Guidelines for the Syntactic Annotation of the Ancient Greek Dependency Treebank (1.1) *

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*These guidelines are based on those developed for the annotation of Latin syntax in collaboration with the Index Thomisticus [1]. Thanks are due to Meg Luthin for finding many of these example sentences and to Dan Ullucci for illustrating them.
1 Introduction

Treebanks – large collections of syntactically parsed sentences – have recently emerged as a valuable resource not only for computational tasks such as grammar induction and automatic parsing, but for traditional linguistic and philological pursuits as well. This trend has been encouraged by the creation of several historical treebanks, such as that for Middle English (Kroch and Taylor [6]), Early Modern English (Kroch et al. [5]), Old English (Taylor et al. [10]), Early
New High German (Demske et al. [2]) and Medieval Portuguese (Rocio et al. [8]).

In what follows we present a preliminary set of annotation guidelines for the Ancient Greek Dependency Treebank adapted from those developed for the Latin Dependency Treebank in collaboration with the Index Thomisticus. The annotation style proposed here is predominantly informed by two sources: the dependency grammar used by the Prague Dependency Treebank [4, 3] (itself based on Sgall et al. [9]), and the Latin grammar of Pinkster [7].

2 Dependency Grammar

Dependency Grammar (DG) differs from constituent-based grammars by foregoing non-terminal phrasal categories and instead linking words themselves to their immediate head. This is an especially appropriate manner of representation for languages with a moderately free word order (such as Greek, Latin and Czech), where the linear order of constituents is broken up with elements of other constituents. A DG representation of *ista meam norit gloria canitiem*, for instance, would look like Figure 1.

![Dependency graph of *ista meam norit gloria canitiem* (Prop. I.8.46). Arcs are directed from heads to their dependents.](image)

Dependency grammar is also appropriate for Greek and Latin since it is not too theoretically distant from Classical pedagogical grammars, where the highly inflected nature of the language leads to discussions of, for example, which adjective “modifies” which noun in a sentence. A dependency grammar simply assigns one such “modification” to every word.

3 Annotation Style

Different treebanks and grammars, however, assign syntactic functions differently. The general model for our style of representation is that used by the Prague Dependency Treebank, with several important departures arising from Pinkster’s [7] Latin grammar. The following table lists all of the tags currently in use; the following subsections further elaborate each.
Table 1: Complete tagset.

3.1 PRED (predicate)

Every complete sentence (i.e., non-elliptical with at least one predicate) has one word unattached to any other; this is attached to the root of the sentence with the relation PRED.

If a sentence begins with an initial conjunction, the main verb is dependent on that conjunction and the conjunction then depends on the root.
ναιετάω δ’ Ἰθάκην ἐυδείελον
(“I inhabit clear-seen Ithaca,” Od. 9.24)

χαλεπὰς δὲ θεοὶ δώσουσι μερίμνας
(“And the gods will give difficult troubles,” Op. 178)

3.2 SBJ (subject)
Subjects are dependent on their verb (which is the predicate of either a main or subordinate clause), and come in a variety of parts of speech and phrases, including:
3.2.1 Nominative nouns

δὲ ἀποφθινύθουσι λαοί

(“And the men perish,” Op. 243)

3.2.2 Accusative nouns

These are typically found in indirect discourse and other accusative + infinitive constructions.

Accusative absolutes, like the more common genitive absolutes below, are treated as a form of embedded predication, with the accusative dependent on the participle as its SBJ.

φάν γάρ μν ἀληθέα μυθήσασθαι

(“For they thought that he spoke the truth,” Od. 18.342)
3.2.3 Genitive nouns

Since genitive absolutes are treated as an embedded predication, the genitive noun in such constructions should be annotated as the subject of the participle.

πάντα δὲ οἱ βλέφαρ᾽ ἀμφὶ καὶ ὀφρύας εὔσεν ἀυτὴν γλήνης καιομένης ...
(“And the flame singed his eyelids and brow all around, his eyeball burning,” Od. 9.389-90)
3.2.4 Infinitive verbs

δέ
COORD
ἐστιν
PRED_CO
μυθολογεύειν
SBJ
εἰρημένα
OBJ
ἀριζήλως
ADV
αὖτις
ADV
μοί
ADV
ἐχθρὸν
PNOM

ἐχθρὸν δέ μοι ἐστιν αὕτις ἀριζήλως εἰρημένα μυθολογεύειν
(“To tell a tale clearly again is irksome to me,” Od. 12.452-3)

3.2.5 Relative Pronouns

ἔννεπε
PRED
μοῦσα
ExD
μοι
OBJ
ἄνδρα
OBJ
πολύτροπον
ATR
ὃς
SBJ
πλάγχθη
ATR
πολλὰ
ADV
μάλα
AuxZ

ἄνδρα μοι ἔννεπε, μοῦσα, πολύτροπον, ὃς μάλα πολλὰ πλάγχθη
(“Tell me, muse, of the many-deviced man, who wandered very many ways,” Od. 1-2.)

3.3 OBJ (object)

Likewise, objects are also dependent on their verb, and come in as large a variety of phrase types as subjects, including:
3.3.1 Accusative nouns

δ᾽ ἔφερε ζείδωρος ἄρουρα αὐτομάτη πολλὸν τε καὶ ἄφθονον
(“The fruitful earth unforced bare them many and abundant fruit,” Op. 117-18.)

3.3.2 Accusative + infinitive constructions

The infinitive verb is the head of the accusative + infinitive construction, and depends on the verb introducing the construction via OBJ.

φάν γὰρ μὴ ἀληθέα μυθήσασθαι
(“For they thought that he spoke the truth,” Od. 18.342)
3.3.3 Relative clauses

δὲ
COORD
ἀξιοῦμεν
PRED_CO
ἀκοῦσαι
OBJ
παρὰ
AuxP
σοῦ
ADV
ἡ
OBJ

ἀξιοῦμεν δὲ παρὰ σοῦ ἀκοῦσαι ἃ φρονεῖς
(“We want to hear from you what you think,” Acts 28.22)

3.3.4 Subordinate clauses

τε
COORD
ἔφη
PRED_CO
Παῦλος
SBJ
ὁ
ATR
ἀδελφοί
ExD
ᾔδειν
OBJ
Οὐκ
AuxZ
ὅτι
AuxC
ἐστὶν
OBJ
ἀρχιερεύς
PNOM
,
,

ἔφη τε ὁ Παῦλος Οὐκ ᾔδειν , ἀδελφοί , ὅτι ἐστίν ἀρχιερεύς
(“Paul said, ‘I didn’t know, brothers, that he was high priest,’” Acts 23.5)
3.3.5 Infinitive verbs

This include both verbs that function as traditional direct objects as well as those that complete verbs like ἐθέλω (to be willing), μέλλω (to intend), δύναμαι (to be able) and βούλομαι (to want).

δὲ ἀξιοῦμεν ἀκοῦσαι ἃ φρονεῖς παρὰ σοῦ

(“We want to hear from you what you think,” Acts 28.22)

3.3.6 Complements

Our notion of object follows that used by the PDT, and includes a wider range of phrases than traditional direct objects. OBJ should also be used to annotate the complements of a verb (i.e., those required arguments that cannot become subjects if the verb is made passive). These are arguments that pertain specifically to the verb in question and cannot readily be applied to other verbs as well. The following English examples all have one argument that is typically considered the “direct object”: this would generally appear in the accusative case in Greek or Latin and should be annotated OBJ. However, they also each contain one phrase that completes the action of the verb (with wine, onto his right hand and out of pork) that should be annotated with OBJ as well.

- They sprinkled the lamp with wine
- He threw the ring onto his right hand
- The cook fashioned birds and fish out of pork

In practice, complements like these are often confused with ADV. Objects are obligatory arguments of verbs, while adverbials are always optional. If an object is left out of the sentence, one of two things happens: the sentence
becomes ungrammatical or a different sense of the verb is implied (one with a reduced valency). If we were to add any of the complements above to another verb (like “runs”) it wouldn’t make sense (e.g., “runs” in “he runs out of pork” does not mean the same thing as “he runs”).

Adverbs, however, can apply to almost any verb, so we could easily add “yesterday” to any of the examples and they would still be grammatical:

- They sprinkled the lamp with wine *yesterday*
- He threw the ring onto his right hand *yesterday*
- The cook fashioned birds and fish out of pork *yesterday*

One category in particular that should always be annotated with OBJ consists of words that specify “motion toward” something.

3.3.7 Indirect objects

Traditional indirect objects are also included in this category, and can show up either as prepositional phrases or as dative nouns:

\[
\text{Αἰολίην δ᾽ ἐς νῆσον ἀφικόμε΄θ}
\]

(“We came to the Aeolian island,” Od. 10.1)
3.3.8 Passive agents

And as in the PDT, actors in passive constructions should also be annotated as OBJ.
3.4 ATR (attribute)

Attributes are those phrases that attributively specify (or delimit) the meaning of their head. Most commonly these are adjectives, but can include other classes as well, such as nouns, relative clauses and prepositional phrases.

3.4.1 Adjectives

(“And pale fear seized me,” Od. 11.43)
3.4.2 Determiners

η δὲ πρύμνα ἐλύετο ὑπὸ τῆς βίας
("The stern began to be broken up by the waves," Acts. 27.41)

3.4.3 Participles

μοῦσαι Πιερίηθεν ἀοιδῇσιν κλείουσαι δεῦτε, Δί' ἐννέπετε, σφέτερον πατέρ᾽ ὑμνείουσαι
("Muses of Pieria giving glory by song, here!, tell of Zeus, singing of your father," Op. 1.1)

Note that there are two participles in this sentence, one attributive (κλείουσαι) and one adverbial (ὑμνείουσαι). The first restricts the reference of the noun ("Muses who give glory ...") while the second modifies the verb because it gives more information on how that action is undertaken (e.g., “tell of Zeus by singing”).
3.4.4 Prepositional phrases

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3.4.4 Prepositional phrases

άποαινυται
PRED
Κρονίδης
SBJ
νέας
OBJ
ἐν
AuxP
πόντῳ
ATR
αὐτῶν
ATR

νέας ἐν πόντῳ Κρονίδης ἀποαινυται αὐτῶν
("The son of Cronos takes away their ship at sea," Op. 247)
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3.4.5 Agreeing nouns

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νηῦς δέ μοι ἥδ’ ἕστηκεν ἐπ’ ἀγροῦ νόσφι πόληος, ἐν λιμένι ῾Ρείθρῳ ὑπὸ Νηίῳ ὑλήεντι
("My ship lies there beside the field, away from the city, in the harbor of Rheithron, under woody Neion," Od. 1.185-6)
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3.4.6 Non-agreeing nouns

Possessive genitives and datives, objective genitives and partitives all fall in this category.
ἡ δὲ μάλ᾽ αὐτίκα πατρὸς ἐπέφραδεν ὑψερεφὲς δῶ
(“And she quite immediately pointed out the high-roofed homes of her father,” Od. 10.111)

καρπὸν δ’ ἔφερε ζείδωρος ἄρουρα αὐτομάτη πολλὸν τε καὶ ἄφθονον
(“My heart is torn over wise Odysseus,” Od. 1.48.)
καὶ τινες ἐξ αὐτῶν ἐπείσθησαν καὶ προσεκληρώθησαν τῷ Παύλῳ καὶ τῷ Σίλᾳ
(“And some of them were persuaded and joined Paul and Silas,” Acts 17.4)

καὶ πορευομένη τῷ φόβῳ τοῦ κυρίου καὶ τῇ παρακλήσει τοῦ ἁγίου πνεύματος ἐπληθύνετο
(“They multiplied, walking in the fear of the Lord and the comfort of the Holy Spirit,” Acts 9.31)

3.4.7 Relative clauses

οὐ γὰρ ἐάσει φάρμακον ἐσθλόν, ὅ τοι δώσω
(“For the potent drug which I will give to you will not permit it,” Od. 10.291-2)
3.4.8 Pronouns

τίς τοι κακὸς ἔχραε δαίμων
(“What evil spirit assailed you?” Od. 10.64)

3.5 ADV (adverbial)

Similarly, adverbials further specify the circumstances under which a verb, adjective or adverb takes place. These include adverbs, prepositional phrases, nouns in oblique cases, participles and subordinate clauses.

3.5.1 Adverbs

καὶ εὐθέως ἀνέστη
(“And he immediately rose,” Acts. 9.34)
3.5.2 Prepositional phrases

"οὐ γὰρ ἔχον κρῖ λευκὸν ἐυσσέλμου ἐπὶ νηός"
(“For they did not have white grain on the well-bench ship,” Od. 12.358)

3.5.3 Nouns

"καὶ τότε δὴ μὲν ἔπεσσι προσηύδων μειλιχίοισι"
(“Then, at that time I addressed him with simple words,” Od. 9.363)

3.5.4 Participles

Just as prepositional phrases can either modify a noun (with ATR) or a verb (with ADV), so can participial phrases as well. When a participial phrase delimits the possible reference of a noun phrase (as in section 3.4.2 above), it should depend on that noun via ATR. When it further specifies the action of a verb, it should depend on the verb via ADV. Note that even if a participle shares the same case, number and gender as another noun in the sentence (as χολούμενος matches Ζεὺς in the example below), it should still depend on the verb via ADV unless it further restricts the reference of the noun - e.g., it should depend on Zeus only if it means “the Zeus who was angry” (as opposed to some other Zeus who was not). If it describes how the verb was completed (e.g., with
the subject momentarily being angry), as it does here, it should depend on that verb via ADV.


greek text with tree diagram and explanation

3.5.5 Subordinate clauses

Subordinate clauses that can be left off the sentence without it becoming ungrammatical generally express optional information about the circumstances surrounding the verb. Clauses beginning with “if” or “because” almost always fall into this category.


greek text with tree diagram and explanation

3.6 ATV/AtvV (Non-governed complement)

Following the PDT, we use the tag ATV for all complements not participating in government (complements that are governed by their verb are assigned the tag OBJ). These are typically noun phrases and adjectives that agree with their head noun morphologically, but differ from typical attributes in that they also qualify the function of the verb – but not optionally, as ADVs do. The PDT
use of ATV is largely similar to the account of praedicativa given in Pinkster [7], as for example:

- Cicero *consul coniurationem Catilinae detexit* ("Cicero as consul uncovered the conspiracy of Catiline").

Here *consul* cannot be left out without changing the meaning of the verb, since what is being stressed is the state of the actor. Similarly in Greek:

- γείτονες ἄζωστοι ἔκιον ("The neighbors went unarmed," Op. 345)

Here, ἄζωστοι cannot be optionally left out without changing the fundamental meaning of the sentence. Similarly, even though it matches the noun γείτονες morphologically, it shouldn’t depend on it via ATR since this analysis leads to the translation “The unarmed neighbors went.” The solution is to have it depend on the noun via ATV.

If the head noun phrase in such constructions is implied, the praedicativum should depend on the main verb via AtvV.

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δ᾽ οἶη δ᾽ οὐκ εἴσεμι μετ᾽ ἀνέρας
("I will not go alone among men," Od. 18.184)
ATV and AtvV are both relatively rare constructions – before using it, be careful to consider that the word should not be annotated as an optional ADV or a restrictive ATR. The verbs you find used with ATV/AtvV are typically confined (as Pinkster notes) to a limited number of groups, mainly verbs involving motion (as the example above and this below) and several that behave like copulas.

Most phrases that involve x doing something as y should be annotated with ATV. In the example below, the direct object (μιν) has been left as a young bride.

3.7 PNOM (predicate nominal)
Predicate nominals (subject complements) depend on a verbal head.
Predicate nominals are not limited, however, to noun phrases and adjectives in the same case as the sentence subject. They can also appear in a variety of other constructions, such as genitives. PNOMs most often appear with inflections of εἰμι.

3.8 OCOMP (object complement)

Like predicate nominals (subject complements), object complements depend on their verbal head. Object complements are generally of the form to make $x \ y$, and most often appear with verbs such as ποιέω and τίθημι.
νῦν δ᾽ ἑτέρως ἐβόλοντο θεοὶ κακὰ μητιόωντες, οἳ κεῖνον μὲν ἀιστον ἐποίησαν περὶ πάντων ἀνθρώπων

(“But now the gods, who had made that man unseen among all men, wish otherwise, planning evil things,” Od. 234-5)

3.9 “Bridge” structures

In the annotation style adopted by the Prague Dependency Treebank, coordinators (including punctuation), “apposing” words, prepositions, and subordinate conjunctions (all described below) function as “bridges” between their children and their own heads. In ἰὸς ἐστρεφέν ἐπὶ ἄγροῦ (“the ship lies beside the field”), for example, the noun ἄγροῦ (“field”) depends on the preposition, but with the relation it would bear to ἐστρεφέν (“lies”) - namely, ADV. The preposition is assigned a sort of “dummy” relation AuxP, meant to signify that the true relationship is that between ἄγροῦ and ἐστρεφέν, and that the preposition simply acts a mediator between the two.

In the following subsections, we delineate the different methods by which this approach annotates coordination, apposition, prepositional phrases and subordinate clauses.

3.9.1 COORD (coordinator)

An example of a coordinated structure is given below.
καρπὸν δ’ ἔφερε ζείδωρος ἄρουρα αὐτομάτη πολλὸν τε καὶ ἄφθονον

(“The fruitful earth unforced bare them many and abundant fruit,” Op. 117-18.)

Here, πολλὸν and ἄφθονον both depend on the single final coordinator that separates them: καὶ. Each of these words depends on that καὶ with a complex tag comprised in part of the relation they bear to the coordinator’s head: since each would individually modify καρπὸν as an ATR, each depends on the coordinator with the tag ATR_CO. The coordinator then depends on καρπὸν with the tag COORD. If several coordinating conjunctions are present (e.g. τε here) – and this is especially common in list contexts with three or more coordinated elements – only the final conjunction is the head; all others depend on it (via AuxY for actual words like τε and via AuxX for coordinating punctuation like commas).
κλαῖε δ' ὅ γε λιγέως, θαλερόν κατὰ άκρυον εἴβων, πιτνὰς εἰς ἐμὲ χεῖρας , ὧρεξάσθαι μενεάινων

(“He wept aloud, shedding big tears, stretching his arms toward me, wanting to reach me,” Od. 11.391-2)

If coordination involves multiple prepositional phrases (AuxP) or subordinate clauses (AuxC), the CO suffix should be appended to the children of the preposition or subordinating conjunction, respectively (AuxP.CO and AuxC.CO are not valid tags).

And even if words are coordinated on different levels, each should only have one CO suffix.

3.9.2 APOS (apposing elements)

An example of apposition is given below.

 долг ώς ἔφατ᾽ ὠκυπέτης ἴρηξ, πανυσίπτερος ὄρνις

(“So said the swift-flying hawk, the long-winged bird,” Op. 212)

Here the two phrases in apposition to each other are ἴρηξ ("hawk") and ὄρνις ("bird"): the appositional-coordinating element that separates them is the comma between them. Both ἴρηξ and ὄρνις depend on the apposing comma via the relation they each individually bear to the phrase’s head (ἔφατ’). Since they are both the subjects of ἔφατ’, they modify the apposing word via the complex tag SBJ.AP; the apposing word then modifies ἔφατ’ via APOS.

3.9.3 AuxP (preposition)

An example of several prepositional phrases is given below.
νηῦς δὲ μοι ἥδ’ ἕστηκεν ἐπ’ ἀγροῦ νόσφι πήληος, ἐν λιμένι ῾Ρείθρῳ ὑπὸ Νηίῳ ὑλήεντι
(“My ship lies there beside the field, away from the city, in the harbor of Rheithron, under woody Neion,” Od. 1.185-6)

Our method of annotation sees prepositions as acting as a functional bridge between their child and head. Here the object of each preposition (ἀγροῦ, ἀγροῦ, λιμένι and Νηίῳ) would depend on its preposition via the relationship it would hold to the preposition’s head (here, ADV for each). The preposition then depends on its head via the relation AuxP.

3.9.4 AuxC (conjunction)

Subordinate (non-relative) clauses are annotated in a manner similar to prepositional phrases, with the subordinating conjunctions acting as a functional bridge between the embedded verb and the parent of the phrase.
τοὺς μὲν ἔπειτα Ζεὺς Κρονίδης ἔκρυψε χολούμενος , οὖνεκα τιμάς οὐκ ἔδιδον μακάρεσι ἐχουσιν

(“Then Zeus the son of Cronos covered them, being angry, because they did not give honor to the blessed gods” Op. 137-9)

Here the subordinate verb ἔδιδον (“give”) depends on its head (οὖνεκα, “because”) via the relationship ADV. οὖνεκα then depends on ἔκρυψε (“covered”) via the “bridge” relationship AuxC.

3.10 Punctuation

Our methods of annotating punctuation follow that established by the PDT, which assigns several different functional tags.

3.10.1 AuxX (commas)

If a comma is not the head of a coordinated or appositional phrase, it should be annotated with AuxX and depend on the head of its clause. In coordinated lists, this head is the final comma.

κλαῖε δ᾽ ὅ γε λιγέως, θαλερὸν κατά άκρυον εἴβων, πιτνὰς εἰς ἐμὲ χεῖρας , ὀρέξασθαι μενεαίνων

(“He wept aloud, shedding big tears, stretching his arms toward me, wanting to reach me,” Od. 11.391-2)
Here, ἔβαν, πιτνὰς, and μενεαίνων all depend on the final comma (that separating χεῖρας from ὑρέξασθαι) via ADV_CO. The remaining commas should then depend on the final comma via AuxX. Note that if the non-head coordinator is a content word (e.g., τε), it depends on the final coordinator via AuxY; if it is punctuation, it depends via AuxX.

If a comma is used to separate a subordinate clause, it should depend on that clause’s head.

3.10.2 AuxG (bracketing punctuation)

“Bracketing” punctuation surrounds an enclosed phrase, and most frequently appears as quotation marks or parentheses (not commas, which are annotated in such situations with AuxX). These punctuation marks should depend on the head of the bracketed phrase via AuxG.
ἔφη τε ὁ Παῦλος "Οὐκ ᾔδειν, ἀδελφοί, ὅτι ἐστὶν ἀρχιερεύς."
("Paul said, 'I didn't know, brothers, that he was high priest,'" Acts 23.5)

καὶ ἐπιστρέψας πρὸς τὸ σῶμα εἶπεν 'Ταβειθά, ἀνάστηθι.'
("Turning toward the body, he said 'Tabitha, get up,'" Acts 9.40)

AuxG should also be used to annotate abbreviation, with the period depending on the abbreviated word.

3.10.3 AuxK (terminal punctuation)

Final punctuation (if present) should depend on the root via AuxK.
3.11 AuxY (sentence adverbials)

Sentence adverbials (also called disjuncts) are those that pertain to the entire sentence and are used to connect the sentence to the discourse at large (especially to what immediately precedes it). This includes words like “therefore,” “however,” or “regardless” – adverbials that don’t qualify the circumstance of the main verb of the sentence (like ADVs usually do), but rather situate the entire sentence against a context that exists outside of it. Similarly, these also often express the author’s opinion (from the perspective of someplace outside the action of the sentence) about the validity of what’s being said (e.g., “truly,” “certainly”).

In Greek this includes words like γάρ, μέν, δέ, δὴ, ἀρα, ὦ, ἄν, κέ, ἄρα, οὖν, γοῦν, ναὶ, νῦν, νῦν and ἔτι – though note that several of these words often have other functions (e.g., νῦν as ADV, δέ as a coordinator) – what’s important is to see how they’re used in context.

This also includes exclamations.
μούσαι Πιερίηθεν ἀοιδῇσιν κλείουσαι δεῦτε, Δί' ἐννέπετε, σφέτερον πατέρ' ὑμνείουσαι

(“Muses of Pieria giving glory by song, here!, tell of Zeus, singing of your father,” Op. 1.1)

AuxY should also be used to annotate coordinators that are not commas (e.g., τε, καὶ) when they are not the head of the coordinated phrase. (Non-head commas in these structures should be annotated with AuxX.)

καρπὸν δ' ἔφερε ζείδωρος ἄρουρα αὐτομάτη πολλόν τε καὶ ἄφθονον

(“The fruitful earth unforced bare them many and abundant fruit,” Op. 117-18.)
3.12 AuxZ (emphasizing particles)

AuxZ should be assigned to particles with a relatively poor meaning content that emphasize one specific word in the sentence (as distinct from AuxY, which emphasizes the sentence as a whole). This group consists largely of negators (e.g., οὐ or μὴ) but also includes words such as γε, οὐ, δὴ, πέρ and τοι.

φιλεῖ
PRED

βροτός
SBJ

τήν
OBJ

οὔτις
ATR

GE
AuxZ

οὔτις τήν γε φιλεῖ βροτός

(“Her certainly no man loves,” Od. 11.15)

Negative particles should depend on the word that is being negated (whether a verb, adjective, etc.).

ἔχον
PRED

γὰρ
AuxY

ἐπὶ
AuxP

λευκὸν
ATR

νηός
ADV

ἔυσσέλμου
ATR

οὐ γὰρ ἔχον κρῖ λευκὸν ἐυσσέλμου ἐπὶ νηός

(“For they did not have white grain on the well-benched ship,” Od. 12.358)

4 How to Annotate Specific Constructions

4.1 Ellipsis

Ellipsis - the omission of words in a sentence that are recoverable from contextual cues - is a ubiquitous phenomenon in literary texts. Our method of representing ellipsis attempts to preserve the structure of the tree as much as possible. We accomplish this by assigning a complex tag to orphaned words. This tag preserves the path from the word itself to the elided word’s head. Con-
sider the example from Odyssey 9.369-70 given in the figure below.

\[
\text{Odyssey 9.369-70: } \text{"I will eat Nobody last among his friends, the others beforehand,"} \text{ Od. 9.369-70. Abstract structure with elided words reconstructed.}
\]

Here, the verb \(\text{ἔδομαι}\) is missing from the second clause.\(^1\) We can preserve the structure of the tree by assigning the head of \(\text{ἄλλους}\) and \(\text{πρόσθεν}\) to be the head that the second \(\text{ἔδομαι}\) would have if it were in the sentence (\(\delta'\)), and by assigning tags to each that preserve the path: \(\text{ἄλλους}\) should be the object (OBJ) of \(\text{ἔδομαι}\), which should then depend on \(\delta'\) via by PRED CO; it therefore receives the tag OBJ ExD0 PRED CO (like the PDT, ExD here signifies an external dependency; the following numeral indexes the ellipsis, since in some sentences multiple words are elided). Likewise, \(\text{πρόσθεν}\) should be an adverbial (ADV) dependent on the elided word; it therefore receives the tag ADV ExD0 PRED CO. This produces the tree given below (which should be used as a model for annotation). This method allows us to use the complex tags to reconstruct the tree as necessary.

\(^1\)Note that we know that the second \(\text{ἔδομαι}\) is elided because the presence of the two adverbs \(\text{πύματον}\) and \(\text{πρόσθεν}\) prevents us from coordinating \(\text{Οὔτιν}\) and \(\text{ἄλλους}\) on the single \(\text{ἔδομαι}\). The two adverbs both must modify the verb, and if all four words depend on the same instance of \(\text{ἔδομαι}\), we would not be able to distinguish structurally which person is to be eaten “last” and which “before.”
4.2 Relative Clauses

Different relative clauses must be annotated differently based on their syntactic function in the sentence. Relative clauses with antecedents, as in the following example, are generally attributive, and should modify the antecedent via ATR (this is because the relative clause provides more information to restrict the reference, just like an adjective does – not just “any drug” in the example below, but “the drug that I give you”). The head of a relative clause is the subordinate verb; this is the element that depends on the antecedent.

"For the potent drug which I will give to you will not permit it," Od. 10.291-2)
Not all relative clauses, however, have antecedents. These should be annotated according to the syntactic function of the entire relative phrase:

μαχήσεται
PRED
πλεόνεσσι
OBJ
θείνῃ
SBJ
σε
OBJ
ὅς
SBJ
κέ
AuxY

πλεόνεσσι μαχήσετα ὅς κε’ σε θείνῃ
(“He who strikes you will fight with more,” Od. 18.63)

Here, the subject of μαχήσετα (“will fight”) is the entire phrase ὅς κε’ σε θείνῃ (“he who strikes you”). Since θείνῃ is the head of this phrase, it depends on μαχήσετα as the SBJ (within the phrase, ὅς is the SBJ of θείνῃ and σε is its OBJ).

φάνημεν
PRED_CO
ἀσπάσιοι
PNOM
φύγομεν
SBJ
θάνατον
OBJ
οἳ
SBJ
φίλοις
ATR
ἑτάροισι
OBJ
δὲ
COORD

ἀσπάσιοι δὲ φίλοις ἑτάροισι φάνημεν, οἳ φύγομεν θάνατον
(“Those of us who escaped death appeared welcome to our dear friends,” Od. 9.466)

Here, the subject of φάνημεν (“we appeared”) is the entire phrase οἳ φύγομεν θάνατον (“we who escaped death”). This relative clause has its own internal structure (with a SBJ [οἳ] and an OBJ [θάνατον]), and since φύγομεν is the head of that clause, it represents it, and depends on φάνημεν as a SBJ.

Note that this method of annotation is structurally different from that for
subordinate clauses, in which the subordinate verb depends on the subordinating conjunction, which then depends on a word outside of the clause. See section 3.9.4 (AuxC) for information on annotating subordinate clauses.

4.3 Particles

A particle is a morphological category for uninflected function words (like μέν, γάρ and δέ). Just like most other morphological categories (such as nouns and verbs), particles can be annotated in several different ways depending on how they’re used in context. Most particles, however, tend to modify either the sentence as a whole (AuxY) or one word in particular (AuxZ).

φάν γάρ μιν ἀληθέα μυθήσασθαι
(“For they thought that he spoke the truth,” Od. 18.342)

ναιετάω δ’ Ἰθάκην ἐυδείελον
(“I inhabit clear-seen Ithaca,” Od. 9.24)
καὶ τότε δὴ μιν ἔπεσσι προσηύδων μειλιχίοισι
(“Then, at that time I addressed him with simple words,” Od. 9.363)

οὔτις τήν γε φιλεῖ βροτός
(“Her certainly no man loves,” Od. 11.15)

4.4 The Genitive and Accusative Absolute

The genitive and accusative absolute are grammatical constructions similar to the English nominative absolute, where a noun and a participle form a phrase that is disjoint from the grammar of the rest of the sentence; in Greek both the noun and participle are inflected either the genitive or accusative case, as in the following:

- Genitive: πάντα δὲ οἱ βλέφαρ’ ἀμφὶ καὶ ὀφρύας εὕσεν ἀυτμὴ γλήνης καιομένης
  (“And the flame singed his eyelids and brow all around, his eyeball burning,” Od. 9.389-90)

- Accusative: νειὸν δὲ σπείρειν ἔτι κουφίζουσαν ἄρουραν
  (“Sow fallow-land with the soil still getting light,” Op. 463)

Following Pinkster [7], we treat Greek genitive and accusative absolutes like their Latin ablative cousins: as an embedded predication that functions as an adjunct. In common absolutes (with a noun + participle), the noun should be annotated as the subject of the participle, with the participle (as the head of
the phrase) depending on the main verb as an adverbial. We would annotate
the example above in the following way:

\[
\text{δὲ} \quad \text{COORD} \\
\text{εὗσεν} \\
\text{καὶ} \quad \text{COORD} \\
\text{ὅφρυας} \\
\text{ἀμφὶ} \quad \text{ADV} \\
\text{βλέφαρ᾽} \\
\text{πάντα} \quad \text{ATR} \\
\text{οἱ} \\
\text{#End} \\
\text{γλήνης} \\
\text{καιομένης} \quad \text{ADV}
\]

πάντα δὲ οἱ βλέφαρ᾽ ἀμφὶ καὶ ὀφρύας εὗσεν ἀυτή γλήνης καιομένης ...

(“And the flame singed his eyelids and brow all around, his eyeball burning,”
Od. 9.389-90)

\[
\text{δὲ} \quad \text{COORD} \\
\text{σπεῖρειν} \\
\text{νείὸν} \\
\text{κουφίζουσαν} \quad \text{ADV} \\
\text{ἔτι} \quad \text{AuxY} \\
\text{ἄρουραν} \\
\text{#End}
\]

νείὸν δὲ σπεῖρειν ἔτι κουφίζουσαν ἄρουραν

(“Sow fallow-land with the soil still getting light,” Op. 463)

4.5 Accusative + Infinitive

In indirect discourse and other accusative + infinitive constructions, the infinitive verb is the head of its phrase. This verb represents the entire clause and should depend via OBJ on the word that introduces the discourse. Within the phrase, standard annotation applies (so that the subject, while accusative, still depends on the indirect infinitive via SBJ).
4.6 Tmesis

Tmesis is the separation of a verb into two parts, usually involving a prefix that can also function as a preposition or adverb on its own. In the example below, the verb ἥσθιον is not derived from the simple verb ἔσθιω ("to eat") but rather from the complex verb κατέσθιω ("to devour"). In these cases, the separated prefix should depend on the verb via AuxZ.

"The fools who devoured the bulls of Helios Hyperion perished," Od. 1.7-8)
4.7 Direct Speech

Direct speech should be annotated the same way as indirect discourse, by attaching the head of the “spoken” phrase to the predicate that introduces the speaking.

\[
\text{ἐφη} \text{τε} \ Παῦλος "Οὐκ ᾔδειν, ἀδελφοί, ὅτι ἐστὶν ἀρχιερεύς"
\]

(“Paul said, ‘I didn’t know, brothers, that he was high priest,’” Acts 23.5)

4.8 Direct Address

As in the PDT, vocatives should depend on their verbal heads via ExD.

\[
\text{ἄνδρα μοι ἔννεπε, μοῦσα, πολύτροπον}
\]

(“Tell me, muse, of the man of many ways,” Od. 1.1)
References


