferential contribution of $\alpha p \alpha$ to the domain of pragmatics, as opposed to semantics, seem warranted by the fact there is no formally defined context, e.g. a clause type, in which $\alpha p \alpha$ always relates p to the common ground or indicates inference. Ultimately, it is the whole linguistic and extra-linguistic context that determines whether there are any evidential or epistemic implicatures associated with the process of envisaging and activating p . The gradual conventionalization of the logical and connective function of $\alpha p \alpha$ is observable in the philosophical prose of Plato and later Aristotle, the latter of which uses the particle to signpost the steps within his arguments (Jiménez Delgado 2023: 115–116).

The structure of the chapter is as follows. Section 4.2 discusses $\alpha p \alpha$ in conditional protases. The function of the particle in clausal complements is investigated in Section 4.3.

Section 4.4 focuses on the interrogative sentences with ἄρα. Declarative sentences with the particle are treated in Section 4.5. A synthesis with an emphasis on the evidential use of ἄρα is presented in Section 4.6.

The distribution of the structural contexts with ἄρα in the research corpus is presented in the following table:

Context	Number of occurrences	Share of occurrences
Conditional protases	103	54.50 %
Embedded clauses	47	24.87 %
Direct (polar) questions	17	8.99 %
Indirect (polar) questions	4	2.12 %
Declarative sentences and main clauses	18	9.52 %
Total	189	100 %

Table 12 Counts of the occurrences of ἄρα in the research corpus

4.2. Ἄρα in conditional protases

4.2.1. Introduction

By far the most common syntactic context in which ἄρα occurs in the research corpus is the protasis in conditional sentences. The semantic contribution of ἄρα in these contexts has been described in the literature as marking unexpected or surprising eventualities (Wakker 1994: 343–350;⁵³ Jiménez Delgado 2023: 112).⁵⁴ According to this view, the speaker assesses the eventual occurrence of the described state-of-affairs as unexpected, unhoped for or, when mutually exclusive scenarios are discussed, less likely than some other eventuality. In agreement with this analysis, there are contexts with ἄρα in the research corpus in which parenthetical expressions or the speaker's comments suggest that the eventual occurrence of the state-of-affairs in the protasis is indeed perceived as unexpected or surprising:

- (1) οὐ γὰρ ἐξομνύναι 'θελήσιν αὐτοὺς οἶομαι. ἐὰν δ' ἄρα τοῦτο ποιήσωσιν ὑπ' ἀναιδεΐας
 ...
 'I do not think they will choose to take an oath of disclaimer. But if ἄρα they are shameless enough to do this [...].' (Dem. 45.59)

⁵³ Gerry Wakker later abandoned the view that ἄρα in protases signals surprise. In Wakker (1997: 231–238), she endorses the analysis of Van Ophuijsen (1993) and glosses the protases containing ἄρα with 'if it turns out that...' or uses the adverb *apparently*.

⁵⁴ The assessment of Kühner & Gerth (1904: 224–226), who describe the function of ἄρα in protases in terms of low speaker commitment and distance also belongs here. Denniston (1954: 37) claims that ἄρα marks hypotheses of which the possibility has just been realized, which is in line with his overall analysis of ἄρα as a marker of new or interesting information.

(2) ἐὰν μὲν ἀνααιρεθῶσι καὶ διοικισθῶσιν, ἰσχυροῖς Λακεδαιμονίοις ἔστιν εὐθὺς εἶναι, ἐὰν δὲ σωθῶσιν **ἄρα**, ὥς ἤδη τι καὶ παρ' ἐλπίδας ἐξέβη ...

'If [the Megalopolitans] are overthrown and decentralized, the Lacedaemonians can at once be a great power, but if they are saved **ἄρα**, for such unexpected things have happened before now [...].' (Dem. 16.30)

(3) [I can present some men as my witnesses.] ἂν δ' **ἄρα** καὶ τούτους πείσωσι μὴ μαρτυρεῖν, ὥς οὐκ οἶομαι· εἰ δὲ μή, ἀλλ' οὐχ ἅπαντάς γε ...

'But if **ἄρα** they do persuade these men also not to testify (I do not expect they will, at any rate not all of them) [...].' (Aeschin. 1.48)

What militates against this analysis of ἄρα is the fact that there are passages in which the speaker assesses the eventuality as expected or the context does not readily admit the nuance of surprise:

(4) τότε δ', ἂν **ἄρ'** ἃ νῦν οἰόμεθ' ἡμεῖς πράττηται ...

'But later on, if **ἄρα** what we now deem probable comes to pass [...].' (Dem. 14.13)

(5) ἀλλὰ δεῖ νῦν εὖ βεβουλευμένους ἡμᾶς φανῆναι, τότε δέ, ἂν **ἄρα** ταῦτα δοκῇ, τὰ τῆς ἀνδρείας ἀποδείξασθαι.

'Rather we must now show ourselves to have been wise in counsel and later, if **ἄρα** this proposal is adopted, display the deeds of courage.' (Dem. Ex. 50.1)

In my view, a more adequate description of the function of ἄρα in protases stems from Van Ophuijsen (1993: 128–131), who discusses a handful of occurrences in Herodotus. He claims that ἄρα correlates with statements that the speaker assumes for the sake of the argument but does not accept responsibility for. This assessment essentially agrees with the conclusions of the present study, which discusses the properties of the conditionals that belong here in greater detail and frames the contribution of ἄρα in somewhat different terms.

The distribution of ἄρα in conditional sentences calls for an analysis of the particle that should account for several facts. First, counterfactual protases with ἄρα are absent in the research corpus.⁵⁵ The entailment of non-factuality, which is naturally associated with counterfactuals, seems to clash with the contribution of the particle in this syntactic context. Second, even though the semantic entailment of surprise can be ruled out, it is nevertheless often present as a conversational implicature. This tendency should be explained by correctly analyzing the division of labor between semantics and pragmatics. Third, the scope of the particle mostly includes the entire subordinate clause but contexts in which ἄρα seemingly has a single word or phrase within its scope also occur. The final point concerns methodology.

⁵⁵ Note that ἄρα does occur in counterfactual protases in Homer (George 2018: 245).

We must not lose sight of the use of ἄρα outside of conditional protases. The second most common context for the occurrence of this particle is in embedded clauses following verbs of speaking or thinking. These contexts often exhibit low speaker commitment regarding the complement. While monosemous analyses of particle meaning are decidedly less attractive than accounts that presuppose polysemy,⁵⁶ different functions associated with the same particle cannot be studied in isolation. Any analysis of the use of ἄρα in conditional sentences should be reconcilable with the contribution of the particle in other syntactic contexts if we allow for differences caused by conceivable semantic changes. Therefore, the tendency of ἄρα to appear in conditional antecedents and clausal complements, which together add up to almost 80 % of the occurrences in the research corpus, must remain a backdrop in the analysis of the particle in individual syntactic contexts.

An important part of the analysis presented below is the observation that ἄρα predominantly occurs in the conditional protases that express various types of presuppositions associated with the main clause. The protasis may relate to the communicated content or the felicity conditions of the speech act expressed by the main clause. The matters of presupposition and felicity conditions in conditional clauses are discussed in Section 4.2.2. The Greek data, organized according to the type of the conditional sentence, are analyzed in Sections 4.2.3 to 4.2.5. The position of the particle is discussed in Section 4.2.6. Some preliminary conclusions are drawn in Section 4.2.7. To preview the results, it can be stated that ἄρα in the protasis signals that the speaker is aware of a subsidiary proposition that constitutes the necessary background for the intended contribution. This contribution appears in the main clause and represents the discursively salient part of the utterance. The particle correlates with a) the activation of the marked proposition in the speaker's consciousness, b) the coherence between the marked proposition and the communicated content of the main clause, and c) the neutral epistemic stance of the speaker towards the marked proposition.

4.2.2. Presupposition and felicity conditions in conditionals

The notion of presupposition concerns the propositional content that is positively associated with a sentence but does not necessarily depend on its entailment (Levinson 1983: 167–225; Lambrecht 1994: 51–73; Huang 2014: 84–113). Consider the following example:

- (6) a. The king of France wears / doesn't wear a crown.
b. There is a king of France.

Both versions of (6)a presuppose (6)b, which illustrates that presuppositions, unlike entailment, may survive under narrow scope negation. Presupposed content forms the background for the foregrounded component of the utterance. In the case of (6)a, what stands

⁵⁶ See Thijs (2021: 134–145) for an illuminating discussion about the adequacy of a polysemy approach in the case of polyfunctional particles.

in the foreground is the assertion concerning the head cover of a certain person, whose existence is taken for granted. The difference between asserted and presupposed propositions may also be highlighted by means of the ‘lie-test’ (Erteshik-Shir & Lappin 1979; 1983). A natural interpretation of (7)b in a dialogue is that the speaker is challenging the part of (7)a that concerns the crown, not the existence of the king:

- (7) a. The king of France wears a crown.
- b. That’s not true!

Presuppositions are triggered by a plethora of linguistic structures including definite descriptions (the king of France), factive verbs (e.g. *regret*, *thank*, *know*), change of state verbs (e.g. *stop*), and temporal clauses (for a more comprehensive list see Levinson 1983:181–184). But even though presuppositions depend on the linguistic and logical form of the sentence, they cannot be exhaustively described by means of semantics alone. The context of utterance and the common ground between the speaker and addressee influence the way potential presuppositions are processed in communication. In the case of utterances like (8)a, the presupposition (8)b, which would normally be triggered by the *before*-clause, is cancelled because everyone knows that being dead precludes any further activity.

- (8) a. Franz Kafka died before he finished writing *The Castle*.
- b. ?Kafka finished writing *The Castle*.

Thus, pragmatic factors cannot be omitted from a usage-based study of presupposition. A definition proposed by Lambrecht (1994: 52) provides a sufficient theoretical footing for our investigation of ἄρα:

- (9) *Pragmatic presupposition*: The set of propositions lexicogrammatically evoked in a sentence which the speaker assumes the hearer already knows or is ready to take for granted at the time the sentence is uttered.

Lambrecht further specifies that “to know a proposition” means “to have a mental representation of its denotatum,” which is neutral with respect to the truth of the proposition. Note that the mental state of the speaker is not specified by the definition because it is perhaps assumed that a sincere performance of the speech act requires that the speaker knows its presupposition and is committed to its truth. For this reason, Lambrecht’s definition of “knowing” may appear as too weak with respect to the speaker. However, there are communicative contexts in which the speaker suspends their commitment to the presupposition triggered by the foregrounded part of the utterance. As will become apparent, such a suspension of commitment does not compromise the felicity of the speech act. The linguistic structure that enables this is the conditional clause.

Conditional clauses of a certain logical structure involve cancelation or suspension of the presupposition triggered by the main clause. Consider the following example:

- (10) a. If Harry has children, he will/won't regret doing linguistics.
b. If Harry does linguistics, he will/won't regret doing it.
c. Harry does linguistics.
(Levinson 1983: 200)

Proposition (10)c is presupposed by (10)a but not by (10)b, because the protasis 'If Harry does linguistics' cancels the presupposition triggered by the factive verb *regret*. This behavior can be predicted by means of a descriptive rule that specifies the conditions in which presuppositions in conditionals are filtered:

- (11) In a sentence of the form *if p then q*, the presuppositions of the parts will be inherited by the whole unless *q* presupposes *r* and *p* entails *r*.
(Karttunen 1973: 178)

Main clause *q* in sentences like (10)b presupposes proposition *r* (= 'Harry does linguistics'), which is at the same time entailed by the protasis. Naturally, by inserting *p* in the protasis the speaker distances themselves from its entailment *r*, which results in canceling the presupposition of *q*.

Speakers may exploit such conditionals to signal that they are aware that the contribution of the main clause depends on a presupposition whose truth is uncertain:

- (12) a. I will dedicate my book to you if I finish writing it.
b. *q* 'I will dedicate my book to you' presupposes *r* 'my book will exist'
c. *p* 'I will finish writing my book' entails *r* 'my book will exist'

The main clause of (12)a is a commissive speech act whose communicated content presupposes the existence of a book written by the speaker. However, this presupposition is suspended by the protasis. Analyzing such sentences as mere predicational conditionals does not capture their communicative import. While it is true that if *p* holds then the state-of-affairs described in *q* will happen at some point, this analysis does not tell us why the speaker used the conditional clause in the first place. I argue that such presupposition-suspending conditionals are employed when the speaker wants to contribute to the communication without committing themselves to the presupposition triggered by the communicated content. Alternatively, the speaker may be aware that the addressee could find the presupposition not easily accommodable and by suspending it they ensure the felicity of their contribution. The felicitousness of the promise in (12)a illustrates this point. The status of the

suspended presupposition with respect to the speaker is that they, to use Lambrecht's words, have a mental representation of its denotatum but are not committed to its truth.

Communicated content is not the only aspect of an utterance that triggers assumptions about its background. These assumptions can also relate to the interpersonal context between the interlocutors and the overall communicative situation. From the perspective of the speech act theory, such assumptions are among the felicity conditions that need to be met so that the speech act is successful. In Searle's (1969: 64–71) analysis of the structure of speech acts, four types of felicity conditions are identified. The first type concerns propositional content, to which the foregoing discussion of pragmatic presupposition applies. The second type of conditions is labelled preparatory in Searle's analysis. They specify the mental states and characteristics of the speaker and the addressee, as well as the properties of the communicative situation in which a speech act can be performed felicitously. For instance, the preparatory conditions for asserting are that the speaker has evidence for the truth of *p* and that it is not obvious to both the speaker and addressee that the latter knows *p*. The third type is the essential condition, which specifies that the speaker's aim is aligned with the conventional purpose associated with the specific speech act type. For example, a request counts as an attempt to get the addressee to do something. Finally, sincerity condition requires that the speaker does not act disingenuously.

Besides the conditions that apply to the communicated content, preparatory conditions are the most relevant type for the analysis of ὅρα in conditionals. Consider the following example.

(13) I will tell you a good story if you have a few minutes to spare.

The subordinate clause in (13) describes a preparatory condition for the speech act of narrating announced in the main clause. Thus, the protasis does not target the propositional content of the apodosis but specifies the circumstances in which it is appropriate to perform the announcement expressed in the main clause. Such pragmatic, or illocutionary, conditionals were already analyzed by Wakker (1994: 236–256), but the focus is now on what they have in common with presupposition-canceling conditionals.

Both types of conditionals discussed so far contain propositional content in the protasis that describes the necessary background for the main clause. The backgrounded proposition may be associated with the communicated content of the apodosis or the felicity conditions that relate to the extra-linguistic context. Furthermore, if the speaker were to utter the main clause as an independent sentence, this act would imply that they assume that the proposition embedded in the protasis of the corresponding complex clause is true.

- (14) a. *q* 'I will dedicate my book to you.'
b. *p* 'The speaker will finish writing his book.'

- (15) a. *q* ‘I will tell you a good story.’
 b. *p* ‘The addressee has time to spare.’

The close connection between *p* and *q* in these two examples suggests that they are coherent in a different way than *p* ‘Harry has children’ and *q* ‘He will regret doing linguistics’ in (10)a. If the speaker combines the latter pair of statements in ‘If Harry has children, he will regret doing linguistics’ they state that *p* is associated with the eventuality described in *q*. The point of uttering such sentences is to inform the addressee that there is a conditional relation between two otherwise independent eventualities. On the other hand, in (14) and (15), the relation between the two is more conventional because uttering *q* normally implies that the speaker is aware that *p* holds and the addressee knows it too. When they are combined in *if p then q* as in (12)a and (13), the actual contribution is limited to the apodosis since the conditional relation between *p* and *q* hardly constitutes a new piece of information for the addressee. The most adequate interpretation is that the speaker activates *p* in order to contribute *q*.

In what follows, the occurrences of ἄρα in conditional antecedents in the research corpus are analyzed. Section 4.2.3 contains a discussion of presupposition-suspending conditionals with ἄρα. Pragmatic conditionals are treated in Section 4.2.4. The particle is also common in the contexts in which the speaker switches from describing one potential scenario to another. These contexts of use are treated in Section 4.2.5. The position of ἄρα in the protasis and the properties of its scope are analyzed in Section 4.2.6.

4.2.3. Presupposition-suspending conditionals with ἄρα

Suspension of presupposition may apply to any discourse act that expresses communicated content, regardless of the sentence mood or the speech act type. Thus, we encounter protases with ἄρα in conditionals where the main clause is interrogative, imperative, or indicative:

- (16) [You must not be negligent of the piety due to your ancestors,] οἷ πῶς ἂν διατεθεῖεν, εἴ τις ἄρα τοῖς ἐκεῖ φρόνησίς ἐστι περὶ τῶν ἐνθάδε γιγνομένων, [if they could perceive the current decline of the Athenian power];
 ‘What would be [the ancestors’] feelings, if ἄρα the dead possess any perception of what takes place here?’ (Isoc. 14.61)
- (17) ταῦτα τοίνυν, ὦ ἄνδρες δικασταί, μεμνημένοι σαφῶς, ἐὰν ἄρα τι περὶ αὐτῶν ἐγχειρῇ νυνὶ διαβάλλειν, ἀντίθετε.
 ‘Keep these facts, then, clearly in your minds, men of the jury, and if [Polyeuctus] ἄρα now tries to make any slanderous statements about the matter, confront him with them.’ (Dem. 41.18)

- (18) [I earnestly beg you to bestow the captive girls on me.] βούλομαι δέ σ' ἀκοῦσαι καὶ μαθεῖν οἷαν μοι δώσεις δωρεῖάν, ἂν ᾗρα δῶς.
 'And I wish you to understand what sort of gift you will be giving me, if ᾗρα you give it.'
 (Dem. 19.195)

The antecedent with ᾗρα in (17) suspends the presupposition that is triggered lexically. The verb ἀντιτίθημι 'set against' presupposes that there is something against which the subject may react. In (16) and (18), the presupposition stems from the fact that the phrases πῶς ἂν διατεθεῖεν 'how would they feel' and οἷαν δωρεῖάν 'what kind of gift' presuppose the reality of the described events and things because the focus is on their manner and quality, respectively. The verb meaning 'feel' in (16) implies that the subject can receive stimuli, which is picked up by the protasis.

There are several reasons why the speaker might want to suspend a presupposition associated with a discourse act. The question in (16) presupposes something no one can possibly know for sure, hence suspending the presupposition may serve the Gricean maxim of quality (Grice 1991 [1975]: 27). Requesting something, as in (17), presupposes that the state-of-affairs or entity the addressee is asked to manipulate or react to actually exists. Furthermore, the speaker may sometimes wish to request something even though the associated presupposition cannot be taken for granted at the time of utterance. In (18) the suspension helps to maintain the polite tone of the discourse move. The speaker is not socially superior to the addressee, the king of Macedon, so presupposing that his request would be granted would be presumptuous.

The fact that the protases in the examples above express presuppositions is made clear by the observation that they would be triggered even if the foregrounded component of the sentence was negated:

- (19) a. *Do not* confront Polyeuctus' slander with these facts.
 b. Polyeuctus will speak.
- (20) a. I *do not* wish you to understand what sort of gift you will be giving me.
 b. You will give me a gift.

However, protases with ᾗρα may also target the asserted part of the main clause, which means that ᾗρα *p* is not presupposed by the polar opposite of the apodosis:

- (21) [At the same time the lawgiver teaches the younger men to respect their elders, to yield precedence to them in every act, and to honor that old age] εἰς ὃ πάντες ἀφιζόμεθα, ἐὰν ᾗρα διαγενώμεθα.
 'To which we shall all come if ᾗρα our lives are spared.' (Aeschin. 1.24)

- (22) a. We *shall not* all come to old age.
 b. ?Our lives will be spared.

Despite the logical form, the function of the protasis in (21) is very similar to the contexts that express real presuppositions. The speaker makes a prediction that comes with a strong assumption. This assumption is suspended in order not to violate the maxim of quality.

Another not strictly presuppositional usage of ἄρα concerns *in case* conditionals (Wakker 1994: 277–282). The main clause describes a state-of-affairs that is brought about in case the proposition in the protasis turns out to be true. The eventuality in the main clause is meant to lead to the optimal outcome from the point of view of the speaker or a different person.

- (23) βούλομαι δὲ κάκεῖνο προειπεῖν, ἐὰν ἄρα ὑπακούσῃ ὁ Μισγόλας τοῖς νόμοις καὶ ὑμῖν.
 ‘But I wish to say another thing in anticipation, in case ἄρα Misgolas shall answer before the laws and before you.’ (Aeschin. 1.49)

- (24) [Philip says that he does not know what he can do to oblige you, but that, if you will tell him, he will do anything “that is consistent with his own honor and reputation”]
 εἰς ταύτας τὰς προφάσεις καταφεύγων, κἂν ἄρ’ εἵπητέ τι καὶ προαχθῇθ’ ὑμεῖς ἐπαγγείλασθαι, ἀναχώρησιν ἑαυτῷ καταλείπων.
 ‘Taking refuge in this saving clause, and leaving himself a loophole in case ἄρα you make any proposal or are induced to ask any favor.’ (Dem. 19.41)

The future eventuality described in the protasis does not comprise the presupposed background or the entailment of the asserted part of the main clause. The particle seems to be motivated by the fact that the main clause is rendered more acceptable by propositional content that need not be true. Felicitously uttering the main clause in (23) and the need for a coherent account of Philip’s actions described in (24) require that the speaker evoke a subsidiary proposition. Thus, the aim of the speaker is not to suspend a presupposition that is not easily accommodable by the addressee, but to supply a sufficient justification ἄρα *p* for proposition or speech act *q*. What these two uses have in common is that ἄρα *p* and *q* describe a coherent scenario and that *q* is communicatively appropriate if the speaker has formed a mental representation of *p* and entertains its possibility. The coherence between *p* and *q* in *in case* conditionals therefore does not follow from the linguistic form of *q* but from the speaker’s knowledge and conceptualization of reality.

Similar factors seem to be at work in negative protases with ἄρα. In asserting *q*, the speaker normally assumes that any defeating eventuality, which would falsify *q*, is not actual. However, this assumption may sometimes prove too strong, and the speaker chooses to suspend it by employing the structure *q unless ἄρα p*.

(25) οὕτοσι ὁ νόμος, ὧ ἄνδρες, κοινὸς ἅπασι κεῖται, ἐξεῖναι τὰ ἑαυτοῦ διαθέσθαι, ἐὰν μὴ παῖδες ὧσι γνήσιοι ἄρρενες, ἐὰν μὴ ἄρα μανεῖς ἢ ὑπὸ γήρως ἢ δι' ἄλλο τι τῶν ἐν τῷ νόμῳ παρανοῶν διαθῇται.

‘This law, men, holds good for all men alike, permitting anyone to dispose of his property if there is no male issue, unless ἄρα he is insane or mentally incapacitated by old age or any other of the causes mentioned in the law.’ (Is. 6.9)

According to the analysis of ἄρα presented here, the protasis with the particle is subsidiary to the main clause because its content is presupposed, entailed or it may be inferred from the latter. This is also illustrated by (25), in which two protases with ἐὰν μή ‘if not’ appear next to each other. I propose that the first protasis does not contain ἄρα because it expresses a necessary and independent condition for the truth of the main clause. The second protasis with ἄρα is subsidiary since it describes a defeating eventuality whose absence (μή) is normally assumed, but the legal context requires that the speaker acknowledges that the eventuality is nevertheless possible.

To summarize, the foregoing analysis suggest that ἄρα is especially suited to presupposition-suspending protases. Furthermore, it may be used any time the speaker needs to signal that they entertain a proposition so as to render the communicated content of the main clause more appropriate. The marked proposition is conventionally associated with the communicated content of the main clause in the construction *if ἄρα p then q*. The association between ἄρα *p* and *q* is based on the linguistic form of *q* or the knowledge of the speaker, who is aware that uttering *q* normally implies that *p* is taken for granted. Thus, the particle signals that the speaker envisages the content of the marked proposition, which supports an asserted or focused piece of information. The particle’s compatibility with conditional antecedents means that the speaker is not committed to *p*. The following section discusses the contexts in which the protasis does not relate to the communicated content of the main clause but the communicative situation itself.

4.2.4. Pragmatic conditionals with ἄρα

Pragmatic conditionals with ἄρα in the protasis can target various types of preparatory conditions required by the speech act that is performed by means of the main clause. Perhaps the most basic condition concerns the appropriateness of the speech act in the given communicative situation:

(26) καὶ μὴν εἰ καὶ τοῦτ’ ἄρα δεῖ μ’ εἰπεῖν, ἡ μὲν ἐμὴ πολιτεία καὶ προαίρεσις, ἃν τις σκοπῇ, ταῖς τῶν τότε ἐπαινουμένων ἀνδρῶν ὁμοία καὶ ταῦτά βουλομένη φανήσεται ...

‘And if I must speak also about that **ἄρα**, if my policy and my principles are considered, they will be found to resemble in spirit and purpose those of the venerated names of antiquity.’ (Dem. 18.317)

(27) μήτ’ οὖν ἐκεῖνοί ποτε παύσαιντο, εἰ **ἄρ’** εὖξασθαι δεῖ, τοὺς μὲν ἑαυτοὺς ἀγαθόν τι ποιοῦντας μήτε τιμῶντες μήτε θαυμάζοντες ...

‘If **ἄρα** a prayer may be allowed, may they never cease to withhold honor and admiration from those who do them service.’ (Dem. 20.109)

The protasis in (26) suspends the assumption that the assertion in the main clause is an appropriate contribution. The antecedent in (27) has the same function but it targets a wish.

Another type of preparatory conditions bears on the speaker’s ability to felicitously perform the intended speech act. For example, assertions require that the speaker can correctly assess the reality they want to describe, while commissive speech acts presuppose his or her ability to bring about a state-of-affairs:

(28) ἀλλ’ εἴπερ **ἄρ’** ὀρθῶς ἐγὼ λογίζομαι καὶ σκοπῶ, ὑπὲρ τοῦ Χερρόνησον ἔχειν ὑμᾶς ἀσφαλῶς [...] περὶ τούτου μοί ἐστιν ἅπασ’ ἡ σπουδή.

‘But if **ἄρα** my judgement and my views are at all right, the purpose of all my exertions in this case is that you may hold the Chersonese securely.’ (Dem. 23.1)

(29) [I intend to explain how you can best prepare for war.] ἐγὼ δὲ τοῦτ’, ἂν **ἄρ’** οἷός τ’ ὦ, πειράσομαι ποιῆσαι ...

‘This, if **ἄρα** I am able, I will try to do.’ (Dem. 14.2)⁵⁷

The felicity of the speech act may also depend on the mental state or knowledge of the addressee. For instance, referring to a person is more informative if the addressee already knows who that person is:

(30) ἔστι τις Ἀριστίων Πλαταϊκός, ὁ τοῦ Ἀριστοβούλου τοῦ φαρμακοπώλου υἱός, εἴ τις **ἄρα** καὶ ὑμῶν γινώσκει.

‘There is one Aristion, a man of Plataean status, son of Aristobulus the apothecary, if some **ἄρα** of you happen to know him.’ (Aeschin. 3.162)

Pragmatic conditionals with **ἄρα** suspend assumptions that arise in the process of communication and concern the interpersonal context between the speaker and the

⁵⁷ Kühner & Gerth (1904: 325) interpret **ἄρα** in this example as a marker of humility.

addressee. Such assumptions are normally accommodated⁵⁸ by the addressee when the speaker performs a speech act with a specific illocutionary force. For instance, by uttering a promise the speaker signals to the addressee that they are able to manipulate the reality so that it matches their words. The speaker might choose to suspend such assumptions if they are not sure that the preparatory conditions for the speech act are met or if they want to avoid sounding overconfident.

The contribution of ἄρα in pragmatic conditionals is the same as in the protases that target the propositional content of the apodosis. The particle signals that the speaker has envisaged the content of ἄρα *p* but is not committed to its truth. The proposition within the scope of ἄρα is conventionally associated with the illocutionary intent of the main clause. The link between ἄρα *p* and *q* is anchored within the communicative situation and established based on the intuitive knowledge of conversational maxims.

4.2.5. Switching between scenarios

The particle is common in the contexts in which the speaker, after having explored a scenario, switches to a different one, which may involve various speech act types or sentence modes, e.g. assertions, requests, and questions. The second scenario is incompatible with the first one and there is often the nuance that the speaker considers it unlikely. The conditional conjunction is almost always followed by the particle δέ:⁵⁹

(31) ἐὰν μὲν ἀναιρεθῶσι καὶ διοικισθῶσιν, ἰσχυροῖς Λακεδαιμονίοις ἔστιν εὐθὺς εἶναι, ἐὰν δὲ σωθῶσιν ἄρα, ὥς ἤδη τι καὶ παρ' ἐλπίδας ἐξέβη, βέβαιοι σύμμαχοι Θηβαίων δικαίως ἔσονται.

‘If [the Megalopolitans] are overthrown and decentralized, the Lacedaemonians can at once be a great power, but if they are saved ἄρα (for such unexpected things have happened before now) they are bound to be the staunch friends of Thebes.’ (Dem. 16.30)

I will call passages like (31) switch-contexts for the sake of brevity. A common feature of switch-contexts is that the antecedent with ἄρα introduces the second scenario which means that the subordinate clause precedes the main clause. We have seen that protases that suspend presuppositions or assumptions may precede, follow, or divide the main clause into two parts. The last two arrangements are especially suitable because the presupposition is suspended only after the context that triggers it has been introduced into the discourse. By contrast, protases in switch-contexts seem to prepare the stage for the main clause rather than to suspend a presupposition or assumption that follows from it.

⁵⁸ Accommodation is usually discussed in connection with real presuppositions, which relate to the communicated content and not the communicative situation, see Huang (2014: 108–112) with references. However, I do not find it controversial to apply this notion to other preparatory conditions.

⁵⁹ Oréal (1997: 241) argues that ἄρα in (31) signals that the proposition within its scope is not asserted.

The nature of preparation varies, and it is sometimes reducible to the two basic functions of *if* ἄρα *p* we have already examined. First, *p* may be presupposed by the propositional content of the main clause. For instance, the foregrounded adverbs φαύλως ‘feebly’ and κακῶς ‘badly’ in (32) presuppose that the eventuality they modify is actual:

(32) οἶμαι μὲν οὖν οὐδὲ βοηθήσειν αὐτήν, ἂν δ’ ἄρα τοῦτο ποιῇ, φαύλως καὶ κακῶς.

‘I do not expect that [Artemisia] will send any help to [the Rhodian government], and if ἄρα she does, it will be feeble and half-hearted.’ (Dem. 15.13)

Second, the protasis may target a preparatory condition of the speech act in the main clause. The request expressed in (33) is appropriate if the audience is willing to give ear to Demosthenes:

(33) [Calling Demosthenes to speak poses danger to you and the state] ἂν δ’ ἄρα ὑμῖν δόξη ἀκούειν, ἀξιώσατε τὸν Δημοσθένην τὸν αὐτὸν τρόπον ἀπολογεῖσθαι ὄνπερ κάγω κατηγορήκα.

‘But if ἄρα you decide to listen, demand that Demosthenes make his defence in the same way in which I have made the accusation.’ (Aeschin. 3.202)

It is also common that the proposition in the antecedent is associated with the main clause simply on account of the speaker’s conceptualization of the world or the communicative context. More specifically, ἄρα *p* is conceptualized as the necessary background for the eventuality or the speech act expressed in the main clause:

(34) μάλιστα μὲν, ὃ ἄνδρες Ἀθηναῖοι, βουλοίμην ἂν ὑμᾶς ἃ μέλλω λέγειν πεισθῆναι· εἰ δ’ ἄρα τοῦτ’ ἄλλη πη συμβαίνοι, ἐμαυτῷ γ’ ἂν εἰρῆσθαι πρὸ παντὸς αὐτὰ δεξαίμην.

‘Most of all I should desire, men of Athens, that you be convinced by the words I am about to utter, but if ἄρα it should turn out otherwise, I should prefer above all else that by me, at least, they had been spoken.’ (Dem. Ex. 33.1)

We have seen in the preceding sections that the relation between ἄρα *p* and *q* may depend on the way the speaker conceptualizes the world, rather than on the semantic properties of the main clause or the pragmatic context. Thus, a descriptive analysis of switch-contexts proposed here is that the second scenario constitutes an information island that is internally coherent but at the same time incompatible with the preceding contribution of the speaker. The incompatibility is resolved by inserting the introductory proposition *p* in a protasis. By coherence is meant that *p* represents the background for *q* and that *p* supports *q*. The association between *p* and *q*, again, is due to the fact that *p* refers to a presupposition, felicity condition, or an assumption associated with *q*. Therefore, the contribution of ἄρα in switch-contexts is the same as in other conditionals. It signals that the speaker has formed a

mental representation of *p*, which they entertain for the moment. The following example illustrates the conventional relation between the antecedent and the main clause. Calling the law to become the arbiter presupposes that there is disagreement:

- (35) a. [I think you are liable to pay the outstanding debts.] εἰ δ' ἄρ' ἀντιλέγομεν περὶ
τούτου, διαιτητῆς ἡμῖν γενέσθω ὁ νόμος ...
'But if ἄρα we disagree on this, let the law be our arbiter.' (Hyp. 3.21)
b. *q* 'Let the law be our arbiter.'
c. ἄρα *p* 'We disagree about something.'

Switch-contexts often suggest that the speaker deems the eventual truth of *p* as unexpected or surprising. I argue that this is a side effect that has to do with the speaker's motivation to use a conditional sentence in the first place. We have seen that presupposition-suspending protases may serve to uphold the conversational maxim of quality or to ensure that the contribution is polite. These aims are addressee-oriented in that the protasis suspends *p* that the addressee cannot easily accommodate. By contrast, switch-contexts involve *p*'s that are inserted in a protasis because they clash with the speaker's preceding contribution. Since the first presented scenario updates the common ground with a set of propositions, the contrastive contribution, introduced with *if* ἄρα *p*, is interpreted in such a way that it does not conflict with the preceding contribution. This gives rise to a conversational implicature that the speaker deems ἄρα *p* as unexpected or less likely than the scenario introduced first. The semantics of the particle, however, does not include this component, as is also suggested by the use of *if* ἄρα *p* in the following example, in which the particle marks both $\neg p$ and *p*:

- (36) σὺ οὖν, εἰ ἄρα μὴ ἀπείληφεν, λέγε ὅτι ἐγὼ ἀμφισβητῶ, ἂν ἄρα ἔλθῃ ὁ Κηφισιάδης.
εἰ δ' ἄρα ἀπείληφεν, λέγε ὅτι ἐγὼ μάρτυρας ἔχων ἡξίουں ἐμφανῇ καταστῆσαι τὰ
χρήματα ἢ τὸν κεκομισμένον ...
'Therefore, if [Cephiades] ἄρα has not recovered [the money], say, if ἄρα he should
come here, that I dispute his claim; and if ἄρα he has recovered it, say that I came with
witnesses and demanded that the money be produced, or the person who has
received it.' ([Dem.] 52.10)

The first protasis with ἄρα describes an assumption associated with the verb ἀμφισβητῶ 'dispute a claim'. The opponent's claim to the money may be disputed only if he has not yet recovered the sum. The protasis therefore introduces a scenario in which the order expressed by the main clause makes sense. The second protasis describes the necessary background for the imperative λέγε 'say', which presupposes that Cephiades is present. The third protasis with ἄρα introduces a different scenario that is not compatible with the first one. The presence of the particle in both introductory protases suggests that the speaker considers the described eventualities as equally possible.

Thus far, the meaning of ἄρα seems to be consistent across various types of conditional sentences. However, the position of the particle in sentences (31) and (26) may suggest that it can also have scope over constituents beneath the level of proposition. At first glance, this seems to go against the proposed analysis of ἄρα in conditionals as it includes notions like coherence and mental representation, which are most naturally associated with propositional content. While various meanings and different scope properties associated with the same particle are not problematic *per se*, it can be shown that it is not necessary to posit various meanings of ἄρα in conditional protases. The following section aims to prove that ἄρα is indeed a clausal particle even though it may occasionally appear later in the clause.

4.2.6. The position of ἄρα in conditional protases

Ἄρα is a postpositive particle, which predominantly clings to the first prosodic word of the syntactic unit within its scope. Its host may also be a word that is not autonomously prosodic but gains this status when followed by a postpositive. This is also the case in conditionals in which the preferential position in the subordinate clause is occupied by the introductive εἰ ‘if’. If we assume that the scope of ἄρα is the entire clause, it follows that the particle should appear in the second position after εἰ/ἐάν, possibly after other postpositives in a particle cluster. This prediction is borne out by almost all the occurrences in the research corpus (98 out of 103). However, in five passages the host of ἄρα appears later in the clause:

(37) a. ἐάν δὲ σωθῶσιν ἄρα ...

‘And if [the Megalopolitans] are saved ἄρα [...]’ (Dem. 16.30) = (31)

b. ἂν δ’ ἀνενέγκωσιν ἄρ’ οἱ Θηβαῖοι καὶ σωθῶσιν ...

‘But if the Thebans recover ἄρα and are saved [...]’ (Dem. 16.31)

c. καὶ μὴν εἰ καὶ τοῦτ’ ἄρα δεῖ μ’ εἰπεῖν ...

‘And if I must speak also about that ἄρα [...]’ (Dem. 18.317) = (26)

d. [ἵνα] μετὰσχητε τῶν λογισμῶν καὶ πρόνοιάν τιν’ ὑμῶν γ’ αὐτῶν, εἰ μὴ καὶ τῶν ἄλλων ἄρα βούλεσθε ...

‘So that you may adopt this reasoning as your own and take forethought for yourselves, even if for the others ἄρα you refuse to take it.’ (Dem. 9.20)

e. εἴ τις οὖν ὑμῶν ἄρα καὶ τὸν ἔμπροσθεν χρόνον τῶν ἰδίων τινὸς εἵνεκα γίνεσθαι τὸν ἀγῶνα τόνδ’ ὑπελάμβανεν, ἐνθυμηθεὶς νῦν ὅτι ...

‘Therefore, if anyone of you ἄρα hitherto assumed that this action was brought from private motives, when he now reflects that [...]’ (Dem. 21.8)

The position of ἄρα in (37)a–d seems to be motivated by the information structure of the clause. In each case the host of the particle constitutes the focus, which is informationally the most salient part of the clause. Focused elements immediately precede the verb unless the verb itself is the focus (Dik 1995: 12; Matić 2003; Allan 2014). Now, the fact that the host of

ἄρα coincides with the focused constituent does not mean that the particle has only this constituent within its scope instead of the entire clause. Foci may become secondary hosts for clausal particles, which retain their wide scope while highlighting the focused element (Dik 2007: 21). The focused constituent highlighted by ἄρα is precisely the part of the protasis that refers to the most salient component of the presupposition or assumption triggered by the main clause. For instance, ὑμῶν γ' αὐτῶν 'yourselves' in (37)d, marked by the restrictive particle γε, triggers the assumption that προνοία 'forethought' concerns first and foremost the audience because it is in their own interest. This assumption is then echoed by καὶ τῶν ἄλλων ἄρα 'also the others', which is negated.

The matter is a bit more complicated in the case of the arrangement in (37)e. The constituent τις ὑμῶν 'anyone of you' is most likely a contrastive topic, while the complement of ὑπελάμβανεν '(he) assumed' is the focus. The indefinite pronoun τις is a postpositive that is normally attracted to the conjunction εἰ and its position close to the left edge of the clause is not unexpected. I cautiously propose that ἄρα is pushed behind ὑμῶν in order to preclude that too many words come in between τις and the personal pronoun that specifies it.

The property of ἄρα to potentially highlight its prosodic host is also inferable from the contexts in which the speaker avoids the neutral order τις/τινες ἄρα. This is the case in short clauses in which the indefinite pronoun is a contrastive topic. The information status of the constituent is clearer if it follows rather than precedes ἄρα. The neutral order, illustrated by (39), is compatible with focus on τις:

(38) πρὸς δὲ τούτοις καθοπλίζειν ἅπαντας τοὺς πολίτας, ὥς οὐδενὸς μὲν ἐπιχειρήσοντος περὶ αὐτὸν νεωτερίζειν, ἣν δ' ἄρα [τινὲς]_{CONTOP} [τολμήσωσιν]_{FOC} ...

'In addition, he gives arms to all the citizens, thinking that none will try to revolt from him; but if ἄρα any should dare it [...].' (Isoc. *Ep.* 7.9)

(39) ... ὥστε μοι μηδὲ τὸν συνεροῦντ' εἶναι, ἐὰν μή [τις ἄρα τῶν οἰκείων]_{FOC} βοηθήσῃ.

'So that I shall have no one even as a fellow-pleader, unless someone ἄρα from among my own kinsmen shall come to my aid.' ([Dem.] 58.4)

4.2.7. The semantics of ἄρα in conditional protases

The foregoing analysis allows us to draw some conclusions about the function of ἄρα in conditional protases. The investigated occurrences of the particle point to the relevance of both the cognitive involvement of the speaker and the status of the proposition relative to other propositions that are active in the discourse. With respect to the former, ἄρα *p* signals that the speaker envisages the content of *p* but is not committed to its truth. As for the latter, the particle correlates with *p*'s that describe a presupposition or a necessary precondition for the communicated content of the apodosis, or a felicity condition for the performance of the speech act conveyed by the apodosis.

The activation of a mental representation of p is necessary in order that the main clause constitutes a meaningful contribution to the unfolding communication. Furthermore, if the main clause was uttered on its own, it would presuppose p or at least trigger the assumption that p holds. At the same time, the inclusion of p in the protasis signals that p cannot be taken for granted.

The studied conditionals exhibit an uneven discourse salience of the protasis and the apodosis. The protasis with $\alpha\pi\alpha$ is backgrounded and contains subsidiary information that ensures the appropriateness of the apodosis. Conditionals with $\alpha\pi\alpha$ thus serve a different communicative purpose than most other conditionals.

- (40) a. *if $\alpha\pi\alpha$ p then q* : ‘If p , which I now envisage, I contribute q .’
 b. *if p then q* : ‘I contribute that if p then q .’

The paraphrase in (40)a tries to capture the fact that the speaker’s intended contribution is q provided that a precondition, which constitutes the necessary background for q , is at least envisaged. By contrast, by using conditionals like (40)b the speaker contributes the logical structure as a whole with no backgrounding of p . Note that at the level of representation, the two types of conditional sentences do not really differ from each other. Both sentences in (40) entail that q is true or felicitous only if p holds. The difference between them is in the pragmatic domain. In (40)a, the speaker’s aim is to contribute a proposition anchored in a hypothetical scenario or to politely perform a speech act. In these contexts, the addressee usually does not learn anything new by being told that q applies if p holds because the association between the two is conventional or easily inferable. By contrast, in sentences like (40)b, the main point of the conditional structure is to inform the addressee precisely of the fact that q is conditioned by p . This analysis distinguishes the notion of contribution from the notion of truth or factuality of a proposition. Contributing something means that the speaker proposes that an element be added to the common ground. The contributed element may be a proposition whose subjective epistemic evaluation may range from counterfactual to hypothetical to certainly true. By contrast, the act of envisaging p , which is signaled by $\alpha\pi\alpha$, is a weaker form of contributing p . The marked proposition is not (yet) to be added to the common ground but merely mentally envisaged.

The particle does not occur in counterfactual conditionals in the research corpus. Protases in such conditionals trigger the presupposition that p does not hold, i.e. $\neg p$. However, there is no reason to assume that the cognitive activation of p is *per se* not reconcilable with counterfactual contexts.

- (41) a. I would have dedicated my book to you if I had finished writing it.
 b. p (counterfactual scenario) ‘I finished writing my book’
 c. $\neg p$ (reality) ‘I did not finish writing my book’

The main clause in (41)a triggers the presupposition, or at least the implicature, spelled out in (41)b, which is suspended by means of the *if*-clause. Presenting a scenario as counterfactual does not mean that a subsidiary proposition that belongs to it cannot be active in the consciousness of the speaker. Despite this, it seems to be the case that ἄρα *p* is not admissible in the protasis if the speaker knows that ¬*p* holds. It is therefore required that *p* be possible or, in other words, that *p* be such a proposition that may turn out to be true in actual reality. This suggests that ἄρα in the protasis signals activation of *p* that may at some later point lead to the realization that *p* is true. The same constraint does not apply outside of conditional protases because ἄρα *p* is admissible even if *p* is marked as a counterfactual proposition (see Section 4.4).

On the level of discourse structure, protases with ἄρα appear in two discernible but related contexts. First, they are employed when the speaker wants to signal that his or her contribution is appropriate, even though some assumptions that underlie it cannot be taken for granted. Second, antecedents with ἄρα are frequently used in switch-contexts, which involve exploration of alternative scenarios. The proposition marked by the particle serves as an entry point to a possible world, which is internally consistent but often considered less likely than the scenario mentioned before. Both contexts of use are similar in that they constitute chunks of discourse that may be analyzed as islands of coherence. Such islands coalesce around foregrounded propositions or speech acts that in turn invite additional subsidiary propositions that must be at least envisaged in order that the main contribution is felicitous.

The proposed meaning of ἄρα in conditional antecedents will serve as a comparandum for the analysis of the particle in other syntactic contexts. The following section contains a discussion of the occurrences of ἄρα in embedded clauses.

4.3. Ἄρα in embedded clauses

4.3.1. Introduction

Embedded clauses are defined here as subordinate clauses that complement a verbal predicate or a deverbal noun in the matrix clause. Similarly to the distribution of ἄρα in conditional protases, the occurrence of the particle often correlates with the speaker signaling distance from the content of the subordinate clause:

(42) πολλὰ δὲ θαυμάζων τῶν εἰωθότων λέγεσθαι παρ' ὑμῖν, οὐδενὸς ἦττον, ὧς ἄνδρες Ἀθηναῖοι, τεθαύμακα, ὃ καὶ πρώην τινὸς ἤκουσ' εἰπόντος ἐν τῇ βουλῇ, ὡς ἄρα δεῖ τὸν συμβουλευόντα ἢ πολεμεῖν ἀπλῶς ἢ τὴν εἰρήνην ἄγειν συμβουλεύειν.

'I often wonder at the sort of speeches that are delivered here, but nothing, men of Athens, has surprised me more than what I heard someone utter in the council the other day, that ἄρα your advisers are bound to put before you the plain alternative of fighting or observing the peace.' (Dem. 8.4)

However, analyzing ἄρα as a marker of low speaker commitment or unexpected information⁶⁰ is not attractive as there are contexts in which the stance of the speaker ranges from neutral to positive:

(43) καὶ γὰρ πυνθάνομαι μέλλειν Δημοσθένην, ἐπειδὴν αὐτοῖς ὁ λόγος ἀποδοθῇ, καταριθμεῖσθαι πρὸς ὑμᾶς, ὡς ἄρα τῇ πόλει τέτταρες ἤδη γεγέννηται καιροί, ἐν οἷς αὐτὸς πεπολίτεται.

‘For I understand that when the defence are given opportunity to speak, Demosthenes will enumerate to you that ἄρα there have been four periods in the history of the city in which he has been politically active.’ (Aeschin. 3.54)

(44) ἀκούετ’, ὦ ἄνδρες Ἀθηναῖοι, περὶ τῶν τοιούτων ἀνθρώπων οἷα Σόλων λέγει, καὶ περὶ τῶν θεῶν, οὓς φησι τὴν πόλιν σῶζειν. ἐγὼ δ’ αἰεὶ μὲν ἀληθῆ τὸν λόγον τοῦτον ἡγοῦμαι καὶ βούλομαι, ὡς ἄρ’ οἱ θεοὶ σῶζουσιν ἡμῶν τὴν πόλιν.

‘You have heard, men of Athens, what Solon says of men of such character, and of the gods who protect our city. As for me, I consider and want to be always true the saying that ἄρα the gods protect our city.’ (Dem. 19.256)

It is also not probable that the particle signals reported information for which the speaker does not take responsibility.⁶¹ The complement in (45) concerns an information that became apparent rather than a hearsay report:

(45) οὐδὲ τοῦτο δειχθῆναι πᾶσιν, ὅτι οὐκ ἄρ’ ἡ πόλις ἢ τῶν Ἀθηναίων ἡττητο τῷ πολέμῳ, ἀλλὰ Φίλιππος ἐστὶν ὁ τῆς εἰρήνης ἐπιθυμῶν καὶ ὁ πόλλ’ ὑπισχνούμενος τοῖς Ἀθηναίοις ἂν τύχη τῆς εἰρήνης.

‘Nor did [Philip want] to become manifest to all the fact that ἄρα Athens had not been beaten in the war, and that it was Philip who was really eager for the peace, and was ready to make large promises to the Athenians if he could get it.’ (Dem. 19.160)

Given the difficulty of correctly analyzing the contribution of ἄρα, we may take the proposed meaning of the particle in conditional protases as a starting point. It was argued that in this syntactic context the particle signals mental activation of *p* and the neutral epistemic stance of the speaker. If we look for similar semantic features in embedded clauses with ἄρα the analysis becomes more elaborate. Considering the syntactic structure of the complex sentence, the particle could pertain to *either* the stance of the cognizer referred to in the

⁶⁰ Cf. Denniston (1954: 38): “In reported speech and after verbs of thinking and seeming, ἄρα denotes the apprehensions of an idea not before envisaged. Usually ἄρα conveys either, at the most, actual scepticism, or, at the least, the disclaiming of responsibility for the accuracy of the statement. But sometimes the context implies acceptance of the idea, and ἄρα merely denotes that its truth has not before been realized.” This analysis is not adequate as there are contexts in which the complement does not represent new information, as in (44) and (53).

⁶¹ This analysis appears in Kühner & Gerth (1904: 324).

matrix clause *or* to the reporting speaker.⁶² As will become apparent, the possibility of different alignment is a significant characteristic of the embedded clauses with ἄρα.

The remainder of the section is organized as follows. Section 4.3.2 focuses on the contexts in which the particle pertains to the stance of the embedded speaker/cognizer. Ἄρα referring to the primary speaker is treated in Section 4.3.3. Some conclusions are presented in Section 4.3.4.

4.3.2. Ἄρα referring to the embedded speaker/cognizer

Embedded speakers/cognizers are those which are referred to or implied in the matrix clause. The meaning of ἄρα proposed above is reconcilable with a subset of the occurrences if we assume that the particle reflects the perspective of the embedded cognizer:

(46) βουλοίμην δ' ἄν σε μὴ πάρεργον ποιήσασθαι τὸ προσέχειν τὸν νοῦν τοῖς μέλλουσιν ῥηθήσεσθαι, μηδ' ὑπολαμβάνειν τοῦθ', ὡς ἄρ' ἐγὼ τούτοις κέχρημαι τοῖς λόγοις οὐ τῆς σῆς ὠφελίας ἔνεκα, ἀλλ' ἐπιδείξω ἐπιθυμῶν.

‘To the words I am about to utter I would not have you give heed as to a matter of trivial importance, nor to assume that ἄρα I have addressed you thus, not for your good, but from a desire to display my skill.’ ([Dem.] 61.34)

The speaker prefers that *p* expressed in the embedded clause is not activated in the consciousness of the subject of ὑπολαμβάνειν ‘assume’, here coinciding with the addressee. The context and the meaning of the governing verb suggest that ἄρα *p* is an inferred conclusion at which the addressee could arrive based on the words of the speaker. The speaker thus imputes the following inference to the addressee:

(47) The speaker ἄρ' has addressed me thus, not for my good, but from a desire to display his skill.

This context shares all the features associated with ἄρα that have been mentioned above. The cognizer has formed a mental representation of *p*. The governing verb ὑπολάνω ‘assume’ indicates moderate epistemic commitment. Furthermore, *p* is seemingly coherent with the common ground or with the communicative situation. This bundle as a whole is ascribed to the addressee, i.e. the embedded cognizer, by the primary speaker.

The semantics of the verbs that introduce the embedded clauses that belong here go well with the notion of mental activation of *p*. We encounter verbs of propositional attitude like καταγιγνώσκω in the sense ‘judge’ (Isoc. 8.66), προκαταγιγνώσκω ‘prejudge’ (Isoc.

⁶² In an analysis of Thucydides and Herodotus, Wakker (1997: 233–238) argues that ἄρα in the protasis of reported conditionals reflects the stance of the original speaker. Regarding dependent declarative clauses, Wakker concludes that the particle may belong to the perspective of the embedded speaker or the reporting speaker. She translates the particle with ‘apparently’ or ‘it turns out that’.

15.237), φρονέω ‘think’ (Dem. 24.199), and υπολαμβάνω ‘assume’. While these predicates express moderate epistemic commitment, there seem to be no reservations implied in contexts like (45) and the following:

(48) καὶ τὰ μὲν ἄλλ’ ἔστιν τούτων ὡς ἕκαστος ἔχει γνώμης, οὕτως υπολαμβάνειν· ὃ δ’ ἅπασιν ὁμοίως τοῖς οὖσιν ἀνθρώποις γεγένηται φανερόν, ὅτι ἡ πάσης τῆς Ἑλλάδος ἄρ’ ἐλευθερία ἐν ταῖς τῶνδε τῶν ἀνδρῶν ψυχαῖς διεσώζετο.

‘As for the other questions touching this campaign, each individual is at liberty to draw conclusions according to his judgement, but what has become manifest to all living men alike is this—that ἄρα the freedom of the whole Greek world was being preserved in the souls of these men.’ (Dem. 60.23)

This suggests that the most salient semantic characteristic of ἄρα concerns mental activation of *p* and that any epistemic implicatures are due to the context. Note that this use of ἄρα is compatible with verbs of speaking in the matrix clause:

(49) ὅσοι μὲν οὖν τῶν ἐμπόρων ἢ τῶν ἄλλων ξένων ἢ τῶν πολιτῶν τῶν ἡμετέρων κατ’ ἐκείνους τοὺς χρόνους ἐχρήσαντο τῷ σώματι τῷ Τιμάρχου, ἐκὼν καὶ τούτους ὑπερβήσομαι, ἵνα μή τις εἴπῃ ὡς ἄρα λίαν ἀκριβολογοῦμαι ἅπαντα.

‘The names of the merchants or other foreigners, or of our own citizens, who enjoyed the person of Timarchus in those days I will pass over willingly, that no one may say that ἄρα I am over particular to state every petty detail.’ (Aeschin. 1.40)

I propose that ἄρα in (49) signals that the subject of εἴπῃ ‘say’ could assume or conclude *p*, which could then be verbally expressed.

The activation of *p* is chiefly facilitated by inferential reasoning. This may be highlighted by nominals like τεκμήριον ‘proof’ introducing the complement:

(50) ἀξιῶ δ’, ὦ ἄνδρες Ἀθηναῖοι, μηδέπω τὴν τῶν δημοτῶν ἀποψήφισιν ποιεῖσθαι τεκμήριον ὑμᾶς, ὡς ἄρ’ οὐχὶ προσήκει μοι τῆς πόλεως.

‘I beg of you, men of Athens, not until I have been heard, to take my rejection by the demesmen as a proof that ἄρα I am not entitled to citizenship.’ (Dem. 57.6)

A further indication that this use of ἄρα pertains to the embedded cognizer is that the proposition within the scope of the particle often stands isolated in the discourse of the primary speaker. From the perspective of the primary speaker, the activation of *p* by means of ἄρα makes sense if it is motivated by the need to highlight a proposition that is important for a wider segment of the discourse. For instance, we have seen that *if* ἄρα *p* may constitute the necessary background for an assertion. However, in examples like (49), the subordinate clause with ἄρα *p* does not play any significant role in the argument of the primary speaker and

consequently it drops out of the view. The activation of *p* only makes sense if ἄρα refers to the mental state and reasoning of the subject of εἴπη ‘say’. Therefore, the marked proposition represents an evaluation or inferred conclusion the speaker ascribes to someone else.

The second possible arrangement regarding ἄρα in embedded clauses is that it refers to the stance of the primary speaker. This usage is discussed in the following section.

4.3.3. Ἄρα referring to the primary speaker

The second group of the occurrences of ἄρα in embedded clauses mainly involves the perspective of the primary speaker. I propose that the proposition is marked because the speaker intends to react to or comment on it. The reaction is almost always refutation, as in (51), but epistemically neutral contexts also occur.

- (51) a. τολμᾷ λέγειν βλέπων εἰς τὰ πρόσωπα τὰ ὑμέτερα, ὡς **ἄρα** Θηβαῖοι τὴν συμμαχίαν ὑμῖν ἐποιήσαντο οὐ διὰ τὸν καιρόν, οὐ διὰ τὸν φόβον τὸν περιστάντα αὐτούς, οὐ διὰ τὴν ὑμετέραν δόξαν, ἀλλὰ διὰ τὰς Δημοσθένους δημηγορίας.
 ‘[Demosthenes] dares to look you in the face and say that **ἄρα** Thebes made the alliance with you, not because of the crisis, not because of the fear that was impending over them, not because of your reputation, but because of Demosthenes’s declamations.’ (Aeschin. 3.137)
- b. ὁ δ’ εἰσάγων ἦν ὑμᾶς εἰς τὰς Θήβας καιρὸς καὶ φόβος καὶ χρεῖα συμμαχίας, ἀλλ’ οὐ Δημοσθένης.
 ‘What brought you into Thebes was the crisis and fear and need of alliance, not Demosthenes.’ (Aeschin. 3.141)

Example (51) illustrates a refutation. I propose that the reported claim is marked by ἄρα so that it stays active in the discourse and the consciousness of the interlocutors. Notice that Aeschines repeats the words καιρός ‘crisis, critical time’ and φόβος ‘fear’ from the original claim at a climactic point in his counterargument in (51)b.

The following example represent an epistemically neutral context:

- (52) a. καὶ γὰρ πυνθάνομαι μέλλειν Δημοσθένην, ἐπειδὴν αὐτοῖς ὁ λόγος ἀποδοθῇ, καταριθμεῖσθαι πρὸς ὑμᾶς, ὡς **ἄρα** τῇ πόλει τέτταρες ἤδη γεγέννηται καιροί, ἐν οἷς αὐτὸς πεπολίτευται. [When he has enumerated these, he intends, as I hear, to call me forward and ask me to tell him for which of these four periods I accuse him].
 ‘For I understand that when the defence are given opportunity to speak, Demosthenes will claim that **ἄρα** there have been four periods in the history of the city in which he has been politically active.’ (Aeschin. 3.54–55) = (43)
- b. ἀποκρίνομαι, ὅτι ἀπάντων τῶν τεττάρων καιρῶν κατηγορῶ σου ὅσους διαιρῇ.

‘I answer you that for all the four periods which you enumerate I accuse you.’ (Aeschin. 3.56)

The proposition marked by ἄρα is the backdrop for the main claim of Aeschines uttered a bit later. Notice that the interpretation of the particle that Demosthenes assumed or realized something is not adequate in this context.

In this usage, the mental activation of *p* is not limited to the contexts in which *p* constitutes an assumed background (cf. Section 4.2) or an inferred conclusion (cf. Section 4.3.2). The speaker may choose to keep *p* active in the discourse if they wish to react to it in any way – i.e. by refuting, confirming, or commenting on it. The prevalence of the contexts that contain a refutation could be explained by the text type and the fact that ἄρα is underspecified with respect to epistemic modality. In a confrontational speech, the reason to activate a proposition in an epistemically neutral way is more likely going to be the speaker’s intention to refute it rather than to confirm it. A more neutral coloring is apparent in decrees (ψηφίσματα), the following passage is quoted by Demosthenes:

(53) Εὐβουλος Μνησιθέου Κόπριος εἶπεν· ἐπειδὴ προσήγγειλαν οἱ στρατηγοὶ ἐν τῇ ἐκκλησίᾳ ὡς ἄρα Λεωδάμαντα τὸν ναύαρχον καὶ τὰ μετ’ αὐτοῦ ἀποσταλέντα σκάφη εἴκοσι ἐπὶ τὴν τοῦ σίτου παραπομπὴν εἰς Ἑλλήσποντον ὁ παρὰ Φιλίππου στρατηγὸς Ἀμύντας καταγόχεν εἰς Μακεδονίαν καὶ ἐν φυλακῇ ἔχει, ἐπιμεληθῆναι τοὺς πρυτάνεις καὶ τοὺς στρατηγοὺς ὅπως ἡ βουλὴ συναχθῇ καὶ αἰρεθῶσι πρέσβεις πρὸς Φίλιππον.

‘Eubulus, son of Mnesitheus, of Coprus, proposed that, since the generals have announced in the assembly that ἄρα the admiral Leodamas and the twenty ships under his command, sent to the Hellespont to convoy corn, have been removed to Macedon by Philip’s officer, Amyntas, and are there kept in custody, it shall be the concern of the presidents and of the generals that the Council be convened and ambassadors chosen to go to Philip.’ (Dem. 18.73)

The content of the report dependent on προσήγγειλαν ‘they announced’ is activated by means of ἄρα so that the proposal of Eubulus, expressed by the dynamic infinitive ἐπιμεληθῆναι ‘take care of’, is properly anchored and adequately supported.

There are also contexts in which the two possible alignments of ἄρα are blended. This is the case when ἄρα *p* is at the same time a conclusion drawn by the embedded speaker and a proposition highlighted in the current discourse to which the primary speaker reacts:

(54) α. αὐτίκα ἐγὼ πολλῶν μοι ἀπαγγελλόντων ὅτι λέγοιεν οἱ ἐχθροὶ ὡς ἄρα ἐγὼ οὔτ’ ἂν ὑπομείναιμι οἰχίσσομαί τε φεύγων, [– “His trial in Athens would be hazardous; while if he returns to Cyprus, he could obtain good agricultural land.] οὗτος ἄρα βουλήσεται περὶ τοῦ σώματος τοῦ ἑαυτοῦ κινδυνεῦσαι;” (And. 1.4)

‘At any rate I, since my enemies have been saying, I keep hearing, that ἄρα I would take flee instead of standing my ground, – “[...] Will ἄρα a man in his position want to risk his life?’”

b. ἐγὼ δέ, ὦ ἄνδρες, πολὺ τὴν ἐναντίαν τούτοις γνώμην ἔχω. ἄλλοθί τε γὰρ ὦν πάντα τὰ ἀγαθὰ ἔχειν στερόμενος τῆς πατρίδος οὐκ ἂν δεξαίμην.

‘I feel very different from this, gentlemen. I would never consent to a life abroad which cut me off from my country, whatever the advantages attached to it.’ (And. 1.5)

In (54)a, Andocides reproduces the reasoning of his personal enemies and reports its conclusion marked by ἄρα. At the same time, the marked conclusion is refuted in (54)b, which picks up the anacoluthic ἐγὼ ‘I’ from the first sentence. The use of ἄρα in the questions that contain a proposition not supported by contextual evidence is treated in Section 4.4.2

4.3.4. The semantics of ἄρα in embedded clauses

The meaning of ἄρα in embedded clauses is similar to its contribution in conditional protases. However, there are some important differences. The particle may refer to the stance of the primary speaker or the embedded speaker/cognizer. In both cases, ἄρα signals that *p* is envisaged. In the contexts in which the particle refers to the stance of the embedded cognizer, the activation of a proposition may be associated with inferential reasoning or the nuance of realization. An evidential reading becomes available if the matrix clause contains a verb or a noun that suggests that the cognizer learned something by evaluating the contextual evidence. By contrast, if the particle refers to the stance of the primary speaker the implicature of inferential reasoning is most often lacking. The proposition within the scope of ἄρα is activated because the speaker intends to react to it or use it as a supporting element in the discourse move. The view that ἄρα signals reported information here is not very convincing. There are contexts that superficially involve hearsay, but the reported speech act is itself prospective or hypothetical, as in (52).

Regarding epistemic modality, the situation is again comparable to conditional clauses. Most of the occurrences involve distance on the part of the reporting speaker, but the minority of neutral or positive contexts falsifies the hypothesis that ἄρα signifies low speaker commitment. The same applies to the hypothesis that ἄρα *p* refers to the propositions whose truth is or would be surprising. While this nuance poses no problems for contexts like (42), passages like (53) preclude it. From this follows that ἄρα is most likely neutral with respect to epistemic modality. At the same time, it is difficult to determine the degree of conventionalization of the epistemic implicature. It is well possible that the collocation ὥς ἄρα generally triggers the implicature that the speaker considers the complement false or irrelevant. This implicature, however, may be occasionally canceled, as in (44).

The analysis up until this point focused on the meaning of ἄρα in subordinate clauses. The remainder of the chapter focuses on ἄρα in main clauses and independent sentences.

Interrogative sentences are discussed in Section 4.4. Section 4.5 offers an analysis of ἄρα in assertive main clauses and sentences.

4.4. Ἄρα in questions

4.4.1. Introduction

The analysis of ἄρα in questions presented here starts from the same notions that were found to be relevant in other syntactic contexts – mental activation of *p* and neutrality with respect to epistemic modality. Furthermore, some specific properties of interrogative sentences must be taken into consideration. The most important feature from our perspective is the possibility to prepose negation to indicate that the question is biased. In this case, the speaker signals that a positive answer is expected. It will be argued that questions with ἄρα serve different argumentative purposes depending on the coherence or a lack thereof between ἄρα *p* and other propositions active in the discourse. A more general point of interest is the function of questions with ἄρα in monological⁶³ discourse. In a speech, a question may be presented as if it belonged to a conversation, also simulated, between the speaker and someone else. This usage introduces dialogical elements in monological discourse and, as we will see, preserves most of the pragmatic properties of ordinary interrogatives. Another possibility is to use a rhetorical question, which does not involve any actual querying of information and it is therefore closer to the prototype of monological discourse. Thus, one of the aims of this section is to analyze the differences between ordinary and rhetorical questions with ἄρα.

All of the independent questions with ἄρα in the research corpus represent polar questions. In addition, there are four indirect polar questions with ἄρα in the subordinate clause.⁶⁴ The subordinate clause is always introduced by εἰ, and the matrix clause often contains the verb σκοπῶ ‘consider’ in the imperative mood. The contribution of ἄρα in such indirect questions is similar to its meaning in the embedded clauses in which the particle reflects the stance of the subject of the matrix clause. The particle signals the anticipated activation of a proposition in the mind of the cognizer as a result of reasoning:

(55) πρῶτον μὲν τοίνυν Κόνωνα σκοπεῖτε, εἰ ἄρ’ ἄξιον, καταμεμψαμένους ἢ τὸν ἄνδρα ἢ τὰ πεπραγμένα, ἄκυρόν τι ποιῆσαι τῶν ἐκείνῳ δοθέντων.

⁶³ The distinction between monological and dialogal discourse on the one hand, and monological and dialogical discourse on the other stems from the Geneva Model of Discourse Analysis (Roulet 1984; Roulet et al. 1985; an influential study that applied this model to Latin data is Kroon 1995). Monological discourse is produced by one speaker, while dialogal discourse involves two or more speakers. The other distinction concerns the figure of the addressee: monological discourse is characterized by the presence of a single addressee, whereas dialogical discourse involves two or more addressees. These distinctions can be combined, resulting in four possible arrangements. The rhetorical texts analyzed in this study are monological, but they may contain simulated exchanges, resulting in monological–dialogical stretches of discourse.

⁶⁴ They are (55), Dem. 23.178, Dem. 19.19, and Is. 3.54.

‘First of all, then, in the case of Conon, ask yourselves whether ἄρα dissatisfaction with the man or his performances justifies the cancelling of the gifts conferred on him.’ (Dem. 20.68)

The treatment of questions with ἄρα is divided as follows. The following section focuses on positive interrogatives. Questions containing preposed negation are discussed in Section 4.4.3. A summary is presented in Section 4.4.4.

4.4.2. Ἄρα in positive questions

The key variable that determines the function of ἄρα p in questions is the relation between p and other information available in the common ground. There are two possible arrangements. One is that ἄρα p is coherent with the immediately preceding context. The other option is that ἄρα p is patently incoherent with what has been said before. The first arrangement is illustrated by the following example:

- (56) [Themistocles, Miltiades, and Aristides were not crowned for their achievements.]
ἀχάριστος ἄρ’ ἦν ὁ δῆμος; οὐκ, ἀλλὰ μεγαλόφρων ... [For they thought that their honor should be conferred, not in written words, but in the memory of those whom they had served; and from that time until this day it abides, immortal.]
‘Was ἄρα the democracy ungrateful? No, but noble-minded.’ (Aeschin. 3.182)

The proposition that constitutes the nucleus of the question is superficially coherent with the fact that esteemed politicians did not use to be crowned by the people. The purpose of such questions is to check whether p (= ‘The democracy was ungrateful’), which is inferable from what was said before, is true. The question is motivated by the fact that p , despite being coherent with the contextual evidence, is in implicit conflict with the part of the common ground that includes shared cultural knowledge, i.e. q (= ‘The democracy was grateful’). In (56), this conflict is resolved by specifying that honor was conferred in a different way in the past, which eliminates the uncomfortable inference p . This use of the particle may be generalized as follows:

- (57) Is p , which comes to mind (ἄρα) because of what has been said before, true?

The conflict between what the notional speaker, i.e. the audience, initially assumed (q) and what the notional addressee, i.e. Aeschines, implied (p) could suggest that the question is meta-conversational⁶⁵ in nature. Such questions do not serve to enquire about the truth of p but to check with the addressee whether p should be really added to the common ground. Meta-conversational questions challenge the preceding move of the interlocutor when their

⁶⁵ See Romero & Han (2004) and Section 4.4.3.

contribution entails or implies a proposition that conflicts with the beliefs of the speaker. The speaker uses a meta-conversational move to resolve the conflict by double-checking whether *p* should be accepted. However, such questions are formally marked by preposed negation (*Isn't it the case that q?*), an adverb like *really* (*Is it really the case that p?*) or polarity focus (*Was the democracy NOT grateful?*), none of which are present in example (56) (Romero & Han 2004). For this reason, questions with ἄρα but with no preposed negation ought to be analyzed as regular moves, as opposed to being meta-conversational.

The fact that ἄρα *p* is inferable but not necessarily in accordance with the private beliefs of the (notional) speaker has implications for the epistemic value of the particle. Positive questions may be epistemically biased if there is contextual evidence in favor of *p*. The context in (56) is in this respect peculiar because the support for *p* is exclusively based on the immediate context, while the shared cultural knowledge contains the opposite of *p*, i.e. *q* (= 'The democracy was grateful'). This suggests that the conclusion ἄρα *p* is kept separate from the overall epistemic stance of the speaker. It merely follows from what has been said before.⁶⁶ The questions with ἄρα *p* therefore serve to explore the implications that stem from the preceding discourse move, but they allow the speaker to stay neutral with respect to *p*. This neutrality of ἄρα in positive questions is also apparent in Plato in the contexts in which the speaker checks with the addressee whether an inference, which follows from what has been said before, is sound:

(58) ἐξ οὗ τοῦ ζῶντος τί τὸ γινόμενον; – τὸ τεθνηκός, ἔφη. – τί δέ, ἦ δ' ὅς, ἐκ τοῦ τεθνεώτος; – ἀναγκαῖον, ἔφη, ὁμολογεῖν ὅτι τὸ ζῶν. – ἐκ τῶν τεθνεώτων ἄρα, ὃ Κέβης, τὰ ζῶντά τε καὶ οἱ ζῶντες γίνονται; – φαίνεται, ἔφη.

“‘Now what is it which is generated from the living?’ – ‘The dead,’ said [Cebes]. – ‘And what,’ said [Socrates], ‘from the dead?’ – ‘I can say only one thing, the living.’ – ‘From the dead ἄρα, Cebes, the living, both things and persons, are generated?’ – ‘Evidently,’ said he.” (Pl. *Phd.* 71d–e)

Furthermore, the question in (56) is ordinary, as opposed to rhetorical, because its illocutionary force is interrogative. We should not be confused by the fact that it is the primary speaker who utters the words. I propose that the primary speaker for a moment assumes the role of the addressee, i.e. the audience, by uttering a question which the audience might reasonably ask. This is also apparent in the following example,⁶⁷ in which the primary speaker shifts the deictic markers so that he is referred to by the second person pronoun σύ ‘you’:

⁶⁶ A similar reading is offered by Van Ophuijsen (1993: 82–83).

⁶⁷ This example is also analysed in Oréal (1997: 240–241), who argues that ἄρα signals here that the notional speaker is not subjectively aligned with the conclusion being drawn.

(59) [We must avoid being later induced to do something against our wish because of our present private reasons.] τὰ κελεύόμεν' ἡμᾶς ἄρα δεῖ ποιεῖν ταῦτα φοβουμένους; καὶ σὺ ταῦτα κελεύεις; πολλοῦ γε καὶ δέω.

“‘Must ἄρα we do as we are told for fear of the consequences? Do you of all men advise that?’ Far from it.” (Dem. 5.24)

At this point in time, the Athenians are leaning towards war against Philip, from which Demosthenes is trying to dissuade them. The question is presented as if it was posed to Demosthenes by the actual addressee of his speech, i.e. the Assembly. The nucleus of the question is an inference that is hardly acceptable from the point of view of the Assembly and Demosthenes hastens to add that this is not what he implied. This stretch of discourse is chiefly monological in form, but it is functionally dialogical. The same applies to other positive questions with ἄρα that involve actual coherence between *p* and the immediate context. A further piece of evidence that we are dealing with ordinary questions is the fact that they are always followed by an answer supplied by the primary speaker.

I propose that the contribution of ἄρα in such questions is to signal that *p* is active in the mind of the (notional) speaker and hence present in the discourse. The activation is facilitated by inference, which may represent a generalized implicature in this context. The proposition is activated and the notional addressee, in our case the primary speaker, is asked to confirm whether inference *p* is true. The fact that these questions in the corpus are always marked by incredulity of the notional speaker need not mean that ἄρα entails epistemic distance. Rather, the particle is epistemically neutral, and the nuance of disbelief apparent in the examples above is due to the conflict between the assumptions of the notional speaker and the inferred conclusion. In the orators, positive questions with coherent ἄρα *p*'s are employed by the primary speaker to prevent the audience from drawing conclusions that are superficially warranted but do not take into account some important evidence that defeats *p*. In Plato, as we have seen above, an inferred *p* need not clash with the convictions of the speaker. This points to the conclusion that ἄρα *p* in questions characterized by coherence means that *p* is envisaged and put in relation with what has been said before, while the subjective epistemic stance of the speaker remains temporarily suspended with respect to *p*. Any eventual epistemic overtones are the result of an implicit comparison of *p* with the private beliefs of the notional speaker. The nuance of surprise arises in a similar way.

The second usage of positive ἄρα *p* in questions involves propositions that are clearly not compatible with the contextual evidence:

(60) νυνὶ δ', ὅτ' εἰς ταῦτόν τὸ δίκαιον ἅμα καὶ ὁ καιρὸς καὶ τὸ συμφέρον συνδεδράμηκεν, ἄλλον ἄρα τινὰ χρόνον ἀναμενεῖτε τῆς ἰδίας ἐλευθερίας ἅμα καὶ τῆς τῶν ἄλλων Ἑλλήνων ἀντιλαβέσθαι;

‘And now, when justice and opportunity and expediency all concur, will ἄρα you wait for some other season to claim your liberties and the liberties of all the Greeks?’ (Dem. 17.9)

In (60), the subordinate clause creates an expectation that the Athenians should immediately take action. The contextual evidence therefore points to proposition q (= “You should take action now”), which is the opposite of p (= ‘You will wait for some other season’) embedded in the question. Ἄρα p in such interrogative contexts singles out propositions that cannot or, in the case of indirect requests, should not be true. Since p is not coherent with the contextual evidence, how should we account for the presence of the particle? A possible solution is that the speaker activates p in order to juxtapose it to the common ground, which is being continually updated. Thus, the addressee is prompted to envisage the marked proposition, relate it to the common ground and then evaluate its truth value or acceptability. In this way, the incoherence of p comes to the fore. A generalization of this argumentative strategy may be formulated:

(61) Is p , which is now envisaged (ἄρα) and compared with what has been said before, true?

Note that the question is pragmatically unmotivated because it does not address any informational need of the speaker, nor does it resolve any epistemic conflict between the interlocutors. As there is no obvious epistemic asymmetry between the speaker and the addressee, the usage we are dealing with is not an ordinary question. The aim of uttering (60) is rather to indirectly signal the unacceptability of p . This indicates that this usage resembles rhetorical questions.

In the case of polar rhetorical question, the interrogative sentence prototypically contains p that both the speaker and the addressee already know to be true or false (Caponigro & Sprouse 2007). In contexts like (60), the situation is slightly different. Since p has not been established beforehand as either true or false (alternatively, as desirable or undesirable), the question does not point to a preexisting consensus but aims at creating it. The addressee who is prompted by such a question must conclude that p is indeed incompatible with the known facts and therefore false. In accordance with the specific status of such interrogatives, answers to them may be omitted. These observations suggest that these questions are a feature of monological discourse. A natural context for their use is when the speaker tries to refute the opponent’s claim:

(62) καὶ τότε μὲν ἄρα, ἵνα μὴ περιβόητος εἶην, ἡσυχίαν ἦγον, συμφορὰν ἑμαυτοῦ νομίζων τὴν τούτου πονηρίαν· ἐπειδὴ δὲ χρόνος διεγένετο, πάλιν, ὡς οὗτός φησιν, ἐπεθύμησα περιβόητος γενέσθαι;

‘And ἄρα back then, to avoid notoriety, I kept quiet, taking this man's wickedness to be so much misfortune to myself, but, after a lapse of time, did I, as he says, desire to become notorious?’ ([Lys.] 3.30)⁶⁸

We may briefly summarize the differences between the two types of positive interrogatives discussed in this section. While the ordinary questions with contextually supported *p*'s serve to check with the (notional) addressee if the inferred conclusion is indeed true, the rhetorical questions with incoherent *p*'s indirectly point to the falsity of *p* by seemingly enquiring whether *p* is true given its conflict with the common ground. In the former usage, ἄρα invites the implicature that *p* is compatible with the preceding context, whereas in the latter usage *p* is merely juxtaposed to what has been said before. Both usages have in common that *p* is envisaged for a moment and that the (notional) speaker's epistemic stance towards it remains ostensibly neutral, though epistemic and mirative overtones may arise due to the pragmatic context and the contrast with the facts already embedded in the common ground. The more neutral usage in Plato suggests that epistemic distance and mirativity are not semanticized components of the meaning of ἄρα in positive questions.

4.4.3. Ἄρα in questions with preposed negation

Preposed negation in a question indicates that the speaker expects a positive answer, i.e. they assume that the nucleus proposition is true:

- (63) a. Aren't dogs more obedient than cats?
b. *p* 'Dogs are more obedient than cats.'

According to Ladd (1981), such biased questions in English involve an ambiguity between a *p*-reading, i.e. outer negation, and a $\neg p$ -reading, i.e. inner negation. Inner negation has scope over *p* and applies when the speaker asks about $\neg p$. Consider the following example:

- (64) Context: Pat and Jane are two phonologists who are supposed to be speaking in our workshop on optimality and acquisition.
A: Pat is not coming. So we don't have any phonologists in the program.
B: Isn't Jane coming either?
(Romero & Han 2004: 610–611)

Speaker B assumed Jane would be speaking in the workshop, i.e. *p*, which leads her to question whether $\neg p$ (= 'Jane is not coming'), implied by A, is indeed correct. Romero & Han (2004) label

⁶⁸ Van Ophuijsen's (1993: 117–118) view is that ἄρα in this example has scope just over the clause ending with *πονηρίαν* and indicates an assumption of the opponent ('on his hypothesis'). I take it that the question is also within the scope of the particle.

this usage as double-checking $\neg p$. Biased ordinary questions with inner negation are felicitous when there is contextual evidence against p (Büring & Gunlogson 2000: 28). In example (64), the evidence stems from the claim of A, which implies $\neg p$.

The second possible arrangement is that negation does not scope over p but an operator that is higher in the structure of the interrogative sentence.

(65) Context: A wants to get a pet that would not cause any trouble and follow his orders if needed. He is considering getting a cat or a dog.

A: I am not sure whether I should get a dog or a cat.

B: Aren't dogs more obedient than cats?

In this context, speaker B is double-checking p (= 'Dogs are more obedient than cats'), while speaker A is uncertain whether p or $\neg p$ is the case. The pragmatic requirement for this usage is that there is no contextual evidence for p (Büring & Gunlogson 2000: 33). The speaker's question amounts to asking whether the addressee has doubts about p (Romero & Han 2004: 646–647).

To solve the problem of such ambiguous questions, Romero & Han (2004) propose that negation contributes an abstract epistemic operator, which they label VERUM and which is akin to the adverb *really* in English. The authors paraphrase the operator as 'to be sure that p should be added to the common ground'. The relations of scope for the two types of negation then look like this:

(66) *Inner negation*: Are you sure that $\neg p$ should be added to the common ground?

Outer negation: Are you **not** sure that p should be added to the common ground?

These abstract templates yield the correct paraphrases of (64) and (65), respectively:

(67) *Inner negation*: Are you sure that 'Jane is **not** coming to the workshop' should be added to the common ground?

(A implied $\neg p$; B initially assumed p so she double-checks $\neg p$)

Outer negation: Are you **not** sure that 'Dogs are more obedient than cats' should be added to the common ground?

(A is agnostic or implied $\neg p$; B initially assumed p so she double-checks p)

Based on Romero & Han (2004), the differences between the two options in ordinary questions may be summarized as follows:

	<i>Inner negation</i>	<i>Outer negation</i>
Double-checking	$\neg p$	p
Scope	VERUM not p ?	not VERUM p ?
Contextual evidence	against p	absent or against p
Speaker assumes	p	p
Speaker wants	Further evidence that $\neg p$	Evidence that would make him doubt p
Common ground	'Are you sure we should add $\neg p$ to CG?'	'Are you not sure we should add p to CG?'

Table 13 Inner and outer negation in biased ordinary questions

We are now equipped to analyze the Greek data. There are several contexts that exhibit all the hallmarks of biased questions with inner negation:

- (68) [Our ancestor did not honor Themistocles, Miltiades and others with bronze statues.]
οὐκ ἄρα τοῖς ἑαυτοῦς ἀγαθόν τι ποιοῦσιν χάριν εἶχον; σφόδρα γ', ὧ ἄνδρες Ἀθηναῖοι
...
'Were they ἄρα not grateful to those who had served them well? Yes, men of Athens, they were very grateful.' (Dem. 23.197)

In (68), the primary speaker's claim about the absence of statues commemorating the eminent generals seemingly implies that the Athenians were not grateful to their benefactors, i.e. $\neg p$. The speaker then assumes the role of the audience and asks whether inference $\neg p$ (= 'The Athenians were not grateful') should be added to the common ground even though p (= 'The Athenians were grateful') is normally taken for granted. Finally, Demosthenes assures the audience that p is indeed true because gratitude used to be displayed in a more restrained way in the past. This context conforms to all the pragmatic properties of inner negation from Table 13. This usage is therefore appropriate in a dialogical stretch of discourse within a monologue.

There is also an example in which the primary speaker confirms $\neg p$:

- (69) [The Senate of the Areopagus is required by the law to file its accounts with the Board of Auditors and to submit to their examination.] οὐκ ἄρα στεφανωθήσεται ἡ βουλὴ ἢ ἐξ Ἀρείου πάγου; οὐδὲ γὰρ πατριον αὐτοῖς. οὐκ ἄρα φιλοτιμοῦνται; πάνυ γε ...
'Shouldn't ἄρα the Senate of the Areopagus receive a crown? They shall not, for such is not the tradition of our fathers. Don't ἄρα they have love of honor? Indeed they have.' (Aeschin. 3.20)

The main argument of Aeschines in the context preceding (69) is that the officials who are subject to file accounts should not be crowned before the procedure is finished. The fact that the members of the Areopagus are obliged to file accounts therefore invites the implicature that they should not be crowned ($\neg p$). The first question with ἄρα double-checks whether $\neg p$ should be added to the common ground and Aeschines's answer confirms that it should. In other words, the speaker urges the audience to accept $\neg p$ even though they might have initially assumed p (= 'The Senate of Areopagus should receive a crown'). The second question-answer pair represents the more familiar pattern, in which p (= 'They love honor') prevails over inferred $\neg p$ (= 'They have no love of honor') because further evidence, adduced after the quoted passage, defeats $\neg p$.

The role of ἄρα in this usage is familiar by now. In the interrogative contexts with inner negation the particle signals that $\neg p$ is active. Furthermore, it implies or signals that $\neg p$ is inferable from what has been said before. The question is meta-conversational, because preposed negation contributes the abstract operator VERUM:

(70) Seeing that I assume p , are you sure that $\neg p$, which comes to mind (ἄρα) because what has been said before, should be added to the common ground?

Other occurrences in the corpus are more difficult to analyze but they seem to mirror positive questions with incoherent p 's:

(71) ἐπειδὴ δὲ εἰς τὴν ἀρχὴν κατέστησαν, ὁμολογοῦσιν ἐκόντες πολλοὺς τῶν πολιτῶν ἀκρίτους ἀποκτινύναι, οὐκ ἄρα χρή αὐτοὺς καὶ τοὺς παῖδας ὑφ' ὑμῶν ταῖς ἐσχάταις ζημίαις κολάζεσθαι; [Now I, gentlemen, might almost claim that the accusations you have heard are sufficient.]

'And then, once established in power, [the oligarchs] admit that of their own free will they put to death many of the citizens without a trial, aren't these men ἄρα and their children to be visited by you with the extreme penalty of the law?' (Lys. 12.36)

The extrajudicial executions perpetrated by the thirty tyrants warrant the conclusion that they should be severely punished, i.e. p . This could lead us to interpret οὐκ 'not' as outer negation:

(72) Given the evidence, are you **not** sure that it should be added to the common ground that these man ἄρα and their children should be punished?

Note that the usage here cannot be an ordinary question because outer negation normally requires that there is contextual evidence against p or at least no evidence for p (= 'These man and their children should be punished'), which is not the case in (71). A possible solution is to assume that the question is rhetorical. In this case, the speaker would list the evidence for p and round off his argument with a rhetorical question that double-checks p . While this analysis

captures the pragmatics of the studied passage, outer negation does not provide the best fit for the rhetorical structure of the move, which is marked by indignation of the speaker. Therefore, I propose that contexts like (71) are rhetorical questions that involve inner negation, i.e. they double-check $\neg p$. The paraphrase is as follows:

(73) Given the evidence, are you sure that it should be added to the common ground that these man **ἄρα** and their children should **not** be punished?

There are several reasons why this reading is preferable. First, we have seen that the orators use contextually unsupported p 's in positive questions with **ἄρα** as well. The usage under discussion is similar in that $\neg p$ within the scope of the particle is incompatible with the contextual evidence, which instead points to p . Second, inner negation creates a jarring contrast between $\neg p$ and the expected conclusion. This arrangement helps the speaker to highlight the absurdity of $\neg p$. Regarding this point, there is indirect evidence that such questions indeed ask about $\neg p$. Consider the following passage from Lysias:

(74) οὐ γὰρ ἂν δήπου, εἰ μὲν τις λίποι τὴν τάξιν μὴ αὐτῆς τῆς πόλεως ἐν κινδύνῳ οὔσης ἀλλ' ἐτέρους εἰς τοῦτο καθιστάσης, ἐτέθη νόμος ὡς μεγάλα ἀδικοῦντος, εἰ δέ τις αὐτῆς τῆς πόλεως ἐν κινδύνῳ οὔσης λίποι τὴν πόλιν αὐτήν, οὐκ ἂν **ἄρα** ἐτέθη; σφόδρα γ' ἂν, εἴ τις ᾤκηται τινὰ τῶν πολιτῶν ἀμαρτήσεσθαι τι τοιοῦτόν ποτε.
'For sure it should not..., if one should desert one's post when the city itself was not in danger, but was rather endangering another people, a law would have been made condemning that as a grievous crime; but if one deserted the city itself when the city itself was in danger, wouldn't **ἄρα** a law have been made? Certainly it would, if there had been a thought that any of the citizens would ever commit such a crime.' (Lys. 31.28)

Lysias's intent is to argue that since there is a law that prohibits desertion when the state is waging an offensive war, it follows that a law prohibiting desertion when the city is attacked would also have been introduced (p), if it occurred to the lawmaker that anyone would commit such a serious crime. The passage starts with anacoluthic οὐ γὰρ ἂν δήπου, which is resumed only later with οὐκ ἂν **ἄρα** ἐτέθη;. I propose that the anacoluthon is due to the indignation of the speaker who pretends to be genuinely asking whether the audience is willing to accept the outrageous proposition $\neg p$ (= 'The law would not have been passed'). The idea that the judges could find $\neg p$ attractive despite the evidence to the contrary makes the speaker seemingly lose the thread of his speech.

Finally, if we are indeed dealing with incoherent $\neg p$'s, the speaker may further dwell on the possibility that the audience could accept $\neg p$:

- (75) [But I, who have seen him throw away his shield which you likewise know, who have saved my own shield, who have been accused of a proceeding thus unholy and monstrous, and whose disaster will be overwhelming if he is acquitted, while his will be inconsiderable if he is convicted of slander,] οὐκ ἄρα δίκην παρ' αὐτοῦ λήψομαι; τίνας ὄντος ἐμοὶ πρὸς ὑμᾶς ἐγκλήματος;
'Shouldn't ἄρα I obtain satisfaction from him? What imputation have you standing against me?' (Lys. 10.22)

The follow-up question in (75), which does not constitute an independent clause, takes up the prospect that $\neg p$ (= 'I will not obtain satisfaction') turns out to be the case. If the nucleus of the question were p instead, we would expect further comments on p and not an indignant reaction to $\neg p$ (= 'What do you accuse me of?').

The contribution of ἄρα in these questions is comparable to ἄρα in positive questions with contextually unsupported p 's:

- (76) Are you sure we should add $\neg p$, which is now envisaged (ἄρα) and compared with what has been said before, to the common ground?

There is arguably one example of a rhetorical question, which involves an inferred p , with outer negation in the research corpus:

- (77) a. [If our opponents were asked on what grounds they claimed to inherit the property of Cleonymus, they might reply that they are somehow related to him, and that for some time he was on terms of friendship with them.] οὐκ ἂν ἄρα ὑπὲρ ἡμῶν μᾶλλον ἢ ὑπὲρ σφῶν αὐτῶν εἶεν εἰρηκότες; [For we are more closely related to him and it is common knowledge that it was to us that he was more closely bound by affection.]
'Would not ἄρα this statement tell in our favor rather than in theirs?' (Is. 1.36)
b. Are you **not** sure we should add p (= 'This statement tells in our favor') to the common ground?

The proposition in the nucleus of the question is a suggestion proposed by the speaker. Inner negation yielding putative $\neg p$ (= 'This statement does not tell in our favor') does not mesh with the following discourse move, in which the speaker lists further evidence that favors p .

4.4.4. The semantics of ἄρα in questions

Questions with ἄρα allow the speaker to highlight a proposition and relate it to the preceding context. When used as ordinary (i.e. not rhetorical) interrogatives, such questions enquire whether p is true or, if there is preposed negation, whether $\neg p$ should be added to the common ground. The particle is used to prompt the notional addressee to envisage the content of the

proposition. There is also a salient implicature that the proposition within its scope is compatible with the contextual evidence and hence inferred. The epistemic stance of the notional speaker with respect to $(\neg)p$ is not signaled by the particle; it merely indicates to the (notional) addressee that the speaker is following the logic of the argument. The questions that belong here cannot be assessed as rhetorical because the primary speaker assumes the role of the audience to ask a question that could be posed in a dialogical context. The question is always followed by an answer and the deictic words are sometimes shifted to refer to the primary speaker in the second person. The nuance of disbelief or surprise arises if the inferred proposition conflicts with the personal beliefs of the notional speaker. From the point of view of the primary speaker, the rhetorical function of these questions in speeches is often to preempt an inference on the part of the audience and reassure them that the speaker is not challenging their initial assumptions. The usage in Plato is more epistemically neutral.

The questions with ἄρα $(\neg)p$ that is not compatible with the contextual evidence serve to confute the argument of the opponent. Such questions ought to be analyzed as rhetorical because they represent indirect assertions or requests. The function of ἄρα is to instruct the addressee to envisage $(\neg)p$ and relate it to what has been said before. This highlights the lack of coherence between the proposition and the common ground. This usage carries the nuance of surprise and sometimes indignation, but it is hardly the contribution of the particle itself, given its occurrence in more neutral questions. Any epistemic overtones may be explained in a similar way.

Questions with ἄρα admit inferences that may be in accord (in Plato) or conflict (in the orators) with the personal beliefs of the (notional) speaker. This suggests that epistemic distance is not part of the semantic entailment of the particle. The epistemic nuance is rather a conversational implicature that is triggered by the pragmatic context and enabled by the neutrality of ἄρα with respect to epistemic modality.

4.5. ἄρα in declarative sentences

This section focuses on the occurrences of ἄρα in declarative independent sentences and main clauses of conditionals. There are two discernible usages of the particle in these syntactic contexts in the research corpus. One concerns inferences from a hypothetical premise, the other involves the speaker's deferred realization that a proposition is true.

Let us first turn to inferences from a hypothetical premise. The speaker may introduce an uncertain proposition and present the conclusion that follows from it. An important rhetorical facet of this usage is that the uncertain premise concerns the action of the addressee, i.e. the Assembly or the jurymen. The speaker connects a hypothetical decision in favor of the opponent with an outcome that is negative for the addressee. This rhetorical strategy serves to dissuade the addressee from siding with the speaker's opponent.

(78) εἴτα τοῦτον οὐκ ἀποκτενεῖτε τὸν ἀπάσαις ταῖς ἀδικίαις ἔνοχον ὄντα; τίνας οὖν τιμωρήσεσθε; τοὺς ἔν τι τούτων ἡμαρτηκότας; ῥάδιον ἔσται παρ' ὑμῖν ἄρα μεγάλα ἀδικεῖν, εἰ φανεῖσθε ἐπὶ τοῖς μικροῖς μᾶλλον ὀργιζόμενοι.

‘Then will you not kill this man who is answerable for every crime? If not, whom will you punish? Those guilty of only one such act? It will **ἄρα** be easy then to commit serious offences among you, if you show that the smaller ones arouse your anger more.’ (Lyc. 1.78)

In (78), the hypothetical conclusion follows from the uncertain propositions expressed in the preceding questions and the protasis of the conditional. In this usage, the conclusion may represent an inference of the speaker, as in (79), or an evaluative judgement, illustrated by (80):

(79) οὐκ ἄρ' εἰσὶ παρ' ὑμῖν εὖθυναί βίου, εἰ τοῦτον ἀφήσετε.

‘You **ἄρα** give up the possibility of calling any man to account for his manner of life, if you let this man go.’ (Aeschin. 3.230)

(80) εἴθ' ὃν ὁρᾷτ' ἐπὶ πάντων οὕτως ἄγριον καὶ μιᾶρόν, τοῦτον ὑμεῖς ἡδίκηκότ' ἐπ' αὐτοφώρῳ λαβόντες οὐ τιμωρήσεσθε; δεῖν' ἄρ', ὧ ἄνδρες δικασταί, ποιήσετε καὶ οὐχὶ δίκαια.

‘A man, then, whom you find to be so brutal and so savage on all occasions, are you going to fail to punish him when you have caught him in the very act of wrongdoing? Men of the jury, you **ἄρα** will do what is an outrage and in no sense right.’ (Dem. 45.70)

Hypothetical inferences involve the semantic features that have been associated with **ἄρα** throughout this chapter. The activation of *p* rests on the perceived coherence of the premise and the inferred conclusion. Furthermore, conjectural premises yield conclusions to which the speaker cannot be really committed. The outcome of the reasoning process is merely envisaged, as opposed to accepted as true. Indeed, the point of employing such expressions in the orators is to ensure that the imagined outcome never happens.

This usage is a mirror image of the conditional protases with **ἄρα**. While the particle in the protasis serves to activate a backgrounded proposition that together with the apodosis describes a coherent scenario, **ἄρα** in declarative sentences marks the proposition that stands in the foreground. In both syntactic contexts, the marked proposition cannot be described as true or false.

The other usage of **ἄρα** in declarative sentences exhibits a different discursive pattern. The main context of use are the stretches of discourse in which the speaker describes some past events from the perspective of the participants, which may include himself. The speaker then shifts the epistemic perspective to the present time. This change entails that the speaker’s knowledge has expanded since the event time and that it is more complete at the

time of utterance. Sentences with ἄρα in such passages contain information that became available only later and can now be supplied so that the narrative becomes more comprehensive.⁶⁹

- (81) [One evening, when I was taking a walk, as my custom was, in the agora with Phanostratus of Cephisia, a man of my own age, Ctesias, the son of the defendant, passed by me in a drunken state opposite the Leocorion, near the house of Pythodorus. At sight of us he uttered a yell, and, saying something to himself, as a drunken man does, in an unintelligible fashion, passed on up, toward Melite.] ἔπινον δ' ἄρ' ἐνταῦθα (ταῦτα γὰρ ὕστερον ἐπυθόμεθα) παρὰ Παμφίλῳ τῷ γναφεῖ Κόνων οὔτοσί, Θεότιμός τις, Ἀρχεβιάδης, Σπίνθαρος ὁ Εὐβούλου, Θεογένης ὁ Ἀνδρομέλους, πολλοί τινες, οὓς ἐξαναστήσας ὁ Κτησίας ἐπορεύετ' εἰς τὴν ἀγοράν.
'Gathered ἄρα together there for a drinking bout, as we afterwards learned, at the house of Pamphilus the fuller, were the defendant Conon, a certain Theotimus, Archeblades, Spintharus, son of Eubulus, Theogenes, son of Andromenes, and a number of others. Ctesias made them all get up, and proceeded to the agora.' (Dem. 54.7)

The speaker of (81) proceeds to describe how Conon and his accomplices assaulted him and his friend. The later time of the realization expressed in the sentence with ἄρα is underlined by the parenthetical 'as we afterwards learned'. Another example of a shift in the speaker's perspective is the following passage from a speech concerning slander. The sentence with ἄρα contrasts with the preceding ἐγὼ μὲν ᾧμην 'I thought':

- (82) καὶ ἐγὼ μὲν ᾧμην φιλοσοφοῦντας αὐτοὺς περὶ τοῦ πράγματος ἀντιλέγειν τὸν ἐναντίον λόγον· οἱ δ' ἄρα οὐκ ἀντέλεγον ἀλλ' ἀντέπραττον, καὶ διὰ τοῦτο ἀντέλεγον, ἵνα τὸν ἐμὸν λόγον εἰδείῃ Πολυκλῆς.
'And I also thought it was for the mere theory of the thing that they took up the argument in opposition; but they ἄρα were not arguing but acting against me, and the purpose of their argument was to enable Polycles to know my argument.' ([Lys.] 8.11)

An interesting context appears in Demosthenes's *Against Callicles*, in which the first sentence of the speech contains ἄρα:

- (83) οὐκ ἦν ἄρ', ὧ ἄνδρες Ἀθηναῖοι, χαλεπώτερον οὐδὲν ἢ γείτονος πονηροῦ καὶ πλεονέκτου τυχεῖν, ὅπερ ἐμοὶ νυνὶ συμβέβηκεν. [For Callicles has been bringing suits against me and tried to strip me off my property.]

⁶⁹ The use of ἄρα in the context characterized by hindsight is also noted by Denniston (1954: 36), Van Emde Boas et al. (2019: 685–686), and La Roi (2019: 79).

‘There is (lit. was) ἄρα, men of Athens, nothing more vexatious than to have a neighbor who is base and covetous; the very thing which has fallen to my lot.’ (Dem. 55.1)

The proposition within the scope of the particle is a general truth but the verb ἦν ‘was’ is in the past tense. This suggests that the speaker now realizes (ἄρα) that *p* adequately describes his situation given the treatment he has experienced at the hands of Callicles. The insight is past-oriented because it is a retrospective addition to the speaker’s knowledge of past events after they have occurred. In other words, the truth of ἄρα *p* is acknowledged in the present but applies to the past.⁷⁰

In narrative passages, the usage may be characterized as an authorial remark with mildly metaleptic overtones. It consists of an evaluation that is available at the time of utterance, but the speaker may insert it in the sequence of narration. By performing this discourse move, the speaker steps away from the epistemic space of the unfolding narrative in order to add a remark that is appropriate for the more comprehensive knowledge of the retrospective narrator. An illustrative example of this employment of ἄρα is provided by Aeschines in his narration about the Athenian embassy to Philip:

(84) [When we had come in and taken our seats, Philip began at the beginning and undertook to make some sort of answer to every argument which we had advanced. Naturally he dwelt especially on my argument, for I think I may fairly say that I had omitted nothing that could be said; and again and again he mentioned my name in the course of his argument. But in reply to Demosthenes, who had made such a laughingstock of himself, not one word was said on a single point, I believe.] τοῦτο δὲ ἦν ἄρα ἀγχόνη καὶ λύπη τούτῳ.

‘This was ἄρα pain and anguish to him.’ (Aeschin. 2.38)

The evaluation ἄρα *p* is supported by what Aeschines says after the quoted passage. He describes how Demosthenes was visibly besides himself with anger when Philip turned to expressions of friendship towards Aeschines. The emotional reaction of Demosthenes suggests that he was anguished by the course of the negotiations even before his anger became apparent. Thus, ἄρα *p* is a remark substantiated by the evidence that became available a bit later. Even though the speaker did not realize *p* when the event described by it was occurring, he may contribute such a comment because he can benefit from narratorial hindsight.

The function of ἄρα in this usage is to signal the speaker’s deferred realization that *p* is the case. This usage is therefore not characterized by epistemic distance on the part of the speaker. Furthermore, the realization comes only after the event described by *p*, or concerns a generic statement whose truth is only now acknowledged by the speaker. In both cases, the

⁷⁰ Denniston (1954: 37) quips that this sentence is a “characteristically naïve opening to a naïve little speech”.

realization contrasts with the speaker's ignorance that preceded it. The content of *p* need not be inferred (cf. (81)), which suggest that the deferred recognition of *p* as true is sufficient to warrant the use of ἄρα. The nuance of inferential reasoning may arise as an implicature when the speaker realizes something about the past in light of the evidence that became available later, as in examples (82) and (83). Interestingly, the perception of the evidence and the process of inference may be localized in the past, as in (84) and likely (82).

Regarding the fact that the speaker is committed to *p*, we have seen above that ἄρα is also compatible with hypothetical conclusions. For this reason, it is not attractive to ascribe a well-defined and stable epistemic meaning to the particle. It is reasonable to propose that epistemic nuances are associated with individual syntactic contexts, possibly with even more narrowly defined rhetorical strategies. The two usages treated in this section are a case in point, as they both involve declarative sentences but factually contrastive *p*'s.

4.6. ἄρα as an evidential strategy

It is time to take stock. An analysis of the occurrences of ἄρα in the research corpus points to the conclusion that inference is not a stable component of the semantics of the particle. This is not surprising given the fact that ἄρα may appear in syntactic contexts, e.g. protases in conditional clauses, that rarely host evidentials.⁷¹ Despite this, the basic contribution of the particle in protases is very similar to its import in declarative sentences and questions, in which the evidential nuance of ἄρα becomes more prominent. This suggests that the component of inferential reasoning arises as a conversational implicature, which may become generalized in some rhetorical strategies.

The implicature of inference stems from the activation of proposition *p* in the consciousness of the speaker (or the embedded speaker/cognizer). When the speaker registers a set of propositions or perceives an event, another proposition, marked by ἄρα, lights up in their consciousness. The activation of the proposition is facilitated by inferential reasoning, which becomes secondarily associated with the particle in some syntactic and pragmatic contexts. In the research corpus, salient evidential implicatures appear in the following contexts of use:

- embedded clauses with ἄρα in which the particle refers to the stance of the embedded speaker/cognizer;

⁷¹ For instance, evidentials are ungrammatical in conditional antecedents in Cuzco Quechua (Faller 2002: 221). In St'át'imcets, a Salishan language spoken in British Columbia, evidentials cannot normally appear within the scope of the equivalent of *if*. If they do appear in the protasis, the only available interpretation is that they project out of it (*if p, as it looks to me, then q*), but the usage may be nevertheless not felicitous because the hypothetical nature of the antecedent clashes with the meaning of the evidentials, which sometimes signal that the speaker already accepts *p* (Matthewson, Davis & Rullmann 2007: 232–233). On the other hand, evidentials in Japanese may be embedded in the protasis and be within the scope of the conditional conjunction (*If it looks like p, then q*) (McCreedy & Ogata 2007: 167–168). See also Müller (2022: 204–206).

- positive questions with ἄρα that contain p 's that are compatible with contextual evidence;
- questions with ἄρα that contain preposed negation and $\neg p$'s that are compatible with contextual evidence;
- declarative sentences or declarative main clauses with ἄρα that express inferences from hypothetical premises;
- occasionally, declarative sentences with ἄρα that express a deferred realization.

The speaker may also envisage a proposition and instruct the addressee to do the same without implying that it is compatible with other propositions or sensory input. The purpose of this strategy is twofold. First, the speaker may entertain a proposition to support his or her contribution that is tied to an assumption that cannot be taken for granted. Second, activating p gives the speaker the opportunity to point to its untenability or to react to it. In both case, inferential reasoning is absent. This configuration applies to the following context:

- conditional protases with ἄρα (presupposition-suspending protases, pragmatic conditionals, conditionals in switch-contexts);
- positive questions with ἄρα that contain p 's that are not supported by contextual evidence;
- questions with ἄρα that contain preposed negation and $\neg p$ that are not supported by contextual evidence;
- embedded clauses with ἄρα in which the particle refers to the stance of the primary speaker.

Envisaging p is therefore the most stable feature of the contexts that contain ἄρα. The particle signals to the addressee that the speaker is aware of p in the sense that they have formed a mental representation of its content that is active in their mind. The speaker does not necessarily ascribe a truth value to the activated proposition. The notion that activation is separate from epistemic evaluation is in accordance with the analysis of Dryer (1996), who argues that the two dimensions are orthogonal to each other.⁷² According to Dryer, propositions believed to be true (e.g. 'There were slaves in Athens') or false (e.g. 'There were centaurs in Athens') may be represented in the speaker's long-term memory but not activated at any given moment. The speaker's long-term memory also contains nonactivated propositions which are not specified for their truth value. Furthermore, some propositions may not be represented at all in the speaker's memory, but they nevertheless represent potential beliefs (e.g. 'There were more than ten slaves in Athens'), because they are inferable

⁷² Activation is most often discussed in connection with mental representations of discourse referents. As a concept, it is useful in analyzing the use of deictic words and the information structure of the utterance (Chafe 1994: 53–56; Lambrecht 1994: 93–105). Mental activation also concerns higher level entities like propositions (see Thijs 2021: 86–89 with further references).

from the mentally represented beliefs. Regarding activation, it may apply to represented beliefs, represented propositions believed to be false, and other represented proposition without an ascribed truth value. The propositions that are not cognitively represented may become activated only after they have been endowed with a mental representation, though the two processes may happen simultaneously. The following table, taken from Dryer (1996: 485), represent the possible configurations:

	Not represented	Represented but nonactivated	Represented and activated
Believed true	inferable beliefs	typical beliefs	activated beliefs
Believed false	inferable believed false	believed false	activated but believed to be false
Not believed true or false	'most propositions'	various propositions one has beliefs about	simply activated

Table 14 Cognitive states relevant to propositions according to Dryer (1996)

Ἄρα is a marker that pertains to the last column of the table. Furthermore, the particle is especially compatible with propositions that are ‘simply activated’. These epistemically underspecified propositions may be activated through real-time inferential reasoning or through retrieval from long-term memory. At the same time, ἄρα also occurs with ‘activated beliefs’ and propositions ‘activated but believed to be false’ (see Section 4.3.3). This insensitivity to epistemic specification is what leads me to the conclusion that ἄρα is not a marker of the common ground. Given that the common ground primarily consists of the propositions accepted by the interlocutors, we could reasonably expect that ἄρα in classical Greek would primarily mark ‘activated beliefs’, if it indeed were a marker of the common ground. However, this is not borne out by the corpus data. To be sure, ἄρα may apply to the propositions that are embedded in the common ground or follow from it, but the contribution of the particle is not to point to this fact.

The above-mentioned distribution of the structural contexts in the two groups based on the presence or absence of the inferential nuance suggests that there isn’t any formally defined environment in which ἄρα invariably signals inference. Salient evidential implicatures associated with some rhetorical strategies may be marginal or absent in others that are expressed by the same syntactic construction. For instance, while some declarative sentences with ἄρα express inferences from hypothetical premises, other express a realization of a fact after the event, which need not be based on inferential reasoning. Similarly, some embedded clauses with the particle clearly involve inference, while others highlight a proposition so that the speaker may react to it. This suggests that inference is, at most, an invited pragmatic implicature of ἄρα in certain contexts that are conducive to this interpretation. To be sure, this does not mean that the implicature depends solely on pragmatics. There are formal cues that

are strongly associated with an evidential reading of ἄρα. For example, an embedded clause with ἄρα governed by ὑπολαμβάνω ‘assume’ is very likely to involve inferential reasoning on the part of the subject of the verb.

Given that the implicature of inferential reasoning stems from the entailment that a proposition is activated or envisaged, it is interesting to observe how the particle functions in the contexts that point to the speaker’s consciousness at some other time or to an altogether different cognizer. It seems that the evidential nuance is prominent when a proposition lights up in the consciousness of the speaker at the time of utterance as a reaction to some information becoming available in the immediate communicative or extra-linguistic context. This applies, for instance, to the questions with ἄρα that contain *p*’s logically following from the contextual evidence. In addition, the same inferential implicature arises if the particle refers to the stance of the subject of an embedding verb like ὑπολαμβάνω ‘assume’. The process of envisaging *p* is in this case ascribed to someone other than the speaker. Furthermore, the evidential implicature is compatible with any tense of the main verb. By contrast, when ἄρα signals deferred realization, an inferential nuance is present only if the context suggests that the speaker learned about *p* by evaluating the available evidence.

With respect to the type of inference, the contexts in the research corpus predominantly involve assumption, i.e. inference from known facts or, as is especially relevant in the case of ἄρα, from hypothetical premises. The particle is also compatible with circumstantial inference, which is based on directly perceptible evidence. Example (84) probably contains a proposition that the speaker inferred in the past based on his firsthand sensory perception. For obvious reasons, contexts with circumstantial inference are more likely to appear in dramatic poetry. In the following passage, Deianeira’s remark represents a deferred realization motivated by a piece of advice that has just been provided by a servant:

(85) Δηϊάνειρα· ὦ τέκνον, ὦ παῖ, κάξ ἀγεννήτων ἄρα | μῦθοι καλῶς πίπτουσιν· ἦδε γὰρ
γυνή | δούλη μέν, εἶρηκεν δ’ ἐλεύθερον λόγον.

‘{Deianeira} My child, my son, wise sayings ἄρα sometimes come even from humble people like this woman. She is a slave, but what she says rings free.’

The epistemic value of the particle is neutral. It does not signal on its own whether the speaker distances themselves from the marked proposition or accepts it. This conclusion follows from the fact that ἄρα is compatible, as suggested by the occurrences in the corpus, with both subjectively acceptable and doubtful *p* or $\neg p$ in almost every syntactic context studied. The epistemic neutrality of the particle in classical Greek may be explained by the fact that its function is chiefly to signal that a proposition is envisaged. When the speaker envisages *p*, they need not have formed a judgment with respect to its truth value. Epistemic nuances associated with the clauses that contain ἄρα are almost always attributable to the interpersonal interface between the speaker and the addressee, i.e. they belong within the

domain of pragmatics. The only context in which ἄρα is always associated with speaker commitment to p is the declarative sentences that express deferred realization.

A final comment concerns the idea that ἄρα may be used as a mirative marker. According to this view, ἄρα sometimes signals that the speaker is surprised at a new or remarkable piece of information. While some contexts with ἄρα do invite the conversational implicature that the speaker is surprised, mirative overtones are likely a side effect of envisaging the content of the marked proposition. The effect is salient with p 's that follow from what has been said, but clash with the initial beliefs of the speaker. As for conditional protases, the data do not corroborate the view that *if* ἄρα p more often than not signals unexpected, unhoped for, or particularly interesting eventualities.

5. The predicative and adverbial δῆλον ὅτι

5.1. Introduction

Lexical items that denote appearance or the quality of being visible to the eye are an important diachronic source of expressions that belong within the semantic-functional domain of information source. As was argued in Chapter 1, evidential expressions, regardless of their grammatical status, prototypically modify propositions and convey the source of information. Even though propositional scope is commonly not associated with the early stages of use of the lexemes that denote appearance or visibility,⁷³ wide-scope usage may become available over time through linguistic change. In the case of verbs of appearance, gradual licensing of the types of complements that entail or imply propositional reading allows such constructions to serve as lexical expressions of information source (see Section 1.6).⁷⁴ These verbs are potentially subject to grammaticalization that may result in the emergence of fully-fledged evidentials, i.e. obligatory markers of information source that participate in paradigmatic relations.⁷⁵ Regarding adverbs and adverbials expressing visibility, a wide-scope interpretation may emerge from the original narrow-scope usage by conversational implicature, which may gradually become entrenched through the process of conventionalization.⁷⁶ When used as propositional modifiers, these adverbials specify the information source for the proposition expressed by the clause. In contrast to verbs, evidential adverbials do not tend to develop into grammaticalized evidentials, but they may nevertheless serve as evidential strategies whose meaning most commonly involves inference or hearsay (see Section 1.3 and Section 5.2 below).⁷⁷

⁷³ See, for example, Vliegen (2011) on the diachrony of the Dutch *schijnen* ‘appear’, *blijken* ‘appear’, Diewald & Smirnova (2010: 252–254) on the German *scheinen* ‘appear’, Gisborne & Holmes (2007) on the English *seem*, *appear*, and *look*, and Cornillie (2007: 70–77) on the Spanish *parecer* ‘appear’. Regarding adverbs, a similar initial restriction to narrow-scope usage is observable in the history of *scheinbar*, *offenbar*, *anscheinend*, and *offensichtlich* all meaning ‘seemingly’ in German (Müller 2022: 304–309).

⁷⁴ See Squartini (2018: 281–283) on the role of morphosyntax in various evidential interpretations of verbs that denote appearance. Studies on individual verbs and their evidential uses include, among others, Vliegen (2011) on the Dutch *blijken* ‘appear’, *lijken* ‘look like’, and *schijnen* ‘appear’, Van Bogaert & Coleman (2013) on the Belgian Dutch (*’t*) *schijnt* ‘it seems’, Cornillie (2007: 15–84) on the Spanish *parecer* ‘appear’, Dendale & Van Bogaert (2007: 76–79) on the French *sembler* ‘look like’ and *paraître* ‘appear’, Aijmer (2009) on the English *seem*, and Diewald & Smirnova (2010: 177–190) and Mortelmans (2016) on the German *scheinen* ‘appear’.

⁷⁵ In East Tucanoan languages, spoken in the Vaupés area in South America, verbs meaning ‘seem, be perceived, feel’ often developed into non-visual evidentials (Aikhenvald 2004: 274).

⁷⁶ See Müller (2022: 310–322) for an analysis of the expansion of scope in the case of German *offensichtlich* and *scheinbar*; other German adverbs that have undergone a similar development are treated by Axel-Tober (2016). The development of manner adverbs into sentence adverbs in English is discussed by Swan (1988).

⁷⁷ I am not aware of any morphologically bound and paradigmatically organized evidential markers that have emerged from evidential adverbs. However, according to Boye & Harder (2009), evidential adverbs are grammatical, as opposed to lexical, from a functional perspective. Their grammatical status follows, the authors argue, from the fact that their contribution represents coded discursively secondary information. This claim is softened in Boye & Harder (2021: 10–11). The authors argue that some sentence adverbs are rather lexical because they may be modified or form an utterance on their own. Furthermore, Boye and Harder claim that such adverbs may become conventionally discursively secondary when they inherit this status from a slot in the sentence that is reserved for secondary information.

The use of evidential adverbs and adverbials that contain morphemes denoting visibility is a common feature in the familiar European languages – adverbs like *evidently* and *clearly* in English, *scheinbar* and *offensichtlich* in German, *visiblement* in French, and many others belong here.⁷⁸ With respect to classical Greek, there are several adverbs, productively derived from adjectives, that express that an event is visually perceptible. Adverbs like σαφῶς ‘clearly’ (from σαφής ‘clear, distinct’) and φανερῶς ‘visibly, manifestly’ (from φανερός ‘visible’) are the most common. Besides visible states-of-affairs, their narrow-scope reading may also apply to predicates whose meaning suggest cognitive accessibility. This is the case in collocations like σαφῶς διηγέσθαι ‘explain clearly’ and σαφῶς ἐπιδεικνύναι ‘show clearly’, in which the adverb does not refer to any physical property of someone’s speech or writing. The cognitive meaning is facilitated by the extension of ‘visible to the eye’ to the target meaning ‘accessible to the mind’. However, these adverbs rarely exhibit wide-scope reading in the texts stemming from the classical period and they will not be considered further.

Regarding expressions with unambiguously propositional scope, the adjective δῆλος ‘visible, clear’ and the adverbial expression that emerged from its use in matrix clauses constitute a more interesting research topic. When used predicatively, δῆλον may take a propositional complement introduced by the subordinator ὅτι ‘that’ or, less often, ὡς ‘that’.⁷⁹ In these contexts, the adjective δῆλον is not always analyzable as a predicative expression complemented by a subordinate clause. As is manifested by the unverbated adverb δηλονότι, the sequence (ἐστὶ) δῆλον ὅτι ‘it is clear that’ could be reanalyzed in some contexts into a fixed adverbial expression. Given the propositional scope of the predicative construction and its etymological meaning, it is reasonable to expect that the related adverbial expression could serve as an evidential strategy.

The aim of this chapter is to provide an analysis of the predicative construction (ἐστὶ) δῆλον ὅτι and the adverbial δῆλον ὅτι⁸⁰ that originated from it. More specifically, it is worth examining how the notion of ‘clearness’ applied to propositional content blends together various semantic components that belong to the functional domains of epistemic modality and information source. In addition to the perspective of the speaker, it is important to consider the interpersonal communicative interface, which includes the perspective of the addressee, since the quality of being clear or obvious potentially involves intersubjective access to evidence and information.

One of the main arguments advanced in this chapter is that the emergence of the adverbial δῆλον ὅτι constitutes an example of grammaticalization understood as the

⁷⁸ Perception-based evidential adverbs in European languages have been extensively studied in recent years. A bibliography up to 2021 may be found in Ruskan (2021). To this may be added Müller (2022), a book-length study on evidential adverbs in German from the perspective of generative grammar, and Kittilä (2024), who discusses Finnish data.

⁷⁹ Besides finite complements, δῆλος in predicative and attributive constructions also admits participial complements. This is often the case when δῆλος modifies a nominal head that constitutes the topic of the sentence.

⁸⁰ Throughout this chapter, I write δῆλον ὅτι also to refer to the adverbial expression (see also Section 5.5.2).

conventionalization of discursively secondary status (see Section 1.7 and Boye 2023b). The outcome of conventionalization is in this case not a grammatical marker but an adverbial, allowing both wide- and narrow-scope usage, whose semantic value involves positive speaker commitment, inference, and intersubjective mediation of knowledge between the speaker and the addressee. With respect to intersubjectivity, the adverbial *δῆλον ὅτι* expresses that the proposition or the communicated content within its scope is inferred or retrieved from the common ground and that both the speaker and the addressee have access to the evidence that underlies the inference. An analysis of the semantic features of the studied expressions must be complemented by an investigation of their formal properties. It will be argued that the presence of optional arguments and modifiers in the predicative construction (*ἐστὶ δῆλον ὅτι*) and the position of *δῆλον* and *ὅτι* relative to other constituents in the sentence indicate the discourse salience of the matrix clause. The lack of discourse prominence was one of the features that contributed to the emergence of the adverbial *δῆλον ὅτι* in some structural contexts.

The structure of the chapter is as follows. Section 5.2 contains a discussion about evidential adverbs and adverbials from a crosslinguistic perspective. Section 5.3 briefly treats the etymology of the adjective *δῆλος* and its meaning. The predicative construction with *δῆλον* and a propositional complement is analyzed in Section 5.4. Section 5.5 focuses on the adverbial expression *δῆλον ὅτι*. A synthesis of the findings is presented in Section 5.6.

The distribution of the occurrences of the form *δῆλον* analyzed in this chapter is summarized in the following table:

Context	Number of occurrences
sequence <i>δῆλον ὅτι</i>	61
<i>δηλονότι</i> (<i>sic</i>)	14
<i>δῆλον</i> separated from <i>ὅτι</i>	52
sequence <i>δῆλον ὡς</i>	5
<i>δῆλον</i> separated from <i>ὡς</i>	6
<i>δῆλον</i> + <i>τοῦτο</i> ‘this’	5
Total	143

Table 15 Numbers of occurrences of *δῆλον* in the research corpus

5.2. Evidential adverbs and adverbials

Evidential adverbs and adverbials⁸¹ belong to a broader category of sentence modifiers that are referred to as ‘disjuncts’.⁸² The term points to the fact that the expressions that belong here are syntactically detached from the rest of the clause and that their scope extends beyond the level of predication and includes the whole clause or sentence. Regarding their function, a basic distinction follows from the level in the hierarchical structure of the clause at which a disjunct is hosted (cf. Section 1.5).⁸³

The interpersonal level hosts illocutionary and evaluative disjuncts. The former are used by the speaker to comment on the style of performance that characterizes the speech act, while the latter express the speaker’s subjective assessment of the described event or an evaluation of the role of a participant involved in the event. Illocutionary disjuncts include adverbials like the English *frankly*, *briefly*, and *simply put* and the Greek συντόμως ‘briefly’ and ἐν κεφαλαίῳ ‘summing up’ (Crespo 2015). Examples of evaluative disjuncts are *fortunately* and *cleverly* in English and εἰκότως ‘reasonably’ in Greek.

Disjuncts with propositional scope, which operate at the representational level, pertain to the domains of epistemic modality and information source. Epistemic disjuncts, e.g. *certainly* and *probably* in English and ἴσως and τάχα, both ‘perhaps’, in Greek (Ruiz Yamuza 2000), specify the degree to which the speaker is committed to the truth of the proposition within the scope of the adverbial. Evidential disjuncts primarily convey the source of information expressed by the clause. Examples of English adverbs that belong to this category are *evidently*, *obviously*, and *allegedly*. As for Ancient Greek, Thijs (2021: 93) includes δηλονότι (*sic*) in this category.⁸⁴

Individual epistemic and evidential adverbials may also participate in the other category. Prototypical epistemic adverbials may invite a conversational implicature that points to the information source for the modified proposition (Simon-Vandenbergen & Aijmer 2007: 38). Such evidential implicatures, which predominantly involve inference, depend on the context and the text type. In a study on evidential markers in Bulgarian, Wiemer & Kampf

⁸¹ Adverbs, defined as a lexical category, are modifiers of heads that are not nouns (Huddleston & Pullum 2002: 562). While adverbs may constitute adverbial phrases on their own (e.g. *briefly*) or serve as their heads (e.g. *very briefly*), adverbial phrases need not involve a morphological adverb (e.g. ἐν κεφαλαίῳ ‘summing up’). In this chapter, I use the term *adverbial* to refer to any adverbial expression without any implications about its morphological status; this means that the term *adverbial* may also refer to actual adverbs. I reserve the term *adverb* for the words that belong to the relevant lexical category.

⁸² Descriptions of morphological, syntactic, and semantic properties of disjuncts in the English language are available in Greenbaum (1969: 81–212), Quirk et al. (1985: 612–631), and Huddleston & Pullum (2002: 767–775). Note that Huddleston & Pullum (2002) use the term *adjunct* where Quirk et al. (1985) and Greenbaum (1969) speak of disjuncts. A typological overview of sentence adverbs, which include disjuncts, is presented in Ramat & Ricca (1998). An overview of disjuncts in Ancient Greek is available in Crespo (2015), see also Thijs (2021: 92–93). The epistemic disjuncts ἴσως and τάχα are treated in Ruiz Yamuza (2000).

⁸³ The classification of disjuncts presented in this section agrees with that of Thijs (2021: 92–93), who, however, does not commit himself to a specific framework. A categorization of sentence adverbs based on the layered structure of the clause can be found in Ramat & Ricca (1998).

⁸⁴ Crespo (2015: 20) includes δηλονότι (*sic*) in the category of modal adverbs, which he defines in terms of the degree to which the speaker is committed to the truth of the modified proposition.

(2012: 32) conclude that the evidential function of a marker is foregrounded when the context allows the addressee to reconstruct the cognitive basis leading to an inference. In the case of prototypical evidential adverbs, the evidential meaning is the primary contribution of the expression, while epistemic overtones arise as cancelable implicatures or secondary entailments. The nature of the epistemic qualification and its position in the gradient between coded meaning and conversational implicature must be assessed for each adverbial individually. Crosslinguistically, it appears that evidential adverbials may be grouped into three main clusters with respect to their epistemic meaning or potential (Carretero, Marín-Arrese & Lavid-López 2017: 39–40). One cluster contains adverbials like the English *clearly*, *evidently*, and *obviously* and the Polish *oczywiście* ‘obviously’, which entail that the speaker is certain that the modified proposition is true (Simon-Vandenberg & Aijmer 2007: 172; Carretero & Zamorano-Mansilla 2013: 320; Ruskan 2021: 211). The second cluster contains adverbials that signal that the speaker distances themselves from the contents of the proposition (Müller 2022: 38; Carretero, Marín-Arrese & Lavid-López 2017: 39–40). The adverbials that belong here predominantly express hearsay, e.g. *allegedly* and the German *angeblich*, but inferential adverbs, e.g. *seemingly* and the Spanish *aparentemente*, are not excluded.⁸⁵ The third cluster involves adverbials that signal that the speaker assesses the proposition as possibly true (Müller 2022: 40; Carretero, Marín-Arrese & Lavid-López 2017: 40). Examples include *offensichtlich* and *offenbar* in German, *apparently* in English, and *al parecer* in Spanish.

The distribution of the adverbials in the three groups suggests that the expressions whose etymology involves a root denoting visibility may convey a broad range of epistemic meanings including certitude, epistemic possibility, and distance. This is not surprising given the widespread conceptualization of sight as both the most accurate and relatively superficial source of information. Furthermore, some adverbials that express epistemic possibility differ from the predicative constructions containing homonymous adjectives, which entail that their complement is true. This applies, for instance, to the pair *offensichtlich* and *es ist offensichtlich, dass* in German (Müller 2022: 42). This raises the question whether the adverbial δῆλον ὅτι differs in a similar way from the predicative (ἐστὶ) δῆλον ὅτι, which entails that the complement is true.

Evidential adverbials that originated from expressions denoting visual perceivability can express several evidential values. Although the range of possible types of evidence must be determined for each adverbial individually, there are several crosslinguistic tendencies. The evidential value that is most commonly expressed by these adverbials in the familiar European languages is inference.⁸⁶ The basis for inferential reasoning can be both direct visual

⁸⁵ Cf. Celle (2009), who argues that instead of expressing distance from the modified proposition, adverbs like *allegedly* and *reportedly* introduce a fictitious assertive source, from which the speaker may distance themselves. Celle refers to the function of these adverbs as dis-assertive as opposed to epistemic.

⁸⁶ See Ruskan & Šolienė (2017: 147) and Ruskan (2021: 221) on Lithuanian, Ruskan (2021: 221) on Polish, Vandenberg & Aijmer (2007: 151–153, 172) and Carretero, Marín-Arrese & Lavid-López (2017: 56) on English, Wiemer & Kampf (2012: 22) on Bulgarian, Müller (2022: 53) and Müller & Axel-Tober (2017: 42) on German, 172

perception and encyclopedic knowledge about the world. In other words, evidential adverbials may express circumstantial inference and assumption. Another attested meaning is hearsay. It can be conveyed, for example, by the German adverbs *anscheinend*, *scheinbar*, *offenbar* and *offensichtlich* (Müller 2022: 53), the English *seemingly* and *evidently* (Carretero, Marín-Arrese & Lavid-López 2017: 56; Simon-Vandenberg & Aijmer 2007: 161), and the Spanish *aparentemente* (Carretero, Marín-Arrese & Lavid-López 2017: 56). Despite their etymology, the adverbials that belong here virtually do not express visual source, i.e. they do not mark the propositional content that mirrors a directly perceived state-of-affairs. Simon-Vandenberg & Aijmer (2007: 152) posit visual source for some occurrences of *obviously* and other English evidential adverbs, but they seem not to distinguish direct perception from circumstantial inference in their usage of the adjective ‘visual’ (cf. Simon-Vandenberg & Aijmer 2007: 158). Other studies are more explicit in ascribing the evidential value of visual source to some adverbials. Thus, Carretero (2019: 283) claims that *visibly* predominantly expresses visual evidence, Haßler (2018: 91) and Cuartero Sánchez (2011) associate the same meaning with Spanish *visiblemente*. However, Dendale, Vanderheyden & Izquierdo Alegría (2020) persuasively argue that the putative examples in which these adverbs are said to convey visual source represent their narrow-scope usage. In these contexts, according to Dendale, Vanderheyden & Izquierdo Alegría (2020), these adverbs modify the predication and not the propositional content. Consequently, the Dendale and colleagues arrive at the conclusion that the French *visiblement* and the Spanish *visiblemente*, which is only rarely used as a sentence adverb, may only express circumstantial inference.

Scholarship also identifies a distinct category of adverbials whose meaning is related to evidential adverbials conveying assumption. Simon-Vandenberg & Aijmer (2007: 172) use the label *expectation adverbials* for this category and claim that such items express “commitment to the truth of the proposition, based on the fact that the state of affairs referred to in that proposition is to be expected, follows from other states of affairs or from what we know about the world”. The English adverbials ascribed to this category are *of course*, *naturally*, *inevitably*, and *necessarily*. Carretero, Marín-Arrese & Lavid-López (2017: 45) claim that the sense “‘naturally, as might be expected from the circumstances’ [...] would not belong within the domain of evidentiality proper, since in most cases it does not involve any inference based on evidence”.⁸⁷ In contrast to these claims, I believe that the boundary between expectation and inferential reasoning is fuzzy as it is often difficult to tell whether a proposition describing an expected eventuality has been merely retrieved from the common ground or inferred based on what is known. The close relation between expectation and inference is illustrated by the fact that evidential adverbs like *obviously* and the Spanish *obviamente* often mean ‘naturally, as is expected’ (Simon-Vandenberg & Aijmer 2007: 154–156; Carretero, Marín-Arrese & Lavid-López 2017: 45–47). Even though the speaker may be sure that the

Carretero, Marín-Arrese & Lavid-López (2017: 56) on Spanish, and Dendale, Vanderheyden & Izquierdo Alegría (2020) on French.

⁸⁷ Ruskan (2021: 210) follows this view.

modified proposition holds, and they need not rely on inference, inferential reasoning defined as deriving new information from old may still be a relevant component of meaning with respect to the addressee's point of view. Given the functional overlap between expectation and inference, I refrain from positing a clear boundary between the two notions.

The blurry dividing line between inference and the activation of shared or otherwise available knowledge becomes more solid when the adverbials that point to the common ground are used primarily to shape the interpersonal context between the speaker and the addressee. Modifiers that facilitate effective communication between the participants with respect to the information flow belong to the interpersonal level, which sets them apart from propositional modifiers. The shift from a propositional to an illocutionary meaning⁸⁸ has affected several evidential adverbs in the languages mentioned in this section.⁸⁹ For instance, Cornillie & Gras (2015) describe the pragmatic function of the Spanish adverbials *por lo visto* and *al parecer*, which facilitate turn-taking, and *evidentemente*, which, by contrast, helps the speaker to keep their turn in the exchange. Pragmaticalization is also observable in the case of the Polish *oczywiście* 'obviously', which may be used as an emphatic response word expressing agreement (Ruskan 2021: 220–221).

The preceding overview highlights the research questions that need to be addressed regarding the adverbial *δῆλον ὅτι*. In order to ascertain the function of the adverbial, we first need to analyze the properties and function of the predicative construction with *δῆλον* in matrix clauses. Given the syntactic disconnectedness of disjuncts, we also need to determine how a matrix clause may change into a discursively secondary adverbial. A contrastive analysis of the predicative construction and the adverbial should then reveal in which respects the two expressions differ. In the domain of propositional modification, it needs to be determined whether the adverbial entails or implies the same epistemic and evidential meaning as the original construction. Furthermore, in the light of the crosslinguistic tendency of evidential adverbials to develop pragmatic meanings, we ought to ascertain whether the same development has affected *δῆλον ὅτι*. These questions are addressed after a brief discussion about the etymology of the adjective *δῆλος* in Section 5.3.

5.3. The etymology of *δῆλος*

The adjective *δῆλος* contains the Proto-Indo-European root **deyh₂-* 'shine' and goes back to the uncontracted form **deya-lo-* 'clear, shining *vel sim.*' (Beekes 2010: 324; Ruijgh 1970:

⁸⁸ See Diwald (2011) for an analysis of the subtype of grammaticalization that leads to the conventionalization of pragmatic functions. The shift from propositional to illocutionary meaning is also within the purview of the theory of grammaticalization developed within the framework of FDG (see Hengeveld 2017 and Section 1.7).

⁸⁹ In the case of *obviously* and *obviamente*, Simon-Vandenberghe & Aijmer (2007: 154–156) and Carretero, Marín-Arrese & Lavid-López (2017: 45–47) respectively allot a relatively broad conceptual space to illocutionary meaning, which they connect with the nuance of expectation. While I accept that the adverbs in question have a pragmatic function in some contexts, I do not divorce the notion of expectation from inference.

319).⁹⁰ The same root appears in the aorist form δέατο ‘seemed, appeared’ in Hom. *Od.* 6.242 and in a number of forms attested in several Arcadian inscriptions (see LSJ, s. ν. δέατο). The original meaning of the root, which referred to physical emission of light, is already bleached in the verbal derivation, which is semantically rather similar to δοκέω ‘seem, appear’.

The sole occurrence of δῆλος in the epics comes close to the common classical construction (ἐστὶ) δῆλον ὅτι. The copula is omitted and the demonstrative pronoun τόδε ‘this’ is picked up by the relative pronoun ὃ ‘that’. The subordinate clause expresses a proposition, which means that the notion of ‘clearness’ applies to the domain of cognition and not visual perception:

(1) νῦν δ’ ἤδη **τόδε δῆλον**, ὃ τ’ οὐκέτι νόστιμός ἐστιν.

‘But now **this is clear, that** [Odysseus] will return no more.’ (Hom. *Od.* 20.333)

An early extension of the meaning of δῆλος did not efface the original sense of the adjective, which may be applied to physically perspicuous entities. This use is sporadically attested in later authors:

(2) καὶ σφρων ἔτι **δῆλος** ἐστὶ ὁ τάφος.

‘And their tomb is still **visible**.’ (Hdt. 4.11.4)

(3) ἀποθανόντος δ’ αὐτοῦ οὐδαμοῦ **δῆλα** τὰ χρήματα ...

‘When he died the money was nowhere **to be found**.’ (Lys. 19.48)

The productively formed adverb δῆλως ‘clearly’ is virtually absent in the preserved texts except for a handful of late occurrences in the works of John Chrysostom (4th–5th cent. CE). The grammarian Julius Pollux discusses the acceptability of some adverbs in atticizing texts and points out that δῆλως, along with καταδήλως, are not good Greek (Poll. 6.205.3). On the other hand, he commends ἐνδήλως, ἐκδήλως, προδήλως, and ἐπιδήλως, which all mean ‘clearly’ and of which only the last two occur, albeit rarely, in texts from the classical period.

In the next section, we turn to the predicative construction with δῆλον that takes a propositional complement.

5.4. The predicative δῆλον with a complement

5.4.1. Introduction

The adjective δῆλος may be used in predicative constructions with a clausal complement introduced by ὅτι ‘that’ or ὡς ‘that’. A basic sentence that exhibits this structure contains two

⁹⁰ The identification of δῆλος with δέελος in Hom. *Il.* 10.466 is spurious (Ruijgh 1970: 319; cf. Chantraine 1968–1980: 272). The latter form appears in the context where it could mean ‘visible, conspicuous’ but Ruijgh persuasively argues that the form is a noun that contains the root of δέω ‘bind’ and refers a band or halter.

propositions expressed by two clauses. Proposition p expressed by the matrix clause ascribes the quality of being $\delta\eta\lambda\omicron\nu$ ‘clear’ to the proposition q in the subordinate clause:

(4) $p(q)$ where $p \sim$ ‘be $\delta\eta\lambda\omicron\nu$ ’

From the syntactic point of view, the clause expressing q may be analyzed as the subject of the predicative construction with $\delta\eta\lambda\omicron\varsigma$ and the copula, i.e. ‘ q be $\delta\eta\lambda\omicron\nu$ ’. However, this syntactic analysis somewhat obscures the fact that the clause containing q patterns together with the subordinate clauses that complement predicates of speaking and knowledge. In order to emphasize the functional and formal affinity between the construction treated in this section and the constructions governed by verbs like $\lambda\acute{\epsilon}\gamma\omega$ ‘say’ and $\omicron\tilde{\iota}\delta\alpha$ ‘know’ I prefer the hierarchical analysis rendered in (4), i.e. ‘be $\delta\eta\lambda\omicron\nu(q)$ ’.

5.4.2. Modifications of the predicative construction

The main point of (4) is that ‘be $\delta\eta\lambda\omicron\nu$ ’, i.e. p , is a proposition and not a modifier with q within its scope. From this follows that ‘be $\delta\eta\lambda\omicron\nu$ ’ may be manipulated and elaborated by the speaker in a way that a sentential adverbial could not. While the core predication of p consists of the adjective $\delta\eta\lambda\omicron\nu$ and, optionally, the copula, the speaker may fine-tune the meaning of p . This is achieved by supplying adjuncts or optional arguments, or by changing the tense of the copula, negating it, or using the verb $\pi\omicron\iota\acute{\epsilon}\omega$ ‘make’ as a causative equivalent of $\epsilon\tilde{\iota}\nu\alpha\iota$ ‘to be’. In (5), for instance, the main clause includes an optional argument in the dative:

(5) **$\delta\eta\lambda\omicron\nu$** γάρ ἐστι τοῖς Ὀλυνθίοις **ὅτι** νῦν οὐ περὶ δόξης οὐδ’ ὑπὲρ μέρους χώρας πολεμοῦσιν, ἀλλ’ ἀναστάσεως καὶ ἀνδραποδισμοῦ τῆς πατρίδος.
 ‘It is clear to the Olynthians that they are now fighting not for glory, not for a strip of territory, but to avert the overthrow and enslavement of their fatherland.’ (Dem. 1.5)

With respect to the semantic role, there are two types of optional arguments that often occur in the studied construction – the cognizer and the source. The cognizer is the participant who mentally perceives that q is $\delta\eta\lambda\omicron\nu$. As exemplified by (5), this optional argument is expressed in the dative case.

The source specifies the element that justifies the claim ‘be $\delta\eta\lambda\omicron\nu(q)$ ’. The ontological quality of the source is not pre-defined as in the case of the cognizer, which always refers to an individual or a group of people. The source may be a physical object, an abstract entity, a state-of-affairs, a proposition, or a speech act. The first option is not attested in the research corpus but there is no reason to assume that physical objects are excluded as sources.

(6) Source: abstract entity and speech act

[That our father did not collect the money after the release; that no one would voluntarily have paid the money, if Demaretus had sent someone to get it; and that he himself neither put out to sea nor visited Bosphorus,] **δῆλον** ἐκ τῶν χρόνων καὶ τῶν μαρτυριῶν ὑμῖν **γέγονεν**.

‘*q* **has been made clear** to you from the dates and the depositions.’ (Dem. 38.14)

(7) Source: state-of-affairs

τῷ **δῆλον** [...] **ὅτι** τὴν στρατείαν φεύγων, οὐ φιλοτιμία, τοῦτ’ ἐποίησεν; τοῖς μετὰ ταῦτα πραχθεῖσιν ὑπ’ αὐτοῦ.

‘What **makes it clear that** his motive was not public spirit but the desire to shirk the campaign? His subsequent acts.’ (Dem. 21.162)

(8) Source: proposition

δῆλον δὲ καὶ ἐκ τῶν εἰκότων **ὅτι** [they chose to continue as debtors for the dowry, rather than to have it involved in the estate of Aphobus which was sure to be so seriously endangered.]

‘It is **clear** from the probable facts **that** *q*.’ (Dem. 30.10)

The conceptualization of the source often involves the metaphorical mapping of movement in space to the domain of cognition. The thought process moves from the source to the conclusion that proposition *q* is δῆλον. This is reflected by the frequent use of prepositional phrases with ἐκ ‘from’ and adverbs with -θεν ‘from’ (e.g. in Dem. 19.76), an agglutinative marker similar to the elative, to express the source. Besides these expressions, the source may also be coded by the dative case, as in (7).

Before we proceed to the analysis of the semantic properties of the construction, Section 5.4.3 analyses how it interacts with the conventional strategies of discourse management in classical Greek that help facilitate the communication between the speaker and the addressee.

5.4.3. The predicative construction and the interpersonal level

5.4.3.1. Introduction

The interpersonal level of the clause pertains to the dynamic communicative interface between the interlocutors that emerges during the course of communication (see Section 1.5). This section focuses on those components of the interpersonal level that are expressed by grammatical or at least strongly conventionalized means in classical Greek. They pertain to illocution, information structure of the communicated content, and some components of discourse management that are signaled by pragmatic markers.

The aim is to analyze how ‘be δῆλον(*q*)’ and its constituent parts interact with specific communicative strategies in the domain of pragmatics. Predictably, the analysis confirms that

the structural status of ‘be δῆλον’ is lexical and clausal, as opposed to adverbial, because the core predication or its optional arguments may function as discursively primary elements in the utterance. Additionally, some structural contexts in which the discourse prominence of the construction is reduced are identified. Such contexts are important because the potential for reduced discourse prominence is a prerequisite for the conventionalization of δῆλον ὅτι as a functional modifier.

5.4.3.2. Illocution

Illocution has to do with felicitous employment of various speech act types in communication.⁹¹ Most of the examples cited above involve the use of the predicative construction in assertions. Example (7) is a question in which the *wh*- constituent queries the source that justifies the belief that *q* is obvious. This context illustrates two properties of the predicative construction with δῆλον in questions. First, there is the trivial observation that ‘be δῆλον’ does not project outside the question.⁹² Second, in the research corpus, interrogation often targets the constituent that specifies the source of the evaluation ‘be δῆλον’.

It is important to differentiate between questions that concern the information source in general and those that concern the source in the predicative construction ‘be obvious(*q*)’. Inquiring about the information source pertains to the part of the utterance that is asserted and to which the speaker is subjectively committed, as illustrated in (9). Such questions, however, may signal distrust because the speaker does not accept the testimony of the interlocutor at face value:

- (9) a. A: My cat is friendlier than your dog. – B: How do know that (your cat is friendlier than my dog)? – A: I can tell from their behavior.
 b. A: Peter thinks that cats are friendlier than dogs. – B: How do you know that (Peter thinks that)? – A: He told me.

Simple assertions like *A*’s in (10)a, which do not have intersubjective validity, differ from complex sentences with *it is obvious that ...*. The epistemic import of *obvious* is intersubjective if the cognizer refers to *us*, *you*, or if it is not specified (cf. Section 5.4.4). Asking about the source of the claim that *q* is obvious is felicitous only if the interlocutor claimed or implied such a thing:

- (10) a. A: Cats are friendlier than dogs. – B: ?How is that obvious?

⁹¹ The most influential theory of speech acts has been developed by John Searle, building upon the ideas of J. L. Austin (Searle 1969; Searle 1975). Further developments in the study of speech acts are presented in, for example, Levinson (1983: 226–283) and Huang (2014: 118–164).

⁹² Projection is treated in greater detail in Section 5.5.4.2. It concerns the information that is not within the scope of interrogation. The part of the question that projects is taken for granted by the speaker.

b. A: It is obvious that cats are friendlier than dogs. – B: How is that obvious? – A: I guess anyone can infer it from their behavior.

The questions in (9) and (10) are quite different. While B's questions in (9) concern the information source for the claim asserted by A and hence the justification for A's subjective commitment, the question in (10)b asks what justifies the assertion that a fact is obvious to potentially very many people. Note that the subjectively colored question 'How do you know that?' is not quite suitable to target the main clause in (10)b, whereas a more neutral question seems more acceptable:

(11) A: It is obvious that cats are friendlier than dogs. – B: ?How do you know that (it is obvious)? / What makes you say that (it is obvious)?

Therefore, the source in 'be δῆλον(*q*)' pertains to both *q* and 'be δῆλον'. On the one hand, the source represents the evidence for *q*. On the other hand, access to the evidence must be available to all relevant cognizers, typically the speaker and the addressee.

In monological discourse,⁹³ asking what makes claim *q* obvious may be employed as an argumentative strategy in order to imply that *q* is intersubjectively acceptable. The proposition embedded in the question triggers the implicature that the speaker considers some claim *q* potentially obvious and intends to show to the addressee that they too may reach the conclusion that *q* holds. The aim of the speaker is to extend the epistemic acceptability of *q* from subjective to intersubjective:

(12) Cats are friendlier than dogs. How can I make it obvious? Let me explain.

These observations seem to apply to 'be δῆλον(*q*)' as well. Besides triggering the implicature that *q* is obvious, asking about the source of the predication 'be δῆλον(*q*)' serves to introduce an argument or a generally accessible piece of evidence that points to *q*:

(13) [Of all people in the world my opponents have the least claim to a crown.] πόθεν οὖν **τοῦτο** μάλιστ' **ἔσται δῆλον**; ἀφ' ὧν αὐτοὶ πεποιήκασιν.
'How **can this become** beyond **obvious**? By what they have themselves done.' (Dem. 51.7)

In addition to targeting the source, the scope of interrogation may include the whole predicative construction. In (14), the speaker indirectly prompts the audience to accept *q* in the complement, which is based on inferential reasoning:

⁹³ For the distinction between monological and monological discourse see footnote 63.

- (14) ἄρα γε **οὐχὶ δῆλον**, ὧ ἄνδρες, **ὅτι** ἅ πάλαι οὗτοι μαρτυροῦσι γενέσθαι, πολλῶ ὕστερον τῆς λήξεως τοῦ κλήρου <ἐνεκα> σύγκειται αὐτοῖς;
 ‘**Is it not obvious**, gentlemen, **that** the events which they deposed to have happened long ago were invented by them much later for the purpose of claiming the estate?’
 (Is. 3.33)

5.4.3.3. Information structure

Information structure in classical Greek is signaled by word order.⁹⁴ There are two formulas that capture a large proportion of the sentences in Greek prose and the distribution of the variables relevant to information structure:

- (15) (Contrastive Topic) – Narrow Focus – Verb – (Given Topic) – (Rest)

- (16) (Contrastive Topic) – Broad Focus I = Verb – (Given Topic) – Broad Focus II – (Rest)

In complex sentences ‘be δῆλον(α)’, the matrix predication functions as a finite verb in simple clauses with respect to information structure. This means that the speaker may select the complement and assign the role of Narrow Focus to it. In (17), the status of the complement is also signaled by the particle γε:

- (17) ἀλλὰ μὴν [**ὅτι** γ’ οὐ στήσεται,]_{NFOC} [**δῆλον**,]_{VERB} [εἰ μή τις κωλύσει.]_{REST/TAIL}
 ‘**That** he will not stop, **is obvious**, unless someone stops him.’ (Dem. 4.43)

An optional argument like the source can also constitute the Narrow Focus of the sentence. Note the adverbial μόνον ‘only’, which also marks the focused constituent in the following example:

- (18) οὐ τοίνυν [μόνον ἐκ τούτων]_{NFOC} [**δῆλόν ἐσθ’**]_{VERB} [**ὅτι** τούτων ἔνεκ’ ἐρρήθη τὸ προβούλευμ’ ὧν λέγω,]_{GIVTOP} ἀλλὰ καὶ ἐκ τοῦ ψηφίσματος αὐτοῦ μαρτυρία τίς ἐστ’ εὐμεγέθης.
 ‘Nor is it only these considerations that **make it clear that** such was the purpose for which the resolution was moved: the decree itself supplies evidence of great weight.’
 (Dem. 23.16)

The predication ‘be δῆλον’ may constitute the primary focus of the utterance if the complement contains information previously established in the course of argumentation. This

⁹⁴ On word order and information structure in classical Greek prose see Dik (1995), Matić (2003), and Allan (2014); a summary is available in Van Emde Boas et al. (2019: 711–721). Dik (2007) applies the same methodology to dialogues in dramatic poetry; Homeric texts are analyzed by Bertrand (2010).

arrangement appears in the statements that round off argumentative discourse moves and reiterate the speaker's main point:

- (19) [ὅτι μὲν τοίνυν οὐθ' ὁ πατήρ μετὰ τὴν ἄφεσιν τὰ χρήματ' εἰσέπραξεν, οὐτ' ἂν ἔδωκεν ἐκὼν οὐδεὶς, εἴ τιν' ἔπεμψεν ὁ Δημάρετος, οὐτ' ἀνέπλευσεν αὐτὸς οὐδ' ἀφίκετ' ἐκεῖσε,]_{GIVTOP} [δῆλον ἐκ τῶν χρόνων καὶ τῶν μαρτυριῶν ὑμῖν γέγονεν.]_{FOC}
 'Well then, **that** our father did not collect the money after the release; that no one would voluntarily have paid the money, if Demaretus had sent someone to get it; and that he himself neither put out to sea nor visited Bosporus, **has been made clear** to you from the dates and the depositions.' (Dem. 38.14)

The matrix clause and the complement frequently constitute the focus of the utterance together. This is explained by the fact that the evaluation 'be δῆλον' is discursively tied to its complement *q*. Putting more emphasis on 'be δῆλον' can therefore highlight *q* as well. The result is a Broad Focus arrangement, whose scheme is captured by (16). In this arrangement, the predication 'be δῆλον' is the first part of the Broad Focus, while the complement constitutes the other part. The matrix predicate may be lexically emphasized as in (20), which contains the focus particle καὶ and an adverb:

- (20) [Aeschines made his lying report, you believed it, the Phocians heard of it, surrendered, and perished, all within a period of five days only.] [ὅθεν]_{TOP} οἶμαι [καὶ δῆλόν ἐστι σαφῶς]_{BFOCI}, [ὅτι πᾶσ' ἀπάτη καὶ τέχνη συνεσκευάσθη τοῦ περὶ Φωκέας ὀλέθρου.]_{BFOCI}
 'Whence **it is** clearly **evident that** the ruin of the Phocians was nothing but a concoction of deceit and artifice.' (Dem. 19.76)

It is often the case that the matrix clause in sentences with a Broad Focus is reduced to just δῆλον. The reduced predicative construction was still analyzable as such by the speakers, as is suggested by the presence of postpositive particles that could intervene between δῆλον and the complementizer and by the fact that the complementizer could be either ὅτι or ὥς:

- (21) [δῆλον]_{BFOCI} γὰρ [ὅτι πάντες κέρδους ἕνεκ' ἀδικοῦσιν.]_{BFOCI}
 'For **it is obvious that** it is always for the sake of gain that men do wrong.' (Isoc. 21.6)
- (22) [δῆλον]_{BFOCI} γὰρ [ὥς ὁ μηδὲν ὦν αὐτὸς χρήσιμος οὐδ' ἂν ἄλλον φρόνιμον ποιήσειεν.]_{BFOCI}
 'For **it is clear that** if one is of no use in himself, neither can he make another man wise' (Isoc. 2.52)

The fact that the main clause or its internal argument may be focalized does not exclude the possibility that the subordinate clause contains its own preverbal Narrow Focus.⁹⁵ Such Narrow Foci are apparent in examples (18) (τούτων ἔνεκ'), (20) (πᾶσ' ἀπάτη καὶ τέχνη), and (21) (κέρδους ἔνεκ'). Completive focalized constituents compete for discourse prominence with other highlighted elements of the sentence, which include the matrix clause as Broad Focus I or its internal argument occupying the Narrow Focus position in the matrix clause. Allan (2012: 17–18) argues that completive focus constituents do not exhibit a high degree of focality since they do not provide contrastive information but merely update the common ground with a new element. Thus, the presence of a Narrow Focus in the embedded clause does not cancel the potential of the main clause or its internal argument to be discursively primary.

Sentences with Broad Focus are important with respect to the reanalysis that eventually resulted in the adverbial δῆλον ὅτι. The relevant properties involve both the form and the meaning. Regarding the form, in the sentences with a clause-initial connector like ἀλλά 'but' or with a sentence-initial conditional protasis, δῆλον and ὅτι can appear next to each other, as there is no intervening postpositive particle with sentential scope. Regarding the meaning, in the sentences with a Broad Focus, Broad Focus II can gain prominence over Broad Focus I, if the latter can be analyzed as discursively backgrounded. This feature is relevant here because the meaning of δῆλον is rather functional, while the complement expresses a proposition that is often of key importance in the given stretch of discourse.

5.4.3.4. Pragmatic markers

Pragmatic markers are items that do not convey a truth-conditional meaning but provide useful signals to the addressee in order that they may more easily process the contribution of the speaker.⁹⁶ The term pragmatic marker is neutral with respect to the morphological properties of the items that fulfill this role in communication (Foolen 2011: 218). The most important group of pragmatic markers in classical Greek are particles.⁹⁷ Regarding their function in discourse, particles may be divided into several classes, the most important of which for our purposes are connective particles, attitudinal-interactional particles, and focus modifiers.⁹⁸ The use of most wide-scope particles within the complex clause 'be δῆλον(q)' is

⁹⁵ The discourse-configurational model of word order in Ancient Greek developed by H. Dik, D. Matić, and R. J. Allan is assumed to apply also in embedded clauses (Goldstein 2016: 37). See Allan (2012) for an application of the model to infinitival and participial complement clauses.

⁹⁶ A detailed discussion on pragmatic markers from the perspective of both general and Ancient Greek linguistics may be found in Thijs (2021: 39–124).

⁹⁷ A standard modern reference work on particles in Ancient Greek is lacking. A classic but now outdated handbook is Denniston (1954). Bonifazi, Drummen & de Kreij (2016) offer an extensive treatment of some particles in selected authors. Van Emde Boas et al. (2019: 664–701) contain brief and theoretically up-to-date descriptions of particle meanings. An overview of earlier scholarship with a discussion on methodological innovations in the field since Denniston's work is available in Thijs (2021: 5–9).

⁹⁸ I follow the classification proposed by Thijs (2021: 36–39), which also includes TMA-particles, intensifying particles, polarity particles and illocution-marking particles. The three categories focused on in this section are discussed in detail in Thijs (2021: 47–112).

possible only if the main clause or the complement stand at the beginning of the sentence. If the entire construction ‘be δῆλον(*q*)’ is shifted to the right, most particles with wide scope cannot occur in either of the two clauses. The sentences in which there is no particle in the complex clause ‘be δῆλον(*q*)’ are not considered in this section.

Contexts with a focus modifier were touched upon in the previous section. The restrictive particle γε, which has narrow scope and often indicates focus, can stand behind the complementizer while the matrix clause follows the complement, as in (17).⁹⁹ On the other hand, the governing predication ‘be δῆλον’ cannot be stressed by means of γε. The focus particle καί (Van Emde Boas et al. 2019: 693) is admissible in the governing clause if the sentence exhibits a Broad Focus arrangement like (20).

Attitudinal-interactional markers embedded in ‘be δῆλον(*q*)’ are rare in the research corpus. Low frequency or absence of some particles can be explained on semantic grounds. Given that the main clause means ‘be clear’, it would be redundant to use markers that signal obviousness in the complement. This seems to be the reason why we do not find δή, which may signal self-evident or easily inferable propositional content (Thijs 2019: 255), in the complements of ‘be δῆλον’. There is just one occurrence of δήπου(θεν) in a harmonic combination with ‘be δῆλον’. According to Gijbels & Van Rooy (2023), δήπου in drama may signal that the proposition within its scope is evident and that it should be added to the common ground. I tentatively propose that such a combination is used to stress that the information in the complement of ‘be δῆλον’ is self-evident:

- (23) εἰ δ’ ἐκ τούτων τὰ δίκαια τίθενται καὶ τὴν εἰρήνην ταύτην ὀρίζονται, **ὅτι** μὲν δήπουθεν οὐθ’ ὅσι’ οὐτ’ ἀνεκτὰ λέγουσιν οὐθ’ ὑμῖν ἀσφαλῆ, **δῆλόν ἐστιν** ἅπασιν ...
 ‘But if they ground their plea upon this principle and this is their interpretation of the peace, **it is obvious** to all that their argument is clearly impious and intolerable and dangerous to you.’ (Dem. 8.8)

The particle δή in the governing clause is hard to analyze. There are no occurrences in the research corpus, but Plato often uses δῆλον δὴ ὅτι in answers. It is hard to tell whether the collocation involves δή in its attitudinal value, “Clearly, it is obvious that *q*”, or whether it is a discourse-structuring particle (Thijs 2019: 302). In Herodotus and dramatic poetry, there is a handful of occurrences of δῆλα δὴ that can be analyzed as the incipient stage of the discourse marker δηλαδή, whose frequency increased in later stages of Greek.¹⁰⁰ In argumentative discourse, the relative lack of attitudinal or epistemic modifiers probably has to do with pragmatic constraints. Doubly emphasizing that *q* is obvious by means of ‘be δῆλον’ and an attitudinal marker could be seen as presumptuous.

⁹⁹ The precise meaning of γε is elusive. See Goldstein (2019) and Van Emde Boas et al. (2019: 692).

¹⁰⁰ The function of δηλαδή in Modern Greek is investigated by Archakis (1996).

Mitigating the semantic import of the governing clause is not a frequent strategy either. There is one context with *που*, which signals that there is a tentative agreement on the proposition within its scope (Gijbels & Van Rooy 2023):

(24) [Now here is just one letter more that you must read; but never mind the rest.]

δῆλον γάρ που ὑμῖν **γέγον'** ὥς πεφενάκιεν ὑμᾶς.

'For **it has**, I suppose, **become clear that** he has cheated you.' (Dem. 23.162)

Connective particles occur more frequently in the studied construction. They signalize the rhetorical function of the complex sentence 'be *δῆλον(q)*' or its position in the hierarchical structure of the discourse. Simple connection by means of *δέ* is not as frequent as the use of *γάρ* and *τοίνυν*. The particle *γάρ* marks a subsidiary speech act with information that justifies the preceding contribution of the speaker (Van Emde Boas et al. 2019: 668–670). The particle occurs predominantly in the matrix clause, while the whole sentence exhibits a Broad Focus arrangement:

(25) [If my father wronged you by enclosing his land, you are now wronging me by thus

enclosing yours.] **δῆλον** γὰρ ὅτι μεγάλοις λίθοις ἀποικοδομηθέντος πάλιν τὸ ὕδωρ εἰς τὸ ἐμὸν ἤξει χωρίον, εἴθ' ὅταν τύχη καταβαλεῖ τὴν αἵμασιαν ἀπροσδοκῆτως.

'For it is evident that, since you have built your obstructing wall with large stones, the water will flow back upon my land, and when it so chances, may with an unlooked-for rush throw down my wall.' (Dem. 55.30)

The construction 'be *δῆλον(q)*' with *γάρ* refers to *q* that is either known and shared by the participants or easily inferable. These properties of *q* in the complement have to do with the function of subsidiary speech acts. The more important, and possibly contentious, contribution is conveyed by the preceding speech act, while the sentence with *γάρ* contains information that ought to be non-controversial and easily acceptable. The speaker invites the audience to accept *q*, which is described as obvious, so that the more central preceding point is strengthened.

A peculiar usage of *γάρ* concerns answers to *wh*- questions. The answer with *γάρ* cannot be subsidiary because it refers to the queried element:

(26) [We are told that he was thrown into the sea.] ἐν τίνι πλοίῳ; **δῆλον** γὰρ ὅτι ἐξ αὐτοῦ τοῦ λιμένος ἦν τὸ πλοῖον.

'From what boat? **It is clear that** the boat came from the harbor itself.' (Antipho 5.28)

I propose that this use of *γάρ* signals a foregone conclusion. The speaker suggests that the answer is available even before it is uttered. It can be paraphrased as '[*q*], for it is clear that *q*.' A similar use of *γάρ* appears in answers to polar questions (Van Emde Boas et al. 2019: 669).

In this case, a *yes* or *no* is inferable from a justification with γάρ, while the actual answer word or sequence is omitted.

The particle τοίνυν combines an interactional (cf. τοι) and a discourse-structuring function (cf. νυν) (Van Emde Boas et al. 2019: 684; Wakker 2009). It is used to signal a new step in the argumentation or an important conclusion of which the addressee should take note. The particle may appear in the main or the subordinate clause. In the research corpus, ‘be δῆλον(*q*)’ with τοίνυν is used to round off a stretch of argumentation with a summarizing conclusion. The sentences with τοίνυν do not primarily convey the outcome of inferential reasoning but rather the fact that *q* is now obvious to the addressee. If the governing clause is in the future tense or contains a causative construction with ποιέω ‘make’, the particle signals that a new stretch of discourse about the focused constituent, i.e. the proposition in the complement, commences:

(27) [Depositions of the witnesses.] ὅτι μὲν τοίνυν οὐ μετρίας τινὰς καὶ φαύλας λαβὼν πληγὰς, ἀλλ’ εἰς πᾶν ἐλθὼν διὰ τὴν ὕβριν καὶ τὴν ἀσέλγειαν τὴν τούτων πολὺ τῆς προσηκούσης ἐλάττω δίκην εἴληχα, πολλαχόθεν νομίζω **δῆλον** ὑμῖν **γεγενῆσθαι**.

‘**That** the wounds I received, then, were not slight or trifling, but that I was brought near to death by the outrage and brutality of these men, and that the action which I have entered is far more lenient than the case deserves, **has been made clear** to you, I think, on many grounds.’ (Dem. 54.13)

(28) ὅτι τοίνυν ὅλως οὐδὲ τὴν εἴσπραξιν αὐτὴν ὑπὲρ ὑμῶν πεποιήται, καὶ τοῦτ’ αὐτίκα δὴ μάλ’ ὑμῖν **δῆλον ποιήσω**.

‘However, I **will make it** quite **clear** to you **that** he did not carry out these exactions for your benefit at all.’ (Dem. 22.65)

5.4.3.5. Discussion and conclusions

The analysis presented in this section shows that some sentences that contain the word δῆλον and a complementizer constitute complex clauses with the structure ‘be δῆλον(*q*)’. The governing clause or its constituent parts may be targeted by the processes that pertain to the interpersonal level in the hierarchical structure of the clause. Some of the strategies that belong here allow the speaker to present the governing clause with δῆλον as a discursively primary element. From this follows that the status of δῆλον in these sentences is lexical rather than functional. The following properties are especially relevant here:

- the core predication ‘be δῆλον’ or the argument expressing the source may be targeted by interrogation;
- the core predication ‘be δῆλον’ behaves like a verb with respect to the information structure of the utterance;
- ‘be δῆλον’ may constitute the first part in a Broad Focus construction;

- the core predication ‘be δῆλον’ may be separated from the complementizer ὅτι or ὥς, which introduces the subordinate clause.

These properties are expected insofar as ‘be δῆλον(*q*)’ approximates other types of complex sentences governed by, for example, predicates of speaking or knowledge acquisition. Upon closer examination, some properties of ‘be δῆλον(*q*)’ provide hints as to why the construction could be prone to grammaticalization. The sentences with a Broad Focus and no topicalized optional arguments placed before δῆλον exhibit the sequence δῆλον ὅτι *q*. At the same time, δῆλον (ὅτι) may be interpreted as less discursively prominent than *q*, because the governing clause is semantically light. Even though these facts in themselves are not sufficient to explain the reanalysis that led to the interpretation of δῆλον ὅτι as a wide-scope modifier, they nevertheless help to clarify the conditions necessary for such a reanalysis.

After having discussed the pragmatic properties of ‘be δῆλον(*q*)’ we may turn to the semantics of this construction.

5.4.4. The semantics of the predicative construction

This section contains a description of the coded meaning of ‘be δῆλον(*q*)’ and the salient conversational implicatures this construction may invite. The division of labor between entailments and implicatures is determined by the presence of optional arguments and words in the main clause. For instance, the inclusion of the source entails that the evaluation expressed by δῆλον is based on inference or testimony. If, on the other hand, the argument expressing the source is not included, the nuance of inferential reasoning may be still available as a conversational implicature.

There are five conceptual components that may be said to sufficiently describe the meaning of ‘be δῆλον(*q*)’, including both its entailments and implicatures. Each component may be isolated by means of a question that targets it:

- (29) a. What is the proposition under discussion? – *q* (complement, PRO)
- b. What is the evaluation of this proposition? – δῆλον
- c. To whom is the evaluation ascribed? – Cognizer (NP, PRO)
- d. When does the evaluation apply? – Time (verb)
- e. What is the evaluation based on? – Source (NP, PRO, ADV)

Some of these components are semantically obligatory, while others are not. Obligatory components *q* and δῆλον, isolated in (29)a and (29)b, are always expressed by the complement and the adjective respectively. These two expressions constitute the necessary morphosyntactic parts of ‘be δῆλον(*q*).’ Components cognizer and time, targeted in (29)c and (29)d, are obligatory on the level of meaning, but their expressions may be omitted. These two components may be labeled as generalized implicatures because they revert to a default value,

described below, unless they are specified by a dedicated expression. Finally, source, isolated in (29)e, is not semantically obligatory. It may be expressed by an optional constituent or implied. These properties are summarized in the following table:

Component	Expression	Obligatory semantics	Obligatory expression
<i>q</i>	complement, PRO	✓	✓
Evaluation	δῆλον	✓	✓
Cognizer	NP, PRO	✓	X
Time	verb	✓	X
Source	NP, PRO, ADV	X	X

Table 16 Meaning of 'be δῆλον(*q*)'

Component *q* is by definition a proposition. As we have seen above, its expression may be a full clausal complement introduced by a subordinator or an anaphoric pronoun as in (30):

- (30) [Eubulides did not even cast his vote that my father was not an Athenian.] τῷ **τοῦτο δῆλον**; ὅτι ἀπάσαις ἔδοξεν δημότης εἶναι.
 'How is **this proved**? Because my father was declared by all the votes to be a member of the deme.' (Dem. 57.61)

The semantic component cognizer is obligatory because the meaning of δῆλον presupposes an individual or a group that may realize that some fact is obvious. If the optional argument that specifies the cognizer is omitted, the semantic slot is filled by the individuals to whom *q* is (or was or will be) of interest at the time referred to by the main clause. It could be argued that the criterion of time is not necessary here because the implied cognizer is almost always the addressee together with the speaker:

- (31) ὅθεν οἶμαι καὶ **δῆλόν ἐστι** σαφῶς, **ὅτι** πᾶς' ἀπάτη καὶ τέχνη συνεσκευάσθη τοῦ περὶ Φωκέας ὀλέθρου.
 'Whence **it is** clearly **evident that** the ruin of the Phocians was nothing but a concoction of deceit and artifice.' (Dem. 19.76)
 → it is evident to the speaker and the addressee that *q*

Note, however, that the ascription of the evaluation expressed by δῆλον applies to the speaker and the addressee only if δῆλον (+ VERB) refers to the time of the utterance. If δῆλον + VERB refers to the past or future, the evaluation of *q* pertains to an individual or a group relevant at the topic time. In (32), it is Alcibiades and his contemporaries that were aware that *q* was obvious, not Plutarch (the speaker) and his readers (the addressee). Similarly, the complement of δῆλον ἦν in (33) contains a piece of information that was known by the king Philip V of Macedon and his commanders:

(32) ἐπεὶ δὲ **δῆλον ἦν ὅτι** ἐνὶ τῶν τριῶν τὸ ὄστρακον ἐποίσουσι, συνήγαγε τὰς στάσεις εἰς ταύτῳ ὁ Ἀλκιβιάδης, καὶ διαλεχθεὶς πρὸς τὸν Νικίαν κατὰ τοῦ Ὑπερβόλου τὴν ὄστρακοφορίαν ἔτρεψεν.

‘When **it was clear that** the ostracism would fall on one of three men—Phaeax, Alcibiades, or Nicias—Alcibiades had a conference with Nicias, united their two parties into one and turned the vote of ostracism upon Hyperbolus.’ (Plut. Alc. 13.7)
→ It was evident to Alcibiades and others that *q*

(33) [Context: Philip V of Macedon is advised to sail to Messenia to help his allies there. He could easily do this but for the duration of the etesian winds sailing back again would not be possible.] ἐξ οὗ **δῆλον ἦν ὥς** ὁ μὲν Φίλιππος ἐν τῇ Μεσσηνίᾳ μετὰ τῆς δυνάμεως συγκλεισθεὶς ἀναγκασθήσεται τὸ λοιπὸν μέρος τοῦ θέρους ἄπρακτος μένειν ...

‘From which **it was clear that** Philip and the army would be restricted to Messenia and forced to stay there for the rest of the summer without getting anything done.’ (translation Robin Waterfield) (Plb. 5.5.7)
→ it was evident to Philip and his generals that *q*

The property of ‘PRAES.δῆλον(*q*)’ to trigger the generalized implicature that δῆλον applies to the speaker and the addressee is important for the conventionalization of δῆλον ὅτι. In almost every utterance, the speaker and the addressee are represented as the participants at the interpersonal level of the clause. This means that the participants at the interpersonal level of the utterance overlap with the reference of the generalized implicature triggered by δῆλον. For this reason, the governing clause of ‘be δῆλον(*q*)’ may be reanalyzed in such a way that the representational meaning ‘it is clear to you and me’ becomes a modifier that, at least partially, functions at the interpersonal level of the utterance:

(34) ‘it is clear [$\Rightarrow$ to you and me] that *q*’ > ‘it is clear:INTERSUBJ(*q*)’

The notation in (34) captures the fact that the cognizer, implied (‘ $\Rightarrow$ ’) on the left-hand side of the scheme, may be reanalyzed as a discursively secondary component of the meaning of the construction. The difference between the generalized implicature (‘ $\Rightarrow$ ’) and the component INTERSUBJ is that the latter cannot be canceled nor modified by the speaker. Since the original construction has a lexical meaning the slot for the cognizer in ‘be δῆλον(*q*)’ may be specified by the speaker:

(35) **δῆλον** γάρ **ἐστι** τοῖς Ὀλυνθίοις **ὅτι** νῦν οὐ περὶ δόξης οὐδ’ ὑπὲρ μέρους χώρας πολεμοῦσιν, ἀλλ’ ἀναστάσεως καὶ ἀνδραποδισμοῦ τῆς πατρίδος.

‘**It is clear to the Olynthians that** they are now fighting not for glory, not for a strip of territory, but to avert the overthrow and enslavement of their fatherland.’ (Dem. 1.5)
= (5)

The default inclusion of the speaker and the addressee in absence of the optional argument is mirrored by the time reference of ‘be δῆλον(*q*)’. If a tensed verb is omitted in the matrix clause, the construction refers to the utterance time:

(36) δῆλον γὰρ ὅτι τοιαῦτα τοὺς συνόντας παιδεύομεν, οἷά περ αὐτοὶ τυγχάνομεν ἐπιτηδεύοντες.

‘For **it is evident** that the principles which we instill into our students are such as we practice in our own lives.’ (Isoc. 15.239)

Time may be modified by the speaker, just like the cognizer:

(37) δῆλον γὰρ που ὑμῖν γέγον’ ὥς πεφενάκιεν ὑμᾶς.

‘For **it has**, I suppose, **become clear that** he has cheated you.’ (Dem. 23.162) = (24)

The potential reanalysis of the generalized implicature pertaining to time is structurally similar to the one described above. The representational meaning ‘it is clear (now)’ becomes functionally anchored to the utterance time. The scheme from (34) may be modified to capture this shift:

(38) ‘it [$\Rightarrow$ is] clear [$\Rightarrow$ to you and me] that *q*’ > ADV’clearly’:INTERSUBJ(*q*)¹⁰¹

The most complex part of the meaning of ‘be δῆλον(*q*)’ is the contribution of the adjective δῆλον and its interaction with the component of source. As discussed above, the epistemic value of δῆλον is intersubjective. Even though *q* in (36) is such that the speaker, a teacher of rhetoric, has personal knowledge about it, the whole sentence must mean that *q* is obvious to both the speaker *and* the addressee.

The value of δῆλον, therefore, entails that *q* is obvious to the cognizer(s). Obviousness of *q*, however, is not interchangeable with epistemic commitment to *q*. We may reasonably assume that δῆλον is semantically similar to the English adjectives *clear*, *obvious*, or *evident*. Predicative constructions with these adjectives leave space for some asymmetry with respect to the epistemic commitment of the speaker and the addressee. They entail that the speaker is committed to *q*, while the addressee need not be. This is in contrast with the predicate *know*:

(39) a. It is obvious that Peter left her, ?but I don’t believe it.

¹⁰¹ Note that the reanalysis scenario in (38) glosses over the change of *q* from a subordinate clause to an independent clause.

- b. It is obvious that Peter left her, but you don't believe it.
- c. We both know that Peter left her, ?but you don't believe it.

The epistemic meaning of *δηλον*, therefore, likely entails that the addressee is justified to believe *q*, if they apply the same criteria and follow the same reasoning as the speaker, who already believes *q*. At the same time, the grounds on which *q* may be accepted must be intersubjectively accessible. Note, however, that the meaning of 'be *δηλον*(*q*)' cannot be paraphrased by 'there is evidence that *q*.' The latter does not entail the commitment to *q* on the part of the speaker and the invitation to the addressee to accept *q*. Moreover, this paraphrasis is not suitable because it cannot be felicitously combined with the optional argument expressing the source:

(40) ?[From the available evidence] there is evidence that *q*.

Therefore, a more suitable paraphrasis, which is compatible with the optional argument, contains one of the adjectives mentioned above:

(41) [From the available evidence] it is clear/obvious/evident that *q*.

The crucial question is whether the contribution of *δηλον* can be reduced to a combination of inferential reasoning and epistemic commitment as in the following paraphrasis:

(42) [From the available evidence] you and I may infer that *q*, which I believe to be true, and you should too.

The use of 'be *δηλον*(*q*)' in the research corpus suggests that such a paraphrasis does not do justice to the meaning of the construction. The speaker may use 'be *δηλον*(*q*)' to signal to the addressee that they may cognitively perceive that *q* holds. This perception is not always reducible to the outcome of inferential reasoning. Consider the following example:

(43) **ὅτι** τοίνυν ὅλως οὐδὲ τὴν εἴσπραξιν αὐτὴν ὑπὲρ ὑμῶν πεποιήται, καὶ τοῦτ' αὐτίκα δὴ μάλ' ὑμῖν **δηλον ποιήσω**.

'However, I **will make it** quite **clear** to you **that** he did not carry out these exactions for your benefit at all.' (Dem. 22.65)

The matrix clause does not entail nor imply that the addressee will be able to infer *q*. The meaning is simply that the audience will be able to see that *q* is true, while the source of information is left out of the picture. Therefore, the coded meaning of 'be *δηλον*(*q*)' is best captured by (41) above, which entails the speaker's commitment to *q*, an invitation to the

addressee to share in the speaker's belief, and also the fact that there is intersubjectively accessible justification for q .

The relation between (41) and (42) with respect to 'be $\delta\eta\lambda\omicron\nu(q)$ ' is that the coded meaning in (41) may invite a conversational implicature that involves inference:

(44) It is clear/obvious/evident that q .

→ It is clear/obvious/evident that q , as you and I may infer.

The following example will serve as an illustration:

(45) [Context: The speaker's opponents put his former slave to death so that he could not testify in the speaker's favor] $\delta\eta\lambda\omicron\nu$ οὖν ὅτι οὐ τοῦ σώματος αὐτοῦ χρεία ἦν αὐτοῖς, ἀλλὰ τῶν λόγων.

'It is clear that it was not his person, but his evidence, which they required.' (Antipho 5.35)

The speaker infers what motivated his opponents to kill the slave and marks his conclusion as obvious. The inference is based on the speaker's knowledge about what happened in combination with some general knowledge about the world. He assumes that there is some common ground between him and the audience, so that they can perceive that q is true. Note that the example does not contain the optional argument for the source. In this case, the inference follows from the common ground that has been established in the course of the speech and also from shared general knowledge. The evidential value that matches this arrangement is assumption. It is worth noting that the construction does not exclude visual or generally firsthand evidence as a basis for the inference. An example from Aristophanes may be adduced here. The directly perceived behavior of the informer brings Cario to the conclusion that he is eager for money:

(46) Καρίων· ὡς σοβαρὸς ὦ Δάματερ εἰσελήλυθεν | ὁ συκοφάντης. $\delta\eta\lambda\omicron\nu$ ὅτι βουλιμιᾷ.
'{Cario} By Demeter! What an impudent informer has joined us! It is clear he's starving.' (Ar. Plu. 872–873)

The implicature of inferential reasoning becomes a part of the entailment of 'be $\delta\eta\lambda\omicron\nu(q)$ ' if the optional argument for the source is included. This is because the speaker explicitly states that the evaluation expressed by $\delta\eta\lambda\omicron\nu$ is supported by specific evidence:

(47) οὐ τοίνυν ἐκ τούτων $\delta\eta\lambda\omicron\nu$ ἐστὶ μόνον ὅτι ἦν ἡμῶν ἡ μήτηρ θυγάτηρ γνησία Κίρωνος, ἀλλὰ καὶ ἐξ ὧν ὁ πατήρ ἡμῶν ἔπραξε καὶ ἐξ ὧν αἱ γυναῖκες αἱ τῶν δημοτῶν περὶ αὐτῆς ἐγίγνωσκον.

‘But it is not only from these proofs that **it is clear that** our mother was the legitimate daughter of Ciron, but there is also the evidence of our father's conduct and the attitude adopted by the wives of his fellow-demesmen towards her.’ (Is. 8.18)

Note that the source itself does not constitute the information source in the linguistic sense of the word. The evidential component in the meaning of the construction arises in the interplay between the source, the evaluation expressed by *δηλον*, and the cognitive process that leads from the former to the latter. This fact may be schematically captured as follows:

Source	Cognitive process	Evaluation	Complement
NP, PRO, ADV	$\leadsto$	<i>δηλον</i>	<i>q</i>
Inference			
[Common Ground]	$\leadsto$	<i>δηλον</i>	<i>q</i>
[Implied Inference]			

Figure 7 The role of inference in ‘be *δηλον*(*q*)’

Since the adverbial *δηλον* ὅτι is not the outcome of the reanalysis of those ‘be *δηλον*(*q*)’ sentences that include the source, the bottom half of the table is more important for the conventionalization of the functional modifier. Therefore, the conversational implicature of inferential reasoning may be included in the scheme that describes the potential reanalysis of the predicative construction:

- (48) ‘It [$\Rightarrow$ is] [$\rightarrow$ inferable and therefore] clear [$\Rightarrow$ to you and me] that *q*’ > ADV:EPIST
:(INFR):INTERSUBJ(*q*)

The right-hand side of (48) is what we may expect to be the meaning of the conventionalized adverbial *δηλον* ὅτι. The actual analysis will be carried out in Section 5.5.5. For now, ADV:EPIST:(INFR):INTERSUBJ(*q*) represents a working hypothesis that raises several interesting questions. First, what is the role of inferential reasoning in the use of *δηλον* ὅτι? Is the component INFR an implicature, as in the original construction, or is it an entailment? Second, is the epistemic meaning of the adjective *δηλον* and the component INTERSUBJ retained in the entailment of the adverbial *δηλον* ὅτι? A conceivable, though perhaps less likely, development would be the cancelation of subjective epistemic commitment coupled with semanticization of the evidential component, i.e. ADV:INFR:INTERSUBJ(*q*), or the loss of both the intersubjective nuance and speaker commitment accompanied by a strengthening of the evidential meaning, i.e. ADV:INFR(*q*). These options are summarized in the following table:

‘be <i>δηλον</i> (<i>q</i>)’	<i>δηλον</i> ὅτι
‘It [$\Rightarrow$ is] [$\rightarrow$ inferable and] clear [$\Rightarrow$ to you and me] that <i>q</i> ’	ADV:EPIST:(INFR):INTERSUBJ(<i>q</i>)

	ADV:INFR:INTERSUBJ(<i>q</i>)
	ADV:INFR(<i>q</i>)

Table 17 Possible meanings of the adverbial *δῆλον ὅτι*

5.4.5. Summary

The investigation presented in Section 5.4 predictably confirms that some sentences with *δῆλον* and a complementizer represent complex clauses whose structure is ‘be *δῆλον(q)*’. The key properties that characterize the predicative construction are the following:

- ‘be *δῆλον*’ or the argument expressing the source may be targeted by interrogation;
- ‘be *δῆλον*’ behaves like a verb with respect to the information structure of the utterance; it may constitute the first part in a Broad Focus construction;
- the core predication ‘be *δῆλον*’ may be separated from the complementizer;
- the speaker may modify the time reference of ‘be *δῆλον*’;
- the speaker may specify the cognizer who perceives that a proposition is *δῆλον*;
- the speaker may specify the source that justifies the evaluation expressed by *δῆλον*.

Several characteristics of ‘be *δῆλον(q)*’ in specific structural contexts increase the potential for a reanalysis of the governing clause into a functional modifier. The relevant features are as follows:

- the main clause may minimally consist of the adjective *δῆλον*, while the copula may be omitted;
- in a Broad Focus construction, the sequence *δῆλον ὅτι q* may appear without any optional arguments;
- in a Broad Focus construction, ‘be *δῆλον*’ may be easily interpreted as discursively secondary;
- if a tensed verb is omitted, ‘be *δῆλον(q)*’ invites the generalized implicature that it applies to the utterance time;
- if the cognizer is omitted, ‘be *δῆλον(q)*’ invites the generalized implicature that it applies to the speaker and the addressee;
- ‘be *δῆλον(q)*’ may invite the implicature that *q* is inferable from what is already known or from direct perception.

The first three features, which relate to both the form and the discursive status, constitute general preconditions for conventionalization. Regarding the form, the properties of ‘be *δῆλον(q)*’ happen to be such that the matrix clause may exhibit only few features of prototypical independent clauses in classical Greek. A finite verb is not obligatory, and the minimal morphophonemic representation of the clause is the word *δῆλον*. Since the remaining material in the sentence usually constitutes a full clause, it is easy to see how the sequence

δῆλον ὅτι could be reanalyzed into a fixed adverbial expression instead of a predicative adjective with a complementizer. Regarding the discursive status, the third bullet point captures a feature that may lead to the effacement of the lexical status of the expression. The discursively secondary status of ‘be δῆλον’ is contextually conditioned by the information structure of the utterance. In suitable contexts, the secondary discursive status could be analyzed as a permanent feature of δῆλον ὅτι. Besides the favorable pragmatic properties of some contexts with ‘be δῆλον(*q*)’, the expression was susceptible to conventionalization also because of its semantics.

The meaning of ‘be δῆλον’ participates at some semantic values that belong to the functional domains of subjective epistemic modality and information source, namely speaker commitment and inference. Given the meaning of δῆλον and the pragmatic properties of ‘be δῆλον(*q*)’, the expression δῆλον ὅτι could be reanalyzed as a functional modifier. The remaining three bullet points specify what could be the meaning of the adverbial δῆλον ὅτι. The prediction is that the adverbial expression refers to the utterance time and reflects the stance of both the speaker and the addressee. These features are expected to be more salient than the component of inferential reasoning. The former stem from the generalized implicatures that are triggered by the original ‘be δῆλον(*q*)’, whereas the latter is a more restricted conversational implicature invited by the construction.

With these conclusions in mind, we may turn to the analysis of the contexts that potentially involve the conventionalized adverbial expression δῆλον ὅτι.

5.5. The adverbial δῆλον ὅτι

5.5.1. Introduction

The aim of this section is twofold. First, we need to determine in which contexts the sequence δῆλον ὅτι represents an adverbial expression as opposed to the adjective δῆλον with a subordinator. One of the assumptions of the analysis is that the predicative and the adverbial δῆλον (ὅτι) represent two distinct categories that consist of sets of individual occurrences. Each set corresponds to a structural context that is characterized by the degree of discourse prominence allotted to δῆλον (ὅτι). The sequence δῆλον ὅτι is an adverbial in those structural contexts in which its discourse prominence is conventionally low and cannot be increased by the speaker. Since discourse prominence is a continuous variable, we may construct a continuum in which individual structural contexts are placed in sequence according to the gradually decreasing discourse prominence of δῆλον (ὅτι). At the same time, it is important to stress that this continuum should not suggest that the relationship between predicative adjectives and sentence adverbials that stem from them is marked by gradience.¹⁰² In other

¹⁰² I follow Boye (2023b) who argues against the lexical-grammatical continuum. According to Boye (2023b: 6), grammatical elements are by convention discursively secondary, and do not have the potential for primary status. While I am hesitant to call wide-scope adverbials ‘grammatical’ (see footnote 77 and Section 1.7), I agree that there is a split between predicative adjectives and wide-scope adverbials that diachronically emerge from them.

$$\begin{array}{ccccc} \text{structural context}_1 & - & \text{structural context}_2 & - & \text{structural context}_3 & - & \text{structural context}_n \\ \text{predicative} & & & & & & \text{adverbial} \end{array} \rightarrow$$

The second aim is to analyze the semantics of $\delta\eta\lambda\omicron\nu\ \delta\tau\iota$ in those contexts in which the sequence represents an adverbial expression. The semantic analysis ought to take into account the meaning of the predicative construction and identify any possible semantic changes that set apart the adverbial from the source expression.

The structure of this section is as follows. In Section 5.5.2, I discuss the practice of distinguishing δῆλον ὅτι and δηλονότι in modern editions and try to identify the criteria that are applied to this end in editorial practice. Section 5.5.3 focuses on the distributional properties of δῆλον ὅτι and its scope. Building on the observations from this section, Section

195

5.5.4 homes in on the pragmatic properties of the sequence in different structural contexts. The aim of the section is to identify the contexts in which *δῆλον ὅτι* is discursively secondary and therefore analyzable as a sentence adverbial. The semantics of the expression in different structural contexts are analyzed in Section 5.5.5. The main goal of this section is to determine what is the entailment of the adverbial and whether it differs from the meaning of the original predicative expression.

5.5.2. Distinguishing *δῆλον ὅτι* and *δηλονότι* in modern editions

Before analyzing the occurrences in the research corpus, a few observations about distinguishing *δῆλον ὅτι* and *δηλονότι* in modern editions are in place. Editors prefer to print *δηλονότι* in contexts that are apparently poorly compatible with a predicative reading of *δῆλον*. The most important criterion is the scope of the expression. If it does not have a clause with a finite verb within its scope, editors prefer to print *δηλονότι*. Furthermore, if the expression has a full clause within its scope but appears at its right edge, the unverbated form is occasionally printed. The form *δῆλον ὅτι* is preferred if it has a full clause within its scope and appears at its beginning or in the middle.

Regarding each occurrence, the ambiguity as to whether the string ΔΗΛΟΝΟΤΙ in the manuscript tradition stands for *δῆλον ὅτι* or *δηλονότι* was faced by medieval scribes,¹⁰⁵ and modern editors alike. To my knowledge, there are no comments by Hellenistic grammarians about the different status of *δῆλον ὅτι* and *δηλονότι* in classical works. Thus, medieval and modern scholars had to rely on some implicit or explicit criteria that guided their scribal and editorial practice. Regarding the texts quoted in this study, the final decision naturally lies with the modern editor. Interestingly, variant readings of *δηλονότι* and *δῆλον ὅτι* do not appear in critical apparatus.

The position taken here is that the conventions employed in modern editions cannot serve as a guide in the analysis of the conventionalization of *δῆλον ὅτι*. As has been stated in footnote 80, *δῆλον ὅτι*, written as two separate words, is used in this chapter to capture both the predicative usage and the adverbial. The adverbial status of the expression does not depend on its potential unverbation. When I write *δηλονότι*, I refer precisely to the fact that the expression is a unverbated adverb. The writing convention adopted here means that I write *δῆλον ὅτι* also to refer to the occurrences that modern editors render as *δηλονότι*.

5.5.3. Scope and distributional properties

The scope of *δῆλον ὅτι* varies. The expression within the scope of *δῆλον ὅτι* may involve a full clause or a sub-clausal constituent. The morphosyntactic constituents that *δῆλον ὅτι* may apply to are participial phrases, nominal phrases, adjective phrases and prepositional phrases.

¹⁰⁵ Accents were consistently written on manuscripts since the 9th cent. CE, when minuscule writing became prevalent (Probert 2006: 48–50).

With respect to the material within its scope, *δῆλον ὅτι* can be placed at its left or right edge, or it can be located in the middle.

The expression does not appear at the absolute beginning of the sentence in the research corpus but this arrangement is very sparsely attested elsewhere (see, for example, (46) above).¹⁰⁶ The few occurrences have in common that there is no postpositive particle following *δῆλον ὅτι* so that these sentences may be analyzed as asyndetic. Regarding connective particles, we have seen in Section 5.4.3.4 that postpositive particles may be inserted between *δῆλον* and the subordinator in sequences like *δῆλον γάρ ὅτι* or *δῆλον τοίνυν ὅτι*. Furthermore, a search in TLG reveals that the pattern *δῆλον ὅτι* / *δηλονότι* followed by a postpositive particle (e.g. *δέ, οὖν, τοίνυν*) is virtually non-existent.¹⁰⁷ From this follows that *δηλονότι* as a single prosodic word does not occur at the beginning of the sentence in classical Greek. Since wide-scope adverbs like *τάχα* or *ἴσως* are not barred from the sentence-initial position, we may conclude that the positional restriction specifically applies to the unverbated form *δηλονότι*. Now, since the predicative *δῆλον* [PTCL] *ὅτι* may appear at the beginning of the sentence but *δηλονότι* cannot, we may tentatively assume that the unverbated form originated in the contexts of use in which the adverb could not occur sentence-initially. These contexts were most likely associated with a distinct function of the adverb. This analysis is further developed in Section 5.5.5.2.

If the sequence *δῆλον ὅτι* has a clause within its scope and stands at its left edge, some material almost always precedes it. The preceding element is either a connective expression or a sentence-initial subordinate clause. The former group involves connective particles like *καί* ‘also’, *ἀλλά* ‘but’, and *καίτοι* ‘although, and yet’. Furthermore, questions with *δῆλον ὅτι* may be introduced by the interrogative particle *ἄρα* or *ἤ* ‘or’. These connective expressions have in common that they are not postpositive:

(49) *καίτοι δῆλον ὅτι*, εἰ τῶν αὐτῶν ἐπεθυμοῦμεν, οὐκ ἂν τοιαύτην γνώμην εἶχον περὶ ἐμοῦ.

‘But **it is obvious** that if [I and other youths] were at one in our desires they would not regard me with such feelings [of enmity].’ (Lys. 16.11)

(50) [When he declared that the dowry was eighty minae, if one had granted that he should recover that sum on condition of his swearing that this statement of his was true, what would he have done?] *ἢ δῆλον ὅτι* ὥμοσεν;

‘Or rather **is it clear** that he would have taken the oath?’ (Dem. 31.9)

Regarding the sentence-initial subordinate clauses, most of the contexts in the research corpus involve a conditional protasis. The remaining contexts exhibit a preposed relative clause:

¹⁰⁶ Another example from the classical period is Xen. An. 3.2.34.

¹⁰⁷ The only occurrence from before the Byzantine period stems from Proclus, who lived in the 5th cent. CE (Procl. in Ti. 1.114.23: *ψυχὴ μὲν οὖν κινήσεως αἰτία [...]*· *δηλονότι δὲ νοῦς τῶν ἀκινήτων*).

(51) [It is said that even the gods are ruled by Zeus as king.] περὶ ὧν εἰ μὲν ἀληθὴς ὁ λόγος ἐστί, **δῆλον ὅτι** κάκεῖνοι ταύτην τὴν κατάστασιν προκρίνουσιν ...
 ‘If the saying is true, **it is clear** that the gods also prefer this regime.’ (Isoc. 3.26)

(52) καὶ ὁπότερος τούτων δικαιότερα λέγειν δόξει καὶ κατὰ τοὺς νόμους μᾶλλον, **δῆλον ὅτι** τούτῳ ὑμεῖς οἱ δικασταὶ προσθήσεσθε.
 ‘And whichever of these two shall in your judgement speak most in harmony with justice and the laws, to him, **it is plain**, you jurymen will give your votes.’ ([Dem.] 43.35)

The expression δῆλον ὅτι may also break the clause within its scope into two discontinuous parts and stand between them. This arrangement is conditioned by the information structure of the utterance (see Section 5.5.4.3). It is noteworthy that the selection of the focus or the topic targets the constituents that belong to the clause within the scope of δῆλον ὅτι. Similar behavior is observable in the case of the clause-final placement of the expression. Recall that in the case of unambiguous bi-clausal ‘be δῆλον(*q*)’, *q* is not segmented into two parts and δῆλον is not backgrounded in the information structure of the utterance.

(53) εἰ δ’ ἐν τῇ θαλάττῃ κίνδυνός τις ἦν, εἰς τὴν γῆν **δῆλον ὅτι** ὥχετ’ ἄν.
 ‘But if there had been any risk at sea, he would **certainly** have hastened to land.’
 (Dem. 21.165)

(54) [Aeschines displayed no regret over the defeat at Chaeronea] ἀλλ’ ἐπάρας τὴν φωνὴν καὶ γεγηθὼς καὶ λαρυγγίζων ὥετο μὲν ἐμοῦ κατηγορεῖν **δηλονότι**, δεῖγμα δ’ ἐξέφερεν καθ’ ἑαυτοῦ ὅτι τοῖς γεγεννημένοις ἀνιαιοῖς οὐδὲν ὁμοίως ἔσχε τοῖς ἄλλοις
 ‘He vociferated, he exulted, he strained his throat, for he **evidently** supposed himself to be testifying against me, but he was really offering proof against himself that in all those distressing events he had had no feeling in common with other citizens.’ (Dem. 18.291)

The expression may also have a sub-clausal constituent within its scope. This arrangement may be found in the sequences that contain an alternative or specifying question followed by an answer:

(55) πότερόν σε τις, Αἰσχίνη, τῆς πόλεως ἐχθρόν ἢ ἐμὸν εἶναι φῆ; ἐμὸν **δῆλον ὅτι**
 ‘Should anyone call you the enemy of Athens, Aeschines, or my enemy? Mine, **of course**.’ (Dem. 18.124)

Outside the question-answer sequences, we observe a caesura between the marked constituent and the clause on the syntactic and pragmatic levels. Nominal or prepositional phrases marked by *δήλον ὅτι* stand in apposition to an argument or adjunct of the finite verb, or, alternatively, supply a syntactically optional constituent that further specifies the state-of-affairs described by the clause. In (56), the inserted remark specifies who were the supposed sons of Archiades. The prepositional phrase in (57) supplies an optional argument of *διελέγοντο* ‘they talked among themselves’.

(56) νῦν δὲ γνησίους υἱοὺς γέγραφεν τῷ Ἀρχιάδῃ ἐκείνῳ εἶναι, τὸν τε αὐτοῦ πατέρα **δήλον ὅτι** καὶ τὸν κατὰ τὴν ἐξ ἀρχῆς ποίησιν, οὐκ ἐπιλογισάμενος ὅτι ἐπανεληλυθότες ἦσαν.

‘He has written that Archiades had lawfully born sons, meaning, **of course**, his own father and the one made such by the original adoption, not taking cognizance of the fact that they had returned to their original family.’ ([Dem.] 44.54)

(57) ἀπάντων δὲ τούτων ἐπιτετελεσμένων οἱ μὲν ἄλλοι διελέγοντο πρὸς σφᾶς αὐτούς, **δήλον ὅτι** περὶ τῶν ἀναγνωσθέντων.

‘But when all this demonstration had come to an end, the others present began to talk among themselves, **clearly** about the discourse which had been read.’ (Isoc. 12.234)

Participial phrases within the scope of *δήλον ὅτι* describe properties that are ascribed to a person or entity referred to by the main predication in the sentence. In contexts like this, using a wide-scope *δήλον ὅτι* would slightly change the meaning of the sentence:

(58) καὶ τούτοις οὐκ ἐπεσκήψατο, **δήλον ὅτι** τάληθῇ μεμαρτυρηκότας εἰδώς.

‘Against these men he has lodged no charges, **clearly** because he knew that their testimony was true.’ (Dem. 29.33)

Regarding pragmatics, sub-clausal constituents marked by *δήλον ὅτι* represent an aside or an afterthought. A right dislocated element with these pragmatic properties is referred to as Tail in the literature on information structure.¹⁰⁸

The presented analysis of the distributional properties of *δήλον ὅτι* suggest that the sequence has different pragmatic properties than ‘be *δήλον(q)*’ at least in some contexts of use. Furthermore, exclusion of the unverbated *δηλονότι* from the left edge of the sentence may be an indication that the unverbated form functionally differs from the original

¹⁰⁸ Tails in Ancient Greek dramatic poetry and prose are discussed by Dik (2007: 35) and Allan (2014: 185, 202–204). These scholars focus on Tails that involve nominal phrases, which specify zero or pronominal topics. From the perspective of FDG, nominal Tails represents referential subacts (see Section 1.5). However, example (58) suggests that ascriptive subacts may also function as Tails, see Section 5.5.5.2 below.

expression. The following section focuses on the pragmatics of *δῆλον ὅτι*. The semantic properties of the expression are treated in Section 5.5.5.

5.5.4. The adverbial *δῆλον ὅτι* and the interpersonal level

5.5.4.1. Introduction

The aim of this section is to determine in what way the fixed adverbial expression *δῆλον ὅτι* behaves differently than the predicative *δῆλον* in the pragmatic domain. By analyzing the properties of the sequence *δῆλον ὅτι* in questions, its behavior with respect to the information structure, and its interaction with discourse markers we should be able to clarify in what structural contexts *δῆλον ὅτι* functions like an adverbial rather than a matrix clause with a subordinator. The main variable that will serve as an indicator of the adverbial status of the studied expression is low discourse prominence. At the same time, it should not be expected that a clear boundary between the predicative and the adverbial use may be identified. While it is probable that some distributional contexts clearly favor one or the other interpretation, exploring the gray zone consisting of ambiguous contexts may help explain the factors that contributed to the conventionalization of the adverbial *δῆλον ὅτι*.

The structure of the section mirrors that of Section 5.4.3, which offers a discussion about the pragmatic properties of ‘be *δῆλον(q)*’. The reader is referred to that section for general comments that pertain to the concepts and analytical tools employed here. The following sections successively treat the illocutionary properties of *δῆλον ὅτι*, how it interacts with the selection of topic and focus, and how it combines with discourse markers.

5.5.4.2. Illocution

We have seen in Section 5.4.3.2 that in the questions with ‘be *δῆλον(q)*’, interrogation targets the predication ‘be *δῆλον*’ or an argument of the predication, usually the source. In other words, predicative *δῆλον* does not project out of questions. From the speaker’s point of view, projection in polar interrogative sentences means that besides enquiring about the core proposition embedded in the question, the speaker also contributes a piece of information that is not at issue in the unfolding communication. The proposition that is not at issue is said to project because it is not within the scope of the interrogative operator.¹⁰⁹ Consider the following example:

- (59) a. Have you **perhaps** misunderstood the question?
b. ??Is it possible that you have misunderstood the question?
c. Projection: You have **perhaps** misunderstood the question.
(Bellert 1977: 344)

The most natural interpretation of (59)a is not (59)b, because the speaker is not asking the addressee whether it is possible that they have misunderstood the question. Instead, the

¹⁰⁹ See Müller (2022: 175–181) for a discussion on projection in the case of wide-scope adverbs in German.

question exclusively targets the embedded proposition ‘you have misunderstood the question’. By adding *perhaps*, the speaker signals that they assess the embedded proposition as possible. This is captured by (59)c, which is a projection of (59)a. One of the differences between sentence adverbials like *perhaps* and the governing clause in ‘be δῆλον(*q*)’ is that *perhaps* is discursively secondary while ‘be δῆλον’ is potentially discursively primary. Given this, a question arises whether the sequence δῆλον ὅτι may also behave like *perhaps* in some interrogative contexts and be outside the scope of interrogation. If this is the case, the form ought to be analyzed as an adverbial in such contexts.¹¹⁰

The analysis is complicated by the fact that the most likely meaning of a sentence adverbial stemming from the string δῆλον ὅτι is ‘clearly’. If the adverbial retains the epistemic meaning of the predicative ‘be δῆλον’, which involves positive commitment on the speaker’s part, its occurrence in questions would be pragmatically peculiar. Note that *perhaps* in (59) does not entail positive commitment. Even if (59)c projects out of (59)a, the speaker may still pose such a question because they do not know for sure, or at least pretend not to know, whether the embedded proposition is true. In the case of questions with *clearly*, the speaker would be asking whether *q* holds, while signaling that they already accept *q* as obviously true. Besides some specific pragmatic contexts where this strategy could be felicitous, the problem of epistemic commitment can be obviated if the marker does not apply to the proposition targeted by the question but something else. We will see how these observations are relevant to the distribution of δῆλον ὅτι in questions.

One group of the occurrences of δῆλον ὅτι in questions is characterized by the presence of the interrogative particle ἄρα or the connective ἢ ‘or’:

- (60) [Context: Philon’s mother gave a sum of money to Antiphanes to cover the costs of her burial, while she ignored her son.] ἄρα **δῆλον ὅτι** εὖ ᾔδει αὐτὸν οὐδὲ διὰ τὸ προσήκειν αὐτῇ τὰ δέοντα ἂν ποιήσαντα;
‘**Is it** [already] **clear that** she was convinced that he would not perform the last duties even on the ground of his relationship?’ (Lys. 31.21)

- (61) [Suppose some of these men here claimed it would be monstrous if a select few of the resident aliens were to escape the public services; how would you deal with their arguments?] ἢ **δῆλον ὅτι** φωνὴν οὐκ ἂν ἀνάσχοισθ’ ὡς συκοφαντούντων;
‘Or rather **is it clear that** you would not bear to listen to such pettifoggers?’ (Dem. 20.62)

¹¹⁰ Strictly speaking, sentence adverbs do not always project out of questions. For instance, in *wh*-questions in German, epistemic and evidential adverbs restrict the possible answer with respect to the probability or the information source of *q*, and they are therefore within the scope of interrogation (Müller 2022: 178–181). However, the sequence δῆλον ὅτι does not occur in *wh*-question in the research corpus. Polar questions with epistemic and evidential adverbs in German allow both the regular usage, i.e. within the scope of interrogation, and projecting, of which the latter contributes not-at-issue and hence discursively backgrounded information. On the use of grammatical evidentials in questions see Aikhenvald (2004: 242–249) and Müller (2022: 209–211).

There are two ways to analyze such questions. The expression $\delta\eta\lambda\omicron\nu\ \acute{o}\tau\iota$ is either the main clause within the scope of interrogation, as indicated in the translations above, or a projecting adverbial that could signal that the proposition in the question is a foregone conclusion. In the case of (60), the latter reading may be paraphrased as follows.

- (62) a. Are you now sure (**and I deem it obviously true / inferable**) that she was convinced that he would not perform the last duties even on the ground of his relationship?
- b. Is it true (**and I deem it ?obviously true / inferable**) that she was convinced that he would not perform the last duties even on the ground of his relationship?

The paraphrasis in (62)a is a meta-conversational question used to negotiate the common ground with the addressee (cf. Section 4.4.3). Note that this reading is felicitous even if the projecting adverbial entails the speaker's commitment, because the speaker is not interested in learning about the truth of q but about its acceptability from the addressee's point of view. On the other hand, the paraphrasis with a regular question in (62)b would be more acceptable if $\delta\eta\lambda\omicron\nu\ \acute{o}\tau\iota$ denoted inference exclusively. If the marker also denoted commitment to q , its use in regular questions targeting q would be paradoxical. Anticipating the discussion about the meaning of the adverbial $\delta\eta\lambda\omicron\nu\ \acute{o}\tau\iota$ from Section 5.5.5, a purely inferential meaning is not tenable. This leaves us with the meta-conversational reading with a projecting adverbial, illustrated by (62)a, and the predicative reading, which is given in the translations in (60) and (61).

Upon closer examination, there is little functional difference between the predicative and the meta-conversational reading. In the former the speaker enquires whether q is clear, which amounts to asking the addressee whether q is justified in their eyes. In the case of the latter, the speaker checks with the addressee whether q should be added to the common ground, and signals that he deems q obviously true. While both readings seem acceptable for contexts like (60) and (61), the meta-conversational interpretation is problematic. It is not clear which part of the sentence could trigger the meta-conversational reading instead of the regular one as in (62)b. Romero & Han (2004) claim that meta-conversational interpretation can arise when the question contains preposed negation, a focused element, or an adverb like *really*, none of which is present in the examples above. A possible candidate that could trigger this reading is $\delta\eta\lambda\omicron\nu\ \acute{o}\tau\iota$ itself, but the argument would be circular. Therefore, examples (60) and (61) most likely contain a predicative $\delta\eta\lambda\omicron\nu$ and not a wide-scope adverbial.

There is just one clear example in which $\delta\eta\lambda\omicron\nu\ \acute{o}\tau\iota$ is embedded in a question and projects out of it. I classify this usage as adverbial:

(63) σὺ δ' ὁ τῷ ψηφίσματι τοῦ σώματος αὐτοῦ τὴν φυλακὴν καταστήσας καὶ οὐτ' ἐκλειπομένην ἐπανορθῶν οὔτε καταλυθείσης τοὺς αἰτίους κρίνας, προῖκα **δηλονότι** τὸν καιρὸν τοῦτον τεταμίευσαι;

'It was you [i.e. Demosthenes] who decreed that a guard should be posted over the person [of Harpalus]. Yet when it relaxed its vigilance you did not try to restore it, and after it was disbanded you did not prosecute those responsible. Unpaid, **clearly**, is how you handled this situation?' (Hyp. fr. 3 col. 12)

The context is pragmatically peculiar because of the ironic tone of the question. Demosthenes's actions are such that it is not reasonable to assume he has not been bribed by Harpalus. Note that the word προῖκα 'unpaid' is the focused constituent of the question, but the evaluation is incongruous given the participial phrases that precede it. I propose that the speaker uses δῆλον ὅτι to highlight the incongruity by ironically suggesting, by means of a projecting adverbial, that it obviously follows that Demosthenes helped Harpalus for free. There are no examples with a projecting δῆλον ὅτι in less marked pragmatic contexts. If this usage was after all acceptable, one can imagine that such questions could be used to seek a confirmation for a proposition the speaker finds very plausible given the available evidence. However, the lack of non-ironic questions similar to (63) suggests that this strategy was uncommon.

The epistemic paradox is avoided in the questions in which the adverbial δῆλον ὅτι has scope over a constituent that is itself not within the scope of interrogation. This is possible if the adverbial applies to an extra-clausal constituent. Such constituents may be analyzed from the perspective of information structure. Allan (2014) identifies left-dislocated resumed topics, or Themes, preposed adverbial clauses, or Settings, and right-dislocated clarifications of given topics, or Tails. There are two questions in the research corpus in which δῆλον ὅτι has a right-dislocated constituent within its scope:

(64) πότῃ σου προσήκειν συνοικεῖν ἐκδεδομένην Χαρίππῳ, ἐνὶ τῶν πολιτῶν, ἣ ἀνέκδοτον ἔνδον καταγηράσκειν, ἣ εὐθύς ἐξεδόθη τάλαντον ἀργυρίου προσθέντος αὐτῇ Εὐφήμου, **δηλονότι** οὐ διὰ πονηρίαν, ἀλλὰ δι' ἐπιείκειαν;

'Did you think that she was right to live with Charippus, an Athenian citizen who was her husband, or was she supposed to grow old unmarried in her home, she who was married at once, as soon as Euphemus supplied a talent of silver as a dowry, **obviously** with no ulterior motive but simply out of kindness?' (Hyp. 1.13)

(65) εἰ γὰρ ἔθηκα μὲν τὴν ἱκετηρίαν, ὑπήκουσα δὲ μή, ἄλλο τι ἢ αὐτὸς μὲν αὐτὸν ἀπώλλουον τιθεὶς τὴν ἱκετηρίαν, ἐσφζόμενην δὲ τῇ τύχῃ διὰ τὸ μὴ ὑπακοῦσαι, **δῆλον ὅτι** διὰ τὴν θεῶν;

‘If I laid the bough there, and then failed to answer [the herald], was it not I who was bringing about my doom by putting down the bough, and was I not saved by good fortune as I kept silent, **obviously** inspired by the Two Goddesses?’ (And. 1.114)

The two constituents marked by $\delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota$ further specify the states-of-affairs described by non-finite verbal forms. In both cases, the state-of-affairs that is being complemented is part of the presupposed content of the sentence, and it is therefore not targeted by interrogation. The exact classification of the dislocated elements is not straightforward. The right-dislocated Tail is usually a specification of the given topic (Allan 2014; see also footnote 108). Now, the constituents in (64) and (65) do not fulfill this narrow definition because they supply a different kind of information, but they are nevertheless quite similar to the prototypical Tail since they represent afterthoughts. The communicated content may be marked as obvious because the question concerns a different piece of information.

We may conclude that the adverbial $\delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota$ may appear in questions and that it may project out of them. This arrangement, however, is rare, which is most likely due to the semantics of $\delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota$. The only unambiguous example in the corpus is marked by irony and it is unclear whether the adverbial may appear in more pragmatically neutral questions. The adverbial is also admissible in questions if it modifies an extra-clausal constituent. In this case, we are not dealing with projection because the extra-clausal constituent itself is outside the scope of interrogation. This ensures that the assumed epistemic meaning of the adverbial does not clash with the interrogative illocutionary force of the question.

5.5.4.3. Information structure

The aim of this section is to analyze the declarative sentences in which $\delta\eta\lambda\omicron\nu$ possibly does not function as a matrix clause but is part of a fixed expression $\delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota$. In Section 5.4.3.3 we saw that in the predicative construction ‘be $\delta\eta\lambda\omicron\nu(q)$ ’, the governing clause behaves like a verb from the perspective of information structure. In accordance with the status of the governing predication, its arguments, including the whole complement, may be focalized. Sentences exhibiting a Broad Focus construction were identified as a possible locus of the reanalysis of the matrix clause into a wide-scope adverbial. An expected consequence of this change is that the former subordinate clause exhibits some properties of independent clauses while $\delta\eta\lambda\omicron\nu$ loses the status of the main clause. The following analysis indicates that even though it may be sometimes difficult to ascertain the status of $\delta\eta\lambda\omicron\nu$, the information structure of the utterance often provides hints as to whether we are dealing with a complex sentence or an adverbial usage of an erstwhile matrix predicate.

As we have seen before, the information structure of a sentence may be inferred from the order of its constituents. A good indication that an apparent subordinate clause approximates prototypical independent clauses is when an internal constituent, as opposed to the whole clause, functions as a primary focus or topic of the sentence, while the string $\delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota$ remains discursively backgrounded. This kind of focalization and topicalization may

cause discontinuity of the clause when a medially placed *δῆλον ὅτι* separates a preposed constituent from the rest of the clause. However, not all instances of the intervening *δῆλον ὅτι* may be analyzed as adverbial. The assessment of *δῆλον ὅτι* in those cases depends on the status of the preposed constituent and whether it is extra-clausal or not.

Most of the sentences that contain the sequence *δῆλον ὅτι* and do not involve a discontinuous clause exhibit a Broad Focus. A one-size-fits-all analysis of such sentences is that they represent bi-clausal ‘be *δῆλον* (*q*)’, in which *δῆλον* occupies Broad Focus I, while its complement introduced by a subordinator constitutes Broad Focus II. This solution works best for those contexts in which the subordinate clause does not exhibit a salient focalized constituent. Since the entire subordinate clause constitutes a focused element, the order of its internal constituents is neutral.¹¹¹ A common feature of these sentences is that the verb in the subordinate clause occupies the final position. The sentence-initial position hosts a subordinate clause, usually a conditional protasis, or a connector:

(66) εἰ δὲ ἀμφισβητεῖς καὶ φῆς Φρύνιχον ἀποκτεῖναι, [*δῆλον*]_{BFoCI} [*ὅτι* μείζω τὸν δῆμον τὸν Ἀθηναίων κακὰ ποιήσας τὴν ὑπὲρ Φρυνίχου αἰτίαν πρὸς τοὺς τριάκοντα ἀπελύσω.]_{BFoCII}

‘if you dispute this, and declare that you did kill Phrynichus, **it is clear** that you must have done yet greater injuries to the Athenian people so as to redeem, in the eyes of the Thirty, the blame for Phrynichus's death.’ (Lys. 13.75)

(67) καίτοι [*δῆλον*]_{BFoCI} [*ὅτι* καὶ τόθ’ ὕδατα πολλάκις ἐγένετο.]_{BFoCII}

‘And yet it is clear that it often rained then.’ (Dem. 55.4)

The material to the right of *δῆλον ὅτι* may also approximate an independent clause with respect to its constituent order. In this case, the complement carries the communicative weight of the utterance, while *δῆλον* provides a commentary on the complement’s contents. An observable feature of this pragmatic structure is the presence of a pre-verbal Narrow Focus within the subordinate clause:

(68) [Since the children, and not my opponent himself, would have become masters of the woman’s property if she were alive,] [*δῆλον ὅτι*] [καὶ τετελευτηκυίας, ἐπεὶ παῖδας ἡμᾶς καταλέλοιπεν]_{SETTING}, οὐ τούτοις ἀλλ’ [ἡμῖν]_{NFOC} προσήκει κληρονομεῖν τῶν χρημάτων.

‘**It is obvious**, since she is dead and has left children, namely us, that we, and not our opponents, have the right to succeed to the estate.’ (Is. 8.31)

¹¹¹ What constitutes basic word order in Ancient Greek is unclear (Goldstein 2016: 17–18 with references). While complement clauses after *δῆλον* may exhibit the same word order as independent clauses, the default internal configuration of Broad Focus II may be regulated by different principles than those that are postulated by the basic model.

- (69) ὅσω γὰρ ἂν τις ἐπεικέστερον αὐτὸν ἐπιδείξη, [δῆλον ὅτι] [τοσοῦτω χεῖρον]_{NFOC}
ἀγωνιέται παρ' αὐτοῖς.
'The more honest a man shows himself to be, the more hopeless, **it is obvious**, will
he make his case in their eyes.' (Isoc. 15.154)

In contexts like this, δῆλον ὅτι exhibits some features of fixed adverbial expressions. It modifies the proposition within its scope and is discursively secondary. While an adverbial reading remains rather tenuous if the complement follows δῆλον ὅτι, it becomes more salient if the complement clause is discontinuous.

Apparent discontinuity, however, need not mean that δῆλον ὅτι is necessarily adverbial. The preposed constituent may be a left-dislocated extra-clausal topic, i.e. a Theme. Even though the dislocated constituent may seem like the subject of the verb in the subordinate clause, the domain of the subordinate clause is continuous because the Theme forms a separate intonation unit. Therefore, it is the structure of the complement that provides hints about the discursive status of δῆλον. Consider the following example:

- (70) [οἱ τοίνυν χοροὶ πάντες οἱ γινόμενοι καὶ οἱ χορηγοὶ]_{THEME} [δῆλον ὅτι] [τὰς μὲν
ἡμέρας ἐκείνας ἃς συνερχόμεθ' ἐπὶ τὸν ἀγῶνα]_{SETTING}, [κατὰ τὰς μαντείας
ταύτας]_{CONTOP} [ὑπὲρ ὑμῶν]_{NFOC} ἐστεφανώμεθα ...
'Therefore, in the case of all the choruses that are constituted together with their
chorus-masters, **it is clear** that during the days on which we meet in competition, we
wear our crowns as your representatives according to these oracles.' (Dem. 21.55)

The two co-ordinated NPs at the beginning of the sentence do not belong to the same intonation unit as the rest of the clause. The sentence rounds off the speaker's argument about the role of choruses and chorus-masters in the polity. The particle τοίνυν signals that there is a change in the hierarchical structure of the discourse between the preceding context and the conclusion the speaker may finally present to the audience. The topic of the sentence is accordingly placed at the left periphery and the rest of the sentence provides a comment on it. For this reason, the discursive status of δῆλον needs to be inferred from the structure of the complement. In this case the complement resembles an independent clause due to the order of its constituents. There is a left-dislocated Setting followed by a Contrastive Topic and, probably, a pre-verbal Narrow Focus. It follows that δῆλον ὅτι may be viewed as an adverbial-like expression in this case, but the preposed constituents do not contribute to this effect, since they are extra-clausal. At the same time, the status of δῆλον depends on the intonation of the sentence and both interpretations are possible.

It may be sometimes difficult to tell whether a topic at the left edge of the sentence is a Theme or a Contrastive/New Topic. The distinction is important because an intervening δῆλον ὅτι that separates a Contrastive Topic from the rest of the clause is more likely a fixed

expression. This is due to the fact that a Contrastive/New Topic is an intra-clausal constituent, which is syntactically connected with other constituents in the clause. Consider the following ambiguous example:

- (71) [Context: Nicocles and Pasicles have not testified the truth about a purported will]
 [ὁ γὰρ ἐπιτροπεῦσαι κατὰ διαθήκας μαρτυρῶν]_{THEME/CONTOP} [δῆλον ὅτι] [καθ’
 ὁποίας]_{NFOC} ἂν εἰδείη, καὶ [ὁ ἐπιτροπευθῆναι κατὰ διαθήκας μαρτυρῶν]_{THEME/CONTOP}
 [δῆλον ὅτι] [καθ’ ὁποίας]_{NFOC} ἂν εἰδείη.
 ‘For a person who testifies that he served as guardian under a will should **certainly**
 know what the nature of the will was, and a person who testifies that he lived as
 ward under a will should **certainly** know what the nature of the will was.’ (Dem.
 45.37)

Before uttering (71), the speaker comments on the incomplete testimonies by Nicocles and Pasicles regarding a purported will. The two men claimed to have been a guardian and a ward respectively. The topicalized constituents in the quoted sentence refer to hypothetical individuals that cannot be equated with Nicocles and Pasicles, who have given false testimony according to the speaker. Nevertheless, the referents are active in the discourse because Nicocles and Pasicles claimed the same thing as the hypothetical individuals in (71). The two constituents may be viewed as Contrastive Topics if we judge that they are closely connected with the preceding context referring to Nicocles and Pasicles. On the other hand, if we assume that there is a discursive boundary between (71) and the preceding context, we are dealing with extra-clausal Themes (i.e. ‘Now, regarding a person who testifies...’). The interpretation according to which the constituents are intra-clausal Contrastive Topics goes hand in hand with ascribing a relatively low discourse salience to δῆλον ὅτι.

Contrastive Topics, which are intra-clausal, are easier to identify if the relevant constituents are correlated by means of μέν ... δέ or involve anaphoric pronouns. In (72), the syntactic incorporation of the topics in the clause is also made apparent by the genitive case, which is governed by the phrase δίκην λαμβάνειν/διδόναι ‘receive/give satisfaction’. Note that the sentence contains a protasis εἴπερ ἀδικεῖται ‘if he is suffering any wrong’, which is probably parenthetical. Two parenthetical expressions next to each other are not likely, which suggest that the adverbial expression δῆλον ὅτι is more integrated within the sentence than a typical parenthetical clause:

- (72) [It is not proper, when one is manifestly shown to be in the wrong, for him to shift
 the charges and have recourse to accusation and calumny.] ἀλλ’ [ἐκείνων]_{CONTOP} μέν,
 εἴπερ ἀδικεῖται, [δῆλον ὅτι] δίκην λήψεται, [τούτων]_{CONTOP} δὲ δώσει.
 ‘For his [counter-charges], if he is suffering any wrong, he will **clearly** receive
 satisfaction, but for [the claims made against him], he will give it.’ (Dem. 41.13)

While topicalized constituents at the left edge of the sentence are sometimes ambiguous regarding their relation to the rest of the clause, focused constituents are clearly intra-clausal. For this reason, *δῆλον ὅτι* in a discontinuous clause with a focused constituent to its left ought to be viewed as a fixed adverbial expression:

- (73) εἰ δ' ἐν τῇ θαλάττῃ κίνδυνός τις ἦν, [εἰς τὴν γῆν]_{NFOC} [**δῆλον ὅτι**] ὥχετ' ἄν.
 'But if there had been any risk at sea, he would **onviously** have hastened to land.'
 (Dem. 21.165)

- (74) [ὁ γὰρ τὸ θεωρικὸν ἀδίκως ἀξιώσας λαμβάνειν]_{THEME} καὶ [περὶ τοῦ κλήρου]_{CONTOP} [τῇ αὐτῇ διανοίᾳ]_{NFOC} [**δῆλον ὅτι**] κέχρηται νυνί.
 'For he, who fraudulently claimed the right to receive the admission fee, has now **obviously** practised the same design regarding the inheritance.' ([Dem.] 44.38)

Another possible arrangement with an intervening adverbial *δῆλον ὅτι* is when it is preceded by a focused verb. The verb itself is Broad Focus I while the rest of the clause is Broad Focus II:

- (75) [ἀφέστατε]_{BFOCI} [**δῆλον ὅτι**] [αὐτῷ]_{BFOCII}, καὶ φανερόν πεποιήκατε ὅτι οὐδ' ἂν δεκάκις ἀποθάνῃ, οὐδὲν μᾶλλον κινήσεσθε.
 'Obviously, you have stood aside from his path and made it clear that, were he to die ten times over, you at least will make no further move.' (Dem. 8.37)

The remaining attested configurations also involve a post-verbal placement of *δῆλον ὅτι*. The sentence may contain a pre-verbal Narrow Focus or a Broad Focus construction. The adverbial expression may occur at the end of the clause or before another constituent:

- (76) [ἦν δ' ἂν ἐπ' ἐκείνῳ]_{BFOC}, ὧ ἄνδρες, [**δῆλον ὅτι**], εἰ μηδεμίαν προῖκα διωμολογήσατο ἔξαιεν ἐπ' αὐτῇ.
 'And he could **certainly** [dismiss the wife], if he had made no stipulation that he should receive a dowry with her.' (Is. 3.36)

- (77) καὶ [ταῦτ']_{NFOC} ἤδη διέξεισι [**δηλονότι**] πρὸς τοὺς δικαστάς, λέγων ἃ χρὴ τὸν τοιοῦτον ποιεῖν.
 'And now, **of course**, he proceeds to describe these things to the jury, telling what it is that a man of that sort is expected to do.' (Aeschin. 1.163)

A possible argument against an adverbial interpretation of *δῆλον ὅτι* in the sentences in which it is preceded by a focalized or topicalized constituent is that these contexts represent clause intertwining. In this interpretation, the preposed constituent is lifted from the

complement and placed in a pre-verbal slot in the matrix clause for additional emphasis. However, there are at least two arguments that speak against a clausal interpretation of *δῆλον* *ὅτι* in these contexts. First, there are no instances of clause intertwining in the research corpus that include a separation of *δῆλον* from *ὅτι* or additional arguments complementing *δῆλον*. This suggests that *δῆλον* *ὅτι* behaves like a fixed expression here. Second, the main contribution in sentences (72)–(77) is the proposition within the scope of *δῆλον* *ὅτι* and not the expression itself, which merely modifies proposition *q*. This is in contrast with the following example of clausal intertwining, in which the main clause expresses the illocutionary intent of the speaker:

- (78) ἀλλ' ἐννοεῖν χρὴ τοῦτο μὲν γυναιξ' *ὅτι* | ἔφουμεν, ὡς πρὸς ἄνδρας οὐ μαχουμένα.
 'We must remember that we are women by nature, and accordingly not suited to battles against men.' (S. Ant. 61–62)

Intervening *δῆλον* *ὅτι* is therefore similar to the fixed expressions *οἶδ' ὅτι* and *εὔ οἶδ' ὅτι*, which often follow preposed focalized or topicalized constituents. Huitink (2009: 30) argues that expressions like this do not have the status of a full main clause, but rather function as parenthetical tags, which may be used almost like modal particles. I agree with this view except that I prefer the term *adverbial*.

The analysis presented in this section shows that *δῆλον* may lose the status of the matrix clause and become together with the subordinator a fixed adverbial expression *δῆλον* *ὅτι*. It was also confirmed that in the sentences exhibiting a Broad Focus construction with *δῆλον* occupying Broad Focus I, the subordinate clause may approximate independent clauses. This effect arises if the subordinate clause contains the primary focus of the sentence. Ambiguous status of *δῆλον* is characteristic of the sentences that have a sentence-initial topic that may be classified either as intra- or extra-clausal. The presence of a preceding intra-clausal topic weakens the predicative status of *δῆλον* and favors an adverbial interpretation of the sequence *δῆλον* *ὅτι*. An adverbial reading is also attractive if a focused constituent precedes *δῆλον* *ὅτι* or if the expression follows the verb. The adverbial interpretation is therefore associated with clause-final and clause-medial placement of the expression.

5.5.4.4. Pragmatic markers

The occurrences of pragmatic markers in the sentences with the sequence *δῆλον* *ὅτι* provide relatively little material for analysis. It has already been stated in Section 5.5.3 that postpositive particles with wide scope virtually do not occur after *δῆλον* *ὅτι* and that the expression can be placed sentence-initially only in asyndetic contexts. Postpositive connective particles with wide scope are placed between *δῆλον* and *ὅτι*, which suggests that *δῆλον* is in these contexts a predicative adjective (cf. Section 5.4.3.4). A predicative reading of *δῆλον* is also more attractive in most contexts in which a sentence-initial or clause-initial connective particle

precedes δῆλον ὅτι. This applies to the particles καί ‘and,’ ἀλλά ‘but,’ and καίτοι ‘although, and yet’:

(79) ὅτε γὰρ Πολύευκτος διετίθετο ταῦτα, παρῆν μὲν ἡ τούτου γυνή, καὶ δῆλον ὅτι τὰς τοῦ πατρὸς διαθήκας ἀνήγγειλεν, ἄλλως τ’ εἰ καὶ μηδὲν ἴσον εἶχεν ἀλλ’ ἐν ᾗπασιν ἤλαττοῦτο ...

‘For, when Polyeuctus gave these directions in his will, the defendant’s wife was present, and it is clear that she reported to him the will of her father, especially if he did not receive an equal share, but was at a disadvantage in all respects.’ (Dem. 41.17)

(80) ἀλλὰ δῆλον ὅτι καὶ οἱ τοὺς νόμους ἐνθάδε θέντες, οὐκ εἴ τινας μαχεσάμενοι ἔτυχον ἀλλήλων κατὰξαντες τὰς κεφαλὰς, ἐπὶ τούτοις ἠξίωσαν τῆς πατρίδος φυγὴν ποιήσασθαι.

‘But it is clear that even the makers of our laws did not think well, when people happened in a fight to break each other’s heads, to make it a case for banishment from their country.’ (Lys. 3.42)

(81) [Context: The speaker, who is defending himself in the course of a public scrutiny, claims that ill-behaved youths dislike him] καίτοι δῆλον ὅτι, εἰ τῶν αὐτῶν ἐπεθυμοῦμεν, οὐκ ἂν τοιαύτην γνώμην εἶχον περὶ ἐμοῦ.

‘It is obvious, then, that if we were at one in our desires they would not regard me with such feelings.’ (Lys. 16.11)

The clauses within the scope of δῆλον in the examples above approximate independent clauses only insofar as the constituent order supports such a reading. There seems to be no pre-verbal focus in (79), which suggests that we are dealing with a subordinate clause. On the other hand, in (80) and (81), ἐπὶ τούτοις and τοιαύτην γνώμην appear to be the Narrow Focus of the clause. At the same time, the clause within the scope of δῆλον is continuous and the subordinator precedes it. For this reason, a predicative reading of δῆλον is preferable than an adverbial one.

5.5.4.5. Discussion and conclusions

The analysis of the pragmatic properties of δῆλον ὅτι presented in this section suggests that the sequence may function as an adverbial expression. The variable that indicates the status of δῆλον ὅτι is the degree of discourse prominence. Whereas the predicative δῆλον is potentially discursively primary, some occurrences of the string δῆλον ὅτι are discursively secondary in such a way that an adverbial reading of the expression is warranted. This should not suggest, however, that the split between the predicative δῆλον and the adverbial δῆλον

ὅτι may be easily located. Instead, the structural contexts form a continuum that connects the prototypically predicative and the prototypically adverbial contexts of use. The space between them is characterized by ambiguity with respect to the syntactic status of δῆλον (ὅτι).

The continuum may be drawn up in the form of an ordered list. The degree to which δῆλον ὅτι approximates an adverbial, as opposed to a main clause, may be inferred from the information structure of the utterance. The sequence in (82) starts with a prototypically predicative usage and progresses to prototypically adverbial contexts. The last four arrangements may be considered adverbial:

- (82) a. [*preceding material*] [δῆλον]_{BFoCI} [ὅτι ... VERB]_{BFoCI}
 b. [*preceding material*] [δῆλον] [ὅτι ... NARROW FOCUS – VERB – REST]
 c. [THEME] [δῆλον]_{BFoCI} [ὅτι ... VERB]_{BFoCI}
 d. [THEME] [δῆλον] [ὅτι ... NARROW FOCUS – VERB – REST]
 e. [CONTRASTIVE/NEW TOPIC] [δῆλον ὅτι] [*clause continuation*]
 f. [NARROW FOCUS] [δῆλον ὅτι] [*clause continuation*]
 g. [VERB = BROAD FOCUS I] [δῆλον ὅτι] [BROAD FOCUS II]
 h. [*clause*] [δῆλον ὅτι]

Regarding the use of δῆλον ὅτι in questions, it may be concluded that the adverbial expression is not excluded from them. In agreement with the behavior of some sentential adverbs in other languages, the adverbial δῆλον ὅτι is outside the scope of interrogation. This may occur in two ways – by projection or by modifying a constituent that is itself not within the scope of interrogation. Projection of δῆλον ὅτι outside the question is rare, as there is only one example, whose pragmatic context is marked by irony. The apparent poor compatibility of δῆλον ὅτι with questions may stem from the meaning of the adverbial. If it conveys positive speaker commitment, its use in interrogative contexts would be pragmatically peculiar. The other interrogative context in which δῆλον ὅτι can appear is when the adverbial has a narrow scope and does not modify a constituent within the scope of interrogation. Therefore, what is marked as obvious is a piece of information that belongs to the presupposed content of the question.

The conclusions of this section help us identify the structural contexts in which δῆλον ὅτι functions like an adverbial. We may now turn to the semantic properties of δῆλον ὅτι and examine how they relate to the meaning of the predicative δῆλον.

5.5.5. The semantics of the adverbial δῆλον ὅτι

5.5.5.1. Wide-scope usage

This section treats those contexts in which δῆλον ὅτι has a full clause within its scope. The investigation of the meaning of ‘be δῆλον(*q*)’ in Section 5.4.4 produced a series of working

hypotheses about the semantics of the adverbial *δηλον ὅτι*. The hypotheses may be formulated in a simplified notation as follows:

- (83) a. ADV:EPIST:(INFR):INTERSUBJ(*q*)
 b. ADV:INFR:INTERSUBJ(*q*)
 c. ADV:INFR(*q*)

In (83)a, the meaning of the adverbial *δηλον ὅτι* agrees with the meaning of ‘be *δηλον(q)*’. On this hypothesis, the adverbial entails positive speaker commitment and intersubjective acceptability of *q*. The nuance of inference is available as a conversational implicature. In (83)b, the component of positive speaker commitment has been peeled off and the inferential meaning has become a part of the entailment. A combination of inference with intersubjectivity means that both the speaker and the addressee may infer *q*, but the speaker is not necessarily committed to its truth. Finally, the hypothesis in (83)c does away with intersubjectivity and speaker commitment. These three options do not exhaust all the possible arrangements of semantic features, but they may nevertheless serve as a guide in our analysis.

Before testing these hypotheses on the occurrences of *δηλον ὅτι* that closely approximate adverbial usage, it makes sense to test whether there are any occurrences of the predicative ‘be *δηλον(q)*’ that semantically contradict (83)a. An affirmative answer would mean that a semantic change was associated even with those occurrences of *δηλον ὅτι* that did not resemble adverbials. In order to use a criterion for identifying ‘be *δηλον(q)*’ that is independent of semantics, we may assume that in the structural contexts (82)a–d the sequence *δηλον ὅτι* represents the matrix clause and the subordinator.

According to my reading of the occurrences in the research corpus, there are no examples of (82)a–d that are not reconcilable with ADV:EPIST:(INFR):INTERSUBJ(*q*), provided that we disregard the part of speech and focus on the meaning of the expression. Furthermore, there are several contexts that falsify ADV:INFR:INTERSUBJ(*q*) and ADV:INFR(*q*). The former entails that the speaker is not committed to *q*, while the latter also removes intersubjectivity. Now consider the following two contexts:

- (84) καὶ ὁπότερος τούτων δικαιότερα λέγειν δόξει καὶ κατὰ τοὺς νόμους μᾶλλον, **δηλον ὅτι** τούτῳ ὑμεῖς οἱ δικασταὶ προσθήσεσθε.

‘And whichever of these two shall in your judgement speak most in harmony with justice and the laws, to him, **it is plain**, you jurymen will give your votes.’ ([Dem.] 43.35)

- (85) [Context: The speaker arranged that a written memorandum concerning Pasion’s debt, which he had failed to repay but denied the fact, be given to Satyros.] ἀλλὰ **δηλον ὅτι** ταύτας τὰς συνθήκας ἐποιησάμεθ’ ὥς ὑπολοίπων ὄντων ἡμῖν ἔτι πραγμάτων, περὶ ὧν ἔδει τοῦτον πρὸς ἐμὲ κατὰ τὸ γραμματεῖον διαλύσασθαι.

‘But **it is clear** that we had made this agreement because there yet remained matters which [Pasion] had to settle with me in accordance with the memorandum.’ (Isoc. 17.26)

It would be odd if the speaker in (84) was not committed to the proposition that the judges act justly, as this would signal his distrust towards the people whose goodwill he needs to secure. In the second example, the aim of the speaker is to prove that Pasion has not returned the gold he had lent him. The proposition within the scope of *δηλον* concerns a fact the speaker knows from his firsthand experience. The point of uttering (85) is not just to signal that the speaker believes *q* but to indicate to the audience that they ought to accept *q* too, because it is inferable from the available evidence.

Regarding inferential reasoning, contexts (82)a–d differ from the contexts discussed in Section 5.4.4. We have seen that the predicative construction in modified main clauses may signify that *q* was, is, or will be evident to someone without specifying the source of information. By contrast, the implicature of inferential reasoning in the contexts that represent (82)a–d appears to be generalized.

We may identify two subtypes of assumption that can be signaled by the predicative *δηλον* in contexts (82)a–d. The first subtype involves propositions that are part of shared cultural and encyclopedic knowledge. The speaker activates the proposition and moves it from the latent common ground of shared knowledge to the immediate common ground of the unfolding communication.¹¹² Example (84) illustrates this communicative strategy. The fact that the judges decide according to the laws is a piece of information shared by the members of the Athenian society. Another example of directly retrieving a proposition from the latent common ground is presented in (86). The speech concerns a dispute over a wall that diverts rainwater. The sentence refers to a period of fifteen years since the speaker’s father walled in his land. The immediate common ground is updated with the proposition that it rained then so that the speaker may use this trivial fact to portray the claim of his opponent, who disagrees with his building of a new wall, as unreasonable:

(86) ἐν δὲ τούτοις τοῖς ἔτεσιν ἅπασιν οὐτ’ ἐγκαλῶν οὐδεὶς πώποτ’ ἦλθεν οὔτε μεμφόμενος (καίτοι **δηλον ὅτι** καὶ τόθ’ ὕδατα πολλάκις ἐγένετο) ...

‘In all these years no one ever came to object or make complaint (and yet **it is clear** it often rained then).’ (Dem. 55.4)

The second subtype of assumption is a more prototypical instance of inferential reasoning because it involves propositions that are inferred from what is already known. The premises based on which *q* may be inferred are available to both the speaker and the addressee. This usage is especially common in conditional sentences:

¹¹² This meaning is comparable to that of expectation adverbs mentioned in Section 5.2.

(87) [The lawgiver applied the same penalty for adultery in the case of mistresses as in the case of wives.] καίτοι **δῆλον ὅτι**, εἴ τινα εἶχε ταύτης μείζω τιμωρίαν ἐπὶ ταῖς γαμεταῖς, ἐποίησεν ἄν.

‘Now surely **it is clear that**, if he had had any heavier punishment than this for the case of married women, he would have imposed it.’ (Lys. 1.31)

(88) [Context: The speaker’s opponent was reproached by his peers for unbecoming conduct in wartime] εἰ δὲ μὴ ποιούντός σου κατεσκεύαζόν τινες καταψευδόμενοί σου, οἱ δὲ λοιποὶ τῶν στρατιωτῶν οὐκ ἐκείνοις ἐπετίμων, ἀλλὰ σοὶ ἐπέχαιρον, **δῆλον ὅτι** ἐκ τῶν ἄλλων ὧν ἔζης ἄξιος αὐτοῖς ἐδόκει εἶναι τοῦ τοιαῦτ’ ἀκούειν.

‘If you did not do it and it was all a fabrication, and if the rest of the soldiers, instead of reproving the slanderers, chuckled over you, **it is clear that** from your general manner of life they thought that such a story exactly fitted you.’ (Dem. 21.134)

There is no clear boundary between the two subtypes of assumption. This is because it is often difficult to tell whether the proposition within the scope of *δῆλον* has been merely retrieved from the common ground or inferred based on available knowledge. Example (84), which concerns a future state-of-affairs, is a case in point since future events cannot be predicted with absolute certainty.

Another distinction that bears on the component of inferential reasoning concerns the person who does the inferring. In most cases, the speaker and the addressee are in a similar epistemic position and have access to the same evidence with respect to *q* (cf. (87) and (88) above). More rarely, the speaker has firsthand knowledge about a fact, while the addressee may infer that the fact holds. Besides example (85), the following passage from the same speech concerning an unpaid debt may be adduced here:

(89) [Context: Pasion’s former master become the speaker’s surety for seven talents.] ἀλλὰ **δῆλον ὅτι** τὰς μὲν τριακοσίας δραχμὰς ἐνεκάλεσεν ἐμοὶ χαριζόμενος, τῶν δ’ ἐπτὰ ταλάντων ἐγγυητὴς μοι ἐγένεθ’ ἡγούμενος πίστιν ἔχειν ἱκανὴν τὸ χρυσίον τὸ παρ’ αὐτῷ κείμενον.

‘But **it is obvious that** [Pasion] called in the three hundred drachmas as a favor to me, and that he became my surety for seven talents because he judged that the gold on deposit with him was a sufficient guarantee.’ (Isoc. 17.44)

We may draw the following conclusions about the structural contexts (82)a–d, in which *δῆλον* represents the main clause. The meaning of *δῆλον* in these contexts agrees with the meaning of ‘be *δῆλον(q)*’ identified in Section 5.4.4. The component of inferential reasoning is more prominent than in the case of more complex main clauses with *δῆλον*. It appears that

inference associated with contexts (82)a–d represents a generalized implicature. The last point raises the question as to what causes the salience of the evidential implicature.

I propose that the factors that underlie an inferential interpretation of *δηλον* in (82)a–d include the orientation towards the addressee and the reference to the moment of speech. We have seen in Section 5.4.4 that these two characteristics are by default associated with those instances of ‘be *δηλον*(*q*)’ that do not contain a copula and the cognizer in the main clause. Furthermore, in (82)a–d, *δηλον* is often less discursively prominent than its complement. I propose that the nuance of inferential reasoning may arise due to the effect of the Gricean maxim of quality in combination with the relatively low discourse prominence of the sequence *δηλον* ὅτι. In (82)a–d, the main contribution of the utterance is the complement, which is asserted and simultaneously marked as obvious from the perspective of the speaker and the addressee. In order that the evaluation of *q* as obvious is not pragmatically defective, a justification for *q* needs to be accommodated to the common ground. Therefore, an interpretation is enforced – in accordance with the maxim ‘Do not say that for which you lack adequate evidence’ (Grice 1991 [1975]: 27) – in which *q* is retrievable from the common ground or inferable from what is known. By contrast, in the case of ‘be *δηλον*(*q*)’ in which the main clause is discursively more prominent, the inferability of *q* is not always necessary because the main contribution of the sentence is the assertion ‘*q* be *δηλον*’ and not *q* itself. In other words, in the sentences in which the main clause is discursively salient, the maxim of quality applies to the proposition ‘be *δηλον*’ and not to *q*. The following passage, in which *q* is part of the presupposed content of the sentence, illustrates the difference:

(90) ὅτι μὲν τοίνυν καὶ παρὰ τούτους τοὺς νόμους καὶ παρὰ τοὺς προειρημένους, καὶ μικροῦ δέω παρὰ πάντας εἰπεῖν τοὺς ὄντας ἐν τῇ πόλει, τέθηκε τὸν νόμον, οἶμαι **δηλον** ἅπασιν ὑμῖν εἶναι.

‘**That** the law he has proposed is contrary to the statutes just read, to those which I cited before, and, I may almost say, to every law in Athens, **is** now, I suppose, **clear** to every one of you.’ (Dem. 24.66)

To my mind, the implicature of inferential reasoning is absent here. The reason is that the part of the sentence that is asserted and hence more discursively prominent is οἶμαι *δηλον* ἅπασιν ὑμῖν εἶναι ‘I suppose it is clear to every one of you’. With respect to the maxim of quality, the justification for this assertion is the perceived efficacy of the preceding discourse move in which the speaker attempted to persuade the audience that the law proposed by the opponent is not compatible with other laws.

The same reasoning applies to those contexts in which the main clause refers to the past or the future. When the obviousness of *q* is not anchored at the time of utterance, the addressee is not prompted to add *q* to the common ground and simultaneously accept that *q* is obvious. What is added to the common ground instead is the complex proposition ‘*q* was / will be obvious at some point’. The result is that the implicature of inferential reasoning is not

triggered. Example (43) may be repeated here. According to the maxim of quality, the speaker must have some evidence at his disposal to later prove *q*, so that the commissive speech act is performed in good faith. However, the existence of evidence does not equal inferential reasoning nor that the addressee is able to infer *q*:

- (91) ὅτι τοίνυν ὅλως οὐδὲ τὴν εἴσπραξιν αὐτὴν ὑπὲρ ὑμῶν πεποιήται, καὶ **τοῦτ'** αὐτίκα δὴ μάλ' ὑμῖν **δῆλον ποιήσω**.
 'However, **I will make it** quite **clear** to you **that** he did not carry out these exactions for your benefit at all.' (Dem. 22.65) = (43)

This analysis supports the claim that inference is not a coded semantic component of the predicative *δῆλον*. At the same time, the predicative adjective in contexts (82)a–d always invites the implicature that *q* is inferable or retrievable from the common ground. Therefore, inference may be deemed a generalized implicature in those contexts. Generalized implicatures are triggered automatically, but they still may be canceled. In the case of the predicative *δῆλον*, the cancelation of the implicature is conditioned by the content and the discourse prominence of the main clause. If the main clause is discursively prominent and does not include the argument for source, it is much less likely to trigger the implicature of inferential reasoning, as in (90) and (91).

After having evaluated the contexts in which *δῆλον ὅτι* represents the main clause and the subordinator, we may move on to the contexts in which the sequence represents an adverbial expression. The structural contexts that belong here are captured by (82)e–h. As in the case of the contexts discussed above, there are sentences which strongly favor the interpretation that the speaker is committed to *q*. This falsifies the hypotheses that do not include the speaker's commitment:

- (92) [Context: The opponent is trying to shift the charges.] ἀλλ' ἐκείνων μὲν, εἴπερ ἀδικεῖται, **δῆλον ὅτι** δίκην λήψεται, τούτων δὲ δώσει.
 'For his [counter-charges], if he is suffering any wrong, he will **plainly** receive satisfaction, but for [the claims made on him], he will give it.' (Dem. 41.13)

- (93) εἰ τοίνυν τις ὀφείλειν τιν' ἦτι᾽ αὐτοῦ χρήματα, ὃ δ' ἡρνεῖτο, εἰ μὲν ἐφαίνονθ' αἵ τε συνθηκαὶ καθ' ἃς ἐδανείσατο κείμεναι καὶ οἱ τεθέντες ὅροι ἐστηκότες, τὸν ἀρνούμενον ἡγεῖσθ' ἂν ἀναιδῆ **δηλονότι**, εἰ δ' ἀνηρημένα ταῦτα, τὸν ἐγκαλοῦντα.
 'If A accused B of owing him money, and B denied it, if the registered terms of the loan were still to be read, or if the pillars which marked the mortgaged property were still standing, you would **clearly** regard as impudent the man who denied the transaction; but if it was shown that these proofs no longer existed, then you would regard the accuser as impudent.' (Dem. 25.69)

Both (92) and (93) indirectly concern the integrity of the judges. The speaker would harm himself if he implied that he was not fully committed to idea that the Athenian judges act justly and reasonably. Therefore, it is safe to assume that the speaker is committed to the proposition within the scope of *δηλον ὅτι*.

Regarding intersubjectivity, it seems that the adverbial *δηλον ὅτι* entails that both the speaker and the addressee have access to the evidence that justifies *q*. However, it is not required that the addressee has the same access to the evidence as the speaker. It is enough that the speaker updates the common ground with the preliminary information that is a sufficient basis to infer the proposition within the scope of *δηλον ὅτι*. This ensures that *q* is acceptable from the perspective of the addressee. Consider the following example:

(94) [Aeschines displayed no regret over the defeat at Chaeronea] ἀλλ' ἐπάρας τὴν φωνὴν καὶ γεγηθῶς καὶ λαρυγγίζων ᾤετο μὲν ἐμοῦ κατηγορεῖν **δηλονότι**, δεῖγμα δ' ἐξέφερεν καθ' ἑαυτοῦ ὅτι τοῖς γεγενημένοις ἀνιστοῦσιν οὐδὲν ὁμοίως ἔσχε τοῖς ἄλλοις.

'He vociferated, he exulted, he strained his throat, for he **evidently** supposed himself to be testifying against me, but he was really offering proof against himself that in all those distressing events he had had no feeling in common with other citizens.' (Dem. 18.291)

While some of the judges listening to Demosthenes's speech might not have been there when Aeschines attacked him, the participial phrases *ἐπάρας τὴν φωνὴν καὶ γεγηθῶς καὶ λαρυγγίζων* '[he] vociferated, [he] exulted, and [he] strained his throat' provide the necessary background for the proposition *ᾤετο μὲν ἐμοῦ κατηγορεῖν* '[he] supposed to be to be testifying against me'.

The intersubjective meaning of *δηλον ὅτι* arises in the interplay between the different layers of the common ground and the shared patterns of reasoning, which are presupposed for both the speaker and the addressee. The speaker supplies the necessary specific information, while they rely on the addressee to recognize the general pattern that fits the specific case. The specific piece of information therefore leads to a new insight that is justified in the eyes of both the speaker and the addressee. The following context provides another illustration. Note that the specific premise is cast as a hypothetical proposition:

(95) εἰ μὲν γὰρ εὖνους ἐστὶν ἐκείνοις καὶ τὸν τῆς φύσεως διασώζει νόμον, ὃς καὶ ἀνθρώποις καὶ θηρίοις εἷς καὶ ὁ αὐτὸς ἅπασιν ὤριται, στέργειν τοὺς γονέας, κακόνους ἐστὶ τοῖς ἐκείνους ἀπολωλεκόσιν **δηλον ὅτι** καὶ νόμοις καὶ πολιτείᾳ τῇ τούτων.

'For if he is well-disposed towards [father and mother], and so observes the great law of nature, which is laid down alike for man and beast, that all should love their

parents, then he is **clearly** ill-disposed to those who have destroyed them and to their laws and their constitution.’ (Dem. 25.66)

The foregoing observations about intersubjectivity are also relevant to inference. In the case of the predicative *δηλον* in (82)a–d, as was argued above, the implicature of inferential reasoning is triggered because the discursively primary part of the sentence is the complement and not the matrix clause. The addressee is prompted to add the newly asserted proposition *q* to the common ground and at the same time accommodate the fact that the speaker has marked *q* as obvious. The accommodation is facilitated by the implicature of inferential reasoning that justifies the use of *δηλον*. In the case of the prototypically adverbial usage of *δηλον ὅτι* in (82)e–h, the discourse prominence of the expression is even lower than in the contexts (82)a–d. Therefore, the same accommodation applies. More specifically, the adverbial entails that proposition *q* is either lifted from the latent common ground consisting of shared knowledge or inferred based on what is known by both the speaker and the addressee. Both nuances have in common that they account for the obviousness of *q*. To stress this point once again, there is no clear boundary between these two subtypes of assumptive reasoning. Consider example (92) above. The fact that those who suffer any wrong will receive a satisfaction is something that could be directly retrieved from the shared cultural knowledge. At the same time, the sentence concerns a particular person and a future state-of-affairs. By contrast, the following examples are unambiguously inferential. The knowledge about the past conduct of the opponent leads to a conclusion about a different matter in which his character also determines the outcome:

(96) [Context: The dispute concerns an inheritance. The speaker is trying to portray the opponent’s claim as illegitimate.] ὁ γὰρ τὸ θεωρικὸν ἀδίκως ἀξιῶσας λαμβάνειν καὶ περὶ τοῦ κλήρου τῇ αὐτῇ διανοίᾳ **δηλον ὅτι** κέχρηται νυνί.
‘For he, who fraudulently claimed the right to receive the admission fee, has now **obviously** practised the same design regarding the inheritance.’ ([Dem.] 44.37)

(97) [Context: When the cavalry was summoned for service, Meidias quitted his post and went to his ship to serve there.] εἰ δ’ ἐν τῇ θαλάττῃ κίνδυνός τις ἦν, εἰς τὴν γῆν **δηλον ὅτι** ὥχεται ἄν.
‘But if there had been any risk at sea, he would **certainly** have hastened to land.’

Given that the adverbial *δηλον ὅτι* cannot be modified, and it is always discursively secondary, it follows that the nuance of inferential reasoning cannot be canceled. For this reason, it is reasonable to say that inferential reasoning is a coded component of its meaning. We must modify hypothesis (83)a to account for this fact:

(98) ADV:EPIST:INFR:INTERSUBJ(*q*)

At the terminological level, we may speak of the semanticization of inference when we accept that the expression in question is an adverbial, as opposed to a matrix predicate with a subordinator. If we disregard the gray zone between the two values for a moment, the change from the predicative usage of *δῆλον* to the adverbial *δῆλον ὅτι* may be captured on the semantic level as follows:

- (99) **‘be δῆλον(*q*)’** **δῆλον ὅτι / δηλονότι**
 ‘It [$\Rightarrow$ is] [$\rightarrow$ inferable and] clear [$\Rightarrow$ to you and me] that *q*’ ADV:EPIST:INFR:INTERSUBJ(*q*)

We may conclude that the meaning of the adverbial *δῆλον ὅτι* that has a full clause within its scope may be described by ADV:EPIST:INFR:INTERSUBJ(*q*). The expression entails that the speaker is committed to *q* and that *q* may be retrieved from the common ground or inferred from what is known. The inferential value associated with the expression in the research corpus is assumption. The adverbial is intersubjective in the sense that both the speaker and the addressee have access to the evidence that points to *q*. The evidence comprises shared knowledge about the world and the propositions that have been added to the common ground during the course of communication. The speaker assumes that the addressee will accept *q* and add it to the immediate common ground.

We may now turn to the contexts in which *δῆλον ὅτι* does not have a full clause within its scope.

5.5.5.2. Narrow-scope usage

The sequence *δῆλον ὅτι* with a sub-clausal constituent within its scope must be analyzed as an adverbial. As has been mentioned in Section 5.5.3, *δῆλον ὅτι* may have participial phrases, adjective phrases, nominal phrases, and prepositional phrases within its scope. When modified by the adverbial, these phrases are not placed in the initial position of the sentence but follow some intra-clausal constituents. Sentence-initial position is attested only in answers.

Given that the wide-scope usage denotes ADV:EPIST:INFR:INTERSUBJ(*q*), the same coded meaning is expected in the case of the narrow-scope use of the adverbial. Before testing this hypothesis, we must first clarify whether sub-clausal *q* refers to propositional content or something else. A non-propositional denotation would call for a further enquiry to determine whether an evidential and epistemic modification may apply to it.

The form of sub-clausal constituents militates against a propositional reading because propositions prototypically involve a finite verb or at least a discursively salient predicative construction. Regarding the participial phrases in the corpus, almost all of them refer to the perceived cause of the state-of-affairs expressed by the main predication:

- (100) καὶ τούτοις οὐκ ἐπεσκήψατο, **δῆλον ὅτι** τάληθῃ μεμαρτυρηκότας εἰδώς.

‘Against these men he has lodged no charges, **clearly** because he knew that their testimony was true.’ (Dem. 29.33) = (58)

Vendler (1966: 122–146) argues that the nominalizations that express causes are potential facts, i.e. propositions. However, with respect to most participial phrases in classical Greek, a causal interpretation arises only as a pragmatic implicature. In the perspective of FDG, the contribution of such participial phrases is in the domain of communicated content, which belongs to the interpersonal level in the hierarchy of the clause. An extra-clausal participial phrase represents a discourse act whose content corresponds to an ascriptive subact. Ascriptive subacts serve to ascribe semantic categories. Most commonly, they ascribe a property to a referent (Hengeveld & Mackenzie 2008: 108–113). Thus, in (100), the speaker ascribes the property of knowing something to the subject of the phrase οὐκ ἐπεσκήψατο ‘he has lodged no charges’. An analysis resting on ascriptive subacts is also applicable to the contexts in which the participial phrase does not fulfill a specific logical function with respect to the main clause. Consider the following example:

- (101) [Context: The speaker asks the audience to imagine a hypothetical situation at the court.] οὐκοῦν ὁ πρεσβύτερος, ἀποδοθέντος τοῦ ὕδατος αὐτῷ καὶ λόγου, κατηγορῶν μετὰ σπουδῆς, βλέπων **δηλονότι** πρὸς ὑμᾶς, λέξει ...
‘Now the elder man, when his time allowance and the right to speak are given him, will press his accusation vigorously, and looking, **of course**, into your faces, he will say [...].’ (Aeschin. 1.162)

The participial phrase in (101) is functionally similar to a non-restrictive appositive relative clause. It is connected to ὁ πρεσβύτερος ‘the elder man’, so that the implied reading is something like ‘the elder man, who will be looking into your faces, [...]’. In formal approaches to syntax and semantics, non-restrictive relative clauses are analyzed as propositions, while restrictive clauses are said to denote qualities (Del Gobbo 2007; Müller 2022: 219, 248 fn. 37). Despite this, the coded meaning of the participial phrase in (101) is most likely not propositional since the linguistic form does not support this analysis. Instead, the communicated content of the discourse act βλέπων δηλονότι πρὸς ὑμᾶς ought to be assessed as an ascriptive subact, which ascribes a property to the referent of ὁ πρεσβύτερος. A propositional reading arises only through pragmatic implicature.

A slightly different analysis is required in the case of extra-clausal nominal and prepositional phrases. The former appear in apposition to a constituent embedded in the clause. Appositive phrases represent separate intonation units that contain an independent discourse act. Just like in the case of participial phrases discussed above, the communicated content of such discourse acts hardly corresponds to a proposition. Consider the following example:

(102) νῦν δὲ γνησίους υἱοὺς γέγραφεν τῷ Ἀρχιάδῃ ἐκείνῳ εἶναι, τόν τε αὐτοῦ πατέρα **δῆλον ὅτι** καὶ τὸν κατὰ τὴν ἐξ ἀρχῆς ποίησιν, οὐκ ἐπιλογισάμενος ὅτι ἐπανεληλυθότες ἦσαν.

‘But as it is, he has written that the aforesaid Archiades had lawfully born sons, meaning, **of course**, his own father and the one made such by the original adoption, not taking cognizance of the fact that they had returned to their original family.’
([Dem.] 44.54)

The constituents τόν τε αὐτοῦ πατέρα ‘his own father’ and τὸν κατὰ τὴν ἐξ ἀρχῆς ποίησιν ‘the one [adopted] by the original adoption’ stand in apposition to γνησίους υἱοὺς ‘lawfully born sons’. The communicative purpose of the apposition is to specify the referents of γνησίους υἱοὺς. Therefore, the communicated content of the discourse act corresponds to two referential subacts. Just like ascriptive subacts, referential subacts belong to the interpersonal level in the hierarchy of the clause. They evoke entities and serve to identify or re-identify them in the pragmatic interface between the speaker and the addressee (Hengeveld & Mackenzie 2008: 113–115; see also Section 1.5).

The position of ascriptive and referential subacts in the hierarchy of the clause contrasts with that of propositions, which belong within the representational level. Given this, we have two options to account for the scope of δῆλον ὅτι in contexts like (100)–(102). We could assume that the subact is coerced to function as a proposition and that this proposition is within the scope of δῆλον ὅτι. Alternatively, we may accept that epistemic and evidential modification can directly apply to ascriptive and referential subacts. To my mind, the former option is not attractive here because δῆλον ὅτι with narrow scope always modifies separate intonation units. These extra-clausal segments introduce communicated content that connects to the pragmatic information previously evoked within the same sentence. This distributional restriction suggests that δῆλον ὅτι with narrow scope is sensitive to the pragmatic structure of the utterance. For this reason, I propose that δῆλον ὅτι may function as a modifier within the interpersonal level and have an ascriptive or a referential subact within its scope.

Within FDG, the status of possible evidential modification of subacts is not entirely clear, but I do not see this option as particularly problematic.¹¹³ Inferential evidentiality might signal, for instance, that an evoked entity is intersubjectively identifiable based on the information already available in the common ground. In the case of ascriptive subacts, the

¹¹³ Hengeveld & Mackenzie (2008: 121, 378) and Keizer (2015: 87–88, 94) accept evidential/epistemic modification in the case of ascriptive subacts (e.g. *allegedly scanty data*) but not in the case of referential subacts. On the other hand, Van de Velde (2007) argues that referential subacts may also be modified by evidential/epistemic adverbs (e.g. *allegedly the father, supposedly a UFO*). In more recent contributions, evidential and epistemic adverbs with narrow scope are assumed to coerce their argument to fill a slot that corresponds to the semantics of the adverb (Kemp & Hengeveld 2022; García Velasco 2022). This means that the modified noun phrase or adjective may be interpreted as a proposition, episode, or state-of-affairs depending on the meaning of the adverb. Contrary to this view, I prefer to analyze the scope of the modifying adverbial based on the form and function of the modified expression in the sentence.

nature of the ascribed property might follow from the available evidence. The import of positive speaker commitment might be that the speaker is sure that an entity is identified correctly or that a property may be ascribed.

A similar analysis is applicable to those contexts in which *δῆλον ὅτι* appears in an answer to an identifying or alternative question. The property or entity targeted by the question is specified by the subact contained in the answer. Proposing that *δῆλον ὅτι* means that the answer is inferable, and that the speaker is sure that the ascription or reference is correct is to my mind not immediately defeated by the fact that the expression within the scope of the adverb is not a proposition:

- (103) πότερόν σε τις, Αἰσχίνη, τῆς πόλεως ἐχθρόν ἢ ἐμὸν εἶναι φῆ; ἐμὸν **δῆλον ὅτι**.
'Should anyone call you the enemy of Athens, Aeschines, or my enemy? Mine, **of course**.' (Dem. 18.124)

- (104) πότερ' οὖν τοὺς ἄλλας παρέβαινον καὶ τὰς σπονδὰς, Αἰσχίνη, οἱ προδιδόντες καὶ οἱ παραπρεσβεύοντες καὶ οἱ δωροδοκοῦντες, ἢ οἱ κατηγοροῦντες; οἱ ἀδικοῦντες **δηλονότι** τὰς ὅλης γε τῆς πατρίδος σπονδὰς, ὥσπερ σύ, οὐ μόνον τὰς ἰδίας.
'Who were untrue to their salt and to the cup of friendship, Aeschines? The traitors, the false ambassadors, and the bribe-takers, or their accusers? The evil-doers, **of course**, that just like you broke covenant not with their friends alone but with the whole nation.' (Dem. 19.191)

Referential subacts do not always stand in apposition to an intra-clausal constituent or connect to a *wh*-word in the preceding question. They may also supply an optional argument or adjunct of a predicate contained in the sentence. In this case, the referential subact is connected to a slot made available by the argument structure of the predicate or to a slot licensed by the list of potential adverbial modifications. The following examples illustrate this. The prepositional phrase in (105) supplies an optional argument of *διελέγοντο* 'they talked' in the form of a referential subact. In (106), the phrase modified by *δῆλον ὅτι* represents an adjunct of the genitive absolute *τάλαντον ἀργυρίου προσθέντος αὐτῇ Εὐφήμου* 'Euphemus supplied a talent of silver to her'.

- (105) ἀπάντων δὲ τούτων ἐπιτετελεσμένων οἱ μὲν ἄλλοι διελέγοντο πρὸς σφᾶς αὐτούς, **δῆλον ὅτι** περὶ τῶν ἀναγνωσθέντων.
'But when all this demonstration had come to an end, the others present began to talk among themselves, **clearly** about the discourse which had been read.' (Isoc. 12.234)

- (106) πότερα ὧς προσήκειν συνοικεῖν ἐκδεδομένην Χαρίππῳ, ἐνὶ τῶν πολιτῶν, ἣ ἀνέκδοτον ἔνδον καταγηράσκειν, ἣ εὐθύς ἐξεδόθη τάλαντον ἀργυρίου προσθέντος αὐτῇ Εὐφήμου, **δηλονότι** οὐ διὰ πονηρίαν, ἀλλὰ δι' ἐπιείκειαν;
 'Did you think that she was right to live with Charippus, an Athenian citizen who was her husband, or was she supposed to grow old unmarried in her home, she who was married at once, as soon as Euphemus supplied a talent of silver as a dowry, **obviously** with no ulterior motive but simply out of kindness?' (Hyp. 1.13)

To summarize, the data presented above suggest that δῆλον ὅτι may also have ascriptive and referential subacts within its scope. In addition to that, I have argued that both subact types may be modified by evidential and epistemic expressions. We are now able to evaluate whether δῆλον ὅτι with narrow scope entails ADV:EPIST:INFR:INTERSUBJ(*q*) or not.

Regarding speaker commitment, the examples adduced in this section involve positive speaker commitment to ascriptive or referential subact *q*. The research corpus does not contain any contexts that do not follow this pattern. Note that in (101), the modified subact is part of an imagined scenario. Naturally, positive commitment cannot entail here that the speaker is convinced that *q* is factual. The contribution of the adverb is rather that *q* would be factual in the envisaged scenario. An interesting nuance arises when the modified constituent follows the subjectivizing adverb ὥς:

- (107) τί γὰρ ὥς ἀληθῶς ἐρεῖ; ὣν ὁ πατήρ τι πεποίηκε νῆ Δία. ἀλλὰ κατεγνώκαθ' ὑμεῖς ἐν τουτοισὶ τοῖς δικαστηρίοις αὐτοῦ θάνατον, ὥς πονηροῦ **δηλονότι** καὶ ἀξίου τεθνάναι.
 'What true plea can he find? Something perhaps that his father did? But you yourselves condemned that father to death in these very courts as a rascal, **clearly**, who deserved his doom.' (Dem. 25.77)

The function of ὥς is to align the ascriptive subact within its scope with the stance of the subject of the finite verb. Accordingly, the jurors, i.e. the subject of κατεγνώκατε 'you have condemned', thought that the opponent's father was a rascal. The speaker is committed to the proposition¹¹⁴ that the jurors ascribed this property to the opponent's father. Thus, δῆλον ὅτι does not signal the speaker's commitment towards the subact within the scope of ὥς. Positive speaker commitment applies only at the level of 'ὥς SUBACT'.¹¹⁵ In addition, the adverbial

¹¹⁴ The displacement of the subact from the pragmatic frame of the enfolding communicative situation and its ascription to a different cognizer is a peculiar strategy. The grammatical case of the nominal in the modified phrase is governed by the matrix verb so proposing that ὥς introduces a tacit predicate is not attractive. I refer to the expression 'ὥς NP' as a proposition because it is not speaker-bound, even though its form does not really support a propositional interpretation. The possibility of being ascribed to someone other than the speaker is one of the main criteria that distinguish propositional contents from subacts (Hengeveld & Mackenzie 2008: 144).

¹¹⁵ A similar context is Din. 1.89 in which ὥς has scope over a genitive absolute. The absolute construction does not share a constituent with the clause in which it is embedded, and it should be analyzed as a proposition.

signals that the property the jurors ascribed to the opponent's father is inferable or retrievable from the common ground.

The intersubjective meaning of the narrow-scope usage is comparable to the contexts in which the adverb has a whole proposition within its scope. In the case of referential subacts, the entity may be identified based on generic knowledge or specific information that is active in the common ground. Ascriptive subacts exhibit a similar pattern. The ascription of a property is justified by what the speaker and the addressee already know. Besides assuming that the addressee is aware of the necessary background information, the speaker also takes it for granted that the addressee reasons in a similar way as they. The last point is also relevant to the component of inference.

As was argued above, it is conceivable that assumption applies to referential and ascriptive subacts. The adverbial signals that the identity of the evoked or implied entity is already known, as in (102), or that it may be inferred, as in (105). The same options are available in the case of ascriptive subacts. Prototypical assumption is illustrated by (100). Direct retrieval of information regarding a property is apparent in the following example:

(108) [By the addition of two syllables, Aeschines transformed his father from Tromes to Atrometus], τὴν δὲ μητέρα σεμνῶς πάνυ Γλαυκοθέαν, ἣν Ἐμπουσάν ἅπαντες ἴσασι καλουμένην, ἐκ τοῦ πάντα ποιεῖν καὶ πάσχειν **δηλονότι** ταύτης τῆς ἐπωνυμίας τυχοῦσαν.

'He bestowed upon his mother the high sounding name of Glaucothea, although she was universally known as the Banshee, a nickname she **of course** owed to the diversity of her acts and experiences.' (Dem. 18.130)

The narrow-scope usage of δῆλον ὅτι probably represents the original locus of the unverbated form δηλονότι. As was mentioned in Section 5.5.3, δηλονότι as a prosodic word virtually does not occur in the sentence-initial position. We have observed that except for answers, δῆλον ὅτι with a narrow scope follows other intra- or extra-clausal constituents. This suggests that the narrow-scope usage is excluded in the sentence-initial position, just like δηλονότι. Furthermore, the narrow-scope usage is poorly compatible with the segmentation into an adjective and a subordinator. Taken together, the indirect evidence suggests that the unverbation of δῆλον ὅτι started in these contexts. Note, however, that unverbation and semantic change are not strictly connected and need not proceed in parallel.

A possible explanation why narrow scope usage is excluded from the sentence-initial position is that the entity referred to by the modified constituent needs to be first introduced or licensed within the same utterance. This ensures that the communicated content within the scope of δῆλον ὅτι is connected to a referent that is already active in the consciousness of the addressee. The starting point of inference is the pragmatic information evoked in the utterance. This suggests that δῆλον ὅτι with narrow scope may also be analyzed as a pragmatic marker. Its position within the utterance is conditioned by the pragmatic interface between

the speaker and the addressee, and its contribution concerns the communicated content that belongs within the interpersonal level in the hierarchy of the clause.

To summarize, $\delta\eta\lambda\omicron\nu$ $\omicron\tau\iota$ that has a sub-clausal constituent within its scope means ADV:EPIST:INFR:INTERSUBJ(*q*). The modified expression is not a proposition but a referential or an ascriptive subact. The adverb entails that the speaker is sure that an entity is identified correctly or that a property applies. The expression is intersubjective in the sense that both the speaker and the addressee have access to the evidence that justifies the communicated content. The content represented by the subact is either retrieved from the common ground or inferred from it. The evidential meaning corresponds to assumption, a type of inference. In the case of the contexts in which the subact is within the scope of the subjectivizing adverb $\acute{\omega}\varsigma$, $\delta\eta\lambda\omicron\nu$ $\omicron\tau\iota$ modifies the whole expression, i.e. ' $\acute{\omega}\varsigma$ SUBACT'.

5.5.6. Summary

The synchronic data from the research corpus suggest that the split between the predicative usage of $\delta\eta\lambda\omicron\nu$ and the adverbial $\delta\eta\lambda\omicron\nu$ $\omicron\tau\iota$ cannot be identified with certainty. While some occurrences exhibit the properties of a prototypical sentence adverbial or a predicative adjective, there are also contexts in which the sequence $\delta\eta\lambda\omicron\nu$ $\omicron\tau\iota$ exhibits a mix of properties that situate it somewhere between the two prototypes. The variable that allows us to locate each structural context in the space between the two prototypes is discourse salience. The lower the salience of $\delta\eta\lambda\omicron\nu$ ($\omicron\tau\iota$), the more it approximates an adverbial. By analyzing the information structure of the sentences containing the sequence $\delta\eta\lambda\omicron\nu$ $\omicron\tau\iota$, the following ordered list emerged:

- (109) a. [*preceding material*] [$\delta\eta\lambda\omicron\nu$]_{BFocI} [$\omicron\tau\iota$... VERB]_{BFocII}
- b. [*preceding material*] [$\delta\eta\lambda\omicron\nu$] [$\omicron\tau\iota$... NARROW FOCUS – VERB – REST]
- c. [THEME] [$\delta\eta\lambda\omicron\nu$]_{BFocI} [$\omicron\tau\iota$... VERB]_{BFocII}
- d. [THEME] [$\delta\eta\lambda\omicron\nu$] [$\omicron\tau\iota$... NARROW FOCUS – VERB – REST]
- e. [CONTRASTIVE/NEW TOPIC] [$\delta\eta\lambda\omicron\nu$ $\omicron\tau\iota$] [*clause continuation*]
- f. [NARROW FOCUS] [$\delta\eta\lambda\omicron\nu$ $\omicron\tau\iota$] [*clause continuation*]
- g. [VERB = BROAD FOCUS I] [$\delta\eta\lambda\omicron\nu$ $\omicron\tau\iota$] [BROAD FOCUS II]
- h. [*clause*] [$\delta\eta\lambda\omicron\nu$ $\omicron\tau\iota$]

Structural contexts (109)a–d contain a predicative $\delta\eta\lambda\omicron\nu$ complemented by a subordinate clause. In these contexts, the complement is continuous and follows after $\omicron\tau\iota$. The four contexts differ with respect to the information structure of the complement. If the primary focus of the sentence involves a constituent within the subordinate clause instead of the clause as a whole, it indicates that the discourse salience of $\delta\eta\lambda\omicron\nu$ is relatively low. Structural contexts (109)e–h involve discontinuity of the clause modified by $\delta\eta\lambda\omicron\nu$ $\omicron\tau\iota$. The information structure

of such sentences suggests that they involve only one clause and that $\delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota$ has the status of a wide-scope modifier. The discourse salience of the expression is even lower than in contexts (109)a–d, in which $\delta\eta\lambda\omicron\nu$ could still be analyzed as Broad Focus I. These features point to the conclusion that $\delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota$ in (109)e–h represents an adverbial expression.

The meaning of the adverbial $\delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota$ when used as a wide-scope modifier is that the speaker accepts the modified proposition as true and signals to the addressee that the evidence that justifies the proposition is intersubjectively accessible. The adverbial also entails that the proposition is inferable from what is known or retrievable from the common ground. The evidential entailment is the outcome of the strengthening of the conversational implicature that is sometimes triggered by the predicative usage of $\delta\eta\lambda\omicron\nu$. The evidential component is conditioned by low discourse prominence of the adverbial $\delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota$. The primary contribution of sentences (109)e–h is proposition q , which is at the same time marked as evident. Per the Gricean maxim of quality, q must be inferable or already known if it may be simultaneously asserted and described as obvious. Since the adverb cannot be modified and its low discourse prominence is conventionalized, its evidential meaning cannot be canceled.

$\Delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota$ with narrow scope modifies referential or ascriptive subacts, as opposed to propositions, but its meaning is comparable to that of the wide-scope adverbial. It expresses that the speaker is sure that an entity is identified correctly or that a property really applies. Furthermore, the identity of the entity or the nature of the ascribed property is inferable from the available information or retrievable from the common ground. In this usage, $\delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota$ functions as a pragmatic marker because it modifies the communicated content that belongs to the interpersonal level in the hierarchical structure of the clause.

The distributional properties of $\delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota$ that modifies sub-clausal constituents suggest that the univerbation of the adverbial expression probably originated in these contexts. The narrow-scope adverb cannot modify constituents that occupy the first position in the sentence, which corresponds to the fact that the univerbated form $\delta\eta\lambda\omicron\nu\acute{\omicron}\tau\iota$ is virtually not attested as a sentence-initial prosodic word.

5.6. The adverbial $\delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota$ as an evidential strategy

The investigation of the form and function of the fixed expression $\delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota$ presented in this chapter shows that it may be employed as an evidential strategy. The evidential meaning that is attested in the research corpus is inference based on general knowledge or specific information active in the common ground, i.e. assumption. This, however, need not mean that the evidential meaning of the adverbial is limited to this type of inference. In contrast to constructions like $\acute{\omicron}\tilde{\iota}\delta\alpha + \text{AccPtcp}$, the evidential component of $\delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota$ is anchored at utterance time and bound with the perspective of the speaker and the addressee. The non-interactive nature of the texts in the research corpus and the prevalence of argumentative discourse cause real-time inference based on direct perception to be a rare phenomenon in

the studied authors. The predicative construction is attested to signal circumstantial inference in dramatic poetry, which suggests that the adverbial could also express this evidential value:

(110) Καρίων· ἔα τίς ἔσθ' ὁ προσιῶν οὔτοσί;

Δίκαιος· ἀνὴρ πρότερον μὲν ἄθλιος, νῦν δ' εὐτυχής.

Καρίων· **δῆλον ὅτι** τῶν χρηστῶν τις, ὥς ἔοικας, εἶ.

'{Cario} Who's this? – {Just Man} A man who was once wretched, but now is happy.

– {Cario} **It is clear that** you are a just man, as it seems.' (Ar. Pl. 824–826)

Reportative meaning, on the other hand, is not attested. If the source in the predicative construction refers to a speech act, e.g. μαρτυρίαί 'testimonies' in (6), the proposition in the complement is a product of inference that is based on the reported evidence. Thus, the verbal report is first added to the common ground, which then serves as a reservoir of premises for inferential reasoning.

The role of the common ground in drawing inferences accounts for the range of evidential meanings expressed by the the two studied expressions. The evidence that can be included as the source in the predicative construction may represent various entities (i.e. physical or abstract objects, states-of-affairs, and propositions, cf. Section 5.4.2). These entities are cognitively registered, and knowledge about them is stored in the common ground so that both the speaker and the addressee may access it at will. The information embedded in the common ground then serves as input for inferential reasoning. In addition to that, example (110) suggests that inferences can also be drawn from the immediate common ground represented by the extra-linguistic context, which is directly perceived. The evidential value that corresponds to this arrangement is circumstantial inference. Thus, *δῆλον ὅτι* may express inferences based on direct perception and known facts, but it requires that both the speaker and the addressee have access to the evidence. On the other hand, it seems that visual source is not associated with the studied expressions. This suggest that the function of the adverbial *δῆλον ὅτι* is comparable to evidential adverbs in other languages that contain a root denoting visibility (see Section 5.2).

The evidential meaning of the studied expressions is closely connected with their epistemic and intersubjective value. In the predicative construction, the implicature of inferential reasoning is sometimes triggered by the entailment of positive speaker commitment and intersubjective acceptability of complement *q*. In this case, describing *q* as obvious implies that it may be inferred by the speaker and the addressee. The evidential implicature is weakened or absent if the main clause with 'be *δῆλον*' constitutes the discursively primary part of the utterance and does not refer to a source. Such sentences represent constative speech acts that merely declare that *q* is (or was or will be) accepted as true. By contrast, the main contribution of the sentences with the adverbial expression is *q* itself, since *δῆλον ὅτι* is discursively secondary. Asserting *q* and simultaneously marking it as obvious produces an additional entailment of inference or direct retrieval from the common

ground. The evidential meaning ensures that the epistemic and intersubjective components of the adverbial do not violate the Gricean maxim of quality.

While the adverbial $\delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota$ that has a wide scope modifies propositions, the narrow-scope usage applies to referential or ascriptive subacts. These elements in the hierarchical structure of the clause allow the speaker to refer to an entity and ascribe a property to it, respectively. While propositions belong within the representational level, subacts pertain to the interpersonal level because they represent communicative actions that serve to “‘evoke’ the totality of the message the speaker wishes to convey” (Keizer 2015: 83). A peculiar characteristic of $\delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota$ with narrow scope is that it cannot modify subacts that are not coreferential with or pragmatically attached to a previously evoked entity. This means that $\delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota$ cannot appear in some contexts that are admissible for evidential adverbs in English when they have a sub-clausal constituent within their scope:

- (111) a. an **evidently** proud man
b. an **apparently** slim advantage
c. when Geller’s photos of **supposedly** a UFO are revealed as identical to the lampshade in his house
(Kemp & Hengeveld 2022: 578; Van de Velde 2007: 209)

In (111)a–b, the speaker ascribes a property to a newly evoked entity based on evidence that need not be part of the common ground. The evidence may include sensory perception and information otherwise not represented or evoked in the communicative situation. In (111)c, the speaker doubts that the entity captured in the photos is really a UFO. By contrast, adjectives or participles used attributively cannot be modified by $\delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota$. Only predicative adjective and participial phrases that are used as secondary predications in the sentence may be marked by the adverbial. Regarding referential subacts, the studied adverbial is not compatible with the nominal phrases that are independently referential (i.e. they refer to an entity that has not been evoked or implied by another expression in the immediate context). The referential subact within the scope of $\delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota$ is always extra-clausal – it may stand in apposition to a nominal phrase or specify an implied optional argument or adjunct of a predicate in the sentence. These distributional restrictions for both kinds of subacts indicate that the subact modified by $\delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota$ supplements or specifies the communicated content that has already been evoked and is represented in the common ground. The prerequisite is that the communicated content implies or refers to an entity without clearly specifying its identity, or implies that some property may be ascribed. The function of $\delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota$ is to signal that the speaker is unpacking or clarifying the reference or ascription that has been licensed by the communicated content. The adverbial also signals that the identity of the referent or the nature of the ascribed property may be inferred from the information available in the common ground or directly retrieved from it. Insofar as $\delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota$ pertains to the co-operative action of evoking the content of the message, it may be analyzed as a pragmatic marker.

With respect to the wide-scope adverbial, we do not observe a similar pragmatization that has affected some evidential adverbs in other languages. Adverbs like *obviously* and *oczywiście* ‘obviously’ may be used to facilitate frictionless interaction with the addressee rather than to modify the communicated content in terms of information source or epistemic modality:

(112) I mean **obviously** I can write academic articles I can’t see much point in doing it at the moment because you don’t get paid for it.

(Simon-Vandenberg & Aijmer 2007: 154)

(113) A: Czy mogę zatelefonować do Stanów? Ktoś czeka na mój telefon.

B: Ależ **oczywiście!**

{A} May I make a call to the States? Somebody is waiting for my call. {B} ‘But **of course!**’

(Ruskan 2021: 220)

In Plato, for instance, δῆλον ὅτι in responses clearly pertains to the proposition from the preceding discourse move:

(114) Σωκράτης· ὁ δὲ μὴ ἰατρός γε δήπου ἀνεπιστήμων ὢν ὁ ἰατρὸς ἐπιστήμων.

Γοργίας· **δῆλον ὅτι.**

‘{Socrates} But he who is not a doctor is surely without knowledge of that whereof the doctor has knowledge. {Gorgias} **Clearly.**’ (Pl. Grg. 459b)

Finally, a few observations can be made regarding the fixed character of the adverbial δῆλον ὅτι. The adverbial follows the pattern of sentence adverbs in other languages that originated from the main clause in complex sentences. Items like the Latin *forsitan* ‘perhaps’ from *fors sit an* ‘be the chance that’ and the South American Spanish *dizque* ‘allegedly’ (lit. ‘says-that’), which is a non-firsthand evidential, may be mentioned here (Ramat & Ricca 1998: 232 with more examples; Aikhenvald 2004: 141). The fact that the predicative δῆλον ὅτι became conventionalized and eventually lexicalized in some contexts does not preclude a similar scenario of adverbialization in the case of the predicative δῆλον ὡς. In the research corpus, there are three contexts in which the sequence δῆλον ὡς may be interpreted as an adverbial expression:¹¹⁶

(115) ἴστε γὰρ δήπου πάντες, ὧ ἄνδρες Ἀθηναῖοι, τοῦθ’ ὁμοίως ἐμοί, ὅτι τὸν Κότυν ποτ’ ἐκεῖνον ἐποίησασθε πολίτην, **δῆλον ὡς** κατ’ ἐκεῖνον τὸν χρόνον εὖνουν ἡγούμενοι

¹¹⁶ The other two occurrences are Dem. 7.33 (modifying a genitive absolute, i.e. a proposition) and [Dem.] 56.4. (modifying a participial phrase, i.e. an ascriptive subact). In the whole Perseus corpus (queried in PhiloLogic 4), there are 150 occurrences of the sequence δῆλον ὡς, while δῆλον ὅτι appears 561 times.

‘I am sure, men of Athens, that you all know as well as I do that you once admitted Cotys over yonder to your citizenship, **evidently** because you regarded him at the time as a sincere well-wisher.’ (Dem. 23.118)

It is quite probable that the two adverbial expressions developed in parallel, the more frequent $\delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota$ providing a model for the adverbial usage of $\delta\eta\lambda\omicron\nu\ \acute{\omega}\varsigma$. This suggests that the speakers were aware of the internal structure of the adverbial expressions even though $\delta\eta\lambda\omicron\nu$ could not be analyzed as a prototypical predicative adjective in the relevant contexts anymore.

6. Conclusions

This thesis investigates several linguistic expressions in classical Greek that invite the hypothesis that they represent evidential strategies. The studied expressions are the complementation strategies with verbs of seeing and knowledge, the modal auxiliaries *ἀνάγκη* 'necessity' and *ἀναγκαῖον* 'necessary', the particle *ἄρα*, and the adverbial *δῆλον ὅτι* 'clearly'. Evidential strategies are defined in Section 1.3 as discursively secondary or otherwise functional expressions that specify, by entailment of generalized implicature, the information source for the proposition. Given that the semantic-functional domain of information source is not grammaticalized in classical Greek, the expressions to be studied were selected based on an onomasiological criterion that narrows the investigated meanings down to various types of inference. The study utilizes a descriptive model of the domain of information source that also includes pragmatic meanings like knowledge (a)symmetry and epistemic authority. The model, which is grounded in the crosslinguistic category of evidentiality, serves as a basis for comparing the Greek expressions with evidentials and evidential strategies in other languages. In addition to that, the thesis also investigates epistemic modal entailments and implicatures associated with the Greek expressions under examination.

One of the conclusions of the study is that the distinction between circumstantial inference and assumption, commonly found in languages with evidentiality, also applies to the Greek expressions. Circumstantial inference represents a non-firsthand information source that is based on direct perception of evidence. Assumption refers to inferences that build upon known facts and involve logical reasoning.

Circumstantial inference can be expressed as a generalized implicature by participial complements with predicates of knowledge (see Chapter 2). In addition, the same construction can also convey visual source. The source of this evidential strategy is probably the use of participial complements with verbs of sensory perception, especially verbs of seeing. The construction of verbs of seeing + AccPtcp originally expressed direct perception of a state-of-affairs. The fact that participial complements in classical Greek may be used with verbs of knowledge indicates that this complement type can also denote propositions. Considering that verbs of seeing can function as predicates of knowledge, it follows that some participial complements with verbs like *ὁράω* 'see' refer to acquired information, rather than solely to directly perceived states-of-affairs. The investigation of the occurrences of *ὁράω* 'see' and *εἶδον* 'saw' + AccPtcp presented in Section 2.5 shows that the studied construction can express the evidential values of visual source and circumstantial inference. This range of meanings may be explained by the lexical semantics of the matrix verbs in question. More specifically, I propose that the component of sensory perception is often retained when verbs of seeing are used as predicates of knowledge. In the case of visual source, the subject of the matrix verb directly perceives a state-of-affairs and accepts it as evidence for a proposition whose content corresponds to what has been seen. Regarding circumstantial inference, the subject uses directly perceived evidence to infer a fact that describes an eventuality that has not been seen or cannot be seen. Based on the study of the occurrences in the research

corpus, it may be concluded that the same range of evidential meanings can be expressed by actual verbs of knowledge complemented by AccPtcp. The evidential nuance probably stems from the cognitive use of ὁράω and εἶδον + AccPtcp, from where it spread to other predicates of knowledge. This proposal accounts for those occurrences of participial complements that cannot be explained by the pragmatic factors described in earlier research (e.g. pragmatic presupposition). At the same time, the research corpus also contains several occurrences of the studied construction that are not compatible with the evidential values described above. These contexts refer to general knowledge or events that happened a long time ago. One way to account for this usage is to propose that AccPtcp may also signal epistemic authority. This feature denotes privileged access to knowledge and pertains to information that personally concerns the subject of the matrix clause. Therefore, the close syntactic integration of the complement with the matrix clause can iconically reflect the evidential component of direct access to evidence as well as the component of epistemic authority. While it is likely that both features play a role in the use of AccPtcp with predicates of knowledge, it cannot be claimed that they are semantically encoded. It is rather the case that they represent generalized implicatures and that the use of participial complements is influenced by other factors, which include pragmatics and stylistics. The meaning of other complementation strategies with predicates of knowledge is discussed further below.

Both circumstantial inference and assumption can be conveyed by the particle ἄρα and the adverbial δῆλον ὅτι. Regarding ἄρα, the particle entails that the proposition is activated in the consciousness of the speaker or the subject of the matrix clause (see Chapter 4). The particle can invite the pragmatic implicature that the activation of the proposition is facilitated by circumstantial inference. This evidential meaning appears to be restricted to the contexts in which ἄρα signals deferred realization. The speaker uses the particle to express that they learned about an event some time after it happened. In addition, the particle is used when the speaker realizes that a generic statement is true. It is worth noting that deferred realization signaled by ἄρα can also be based on hearsay. The particle can signal assumption in polar questions, declarative main clauses or sentences, and embedded clauses. In questions, ἄρα signals that the nucleus proposition lights up in the consciousness of the speaker because it is inferable from the preceding contribution of the interlocutor. The speaker's epistemic stance towards the marked proposition is neutral. The epistemic neutrality of ἄρα can give rise to the conversational implicature that the speaker distances themselves from the proposition, because it conflicts with their beliefs. A lack of speaker commitment is also apparent in the contexts in which ἄρα signals inference based on a hypothetical premise. In the studied rhetorical texts, the hypothetical premise involves a political or judicial decision that favors the speaker's opponent, and the inferred conclusion describes a negative effect such a decision would have on the city. ἄρα in embedded clauses can signal assumption on the part of the subject of the matrix verb. This implicature is triggered when the matrix clause contains a verb or other lexical item that indicates that a cognizer (i.e. a person who engages in reasoning) draws a conclusion from the available evidence.

The evidential nuance of ἄρα is lacking in the contexts in which the particle primarily signals activation of the proposition. This is the case in conditional protases, embedded clauses in which the particle signals the stance of the primary speaker, and polar questions that contain propositions that do not follow from the contextual evidence.

The adverbial expression δῆλον ὅτι ‘clearly’ combines an evidential entailment with an intersubjective and epistemic meaning (see Chapter 5). The adverbial entails that the marked proposition is either retrieved from the common ground or inferable from the evidence available to the speaker and the addressee. The speaker is committed to the proposition and signals to the addressee that they should accept it as well. The adverbial neutralizes the distinction between circumstantial inference and assumption because the common ground, which forms the basis of inference, consists of both shared knowledge and the immediate extra-linguistic context that is directly perceived by the interlocutors.

The adverbial δῆλον ὅτι emerged from the construction consisting of the adjective δῆλον ‘clear’ and the clausal complement introduced by ὅτι ‘that’. The adverbial is a result of grammaticalization whereby the original matrix clause lost the status of a potentially discursively primary element and became conventionalized as a discursively secondary item. The evidential meaning, which is a pragmatic implicature in the case of the predicative construction (ἐστὶ) δῆλον ὅτι ‘it is clear that’, represents an encoded semantic feature of the adverbial due to its low discourse prominence. More specifically, the informationally salient part of a sentence with the adverbial δῆλον ὅτι is the proposition modified by it. Simultaneously asserting a proposition and describing it as obvious means that it is either known by the speaker and the addressee or, if the information is new, inferable from the common ground. The evidential entailment emerges in the interplay between the intersubjective meaning of the adverbial and the Gricean maxim of quality, according to which the speaker should only contribute information that is supported by adequate evidence. By contrast, in the original predicative construction, the discursively salient part of the sentence can be the matrix clause, while the complement represents the topic. This is also the case when the matrix clause represents a constative speech act (i.e. a declarative statement) that rounds off the preceding argumentation or refers to a different time than the present. The proposition in the complement is not asserted, and, consequently, the addressee is not prompted to add it to the common ground. For this reason, the addressee need not assume that the embedded proposition is inferable.

The adverbial can also have a sub-clausal constituent within its scope. The modified expression is always a separate intonation unit that represents a referential or ascriptive subact. In addition, the subact specifies the pragmatic information that has already been evoked within the same utterance. For this reason, δῆλον ὅτι with a sub-clausal constituent within its scope never stands at the left edge of the sentence. The meaning of the adverbial in these contexts is comparable to its wide-scope usage, even though it does not modify propositional content. The expression entails that the identity of an individual mentioned or implied earlier in the sentence, or the nature of the ascribed property is retrievable from the

common ground or inferable. It is likely that the unverbated adverb *δηλονότι* emerged in these contexts.

The evidential meaning of the modal auxiliaries *ἀνάγκη* 'necessity' and *ἀναγκαῖον* 'necessary' is limited to assumption (see Chapter 3). The evidential component is an entailment associated with the objective epistemic use of the studied modal auxiliaries. The modal meaning profiles the reasoning of the speaker who concludes that a proposition follows from the premises. The intertwined objective epistemic and evidential meanings of *ἀνάγκη* and *ἀναγκαῖον* emerged through subjectification and scope increase from the earlier event-oriented meaning, which involves objective necessity. In the event-oriented meaning, the force profiled by the modal auxiliary acts within the socio-physical domain and brings about a state-of-affairs. The innovative usage involves the component of logical reasoning, so that the speaker traces the action of a socio-physical force and seeks to determine its outcome. Furthermore, the corpus data indicate that the examined modal auxiliaries are sensitive to the type of logical reasoning (i.e. deduction, instantial induction, and abduction).¹¹⁷ Section 3.3 proposes that the three types do not become grammaticalized at the same time. Deductive and inductive conclusions are more prevalent than abductive conclusions in the texts stemming from the classical period. The proposed explanation for this distribution is that the first two types of reasoning are closer to the original event-oriented meaning of *ἀνάγκη* and *ἀναγκαῖον* and, consequently, they emerged first. The reason is that deduction and instantial induction can lead to conclusions that describe future states-of-affairs, while abduction, which aims at establishing the best explanation of a fact or observation, is never future-oriented. Since event-oriented objective necessity is limited to posterior states-of-affairs, it follows that the innovative epistemic usage was first restricted to this temporal value. Abductive usage became available only after the complements of *ἀνάγκη* and *ἀναγκαῖον* became compatible with simultaneous and anterior reference. Another difference between deduction and instantial induction on the one hand and abduction on the other is that the former imply both a socio-physical force and logical reasoning, whereas the latter exclusively profiles the cognitive process. In addition to expressing objective epistemic modality and information source, *ἀνάγκη* and *ἀναγκαῖον* can also trigger a conversational implicature of (strong) partial epistemic commitment.

The meaning of some expressions can be better described in terms of their interpersonal value, rather than information source. This applies to the constructions containing predicates of knowledge with finite complements introduced by *ὅτι* 'that' or *ὥς* 'that' (see Section 2.7). The complementizer *ὅτι* can signal intersubjectivity and the symmetry of knowledge between the speaker and the addressee. The speaker uses *ὅτι* when the addressee already accepts the information in the complement or when they do not foresee that the addressee could find the information implausible. By contrast, *ὥς* signals that the information cannot be added to the common ground at the time of utterance because it

¹¹⁷ Deduction, instantial induction, and abduction are defined in (11) and illustrated in (12) in Chapter 3.

cannot be readily accepted by the speaker and/or the addressee. These nuances associated with ὅτι and ὥς primarily concern the proposition in the complement, but they may also apply to the evidence by which the proposition is justified. Given the intertwining of knowledge (a)symmetry with information source in some languages that have grammaticalized evidentiality, it seems justified to regard the constructions containing predicates of knowledge with complements introduced by ὅτι or ὥς as evidential strategies.

The investigated evidential strategies in classical Greek can be compared with evidentials and related expressions in other languages. Participial complements with predicates of knowledge are similar to the visual evidentials in Tuyuca and Tariana, which can convey both visual source and circumstantial inference based on directly perceived evidence (Barnes 1984; Aikhenvald 2004: 305–306). Furthermore, the implicature of epistemic authority invited by AccPtcp is comparable to the meaning of the epistemic marker =*mi* in Upper Napo Kichwa, which signals knowledge to which the speaker has privileged access (Grzech 2020; Bergqvist & Grzech 2023). The (a)symmetry of knowledge between the speaker and the addressee, which is signaled by complements with ὅτι and ὥς in classical Greek, is grammaticalized in Kogi (Evans, Bergqvist & San Roque 2018b: 143–150). The modal auxiliaries ἀνάγκη and ἀναγκάϊον, which are nascent markers of objective epistemic modality in classical Greek, resemble the Middle English *must* and the Standard High German *müssen* (Goossens 1999; Mortelmans 2000: 142–143). These modal auxiliaries primarily mark inference since they have not grammaticalized into markers of epistemic commitment. The use of ἄρα to signal deferred realization has parallels in languages like Yukaghir and Tsafiki, in which the non-firsthand evidential can convey the same meaning (Aikhenvald 2004: 102, 202). Finally, the adverbial δῆλον ὅτι can be compared with evidential adverbs in modern European languages like the Lithuanian *aiškiai* ‘clearly’ and the French *visiblement*, which convey inference (Ruskan 2021; Dendale, Vanderheyden & Izquierdo Alegría 2020).

This thesis demonstrates that employing a functional model of language in combination with a descriptive model of a crosslinguistic conceptual domain is a fruitful approach for studying the form and meaning of specific linguistic units within a single language. The research presented here shows that evidential meanings that are grammaticalized in some languages of the world can be expressed by means of entrenched evidential strategies in classical Greek. The value of studying four distinct linguistic units that are loosely connected by virtue of conveying a similar meaning is that we may observe multiple paths that lead to a single conceptual domain. These paths represent diachronic links that connect pre-evidential concepts with evidential implicatures or entailments. We have seen that inference, as a meaning, can emerge from diverse semantic sources such as necessity (cf. ἀνάγκη and ἀναγκάϊον), sensory perception (cf. ὁράω + AccPtcp), cognitive activation (cf. ἄρα), and visibility (cf. δῆλον ὅτι). The changes in meaning we have examined arise from synchronic processes rooted in communication, as speakers endow pre-evidential concepts with evidential implicatures, which cooperative addressees successfully decode. Gradually, recurrent evidential implicatures become generalized and potentially non-cancelable in

certain contexts. At the same time, traces of the original meaning persist in the innovative usage, creating functional differences between semantically similar expressions. For example, although both ἄρα and ἀνάγκη can express assumption, they are not interchangeable. An overview of the meanings conveyed by the studied evidential strategies, as presented in Table 18, reveals that there is minimal functional overlap between them. Thus, the varied pragmatic and epistemic meanings make each expression useful in different communicative contexts. Through the study of these variegated expressions, I hope to have shed light on both their form and meaning, as well as the conceptual domain of inference as manifested in classical Greek.

Expression	Evidential meaning (EM)	Pragmatic meaning (PM)	Semantic status of the EM and PM	Subjective epistemic meaning	Vantage point
Predicates of knowledge + AccPtcp	visual source, circumstantial inference	epistemic authority	generalized implicature	—	subject of the matrix clause
Predicates of knowledge + ὅτι	—	knowledge symmetry	generalized implicature	—	speaker and addressee
Predicates of knowledge + ὡς	—	knowledge asymmetry	generalized implicature	—	speaker and addressee
ἀνάγκη and ἀναγκαῖον (objective epistemic)	assumption	—	entailment	((strong) partial commitment)	speaker
ἄρα	assumption, deferred realization (circumstantial inference)	—	generalized implicature	neutral	speaker, subject of the matrix clause
δῆλον ὅτι	assumption, circumstantial inference	intersubjectivity	entailment	speaker commitment	speaker and addressee

Table 18 Meaning of the studied expressions

7. References

- Aijmer, Karin. 2009. *Seem* and evidentiality. *Functions of Language* 16 (1). 63–88.
- Aikhenvald, Alexandra Y. & Anne Storch. 2013. Linguistic expression of perception and cognition: A typological glimpse. In Alexandra Y. Aikhenvald & Anne Storch (eds.), *Perception and cognition in language and culture*, 1–45. Leiden & Boston: Brill.
- Aikhenvald, Alexandra Y. 2004. *Evidentiality*. Oxford: Oxford University Press.
- Aikhenvald, Alexandra Y. 2007. Information source and evidentiality: what can we conclude?. *Rivista di Linguistica* 19 (1), Mario Squartini (ed.), *Special issue on Evidentiality between lexicon and grammar*. 207–227.
- Aikhenvald, Alexandra Y. 2020. Evidentiality and information source. In Chungmin Lee & Jinho Park (eds.), *Evidentials and modals*, 19–40. Leiden & Boston: Brill.
- Aksu-Koç, Ayhan & Dan I. Slobin. 1986. A psychological account of the development and use of evidentials in Turkish. In Wallace Chafe & Johanna Nichols (eds.), *Evidentiality: The linguistic coding of epistemology*, 159–167. Norwood, N.J.: Ablex.
- Allan, Rutger J. 2012. Clause intertwining and word order in Ancient Greek. *Journal of Greek Linguistics* 12 (1). 5–28.
- Allan, Rutger J. 2013. Exploring modality's semantic space: grammaticalization, subjectification and the case of ὀφείλω. *Glotta* 89. 1–46.
- Allan, Rutger J. 2014. Changing the topic: topic position in Ancient Greek word order. *Mnemosyne* 67 (2). 181–213.
- Allan, Rutger J. 2015. Classifying the Ancient Greek particles. Particle meaning, diachrony and the layered structure of discourse. Presentation at the International Colloquium of Ancient Greek Linguistics, 23–27 March, Rome.
- Allan, Rutger J. 2016. Tense and aspect in Greek: Two historical developments; augment and perfect. In Steven E. Runge & Christopher J. Fresch (eds.), *The Greek Verb Revisited*, 81–121. Bellingham, WA.: Lexham Press.
- Allan, Rutger J. 2017. The history of the future: Grammaticalization and subjectification in Ancient Greek future expressions. In Frédéric Lambert, Rutger J. Allan & Theodoros Markopoulos (eds.), *The Greek future and its history = Le Futur grec et son histoire, Bibliothèque des cahiers de l'Institut de linguistique de Louvain* 139, 43–72. Louvain-la-Neuve: Peeters.
- Anderson, Lloyd B. 1986. Evidentials, paths of change, and mental maps: Typologically regular asymmetries. In Wallace Chafe & Johanna Nichols (eds.), *Evidentiality: The linguistic coding of Epistemology*, 273–312. Norwood, N.J.: Ablex.
- Archakis, Argyris. 1996. *Δείκτες οργάνωσης του λόγου το "δηλαδή" και η σχέση του με συναφείς εκφράσεις*. Ph.D. dissertation. Aristotle University of Thessaloniki.
- Axel-Tober, Katrin & Kalle Müller. 2017. Evidential adverbs in German: Diachronic development and present-day meaning. *Journal of Historical Linguistics* 7 (1/2). 9–47.
- Axel-Tober, Katrin. 2016. Satzadverbiale im Deutschen: synchrone und diachrone Fragen bei einem ‚scheints‘ alten Thema. In Sergio Neri, Roland Schuhmann & Susanne Zeilfelder

- (eds.), *"dat iħdir it nu bi ħuldi ġibu"* – *Linguistische, germanistische und indogermanistische Studien Rosemarie Lühr gewidmet*, 23–33. Wiesbaden: Reichert.
- Bakker, Egbert J. 1993. Discourse and performance: Involvement, visualization and "presence" in Homeric poetry. *Classical Antiquity* 12 (1). 1–29.
- Bakker, Egbert J. 1997. Storytelling in the future: Truth, time, and tense in Homeric epic. In Egbert J. Bakker & Ahuvia Kahane (eds.), *Written voices, spoken signs: Tradition, performance, and the epic text*, 11–36. Cambridge, MA.: Harvard University Press.
- Bakker, Stéphanie J. 2002. Futura zonder toekomst. *Lampas. Tijdschrift voor Nederlandse classici* 3. 199–214.
- Bakker, Stéphanie J. 2009. On the curious combination of the particles γάρ and οὐν. In Stéphanie J. Bakker & Gerry Wakker (eds.), *Discourse cohesion in Ancient Greek*, 41–61. Leiden & Boston: Brill.
- Barnes, Janet. 1984. Evidentials in the Tuyuca verb. *International Journal of American Linguistics* 50 (3). 255–271.
- Bartolotta, Annamaria & Daniel Kölligan. 2020. Modality and injunctive in Homeric Greek: The role of epistemic particles and adverbs in counterfactual constructions. In Martti Leiwo, Marja Vierros & Sonja Dahlgren (eds.), *Papers on Ancient Greek linguistics. Proceedings of the Ninth International Colloquium on Ancient Greek Linguistics (ICAGL 9)*, 417–445. Helsinki: The Finnish Society of Sciences and Letters.
- Bary, Corien L. A. 2009. *Aspect in Ancient Greek: A semantic analysis of the aorist and imperfective*. Ph.D. dissertation. Radboud Universiteit Nijmegen.
- Bary, Corien L. A. 2017. Reportative markers in Ancient Greek. In Felicia Logozzo & Paolo Poccetti (eds.), *Ancient Greek linguistics: New approaches, insights, perspectives*, 293–302. Berlin & Boston: De Gruyter.
- Bary, Corien L. A. 2018. Reporting someone else's speech: The use of the optative and accusative-and-infinitive as reportative markers in Herodotus' Histories. *Open Library of Humanities* 4 (1). 1–38.
- Basset, Louis. 1979. *Les emplois periphrastiques du verbe grec μέλλειν: Étude de linguistique grecque et essai de linguistique générale*. Lyon: Maison de l'Orient.
- Basset, Louis. 1984. L'optatif grec et la dissociation énonciative. *Lalies* 4. 53–59.
- Basset, Louis. 1986. La représentation subjective d'un point de vue passé: L'optatif oblique dans les complétives déclaratives chez Thucydide. In Sylvianne Rémi-Giraud & Michel Le Guern (eds.), *Sur le verbe*, 91–111. Lyon: Presses Universitaires de Lyon.
- Basset, Louis. 1999. Des participiales parmi les complétives. In Bernard Jacquinođ (ed.), *Les complétives en grec ancien. Actes du colloque international de Saint-Étienne (3-5 septembre 1998)*, 33–44. Saint-Étienne: Publications de l'Université de Saint-Étienne.
- Beekes, Robert. 2010. *Etymological dictionary of Greek*. 2 vols. Leiden & Boston: Brill.
- Bellert, Irena. 1977. On semantic and distributional properties of sentential adverbs. *Linguistic Inquiry* 8. 337–351.
- Benardete, Seth. 1965. Xpῆ and δεῖ in Plato and Others. *Glotta* 43 (3/4). 285–298.

- Bentein, Klaas. 2014. Perfect. In Georgios Giannakis, Vit Bubenik, Emilio Crespo, Chris Golston, Alexandra Lianeri, Silvia Luraghi & Stephanos Matthaios (eds.), *Encyclopedia of Ancient Greek language and linguistics*, vol. 3, 46–49. Leiden & Boston: Brill.
- Bergqvist, Henrik & Karolina Grzech. 2023. The role of pragmatics in the definition of evidentiality. *STUF - Language Typology and Universals* 76 (1). 1–30.
- Bergqvist, Henrik & Seppo Kittilä. 2019. Epistemic perspectives: Evidentiality, egophoricity, and engagement. In Henrik Bergqvist & Seppo Kittilä (eds.), *Evidentiality, egophoricity, and engagement*, 1–21. Berlin: Language Science Press.
- Bertrand, Nicolas. 2010. *L'ordre des mots chez Homère. Structure informationnelle, localisation et progression du récit*. Ph.D. dissertation. Université Paris-Sorbonne.
- Bisang, Walter. 2004. Grammaticalization without coevolution of form and meaning: The case of tense-aspect-modality in East and mainland Southeast Asia. In Walter Bisang, Nikolaus P. Himmelmann & Björn Wiemer (eds.), *What makes grammaticalization: A look from its fringes and its components*, 109–138. Berlin & New York: Mouton de Gruyter.
- Bisang, Walter. 2011. Grammaticalization and linguistic typology. In Heiko Narrog & Bernd Heine (eds.), *The Oxford handbook of grammaticalization*, 105–117. Oxford: Oxford University Press.
- Blass, Friedrich & Theodor Thalheim (eds.). 1914. *Antiphontis orationes et fragmenta*. Leipzig: B. G. Teubner.
- Blass, Friedrich (ed.). 1892. *Antiphontis orationes et fragmenta, adiunctis Gorgiae, Antisthenis, Alcidas, declamationibus*. Editio Altera Correctior. Leipzig: B. G. Teubner.
- Bonifazi, Anna, Annemieke Drummen & Mark de Kreij. 2016. *Particles in Ancient Greek discourse: Exploring particle use across genres*. 5 vols. Washington, D.C.: Center for Hellenic Studies.
- Boye, Kasper & Peter Harder. 2009. Evidentiality: Linguistic categories and grammaticalization. *Functions of Language* 16 (1). 9–43.
- Boye, Kasper & Peter Harder. 2021. Complement-taking predicates, parentheticals and grammaticalization. *Language Sciences* 88. 1–19.
- Boye, Kasper. 2010a. Evidence for what? Evidentiality and scope. *STUF - Language Typology and Universals* 63 (4). 290–307.
- Boye, Kasper. 2010b. Reference and clausal perception-verb complements. *Linguistics* 48 (2). 391–430.
- Boye, Kasper. 2012. *Epistemic meaning. A crosslinguistic and functional-cognitive study*. Berlin: Mouton de Gruyter.
- Boye, Kasper. 2018. Evidentiality: The notion and the term. In Alexandra Y. Aikhenvald (ed.), *The Oxford Handbook of Evidentiality*, 261–272. Oxford: Oxford University Press.
- Boye, Kasper. 2023a. Propositions and States-of-Affairs: A cognitive linguistic approach. In Jutta Hartmann & Angelika Wöllstein (eds.), *Propositionale Argumente im Sprachvergleich*:

- Theorie und Empirie. / Propositional arguments in cross-linguistic research: Theoretical and empirical issues*, 85–114. Tübingen: Narr Francke Attempto.
- Boye, Kasper. 2023b. Grammaticalization as conventionalization of discursively secondary status: Deconstructing the lexical–grammatical continuum. *Transactions of the Philological Society* 121 (2). 270–292.
- Boye, Kasper. 2024. Evidentiality, discourse prominence and grammaticalization. *Studies in Language* 48 (3). 575–607.
- Büring, Daniel & Christine Gunlogson. 2000. Aren't Positive and Negative Polar Questions the Same?. Ms., UCLA/UCSC.
- Bybee, Joan, Revere Perkins & William Pagliuca. 1994. *The evolution of grammar*. Chicago: University of Chicago Press.
- Caponigro, Ivano & Jon Sprouse. 2007. Rhetorical questions as questions. In Estela Puig-Waldmüller (ed.), *Proceedings of Sinn und Bedeutung 11*, 121–133. Barcelona: Universitat Pompeu Fabra.
- Carretero, Marta & Juan Rafael Zamorano-Mansilla. 2013. Annotating English adverbials for the categories of epistemic modality and evidentiality. In Juana I. Marín-Arrese, Marta Carretero, Jorge Arús Hita & Johan van der Auwera (eds.), *English modality: Core, periphery and evidentiality*, 317–355. Berlin & Boston: De Gruyter Mouton.
- Carretero, Marta, Juana I. Marín-Arrese & Julia Lavid-López. 2017. Adverbs as evidentials: an English-Spanish contrastive analysis of twelve adverbs in spoken and newspaper discourse. *Kalbotyra* 70. 32–59.
- Carretero, Marta. 2019. Evidentiality in adverbs of manner of perceivability: the case of English *manifestly*, *noticeably*, *patently* and *visibly*. *Functions of Language* 26 (3). 275–307.
- Celle, Agnès. 2009. The intersubjective function of modal adverbs: a contrastive English-French study of adverbs in journalistic discourse. *Language in Contrast* 9 (1) 23–36.
- Cepiraga, Ottavia. 2022a. Argument clause constructions with ἀκούω in classical Greek. Poster presented at the Fifth Pavia International Summer School for Indo-European Linguistics (5-10 September 2022, Università di Pavia).
- Cepiraga, Ottavia. 2022b. L'alternanza tra accusativo e genitivo nei verbi di percezione del greco antico. In Claudia Borghetti & Fabio Tamburini (eds.), *CLUB Working Papers in Linguistics*, vol. 6, 110–125. Bologna: CLUB – Circolo Linguistico dell'Università di Bologna.
- Chafe, Wallace & Johanna Nichols. 1986. Introduction. In Wallace Chafe & Johanna Nichols (eds.), *Evidentiality: The Linguistic coding of epistemology*, vii–xi. Norwood, N.J.: Ablex.
- Chafe, Wallace. 1994. *Discourse, consciousness, and time. The flow and displacement of conscious experience in speaking and writing*. Chicago: University of Chicago Press.
- Chantraine, Pierre. 1968–1980. *Dictionnaire étymologique de la langue grecque. Histoire des mots*. 5 vols. Paris: Klincksieck.
- Chelliah, Shobhana L. 1997. *A Grammar of Meithei*. Berlin: Mouton de Gruyter.

- Chirikba, Viacheslav. 2003. Evidential category and evidential strategy in Abkhaz. In Alexandra Y. Aikhenvald & Robert M. W. Dixon (eds.), *Studies in evidentiality*, 243–272. Amsterdam: John Benjamins.
- Christ, Leo 1905. *Der Substantivsatz mit der Relativpartikel ὡς bei den zehn attischen Rednern*. Würzburg: Staudenraus.
- Clark, Herbert H. & Catherine R. Marshall. 1981. Definite reference and mutual knowledge. In Aravind K. Joshi, Bonnie L. Webber & Ivan A. Sag (eds.), *Elements of discourse understanding*, 10–63. Cambridge: Cambridge University Press.
- Clark, Herbert H. 1996. *Using language*. Cambridge: Cambridge University Press.
- Coates, Jennifer. 1983. *The semantics of the modal auxiliaries*. London: Croom Helm.
- Cornillie Bert & Pedro Gras. 2015. On the interactional dimension of evidentials: The case of the Spanish evidential discourse markers. *Discourse Studies* 17 (2). 141–161.
- Cornillie, Bert. 2007. *Evidentiality and epistemic modality in Spanish (semi-)auxiliaries: A cognitive-functional approach*. Berlin & New York: Mouton de Gruyter.
- Cornillie, Bert. 2009. Evidentiality and epistemic modality: On the close relationship between two different categories. *Functions of language* 16 (1). 44–62.
- Crellin, Robert S. D. 2016. *The syntax and semantics of the perfect active in literary Koine Greek*. Chichester: Wiley-Blackwell.
- Crespo, Emilio. 2015. Non-prototypical adverbs in classical Greek. *Studies in Greek Linguistics* 35. 15–34.
- Cristofaro, Sonia. 1996. *Aspetti sintattici e semantici delle frasi complete in greco antico*. Florence: La Nuova Italia.
- Cristofaro, Sonia. 2003. *Subordination*. Oxford: Oxford University Press.
- Cristofaro, Sonia. 2008. A constructionist approach to complementation: Evidence from Ancient Greek. *Linguistics* 46 (3). 571–606.
- Cristofaro, Sonia. 2012. Participial and infinitival complement sentences in Ancient Greek. In Volker Gast & Holger Diessel (eds.), *Clause linkage in cross-linguistic perspective*, 335–362. Berlin & New York: Mouton de Gruyter.
- Cuartero Sánchez, Juan Manuel. 2011. *Notoriamente* y otros adverbios modales de valoración epistémica. *Español actual: Revista de español vivo* 96. 41–62.
- De Boel, Gunnar. 1980. Towards a theory of the meaning of complementizers in classical Attic. *Lingua* 52 (3). 285–304.
- De Decker, Filip. 2016. The augment use in Iliad 6: An evidential marker?. *Les Études Classiques* 84. 259–317.
- De Decker, Filip. 2018. The augment use of ἔειπε and εἶπε in Early Epic Greek: An evidential marker?. *Symbolae Osloenses* 92 (1). 2–56.
- De Haan, Ferdinand. 1999a. Evidentiality in Dutch. In Steve S. Chang, Lily Liaw & Josef Ruppenhofer (eds.), *Proceedings of the 25th Annual Meeting of the Berkeley Linguistics Society*, 74–85. Berkeley, CA: Berkeley Linguistics Society.

- De Haan, Ferdinand. 1999b. Evidentiality and epistemic modality: Setting boundaries. *Southwest Journal of Linguistics* 18 (1). 83–101.
- De Haan, Ferdinand. 2001. The place of inference within the evidential system. *International Journal of American Linguistics* 67 (2). 193–219.
- De la Villa, Jesús. 1999. L'indicatif du passé dans les propositions complétives du grec ancien. In Bernard Jacquiod (ed.), *Les complétives en grec ancien. Actes du colloque international de Saint-Étienne (3-5 septembre 1998)*, 353–365. Saint-Étienne: Publications de l'Université de Saint-Étienne.
- Del Gobbo, Francesca. 2007. On the syntax and semantics of appositive relative clauses. In Nicole Dehé & Yordanka Kavalova (eds.), *Parentheticals*, 173–202. Amsterdam & Philadelphia: John Benjamins.
- DeLancey, Scott. 1986. Evidentiality and volitionality in Tibetan. In Wallace Chafe & Johanna Nichols (eds.), *Evidentiality: The linguistic coding of epistemology*, 203–213. Norwood, N.J.: Ablex.
- Dendale, Patrick & Julie van Bogaert. 2007. A semantic description of French lexical evidential markers and the classification of evidentials. *Rivista di Linguistica* 19 (1). 65–89.
- Dendale, Patrick & Liliane Tasmowski. 2001. Introduction: Evidentiality and related notions. *Journal of Pragmatics* 33 (3). 339–348.
- Dendale, Patrick, Anne Vanderheyden & Dámaso Izquierdo Alegría. 2020. *Visiblement* en français, *visiblemente* en espagnol : des marqueurs évidentiels de perception directe ou d'inférence?. In Oscar L. Lamas, Martha Rudka & Giovanni Parodi (eds.), *Marcadores del discurso y lingüística contrastiva en las lenguas románicas (Lingüística Iberoamericana 79)*. 63–96.
- Denizot, Camille & Liana Tronci (eds.). 2023. *Building modality with syntax: Focus on Ancient Greek*. Berlin & Boston: De Gruyter Mouton.
- Denniston, John D. 1954. *The Greek particles*. 2nd edn. rev. by Kenneth J. Dover. Oxford: Clarendon Press.
- Dickinson, Connie. 1999. Semantic and pragmatic dimensions of Tsafiki evidential and mirative markers. *Proceedings of the Chicago Linguistic Society 35, part 2: Papers from the Panels*. 29–44.
- Diewald, Gabriele & Elena Smirnova. 2010. *Evidentiality in German: Linguistic realization and regularities in grammaticalization*. Berlin & New York: De Gruyter Mouton.
- Diewald, Gabriele. 2011. Pragmaticalization (defined) as grammaticalization of discourse functions. *Linguistics* 49 (2). 365–390.
- Dik, Helma. 1995. *Word order in Ancient Greek: A pragmatic account of word order variation in Herodotus*. Amsterdam: Gieben.
- Dik, Helma. 2007. *Word order in Greek tragic dialogue*. Oxford: Oxford University Press.
- Douven, Igor & Sara Verbrugge. 2010. The Adams family. *Cognition* 117 (3). 302–318.

- Douven, Igor. 2021. Abduction. In Edward N. Zalta (ed.), *The Stanford Encyclopedia of Philosophy*, <https://plato.stanford.edu/archives/sum2021/entries/abduction/> (accessed Oct. 10, 2024).
- Dretske, Fred I. 1969. *Seeing and knowing*. London: Routledge and Kegan Paul.
- Dryer, Matthew S. 1996. Focus, pragmatic presupposition, and activated propositions. *Journal of pragmatics* 26 (4). 475–523.
- Duhoux, Yves. 2000. *Le verbe grec ancien: éléments de morphologie et de syntaxe historiques*. Louvain-la-Neuve: Peeters.
- Erteschik-Shir, Nomi & Shalom Lappin. 1979. Dominance and the functional explanation of island phenomena. *Theoretical Linguistics* 6. 41–86.
- Erteschik-Shir, Nomi & Shalom Lappin. 1983. Under stress: A functional explanation of English sentence stress. *Journal of Linguistics* 19 (2). 419–453.
- Evans, Nicholas, Henrik Bergqvist & Lila San Roque. 2018a. The Grammar of Engagement I: Framework and initial exemplification. *Language and Cognition* 10 (1). 110–140.
- Evans, Nicholas, Henrik Bergqvist & Lila San Roque. 2018b. The Grammar of Engagement II: Typology and diachrony. *Language and Cognition* 10 (1). 141–170.
- Faller, Martina T. 2002. *Semantics and pragmatics of evidentials in Cuzco Quechua*. Ph.D. dissertation. Stanford University.
- Faure, Richard. 2014. The oblique optative, a case of narrative tense: The example of the future optative. In Annamaria Bartolotta (ed.), *The Greek verb: Morphology, syntax, and semantics*, 131–148. Louvain-la-Neuve & Walpole, MA: Peeters.
- Faure, Richard. 2017. Argument participial clauses viewed as abstract objects in classical Greek. In Felicia Logozzo & Paolo Poccetti (eds.), *Ancient Greek linguistics: New approaches, insights, perspectives*, 551–564. Berlin & Boston: Walter de Gruyter.
- Foolen, Ad. 2011. Pragmatic markers in a sociopragmatic perspective. In Gisle Andersen & Karin Aijmer (eds.), *Pragmatics of society* (Handbooks of Pragmatics 5), 217–242. Berlin & Boston: de Gruyter Mouton.
- García Velasco, Daniel. 2022. Modification and context. *Open Linguistics* 8 (1), 524–544.
- George, Coulter H. 2018. Homeric ἄρα: An (in)consequential particle. *Classical Philology* 113 (3). 241–254.
- Gijbels, Sanderijn & Raf Van Rooy. 2023. Που in Attic drama: Evidential marker and common ground manager. *Symbolae Osloenses* 97 (1). 75–114.
- Gisborne, Nikolas & Jasper Holmes. 2007. A history of English evidential verbs of appearance. *English Language & Linguistics* 11 (1). 1–29.
- Givón, Talmy. 2001a. *Syntax*, vol. 1. Amsterdam: John Benjamins.
- Givón, Talmy. 2001b. *Syntax*, vol. 2. Amsterdam: John Benjamins.
- Goldstein, David M. 2016. *Classical Greek syntax: Wackernagel's law in Herodotus* (Brill's Studies in Indo-European Language & Linguistics 16). Leiden & Boston: Brill.
- Goldstein, David M. 2019. Discourse particles in LSJ: a fresh look at γε. In Christopher Stray, Michael Clarke & Joshua T. Katz (eds.), *Liddell and Scott. The history, methodology, and*

- languages of the world's leading lexicon of Ancient Greek*, 268–287. Oxford: Oxford University Press.
- González, Francisco J. G. 1991. ΔΟΚΕΙΝ: Apuntes para una gramática de los términos epistemológicos griegos. *Florentia Iliberritana: Revista de estudios de Antigüedad Clásica* 2. 199–206.
- Goodell, Thomas D. 1914. Χρή and δεῖ. *The Classical Quarterly* 8 (2). 91–102.
- Goossens, Louis. 1999. Metonymic bridges in modal shifts. In Klaus-Uwe Panther & Günter Radden (eds.), *Metonymy in language and thought*, 193–210. Amsterdam & Philadelphia: John Benjamins.
- Goossens, Louis. 2000. Patterns of meaning extension, ‘parallel chaining’, subjectification, and modal shifts. In Antonio Barcelona (ed.), *Metaphor and metonymy at the crossroads: A cognitive perspective*, 149–169. Berlin: Mouton de Gruyter.
- Gottschalk, Hans B. 1966. Review (H.) Schreckenberg: Ananke. Untersuchungen zur Geschichte des Wortgebrauchs. *The Journal of Hellenic Studies* (86). 213–214.
- Green, Alison C. 2012. *The concept of ananke in Greek literature before 400 BCE*. Ph.D. dissertation. The University of Exeter.
- Greenbaum, Sydney. 1969. *Studies in English adverbial usage*. London: Longman.
- Grice, Paul. 1991. *Studies in the way of words*. Cambridge, MA.: Harvard University Press.
- Grimm, Jörg. 1962. Die Partikel ἄρα im frühen griechischen Epos. *Glotta* 40 (1/2). 3–41.
- Grzech, Karolina. 2020. Managing Common Ground with epistemic marking: ‘Evidential’ markers in Upper Napo Kichwa and their functions in interaction. *Journal of Pragmatics* 168 (2020). 81–97.
- Gusev, Valentin. J. 2007. Эвиденциальность в нганасанском языке. In Viktor S. Xrakovskij (ed.), *Эвиденциальность в языках Европы и Азии. Сборник статей памяти Наталии Андреевны Козинцевой*, 415–444. Saint Petersburg: Nauka.
- Hartung, Johann A. 1832. *Lehre von den Partikeln der griechischen Sprache I*. Erlangen: J. J. Paul und E. Enke.
- Haßler, Gerda. 2018. Evidential and epistemic sentence adverbs in Romance languages. *Linguistics Online* 92 (5). 87–109.
- Haug, Dag T. 2008. From resultatives to anteriors in Ancient Greek: On the role of paradigmaticity in semantic change. In Thorhallur Eythórsson (ed.), *Grammatical change and linguistic theory*, 285–305. Amsterdam & Philadelphia: John Benjamins.
- Heine, Bernd & Tania Kuteva. 2007. *The genesis of grammar: A reconstruction*. Oxford: Oxford University Press.
- Heine, Bernd. 1995. Agent-oriented vs. epistemic modality: Some observations on German modals. In Joan L. Bybee & Suzanne Fleischman (eds.), *Modality in grammar and discourse*, 17–54. Amsterdam & Philadelphia: John Benjamins.
- Hengeveld, Kees & Hella Olbertz. 2012. Didn’t you know? Mirativity does exist!. *Linguistic typology* 16 (3). 487–503.

- Hengeveld, Kees & J. Lachlan Mackenzie. 2008. *Functional Discourse Grammar: A typologically-based theory of language structure*. Oxford: Oxford University Press.
- Hengeveld, Kees & Marize M. D. Hattnher. 2015. Four types of evidentiality in the native languages of Brazil. *Linguistics* 53 (3). 479–524.
- Hengeveld, Kees. 2017. *A hierarchical approach to grammaticalization*. In Kees Hengeveld, Heiko Narrog & Hella Olbertz (eds.), *The Grammaticalization of tense, aspect, modality and evidentiality: A functional perspective*, 13–37. Berlin & Boston: De Gruyter Mouton.
- Hopper, Paul. J. & Elizabeth C. Traugott. 2003. *Grammaticalization*. 2nd edn. Cambridge: Cambridge University Press.
- Huang, Yan. 2014. *Pragmatics*. 2nd edn. Oxford: Oxford University Press.
- Huddleston, Rodney & Geoffrey K. Pullum. 2002. *The Cambridge grammar of the English language*. Cambridge: Cambridge University Press.
- Huitink, Luuk. 2009. Pragmatic presupposition and complementation in classical Greek. In Stéphanie J. Bakker & Gerry Wakker (eds.), *Discourse cohesion in Ancient Greek*, 21–40. Leiden & Boston: Brill.
- Humbert, Jean. 1960. *Syntaxe grecque*. Paris: Klincksieck.
- Jacques, Guillaume. 2018. Non-propositional evidentiality. In Alexandra Y. Aikhenvald (ed.), *The Oxford handbook of evidentiality*, 109–123. Oxford: Oxford University Press.
- Jiménez Delgado, José M. 2017. The Particle ἄρα from the 2nd to the 1st Millennium. In Marie-Louise Nosch, Hedvig Landenius Enegren (eds.), *Aegean scripts: Proceedings of the 14th International Colloquium on Mycenaean Studies, Copenhagen, 2–5 September 2015*, 537–547. Rome: Istituto di Studi sul Mediterraneo Antico.
- Jiménez Delgado, José M. 2023. La partícula ἄρα: orígenes y evolución semántica. *Glotta* 99 (1). 93–121.
- Jiménez, María D. 1990. Δοκεῖν + infinitivo: construcción personal e impersonal. *Cuadernos de Filología Clásica. Estudios Griegos e Indoeuropeos* 24. 235–243.
- Kamio, Akio. 1997. *Territories of information*. Amsterdam & Philadelphia: John Benjamins.
- Karttunen, Lauri. 1973. Presuppositions of compound sentences. *Linguistic Inquiry* 4 (2). 169–193.
- Keizer, Evelien. 2015. *A Functional Discourse Grammar for English*. Oxford: Oxford University Press.
- Kemp, Lois & Kees Hengeveld. 2022. English evidential -ly adverbs in the noun phrase from a functional perspective. *Open Linguistics* 8 (1). 573–592.
- Kittilä, Seppo. 2024. Inference versus assumption in light of the Finnish evidential-modal adverbs *näköjään* and *varmaan*. *Folia Linguistica* 58 (1). 119–155.
- Klamer, Marian. 1998. *A Grammar of Kambara*. Berlin: Mouton de Gruyter.
- Kroon, Caroline. 1995. *Discourse particles in Latin* (Amsterdam Studies in Classical Philology 4). Amsterdam: Gieben.

- Krzyżanowska, Karolina, Sylvia Wenmackers & Igor Douven. 2013. Inferential conditionals and evidentiality. *Journal of Logic, Language, and Information* 22 (3). 315–334.
- Kühner, Raphael & Bernhard Gerth. 1904. *Ausführliche Grammatik der griechischen Sprache. Satzlehre: Zweiter Band*. Hannover & Leipzig: Hahnsche Buchhandlung.
- Kümmel, Martin & Helmut Rix. 2001. *LIV: Lexikon der indogermanischen Verben*. Wiesbaden: Reichert.
- Kyburg, Henry E. 1990. *Science & reason*. Oxford: Oxford University Press.
- La Roi, Ezra. 2019. Epistemic modality, particles and the potential optative in classical Greek. *Journal of Greek Linguistics* 19 (1). 58–89.
- La Roi, Ezra. 2020. The Development of εὕρισκω ‘find’ as evidence towards a diachronic solution of the matching-problem in Ancient Greek complementation. *Philologia Classica* 15 (2). 191–207.
- Ladd, Robert D. 1981. A first look at the semantics and pragmatics of negative questions and tag questions. *Papers from the Seventeenth Regional Meeting of the Chicago Linguistic Society*. 164–171.
- Lambrecht, Knud. 1994. *Information structure and sentence form: Topic, focus, and the mental representations of discourse referents*. Cambridge: Cambridge University Press.
- Langacker, Ronald W. 2008. *Cognitive grammar: A basic introduction*. Oxford: Oxford University Press.
- LaPolla, Randy J. 2003. Evidentiality in Qiang. In Alexandra Y. Aikhenvald & Robert M. W. Dixon (eds.), *Studies in evidentiality*, 63–78. Amsterdam: John Benjamins.
- Lehmann, Christian. 1995. Synsemantika. In Joachim Jacobs et al. (eds.), *Syntax. An international handbook of contemporary research* (Handbooks of Linguistics and Communication Science 9), vol. 2, 1251–1266. Berlin & New York: de Gruyter.
- Lehmann, Christian. 2002 [1982]. *Thoughts on grammaticalization*. 2nd edn. (Arbeitspapiere des Seminars für Sprachwissenschaft der Universität Erfurt 9). Erfurt: Seminar für Sprachwissenschaft der Universität Erfurt.
- Levinson, Stephen C. 1983. *Pragmatics*. Cambridge: Cambridge University Press.
- Lillo, Antonio. 2017. On the oblique optative in Herodotus’ completive sentences, an evidentiality mark in Ancient Greek. In Felicia Logozzo & Paolo Poccetti (eds.), *Ancient Greek linguistics: New approaches, insights, perspectives*, 313–324. Berlin & Boston: De Gruyter.
- Lillo, Antonio. 2020. Oblique optative and inferential evidentiality in Homer. In Martti Leiwo, Marja Vierros & Sonja Dahlgren (eds.), *Papers on Ancient Greek linguistics. Proceedings of the Ninth International Colloquium on Ancient Greek Linguistics (ICAGL 9)*, 479–493. Helsinki: The Finnish Society of Sciences and Letters.
- Luraghi, Silvia. 2020. *Experiential verbs in Homeric Greek: A constructional approach*. Leiden & Boston: Brill.
- Lyons, John. 1977. *Semantics*. Cambridge: Cambridge University Press.

- Madvig, Johan N. 1847. *Syntax der griechischen Sprache, besonders der attischen Sprachform für Schulen*. Braunschweig: Vieweg.
- Maisak, Timur A. & Sergei G. Tatevosov 2001. Личная засвидетельствованность. In Alexander E. Kibrik (ed.), *Багвалинский язык: Грамматика. Тексты. Словари*, 307–312. Moscow: Nasledie.
- Maslova, Elena. 2003. Evidentiality in Yukaghir. In Alexandra Y. Aikhenvald & Robert M. W. Dixon (eds.), *Studies in evidentiality*, 219–236. Amsterdam: John Benjamins.
- Matić, Dejan. 2003. Topic, focus, and discourse structure: Ancient Greek word order. *Studies in Language* 27 (3). 573–633.
- Matthews, Richard. 2003. Modal auxiliary constructions, TAM and interrogatives. In Roberta Facchinetti, Manfred Krug & Frank Palmer (eds.), *Modality in contemporary English*, 47–70. Berlin: Mouton de Gruyter.
- Matthewson, Lisa, Henry Davis & Hotze Rullmann. 2007. Evidentials as epistemic modals: Evidence from St’át’imcets. *Linguistic Variation Yearbook* 7. 201–254.
- McCready, Eric & Norry Ogata. 2007. Evidentiality, modality, and probability. *Linguistics and Philosophy* 30. 147–206.
- Méndez Dosuna, J. V. 1999. La valeur de l’optatif oblique grec : un regard fonctionnel-typologique. In Bernard Jacquiod (ed.), *Les complétives en grec ancien. Actes du colloque international de Saint-Étienne (3-5 septembre 1998)*, 331–352. Saint-Étienne: Publications de l’Université de Saint-Étienne.
- Mortelmans, Tanja. 2000. On the ‘evidential’ nature of the ‘epistemic’ use of the German modal *müssen* and *sollen*. *Belgian Journal of Linguistics* 14. 131–148.
- Mortelmans, Tanja. 2012. Epistemic *must* and its cognates in German and Dutch. The subtle differences. *Journal of Pragmatics* 44 (15). 2150–2164.
- Mortelmans, Tanja. 2016. Indirect evidentiality in Dutch and German: A contrastive corpus study of the *seem*-type verbs *schijnen* and *scheinen*. *Kalbotyra* 69. 121–152.
- Müller, Kalle. 2022. *Satzadverbien und Evidentialität*. Berlin & Boston: De Gruyter.
- Munson, Rosaria V. 2001. Ananke in Herodotus. *The Journal of Hellenic Studies* 121. 30–50.
- Narrog, Heiko. 2005. Modality, mood, and change of modal meanings – a new perspective. *Cognitive Linguistics* 16 (4). 677–731.
- Narrog, Heiko. 2012. *Modality, subjectivity, and semantic change: A cross-linguistic perspective*. Oxford: Oxford University Press.
- Narrog, Heiko. 2017. Relationship of form and function in grammaticalization – the case of modality. In Kees Hengeveld, Heiko Narrog & Hella Olbertz (eds.), *The grammaticalization of tense, aspect, modality and evidentiality: A functional perspective*, 75–110. Berlin & Boston: de Gruyter Mouton.
- Neuberger-Donath, Ruth. 1982. Der Gebrauch von ὅτι und ὡς in Subjekt- und Objekt-Sätzen. *Rheinisches Museum für Philologie* 125 (3/4). 252–274.
- Neuberger-Donath, Ruth. 1983. Die Funktion des Optativs in abhängigen Aussagesätzen. In Shirô Hattori, Kazuko Inoue, Tadao Shimomiya & Yoshio Nagashima (eds.), *Proceedings*

- of the XIIIth International Congress of Linguistics (August 29 – September 4, 1982, Tokyo), 715–718. Tokyo: Comité International Permanent des Linguistes.
- Nichols, Johanna. 1986. The bottom line: Chinese Pidgin Russian. In Wallace Chafe & Johanna Nichols (eds.), *Evidentiality: The linguistic coding of epistemology*, 239–257. Norwood, N.J.: Ablex.
- Noonan, Michael. 2007. Complementation. In Timothy Shopen (ed.), *Language typology and syntactic description*, 52–150. Cambridge: Cambridge University Press.
- Nuyts, Jan. 2001. *Epistemic modality, language, and conceptualization: A cognitive-pragmatic perspective*. Amsterdam & Philadelphia: John Benjamins.
- Oréal, Elsa. 1997. Sur la fonction argumentative de quelques particules grecques. *Lalies* 17. 229–249.
- Ostwald, Martin. 1988. *Ἀνάγκη in Thucydides*. Oxford: Oxford University Press.
- Oswalt, Robert L. 1986. The evidential system of Kashaya. In Wallace Chafe & Johanna Nichols (eds.), *Evidentiality: The linguistic coding of epistemology*, 29–45. Norwood, N.J.: Ablex.
- Palmer, Frank R. 2001 [1986]. *Mood and modality*. Cambridge: Cambridge University Press.
- Pardal Padín, Alberto. 2021. Marcos predicativos y cambio sintáctico-semántico en *δοκέω*. In Juan A. G. Iglesias, Julián M. Dosuna & Blanca M. Prósper (eds.), *Curiositas nihil recusat. Studia Isabel Moreno Ferrero dicata: estudios dedicados a Isabel Moreno Ferrero*, 399–412. Salamanca: Ediciones Universidad de Salamanca.
- Perseus Digital Library. Gregory R. Crane (ed.). Tufts University. <http://www.perseus.tufts.edu> (accessed Oct. 12, 2024)
- Probert, Philomen. 2006. *Ancient Greek accentuation: Synchronic patterns, frequency effects, and prehistory*. Oxford: Oxford University Press.
- Pulte, William. 1985. The experienced and nonexperienced past in Cherokee. *International Journal of American Linguistics* 51 (4). 543–544.
- Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech & Jan Svartvik. 1985. *A comprehensive grammar of the English language*. London & New York: Longman.
- Ramat, Paolo & Davide Ricca. 1998. Sentence adverbs in the languages of Europe. In Johan van der Auwera (ed.), *Adverbial constructions in the languages of Europe (Empirical Approaches to Language Typology 20. Eurotyp 3)*, 187–275. Berlin & New York: Mouton de Gruyter.
- Rijksbaron, Albert. 2006 [1984]. *The syntax and semantics of the verb in classical Greek. An introduction*, 3rd edn. Chicago & London: The University of Chicago Press.
- Romero, Maribel & Chung-Hye Han. 2004. On negative yes/no questions. *Linguistics and Philosophy* 27 (5). 609–658.
- Roulet, Eddy, Antoine Auchlin, Jacques Moeschler, Christian Rubattel & Marianne Schelling. 1985. *L'articulation du discours en français contemporain*. Paris & Bern: Peter Lang.
- Roulet, Eddy. 1984. Speech acts, discourse structure, and pragmatic connectives. *Journal of Pragmatics* 8 (1). 31–47.

- Ruijgh, Cornelis J. 1970. Review P. Chantraine: Dictionnaire étymologique de la langue grecque, Histoire des roots, Tome I: A-Δ. *Lingua* 25. 302–321.
- Ruijgh, Cornelis J. 1971. *Autour de “τε épique”. Études sur la syntaxe grecque*. Amsterdam: Adolf M. Hakkert.
- Ruijgh, Cornelis J. 1985. Review Louis Basset: Les emplois pdrphrastiques du verbe grec μέλλειν. *Lingua* 65. 323–333.
- Ruijgh, Cornelis J. 1986. Review Κατερίνα Συνοδινού: “Εοικα-Εϊκός και συγγενικά από τον Όμηρο ως τον Αριστοφάνη. *Mnemosyne* 39 (1/2). 153–158.
- Ruiz Yamuza, Emilia. 2000. Objective and subjective modality satellites in Ancient Greek: τάχα and ἴσως. *Glotta* 76 (3/4). 237–248.
- Ruiz Yamuza, Emilia. 2008. *Tres verbos que significan “deber” en Griego Antiguo*. Zaragoza: Librós Portico.
- Ruiz Yamuza, Emilia. 2008b. Análisis del comportamiento del verbo κινδυνεύω. *HABIS* 39. 377–396.
- Ruskan, Anna & Audronė Šolienė. 2017. Evidential and epistemic adverbials in Lithuanian: evidence from intra-linguistic and cross-linguistic analysis. *Kalbotyra* 70. 127–152.
- Ruskan, Anna. 2021. Visual perception-based adverbials: Cross-linguistic equivalence and differences. *Journal of Pragmatics* 186. 208–223.
- Sapir, Edward. 1922. The Takelma language of southwestern Oregon. In Franz Boas (ed.), *Handbook of American Indian languages*, vol. 2, 1–296. Washington: Government Printing Office.
- Schrekenberg, Heinz. 1964. *Ananke. Untersuchungen zur Geschichte des Wortgebrauchs*. Munich: C. H. Beck.
- Schüle, Sandra. 2000. *Perception verb complements in Akatek, a Mayan language*. Ph.D. dissertation. Eberhard Karls Universität Tübingen.
- Schwyzler, Eduard & Albert Debrunner. 1950. *Griechische Grammatik. Zweiter Band: Syntax und syntaktische Stilistik*. Munich: C. H. Beck.
- Searle, John R. 1969. *Speech acts: An essay in the philosophy of language*. Cambridge: Cambridge University Press.
- Searle, John R. 1975. A taxonomy of illocutionary acts. In Keith Gunderson (ed.), *Language, mind and knowledge*, 344–369. Minneapolis, MN.: University of Minnesota Press.
- Sillitoe, Paul. 2010. Trust in development: Some implications of knowing in indigenous knowledge. *Journal of the Royal Anthropological Institute* 16 (1). 12–30.
- Simon-Vandenberg, Anne-Marie & Karin Aijmer. 2007. *The semantic field of modal certainty: A corpus-based study of English adverbs*. Berlin & New York: Mouton de Gruyter.
- Smirnova, Anastasia. 2021. Evidentiality in abductive reasoning: Experimental support for a modal analysis of evidentials. *Journal of Semantics* 38 (4). 1–40.
- Squartini, Mario. 2004. Disentangling evidentiality and epistemic modality in Romance. *Lingua* 114 (7). 873–895.

- Squartini, Mario. 2008. Lexical vs. grammatical evidentiality in French and Italian. *Linguistics* 46 (5). 917–947.
- Squartini, Mario. 2018. Extragrammatical expression of information source. In Alexandra Y. Aikhenvald (ed.), *The Oxford handbook of evidentiality*, 273–285. Oxford: Oxford University Press.
- Stüber, Karin. 2019. Griechisch μέλλω: Etymologie und Verwendung bei Homer. *International Journal of Diachronic Linguistics and Linguistic Reconstruction* 16. 145–200.
- Swan, Toril. 1988. *Sentence adverbials in English: A synchronic and diachronic investigation*. Oslo: Novus.
- Sweetser, Eve. 1990. *From etymology to pragmatics: Metaphorical and cultural aspects of semantic structure*. Cambridge: Cambridge University Press.
- Talmy, Leonard. 1988. Force dynamics in language and cognition. *Cognitive Science* 12 (1). 49–100.
- Thesaurus Linguae Graecae® Digital Library. Maria C. Pantelia (ed.). University of California, Irvine. <http://www.tlg.uci.edu> (accessed Oct. 12, 2024)
- Thijs, Kees. 2021. *Polysemous particles in Ancient Greek: A study with special reference to μήν and δή*. Ph.D. dissertation. Radboud Universiteit Nijmegen.
- Traugott, Elizabeth C. & Richard B. Dasher. 2001. *Regularity in semantic change*. Cambridge: Cambridge University Press.
- Traugott, Elizabeth C. 2011. Modality from a historical perspective. *Language and Linguistics Compass* 5 (6). 381–396.
- Tronci, Liana. 2017. On the distribution of some interactive/conclusive discourse markers in Plato's Theaetetus. In Camille Denizot & Olga Spevak (eds.), *Pragmatic approaches to Latin and Ancient Greek*, 213–234. Amsterdam & Philadelphia: John Benjamins.
- Van Bogaert, Julie & Timothy Coleman. 2013. On the grammaticalization of ('t) *schijnt* 'it seems' as an evidential particle in colloquial Belgian Dutch. *Folia Linguistica* 47 (2). 481–520.
- Van de Velde, Freek. 2007. Interpersonal modification in the English noun phrase. *Functions of Language* 14 (2). 203–230.
- Van der Auwera, Johan & Andreas Ammann. 2011. Overlap between situational and epistemic modal marking. In Matthew S. Dryer & Martin Haspelmath (eds.), *The world atlas of language structures online*, Chapter 76. <http://wals.info/chapter/76> (accessed Oct. 10, 2024). Leipzig: Max Planck Institute for Evolutionary Anthropology.
- Van der Auwera, Johan & Vladimir A. Plungian. 1998. Modality's semantic map. *Linguistic Typology* 2 (1). 79–124.
- Van Emde Boas, Evert, Albert Rijksbaron, Luuk Huitink & Mathieu de Bakker. 2019. *Cambridge grammar of classical Greek*. Cambridge: Cambridge University Press.
- Van Ophuijsen, Johannes M. 1993. Οὐν, ἄρα, δή, τοίνυν: The linguistic articulation of arguments in Plato's Phaedo. In Christiaan M. J. Sicking & Johannes M. van Ophuijsen,

- Two studies in Attic particle usage: Lysias and Plato*, 67–164. Leiden, New York & Köln: Brill.
- Van Rooy, Raf. 2016. The relevance of evidentiality for Ancient Greek: Some explorative steps through Plato. *Journal of Greek Linguistics* 16 (1). 3–46.
- Velupillai, Viveka. 2012. *An Introduction to linguistic typology*. Amsterdam & Philadelphia: John Benjamins.
- Vendler, Zeno. 1967. *Linguistics in philosophy*. Ithaca & London: Cornell University Press.
- Verano, Rodrigo & Pardal Padín, Alberto. 2023. (Inter)subjectivity, modality, and syntax in classical Greek: Dokéō and phaínomai in addressee-oriented assertions in the dialogues of Plato. In Camille Denizot & Liana Tronci (eds.), *Building Modality with Syntax: Focus on Ancient Greek*, 167–192. Berlin & Boston: De Gruyter Mouton.
- Verhagen, Arie. 2015. Grammar and cooperative communication. In Ewa Dąbrowska & Dagmar Divjak (eds.), *Handbook of cognitive linguistics (Handbooks of Linguistics and Communication Science 39)*, 232–252. Berlin & Boston: Mouton de Gruyter.
- Viberg, Åke. 1984. The verbs of perception: A typological study. In Brian Butterworth, Bernard Comrie & Östen Dahl (eds.), *Explanations for language universals*, 123–162. Berlin: Mouton de Gruyter.
- Vliegen, Maurice. 2011. Evidentiality. Dutch seem and appear verbs: *blijken, lijken, schijnen*. *Linguistics in the Netherlands* 28 (1). 125–137.
- Wakker, Gerry C. 1994. *Conditions and conditionals: An investigation of Ancient Greek*. Amsterdam: Gieben.
- Wakker, Gerry C. 1997. Modal particles and different points of view in Herodotus and Thucydides. In Egbert J. Bakker (ed.), *Grammar as Interpretation*, 215–250. Leiden, New York & Köln: Brill.
- Wakker, Gerry C. 2006. Future auxiliaries or not?. In Emilio Crespo, Jesús de la Villa & Antonio R. Revuelta (eds.), *Word classes and related topics in Ancient Greek. Proceedings of the Conference on 'Greek Syntax and Word Classes held in Madrid on 18–21 June 2003*, 237–255. Louvain-la-Neuve: Peeters.
- Wakker, Gerry C. 2007. Intentions and Future Realisations. In Rutger J. Allan & Michel Buijs (eds.), *The language of literature: Linguistic approaches to classical texts*, 168–187. Leiden & Boston: Brill.
- Wakker, Gerry C. 'Well I will now present my arguments'. Discourse cohesion marked by οὕτως and τοίγυντα in Lysias. In Stéphanie J. Bakker & Gerry Wakker (eds.), *Discourse cohesion in Ancient Greek*, 63–81. Leiden & Boston: Brill.
- Whistler, Kenneth W. 1986. Evidentials in Patwin. In Wallace Chafe & Johanna Nichols (eds.), *Evidentiality: The linguistic coding of epistemology*, 60–74. Norwood, N.J.: Ablex.
- Whitt, Richard J. 2010. *Evidentiality and perception verbs in English and German*. Bern: Peter Lang.
- Whitt, Richard J. 2018. Evidentiality and propositional scope in Early Modern German. *Journal of Historical Pragmatics* 19 (1). 122–149.

- Wiemer Björn & Veronika Kampf. 2012. On conditions instantiating tip effects of epistemic and evidential meanings in Bulgarian. *Slověne = Словѣне. International Journal of Slavic Studies* 1 (2). 5–38.
- Wiemer, Björn. 2018. Evidentials and epistemic modality. In Alexandra Y. Aikhenvald (ed.), *The Oxford handbook of evidentiality*, 85–108. Oxford: Oxford University Press.
- Willett, Thomas. 1988. A cross-linguistic survey of the grammaticization of evidentiality. *Studies in Language* 12 (1). 51–97.
- Woodbury, Anthony C. 1986. Interactions of tense and evidentiality: A study of Sherpa and English. In Wallace Chafe & Johanna Nichols (eds.), *Evidentiality: The linguistic coding of epistemology*, 188–202. Norwood, N.J.: Ablex.
- Wooley, Allan. 1967. Ananke by Heinz Schreckenberg. *The American Journal of Philology* 88 (2). 228–232.
- Zimmermann, Bernhard & Antonio Rengakos. 2014. *Handbuch der griechischen Literatur der Antike. Zweiter Band: Die Literatur der klassischen und hellenistischen Zeit*. Munich: C. H. Beck.