THE PREVERB EIS- AND KOINE GREEK AKTIONSART

THESIS

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This study analyzes one Koine Greek verb erchomai ‘go/come’ and one preverb eis- and how the preverb affects the verb’s lexical aspect. To determine the lexical aspect of erchomai and eis-erchomai, I annotate all instances of both verbs in the Greek New Testament and develop methodology for researching aktionsart in texts. Several tests for lexical aspect which might be applied to texts are proposed. Applying some of these tests to erchomai and eiserchomai, I determine that erchomai is an activity and eiserchomai is telic. A discussion of the Koine tense/aspect forms and their temporal and aspectual reference is included. I adopt Dowty’s 1979 aspect calculus to explain how eis- affects the lexical aspect of erchomai, using his CAUSE and BECOME operators to account for the meaning of eis-, which denotes an endpoint to motion such that the subject must be at a given location at the end of an interval over which eiserchomai is true.
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VITA

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### Abbreviations

- **-1s** . . . . . . . . . . . . . . . . . . . . . . . . first person singular
- **-2s** . . . . . . . . . . . . . . . . . . . . . . . . second person singular
- **-3s** . . . . . . . . . . . . . . . . . . . . . . . . third person singular
- **-1p** . . . . . . . . . . . . . . . . . . . . . . . . . first person plural
- **-2p** . . . . . . . . . . . . . . . . . . . . . . . . . second person plural
- **-3p** . . . . . . . . . . . . . . . . . . . . . . . . . third person plural
- **ACC** . . . . . . . . . . . . . . . . . . . . . . . accusative case
- **ACT** . . . . . . . . . . . . . . . . . . . . . . . . Active voice
- **AOR** . . . . . . . . . . . . . . . . . . . . . . . . Aorist form
- **DAT** . . . . . . . . . . . . . . . . . . . . . . . . dative case
- **FEM** . . . . . . . . . . . . . . . . . . . . . . . . feminine
- **FUT** . . . . . . . . . . . . . . . . . . . . . . . . Future form
- **GEN** . . . . . . . . . . . . . . . . . . . . . . . genitive case
- **IMPERF** . . . . . . . . . . . . . . . . . . . . . . Imperfect form
- **MASC** . . . . . . . . . . . . . . . . . . . . . . . masculine
- **MID** . . . . . . . . . . . . . . . . . . . . . . . Middle voice
- **NEG** . . . . . . . . . . . . . . . . . . . . . . . negation
- **NEUT** . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . neuter
- **NOM** . . . . . . . . . . . . . . . . . . . . . . . nominative case
- **PART** . . . . . . . . . . . . . . . . . . . . . . . . . . . . participial form
- **PASS** . . . . . . . . . . . . . . . . . . . . . . . Passive voice
- **PERF** . . . . . . . . . . . . . . . . . . . . . . . . . . Perfect form
- **PL** . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . plural
- **PLUPERF** . . . . . . . . . . . . . . . . . . . . Pluperfect form
- **PRES** . . . . . . . . . . . . . . . . . . . . . . . . . Present form
- **SG** . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . singular
- **VOC** . . . . . . . . . . . . . . . . . . . . . . . . vocative case
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CHAPTER 1

INTRODUCTION

A Koine verbal prefix *eis-*, meaning ‘into’ or ‘to,’ is one of a special class of Koine verbal prefixes called ‘preverbs.’ It attaches to a number of Koine verbs. This thesis explores the contribution which the verbal prefix *eis-* makes to aspectual reference of one verb in particular, the Koine Greek verb *erchomai*. I specifically discuss how the preverb *eis-* changes the lexical aspect of *erchomai*. In order to determine accurately the lexical aspect of the verb *erchomai* and its prefixed counterpart *eiserchomai* in Koine Greek of the first-second century BCE, I develop methodology for diagnosing aktionsart in texts.

The Koine Greek verb *erchomai* means both ‘go’ and ‘come.’ Examples (1.1) and (1.2) show an instance in which *erchomai* means ‘go’ and an instance in which *erchomai* means ‘come,’ respectively. In (1.2), *erchomai* appears in a past tense form which has the stem *ēlth-*.

(1.1) τότε ἔρχ-εται μετ’ αὐτῶν ὁ Ἰησοῦς εἰς χωρίον λεγόμενον Γεθσημανί
then *erch-etai* met’ autōn ho Iēsous eis chōrion legōmenon Gethsemani
“Then Jesus went with them the Jesus into place called Gethsemane” (Matt 26:36, ESV)

(1.2) ἐν φυλακῇ ἠμῆν καὶ ἔλθ-ατε πρός με
in prison was.1s and *ēlth-ate* pros me
“I was in prison and you came to me.” (Matt 25:36, ESV)

Fillmore points out that English motion verbs *go* and *come* have different goals of motion (Fillmore, 1983, p. 221). If the speaker is not located at the goal of motion when the sentence is uttered and will not be at the goal of motion at the time of arrival, and if the hearer is not/will not be at the goal of the motion, then *go* is used. However, if the speaker or hearer is at the goal of motion at the time the sentence is uttered, or if the speaker or hearer will be at the goal of motion when the party arrives, then *come* is used (Fillmore, p. 221). In

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1The first person singular Present form, *erchomai*, is the citation form for the verb studied in this thesis.
situations in which there is no conventional speaker or hearer, like in third person narrative, the verb *come* is used to indicate “motion toward a place taken as the subject of the narrative, toward the location of the central character at reference time, or toward the place which is the central character’s home base at reference time” (Fillmore, 1997, p. 99). Unlike the English *come* and *go*, *erchomai* does not have direction of movement built into the verb and can be translated as either *go* or *come*.

In (1.1), the narration is centered on the character Jesus and describes him moving toward a destination which was not the location at the reference time (the time to which a verb refers) and at which there was no competing central character. The result is the translation *go*. In (1.2), Jesus is speaking of a future judgment of all people, and in that future scenario a king (assumedly Jesus) is judging people, and the king identifies with prisoners throughout history, saying what is in the gloss in (1.2). Here *erchomai* occurs in a past tense form with the form *ēlthate* and is translated as *come* because the speaker (the future king, in this case) is at the goal of motion at the time of arrival.

It is possible for *erchomai* to occur with a verbal prefix *eis-*, which means ‘into.’ The compound verb is *eiserchomai*, which means ‘enter’ or ‘go into’ or ‘come into.’ Example (1.3) illustrates the verbal prefix *eis-* in combination with *erchomai*, appearing here as the past tense form *ēlthen*.

(1.3) ...εἰσ-ηλθ-εν  εἰς  τὸν  οἶκον  τοῦ  θεοῦ...
    ...eis-ēlth-en  eis  ton  oikon  tou  theou...
    "...he entered the house of God..." (Matt 12:4, ESV)

In (1.3), *eis-* prefixes *erchomai* and together they express the combined meaning ‘enter.’ Note that there is a second *eis* in (1.3) that is not prefixed to *erchomai* but occurs after the verb. This is the preposition *eis*. The preposition *eis* and the verbal prefix *eis-* developed from a single adverbial form in an earlier form of Greek (Smyth, 1956, Sections 1636-8). Koine Greek, the common form of Greek which developed after the Alexandrian conquests in the fourth century BCE and which is being studied in this thesis, includes the Greek of the New Testament (Horrocks, 1997, pp. 33, 95). The class of free adverbs from which the prefix *eis-* and the preposition *eis* developed existed centuries before Koine. The forms in the class gradually became more attached to (1) verbs, eventually becoming a verbal prefix, more specifically a preverb, and (2) nouns, developing into prepositions (Smyth, Sections 1636-8). Because of this, there is a set of preverbs in Koine which are orthographically identical and diachronically related to a set of prepositions. The preposition *eis* and the preverb *eis-* are two such items. Neither *erchomai* nor *eiserchomai* is transitive, so in situations like that in (1.3) the preposition *eis* is still necessary to denote an explicit destination of motion in the sentence.
This thesis focuses on the differences between *erchomai* and *eiserchomai* with regard to aktionsart. Aktionsarten\(^2\) are classes of propositions, each of which has distinctive aspeical properties. In this thesis, I use the terminology found in Vendler’s system of verb classification as a basis for defining the aktionsarten of propositions. Vendler divided verbs into the following four classes: stative, activity, accomplishment, and achievement (Vendler, 1967). English stative verbs include *know*, *be*, and *see*. Activity verbs intuitively do not involve a state of being or perceiving like stative verbs do. Activities are characterized by motion, action, or intentionality. Examples of English activity verbs are *run*, *push*, and *skate*. Accomplishment verbs also often involve motion, action, or intentionality, but unlike activities, they are what is called telic, which basically means that they culminate with respect to the action they denote. Examples of English accomplishment verbs are *build* and *bake*. Achievement verbs are telic like accomplishments, but they lack a ‘building up’ phase in which a process necessary for the culmination must occur. Examples of achievement verbs in English are *discover* and *notice*.

While Vendler primarily classified verbs, the phenomena that he describes more accurately represent a classification of propositions, not verbs. It is possible for a verb, in the absence of certain sentential elements to express one type of aktionsart, but in the presence of certain sentential elements to express another type of aktionsart. In other words, different elements within a sentence contribute to the aktionsart of the proposition. Such elements range from a noun phrase (NP) subject to a prepositional phrase (PP) within the verb phrase (VP) to a preverb. Different interactions amongst all of these elements plus the verb produce a proposition classified as a specific aktionsart. Because of this, a terminological distinction is made between what the verb contributes to the aktionsart, which is called lexical aspect, and the aktionsart itself, a term which only applies to propositions.

Dowty uses interval semantics to define the different aktionsarten (Dowty, 1986). He defines states, activities, and telic (accomplishment and achievement) propositions in terms of their truth within intervals of time. In Section §2.1 I discuss Dowty’s definitions in more detail.

I propose in this thesis that *erchomai* is an activity verb and *eiserchomai* is a telic (accomplishment or achievement) verb. The preverb *eis-* is responsible for the difference in lexical aspect.

### 1.1 Background on Greek verbs and preverbs

It is necessary to offer an overview of some elements of Koine Greek grammar and history before I further discuss the scope of this thesis. This section gives background in order for the reader to understand the basics

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\(^2\)Singular: aktionsart, Plural: aktionsarten
of the Koine verbal system, some background on *eis-* and *erchomai*, and the difference between preverb *eis*- and the preposition *eis*. A reader not interested in these details may skip to §1.2.

### 1.1.1 Greek verbal morphology

The Koine Greek verbal system consists of six tense/aspect-stems and four moods and three voices. The six tense/aspect-stems are the Present, Future, Aorist, Perfect, Perfect Middle/Passive, and Aorist/Future Passive. It is important to note that each of these forms is so dubbed by a long history of Greek scholarship, and their names do not necessarily correspond to a semantic feature which they possess, though they often do. The stem itself generally is composed of a root and an affix, with the affix denoting tense, aspect, and/or mood. Each of these stem forms acts as a base onto which various morphological markers attach. These morphological markers may determine person, number, voice, or time, or even create non-finite forms such as an infinitive or participle.

The verbs *paideuō* ‘educate’ and *leipō* ‘leave’ in Table 1.1 illustrate the six different tense/aspect stems. *Paideuō* and *leipō* are both the first person singular Present forms and the conventional citation forms for these verbs.

#### Table 1.1: Examples of Greek tense/aspect stems

<table>
<thead>
<tr>
<th>Tense/aspect-stem</th>
<th>Regular</th>
<th>Irregular</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present Active/Middle/Passive</td>
<td>paideu-</td>
<td>leip-</td>
</tr>
<tr>
<td>Future Active/Middle</td>
<td>paideus-</td>
<td>leips-</td>
</tr>
<tr>
<td>Aorist Active/Middle</td>
<td>paideus-</td>
<td>lip-</td>
</tr>
<tr>
<td>Perfect Active</td>
<td>pepaideuk-</td>
<td>leipo-</td>
</tr>
<tr>
<td>Perfect Middle/Passive</td>
<td>pepaideu-</td>
<td>leip-</td>
</tr>
<tr>
<td>Aorist/Future Passive</td>
<td>paideuthē-</td>
<td>leipthē</td>
</tr>
</tbody>
</table>

In Table 1.1, the verb *paideuō* has the root shape *paideu-*, and the verb *leipō* has the root shape *leip-*, *lip-*, and *loip-* (Smyth, 1956, Sections 367-374). Onto these roots different morphological affixes (in bold) are added in order to create the stem. Of the two verbs, *paideuō* is considered “regular” and *leipō* is considered “irregular,” because *leipō* has several different root shapes for different tense/aspect-stems.

The three voices in ancient Greek are active, middle, and passive. The Present, Aorist, Future, and Perfect can all have active, middle, and passive forms. For the Present, each of these voices is built off the same stem, but for the Aorist, Future, and Perfect forms, the three voices must be built off two separate stems.\(^3\) Hansen

\(^3\)This explains why I have labeled the tense/aspect-stems with voice terminology in them. The Perfect Middle/Passive, for example, is the stem for the Perfect middle and passive tense/aspects, whereas the Perfect Active stem is the stem for the Perfect and Pluperfect active tense/aspects.
and Quinn’s Greek textbook uses the following examples in introducing different voices in the indicative mood (Hansen & Quinn, 1992, pp. 49, 116, 166):

(1.4) ἐ-παίδευσ-α

e-paideus-a
PAST–educate.AORIST–1s.ACTIVE
"I educated."

(1.5) ἐ-παιδευσ-άμην

e-paideus-amēn
PAST–educate.AORIST–1s.MIDDLE
"I educated for myself/had (someone) educated."

(1.6) ἐ-παιδεύθη-ν

e-paideuthē-n
PAST–educate.AORIST/PASSIVE–1s.PASSIVE
"I was educated."

Example (1.4) shows the Aorist active form of paideuō; example (1.5) shows the Aorist middle form of paideuō; and example (1.6) shows the Aorist passive form of paideuō. In each example, paideuō is augmented by the morpheme e-, which indicates past tense.\(^4\) Example (1.4) and (1.5) are build off the same tense/aspect-stem, but their different endings differentiate between the active and middle. Paideuō in example (1.6) is built off the Aorist passive tense/aspect-stem, and has an ending which is particular to that stem.

The four moods in Koine Greek are the indicative, the subjunctive, the optative, and the imperative. The indicative is the only mood in which any of the tense/aspect forms has absolute tense, or which denotes the time of the event relative to the time of speech (Comrie, 1985, p. 122; Blass and Debrunner, 1961, p. 166). In the imperative and subjunctive the tense/aspect forms only have aspect (denoting how one views the “internal temporal constituency” of an event), or at most relative tense (denoting time of the event relative to some other reference time in the narrative) (Comrie, 1976, p. 3; Comrie, p. 124). I do not deal here with the optative because there are no instances in my corpus of erchomai or eiserchomai in the optative mood. The optative is much rarer in Koine than in Classical Attic Greek of the 5th century BCE (Blass & Debrunner, p. 36). I do, however, discuss how some of the differences between the indicative, imperative, and subjunctive moods inform my methodology in Chapter 2.3.4. Examples (1.7) and (1.8) show erchomai in the subjunctive and imperative.

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\(^4\)In the case of a vowel-initial root, the augment e- coalesces with the root to produce a long initial vowel. Specifically, in verbs like erchomai, which begin with an e, the augment lengthens the initial vowel to create ē.
“If he comes to you, welcome him.” (Colossians 4:10, ESV)

“Come here.” (John 4:16, ESV)

In (1.7), erchomai appears as an Aorist subjunctive in the protasis of a conditional. Notice that the initial e in elthei is not lengthened (i.e., it is not an e). This means that the past tense augment e is not present on the verb. In (1.7), the ‘coming’ is hypothetical. In (1.8), Jesus is telling a woman to come to where he is. Again, there is no augment and no initial long e. Both (1.7) and (1.8) are built off the same stems as an indicative aorist might be, but they have different endings and lack the past tense augment. See (1.1) for an indicative instance of the Aorist with a past tense augment.

In the indicative mood, six basic tense/aspects are possible, each built off one of the basic tense/aspect-stems. These are the Present, Future, Aorist, Perfect, Pluperfect, and Imperfect. The Present, Future, Aorist, and/or Perfect are possible in other moods as well, but the Imperfect and Pluperfect are only possible in the indicative. As mentioned above, these names are conventional and do not necessarily correspond to a semantic feature associated with the terminology, though often they do. For example, the Future form in the indicative clearly denotes events in the future of the time of utterance, so it is a future tense. The semantics of the Present form, however, are less clear, and the form often denotes events in the present but also often denotes events in the past (the “historical present”) or future. But in the literature the term “Present” is still used for the form because it is conventionally understood as a form, and not necessarily an analytic claim about the tense of that form. Such nomenclature is found for all the tense/aspect forms, regardless of the degree to which their semantic tense and aspect are debated. Throughout this study I use capitalized terminology when referring to a form and non-capitalized terminology when referring to the semantic tense or aspect. For example, Present refers to the Greek tense/aspect form, and present refers to a tense.

Many examples of erchomai are indicative and participle verb forms, so many a description of the morphological makeup of each of these verbal constructions is essential. Indicative Greek verb morphology is summarized in (1.9). At the heart of the verb is the root.

Note that the tense/aspects are different from tense/aspect stems. The former are fully inflected verb forms, the latter are the stems off which the fully inflected forms are built.

There are more than six tense/aspects, but any remaining are less common and are periphrastic.
Indicative verb morphology:

preverb- (augment)- (reduplication)- [root- (affixes)]stem -ending

Various affixes on the root contribute tense, aspect, or mood. The root plus these affixes creates a stem. The stem includes the tense/aspect-stem I refer to above, with the addition of morphological indicators of mood. Reduplication of the stem’s initial consonant occurs with the Perfect and Pluperfect. Recall that the “augment” is a prefix e- which denotes past tense. The augment occurs in the indicative Aorist, Pluperfect, and Imperfect. The preverb (eis-, for this thesis) attaches at the outermost left. To the right of the stem, a morpheme which signifies the person (1, 2, or 3) and number (singular or plural) of the subject attaches. Example (1.10) gives an example of the verb epibouleuō 'plot against’ in the Pluperfect active form epebebouleukē with all of its morphemes spelled out in accordance with (1.9).

\[
\begin{align*}
\text{ἐπ-} & \quad \text{e-} & \quad \beta\varepsilon- & \quad \beta\text{o}u\lambda\varepsilon\nu- & \quad \varkappa- & \quad \eta \\
\text{ep-} & \quad \varepsilon- & \quad \beta- & \quad \text{bouleu-} & \quad \kappa- & \quad \varepsilon
\end{align*}
\]

In (1.10), ep is the preverb, -e- is the past tense augment, -be- is Perfect-aspect related reduplication, bouleu is the verb root, -k- is the verb root affix, which in combination with bouleu-, creates the tense/aspect stem bouleuk, and ē is the first person singular ending.

The Greek participial morphology is summarized in (1.11).

Participial morphology:

preverb- (reduplication)- [root- (affixes)]stem -voice -number/gender/case

The augment is not possible with the participle because the participle is not finite—it does not mark for person (Joseph, 1983, p. 17). The reduplication and preverb morphemes remain the same as in (1.9). Instead of a person and number ending, however, participles contain a morpheme for voice (active, passive, or middle) and a final morpheme for number (singular/plural), gender (masculine, feminine, neuter), and case (nominative/vocative, genitive, dative, accusative). Example (1.12) gives an example of the verb epibouleuō in its Perfect active participial form epibebouleukotes, with all of its morphemes spelled out in accordance with (1.11).

---

7The dual number category of Ancient Greek did not continue into Koine Greek (Blass & Debrunner, 1961, p. 36).
1.1.2 The tense/aspect forms of erchomai

Erchomai is a suppletive form, meaning that different forms of the lexeme are composed of different roots. An example of a suppletive form in English is go and went—they are the same lexeme, but one form is for the present, the other for the past. The tense/aspect-stems for erchomai can be seen in Table 1.2.

<table>
<thead>
<tr>
<th>Tense/aspect-stem</th>
<th>Erchomai form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present</td>
<td>erch-</td>
</tr>
<tr>
<td>Future</td>
<td>eleuth-(^a)</td>
</tr>
<tr>
<td>Aorist</td>
<td>elth-</td>
</tr>
<tr>
<td>Perfect</td>
<td>elēluth-</td>
</tr>
<tr>
<td>Perfect Middle/Passive</td>
<td>–</td>
</tr>
<tr>
<td>Aorist/Future Passive</td>
<td>–</td>
</tr>
</tbody>
</table>

\(^a\)When fully inflected, the future form in New Testament Greek drops the -th- ending due to phonological process with a -s suffix denoting the future tense.

Note that erchomai does not have the forms for two of the possible tense/aspect-stems because it is intransitive and does not occur in the passive. However, erchomai is what is known as a deponent in the Present and Future tense/aspect forms. This means that the verb in the Present and Future forms has passive voice morphology but active voice meaning (Smyth, 1956, Sections 356, 801).

Given the fact that the only common element in all of the forms in Table 1.2 is an initial e, one might ask how to be sure that these are the same form. The first and easiest response is that authoritative dictionaries, such as Liddell and Scott’s A Greek-English Lexicon and Chantraine’s Dictionnaire Étymologique de la Langue Grecque, clearly present them as the same form (Liddell and Scott, 1996; Chantraine, 1983, p. 377).
The second answer involves looking at examples which involve the parallel use of the two forms.\textsuperscript{8} For example, both the form \textit{erchomai} and the form \textit{elthon} accept future participles in order to denote an object. Examples (1.13) and (1.14) illustrate this particular usage. Both examples are taken from Liddell and Scott’s \textit{A Greek-English Lexicon}, which notes it as a special use of \textit{erchomai}.

(1.13) \textit{ερχομαι} \textit{οίσομένος}
\textit{come.PRES-1s} \textit{fetch.FUT-PART.NOM}
“I \textit{come} for a spear.” (Iliad 13.256)

(1.14) \textit{μαρτυρήσων}
\textit{bear.witness.FUT-PART.NOM} \textit{come.AOR-1s}
“I \textit{have come} to bear witness.” (Aeschylus, \textit{Eumenides}, 576)

In (1.13), the Present form \textit{erchomai} takes \textit{oisomenos}, a future participle, in order to convey that the reason for coming was to fetch (a spear). Likewise, in (1.14), the Aorist form \textit{ēlthon} takes \textit{marturēsōn}, a future participle, in order to convey that the reason for coming was in order to bear witness. That both \textit{erchomai} and \textit{ēlthon} share this idiosyncrasy of taking future participles to show the object is consistent with them being the same lexeme with different roots for the Present and Aorist.\textsuperscript{9}

Another argument to support the claim that \textit{erchomai} is a suppletive form with \textit{erchomai} in the Present and \textit{ēlthon} in the Aorist is the fact that the Present form of \textit{erchomai} and the Aorist form of \textit{ēlthon} are in complementary distribution with one another. There is no Aorist form with the root \textit{erch-} or a Present form with the root \textit{elth-}. This complementary distribution is seen in (1.15). This example contains three instances of what I am arguing is the lexeme \textit{eiserchomai}, with two instances of the form \textit{eiserch-} in the Present and one of the form \textit{eiselth-} in the Aorist.

(1.15) \textit{ὑμεῖς γὰρ οὐκ εἰσ-έρχ-εσθε οὐδὲ τοὺς εἰσ-ερχ-ομένους}
\textit{2p.NOM for NEG EIS-go.PRES-2p neither the.PL EIS-go.PRES-PART.ACC.PL}
\textit{ἀφίετε εἰσ-ελθ-εῖν}
\textit{allow.2p EIS-go.AOR-INF}

“For you neither \textbf{enter} yourselves nor allow those who would \textbf{enter} to \textbf{enter}.” (Matthew 23:13)

\textsuperscript{8}This argument is similar to one which argues that English verbs \textit{go} and \textit{went} are the same lexeme based upon their parallel use in idioms such as \textit{go bananas} with past \textit{went bananas}.

\textsuperscript{9}This meaning of this construction is in part due to the meaning of the future participle, but it is nonetheless idiosyncratic enough for Liddell and Scott to justify noting it as a special use of \textit{erchomai}. 
This example involves Jesus rebuking religious leaders for keeping people from entering into the Kingdom of God. The forms erch- in eiserchesthe and eiserchomenous and elth- in eiselthein are obviously being used in parallel to describe (1) the religious teachers’ not entering, (2) the attempt of the laymen to enter, (3) the ultimate prevention of the laymen’s entering by the religious leaders. The fact that the Present forms containing erch- are in complementary distribution with the Aorist form with elth- supports that they are the same lexeme.

1.1.3 Preverbs and Prepositions

That verbal prefixes might serve in language to affect the aktionsart of a proposition is not new (Booij and Kemenade, 2003, p. 6; Klein, 1995, p. 683; Fanning, 1990, p. 150). As described above, the preverb eis- means ‘into,’ ‘in,’ or ‘to’ (Smyth, 1956, Section 1686), but when prefixing erchomai, it more specifically means ‘into’ and denotes that the subject crosses into some other location by the movement denoted by erchomai.

Because of the historical development of a class of preverbs in Koine which are virtually identical orthographically/phonologically to a class of prepositions, there is a preposition eis corresponding to the preverb eis-. The two have very similar meanings, and Smyth gives the same glosses–‘into’ and ‘to’–for both the preverb and the preposition, with the addition of the gloss ‘in’ for the preverb (Smyth, 1956, p. 1686).

While there is an obvious similarity in meaning between the preposition and the preverb, I do not assume they are the same morpheme with a different syntactic distribution. I do so because while it is one thing to observe that they have a common origin, which would explain their similarity in meaning, it is another thing to assert that they are the exact same morpheme. Example (1.16) shows, in fact, that the preverb and the preposition are not equivalent.

(1.16) ελθ-ών ἐὰν εἰς τὴν οἰκίαν, οὐκ ἀφῆκ-εν εἰσ-ελθ-εῖν
eilth-ōn de eis tēn oikian, ouk aphēken eiselthein
go.AOR-PART.NOM but EIS the house NEG allow.AOR-3s EIS-go.AOR-INF
τινα σὺν αὐτῷ
tina sun autōi
tiny one with him

“And when he [Jesus] came to the house, he allowed no one to enter with him.” (Luke 8:51)

The first clause, elthōn de eis tēn oikian ‘when [Jesus] came to the house,’ contains erchomai in the Aorist form elthōn with a PP headed by eis. It denotes the event of Jesus walking up to a house. The second clause, ouk aphēken eiselthein tina sun autōi ‘he allowed no one to enter with him,’ contains eiserchomai in the Aorist form eiselthein and denotes Jesus not allowing anyone to enter into the house with him. Note that the
second clause does not mean that Jesus did not allow anyone to come up to the house with him. The two clauses denote two different events in the same context. *Erchomai + eis* denotes coming to a place where *eis-erchomai* denotes entering into that place. *Eis* as a preposition is not equivalent to *eis-* as a preverb.

Because of this, I refrain from drawing any conclusions about the preposition *eis* from my analysis of the preverb *eis*. I conclude in Chapter 4 that the effect of the two morphemes on aktionsart is very similar, but my conclusion about *eis-* the preverb rests on the data discussed in Chapter 3, while my conclusion for *eis* the preposition rests on other scholars’ observations. The main goal of this thesis is to analyze the preverb, but the preposition is analyzed in the process in order to explain the telicity of *erchomai* in certain contexts.

1.2 Motivation, Scope, and Aim of the Thesis

1.2.1 Motivation

Ancient dialects of Greek have been studied for centuries, and there is a wealth of scholarly linguistic work on these dialects. In more recent years, it has proven fruitful to apply modern linguistic methods and theories to the study of ancient Greek. Relatively few scholars have studied aktionsart in Koine Greek within a modern linguistic framework. Three scholars who have are Mari Broman Olsen (1997), Juan Mateos (1977), and Buist Fanning (1990). Olsen relies on Fanning’s methodology for classifying the lexical aspect of verbs, so Fanning and Mateos are, as far as I know, the only two people who have attempted to classify the lexical aspect of a number of Koine Greek verbs in a Vendlerian-type system. Both of them make some questionable assumptions in their methodology, as noted by Trevor Evans (Evans, 2001, p. 20). Because of these methodological weaknesses, a fresh look at aktionsarten and the methodology for diagnosing aktionsarten in Koine would be valuable.

1.2.2 Aim

The ultimate purpose in discussing the lexical aspect of *erchomai* and *eiserchomai* is to understand the meaning which *eis-* contributes, but this understanding rests on appropriately determining the lexical aspect of *erchomai* and *eiserchomai* (Fanning, 1990, pp. 150-151). Therefore, a second central concern of this thesis is to discuss methodology in determining aktionsart in texts. I aim to expand upon previous methodology in researching aktionsart in texts, which is not well developed (Fanning; Mateos, 1977; Evans, 2001).
1.2.3 Scope


The scope of this thesis is limited to *erchomai* and *eis-* for a couple of reasons. First, there is an inherent value in exhaustivity. Having looked at all the occurrences of *erchomai* and *eiserchomai*, I can truly say that “no stone is left unturned” with regard to the verb in the New Testament. Additionally, given amount of data, annotating more than one verb or preverb was not possible, so I focused on exhaustive annotation of one verb and preverb.

*Erchomai* is an appropriate verb for this study because it occurs prolifically in the New Testament, with 636 instances. *Erchomai* also occurs frequently in a variety of tense/aspects and moods and denotes events in a variety of times, ensuring that instances of the verb could be found in all the tense/aspects. Additionally, *erchomai* can be equivalent to the English *go* and *come* (see (1.1) and (1.2)), and because of this vague directionality, *erchomai* provides an important opportunity to see the effects of directionality on aktionsart classification of propositions.

Likewise, the preverb *eis-* in combination with *erchomai* provides the opportunity for a substantial amount of data (194 instances). The preverb *eis-* has relatively transparent meaning in its combination with *erchomai*. The vast majority of the time *eiserchomai* means ‘go into,’ ‘come into,’ or ‘enter,’ which would be the predicted outcome for the morphological combination of a particle meaning ‘into’ and a verb meaning ‘go/come.’ Thus, the meaning of *erchomai* is compositional with the meaning of *eis-* . This compositionality is not the case for other preverb-verb combinations. For example, the verb *phulassō* means ‘watch’ or ‘guard’ and the preverb *dia-* means roughly ‘through,’ but together, *diaphulassō*, they mean ‘watch closely’ or ‘guard carefully’ (Liddell & Scott, 1996). The verb *hēgeomai* ‘lead the way’ or ‘go before’ and the preverb *kata-* ‘down’ or ‘downward’ combine to mean ‘lead the way’ or ‘explain’ or ‘guide’ (Liddell & Scott). Neither of these examples demonstrate compositional meaning between the preverb and the verb. While the compositionality of the preverb and verb is not necessarily connected to the contribution of the preverb to the verb’s aktionsart,
it seemed appropriate to begin such a study with a preverb that is more consistent in what it contributes than with one that is not.

1.3 Overview of the Thesis

In Chapter 2 I give an overview of relevant literature involving aktionsart in general and Greek aktionsart and aspect in specific, and I develop a methodology for analyzing the aktionsart of a verb in a text without the aid of native speaker intuitions. In chapter 3 I discuss selected Koine Greek tense/aspects in order to understand how they contribute to the interpretation of the proposition and offer evidence for the conclusion that the aktionsarten of *erchomai* is an activity and *eiserchomai* is telic. Chapter 4 formalizes this analysis of *erchomai*, *eis-*, and *eiserchomai* using Dowty’s 1979 aspect calculus and presents a small Koine fragment (Dowty, 1979).
CHAPTER 2
AKTIONSART, GREEK ASPECT,
AND METHODOLOGY

The aim of this chapter is to give an overview of literature which discusses aktionsart and Greek verbal aspect and with this background in place to develop methodology for analyzing aktionsart in texts. Section 2.1 reviews basic aktionsart/lexical aspect classes and the tests that scholars have developed to analyze these classes. I also discuss how scholars who have studied Greek have tested for aktionsart. In Section 2.2 I discuss how different Koine Greek scholars have analyzed Greek grammatical aspect. A proper understanding of grammatical aspect is important in a thorough analysis of aktionsart because grammatical aspect interacts with lexical aspect to produce an array of meanings. Additionally, some of the criteria used to assess the lexical aspect of a verb is based upon proper identification of grammatical aspect. Section 2.3 discusses the merits and deficiencies of previous methodology for studying aktionsart in texts and proposes potential methodology for studying aktionsart in texts. The chapter concludes with a discussion on what aspects of the potential methodology I use in Chapter 3 of this thesis.

2.1 Verb Classes

The observation of distinct verb classes goes back to Aristotle’s *Metaphysics*, and verb classes have been a subject in philosophy for some time (Dowty, 1979, pp. 51-52). Zeno Vendler and Anthony Kenny are two of the first scholars to distinguish rigorously between the different verb classes, using “grammatical and logical criteria” to do so (Dowty, pp. 53-54). Vendler describes four classes and Kenny describes three (Kenny, 1963; Vendler, 1967). Dowty uses some of Vendler and Kenny’s criteria and develops some additional criteria (Dowty). All three authors primarily deal with English. In the rest of the thesis I use the term aktionsart and lexical aspect, but the term verb class suffices for this section, in which I discuss the early research on
aktionsart and lexical aspect, since Vendler and Kenny themselves use this terminology and I discuss many of their insights.

As Table 2.1 shows, there are four verb classes originally proposed by Vendler, which correspond to a similar set of three verb classes proposed by Kenny (Kenny, 1963).

Table 2.1: Terminology Regarding Verb Classes

<table>
<thead>
<tr>
<th>Vendler</th>
<th>Kenny</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stative</td>
<td>Static</td>
</tr>
<tr>
<td>Activity</td>
<td>Activity</td>
</tr>
<tr>
<td>Accomplishment</td>
<td>Performance</td>
</tr>
<tr>
<td>Achievement</td>
<td>Performance</td>
</tr>
</tbody>
</table>

Kenny’s system is the same as Vendler’s except in that he joins the accomplishment and achievement categories into one category, performance. Another term for the performance verb class is the telic verb class.

Dowty 1986 defines aktionsart via intervals of time and truth values. He defines them in terms whether or not the denotation of a sentence is true at certain interval of time, or at intervals within another interval (at subintervals). These definitions are in (2.1)–(2.3).

(2.1) Stative: A sentence $\phi$ is stative iff it follows from the truth of $\phi$ at an interval $i$ that $\phi$ is true at all subintervals of $i$.

(2.2) Activity: A sentence $\phi$ is an activity iff it follows from the truth of $\phi$ at an interval $i$ that $\phi$ is true at all subintervals of $i$ down to a certain limit in size.

(2.3) Telic/Performance: A sentence $\phi$ is an accomplishment/achievement iff it follows from the truth of $\phi$ at an interval $i$ that $\phi$ is false at all subintervals of $i$.

In other words, if a stative sentence is true for a time period, then it is always true within that time period. For example, *Bob hears a buzzing sound for an hour* is true at every interval within that hour. If an activity sentence is true for a time period, then it is always true within that time period, down to a limit in certain size. For example, *Bob walks for an hour* is true at every subinterval of that hour until you get down to a second or fractions of a second, in which the action of walking could not be said to be true because walking requires at minimum one repetition of the motion with putting one foot in front of the other. At a small fraction of the second, this putting-one-foot-in-front-of-the-other action of walking cannot be said to be true. If a performance/telic sentence is true for a time period, then it is false for all the subintervals of that time period. For example, if *Bob built the house* is true for an interval, then *Bob built the house* is not true at any
subinterval of that interval. Note that this definition does not formally distinguish between achievements and accomplishments.

The verb classes in Table 2.1 can be grouped into two more divisions. The first of these divisions distinguishes between statives, which “do not indicate processes going on in time, yet they may be predicated of a subject for a given time with truth or falsity” (Vendler, 1967, p. 102), and dynamic verbs, which are not stative (activities, accomplishments, and achievements). The second of these divisions involves a distinction between atelic verbs, which consist of states and activities, and telic verbs, which consist of accomplishments and achievements (equivalent to Kenny’s performance class).

2.1.1 Criteria for Verb Classification

Criteria that Vendler, Kenny, and Dowty use to test to which class a verb belongs can be divided into three basic categories of tests: (1) tests based upon whether a verb can appear in a certain form or construction, (2) tests based upon different entailments when the verb occurs in a given construction, and (3) tests based upon the compatibility of various adverbials.

The first set of tests, those involving whether a verb can appear in a given form or construction, was used by both Vendler and Kenny in the beginning of their work to make a primary distinction between statives and achievements on the one hand and activities and accomplishments on the other. Vendler and Kenny note that some verbs can appear in the “continuous tenses” (progressive aspect), while other verbs do not occur in “continuous tenses” (Vendler, 1967, p. 99; Kenny, 1963, p. 172). For Kenny, if a verb does not occur in the progressive aspect, it is a stative verb; for Vendler if a verb does not occur in the progressive aspect, then it is either stative or achievement. Dowty notes that the inability to occur in the progressive aspect is a distinctive property of stative verbs¹ (Dowty, 1979, p. 55). Achievement verbs are for the most part marginal in the progressive. (2.4) contains an example of a verb from each of the four verb classes in the progressive.

(2.4)  a. *Mark is resembling his father. (stative)
   b. Mark is running. (activity)
   c. Mark is building the house. (accomplishment)
   d. *Mark is discovering the treasure. (achievement)

Examples (2.4a) and (2.4d) show a stative and achievement verb which are ungrammatical in the progressive. Examples (2.4b) and (2.4c) show an activity and an accomplishment verb which are grammatical in the progressive.

¹There is a special set of stative verbs which denote body positions, typified by the verbs sit, stand, and lie, which occur without problem in the progressive. (Dowty, 1987, p. 7)
Another test from the first set involves the imperative mood. Kenny and Dowty note that most statives are not compatible with the imperative. Dowty points out the verb know in the imperative produces ungrammatical sentences, exemplified by the sentence: *Know the answer!* (Dowty, 1979, p. 55).

Dowty additionally has a series of tests that involve whether a verb can be the complement of another verb. Statives cannot be the complements of the verbs force and persuade. Only accomplishment verbs can serve as the complement for the verb finish. Statives, activities, and accomplishments can serve as the complement for the verb stop, but not achievements. These patterns are shown in (2.5)–(2.7) below.2

(2.5)  
a. *I forced him to know the answer. (stative as complement of force)  
b. *I persuaded him to know the answer. (stative as complement of persuade)  

(2.6)  
a. *Mark finished resembling his father. (stative as complement of finish)  
b. *Mark finished pushing the shopping cart. (activity as complement of finish)  
c. Mark finished building the house. (accomplishment as complement of finish)  
d. *Mark finished noticing the picture. (achievement as complement of finish)  

(2.7)  
a. Mark stopped resembling his father. (stative as complement of stop)  
b. Mark stopped pushing the shopping cart. (activity as complement of stop)  
c. Mark stopped building the house. (accomplishment as complement of stop)  
d. *Mark stopped noticing the picture. (achievement as complement of stop)  

In (2.5a) and (2.5b), the stative verb know is ungrammatical when it is the complement of force and persuade. In (2.6), only the accomplishment is grammatical as the complement of finish. In (2.7), only the achievement is ungrammatical as the complement of stop.

The second set of tests are based upon different entailments when a verb occurs in a given construction. The first of these is that there is a difference in entailment between telic and atelic verbs in the English progressive aspect (or more generally, any imperfective aspect). Event realization is not entailed for telic verbs in the progressive, whereas event realization is entailed for atelic verbs in the progressive (Vendler, 1967, pp. 100, 102; Kenny, 1963, pp. 172-173; Dowty, 1979, p. 57). Examples (2.8) and (2.9) illustrate this test.

(2.8)  
a. Mark is running.  
b. Mark ran.  

(2.9)  
a. Mark is building the house.  
b. Mark built the house.  

2I use the * symbol to indicate that a sentence is either semantically anomalous or ungrammatical.
Example (2.8a) entails that the running event was realized. In other words, (2.8a) entails (2.8b). *Run* is an atelic verb. *Build*, however, is telic--an edifice’s structure has to be completely assembled before it has been built. Example (2.9a) does not entail that the washing event was realized: (2.9a) does not entail (2.9b).

Another test in the second set is related to the first (Dowty, 1979, p. 57). In this test, the same pattern of entailments between the atelic verb in (2.8) and the telic verb in (2.9) is exhibited in sentences with *for*-adverbials like ‘for an hour.’ Examples (2.10) and (2.11) illustrate this.

(2.10) Mark ran for an hour.

(2.11) Mark painted a mural for an hour.

In example (2.10), *Mark ran* is true for every moment within the hour, but in example (2.11), *Mark painted a mural* is not true for every moment within the hour.

A third related test is whether event realization is entailed for complements of *stop*. In this context event realization is entailed for events denoted by atelic verbs, whereas event realization is not entailed for events denoted by telic verbs (Dowty, 1979, p. 57). Examples (2.12) and (2.13) demonstrate this.

(2.12) a. Mark stopped running.

   b. Mark ran.

(2.13) a. Mark stopped building the house.

   b. Mark built the house.

Example (2.12a) entails example (2.12b), but example (2.13a) does not entail example (2.13b). This is due to the fact that an activity verb is used in (2.12) and an accomplishment verb is used in (2.13).

A fourth test in this set of tests involves the word *almost*: activity and achievement verbs and accomplishment verbs have different entailments when they occur with the adverb *almost* (Dowty, 1979, pp. 58-59). Example (2.14) and (2.16) show that activity verbs and achievement verbs are not ambiguous when they appear with *almost*, but example (2.15) with the accomplishment verb is ambiguous.

(2.14) a. Mark almost ran. (activity)

   b. Mark did not run.

(2.15) Mark almost washed the car. (accomplishment)
Example (2.14a) entails example (2.14b), and (2.16a) entails (2.16b). However, (2.15) has two readings: one in which Mark never started (and thus never finished) washing the car and another in which Mark started but never finished washing the car. Example (2.14) only has a reading in which John never even began running. Example (2.16) only has one reading as well.

Another test in this set involving entailments distinguishes achievements from accomplishments. Accomplishments and achievements have different entailments when they occur in a sentence with in-adverbials (like in an hour) (Vendler, 1967, p. 104; Dowty, 1979, p. 59). Examples (2.17) and (2.18) show this.

Example (2.17) entails that Mark was washing his car during the 10 minutes, but (2.18) does not entail that Mark was discovering his car during the 10 minutes, but rather that he discovered the car at one point within a ten minute time frame.

The last test in this set only belongs in it marginally because it has more to do with different readings than different entailments. In the English simple present, dynamic verbs often have a habitual interpretation. Statives do not (Kenny, 1963, p. 175). The example sentences in (2.19) illustrate this test.

(2.19) a. Mark resembles his father. (stative)
    b. Mark runs. (activity)
    c. Mark washes his laundry. (accomplishment)
    d. Mark discovers treasure. (achievement)

(2.19a) does not have a habitual interpretation, but (2.19b), (2.19c), and (2.19d) all have a habitual reading most naturally.

The third basic category of tests has to do with the compatibility of adverbials with different verb classes. The first of these tests that I discuss distinguishes between statives and achievements on one hand and activities and accomplishments on the other hand. Statives and achievements do not occur with adverbials like deliberately and carefully, but activities and accomplishments do (Vendler, 1967, p. 106; Dowty, 1979, pp. 55, 59)). This is shown in (2.20) below.
Examples (2.20a) and (2.20d) are stative and achievement and both are semantically anomalous. Examples (2.20b) and (2.20d) are activity and accomplishment and are not semantically anomalous. I do not know if if the set of adverbs that do not occur with statives is the exact same as the set that does not occur with achievements, but these three adverbs suffice for a test to exclude both statives and achievements.

A second test distinguishes between atelic verbs and telic verbs based upon their compatibility with for-adverbials and in-adverbials. For-adverbials like for an hour or for three days are compatible with statives and activities but only marginally with accomplishments, and are very strange with achievements. In-adverbials, however, are only compatible with accomplishments and achievements. Activities do not occur with in-adverbials (Dowty, 1979, pp. 56, 58-59). Example (2.21a) shows that for an hour is very compatible with (2.21b), which contains an activity verb, but only marginally so with (2.21c), which contains an accomplishment verb. Example (2.22) shows that in an hour is incompatible with (2.22a) (with the exception of an inceptive interpretation, in which Mark starts running in an hour) but compatible with (2.22b) and (2.22c).

(2.21) a. Mark ran for an hour.
   b. Mark washed the car for an hour.
   c. *Mark discovered the treasure for an hour.

(2.22) a. *Mark ran in an hour.
   b. Mark washed the car in an hour.
   c. Mark discovered the treasure in an hour.

Analogous to the in-adverbial/for-adverbial test is a test with the constructions spent x time and took x time. The former is compatible with both activities and accomplishments and not with achievements, the latter only with accomplishments and achievements (Dowty, 1979, p. 56). Both Vendler and Kenny also get at these tests, though they use more general descriptions about the different classes’ relationship with time (Vendler, 1967, pp. 101-103; Kenny, 1963, p. 176)
Table 2.2: Tests for Verb Classes

<table>
<thead>
<tr>
<th>Test</th>
<th>State</th>
<th>Activity</th>
<th>Accomplishment</th>
<th>Achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td>occurs in progressive</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>?</td>
</tr>
<tr>
<td>occurs in imperative</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>occurs as complement of force and persuade</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>?</td>
</tr>
<tr>
<td>occurs as complement of finish</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>occurs as complement of stop</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>event realization entailed in imperfective aspect</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>event realization entailed for every time within for-adverbial</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>n/a</td>
</tr>
<tr>
<td>event realization entailed when complement of stop</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>n/a</td>
</tr>
<tr>
<td>ambiguous with almost</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>x φ-ed in y time entails that x was φing for every time in y</td>
<td>n/a</td>
<td>n/a</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>habitual interpretation in simple present tense</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>occurs with adverbs attentively, obediently and carefully</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>occurs with for-adverbials and spent-x-time construction</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>occurs with in-adverbials and took-x-time construction</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>

All of the above tests are summarized in Table 2.2, using Vendler’s terminology. This table is modeled off the one found in Dowty, 1979, p. 60.

In Table 2.2, ‘no’ means that a verb class is semantically anomalous or does not occur when appearing in the test in the first column. ‘Yes’ means that it is not semantically anomalous, or has the interpretation or entailment listed in the first column. If the test does not apply to a verb class because verbs from the class are ungrammatical in the test, then ‘n/a’ is used.

2.1.2 Terminology regarding tense, aspect, and aktionsart

Tense in language is deictic. A deictic system “relates entities to a reference point” (Comrie, 1985, p. 14). Tense systems commonly use the time of utterance or “speech time” as the reference point and place that time in relation to the times of eventualities (Comrie, p. 14). Aspect is non-deictic temporal meaning, and Comrie defines it as the “internal temporal constituency of one situation” (Comrie, 1976, p. 5). This definition
distinguishes aspect from tense (i.e., it is different than tense yet it has to do with time). Lexical aspect and aktionsart interact with tense and aspect to produce an array of temporal meaning.

_Aktionsart_ literally means ‘kind of action’ in German (Comrie, 1976, pp. 6-7), and the word has been used in several different ways by different authors: (1) to describe a Vendlerian system like the one described in §2.1 (Dowty, 1987, p. 3; Evans, 2001, pp. 19-20); (2) to describe a gamut of non-deictic temporal interpretations of an event (Bache, 1982, p. 70); and (3) in Greek studies to describe all the tense/aspects like ‘Aorist’, ‘Present’, and ‘Pluperfect’ (Thorley, 1988, pp. 193-194; Blass and Debrunner, 1961, p. 166). (This is not an all-inclusive list.) Throughout this work (1) is used.

Aspect is not inherent in the meaning of the verb like lexical aspect, but instead is expressed through morphological markers or grammatical forms. Because it is expressed morphosyntactically, sometimes aspect is called _grammatical aspect_ (in opposition to _lexical aspect_ which is not expressed via grammatical markers). Two opposing grammatical aspects are the perfective and the imperfective. Perfective aspect is defined by Comrie as involving “lack of explicit reference to the internal temporal constituency of a situation” (Comrie, 1985, p. 21). Imperfective aspect, on the other hand, involves “explicit reference to the internal temporal structure of a situation, viewing a situation from within” (Comrie, 1985, p. 24).

The perfective and imperfective aspects might also be defined using Reichenbach’s three-point time system. Reichenbach proposed three times: event time (ET), reference time (RT), and speech time (ST) (Borik, 2006, pp. 147-150). Speech time is the time when the token was uttered. Reference time is “the time span to which the speaker’s claim on [an event] is confined”³ (Klein, 1994, p. 4). Event time is the time of the event expressed by the utterance (Reichenbach, 2005, p. 71). In this thesis I interpret ET, RT, and ST as _intervals_ of time, not as _points_ in time. In the examples in (2.23)–(2.25), English sentences illustrate perfect aspect, imperfective aspect, and perfective aspect.

(2.23) Robin has run. (perfect)
(2.24) Robin is running. (imperfective)
(2.25) Robin ran. (perfective)

For perfect aspect, the ET is before the RT (ET < RT). For imperfective aspect (technically the progressive here), the RT is inside the ET (RT ⊂ ET). For the perfective aspect, the ET is inside the RT (ET ⊂ RT). Both perfective and perfect aspects entail event realization. In other words, both a perfective aspect and a perfect aspect would entail event realization, as in (2.26b) and (2.26c), whereas an imperfective aspect would not entail event realization, as in (2.26a).

³Klein does not use the term “reference time” but “topic time.”
(2.26) a. Mark is building the house.
    b. Mark built the house.
    c. Mark has built the house.

In this thesis I adopt the Reichenbachian ET, ST, and RT terminology in defining Greek aspect.

Aktionsart and lexical aspect are often confused with grammatical aspect, since aktionsart and lexical aspect along with grammatical aspect contribute to the meanings that are often labeled as aspectual phenomena. As seen in §2.1, different aktionsart act differently when they occur in different grammatical aspects (like in the progressive or in a perfective aspect like the Simple Past in English). The distinction between aspect and aktionsart is necessary, because it is only in seeing the interaction of the two are the broader range of aspectual phenomena explicable. Scholars have informally described aspect as doing the following things: “reflect[ing] the situational focus with which a situation is represented” (Bache, 1982, p. 70) or “express[ing] viewpoint, the manner of conception by a speaker or writer of a verbal occurrence in relation to its internal temporal constituency” (Evans, 2001, p. 18) or being “concerned with the speaker’s viewpoint concerning the action in the sense that it implicitly sets up a relationship between the action described and a reference-point from which the action is viewed” (Fanning, 1990, p. 85). In other words, aspect involves perspective which the speaker places on an event. How the event is inherently structured (aktionsart) interacts with this perspective to produce interpretations such as “inceptive,” “incomplete,” “complete,” “punctual,” “continuous,” etc.

2.1.3 Aktionsart versus Lexical Aspect

In §2.1 different tests and criteria for classification of verbs into verb classes were discussed. While both Kenny and Vendler primarily presented their classification system as one which distinguished different types of verbs, it is clear that a discussion on the classification of verbs is not sufficient (Vendler, 1967; Kenny, 1963). Dowty points out that aktionsart are not technically verb classes but classes of propositions (Dowty, 1987). Aktionsart is a semantic classification, not a syntactic one.

The verb walk, which is an activity according to the tests in §2.1, occurs both in sentences which fit the criteria for activity and in sentences which fit the criteria for accomplishment when they are investigated with the tests discussed in §2.1.1. If a system of verb classification were sufficient for understanding the phenomena involving the tests in §2.1.1, then one verb should not fit the criteria for different aktionsarten (i.e., one verb should not occur in a simple sentence which is an activity and another simple sentence which is an accomplishment). Recall that if event realization is entailed in the imperfective, then the verb is atelic;
if event realization is not entailed, then the verb is telic. (2.27) and (2.28) together show that the same verb in different sentences can have different entailments.

(2.27) a. Mark is walking.
    b. Mark walked.

(2.28) a. Mark is walking to his appointment.
    b. Mark walked to his appointment.

Example (2.27a) contains walk in the progressive (which is an imperfective aspect). (2.27a) entails (2.27b), so walk here is atelic. However the truth of (2.28a) does not entail the truth of (2.28b), indicating that walk (to his appointment) is telic. That walk occurs in a sentence which passes the test for atelicity and a sentence which passes the test for telicity indicates that the tests do not categorize verbs, but they are categorizing propositions.

Since walk in (2.27b) occurs without any modifiers which might affect the aktionsart of the proposition, one might say that walk is an activity verb. While aktionsarten classify eventualities and not verbs, it is helpful to still allow ourselves the ability to call walk an activity verb in recognition of the fact that without other sentential elements, walk produces an activity proposition. I use the term lexical aspect for this purpose. The lexical aspect of walk is activity, but the aktionsart of Mark walked to his appointment is telic/accomplishment. The lexical aspect of a verb does not change, but how sentences containing that verb react to different aktionsart tests can change depending the contribution of other elements in the sentence.

In (2.28) to his appointment has affected the aktionsart of the proposition so that the lexical aspect of activity for walk is no longer apparent in the overall interpretation of the sentence. This shows that we do not have access to the lexical aspect of a verb without performing additional aktionsart tests on sentences which contain that verb in the absence of sentential elements which contribute separately to the interpretation of the resulting proposition. This is significant in texts where a verb like erchomai often occurs with sentential elements like PPs which might contribute separately to the aktionsart of propositions. In researching data found in texts, one cannot assume that because a verb often occurs with goal PPs that the lexical aspect of the verb corresponds to the aktionsart of the propositions to which the verb contributes meaning. Instead, one must find instances of that verb without contributing PPs (if that is possible) and test the aktionsart on the sentences with the verb alone.
2.2 Greek Aspect and Aktionsart

2.2.1 Previous studies of aktionsart in Koine Greek

The study of Greek aktionsart begins with Aristotle, who looks at the phenomenon “as categories of states of affairs, processes, and the like, not directly as categories of verbal expressions denoting these,” i.e. eventualities (Binnick, 1991, p. 172). Aristotle’s categories are significant in philosophical studies of action and intention and are thus pertinent to the verb classification system introduced by the two philosophers Vendler and Kenny (Binnick, pp. 171-174).

In Koine and Classical Greek studies, there is a long history of studying verbal aspect, though earlier authors did not make a distinction between the semantic effects of grammatical aspect and the semantic effects of lexical aspect (Olsen, 1997, p. 199). Buist Fanning was the first to apply Vendlerian-type aktionsart to the study of Koine Greek and study the interaction between lexical and grammatical aspect in Koine Greek (Fanning, 1990). Juan Mateos and Mari Broman Olsen are two other scholars who studied Koine Greek aktionsart (Olsen; Mateos, 1977).

Fanning made substantial contributions to the study of aktionsart in Koine. Fanning adopted the entire Vendlerian system of states, activities, accomplishments, and achievements, but he added two classes which are subcategories of the achievement category: climaxes and punctuals (Fanning, 1990, p. 129). Climaxes are prefaced with some previous process, whereas punctuals have no associated process (Fanning, p. 154). Fanning discusses the tests and criteria for different verb classes in English but concludes that many of these tests are not useful for Greek (e.g., statives can occur in the imperative in Greek, with their stative meaning preserved, but they cannot in English) (Fanning, p. 133). For statives, Fanning concludes that the distinction between statives and dynamics “must be discerned from estimating the meaning of the verb, rather than from syntactically based tests” (Fanning, p. 133). For activities, Fanning also claims that classification is “ultimately a matter of estimating its meaning,” though criteria such as the imperfective entailing the perfective and the acceptability of for-adverbials can corroborate the “estimation” of its meaning (Fanning, p. 143). Accomplishments are also determined using the “estimation” method, but Fanning does note that in- and at-adverbials could be useful in diagnosing the aktionsart of a verb. However, he does not attempt to use them, since he has not examined temporal phrases in the New Testament (Fanning, p. 150). Fanning distinguishes between climaxes and punctuals based upon their different interpretations in imperfective/progressive aspects. Climaxes denote the prefacing action when they occur in an imperfective aspect, whereas punctuals take an iterative interpretation in an imperfective aspect (Fanning, p. 156). For each aktionsart, Fanning lists Greek verbs which
are categorized into aktionsarten based upon the criteria he discusses (the foremost being an estimation of the meaning of the verb).

Like Fanning, Juan Mateos uses a system like Vendler’s to categorize many Koine verbs, and classifies a number of them as verbs. He does not develop a methodology for how he decides what a verb’s lexical aspect is. He explains the meanings which occur when verbs of different classes occur in different grammatical aspects. Mateos categorizes both *erchomai* and *eiserchomai* differently than Fanning. Fanning lists *erchomai* as an activity verb and *eiserchomai* as an accomplishment (Fanning, 1990, pp. 144, 151). Mateos lists *erchomai* as an accomplishment and *eiserchomai* as an achievement (Mateos, 1977, pp. 85, 97).

Olsen also studies Greek aktionsarten, but unlike Fanning she does not take it upon herself to categorize Greek verbs into Vendlerian verb classes. Instead, she adopts Fanning’s categorization of Greek verbs, though she rejects his categories ‘climax’ and ‘punctual’ in favor of the supercategory ‘achievement’ (Olsen, 1997, pp. 203, 206 215-216). Using the verbs that Fanning categorized, Olsen argues for system which uses a combination of the privative features +durative, +telic, and +dynamic, or lack thereof, to define all of Vendler’s aktionsarten.

Fanning and Olsen both recognize that other sentential elements can have an effect on the aktionsart of the proposition (Olsen, 1997, pp. 14-16; Fanning, 1990, pp. 163-179). However, neither make explicit a formal system that explains how different Greek sentential components affect the aktionsart of the sentence. Fanning explains how plural NP subjects and objects and different adverbials affect aktionsarten, but he does not formalize his observations.

Several Greek scholars recognize that preverbs play an important role in determining the aktionsart of the proposition (Evans, 2001, pp. 20-22; Olsen, 1997, p. 208; Fanning, 1990, pp. 150-151). Fanning lists quite a few activity movement verbs and claims that they all become accomplishments when they are prefixed with a preverb that denotes source, destination, or extent (Fanning, pp. 144, 151). Evans points out that preverbs affect aktionsart but notes the difficulty in determining their exact effect, since the meaning of the preverbs changes over time (Evans, pp. 20-21). As far as I know, however, no in-depth study of the effect of preverbs on Vendlerian aktionsart in Koine has been conducted.

### 2.2.2 Greek tense/aspect

The appropriate analysis of Greek tense and aspect is controversial. This study focuses on the aktionsart of Greek verbs *erchomai* and *eiserchomai*, but it is critical to develop an understanding of Greek grammatical aspect in order to understand the range of meanings one sees when verbs occur in different tense/aspects. It is
only in understanding the relationship between grammatical aspect and lexical aspect that we understand the full range of phenomena. Furthermore, one of the most important criteria for distinguishing between activities and accomplishments—the fact that event realization is entailed for activities in an imperfective aspect but not for accomplishments—relies upon appropriate identification of imperfective aspects in a language.

Two Greek tense/aspects which take centerstage in this discussion are the Aorist and the Present. Combined they account for 573 of the 634 instances of ἐρχομαι and 182 of 194 instances of εἰσερχομαι in the New Testament. Since the vast amount of the data for both verbs involves either the Present or the Aorist, I focus on these two tense/aspects throughout the thesis, though I discuss other tense/aspects briefly. Examples (2.29) and (2.30) show the Aorist and the Present forms.

(2.29) ἀπερχομένων δὲ αὐτῶν ἁγοράσαει, ἔλθ-εν ὁ νυμφίος
aperchomenōn de autōn agoraśai, ēlth-en ho numphios
departing but them purchase.INF, come.AOR-3s the bridegroom

“While they were going to buy, the bridegroom came” (Matt 25:10, ESV)

(2.30) ὁ ὄχλος πολὺς... ἀκούσαντες ὁτι ἐρχ-εται ὁ Ἰησοῦς εἰς Ἰεροσόλυμα...
ho ochlos polus... akousantes hoti erch-etai ho Iēsous eis Ierosoluma...
the crowd much... hearing that come.PRES-3s the Jesus into Jerusalem...

ἐξῆλθ-εν ὁ ὄχλος εἰς ὑπάντησιν αὐτῷ
eksēlth-en ho ochlos eis hupantēsin autōi
went.out-3p to meeting him

“the large crowd...[hearing] that Jesus was coming to Jerusalem...[they] went out to meet him” (John 12:12, ESV)

The Aorist in example (2.29) has a punctual interpretation. It tells of several women leaving to go to the marketplace, and while they were going, the bridegroom (a character in the story) came to the place where they had been. The coming event was punctual and interrupts the going away event. The Present in example (2.30) is not punctual but shows a continuous interpretation. In this example a large crowd hears that Jesus is on his way to Jerusalem, so they go out to meet him on his way in. We know that Jesus’ coming event is in progress or has continuous interpretation in this example because he has not yet arrived at Jerusalem. Note that the Present form in (2.30) denotes an event in the past. This interpretation of the Present form is often called the “historical Present” in ancient Greek studies (Hansen & Quinn, 1992, p. 731). Verbs in the Present form can also denote events in the present and the future. A good analysis of the Greek Aorist and Present forms should account for these interpretations, along with a range of other interpretations associated with the Present and Aorist.
In this section, I discuss four different analyses of the Greek verbal system.\(^4\) I begin with a more traditional analysis and move to increasingly innovative analyses. In Chapter 2, §3.1 I further discuss and present evidence for my own analysis of Greek tense/aspects, which I mention in passing in the discussion of other analyses below.

### 2.2.3 Blass and Debrunner

Blass and Debrunner’s *A Greek Grammar of the New Testament and Other Early Christian Literature* is an often cited New Testament Greek grammar. Blass and Debrunner, taking a descriptive approach to aspectual analysis, treat aspectual meaning in terms of each of the tense/aspect-stems and what interpretations are possible in each of those stems. For example, they describe the primary aspectual meaning of the Present form as durative (linear or progressive) and iterative, but for the Present in the indicative mood they also cite the a number of specialized meanings: the “conative present,” the “aoristic present,” the “historical present,” the “perfective present,” the “futuristic use of the present,” and the “present used to express relative time” (Blass & Debrunner, 1961, pp. 167-168). These different meanings are not explained via separate systems of grammatical aspect and lexical aspect. Blass and Debrunner explain a wide variety of nuanced aspectual and temporal meaning, but they do not do so using formalized systems of Greek tense/aspects typifies a more traditional perspective on aspectual phenomena.

### 2.2.4 Fanning

Fanning’s analysis of Greek tense/aspect is a more traditional one, aligning on many points with Blass and Debrunner, because it describes each tense/aspect form as being associated with a tense in the indicative mood. However, Fanning separates the aspectual meaning associated with the forms from their tense meaning, and he also distinguishes the aspectual meaning associated with a tense/aspect form from the lexical aspect of a verb that appears in that form.

Table 2.3 summarizes Fanning’s analysis of the indicative Greek verbal system. Each morphological form has both an aspectual and a tense component, with the exception of the future, which is only a tense. Fanning notes that in moods other than the indicative (the imperative, subjunctive, and optative), the aspectual value of the forms in Table 2.3 remain but the tense values do not necessarily remain, depending on the construction. The same applies for infinitives.

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\(^4\)Corien Bary’s dissertation *Aspect in Ancient Greek* provides an analysis of the aorist and imperfective and is relevant here, but I only just received it so cannot include a discussion of it (Bary, 2009).
Table 2.3: Fanning’s analysis of Greek tense/aspect forms in the indicative mood

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Tense</th>
</tr>
</thead>
<tbody>
<tr>
<td>imperfective</td>
<td>past</td>
</tr>
<tr>
<td>perfective</td>
<td>Present</td>
</tr>
<tr>
<td>perfective + stative</td>
<td>Aorist</td>
</tr>
<tr>
<td>nonaspectual</td>
<td>Pluperfect</td>
</tr>
<tr>
<td></td>
<td>Perfect</td>
</tr>
<tr>
<td></td>
<td>Future</td>
</tr>
</tbody>
</table>

In the indicative, Fanning analyzes the Imperfect and Present as two forms which denote the imperfective aspect, the former denoting events in the past, the latter denoting events in the Present (Fanning, 1990, pp. 198, 240). The Aorist in the indicative is both a perfective aspect and a past tense (Fanning, p. 255). The Perfect and Pluperfect, according to Fanning, are a combination of tense, aspect, and aktionsart. They have grammatical aspect in that they are perfective; they contain the aktionsart property of stativity in that they emphasize a state resulting from an anterior action; and they have tense in that they denote an event before a “reference point” and a state resulting from that event which exists at the reference point. The only difference between the Pluperfect and the Perfect is that a resulting state denoted by a verb overlaps with the reference point in the past if it is the Pluperfect and with the reference point at speech time if it is the Perfect (Fanning, pp. 112-120, 290, 305).

I agree with Fanning in his analysis of the Aorist, the Imperfect, and the Future. I differ in that I do not analyze the Present as a tense. I also do not claim that the Greek Perfect and Pluperfect are a perfective aspect plus a stative aspect, or that the Greek Perfect and Pluperfect somehow express aktionsart. I present evidence for these conclusions in §3.1.

2.2.5 Olsen

Olsen’s analysis of Greek tense/aspect differs from Fanning with respect to the Present and Aorist forms. Table 2.4 summarizes Olsen’s analysis. Unlike Fanning, she argues that some of the Greek forms do not possess a tense value in the indicative mood, specifically the Aorist and the Present forms.

She points out that both the Aorist and the Present can denote events located in the past, present or future. Examples (2.31)–(2.32) show the Present and Aorist denoting events in the past. Examples (2.33) and (2.34) show the Present and Aorist denoting events in the present. Examples (2.35) and (2.36) show the Present and Aorist denoting events in the future.
Table 2.4: Olsen’s analysis of Greek tense/aspect forms in the indicative mood
(Olsen, 1997, p. 202)

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Tense</th>
<th>Imperfect</th>
<th>Present</th>
<th>Future</th>
<th>Unmarked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imperfective</td>
<td>Imperfect</td>
<td>Present</td>
<td>Future</td>
<td>Present</td>
<td></td>
</tr>
<tr>
<td>Perfective</td>
<td>Perfect</td>
<td>Future</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonaspectual</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Aorist</td>
</tr>
</tbody>
</table>

Events in the past:

(2.31) παραγγέλλει τῷ ὀχλῷ ἀναπεσεῖν
paraggelei toí ochlōi anapesein
command.PRES.3s the crowd recline.AOR.INF
“he commanded the crowd to sit down” (RSV, Mark 8:6) (Olsen, 1997, p. 222)

(2.32) οὗτος... ἐκτῆσατο χωρίον
houtos... ektēsato chōrion
this.man... buy.AOR.3s field
“this man bought a field” (RSV, Acts 1:18) (Olsen, 1997, p. 222)

Events in the present:

(2.33) ὁ διδάσκαλος λέγει ὁ καιρός μου ἐγγύς ἐστιν
ho didaskalos legei ho kairos mou eggus be.PRES.3s
the teacher say.PRES.3s the time mine near be.PRES.3s
“The teacher says, My time is at hand” (RSV, Matthew 26:18) (Olsen, 1997, p. 224)

(2.34) ἐγνών τί ποιησῶ
egnōn ti poïēsō
know.AOR.1s what do.AOR.SUBJ.1s

Events in the future:

(2.35) ὁ υἱὸς τοῦ ἀνθρώπου παραδίδοται εἰς χεῖρας ἀνθρώπων
ho huios tou anthrōpou paradidotai eis cheiras anthropōn
the son of.th man deliver.PRES.PASS.3s into hands of.men
“The Son of man will be delivered into the hands of men” (RSV, Mark 9:31) (Olsen, 1997, p. 225)

(2.36) πιστεύετε ὅτι ἐλαβετε
pisteuete hoti elabete
believe.PRES.2p that receive.AOR.2p

“Believe that you will receive” (Brooks and Winbery, 1979, p. 94, Mark 11:24) (Olsen, 1997, p. 226)

Since the Present and Aorist forms can denote events in the past, present, and future, Olsen claims that they are not tenses but aspects and that their time reference (how they relate the RT to the ST) is a matter of context. I discuss my own analysis in-depth in Chapter 3. I agree with Olsen about the Present, but not the Aorist. For the Aorist to denote events in the present and future is very rare. Example (2.36) is suspect since an array of popular translations (the New International Version, the New American Standard Bible, the English Standard Version, the New Living Translation, and the New King James Version) do not translate it into English as a future tense, and all but the New King James Version translate it as the present perfect ‘have received.’

Olsen also differs Fanning with respect to the perfect forms. Olsen does not analyze the Perfect and Pluperfect forms as having a stative component and instead analyzes them solely as having perfective grammatical aspect. In Olsen’s analysis, the only difference between the Aorist and the perfect forms (both the Perfect and the Pluperfect) are that the Aorist has no inherent tense. The difference between Olsen and Fanning here is driven not so much by a drastic difference in their accounting of the data as it is in the frameworks they are using and how those frameworks analyze perfect tenses.

Olsen’s analysis departs substantially from traditional analyses by claiming that the Present and Aorist do not have tense in the indicative (Olsen, 1997, p. 200).

2.2.6 Porter

Stanley Porter departs the furthest from tradition by analyzing all indicative forms as aspectual. There is no tense in Koine in Porter’s analysis (Porter, 1989, p. 95). He uses a system of binary aspectual oppositions to define the Greek aspectual forms and explain all the different temporal phenomena (Porter, pp. 90-95). Porter uses more binary features than described in Table 2.5, but exploring the details is not necessary to understand how his analysis differs from Olsen’s and Fanning’s.

I differ significantly with Porter in his analysis. The e-augment, conventionally assumed to express past tense, occurs in the indicative mood with the Imperfect, the Pluperfect, and the Aorist. This augment does not occur in the subjunctive and imperative moods or with the infinitive and participles, all of which do not have absolute tense. It seems easier to analyze some of the forms as tenses than to maneuver around these facts to
Table 2.5: Porter’s analysis of Greek tense/aspect forms in the indicative mood
(Porter, 1989 as presented in Olsen, 1997, p. 201)

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Forms</th>
</tr>
</thead>
<tbody>
<tr>
<td>imperfective</td>
<td>Imperfect, Present</td>
</tr>
<tr>
<td>perfective</td>
<td>Aorist</td>
</tr>
<tr>
<td>stative</td>
<td>Pluperfect, Perfect</td>
</tr>
<tr>
<td>expectation</td>
<td>Future</td>
</tr>
</tbody>
</table>

come up with a purely aspectual analysis of the Greek verbal system. Because the augment is limited to the indicative mood, in which certain tense/aspect forms with the augment are regularly used to denote events at a time with respect to the time of utterance, a temporal analysis of the augment is well motivated.

2.3 Methodology for Diagnosing Aktionsart in Texts

Evans observes that studies which have used the Vendlerian aktionsarten in the analysis of Greek have been “compromised by methodological weaknesses” (Evans, 2001, p. 20). He claims that two such weaknesses are a failure to “distinguish the meaning of verbs from those of the verbal situations in which those verbs occur” and a failure to use Greek data to classify verbs, using instead English glosses of verbs (Evans, p. 20).

Vendler and Kenny’s verb classification systems were constructed with English in mind. Neither of their seminal articles deal with non-English verbs (Vendler, 1967; Kenny, 1963). There is no guarantee, based on these two articles, that a Vendlerian classification system is even applicable to Greek. Nevertheless, Fanning was not unsuccessful in his attempt to classify Greek verbs into a Vendlerian system, and his analysis of lexical and grammatical aspect illuminates aspectual phenomena in Greek, despite the fact that his methodology is suspect at points.

In this work I augment Fanning’s methodology by developing methodology for texts which uses explicit factors in context and interpretation to diagnose the lexical aspect of a verb. I ultimately come to the same conclusion that he does about the aktionsarten of *erchomai* and *eiserchomai*, but I first establish a methodology for classifying Greek verbs based upon data in Greek (Fanning, 1990, pp. 144, 151). Some of these methods are adapted from English, but are applicable to Greek, and other methods I develop based on the Greek data. In §2.3.1 I critique the methodology of previous studies of Greek aktionsart, and in §2.3.2 I set forth potential methodology for studying aktionsarten in non-spoken languages. In §2.3.3, I discuss which methodology from §2.3.2 that I use in Chapter 3 to determine the aktionsarten of *erchomai* and *eiserchomai*.  

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2.3.1 Critique of Methodology of Previous Studies

The only two scholars who have classified a substantial number of Koine Greek verbs into Vendlerian aktionsarten are Buist Fanning and Juan Mateos. Porter does not analyze aktionsarten, and Olsen borrows Fanning’s classifications.

Mateos does not discuss his methodology for classifying verbs into lexical aspects. This is a problem because it leaves the reader without an understanding of how he has come to the conclusions that he has come to. He seems to assume that he can intuit the lexical aspect of Greek verbs. Much of my critique of Fanning’s methods below is also a response to this notion.

As discussed in §2.2.1, Fanning primarily uses his estimation of verbs’ meanings to classify them, though he does note that differences in event realization entailment and adverbials are useful in Greek for classifying verbs. He does not give evidence as to how he came to his conclusions about the verbs he classifies. As Evans suggests, this methodology is lacking. Even if Fanning were a native speaker of Koine Greek, it would still be potentially problematic to classify verbs according to intuition. The basis of classifying verbs and predicates in Vendler’s system is how those verbs and predicates interact with syntactic and semantic tests. As a native English speaker, I cannot discern for certain what the lexical aspect of a verb is until I test the sentence containing the verb with several of the criteria. If I classify an English verb based on an estimation of the meaning of that verb, as Fanning does for Koine, I do no better than an ‘educated guess.’ Admittedly, sometimes an educated guess is all that is available. However, if there is a more explicit way of making aktionsart judgments, then it would be preferable.

Furthermore, Fanning is not a native speaker of Koine Greek, so while he certainly has a deep understanding of the Greek lexicon based on years of study, he cannot have native speaker intuitions about the semantics of Greek words. Without this intuition, Fanning must be relying on some combination of (1) his understanding of lexemes based upon his reading and/or (2) the English glosses of Greek lexemes. Fanning clearly has an excellent command of Greek as a reader and scholar, but this is nevertheless different from being a native speaker, and there is no way of estimating how far removed his understanding of a Greek lexeme’s meaning is from a native speaker’s understanding. Because of this uncertainty, it is best not solely to rely on a non-native speaker’s understanding of a lexeme.

Translations and glosses are not the best means of determining the lexical aspect of a verb. Bache points out that aktionsarten do not divide events and situations into different categories. Rather, aktionsarten divide propositions into different categories. Bache writes that aktionsarten “are not to be regarded as physically
measurable, ‘objective’ characteristics of situations but rather as psychological classifications of (objective or other) situations based on intuitive belief or conception” (Bache, 1982, p. 70). Thus, it is inappropriate to classify a verb based only upon an understanding of an event. In other words, I am a native English speaker, and when I read Koine Greek, I develop an understanding of the events being denoted in the writings which I read. Since I do not have Koine Greek intuitions about the language, I may easily categorize these Greek verbs according to an understanding of how these same events might be denoted by English verbs. This is problematic because there is no guarantee that the Greek and English languages classify “equivalent” verbs (verbs in two different languages that denote the same event) into the same lexical class. I am not saying that that this sort of confusion necessarily happens, only that the risk in making such assumptions is unknown, since we do not have any information on the reliability of translation in classifying verbs.

My point here is not to invalidate completely the use of intuition or translations, but instead to observe that given the potential unreliability of intuition judgments described above, it is preferable to use more explicit means of judging aktionsart when those means are available. That Mateos and Fanning come to different conclusions about the lexical aspect of erchomai and eiserchomai reinforces the point that intuitively classifying Greek verbs is potentially unreliable. Some of the tests for texts discussed previously in this section are more reliable and should be prioritized above the use of translations or intuition to judge aktionsart in texts.

### 2.3.2 Potential Methodology for Classifying Aktionsart in Non-spoken Languages

The following six criteria are potential ways to classify aktionsart in non-spoken languages. They are listed in order roughly from the most reliable to the least reliable.

**The Imperfective Paradox applied to texts**

The difference in entailment in imperfective and perfective aspects is the most reliable cross-linguistic test for determining whether a predicate is telic or atelic (Bohnemeyer & Swift, 2004). Recall that a telic predicate in an imperfective aspect does not entail that the event is realized, but a telic predicate in a perfective aspect does entail event realization. Atelic predicates, on the other hand, entail event realization in imperfective and perfective aspects. This has been called the ‘Imperfective Paradox.’ See (2.8) and (2.9) for examples of the Imperfective Paradox in English.

As a result of this Paradox, two observations in a text provide conclusive evidence of a verb’s atelicity or telicity: (1) if an event is unrealized and the predicate denoting it is in an imperfective aspect, then the predicate is telic; and (2) if it can be shown that event realization is entailed for a predicate in an imperfective aspect.
While it is ideal for the sake of thoroughness that conclusive evidence in the pattern of (1) be corroborated by multiple examples from the text, one example of such a piece of evidence is technically conclusive. Regarding the first type of conclusive evidence, example (2.37) demonstrates what this would look like in a text.

(2.37) οὗτοι ἀναγκάζουσιν ὑμᾶς περιτέμνεσθαι
     houtoi anagkazousin humas peritemnesthai
     those compel.PRES.3s you circumcise.PRES.PASS.INF
     “those... would compel you to be circumcised” (RSV, Galatians 6:12) (Olsen, 1997, p. 207)

Olsen claims that (2.37) shows a telic interpretation of the verb *anagkazousin* ‘compel.’ The example shows a case in which an event (‘compeling’) is in an imperfective aspect (the Present) and has an incomplete interpretation—the addressee was not circumcised in the end, so the ‘compelling’ was not fulfilled. This indicates that the verb *anagkazousin* here is telic, because an event denoted by an atelic predicate must be realized in both perfective and imperfective aspects.

Application (2) of the Imperfective Paradox involves looking for examples that evidence that the realization of an event is *entailed* if the predicate denoting it occurs in an imperfective aspect. If such an example is found, then the predicate must be atelic. However, finding an atelic predicate via this method is unlikely, unless the text includes a metalinguistic conversation on event realization entailments in different aspects.

The only realistic way I can conceive of using the paradox to provide evidence to show evidence of a verb’s atelicity is to amass a large number of instances of a verb and see if there are any examples of the verb in an imperfective aspect where the event it denotes is not realized (of course excluding negation or telicizing PPs as the cause of lack of event realization). One example of an incomplete interpretation of an event when the verb is in an imperfective aspect indicates telicity. But if there are enough examples, then an example set of instances of a verb in an imperfective aspect which *all* denote realized events would weigh heavily on the side of the predicate being atelic. For example, let’s say that I am not a native English speaker and decide to research the lexical aspect of the word *build* by analyzing texts. I might come across an example in a text in which *build* is in an imperfective aspect, and later in the text it becomes obvious that the narrative has taken for granted the building event was realized. I cannot assume that *build* is atelic from one example in which it occurs in an imperfective aspect and then the building event is realized in the narrative. I cannot assume this because the Imperfective Paradox does not state that if an event denoted by a verb in an imperfective paradox is realized, then the verb is atelic. Rather, it says that if a verb is atelic, then event realization is entailed if the verb is in an imperfective aspect. This is why one needs many instances to give adequate evidence of a verb’s atelicity. If I were to take a significant number of instances of *build*, which is telic, in an imperfective aspect
aspect, then I would likely discover that event realization is not entailed for the verb. However, if I were to do the same procedure for the verb *run*, then I would discover that the running event is realized for all the instances of *run* in an imperfective aspect. This would provide convincing evidence for the atelicity of *run*. Note that just a few examples of a realized event in an imperfective aspect would not preclude that the verb is telic. (Technically no amount of examples of a realized event in an imperfective aspect would offer *proof* of a predicate’s atelicity, but a significant amount of such examples would allow one to safely assume atelicity.)

**Adverbial Phrases**

Adverbial phases are also of potential use in determining the aktionsart of a verb in texts. Two basic categories of adverbials are "duration (for-type)" adverbials and "time frame (in-type)" adverbials (Bohnemeyer and Swift, 2004, p. 264; (Dowty, 1979, pp. 56, 58). Atelic predicates take duration adverbials, and telic predicates take time frame adverbials, though in English accomplishments are marginally successful with duration adverbials.

In Koine, two likely candidates for aktionsart-determining adverbials are the “genitive of time within which” construction and the “accusative of extent of time” construction. The genitive construction may be similar to time frame adverbials in English, and the accusative construction to duration adverbials. Dative time constructions in Greek could also be potentially helpful in determining aktionsart. Example (2.38) illustrates the “genitive of time within which”; example (2.39) illustrates the “dative of time at which”; and example (2.40) illustrates the “accusative of extent of time.”

(2.38) ἑξ ἡμερῶν ἰδιάζει τοὺς νεανίας ὁ Ὅμηρος

six days.GEN will.teach the young.men the Homer

“Within six days Homer will teach the young men.” (Hansen & Quinn, 1992, p. 147)

(2.39) τῇ πρώτῃ ἡμέρᾳ ὁπλίτας ἐν τῇ ἁγορᾷ τάξομεν

the.DAT first.DAT day.DAT hoplites in the marketplace we.will.station

“On the first day we shall station hoplites in the marketplace.” (Hansen & Quinn, 1992, p. 147)

(2.40) πέντε ἡμέρας τοὺς νεανίας διδάξομεν.

five days.ACC the young.men we.will.teach

“For five days we shall teach the young men.” (Hansen & Quinn, 1992, p. 148)

The genitive in (2.38) corresponds to an English adverbial *within* and both limit the ET to some time in a six day time interval. The dative in (2.39) locates the ET at a specific time (‘the first day’). The accusative
in (2.40) corresponds to the English for-adverbial for five days in the translation and both require that the ET spanned over a five day time interval. In order to use these time adverbial tests with these time constructions, one would have to do research on whether they have the same effects on aktionsart in Greek as they do in English.

Other adverbials could be useful for testing aktionsarten in Koine Greek or other non-spoken languages. Perhaps some adverbials like tacho ‘soon’, tote ‘then’, euthus ‘immediately’, pollakis ‘many times’, edê ‘already’, or palin ‘again’ would prove to have an interesting interaction with aktionsart. Some of these adverbials could more naturally pattern with certain aktionsart in the same way that English adverbs cautiously and obediently occur with activities and accomplishments but not states or achievements. In order to use adverbial tests, one would first have to develop that adverb as reliable criteria for aktionsart classification, which is beyond the scope of this study.

The Interaction between Aktionsarten and Different Aspects

Some have noted that some aktionsarten have a typical interpretation when they occur in a given aspect and that some aktionsarten never have a particular interpretation in a given aspect. For instance, statives do not have habitual interpretation in an imperfective aspect (Kenny, 1963, p. 175). An appropriate test for dynamicity, then, would be whether a predicate can have a habitual interpretation in an imperfective aspect: if it can, then it is not stative.

Rijksbaron 2002 notes that predicates which take a conative interpretation in the Imperfect or Present are typically atelic. An interpretation is conative if the “state of affairs did not get beyond the stage of an attempt” (Rijksbaron, 2002, p. 16). The conative interpretation in the Imperfect is likely an application of the Imperfective Paradox, since the Imperfect is imperfective and a conative interpretation means the event was not entailed (Rijksbaron, pp. 3, 16-17). See (2.41) below for an example of a conative interpretation.

(2.41) ἄγγελει ἐπείθον ἀποτρέπεσθαι οἱ δ’ οὐχ ὑπἠκουον
aggelei epeithon apotrepesthai hoi d’ ouch hupēkouon
messengers persuade.IMPERF to.turn.back; they but NEG listen.IMPERF
“Messengers tried to persuade them to turn back, but they would not listen.” (Xenophon, An. 7.3.7, from Rijksbaron 2002, p. 16)

In (2.41) the verb epeithon ‘persuade’ is in the Imperfect, an imperfective form, and the persuasion is interpreted as having been attempted but not successful, since the messengers were not able to convince the other party to turn back.

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Rijksbaron 2002 also notes that predicates which take an ingressive interpretation in the Aorist are typi-
cally stative (Rijksbaron, 2002, p. 20). Example (2.42) illustrates this interpretation.

\[(2.42) \ \text{ἀνεῖλε} \ \text{τε} \ \text{δὴ} \ \text{τὸ} \ \text{χρηστήριον} \ \text{kai} \ \text{ἐβασίλευσε} \ \text{oútw} \ \text{Γὺγῆς} \ \text{τὸ} \ \text{oracle} \ \text{and} \ \text{reign.AOR} \ \text{thus} \ \text{Gyges} \ \text{became king} \ \text{“The oracle did so ordain; and Gyges thus became king” (Herodotus, 1.13.2, from Rijksbaron 2002, p. 20)} \]

Example (2.42) has the stative verb *ebasileuse* ‘reign’ in the perfective Aorist form. The sentence is not interpreted as claiming that Gyges reigned for a period of time after the oracle ordained it, but rather that Gyges became a king after the oracle ordained it.

Another indicator of aktionsart involves typical interpretations of atelic events in perfective aspects. If a predicate in a perfective aspect is interpreted as having a start and stop time, without a culmination that completes the event or without the stop time interrupting some stage in the event, the predicate’s behavior is consistent with atelicity. Example (2.43) shows an English example of a sentence with this interpretation with the activity verb *meander*.

\[(2.43) \ \text{She meandered amongst the trees.} \]

In (2.43) the event is of an aimless walking. There is no goal, and after the event, no new condition is true of the subject, other than the fact that she is probably in a different location. The judgments involved here are subtle and require the reader be able to interpret whether the start and stop time of an event is arbitrary or whether they correspond to a stage in the realization of an event.

**Verb Stems**

In Greek, one of the ways the verb forms (i.e., Aorist, Present, Perfect) are differentiated is their stem. Sometimes a verb does not have a verb stem for a particular form because it never occurs in the tense/aspect that is expressed by that form. This can sometimes indicate the verb’s lexical aspect. The Greek verb *eimi* ‘to be’, for example, has no form for the Aorist or Perfect forms. The fact that it cannot occur in a perfective form strongly indicates that it is atelic because if it were telic and did not have a verb stem to express the Aorist or Perfect forms, then it could never entail event realization. This does not necessarily apply to the verbs *erchomai* and *eiserchomai*, because they have verb stems for all the aspect forms.\(^5\) However, it is handy for verbs like *eimi* ‘to be’ which do not have forms for all the aspect forms.

\(^5\)Recall from §1.1.2 that *erchomai* and *elthon* are the same lexeme, so the two suppletive forms fill out the different aspects in the Greek paradigm.
The Existence of a Goal

Telic verbs have been described as “bounded,” “terminative,” or “culminating” (Fanning, 1990, p. 128; Olsen, 1997, p. 32). In motion verbs, a goal or destination serves to provide this required boundary or culmination. One piece of evidence for a telic motion verb would be the presence of a goal or destination. This goal or destination could be explicit, as when a prepositional phrase denotes a goal or destination, or it could be contextually denoted, in which the context makes clear that there is a goal for the motion.

If *erchomai* were atelic and *eiserchomai* were telic, for example, one would expect *erchomai* to sometimes occur without a goal or destination and possess a ‘just walking/traveling’ or even a ‘meandering’ meaning, whereas *eiserchomai* would always have a goal or destination. This goal could be made evident from a PP denoting a destination or from context which indicates a goal or destination to the motion.

Translations and Dictionary

Two methods of assessing the lexical aspect of verbs in texts are to categorize them on the basis of their dictionary definition or to decide based upon how they are translated. Both of these methods can give clues to verbs’ lexical aspect, but neither is conclusive.

Dictionary definitions do not offer conclusive evidence of lexical aspect because while dictionaries of dead languages often include nuanced information about the history and polysemous meanings of a verb, they do not specifically research or present data concerning the lexical aspect of a verb. Without this information, one is left to “intuit” the lexical aspect of a verb by guessing whether there is inherent ‘culmination’ in the definitions given by the dictionary. However, in some cases it could be helpful to try this method. For example, if a verb always means “to heat a liquid until it begins bubbling on the surface”, then it is likely that this inherent ‘culmination’—bubbling on the surface—would make the verb telic. But intuiting is always a risk in the absence of set criteria for what a ‘culmination’ consists of. Other methods shown above in this section should be used in addition to using a dictionary definition.

Using a translation of a text to determine the lexical aspect of a verb is equally inadequate. While an ideal translation would preserve all the nuances of meaning of the original-language sentence into the target-language sentence, there is no guarantee that every translation is ideal. (In fact, translations are probably never ideal.) Several factors work against an ideal translation. The first is that often the translators do not have native speaker intuitions about either the original or the target language. In the case of Koine Greek, no translator today could have native speaker intuitions for Koine, since it is an ancient language. As a result, there is no guarantee that the translator understands all the nuances of meaning in the original language (Koine, in this
case), so there is no way to be assured of a complete transference of all the nuances of meaning in the original language. The second factor is that word meaning is not a one to one mapping from the original language to the target language. Because a translator cannot know the exact equivalents of a Greek word in English, for example, meaning may be lost in the translation. Without studying beforehand whether lexical aspect always translates accurately, the translation should not be trusted for primary judgments about lexical aspect.

Despite reservations about the use of dictionary definitions and translations of the text, they are better methods than none at all. A good translation should contain most or all of meaning that is in the original. Dictionaries and translations are best used to corroborate other evidence of a verb’s lexical aspect.

2.3.3 Methodology used in Chapter 3

In Chapter 3 I apply some of the methodology in §2.3.2 to test Fanning’s assessment of erchomai and eiserchomai (Fanning, 1990, pp. 144, 151). I focus on the use of the Imperfective Paradox and the interpretations that the verbs have in certain aspects. I do not use Greek adverbials to give evidence for the lexical aspect of erchomai and eiserchomai because I have not done any study of how Greek adverbials interact with different lexical aspects. I also look at the two verbs’ preferences for grammatical aspect, as well as how often they occur with a destination, either contextually denoted or denoted by a PP.

2.3.4 A Note on Infinitives, Participles, the Subjunctive, and the Imperative

New Testament data for erchomai and eiserchomai includes instances of both verbs in the imperative and subjunctive moods and in the infinitive. These two moods and the infinitive pose a potential challenge for this study because some constructions disproportionately occur with one tense/aspect, or in some cases, some constructions only occur with one tense/aspect. If a construction necessitates or disproportionately occurs with one tense/aspect form over another, then the author might be using the tense/aspect form for a reason other than the semantics of its grammatical aspect, and rather would be using the form because the syntactic environment required it for some idiosyncratic reason. If this is the case, then it would be inappropriate to include some of these forms in the data because the information would reveal nothing about the affect of erchomai and eiserchomai on the author’s choice in tense/aspect forms, but rather would be a reflection of a syntactic construction. An example of such a construction is found with the verb mellō, ‘be about to,’ which seems to trigger the use of the Present tense/aspect-stem. This construction can be seen in (2.44).

(2.44) μέλλει ὁ νιὸς τοῦ ἀνθρώπου ἔρχεσθαι
mellei ho huios tou anthropou erch-esthai
is.about.to the son of the man come.PRES-INF
“the Son of Man is going to come” (Matt 16:27, ESV)

Here the main verb is mellei, the third person singular Present form for mellō, and the infinitive form erchesthai is its complement. Mellō does not always trigger the Present form in its complements. Thorley claims that in a survey of the New Testament, he found 91 times that an infinitive was coupled with mellō, and of these, 79 had the Present form, 5 had the Future form, and 7 had the Aorist (Thorley, 1989, p. 293). There are a variety of other constructions for the subjunctive, the infinitive, and the imperative, in addition to the mellō construction, which trigger the use of one tense/aspect stem over another, some constructions favoring the Present form while others the Aorist form (Thorley, 1988; Thorley, 1989). Thorley does not explore in-depth why the aorist or present is preferentially selected for some of these constructions.

However, in these cases in which the construction supposedly is more likely to occur with one form over another, meaningful aspectual distinctions can be seen to be made by the author. For example, Thorley says that the when an infinitive follows en tōi, the infinitive is likely to be in the aorist. En tōi + Aorist infinitive is roughly interpreted ‘after’ + the meaning of the infinitive. However when the infinitive is in the Present form instead of the Aorist, the interpretation becomes ‘while’ + the meaning of the infinitive. The difference is obviously that of the tense/aspect form of the infinitive. The Present, an imperfective aspect, results in simultaneity of the two events, while the Aorist, a perfective aspect, results in sequence of the two events.

Examples (2.45) and (2.46) contrast the Present form and the Aorist form in this construction.

(2.45) ἐν τῷ καθεύδειν τοὺς ἀνθρώπους ἐλθεν αὐτὸν ὁ ἐχθρὸς
in the.DAT sleep.PRES.INF the.ACC people.ACC came his the enemy
“while his men were sleeping, his enemy came” (Matthew 13:25, ESV)

(2.46) ἐν τῷ εἰσαγαγεῖν τοὺς γονεῖς τὸ παιδίον
in the.DAT lead.into.AOR.INF the.ACC parents.ACC the.ACC child.ACC
Ἰησοῦν... αὐτὸς ἐδέξατο αὐτὸ εἰς τὰς ἀγκάλας
Jesus.ACC... he received it into the arms
“when the parents brought in the child Jesus... he took him up in his arms” (Luke 2:27-28, ESV)

In (2.45), the Present infinitive katheudein ‘sleep’ denotes an event which occurs simultaneously with the action of the main verb ἐλθεν ‘came.’ Notice that the subject of katheudein, which is τοὺς ἀνθρώπους ‘the people’, is in the accusative case. The infinitive taking an accusative subject is typical of this construction. In (2.46), the Aorist infinitive eisagagein ‘lead into’ denotes an event which occurs before the action of the main
verb *deksato* ‘received.’ The subject of *eisagagein* is *tous goneis* ‘the parents and is in the accusative. The object of *eisagagein* is *to paidion Iēsoun* ‘the child Jesus’ and is also in the accusative, which is usual for this verb. Both (2.45) and (2.46) show good reason for including into my data at least some of infinitival constructions which co-occur disproportionately with one tense/aspect form over another. The pattern demonstrated by some of these constructions reveals the author’s choice to make an aspectual distinction and that choice is relevant to this study.

There are other scenarios in which the subjunctive and imperative and infinitive do not occur in constructions which trigger the use of the Aorist or Present form, and in these scenarios the choice of the Aorist or Present clearly provides information about which grammatical aspect–perfective or imperfective–the author is choosing in order to describe the event.

Sorting through which infinitival constructions result from syntactic necessity and which accurately reflect an author’s choice to emphasize the aspect involves research beyond the scope of this study. As shown in (2.45) and (2.46), even in those constructions which co-occur disproportionately with one form over another, meaningful aspectual contrasts are to be found. Because of this, I do not eliminate the infinitive, subjunctive, or imperative from my data. In Chapter 3 I use discuss patterns in the verbs’ occurrence in different grammatical aspects, and in doing so I count all instances of *erchomai* and *eiserchomai*, in all moods and all instances of the infinitive. I do so because any constructions which syntactically trigger one form over the other will affect both *erchomai* and *eiserchomai*, and since the goal is to compare the two, the net effect of such constructions should be nothing. Meanwhile, those infinitival, subjunctive, and imperative constructions which do reflect the authors’ choice to emphasize one aspect over another will contribute to the results.

For tests for aktionsart in texts, I try not to use the infinitive, subjunctive or imperative whenever possible, especially if it involves a construction which occurs disproportionately with one form over another. However, since I demonstrated in (2.45) and (2.46) that infinitival constructions do show the imperfective-perfective aspect distinctions found in the indicative, I use some infinitival constructions for evidence of lexical aspect when I cannot find an indicative construction that is an equivalent example.

The participle is another story. In Koine the participle is used very frequently. Both verbs *erchomai* and *eiserchomai* occur as a participle more often than the infinitive, subjunctive or imperative. Only indicative mood instances of the verbs occur more often that participial instances. The participle is frequently used in Greek to relate two events in a single sentence much as the way English conjunctions are used.
“She never left the temple but worshiped night and day, fasting and praying.” (Luke 2:37, NIV) Or, more literally: “She did not leave the temple, serving in fasts and prayers night and day.”

In (2.47) the participle *latreuousa* ‘fasting’ agrees with feminine subject (introduced in a previous phrase). Both the main verb *aphistato* and the participle *latreuousa* set the background character for the subject. Both manifest the typical continuous interpretation of the imperfective aspect associated with their forms (the Imperfect and the Present).

Aspectual distinctions between the forms remain in the participle. In (2.48) and (2.49), the lexeme *erchomai* occurs in the Aorist participle in the form *elthonta* and in the Present participle in the form *erchomenos*.

In (2.48) the Aorist participle *elthonta* sequences with the event denoted by the main verb and has a punctual interpretation. In (2.49) the Present participle *erchomenos* denotes an event simultaneous with that denoted by the verb *ēggisen*. The expected aspectual distinctions between the imperfective Present and the perfective Aorist forms remain when they are participial forms. Because aspectual distinctions between the tense/aspect forms remain when those forms are participial, I freely use participles in the tests from §2.3.2.
CHAPTER 3

AN ANALYSIS OF GREEK ASPECT
AND ERCHOMAI AND EISERCHOMAI

Many studies of aspect are divided into an analysis of both lexical and grammatical aspect. This is for good reason: it is the combination of the lexical aspect of a verb and the morphological form (grammatical aspect) in which it occurs that determines the meaning which is expressed of the verb stem. Because of this, I discuss grammatical aspect and lexical aspect in Greek in two sections in this chapter. Based on evidence from the New Testament, I discuss my own analysis of grammatical aspect as it relates to the Greek verb forms in (3.1) and lexical aspect as it relates to erchomai and eiserchomai in (3.2).

3.1 Grammatical Aspect in the Greek Verbal System

As discussed in Chapter 2, scholars have expressed analyses ranging from all the tense/aspect forms being analyzed as aspects (Porter, 1989) to all of the forms being analyzed as tenses (Fanning, 1990), to combinations of both views (Olsen, 1997). In my analysis, I focus on the Aorist and Present primarily, but I briefly discuss the other forms. In the New Testament data, the Aorist and Present forms are by far the most common, so I focus on them.

Throughout my discussion of the data for the different tense/aspect forms, I use several terms to describe how events are interpreted temporally. I use perfective to describe an interpretation of an event which portrays that event in its entirety. In a perfective interpretation Reichenbach’s RT (reference time) would include the ET (event time), so that the view of the entire interval over which the event occurs is available (ET ⊂ RT). I use the term imperfective to describe an interpretation of an event which has view of the “inner work-
ings” of an event, and may or may not have view of the event’s inception or termination. In Reichenbachian
terminology, an imperfective interpretation of an event places the reference time as a subset or equal to the
event time (RT ⊆ ET). I use the term continuous to describe an interpretation which is a kind of imperfective
interpretation and places the RT as a proper subset of the ET (RT ⊂ ET). I follow the literature in assuming
that habitual and generic interpretations are a subclass of imperfective interpretations, though I recognize that
my Reichenbachian definition of imperfective aspect does not explain many of the characteristics of habitual
and generic interpretation (Frawley, 1992; Comrie, 1976).

In some of the sections below I have to determine the time of an event (past, present, or future) denoted
by a sentence in direct or indirect discourse. In these cases I equate the speech time with the time at which
the utterance is made in the narrative. When the sentence is not in direct or indirect discourse, I equate the
speech time with the time at which the writer pens the narrative.

3.1.1 The Present Form

As discussed in the previous chapter, the Present form consists of its own stem, complemented by endings
which indicate person and number and lacking an augment which indicates past time reference. The Present
form is used to denote events in the past, present, and future and events are aspectually interpreted in a variety
of ways in this form. Below I present relevant data for the Present form occurring in situations where it
denotes events in different times.

The Present form and events in the present

When denoting an event in the present, erchomai in the Present form exhibits habitual and continuous in-
terpretations. I also include generic interpretations in this section, though the examples I discuss might be
considered more omnitemporal than present. I analyze the Present form as lacking tense and as imperfective.

Example (3.1) illustrates an event denoted by erchomai which has both a habitual and continuous inter-
pretation. The context for this example involves a crippled man who is located near a pool that is rumored
to have healing properties when the waters stir up. But because the man is crippled, when he is on the way
down to the pool when the waters are being stirred up, he always arrives behind another person who is also
going down to get into the water. The example describes this scenario.
“I have no one to put me into the pool when the water is stirred up, and while I am going another steps down before me” (John 5:7, ESV)

As he describes this repeating scenario, he uses erchomai in the Present form to describe his ‘going down,’ which is interrupted by the action described by allos pro emou katabainei ‘another stepping down before him.’ While the event denoted by erchomai has a continuous interpretation in the description, it also has a habitual interpretation in that the man has been going down to the pool every time the waters are stirred up, and every time this action is interrupted by a person successfully going down before him.

Example (3.2) shows erchomai in the Present form of erchontai with a generic interpretation. This use of the Present is very common in the New Testament. In this example, Jesus is talking to his disciples and warns them of false prophets, who come in the guise of benevolence or goodness but with the intention to harm.

[Bible passage]

The event in (3.2) is generic because he is expressing a generalization about a group of people, an interpretation which is contributed to by the use of the indefinite relative hoitines ‘whoever.’ These people are the type who “come...in sheep’s clothing but inwardly are ravenous wolves.”

Example (3.3) contains eiserchomai in the participial form eiserchomenon, with a generic interpretation.

[Bible passage]
“It is not what goes into the mouth that defiles a person, but what comes out of the mouth; this defiles a person.” (Matt 15:11, ESV)

The sentence is a maxim and describes a rule of thumb, which is why I label it generic.

Example (3.4) shows a habitual interpretation of the Present form of *erchomai*. A man who owns a vineyard is commenting on a fig tree in his vineyard.

(3.4) ἰδοὺ τρία ἐτη ἀφ’ οὗ ἔρχομαι ζητῶν
idou tria etē aph’ hou erch-omai zetōn
behold three.ACC years.ACC during which come.PRES.1s seek.PART.PRES.NOM
καρπὸν ἐν τῇ συκῇ ταύτῃ καὶ οὐχ ἕρισκω
karpon en tēi sukēi tautēi kai ouch heuriskō
fruit on fig.tree this and NEG find.PRES.1s

“ ‘Look, for three years now I have come seeking fruit on this fig tree, and I find none’ ” (Luke 13:7, ESV)

The man complains that for a period of three years he has come to the vineyard each year, looking for fruit on the fig tree, and each year he has found nothing.

Example (3.5) also shows another habitual interpretation, but of *eiserchomai*, here occurring in the Present form *eiserchetai*. Here, the writer of the book of Hebrews discusses the difference between the priestly duty of Jesus and the priestly duty of the typical high priest.

(3.5) ὡσπέρ ὁ ἀρχιερεὺς εἰσ-έρχ-εται εἰς τὰ ἁγία κατ’ ἐνιαυτὸν ἐν ἁίματι ἀλλοτρίῳ...
...hōsper ho archiereus eis-erch-etai eis ta hagia kat’ eniauton en haimati...
...just.as the high.priest EIS-go.PRES-3s into the holy with each.year in blood another...

“...as the high priest enters the holy places every year with blood not his own...” (ESV, Hebrews 9:25)

In this comparison, the writer mentions that the high priest enters on a yearly basis with an animal’s blood. This is habitual because the ‘entering’ reoccurs on a yearly basis.

The above sentences show that *erchomai* and *eiserchomai* in the Present form are both capable of denoting events in the present. The aspectual references found are continuous (for *erchomai*) and habitual, and generic (for both verbs).
The Present form and events in the future

It is also common for verbs in the Present form to be compatible with future time reference. When denoting events in the future, verbs exhibit perfective aspect and imperfective (specifically continuous) aspect. Example (3.6) illustrates a perfective interpretation and in it the writer (Paul) addresses a group of people and tells them that he will be coming to them shortly. In the context, the arrival is being discussed, not the travel. Note that the translations here use the English present progressive, which can also denote events in the future, so this does not weigh against the fact that erchomai is denoting an event in the future.

(3.6) τρίτον τούτο ἔρχ-ομαι πρὸς ὑμᾶς
third this come.PRES-1s to you.PL
“This is the third time I am coming to you.” (2 Corinthians 13:1, ESV)

That the arrival and not the journey is the topic of conversation is made clear by the surrounding text. Paul goes on, “…I warn them now while absent, as I did when present on my second visit, that if I come again I will not spare them” (2 Cor 13:2, ESV). He is discussing a series of visits and different interactions that occurred on these visits. By ‘come’ he refers to his arrival at the destination, not his journey to the people he is addressing, since the surrounding context discusses the third ‘coming’ in conjunction with a second ‘visit,’ which refers to his time at his destination, not his time on the way to his destination. Since it is the arrival being discussed, not the journey, it is fair to assess the perspective as perfective, and since Paul is referring to three visits in a row, it might be considered habitual as well.

Likewise, in (3.7) the ‘coming’ is an arrival, not the process of arriving, and demonstrates a perfective interpretation.

(3.7) γρηγορεῖτε οὖν οἴκατε γῶρτε ὦ νῦν τῆς οἰκίας ἐρχ-εται ὁ κύριος ἐκ νυκτών ἀλεκτοροφώνας ἐν πρωί
be.awake.IMPER then NEG oikas gar poter ho kurios tēs oikias erch-etai e opse e mesonukton e alektorophōnias e prōi
“Therefore stay awake—for you do not know when the master of the house will come, in the evening, or at midnight, or when the rooster crows, or in the morning—” (Mark 13:35, ESV)

That (3.7) is talking about the arrival and not the process of coming is emphasized by the four adverbial phrases opse ‘late,’ mesonukton ‘at midnight,’ alektorophōnias ‘when the cock crows,’ and prōi ‘at morn’,
each of which designate a different possible time of arrival given the context of the parable in which this sentence appears.

Blass and Debrunner call address imperfective, future interpretations of the Present form in what they call the “futuristic use of the Present” and especially note the verb erchomai for this use because it is frequently used in prophetic statements like ‘the one who is to come’ (Blass & Debrunner, 1961, p. 168). They also note that verbs of going and coming can have the meaning of ‘to be in the process of going (coming)’ for which reaching the destination still lies in the future” (Blass & Debrunner, p. 168). This “in-process” reading, or continuous reading, with a future arrival can be seen in (3.8).

(3.8) ὁ ἐρχόμενος ἥξει
ho erchomenos hēksei
the come.PRES-PART.NOM.SG have.come.FUT.3s
“He who is coming will come” (Hebrews 10:37, ESV)

In (3.8), erchomai is in the nominative participial form erchomenos. The verb hēksei is the Future form of the verb hēkō which is of a unique set of verbs that has a perfective meaning in the Present (Blass & Debrunner, 1961, p. 168). Hēkō means ‘have come’ or ‘am here.’ The sentence literally means ‘the one coming will be here’ or ‘the one coming will have come.” The juxtaposition of erchomenos and hēkei highlights that the ‘coming’ denoted by erchomenos is viewed as in process, and the ‘coming’ denoted by hēkei is viewed as a future arrival event. Blass and Debrunner list this use under “the futuristic use of the Present” for erchomai because the arrival is expected in the (often distant) future, but technically erchomenos here has an RT in the present and is continuous. While in the sentence in (3.8) the interpretation for erchomai is continuous, in other similar sentences the interpretation is less apparent. The sentence in (3.9) is Jesus’ statement that he will come back for his followers. He has left at this point (ascended to heaven) but speaks of a future returning.

(3.9) καὶ ἴδον ἐρχόμαι ταχύ
kai idou erch-omai tachu
and behold come.PRES-1s soon
“And behold, I am coming soon.” (Revelation 22:7, ESV)

The reading here could be that of an in process coming with a future arrival or the entire act of coming (the leaving, the coming, and the arrival) could be in the future. The English word soon makes it seem like the latter, but the New King James Version translates it as “Behold, I am coming quickly,” in which case the former reading sounds more appropriate, based on the English. I could use the model of (3.8) to say that the reading is continuous. However, since there is no evidence in the sentence or its context itself to indicate this
and the Present form capable of denoting events in the present with a continuous reading or in the future with a punctual reading, I refrain from doing so.

Through all of the above examples, we see that the Present form when denoting events in the future demonstrates a punctual interpretation.

The Present form and events in the past

The Present form is also frequently used to denote events which are in the past. This use has been called the historical present or the narrative present (Blass and Debrunner, 1961, p. 167; Comrie, 1976, p. 73). However, other scholars point out the frequency of events in the past which are denoted using the Present form and claim that assuming a pragmatic motivator like ‘dramatic use’ for this use of the form is unrealistic. They analyze the use not as a ‘special’ narrative use but incorporate its use into their semantics of the Present form by claiming that it encodes no relationship between ST and RT (Olsen, 1997).

Example (3.10) illustrates an event with a perfective interpretation of erchetai which is described in the past using the Present form.

(3.10) ...πάλιν ἦσαν ἔσω οἱ μαθηταὶ αὐτοῦ καὶ Ὁθωμᾶς μετ’ αὐτῶν ἐγγ-εται
...palin esan eso hoi mathetai autou kai Thōmas met’ auton. erch-etai
...again were inside the disciples his and Thomas with them. come.PRES-3s
ὁ Ἰησοῦς τῶν θυρῶν κεκλεισ-μένων καὶ ἔστ-η εἰς τὸ
ho Iēsous tōn thurōn kkleis-menōn kai est-ē eis to
the Jesus the doors.GEN close.PERF-PART.PASS.GEN and stand.AOR-3s into the
μέσον καὶ εἶπ-εν εἰρήνη ὑμῖν
meson kai eip-en eirēnē humin
middle and say.AOR-3s “Peace you.DAT”
“...his disciples were inside again, and Thomas was with them. Although the doors were locked, Jesus came and stood among them and said, ‘Peace be with you.’ ” (John 20:26, ESV)

The verb is in parallel construction with aorist verbs estē, ‘stood’, and eipen, ‘said’, and the event denoted by erchetai clearly precedes those denoted by estē and eipen in the chronology of the narrative. The sequential time ordering of the three verbs indicates a perfective interpretation is correct.

Example (3.11) includes two verbs in the Present form with perfective aspect, both of which denote past events. These two verbs are erchomai ‘come’ and piptei ‘fall down.’
καὶ ἔρχ-εται ἕνεκ τῶν ἀρχισυναγώγων ὄνοματι Ἰάιρος καὶ ἵδων αὐτὸν πίπτει πρὸς τοὺς πόδας αὐτοῦ "Then came one of the rulers of the synagogue, Jairus by name, and seeing him, he fell at his feet"

(Mark 5:22, ESV)

The events denoted by erchetai and piptei occur sequentially in the narrative, do not overlap, and have a perfective interpretation: Jairus comes up to Jesus and falls down at his feet.

There are also instances of the Present form denoting events in the past which have a continuous/imperfective interpretation. Example (3.12) illustrates such an interpretation.

(3.12) ἥ οὖν Μαρθὰ ὡς ἤκουσ-εν ὅτι Ἰησοῦς ἔρχ-εται, ὑπῆντησεν αὐτῷ "So when Martha heard that Jesus was coming, she went and met him" (John 11:20, ESV)

In this example, Jesus is in the process of traveling into the village of a woman named Martha. Martha hears of his approach and goes out to meet him before he arrives. The only way to read erchetai in this passage is with a continuous interpretation. The ‘coming’ is in process.

In summary, when denoting events in the past, the Present form can have continuous or punctual interpretations. Because the Present form so often denotes events in the past, I analyze it as tenseless, or not encoding a relationship between the RT and the ST.

The Participle and Aspect

In participial form, the Present form overwhelmingly has a continuous interpretation and denotes simultaneity with other events. Table 3.1 summarizes the number of instances of erchomai in the participial Present form which have one of the aspectual readings on the left-hand column in conjunction with the number of instances of erchomai in the participial Present form which denote events in the present, past, or future.

In Table 3.1 the only time the participle might have a perfective interpretation is when it denotes an event in the future, and these are questionable. There are three types of constructions in which this happens, each of which is exemplified in (3.13), (3.14), and (3.15). All three participles are in an attributive construction, in which the participle modifies the NP rather than the VP.
Table 3.1: Participial instances of erchomai in the Present form

<table>
<thead>
<tr>
<th>Aspect</th>
<th>present time</th>
<th>past time</th>
<th>future time</th>
</tr>
</thead>
<tbody>
<tr>
<td>continuous</td>
<td>15</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>habitual</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>generic</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>perfective</td>
<td>0</td>
<td>0</td>
<td>10(?)</td>
</tr>
<tr>
<td>indeterminate</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>22</td>
<td>12</td>
<td>19</td>
</tr>
</tbody>
</table>

(3.13) ὁ ὀπίσω μου ἐρχ-όμενος οὐ οίκει εἰμὶ ἐγὼ ἄξιος ἵνα λύσω αὐτοῦ τὸν ἱμάντα τοῦ ὑποδήματος
the after me come.PRES-PART.NOM.SG whose.GEN am I worthy HINA untie.1s his the strap the.GEN sandal.GEN
“he who comes after me, the strap of whose sandal I am not worthy to untie.” (John 1:27, ESV)

I label (3.13) as a potentially perfective, future interpretation because the opisō mou ‘after me’ clause with erchomai seems to indicate that the speaker is declaring that someone will arrive after he has arrived. (So the come after does not mean ‘chase’ but ‘arrive after I have’.) It does not seem to act in accordance with the “to be in the process of coming” interpretation that Blass and Debrunner discuss (Blass & Debrunner, 1961, p. 168).

(3.14) ἁγίος ἁγίος ἁγίος θεὸς ἄξιος παντοκράτωρ ὁ ἦν καὶ ὁ ὢν καὶ ὁ ἐρχ-όμενος
holy, holy, holy lord the god the all-mighty who was and who be.PRES-PART.NOM.SG and who come.PRES-PART.NOM.SG
“Holy, holy, holy, is the Lord God Almighty, who was and is and is to come!” (Rev 4:8, ESV)

Example (3.14) has a potentially perfective, future interpretation for similar reasons as (3.13). The participle seems to denote a future arrival. The phrase ὁ ἦν καὶ ὁ ὢν καὶ ὁ ἐρχ-όμενος ‘who was and is and is to come’ is highly formulaic and is repeated several times throughout the book of Revelation.
Surely this is the Prophet who is to come into the world.” (John 6:14, ESV)

Example (3.15) is also formulaic and is the usage being described by Blass and Debrunner when they cite the use of erchomai in prophesy-related phrases (Blass & Debrunner, 1961, p. 168).

I claim the uses of erchomai in (3.13)–(3.15) are specialized exceptions to the generalization that the Present participle does not denote events with a perfective interpretation. I claim this because all three seem to be types of epithets (especially (3.14)) and all have prophetic overtones. Of the 53 Present participles in Table 3.1, only 10 (all of which fall into one of patterns seen in (3.13)–(3.15)) have a potentially perfective interpretation.

**Tense and the Present Form**

There are ample instances of erchomai in the Present form referring to the past time, the present time, and the future time. The table below shows instances of erchomai denoting events at different times. I use erchomai here because there are only 11 instances of eiserchomai in the Present form, so it is less useful for illustrating patterns. Table 3.2 summarizes the number of instances of erchomai in the Present form which have one of the aspectual readings on the left-hand column in conjunction with the number of instances of erchomai in the Present form which denote events in the present, past, or future.

<table>
<thead>
<tr>
<th>Aspect</th>
<th>present time/generic use</th>
<th>past time</th>
<th>future time</th>
</tr>
</thead>
<tbody>
<tr>
<td>continuous</td>
<td>8</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>habitual</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>generic</td>
<td>19</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>punctual</td>
<td>0</td>
<td>40</td>
<td>35</td>
</tr>
<tr>
<td>indeterminate</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>27</strong></td>
<td><strong>51</strong></td>
<td><strong>37</strong></td>
</tr>
</tbody>
</table>

*One of the present times was counted as both generic and continuous

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53

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1See Appendix C for instances of erchomai in the Present form which have been removed from the numbers in the Tables (3.1) and (3.2) because their aspectual and/or temporal reference was indeterminate.
The first conclusion to be drawn from this table is that in the indicative mood, *erchomai* in the Present form denotes events in the present, past, and future. In fact, it denotes events in the past and future more often than events in the present or generic events. If the Present form only occasionally denoted events in the past, then it would not be a stretch to claim that the “historical” or “narrative present” were at play and the use of the Present to denote events in the past (or future) conveys vividness or dramatic use, as Fanning and Blass and Debrunner do (Fanning, 1990, pp. 221-239, Blass and Debrunner, 1961, p. 167). However, given the frequency with which the Present form denotes events in the past, it seems a stretch to claim that only vividness or drama is at play. Rodney Decker in his 2001 study of verbal aspect in Mark calculates that of 392 instances of Present indicative verbs in Mark (all of the Present instances excluding *eimi* ‘be’ and some *dunamai* ‘can’), 38.8% denoted events in the past, 34.2% denoted events in the present, 6.6% denoted events in the future, and 20.4% were temporally unrestricted (Decker, 2001, p. 99). This data shows that more than a specialized use of *erchomai* in the Present form is at play in the instances where it denotes a past event in Table 3.2. Decker shows that in Mark the Present form more often denotes events in the past than in the present.

It is worth noting that the New Testament authors vary in their use of the Present form to denote events in the past. The author of Mark does this the most often, followed by the author of John, and the author of Matthew does it less frequently, while the author of Luke-Acts seems to avoid it (Fanning, 1990, p. 238). In some parallel passages in Luke, Mark, and Matthew, Luke and Matthew opt for the Aorist when Mark uses the Present (Fanning, p. 238). The writer of Luke-Acts may have been reluctant to use of the Present form to denote past events because this use may have been considered a vulgarism (Blass & Debrunner, 1961, p. 167). Vulgarism or not, the use is common both amongst Koine “writers with no aspirations to literary style” and amongst “Koine writers influenced by classical style” (like Josephus, for example) (Fanning, p. 238). Because of the patterns of temporal reference in the *erchomai* data, Decker’s data, and overal patterns in Koine literature, I analyze the Present form as tenseless, denoting events in the future, past, and present depending on context.

**Grammatical Aspect and the Present Form**

As for the aspectual reference of the Present form, Koine aspect scholars seem to agree that the form is basically imperfective, and reconcile its continuous interpretations with its perfective interpretations by either ignoring the fact that it frequently has a perfective interpretation, or explaining its expression of perfectivity as a result of a “vivid” or “dramatic” use or a result of a discourse function (Olsen, 1997; Porter, 1989; Fanning, 1990; Decker, 2001; Blass and Debrunner, 1961). I incorporate the perfective interpretations into
the definition of the Present. I analyze the Present form as an imperfective aspect in which the reference time is a subset of the event time, but not necessarily a proper subset (RT ⊆ ET). Thus, RT can equal ET, resulting in a perfective interpretation, or RT can be a proper subset of ET, resulting in a continuous interpretation. The generic and habitual interpretations do not necessarily follow from my Reichenbachian definition of the imperfective. However, since neither the habitual nor the generic are significant in the aktionsart tests I use to diagnose the lexical aspect of erchomai and eiserchomai, it is beyond the scope of this paper to discuss how they might be related to the imperfective.

3.1.2 The Aorist

The Aorist form is perfective. The Aorist also almost always denotes events in the past time, so it is frequently described as a tense as well. Telic sentences are consistently viewed as complete in the Aorist. In my analysis the Aorist form has the reference time including the event time and preceding the speech time ([ET ⊂ RT] ≺ ST).

Example (3.16) shows an example of a telic sentence in the Aorist form. The event denoted by the sentence is realized. The verb eiserchomai is the telic verb in this sentence. I provide evidence for the telicity of eiserchomai in §3.2. For here it suffices that Fanning, Olsen, and Mateos all claim the verb is telic.

(3.16) πορευθ-έντες eis-ēlth-on εἰς εἰς κώμην eis kōmēn Σαμαριτῶν Samari tôn ὡς hōs ētoumāsai 3s.dat get.ready.INF αὐτῷ autōi 3s.dat

“...Having gone on, they went into a village of Samaritans, to make ready for him” (Luke 9:52, YLT)

In the example, Jesus has sent some messengers ahead of him, and they go into a village of the Samaritans in order to prepare for his arrival. After (3.16), the narrative goes on to assume that the messengers are in the village. That the event is realized, and the verb denoting it is telic, is evidence for the perfectivity of the Aorist form.

Example (3.17) shows another telic sentence whose corresponding event is realized.
‘And he rose and took the child and his mother and went to the land of Israel.’” (Matthew 2:21, ESV)

The fact that Joseph actually went to Israel is assumed in the next sentence when Joseph decides not to stay in Judea (a region within Israel), but to continue northward to Galilee (another region in Israel).

The next example (3.18) illustrates the perfective nature of the Aorist form in contrast to the Present form, which is capable of being used with a continuous interpretation.

“He replied... ‘To be sure, Elijah comes and will restore all things. But I tell you, Elijah has already come, and they did not recognize him.’ ” (Matt 17:11-12, NIV)
Aorist participles are frequently used in Greek to sequence events in a narrative without using conjunctions. Aorist participles entail event realization and often serve to place events in sequential order. Chronological sequencing of events in a narrative is a property of perfective aspects, while imperfective aspects typically convey simultaneity or chronological overlap of two events (Hopper, 1979, p. 216; Dowty, 1986; Hinrichs, 1986; Partee, 1984). Example (3.19) contains a genitive absolute—a participial phrase in the genitive whose genitive subject is not an argument in the main sentence. The verb in the genitive absolute is *eiserchomai*, appearing here in the form *eiselthontos*, and denotes an event in which Jesus entered Jerusalem.

(3.19) καὶ ἐισ-ελθ-όντος αὐτοῦ εἰς ἱεροσόλυμα ἕσθη πάσα ἡ πόλις
καὶ EIS-go.AOR-PART.GEN.SG 3s.GEN into Jerusalem be.stirred.up-3s all the polis
city

“And when he entered Jerusalem, the whole city was stirred up.” (Matt 21:10, ESV)

This event denoted by *eiselthontos* is before the event denoted by *eseisthē*, that of the entire city being stirred up. This sequencing is typical of a perfective aspect. Both events in the sentence are in the Aorist and both were realized.

Aorist participles can denote events in the future, and when they do so, the realization of the event denoted by the participle is not entailed, since the event is in the future. The perspective, however, is still perfective. In (3.20) the Aorist participle *elthōn* of verb *erchomai* denotes an event that occurs before the main verb *therapeusō*, ‘I will heal,’ which is in the future.

(3.20) καὶ λέγει αὐτῷ ἐγὼ ἐλθὼν θεραπεύσω αὐτόν
καὶ leg-ei autōi egō elth-ōn therapeusō auton
and say.PRES-3s 3s.DAT 1s.NOM come.AOR-PART.NOM.SG heal.FUT-1s 3s.ACC

“And he said to him, ‘I will come and heal him.’ ” (Matt 8:7, ESV)

The ‘coming’ event of *elthōn* is located before the ‘healing’ event, but the event is not realized, because the event is located in the future. (Though a few sentences later in the narrative the event is realized.)

In summary, the Aorist form in Koine Greek is a perfective aspect. There is debate as to whether the Aorist is also a tense, since it usually denotes events in the past (Olsen, 1997, pp. 200-202). I argue that it is a past tense in the indicative mood, since the past tense augment is present. However, whether it is a tensed or tenseless form does not affect its aspectual properties, so the events denoted by telic sentences should always be realized in the Aorist form, as it is perfective.
### 3.1.3 Other Tense/Aspect Forms

In this section gives a brief look at the four other tense/aspect forms. These forms are much less common than the Present and Aorist are for *erchomai* and *eiserchomai*, so I do not give them as much attention.

**Perfect and Pluperfect**

As discussed in Chapter 2, the Koine Greek Perfect and Pluperfect form is considered perfective by several of the scholars on the subject (Olsen, 1997; Fanning, 1990), since it entails event realization for telic verbs. Porter labels it as having stative aspect, since it emphasizes the resultant state after the realized event from any verb (Porter, 1989). The most important fact for my purposes is that it entails event realization for telic verbs. There are a total of 21 instances of *erchomai* in the Perfect and 2 instances of *eiserchomai* in the Perfect and 7 instances of *erchomai* and no instances of *eiserchomai* in the Pluperfect in all the instances of both verbs that I analyzed. Because of this, the perfect tenses will not play much into my analysis at large.

The Perfect form has the reference time at the same time as speech time and after the ET. When an event is denoted by the Perfect, its event time will have ceased before the reference time and so the event realization is entailed for telic sentences. The resulting state after event realization will have salience at the present time (the RT and ET). Example (3.21) and (3.22) show two instances of *erchomai* in the Perfect form (with the stem *elēluth-*)

(3.21) ἔρχ-εται ὡρα καὶ ἐλήλυθεν ἵνα σκορπισθῆτε
       erch-etai hōra kai elēluth-en hina skorpistikhtē
       “the hour is coming, indeed it has come, when you will be scattered” (John 16:32, ESV)

In (3.21), the coming of the hour occurs before the speech time (the time when Jesus says this), but the repercussions of the coming of the hour are salient at the speech time. These repercussions are, namely, the scattering of the disciples in this scene.

(3.22) ἐγὼ φῶς εἰς τὸν κόσμον ἐλήλυθ-α ἵνα πᾶς ὁ πιστεύων εἰς ἐμὲ ἐν τῇ σκοτίᾳ μὴ μείνῃ
       egō phōs eis ton kosmon ell̄uth-a hina pas ho pisteuōn eis eme en
       I light into the world come.PERF-1s hina pas ho pisteuōn eis eme en
       the darkness NEG remain

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“I have come into the world as light, so that whoever believes in me may not remain in darkness.”

(John 12:23)

In (3.22) Jesus is the speaker and is talking about his reason for coming into the world. The event of his entrance into the world was in the past, but the resulting state of Jesus being in the world still is salient at the speech time in that his purpose is ‘so that whoever believes in me may not remain in darkness’ and he claims to be fulfilling that purpose through his being in the world.

The Pluperfect has the same aspect as the Perfect but for the Pluperfect the reference time is before the speech time. Example (3.23) shows erchomai in the Pluperfect as elēluthei.

(3.23) ἰδοὺ ἀνὴρ Αἴθιος εὐνοῦχος δυνάστης Κανδάκης βασιλίσσης Αἰθιόπων

 behold man Ethiopian eunuch master Candace queen.Ethiopians.GEN,

ὁς ἐν επὶ πάσης τῆς γαζῆς αὐτῆς ὃς εἰληλύθ·ει

who was on all the.GEN treasure.GEN her.GEN, who come.PLUPERF-3s

προσκυνήσων εἰς Ἰερουσαλήμ

worship.FUT-PART.NOM.SG into Jerusalem

“And there was an Ethiopian, a eunuch, a court official of Candace, queen of the Ethiopians, who was in charge of all her treasure. He had come to Jerusalem to worship.” (Acts 8:27, ESV)

The sentence describes an Ethiopian eunuch, a court official, who came to Jerusalem, who worshiped, and who left. At this point in the narrative, the man is on his way out of the region. The sentence describing that the man had been in Jerusalem is after the sentence describing him leaving the region—‘and there was an Ethiopian...’. This sequencing—the time of the event denoted by the Perfect preceding the time of the event denoted by the previous sentence—is typical for perfects (Dowty, 1986). Also note that the event of coming to Jerusalem was realized.

Example (3.24) is very similar to (3.23).

(3.24) πολλοὶ δὲ ἐκ τῶν Ἰουδαίων εἰληλύθ·εισαν πρὸς τὴν Μάρθαν καὶ Μαριὰμ ἵνα παραμυθήσωνται αὐτὰς περὶ τοῦ ἀδελφοῦ

many but from the.GEN Jews.GEN come.PLUPERF-3p to the Martha and Mary in.order.to encourage.AOR-3p them concerning the brother

“And many of the Jews had come to Martha and Mary to console them concerning their brother.” (John 11:19, ESV)
In (3.24), Jesus arrives at a village called Bethany in the sentence before (3.24). The event denoted by elēluth-eisan is realized, occurs before the event denoted by the previous sentence, and denotes an event in the past time. Thus, the Pluperfect is both a past tense and a perfect aspect.

**Future**

Both Olsen and Fanning describe the Future form as a future tense and as aspectually unmarked (Olsen, 1997; Fanning, 1990). I adopt this analysis. The Future form places the reference time after the speech time. The relationship between the reference time and the event time is unspecified. (3.25) and (3.26) show the Future form. Eiserchomai occurs in the Future form eiseleusontai in (3.25). Erchomai along with four other verbs (in bold) are in the Future form in (3.26).

(3.25) ἐγὼ οἶδα ὅτι εἰσ-ελεύ-σωνται μετὰ τὴν ἀφίξιν μου λύκοι βαρεῖς εἰς ὑμᾶς
I know that ELIS-come.FUT-3p after the departure my wolves fierce into you
“I know that after my departure fierce wolves will come in among you” (Acts 20:29, ESV)

In (3.25) the coming of the wolves occurs after the speech time.

(3.26) τί οὖν ποιήσει ὁ κύριος τοῦ ἀμπελώνος ἐλεύσεται καὶ τοὺς γεωργοὺς καὶ δώσει τὸν ἀμπελόνα ἄλλοις
what therefore do.FUT-3s the lord of.the vineyard; come.FUT-3s and destroy.FUT-3s the vine-dressers and give.FUT-3s the vineyard others.DAT
“What will the owner of the vineyard do? He will come and destroy the tenants and give the vineyard to others.” (Mark 12:9, ESV)

In (3.26) the four verbs poiēsei ‘will do,’ eleusetai ‘will come,’ apolesei ‘will destroy,’ and dōsei ‘will give’ are in the Future form. They all denote events in the future.

**Imperfect**

The Imperfect denotes events in the past and is an imperfective aspect. Example (3.27) contains an Imperfect instance of erchomai, which here is ērchonto, ‘were coming.’

(3.27) ἐξῆλθον ἐκ τῆς πόλεως καὶ ἔρχοντο πρὸς αὐτὸν
go.out.of.AOR-3p from the town and go.IMPERF-3p to him
“They went out of the town and were coming to him.” (John 4:30, ESV)
In the sentence before (3.27) in the narrative, some people from a town hear that Jesus is at a well outside the town, so they leave the town to come to him. Immediately after (3.27) in the narrative, the scene shifts back to Jesus and his disciples sitting around the well having a conversation. The people from the town are on their way but have not yet arrived. The proposition here is telic and the event has not yet been realized because it was denoted by an imperfective aspect.

The Imperfect form can also be used to denote past events with a habitual interpretation. This is demonstrated in (3.28).

(3.28) χήρα ἦν ἐν τῇ πόλει ἐκείνῃ καὶ ἐρχ-ετο πρὸς αὐτόν
widow was in the city.DAT that.DAT and come.IMPERF-3s to him
“there was a widow in that city who kept coming to him” (Luke 18:3, ESV)

The interpretation is habitual because the woman repeatedly comes to him over a broad period of time.

3.1.4 Summary of the Analysis of Tense/Aspect Forms

Table 3.3 summarizes the analysis of Koine Greek tense/aspect forms.

<table>
<thead>
<tr>
<th>Tense/aspect form</th>
<th>Reichenbachian meaning analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present</td>
<td>RT ⊆ ET</td>
</tr>
<tr>
<td>Imperfect</td>
<td>RT &lt; ST &amp; RT ⊂ ET</td>
</tr>
<tr>
<td>Aorist</td>
<td>RT &lt; ST &amp; ET ⊂ RT</td>
</tr>
<tr>
<td>Perfect</td>
<td>RT = ST &amp; ET &lt; RT</td>
</tr>
<tr>
<td>Pluperfect</td>
<td>RT &lt; ST &amp; ET &lt; RT</td>
</tr>
<tr>
<td>Future</td>
<td>ST &lt; RT</td>
</tr>
</tbody>
</table>

Recall that ST means “speech time”; RT means “reference time”; and ET means “event time.” Note that I do not address the irrealis in Table 3.3. Additionally, because moods other than the indicative do not encode a relationship between the ST and the RT, Reichenbachian terms which relate the ST and the RT do not apply in these moods. I have chosen to include them in the table because this study overwhelmingly deals with the indicative.

3.2 The Lexical Aspect of Erchomai and Eiserchomai

In §3.2 I analyze the lexical aspect of erchomai and eiserchomai. I do so by exclusion method (by excluding lexical aspects the two verbs could not have), using the tests discussed in §2.3.2 and §2.3.3. I do not use
the test “existence of a goal” in this section but address these in §3.3 where I discuss overall patterns in the data. In §3.2 I first discuss why erchomai and eiserchomai are not stative, then why erchomai is atelic, then instances of erchomai contributing to telic aktionsart, and finally the telicity of eiserchomai.

3.2.1 Dynamicity of Erchomai and Eiserchomai

Kenny observes that statives cannot have a habitual interpretation in an imperfective aspect (see “The Interaction between Aktionsarten and Different Constructions” in §2.3.2. Predicates with a habitual interpretation in an imperfective aspect must be dynamic (Kenny, 1963, p. 175). Both erchomai and eiserchomai occur with habitual interpretations in an imperfective aspect.

Example (3.29), the same as from (3.28) from the previous page provides an instance in which erchomai has a habitual interpretation.

(3.29) χήρα ἦν ἐν τῇ πόλει ἐκείνῃ καὶ ἔρχ-ετο πρὸς αὐτόν
chēra ēn en tēi polei eneikēi kai ērch-eto pros auton
widow was in the city that and came to him
“there was a widow in that city who kept coming to him” (Luke 18:3, ESV)

From this one can conclude that erchomai is not stative.

Example (3.30) below is the same as (3.5) above. This is a clear example of eiserchomai in an imperfective aspect with a habitual interpretation.

(3.30) ὡσπερ ὁ ἀρχιερεὺς εἰσ-ἐρχ-εται εἰς τὰ ἅγια κατ’ ἐνιαυτὸν ἐν αἷματι
...hōsper ho archiereus eis-erch-etai eis ta hagia kat’ eniauton en haimati
...just.as the high.priest EIS-go.PRES-3s into the holy with each.year in blood
ἀλλοτρίῳ
allotríōi...
another...
“...as the high priest enters the holy places every year with blood not his own...” (ESV, Hebrews 9:25)

As described above, the writer is discussing the difference between the priestly duty of Jesus and the priestly duty of the typical high priest, who enters on a yearly basis with an animal’s blood. The ‘entering’ of the high priest reoccurs on a yearly basis. Because the interpretation is habitual, eiserchomai cannot be stative. Additionally, because the preposition eis is redundant with the preverb eis-, it can safely be assumed that the eis ta hagia ‘into the holy places’ is not contributing anything to the aktionsart of the proposition that the eis- preverb is not contributing. From here I conclude that both the aktionsart of the sentence in (3.30) and the lexical aspect of eiserchomai is not stative. Because erchomai and eiserchomai are not stative, we can conclude that they are dynamic (activity, accomplishment, or achievement).
3.2.2 Atelicity of *erchomai*

The atelicity of *erchomai* can be determined based on observation of how the verb interacts with different grammatical aspects. First it is important to understand that not every sentence with the verb *erchomai* is an activity sentence. I argue here that the verb’s lexical aspect is activity, but this does not mean that every sentence in which *erchomai* appears should also be an activity sentence. *Erchomai* in fact often appears with a locative or a contextually defined destination. Both of these things, in combination with activity verb *erchomai*, produce an accomplishment. I deal with these situations in §3.2.3 below.

Below (3.31) is an example in which *erchomai* occurs in a perfective aspect (the Aorist) in the absence of a PP or a contextually defined destination. There is no end-point specified in the context. In the narrative Jesus’ family has visited Jerusalem and has begun to travel away from the city, unknowingly leaving him in Jerusalem. The family goes for a day’s journey before they realize he is not with them. The word used to describe their journeying in the example is *ēlthon*, the Aorist third person plural of *erchomai*.

(3.31) νομίσαντες δὲ αὐτὸν εἶναι ἐν τῇ συνοδίᾳ ἔλθ-ον ἡμέρας ὁδὸν
nomisantes de auton einai en tei sunodiai elth-on hēmeras hodon
καὶ ἀνεζήτουν αὐτὸν ἐν τοῖς συγγενεῦσιν καὶ τοῖς γνωστοῖς
kai anezētoun auton en tois suggeneusin kai tois gnōstois
But supposing him to be in the group they went a day’s journey, but then they began to search for him among their relatives and acquaintances (Luke 2:44)

This example shows that *erchomai* acts like an activity verb would in a perfective aspect. In other words, there is an arbitrary stop and start time during which the party is going and after which the party stops going. The sentence does not express that some end-point is completed or that a culmination of an event has occurred, as a telic sentence would.

The sentence in (3.32) shows *erchomai* in the Present form as a participle. In the narrative sick people are being brought alongside a street that Peter is walking on in the hopes that his shadow will touch them and heal them. Like in the example immediately above, *erchomai* has no PP or contextually defined destination. Peter is simply going along a street.
"they even carried out the sick into the streets... that as Peter came by at least his shadow might fall on some of them." (Acts 5:15, ESV)

The interpretation here is what one would expect for an activity verb. There is no end-point in the action that is not reached. While this observation does not give conclusive proof of the lexical aspect of the verb, it does show that the verb in the absence of a locative PP or contextually defined destination behaves in accordance with what one would expect of an activity.

In (3.33) below erchomai is in the Aorist and in the form ἐλθ-εν.

The sentence in (3.33) is slightly different from (3.31) because the PP eis holēn tēn Galilaian 'to the whole Galilee' is probably associated with the main verb erchomai, so it theoretically would provide a destination. But it does not do this because the object of the preposition eis is the entire region of Galilee. So, while there is an eis prepositional phrase, its object makes it a locus of Jesus’ preaching activity for a time more than a destination. As a result, the interpretation of the sentence is that Jesus is going to all sorts of local synagogues in the region of Galilee, not in a specific sequence of synagogues. Additionally, the two participles κηρύσσων and ἐκβάλλων are in the imperfective Present form, so the events they denote occur simultaneously with the event denoted by ἐλθ-εν. This shows that the Aorist ἐλθ-εν is denoting a period of Jesus’ going about during which he is also preaching and casting out demons. This is consistent with an activity predicate, because there is no obvious culmination or end-point. Instead, a period of going, preaching, and casting out is denoted.2

\[\text{2The only possible “culmination” that I can think of is after he has visited every single synagogue. But this kind of systematicity in his travels is not even suggested in the text.}\]
3.2.3 Telic Sentences Containing Erchomai

While I argue above that erchomai has the lexical aspect of activity, and thus is atelic, it frequently occurs in telic sentences. This occurs as the result of a goal-denoting PP in the sentence or a contextually defined destination which defines an end point to the action of the verb—an end point which much be reached in order for the action to be complete. (3.34) contains erchomai in an imperfective aspect and the event is not realized at this point in the story. In the narrative a woman named Mary hears that Jesus is coming towards her town and gets up to go find him. This going is described with erchomai in the Imperfect form ἐρχετο. Mary does not get to Jesus until several verses later.

(3.34) ἐκεῖνη... ἠγέρθη ταχὺ καὶ ἐρχετο πρὸς αὐτὸν
ekeinē... ēgerth-ē tachu kai ērch-eto pros auton
that.FEM... be.raised.AOR-3s quickly and go.IMPERF-3s to 3s.MASC.ACC
“She...rose quickly and went’ to him.” (John 11:29, ESV)

It is in John 11:32, seen in (3.35), that Mary finally gets to Jesus. In this sentence erchomai is in the Aorist, a perfective aspect, and the event of her reaching Jesus is clearly realized.

(3.35) η οὖν Μαριὰμ ὡς ἠλθ-εν ὅπου ἦν Ἰησοῦς ἰδούσα
hē oun Mariam hōs ēlth-en hopou ēn Iēsous id-ousa
the therefore Mary when come.AOR-3s where was Jesus see-PART.FEM.NOM
αὐτὸν ἐπεσεν αὐτοῦ πρὸς τοὺς πόδας...
auton epes-en autou pros tous podas...
3s.ACC fall.AOR-3s 3s.GEN at the feet
“Now when Mary came to where Jesus was and saw him, she fell at his feet...” (John 11:32, ESV)

The sequence in the narrative of the Gospel According to John from 11:29 to 11:32 is particularly revealing because the same event–Mary’s traveling towards Jesus–is denoted with the same verb (erchomai) but in different aspects. When Mary’s going to Jesus is denoted with an imperfective aspect, it is incomplete because at this point in the narrative she has not yet reached Jesus. When it is denoted with a perfective aspect it is complete–she reaches Jesus. This is a very good example of the Imperfective Paradox found in a text. The fact that the event is unrealized in the Imperfect and realized in the Aorist tells us that both predicates containing erchomai in this sequence are telic. Both contain phrases that denote an end-point. The first sentence has pros auton, ‘to him’, and the second has a relative phrase begun with hopou, ‘where.’ These phrases make the predicate telic despite the fact that the verb erchomai is an activity verb.

Perhaps went here would be better translated as was going, since she does not reach Jesus until later, as demonstrated by the next example.
In some instances, the end-point can be provided by contextual information, as opposed to a PP or relative clause. Often this means that the direction of motion indicated by the verb is towards the speaker or hearer or the locus of the narrative. In these situations, *erchomai* is often translated as ‘come’ instead of ‘go,’ and despite there being no overt PPs or relative clauses that mark for destination, the predicate is still telic. Example sentence (3.36) exemplifies this. A woman is talking about her understanding of the Messiah. She first claims that (1) she knows the Messiah is coming, and then talks (2) about what he will do when he comes (‘he will tell us all things’). The second descriptor of the Messiah (what he will do when he comes) contains *erchomai* in a perfective aspect (the subjunctive Aorist) and describes hypothetically what will happen after the Messiah has arrived on the geographical scene. In other words, the Messiah-coming event has been realized in this hypothetical description. This second descriptor makes it apparent that the first descriptor (‘Messiah is coming’) does not describe a Messiah who has already come but one who will becoming sometime in the future. The first descriptor of the Messiah is in an imperfective aspect, and in this real-world description the Messiah-coming event has not yet been realized, at least according to the woman’s description.

(3.36) οἶδα ὅτι Μεσσίας ἐρχ-εται... ὅταν ἔλθῃ ἐκεῖνος ἀναγγελεῖ ἡμῖν ἅπαντα
oida hoti Messias erch-etai... hotan elth-ei ekeinos anaggelei hēmin apanta
know.1s that Messiah come.PRES-3s... when come.AOR-3s he tell.FUT us everything

“I know that Messiah is coming... When he comes, he will tell us all things.” (John 4:25, ESV)

There are two observations about this passage. The first is that it is another, albeit more complicated, instance of the Imperfective Paradox in a text. An event is viewed as unrealized in an imperfective aspect and realized in a perfective aspect. The second is that the sentence must be telic for these sentences to be interpreted this way in the Imperfective Paradox. Neither instance of *erchomai* in these sentences in (3.36) contains a PP or relative clause or any other overt indication of a destination. However, it was a cultural expectation that a Messiah would arrive onto the geographic scene of Israel. In this sense, the Messiah ‘comes’ because the locus of the narrative is the geographic scene of Israel. The destination that serves as an endpoint is vaguely ‘here.’ No PP or relative clause is needed to give the destination because the context of the phrase is so rich. The fact that *erchomai* subsumes meanings of both the English words ‘come’ and ‘go’ explains the instances in which *erchomai* lacks a PP or relative clause and yet still is telic.

Below (3.37) illustrates the same key points as (3.36).

---

“This is the spirit of the antichrist, which you heard was coming and now is in the world already.” (1 John 4:3, ESV)

The author is discussing different types of spirits, one of which is the spirit of the antichrist. In describing this ‘spirit of the antichrist’, he first says that it is rumored to be coming and second that it is already in the world. These two statements are in contrast to one another in the sense that the first addresses the theology of the spirit of the antichrist—that it will come to the human scene, so to speak—and the second addresses the fact that it is already on the human scene. The event of the spirit of the antichrist coming is denoted by erchomai in an imperfective aspect. This coming event is interpreted as unrealized until the writer modifies it by the second description which points out that it is already on the scene. If it were interpreted as realized in the first description—hoti erchetai—then there would be no need for the second description—nun en toî kosmôi estin ēdē ‘now is already in the world.’ Like in (3.36), the context is enough to understand that the destination is ‘here’ (what I am calling ‘the human scene’). So the predicate denoting the coming event is telic, and we can see this by the fact that it is interpreted as unrealized in an imperfective aspect.

That erchomai occurs in telic predicates is in no way contradictory to my labeling it an activity verb. It is not surprising that such a common word—there are 636 instances of it in the New Testament alone (Computer Concordance to the Novum Testamentum Graece, 1985)—would often occur with modifying phrases or contextually defined destinations. This does not take from the fact that without these modifying phrases and contextually defined destinations, erchomai is an activity verb.5

3.2.4 Telicity of Eiserchomai

Example (3.38) shows how eiserchomai behaves with respect to the Imperfective Paradox. The example contains three instances of eiserchomai. The first two are in the Present in an imperfective aspect (with stem eiserch-) and the third is in the Aorist (eiseth-), a perfective aspect. The context of (3.38) is Jesus arguing with a group of religious leaders about how they teach. He is accusing them of not entering the ‘kingdom of heaven’ themselves, and in addition not allowing those who are trying to enter to enter.

5See (2.27) and (2.28) for an English parallel with the verb walk.
“For you neither enter yourselves nor allow those who would enter to go in.” (Matthew 23:13, ESV)

A more literal translation than the one above is “For you do not enter nor do you allow those entering to enter.” ‘Enter’ is my translation for eiserchomai. In the first two instances, where eiserchomai occurs in the imperfective form eiserch-, the event of entering is not realized. The group of religious leaders do not enter, obviously, because of the negation. But the group of people–those entering–are trying to enter and do not succeed. The entering event for them is also not realized. The word eiserchomenous denoting this event is in an imperfective aspect. So we see that eiserchomai in an imperfective aspect does not entail event realization.

It is obvious that event realization is not entailed because in the broader sentence itself these people who are trying to enter are prevented by the other group of people who don’t enter. Because for eiserchomai event realization in an imperfective is not entailed, eiserchomai is telic. This example is the only one in which eiserchomai has a continuous interpretation and the event it denotes was not completed. Nevertheless, as I discussed in §3.1, one instance of an incomplete event denoted by a verb in an imperfective aspect is sufficient to establish the telicity of that verb. Furthermore, in §3.3 I discuss additional reasons to conclude that eiserchomai is telic.

3.2.5 Accomplishment vs. Achievement Verbs and Eiserchomai

There are typically two lexical aspect categories within the overarching ‘telic’ classification of lexical aspect. As discussed in Chapter 2, accomplishment verbs denote events with subevents that are essential for their realization. Achievement verbs, on the other hand, denote events which lack any subevents. The question at hand is whether eiserchomai is an accomplishment verb or an achievement verb.

One indication that eiserchomai might be an accomplishment is that it can occur in an imperfective aspect (see (3.38)). Since achievements in English do not occur in the progressive, this could be evidence that achievements are generally incompatible with imperfective aspects. It would make sense that achievements, which do not denote events with subevents, could not have a continuous interpretation. My hypothesis, therefore, is that eiserchomai is an accomplishment verb, but I cannot state this with great confidence without researching whether the English progressive test applies to Greek.
Some scholars do not formally differentiate between accomplishments and achievements (Dowty, 1986, p. 42). Since Dowty does not in his 1986 definitions of aktionsart, and I adopt these definitions, it is not necessary for me to further classify eiserchomai as accomplishment or achievement in order to formalize its lexical aspect. What matters for the formalization is that it is telic, which was established in §3.2.4.

3.2.6 Summary

This section argued that neither erchomai nor eiserchomai is stative because they can both have a habitual interpretation in an imperfective aspect. Several examples of erchomai showed that the verb behaves consistent with expectations for an activity verb when it lacks a PP or contextually defined destination. When erchomai occurs in telic sentences, it is the result of a syntactically present PP or relative clause or a contextually defined destination which denotes a goal. Eiserchomai is a telic verb and no further classification of accomplishment or achievement is necessary for the formalization because the formalization (Dowty’s definitions) do not distinguish between them.

3.3 Additional Confirmations of the Lexical Aspect Erchomai and Eiserchomai

The conclusions from §3.2 are corroborated by the test “the existence of a goal” from §2.3.2, which predicts that if a motion verb requires a goal, then it is telic. I annotated all instances of erchomai and eiserchomai in the New Testament. For each instance I recorded the stem-form, the mood, information about the subject and complements, specific information about PPs, the presence of negation, the presence of a contextually defined destination, the direction of motion (to or from speaker or hearer), and elements of overlap or sequencing with other events in the narrative. For some tense/aspect-stems I also looked at the temporal reference and the ‘interpretation’ of the action of the verb (perfective, continuous, habitual, generic). Because both the “goal” test requires looking at statistical information about the entire data set (as opposed to a sentence or two), I discuss some general information about the data before I discuss the application of these additional tests. In addition to the goal test, I discuss patterns in how erchomai and eiserchomai occur in different tense/aspect stems.

3.3.1 Moods, participles, infinitives, and tense/aspect stems in the data

Table 3.4 shows the number of instances of erchomai and eiserchomai for different moods (indicative, subjunctive, and imperative) as well as for participles and infinitives. This shows that most of the data is indicative
erchomai and eiserchomai), followed by participles (24.4% and 25.3%) and infinitives (7.9% and 19.1%), with a handful of subjunctives (6.9% and 13.9%) and a few imperatives (3.1% and 3.6%). I argue in §2.3.4 that aktionsart properties transfer from the indicative to the participle and the infinitive, and I use both in some of the tests in §3.2 to give evidence for the lexical aspect of erchomai and eiserchomai. I do not attempt to do this for the imperative and subjunctive, though authoritative texts claim that the aspect which is manifest in the indicative forms is retained in the imperative and subjunctive (Hansen and Quinn, 1992, pp. 63, 305; Smyth, 1956, Sections 1859-1866; Blass and Debrunner, 1961, Section 335). The subjunctive, imperative, and infinitive are included in the total numbers expressed in this section.

Table 3.4: Number of Moods, Participles, and Infinitives for Erchomai and Eiserchomai

<table>
<thead>
<tr>
<th></th>
<th>erchomai</th>
<th></th>
<th>eiserchomai</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>number</td>
<td>percentage</td>
<td>number</td>
</tr>
<tr>
<td>indicative</td>
<td>367</td>
<td>57.7%</td>
<td>74</td>
</tr>
<tr>
<td>participle</td>
<td>155</td>
<td>24.4%</td>
<td>49</td>
</tr>
<tr>
<td>infinitive</td>
<td>50</td>
<td>7.9%</td>
<td>37</td>
</tr>
<tr>
<td>subjunctive</td>
<td>44</td>
<td>6.9%</td>
<td>27</td>
</tr>
<tr>
<td>imperative</td>
<td>20</td>
<td>3.1%</td>
<td>7</td>
</tr>
<tr>
<td>TOTAL</td>
<td>636</td>
<td>100.0%</td>
<td>194</td>
</tr>
</tbody>
</table>

3.3.2 Goals and Erchomai and Eiserchomai

It was discussed in §2.3.2 that the existence of a goal should be a good indication of telicity in motion verbs if that goal serves to delineate an end point which must be achieved for the event to be realized. In the case of erchomai and eiserchomai the goal is almost always a location, but it is occasionally abstract. Example (3.39) shows an overt locative goal; example (3.40) shows a contextually provided goal; and example (3.41) shows an abstract goal (joy).

(3.39) εἰσ-ηλθ-εν εἰς τὴν πόλιν  
       eis-ēlth-en eis tēn polin  
       EIS-go.AOR-3s EIS the city  
       “He... entered the city.” (Acts 14:20, ESV)

(3.40) εἰσ-ελθ-ούσης τῆς θυγατρὸς αὐτοῦ Ἡρώδιαδος καὶ  
       eis-elth-ousēs tēs thugatros autou Ἡρῳδιάδος καὶ  
       EIS-go.AOR-PART.FEM.GEN the.GEN daughter.GEN that Herodias and  
       ὁρχησαμένης ήρες-εν τῷ Ἡρῴδῃ καὶ τοῖς συνανακείμενοις  
       orchēsamenēs ēres-en tōi Ἡρῳδέι kai tois synanakeimenous  
       dance.AOR-PART.FEM.GEN pleased-3s to the Herod and to the reclining.with.him
“For when Herodias’s daughter \textbf{came in} and danced, she pleased Herod and his guests.” (Mark 6:22, ESV)

\begin{verbatim}
εἴσ-εἰλθ-ε eis-elth-e EIS-go.AOR-IMPER.2s εἰς eis EIS τὴν tēn charan tou kuriou sou “Come and share your master’s happiness!” (Matt 25:23, NIV)
\end{verbatim}

Literally: “\textbf{Enter} into the joy of your master.” (Matt 25:23, ESV)

In example (3.39) there is an overt locative goal denoted by the PP \textit{eis tēn polin} ‘into the city.’ In example (3.40) the context defines the goal. Herodias’ daughter is entering into a banquet area that is the locus of the narrative. This banquet scene is not described directly in the sentence in (3.40), but because it is the locus of the narrative and it is where Herod and his guests are seated, Herodias’s daughter is interpreted as entering into this banquet scene. In example (3.41) the goal is abstract and is joy.

Table 3.5 shows how many instances of each verb have a goal versus how many do not have a goal, in addition to information about how goals are expressed. The most obvious result in this table is that \textit{eiserchomai} always has a goal, whereas 7.9\% of instances of \textit{erchomai} have no goal. Application of a chi-square test is not appropriate here since there is a zero value in the data (zero instances of no-goals for \textit{eiserchomai}) because the data shows a categorical distinction between goals and no goals for \textit{erchomai}. The mere fact that \textit{eiserchomai} never occurs without a goal indicates a fundamental difference from \textit{erchomai}, which does occur without a goal. Furthermore, four-fifths of \textit{eiserchomai}'s goals are overtly expressed via a PP or some other syntactic element (as in (3.39)), and only about a fifth of \textit{eiserchomai}'s goals are contextually provided (and are not present via a syntactic or lexical element—see (3.40)). Of the 584 instances of a goal in predicates with \textit{erchomai}, however, slightly less than half (43.7\% of 91.8\%) were overtly expressed via a syntactic or lexical element, and slightly more than half (48.1\% of 91.8\%) were contextually provided. Of all 584 goal instances of \textit{erchomai}, 438 involved motion toward a speaker or hearer or narrative center in such a way that served to contextually provide a destination. In other words, 438 of the 584 instances with a goal for \textit{erchomai} would typically be translated ‘come’ and not ‘go’ in English.

Three reasonable conclusions and one observation can be drawn from this table. The observation I refer to is merely that \textit{erchomai} more often occurs with a contextually provided destination, whereas \textit{eiserchomai} prefers syntactic or lexical elements which denote the destination. I draw no conclusion from this observation, since how a goal is expressed does not necessarily mean anything about the verb’s basic aktionsart. The first conclusion is that \textit{eiserchomai} requires a goal, whereas \textit{erchomai} does not. Since a semantic goal is the way in which the telic sentences with \textit{erchomai} and \textit{eiserchomai} delineate an end-point, the presence of a goal
Table 3.5: Presence of a Goal

<table>
<thead>
<tr>
<th></th>
<th>erchomai number</th>
<th>percentage</th>
<th>eiserchomai number</th>
<th>percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>goal</td>
<td>584</td>
<td>91.8%</td>
<td>194</td>
<td>100.0%</td>
</tr>
<tr>
<td>adverbial phrase denoting destination</td>
<td>278</td>
<td>43.7%</td>
<td>156</td>
<td>80.4%</td>
</tr>
<tr>
<td>contextual goal</td>
<td>306</td>
<td>48.1%</td>
<td>38</td>
<td>19.6%</td>
</tr>
<tr>
<td>directionality is a factor (of 584)</td>
<td>438</td>
<td>75.0%</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>no goal</td>
<td>50</td>
<td>7.9%</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>636*</td>
<td>99.7%</td>
<td>194</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

*I have left two instances out of this table because they were indeterminate with regard to having a goal.

is a good indication that a sentence with one of these two verbs is telic. The data strongly suggests that the lexical aspect of *eiserchomai* is telic, whereas the lexical aspect of with *erchomai* is not, since some sentences containing *erchomai* do not have a goal. The second conclusion is that directionality (to a speaker or hearer or narrative center) is a key factor in the telicity of sentences containing *erchomai*. When *erchomai* acts as the equivalent to the English ‘come,’ it is likely telic. The third conclusion, drawn from the previous two, is that the preverb *eis-* somehow contributes to the difference between these two verbs. It is this last conclusion that I discuss in the conclusions in §3.4, since insights from §3.2 bear on this discussion.

**Erchomai, eiserchomai, and patterns of occurrence with grammatical aspect**

Table 3.6 displays the number of instances of *erchomai* and *eiserchomai* in different verb stem forms. Recall that the Present and Imperfect are imperfective; the Aorist is perfective; the Perfect and Pluperfect are perfects; and the Future is unmarked aspectually. *Eiserchomai*, the verb which I have concluded in §3.2 is telic, occurs more often in perfective/perfect aspects than imperfective aspects, at a ratio of 87.6 (Aorist and Perfect combined) to 7.2 (Present). *Erchomai*, on the other hand, occurs more often in the Aorist than the Present, but to a far less degree than *eiserchomai* does. A total of 59.6% of the 636 instances of *erchomai* are in perfective-perfect aspects and 35.8% (Present and Imperfect) are in imperfective aspects. Application of a chi-square test to the above ratios yields a P value of less than 0.0001, with 1 degree of freedom and a chi-square value of 58.408. Assuming an alpha value of .05, this indicates that *erchomai* and *eiserchomai* occur in statistically significant proportions in the different tense/aspect stems. The point here is that the contribution of *eis-* affects how often *erchomai* occurs in certain verb forms, and it does so in such a way that
Table 3.6: Instances of *Erchomai* and *Eiserchomai* in Different Tense/Aspect Stems

<table>
<thead>
<tr>
<th></th>
<th><em>erchomai</em></th>
<th></th>
<th><em>eiserchomai</em></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>number</td>
<td>percentage</td>
<td>number</td>
<td>percentage</td>
</tr>
<tr>
<td>Present</td>
<td>217</td>
<td>34.1%</td>
<td>14</td>
<td>7.2%</td>
</tr>
<tr>
<td>Imperfect</td>
<td>11</td>
<td>1.7%</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Aorist</td>
<td>358</td>
<td>56.3%</td>
<td>168</td>
<td>86.6%</td>
</tr>
<tr>
<td>Perfect</td>
<td>21</td>
<td>3.3%</td>
<td>2</td>
<td>1.0%</td>
</tr>
<tr>
<td>Pluperfect</td>
<td>7</td>
<td>1.1%</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Future</td>
<td>22</td>
<td>3.5%</td>
<td>10</td>
<td>5.2%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>636</strong></td>
<td><strong>100.0%</strong></td>
<td><strong>194</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

The prefixed verb, which is telic (*eiserchomai*), occurs more often with perfective aspects than the atelic verb (*erchomai*).

The data from Tables 3.4 and 3.6 gives no indication of whether different moods and/or participles and infinitives contribute disproportionately to the percentages of total instances of each verb in different tense/aspect-stem forms. This is a potential concern, lest the data in Table 3.6 only reflect moods’ and participles’ and infinitives’ patterning with different tense/aspect stems. Compounding this is the fact that participles and infinitives cannot occur in the Imperfect or Pluperfect and very rarely occur in the Future. The indicative mood most likely contributes disproportionately to the percentage of instances of Future, and by definition does so for the Pluperfect and Imperfect forms. Tables 3.7 and 3.8 show that this is not an issue. Table 3.7 gives how often indicative verbs occur in each of the tense/aspect stems and Table 3.8 gives how often participles occur in each of the tense/aspect stems. One can see that the figures are comparable for the major tense/aspect stems (the Present, Aorist, and Perfect), and in the tense/aspect stems in which the participle does not occur (the Imperfect and the Pluperfect) there is also a very low number of occurrences for indicative verbs. Participles do not contribute to the data in any substantially disproportionate way.

Application of a chi-square test to the perfective/perfect-imperfective ratios between the two verbs in Table 3.7 yields a P value of less than 0.0001, with 1 degree of freedom and a chi-square value of 32.363. Assuming an alpha value of .05, this indicates that *erchomai* and *eiserchomai* in the indicative mood occur in statistically significant proportions in the different tense/aspect stems. Application of a chi-square test to the above perfective/perfect-imperfective ratios between the two verbs in Table 3.8 yields a P value of .0133, with 1 degree of freedom and a chi-square value of 6.127. Assuming an alpha value of .05, this indicates that *erchomai* and *eiserchomai* in the participial form occur in statistically significant proportions in the different...
tense/aspect stems Regardless of whether all the data is considered, the data only for the indicative mood is considered, or the data only for participles is considered, *eiserchomai* patterns more with the perfective/perfect aspects in a statistically significant way.

This pattern is interesting because it corresponds to Bohnemeyer and Swift’s observations about aspectual reference and telicity (Bohnemeyer & Swift, 2004). Bohnemeyer and Swift argue that in German, Russian, and Inuktitut that there is a “preferred correlation” between telicity and perfective/imperfective viewpoints. This is shown in (3.42), taken from (Bohnemeyer & Swift, p. 265).

(3.42) *Preferred correlation between telicity and viewpoint selection*

<table>
<thead>
<tr>
<th>Event predicate</th>
<th>Viewpoint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telic</td>
<td>~</td>
</tr>
<tr>
<td>Atelic</td>
<td>~</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th><em>erchomai</em></th>
<th></th>
<th><em>eiserchomai</em></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>number</td>
<td>percentage</td>
<td>number</td>
</tr>
<tr>
<td>Present</td>
<td>132</td>
<td>36.0%</td>
<td>3</td>
</tr>
<tr>
<td>Imperfect</td>
<td>11</td>
<td>3.0%</td>
<td>0</td>
</tr>
<tr>
<td>Aorist</td>
<td>178</td>
<td>48.5%</td>
<td>60</td>
</tr>
<tr>
<td>Perfect</td>
<td>17</td>
<td>4.6%</td>
<td>2</td>
</tr>
<tr>
<td>Pluperfect</td>
<td>7</td>
<td>1.9%</td>
<td>0</td>
</tr>
<tr>
<td>Future</td>
<td>22</td>
<td>6.0%</td>
<td>9</td>
</tr>
<tr>
<td>TOTAL</td>
<td>367</td>
<td>100.0%</td>
<td>74</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th><em>erchomai</em></th>
<th></th>
<th><em>eiserchomai</em></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>number</td>
<td>percentage</td>
<td>number</td>
</tr>
<tr>
<td>Present</td>
<td>58</td>
<td>37.4%</td>
<td>9</td>
</tr>
<tr>
<td>Imperfect</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Aorist</td>
<td>93</td>
<td>60.0%</td>
<td>40</td>
</tr>
<tr>
<td>Perfect</td>
<td>4</td>
<td>2.6%</td>
<td>0</td>
</tr>
<tr>
<td>Pluperfect</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Future</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>155</td>
<td>100.0%</td>
<td>49</td>
</tr>
</tbody>
</table>
The schema in (3.42) applies when the the verb is not overtly marked with a grammatical aspect, in which case the default reading of telic verbs is perfective and atelic verbs is imperfective. The patterns of occurrence for erchomai and eiserchomai reflect the correlation in (3.42), even though Greek tense/aspects are not unmarked for aspect (with the exception of the Future).

3.3.3 Summary of Data

The “the presence of a goal” test further supports the classification of erchomai as an activity verb and eiserchomai as a telic verb. A comparison of the instances of a goal in sentences with these two motion verbs reveals that eiserchomai requires a semantic goal, but erchomai does not. This suggests that the lexical aspect of erchomai is not telic, but atelic.

That eiserchomai occurs far less in perfective aspects than in imperfective ones and erchomai occurs more in imperfective aspects than eiserchomai is interesting because it reflects Bohnemeyer and Swift’s observation of preferred correlations between telicity and aspect in several languages. It reflects this correlation despite the fact that Greek overtly marks for grammatical aspect, and Bohnemeyer and Swift predict the correlation for unmarked aspect.

Both of these patterns confirm the evidence shown in §3.2, and inform our understanding of aktionsart classification in texts by (1) showing the validity of the goal-based test in light of established aktionsart in §3.2 and (2) showing that Bohnemeyer and Swift’s preferred correlation might have some merit even when a verb is marked for aspect.

3.4 Conclusions

In this Chapter I discuss the grammatical tense/aspects in Greek and the lexical aspect of erchomai and eiserchomai. I determine the lexical aspect of these verbs based upon the Imperfective Paradox, behaviors of the verbs in accordance with grammatical aspect, and the statistically based “presence of a goal” test. The tests all indicate that erchomai is an activity verb, although it frequently occurs in telic predicates in the text, and that eiserchomai is a telic verb.

Because erch- is the common stem for both these verbs, I suggest that the preverb eis- has semantically contributed to erch- in such a way that affected the aktionsart of the stem. The preverb eis-’s contribution is delineating an end point for the verb erchomai so that every instance of the verb eiserchomai requires an end for the denoted event to be realized.
In Chapter 4 I formally flesh out the analysis presented in this chapter. There are four desiderata for a formalization of the material. The first is for the formalization adequately to define the Greek aspects, particularly for the perfective Aorist and the imperfective Present, so as to explicate the observations in §3.1. The second is to define the aktionsarten of *erchomai* and *eiserchomai* in such a way as to explicate the interaction between the aktionsarten and the aspects. The third is to formalize the contribution of the preverb *eis*. The fourth is to formalize the contribution of sentential elements which telicize an otherwise activity predicate with the verb *erchomai*. 
CHAPTER 4

THE ASPECTUAL CONTRIBUTION OF EIS-

4.1 Goal and Overview

The aim of this chapter is to provide a formal analysis for how the contribution of the preverb eis- affects the aktionsart of erchomai. In order to do this, I first discuss the formalism which I use to describe aktionsarten in §4.2. In §4.3 I discuss how the preverb and preposition eis are formally analyzed. I present an analysis of the Present and Aorist forms in §4.4. In §4.5 I create a fragment to illustrate how the formalizations throughout the chapter work in a language fragment.

4.2 Aktionsart and the Aspect Calculus

4.2.1 Definitions for Aktionsart

The formal definitions for aktionsart were already discussed in §2.1, but I include them here since they are pertinent in the discussion which follows. Dowty (1986) defines these verb classes via intervals of time and truth values. He defines them in terms whether or not the denotation of a sentence is true at certain interval of time, or at intervals within another interval (at subintervals). These definitions are in (4.1)–(4.3).

(4.1) Static: A sentence $\phi$ is static iff it follows from the truth of $\phi$ at an interval $i$ that $\phi$ is true at all subintervals of $i$.

(4.2) Activity: A sentence $\phi$ is an activity iff it follows from the truth of $\phi$ at an interval $i$ that $\phi$ is true at all subintervals of $i$ down to a certain limit in size.

(4.3) Telic/Performance: A sentence $\phi$ is an accomplishment/achievement iff it follows from the truth of $\phi$ at an interval $i$ that $\phi$ is false at all subintervals of $i$.

For a fuller discussion, see (2.1)–(2.3).
4.2.2 Dowty’s Aspect Calculus

I adopt portions of Dowty’s 1979 aspect calculus in order to formalize the contribution of the preverb eis-. The aspect calculus consists of stative predicates and sentential operators and connectives. The stative predicates of the calculus correspond to stative verbs in natural language in their logical structure, but the aspect calculus representation for dynamic verbs of natural language is a combination of the stative predicates of the calculus and the sentential operators and connectives. The stative predicates of the calculus are non-logical constants in the calculus, and the sentential operators and connectives are the logical constants of the calculus. Three of Dowty’s sentential operators are relevant for this study of eis-. These are the DO operator, the CAUSE operator, and the BECOME operator.

Before describing these three operators in more depth, I first introduce some basic definitions regarding time intervals, on which much of the formal analysis of erchomai and eiserchomai in this chapter is based.

(4.4) Set membership
The symbol \(\in\) signifies set membership.

(4.5) Subset relations
a. The symbol \(\subseteq\) signifies the subset relation. Set \(A\) is a subset of set \(B\) if every element in \(A\) is in \(B\).

b. The symbol \(\subset\) signifies the proper subset relation. Set \(A\) is a proper subset of set \(B\) if \(A\) is a subset of \(B\) and \(B\) has one member which is not in \(A\).

(4.6) Union
The symbol \(\cup\) signifies union. Set \(A \cup B\) is the set containing all of the elements in \(A\) and all of the elements in \(B\).

(4.7) Set \(T\), set \(I\), linear ordering, and precedence
a. If \(T\) is the set of times, then \(I \subseteq \text{Pow}(T)\). (i.e., \(I\) is the set of time intervals.)

b. \(<\) is a strict, linear ordering on \(T\).

c. Interval \(i \in I\) iff for every \(t, t' \in i\), if \(t, t' \in i\) and \(t < t' < t'\), then \(t' \in i\).

(d. The symbol \(<\) signifies precedence. If \(i, i' \in I\), then \(i' < i\) iff for every \(t \in i\) and \(t' \in i', t' < t\).

(4.8) Subintervals
a. If \(i, i' \in I\), then \(i'\) is a subinterval of \(i\) iff \(i' \subset i\).

b. If \(i, i' \in I\), then \(i'\) is an initial subinterval of \(i\) iff \(i' \in i\) and there is no \(t \in (i - i')\) for which there is a \(t' \in i'\) such that \(t < t'\).

c. If \(i, i' \in I\), then \(i'\) is a final subinterval of \(i\) iff \(i' \in i\) and there is no \(t \in (i - i')\) for which there is a \(t' \in i'\) such that \(t' \leq t\).
Bounds and boundary intervals

a. \( t \) is the initial bound of \( i \) iff \( t \notin i \) and \( t \) is the initial subinterval of \( t \cup i \)

b. \( t \) is the final bound of \( i \) iff \( t \notin i \) and \( t \) is the final subinterval of \( t \cup i \)

c. \( i \) is the initial boundary interval for \( i' \) iff \( i \) and \( i' \) are disjoint, \( i \cup i' \) is an interval, and \( i \) is an initial subinterval for \( i \cup i' \)

d. \( i \) is the final boundary interval for \( i' \) iff \( i \) and \( i' \) are disjoint, \( i \cup i' \) is an interval, and \( i \) is a final subinterval for \( i \cup i' \)

The DO operator

The DO operator combines with the stative predicates of the calculus in order to represent activity propositions. Dowty associates the meaning of the DO operator with intentionality or volitionality. The DO operator, for example, operates on a stative predicates like see and hear to create the activity watch and listen (Dowty, 1979, p. 114). However, there is more to the DO operator than volitionality. Dowty notes that in some activities, like John is being obnoxious, the agent (John) might not be intentional in his actions. Dowty refines his assessment of the DO operator so that it must fulfill the following condition:

\[
\square[\text{DO}(\alpha, \phi) \leftrightarrow \phi \land u.t.u.c.o.a.(\phi)] \quad \text{(Dowty, 1979, p. 118)}
\]

In (4.10),  \( u.t.u.c.o.a. \) stands for “is under the unmediated control of the agent (individual denoted by \( \alpha \))” (Dowty, 1979, p. 118). Dowty himself claims that this is a “blatant fudge” because it does not give a model-theoretic definition for the idea of unmediated control, and he claims that it should be “relegated to the status of a conventional implicature” (Dowty, p. 118).

Dowty also notes that some activity sentences do not appear to satisfy the condition in (4.10). He cites the examples in (4.11) as activity sentences which do not meet these conditions (Dowty, 1979, p. 164).

(4.11) a. The rock is rolling down the path.

b. The motor is making noise.

In neither of the examples in (4.11) is the subject agentive, so there is no control exhibited by the subject over the situation. Instead of agentivity, the common thread in examples which violate (4.10) is physical activity: “they all involve...either a change of position or else an internal movement that has visual, audible or tactile consequences” (Dowty, 1979, p. 165). Dowty develops an example definition for the English verb move, shown in (4.12), in order to show how this observation might work in a formal definition:

\[
\text{move}(x) \text{ is true at interval } I \text{ iff there is a place } p \text{ such that } \text{Loc}(x) = p \text{ at the lower bound of } I \text{ and } \text{Loc}(x) \neq p \text{ at the upper bound of } I. \quad \text{(Dowty, 1979, p. 169)}
\]
In (4.12) Loc is a function which assigns a place to each individual for each moment in time, and \( p \) is a variable ranging over places. (4.12) defines *move* so that it is possible for *x moves* to be true in a subinterval of \( I \) as well as a superinterval of \( I \), which fulfills the interval-semantic definition of activity verbs in (4.2) but not that of accomplishments in (4.3). Dowty notes that using definitions in the vein of (4.12), one could conceivably define many English motion verbs. However, a crucial problem with (4.12) is that it does not decompose the meaning of *move* into a stative predicate, which is one of the basic rules in the aspect calculus. At this point Dowty recognizes that not every verb is capable of being decomposed into a stative predicate(s) plus an operator(s) (Dowty, 1979, p. 172). Ultimately, the DO operator is not as significant in Dowty’s aspect calculus as some of the other operators, and the fact that a model-theoretic account of activity verbs is not resolved does not affect the value of the insights of the aspect calculus in telic propositions (Dowty, pp. 119-129). Because of the above reasons, I do not use the DO operator to analyze *erchomai*, even though *erchomai* is an activity verb.

**The BECOME operator**

The BECOME operator operates on a predicate in the aspect calculus to produce both accomplishment and achievement predicates. The definition is below in (4.13).

(4.13) \([\text{BECOME } \phi]\) is true at interval \( i \) iff (1) there is an interval \( i' \) containing the initial bound of \( i \) such that \( \neg \phi \) is true at \( i' \), (2) there is an interval \( i'' \) containing the final bound of \( i \) such that \( \phi \) is true at \( i'' \), and (3) there is no non-empty interval \( j \) such that \( j \subset i \) and conditions (1) and (2) hold for \( j \) as well as \( i \).

(Dowty, 1979, p. 141)

This operator essentially serves to define a change from a proposition’s not being true before an interval to being true after an interval. Over the course of that interval, the change takes place. This captures the intuition that telic predicates culminate and adheres to the definition (2.3). For example, let’s say that the achievement sentence *John discovers a treasure* is analyzed in the aspect calculus as \([\text{BECOME John-know-the-existence-of-a-treasure}]\) so that *John-know-the-existence-of-a-treasure* replaces the \( \phi \) in (4.51). Looking at the diagram below (taken from Dowty (1979), page 140), *John discovers a treasure* is true at \( I \) iff *John-know-the-existence-of-a-treasure* is false in the interval immediately before \( I \) and true in the interval immediately after \( I \).
John discovers a treasure is not true at any subintervals $I$ because condition (3) in (4.13) above excludes it.

The CAUSE operator

All accomplishments in the aspect calculus use the CAUSE operator. The operator is bisentential and basically ensures that the first sentence (the sentence appearing before CAUSE in linear order) causes the second sentence (the sentence appearing after the CAUSE operator). Causation is complex to define, and the CAUSE operator is not merely an aspect-calculus equivalent to English ‘because’ or ‘cause.’ An example of how the operator might be used is in (4.14), which shows the structure of the sentence He swept the floor clean in the aspect calculus (Dowty, 1979, p. 93).

(4.14) \[[He sweeps the floor] \text{CAUSE} [\text{BECOME}[The floor is clean]]\]

The sentence He sweeps the floor causes the floor to become clean, with the BECOME operator entailing that the floor was not clean before the sweeping.

Before defining the CAUSE operator, two definitions are necessary. The first is for causal dependence and is found in (4.15), and the second is for causal factor and is found in (4.16). The symbol $\Box$ represents the natural language conditional, and both $\phi$ and $\psi$ are arbitrary sentences.

(4.15) $\phi$ depends causally on $\psi$ iff $\phi$, $\psi$, and $\neg \phi \Box \neg \psi$ are all true. (Dowty, 1979, p. 108)

The definition for causal dependence states that one sentence depends causally on another if and only if each sentence is true and if the first were not true, then the second would not be true.

(4.16) $\phi$ is a causal factor for $\psi$ iff there is a series of sentences $\phi$, $\phi_1$, ..., $\phi_n$, $\psi$ (for $n \geq 0$) such that each member of the series depends causally on the previous member. (Dowty, 1979, p. 108)

The definition for causal factor states that one sentence is a causal factor for another if and only if the first is in a chain in which each item is causally dependent on the previous, and the final item in the chain is the second sentence.

The notion of a causal factor is a central component to the definition of the CAUSE operator, which is below in (4.52).

(4.17) $[\phi \text{CAUSE } \psi]$ is true iff (1) $\phi$ is a causal factor for $\psi$, and (2) for all other $\phi'$ such that $\phi'$ is also a causal factor for $\psi$, some $\neg \phi$-world is as similar or more similar to the actual world than any $\neg \phi'$-world is.
The first part of the definition states that the first sentence on which CAUSE operates must be a causal factor for the second sentence. The second part of the definition serves to prevent a situation in which an item near the beginning of the causal chain $\phi, \phi_1, \ldots, \phi_n, \psi$ is said to CAUSE $\psi$, when in fact that item is too far removed from $\psi$ for it to be reasonable to say that it “caused” $\psi$ (Dowty, 1979). For example, let us say that several conditions cause a traffic accident (a combination of snow and bad tires and the decision to drive in a severe snow storm alert, for instance). It is appropriate to say that the snow and the bad tires and bad judgment about driving “caused” the accident, but it would be wrong to say that buying the car three years ago “caused” the accident. Clause (ii) in (4.52) prevents such a statement by requiring a world in which a causal factor is not true (the tires were new or the road was salted or the driver decided not to go out in bad weather) to be more similar to the actual world than a world in which an item earlier in the causal chain is not true (the driver deciding three years ago to not buy that car) (Dowty).

Going back to (4.14), the definition in (4.52) states that He sweeps the floor is a causal factor for BECOME[The floor is clean], and a world in which he didn’t sweep the floor is closer to the actual world than the worlds in which other causal factors for BECOME[The floor is clean] are not true.

4.3 Erchomai and Preverbs and Prepositions

4.3.1 Erchomai and the DO operator

Because the DO operator does not work for all activity verbs, as discussed in §4.2.2, I do not use it to define erchomai. Dowty himself notes that not all activities can be decomposed in the aspect calculus, and it seems like erchomai falls into this category, since Dowty puts move, another basic motion verb, in this category (Dowty, 1979, p. 172). I, at least, cannot think of a stative predicate in the aspect calculus which would capture the meaning of erchomai when combined with the DO operator. Dowty’s definition for move (4.18), however, is close to capturing the meaning of the Greek erchomai.

(4.18) “move(x)” is true at interval $I$ iff there is a place $p$ such that $Loc(x) = p$ at the lower bound of $I$ and $Loc(x) \neq p$ at the upper bound of $I$. (Dowty, 1979, p. 169)

There are only two potential additions needed for the definition in (4.18) in order for it to fit for defining erchomai. The first is volitionality. The vast majority of instances of erchomai in the New Testament, there is an agent which willfully goes somewhere. However, this is not always the case. Example (4.19) shows an instance of erchomai in which the subject is not an agent.
μήτι ἔρχ-εται ὁ λύχνος ἵνα ὑπὸ τὸν μόδιον τεθῇ
NEG go.PRES-3s the lamp in.order.to under the basket be.set.3s

“Is a lamp brought in to be put under a basket” (Mark 4:21, ESV) (NOTE: mēti is an interrogative particle which shows that the expected answer to the question is “no.”)

The lamp does not intentionally go under a basket. Rather, it simply goes there. Erchomai need not always have a subject which is an agent, so the definition in (4.18) does not require any changes in order to be adapted to the Greek erchomai.

The second potential addition involves a difference between the meanings of the motion verbs move and go in English. In English, anything that has changed location has “moved” but something must travel a distance in some proportion to its size in order for it to have “gone.” A person can take a small step forward and be said to “move” but not to go. However, if a person moves across a room, then he can be said to go. The difference is not one of how far the person goes, but how far in comparison to his size. If it were a small beetle and not a person that was changing location, then it could crawl the same length as a small human step and be said to go. This is not a matter of absolute distance, but of distance relative to the capacity of a being/object to crawl/walk/climb, etc. These judgments involve a great deal of practical world knowledge.

Another difference between go and move in English is that for a person to “go,” she must move her entire body to a different location, but in order for a person to “move,” she must move some part (or the whole) of her body. The Koine erchomai is equivalent to go in this respect but the judgments are nuanced enough that it is difficult to know exactly how erchomai compares with the English move and go without being able to produce sentences and scenarios to test the truth conditions of erchomai. While there is a lot of data for erchomai in the New Testament, there is not ample opportunity to test how far a subject must go in order for the word erchomai to be appropriate. Since this is the case, it suffices to accept (4.18) as the denotation of erchomai. The denotation is repeated in (4.20), substituting move for erch-

(4.20) “erch-(x)” is true at interval I iff there is a place p such that Loc(x) = p at the lower bound of I and Loc(x) ≠ p at the upper bound of I. (Dowty, 1979, p. 169)

4.3.2 The preverb eis- and the preposition eis

Eis- and eis serve to demarcate an ending for an otherwise unbounded motion and their presence in a sentence results in a telic interpretation in a sentence which otherwise might be atelic.
The preverb \textit{eis}- specifically contributes the meaning \([\phi \text{ CAUSE } e_1 \text{ be-at } e_2]\), where \(\phi\) is the motion of some subject, \(e_1\) is some entity, and \(e_2\) a location in space. The term \(e_1 \text{ be-at } e_2\) equals \(\text{Loc}(e_1) = e_2\) (see (4.12) for the definition of \(\text{Loc}\)). As a lambda term, \textit{eis}- is represented in (4.21).

\[(4.21) \lambda P \lambda x \lambda i [P(x)(i) \text{ CAUSE } \text{BECOME } x \text{ be-at } y](i)\]

\(P\) here is a two-place predicate operating over its subject and a time interval. The interval of time over which event occurs is represented by the variable \(i\), which is an argument of both \(P\) and \([\text{BECOME } x \text{ be-at } y]\), indicating that the truth of this expression is true or false with respect to that interval. Variables \(x\) and \(y\) in the expression range over entities.

In (4.22), \textit{eis}- prefixes \textit{erchomai} in a very basic Koine Greek sentence.

\[(4.22) \epsilon i\sigma \dot{\epsilon} \gamma\dot{\epsilon}\dot{\omega} \theta\epsilon\]
\[\text{eis-erch-esthe}\]
\[\text{EIS-go.PRES-2p}\]
\[\text{“You are going in.”}\]

The sentence in (4.22) would be translated into the translation language as the expression in (4.23), omitting the contribution of the Present form.

\[(4.23) \lambda i [\text{erch'(you')(i) CAUSE } \text{BECOME you’ be-at } y](i)]\]

Translated into plain English, (4.23) means (roughly) ‘your going at interval \(i\) is the primary cause of you coming to be at place \(y\) at the end of interval \(i\).’ The variable \(y\) is not bound because it is contextually provided.

\textit{Eis} the preposition has similar meaning to \textit{eis}- the preverb but is less specific than preverb \textit{eis}-, at least as far as we see \textit{eis}- behaving with \textit{erchomai}. In Koine Greek, the preposition \textit{eis}, formerly distinguishable from the preposition \textit{en} ‘in’ has begun to be confused with \textit{en} ‘in’ (Blass & Debrunner, 1961, pp. 110-111). Examples (4.24) and (4.25) show \textit{eis} ‘into’ being substituted for what formerly would have been \textit{en} ‘in’ (Blass & Debrunner, Section 205).

\[(4.24) \dot{e} \beta \alpha \pi \tau \iota \sigma \theta \eta\]
\[\epsilon i\zeta\]
\[\tau \nu \mathrm{Iordan\acute{e}n}\]
\[\upsilon \dot{\omega}\]
\[\mathrm{I\omega\acute{a}nnou}\]
\[\text{ebaptisthē eis ton Iordanēn hupo Iōannou}\]
\[\text{3s.was.baptised EIS the Jordan by John}\]
\[\text{“[He] was baptized by John in the Jordan.” (Mark 1:9, ESV)}\]

\[(4.25) \tau \alpha\]
\[\mu \alpha\acute{i} \delta\alpha\acute{i} \mu\nu\]
\[\mu \acute{e}\mu\nu\]
\[\epsilon i\zeta\]
\[\tau \nu\]
\[\koi\tau\epsilon\eta\]
\[\epsilon i\acute{a}\nu\]
\[\text{ta paidia mou met’ emou eis tên koitēn eisin the children my with me EIS the bed are}\]
\[\text{“My children are with me in bed.” (Luke 11:7, ESV)}\]
In (4.24), *eis ton Iordan* ‘into the Jordan’ (literally) is used to mean ‘in the Jordan.’ In (4.25), *eis tēn koitēn* ‘into the bed’ (literally) is used to mean ‘in bed.’

Additionally, preposition *eis* does not always indicate entrance into some new location, but can mean coming up to a location, without necessarily entering it (Blass & Debrunner, 1961, p. 112). I include below example (1.16), which I discuss in §1.1.3, as (4.26) to illustrate this point.

(4.26) ἐλθ-ὼν elth-ōn go.AOR-PART.NOM δὲ de eis tēn oikian, ouk aphēken eis-elth-ein εἰσ-ελθ-εῖν EIS-go.AOR-INF

τινα tina anyone σὺν sun αὐτῷ autōi with him

“And when he [Jesus] came to the house, he allowed no one to enter with him.” (Luke 8:51)

Because *eis* has begun to be confused with *en* at this point in Greek language history, I do not deal with all the meanings of preposition *eis* in this fragment. I leave out discussion of the Koine *en–eis* confusion. I define preposition *eis* as a preposition which means [φ CAUSE [BECOME e₁ be-at e₂ ∨ e₁ be-up-to e₂]]. The predicate *be-up-to* assigns an entity to the perimeter of a location. As a lambda-term, preposition *eis* is represented in (4.27).

(4.27) λ��Pλxλi[P(x)(i) CAUSE [BECOME x be-at y ∨ x be-up-to y](i)]

The example (4.28) shows the preposition *eis* in a basic Koine sentence.

(4.28) ἐρχ-εται ēlth-etai go.PRES-3s eis tēn Ioudaian...

εἰς eis τὴν the.ACC Ἰουδαίαν...

The formula in (4.29) below shows how this would be translated.

(4.29) λ��[erch(3s)′(i)] CAUSE [BECOME 3s′ be-at tēn-Ioudaian′ ∨ 3s′ be-up-to tēn-Ioudaian′](i)]

Translated into plain English, (4.29) means (roughly) ‘His going at interval i is the primary cause of him either coming to be in Judea or him coming to be at the perimeter of Judea at the end of interval i.’

### 4.4 Formalizing the Tense/Aspect forms

#### 4.4.1 Present

In Chapter 3, I discuss the Present form and its behavior. The Present frequently refers to events in the past and future, as well as the present, so I do not analyze the form as a tense, but only as an aspect. I therefore
formalize the Present in terms of event time and reference time, without mention of speech time. Specifically, I define the Present as denoting that the event time equals or includes the reference time ($RT \subseteq ET$).  

As a lambda term, the Present has the form in (4.30).

\[(4.30) \lambda P \exists i \exists i' [i \subseteq i' \land P(i')]\]

The first part of the term, $i \subseteq i'$, provides the semantics for the Present form and expresses that the RT ($i$ here) is a (non-proper) subset of the ET ($i'$ here). The term takes a formula $P$ of the type $<\iota, \tau>$, which is a sentence without tense and/or aspect. The variable $i'$ is an argument for the formula of the type $<\iota, \tau>$. The translation for the Present in this fragment takes a clausal argument ($P$ in (4.30)), as Montague does in his grammar (Montague, 2002, pp. 20, 25). I recognize that in Koine Greek grammar tense/aspect is marked on the verb, and does not modify the entire sentence syntactically.

Going back to the aspectless (4.23), the formula in (4.30) provides the necessary information to show the translation for the example in (4.23) with aspect. The unreduced translation is in (4.31a) and a beta-reduced translation is in (4.31b), with another beta-reduced translation in (4.31c). (Two beta-reductions are necessary.)

\[(4.31) \begin{align*}
\text{a. } & \lambda P \exists i \exists i' [i \subseteq i' \land P(i')] (\lambda i [\text{erch'(you')}(i) \text{ CAUSE } \text{BECOME you' be-at } y(i)]) \\
\text{b. } & \exists i \exists i' [i \subseteq i' \land \lambda i [\text{erch'(you')}(i) \text{ CAUSE } \text{BECOME you' be-at } y(i)](i')] \\
\text{c. } & \exists i \exists i' [i \subseteq i' \land [\text{erch'(you')}(i) \text{ CAUSE } \text{BECOME you' be-at } y_c(i)]]
\end{align*}\]

The final formula in (4.31) is the full translation for the Koine Greek sentence in (4.22). Such a sentence is true if the RT ($i$) is a subset or equal to the ET ($i'$), and if the addressee’s going over the ET is the primary cause of the addressee’s coming to be at location $y$ (assigned by context) at the end of the ET.

### 4.4.2 Aorist

I discuss the Aorist form and its behavior in Chapter 3. The Aorist form is both a past tense and a perfective aspect. I define it as denoting an event which precedes speech time (‘now’) and denoting an event whose event time is a subset of reference time ($ET \subset RT$). Thus, when the Aorist occurs with a telic predicate, the telic predicate is always interpreted as complete because any final subinterval of the ET is always included in the RT.

The translation for the Aorist is in (4.32).

\[(4.32) \lambda P \exists i \exists i' [i < \text{now} \land i' \subset i \land P(i')]\]

\[\text{1}^{\text{Note that this definition is not refined enough to deal with the semantics of the imperfective and progressive. See (Dowty, 2002) for an analysis of the progressive.}\]
The first formula in the lambda expression, \( i < \text{now} \), denotes that the interval is in the past. The second \((i' \subset i)\) denotes that the ET is a subset of the RT. I use the example of *erchomai* in the Aorist form *ēlthon* in (4.33), along with its translation in (4.34), to show in (4.35) how the lambda term in (4.32) can be used.

(4.33) 璀Δθ-ον

ēlth-on

go.AOR-3p

“They went.”

(4.34) ἐρχ(they ’)

(4.35) a. \( \lambda P \exists i' [i < \text{now} \land i' \subset i \land P(i')] \) (erch’(they’))

b. \( \exists i' [i < \text{now} \land i' \subset i \land \text{erch}(\text{they'})(i') ] \)

The formula in (4.35b) is the beta-reduced translation for (4.33). The first conjunct places an interval (the RT) before \( \text{now} \) (the ST). The second conjunct places the a second interval (the ET) as a proper subset of the first interval (the RT), in accordance with the Reichenbachian definition of perfective aspect. The third conjunct contains the translation of the verb *erchomai* (*erch*) being predicated of the translation of the subject (*they’*) and interval \( i' \) (the ET). In order for the denotation of (4.35b) to be true, \( \text{erch}(\text{they'})(i') \) must be true over interval \( i' \), and interval \( i' \) must be included in interval \( i \), which in turn must be before the time of utterance (ST/now).

4.4.3 Other Tense/Aspects

The translations for the remaining tense/aspect forms are in Table 4.1.

<table>
<thead>
<tr>
<th>Tense/Aspect form</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Future</td>
<td>( \lambda P \exists i [\text{now} &lt; i \land P(i)] )</td>
</tr>
<tr>
<td>Imperfect</td>
<td>( \lambda P \exists i' [i &lt; \text{now} \land i \subset i' \land P(i')] )</td>
</tr>
<tr>
<td>Perfect</td>
<td>( \lambda P \exists i' [i = \text{now} \land i' \subset i \land P(i')] )</td>
</tr>
<tr>
<td>Pluperfect</td>
<td>( \lambda P \exists i' [i &lt; \text{now} \land i' &lt; i \land P(i')] )</td>
</tr>
</tbody>
</table>

The translation for the Future form only places the event at an interval \( i \) ahead of the present \( \text{now} \). The Imperfect places events in the past \( i \text{ before now} \) and the RT \( i \) as a subset of the ET \( i' \). The Perfect places the RT \( i \) at ST \( \text{now} \) and the ET \( i' \) before the RT \( i \). The Pluperfect places the RT \( i \) before \( \text{now} \) and the ET \( i' \) before the RT \( i \).

It is important to note that the translations above assume the indicative mood. To account for the meanings of the tense/aspect forms in the imperative, subjunctive, and participle in a fragment, one would have to
develop a system which accounted for the interaction between moods and the tense/aspect forms. This is beyond the scope of this work, as I focus on the aktionsart and grammatical aspect. If one were to do this, the relation between ET ($i'$) and RT ($i$) should hold across moods, with the relation between ST (now) and RT pertaining only in the indicative.

4.5 A Fragment

The purpose of creating a fragment for this research is to show tangibly that the above definitions can readily be applied to a compositional semantics account of eis-, erchomai, and eiserchomai. I aim to account for the meaning of erchomai, the meaning of eis-, the meaning of eiserchomai, and the meaning of the preposition eis, since it makes for a telic proposition when combining with erchomai, which I argue in Chapter 3 would otherwise be an activity verb.

The fragment is constructed to be able to compose the three sentences (4.36)–(4.38). The semantics of all three of these sentences were discussed briefly in §4.3.2 and §4.4, but in this section I work through how these meanings are built up compositionally.

(4.36) ἠλθ-ον
ēlth-on
go.AOR-3p
“They went.”

(4.37) εἰσ-έρχ-εσθε
eis-erch-esthe
EIS-go.PRES-2p
“You are going in.”

(4.38) ἐρχ-εται εἰς τὴν Ἰουδαίαν...
erch-etai eis tēn Ioudaian...
go.PRES-3s EIS the.ACC Judea.ACC...
“He is going into Judea.”

The first sentence (4.36) is a fully saturated Aorist form of erchomai and is translated ‘they went.’ The second (4.37) is a fully saturated Present form of eiserchomai and is translated ‘you are going in.’ The third (4.38) contains both the Present form erchetai and the locative PP eis tēn Ioudaian ‘into Judea.’ The first sentence is atelic, but the latter two are telic–(4.37) because of the preverb eis- and (4.38) because of the PP eis tēn Ioudaian.
4.5.1 Syntax of the Fragment

For the fragment, I use a simple categorial grammar for the syntax (Steedman, 1992; Baldridge, 2002), a semantic translation language which incorporates the lambda calculus, and a semantic interpretation of the translation. The atomic categories in the fragment are N, S, and S'. Category N includes names (tēn Ioudaian ‘Judea’), variables ranging over individuals, and morphological person markers.

In the categorial grammar, non-atomic categories are composed of the atomic categories. These “composite” categories serve as functions, and their category name reveals the argument they seek and the resultant category after they combine with their argument. For example, if A is an atomic category and B/A is a functor category, then when B/A finds argument A, the resultant category (both of them together) is B. Functor categories do not only take atomic categories, but can also take other functor categories.

There are two basic syntactic rules in the categorial grammar, and those are forward application and backward application. In forward application, the argument appears to the right of the functor category, and in backward application the argument appears to the left of the functor category. Functor categories in forward application use a forward slash / in their name, whereas functor categories in backward application use a backward slash \ in their name. Below the two rules are illustrated using the made-up functor categories A/B and B\A.

\[
\begin{array}{c}
A/B \\
A \\
\end{array} \quad \text{Forward Application (FA)}
\]

\[
\begin{array}{c}
B \\
B\A \\
A \\
\end{array} \quad \text{Backward Application (BA)}
\]

A/B seeks a B to its right; B\A seeks a B to its left. The result category is A in both cases. Greek is not a fixed word order language, so forward application and backward application, with their focus on word order, would not work for a larger fragment of the language. However, for the purposes of this fragment, I have kept these rules, which will work for this fragment, in order to avoid unnecessarily complicating the syntax.

To the above two rules I add two more:

(4.39) PRES: PRES operates on a sentence φ of category S' to form a sentence ψ of category S by changing the Present form’s root (the underlying form) into the Present form stem.

(4.40) AOR: AOR operates on a sentence φ of category S’ to form a sentence ψ of category S by changing the Aorist form’s root (the underlying form) into an augmented Aorist form stem.

For the verb erchomai (citation form), the lexicon of the fragment contains two verb roots: erch- and elth-. The first is the Present form’s root; the second is the Aorist form’s root. The PRES rule can only apply to the
Present form root, and the AOR rule can only apply to the Aorist form root. With a non-suppletive verb, I would have had both PRES and AOR operate on the verb root and replace the verb root with inflected Aorist and Present form stems. However, since erchomai is suppletive, the verb root is different for the Present and Aorist forms, so, I specify that PRES only works with the Present form root and AOR only works with the Aorist form root. This is unfortunate, because when PRES operates on the Present form root, no morphological change takes place, and when AOR operates on the Aorist form root, the only thing that changes is the length of the initial vowel when the augment is added. The derivation below shows the AOR rule at work.

\[
\begin{align*}
\text{elth-on: } S' & \quad \text{AOR} \\
\end{align*}
\]

A benefit of specifying the two different roots of erchomai in the lexicon (instead of specifying one verbal root and having AOR and PRES operate on that one root) is that I can specify in the two different roots’ syntactic categories which person markers they agree with. The Aorist and Present forms must agree with different sets of person markers. For example the first person singular suffix for the Present is -omai, and the first person singular suffix for the Aorist is -on. In having a separate entry for the Present and Aorist forms, I specify in their categories that a person marker which attaches to either stem must agree with the tense/aspect for which the verbal stem is marked. For example, below, the category of the stem elth—S'/N[AOR]—requires that it be combined with something of the category N[AOR]. The [AOR] subscript is a feature which indicates that the morphological person marker must serve to saturate a verb which is already marked for the Aorist.

\[
\begin{align*}
\text{elth-: } S'/N_{[AOR]} & \quad \text{-on: } N_{[AOR]} \quad \text{FA} \\
\text{elth-on: } S & \quad \text{AOR} \\
\end{align*}
\]

This ensures that the verbs do not combine with mismatching morphemes. For example, elthomai—Aorist stem with a Present form suffix—is impossible. The operation AOR adds the augment and inflects the uninflected verb.

### 4.5.2 Lexicon of the Fragment

As described in §4.5.1, both verb roots of erchomai, shown below in Table 4.2, are in the lexicon.

**Table 4.2: Erchomai in the Lexicon**

<table>
<thead>
<tr>
<th>Lexical entry</th>
<th>English gloss</th>
<th>Category</th>
<th>Translation</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>erch-</td>
<td>go/come</td>
<td>S'[PRES]/N[PRES]</td>
<td>erch’</td>
<td>&lt;e, &lt;i, t&gt; &gt;</td>
</tr>
<tr>
<td>elth-</td>
<td>go/come</td>
<td>S'[AOR]/N[AOR]</td>
<td>elth’</td>
<td>&lt;e, &lt;i, t&gt; &gt;</td>
</tr>
</tbody>
</table>
The first column in the table contains the lexical entries in the lexicon. The second column is the English gloss of these entries. The third column is the categorial grammar category for each of the lexical items. The fourth column is the semantic translation language equivalent for each of the lexical entries. The fifth and final column is the syntactic type corresponding to the categorial grammar syntactic category.

Both *erch-* and *elth-* are of the type `<e, <ι, t> >`, which means that they take an item of type e (an entity) and yield an item of the type `<ι, t>`. An item of type `<ι, t>` requires an item of type ι in order to yield a truth value (type t). *Erch-* is marked for Present aspect, meaning that it must realize Present form aspect when fully inflected. It seeks an argument `N_{PRES}`, which has a [PRES] feature which requires it to agree with the already marked verb stem *erch-*. Likewise, *elth-* is marked for Aorist aspect, meaning that it must realize Aorist form aspect when fully inflected. *Elth-* seeks an argument `N_{AOR}`, which has an [AOR] feature that requires it to agree with the already marked verb stem *elth-*. Both the arguments `N_{PRES}` and `N_{AOR}` are morphological person markers which attach to the verb.

The main difference between *erch-* and *elth-* is that one only *erch-* only takes arguments of category `N_{PRES}`, or arguments which are compatible with the Present form. *Elth-* on the other hand, takes arguments of type `N_{AOR}`, or arguments which are compatible with the Aorist form.

The lexical entries for preverb *eis-* and preposition *eis* are in Table 4.6

<table>
<thead>
<tr>
<th>Lexical entry</th>
<th>English gloss</th>
<th>Category</th>
<th>Translation</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>eis-</em></td>
<td>into (preverb)</td>
<td>(S'/N)/ (S'/N)</td>
<td>λP_ι,ι_o,_o&gt; λx_i λκ_i [P_ι,ι_o,_o&gt; (x_i)(κ_i)]</td>
<td><code>&lt; &lt;e, &lt;ι, t&gt; &gt;</code>,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CAUSE <a href="i_e">BECOME x_e be-at y_e</a> ]</td>
<td><code>&lt;e, &lt;ι, t&gt; &gt; &gt;</code></td>
</tr>
<tr>
<td><em>eis</em></td>
<td>into or to</td>
<td>(S'/N)/ (S'/N)/N_{ACC}</td>
<td>λy_i λP_ι,ι_o,_o&gt; λx_i λκ_i [P_ι,ι_o,_o&gt; (x_i)(κ_i)]</td>
<td><code>&lt; &lt;e, &lt;ι, t&gt; &gt;</code>,</td>
</tr>
<tr>
<td></td>
<td>(preposition)</td>
<td></td>
<td>CAUSE [BECOME x_e be-at y_e be-up-to x_e]</td>
<td><code>&lt;e, &lt;ι, t&gt; &gt; &gt; &gt;</code></td>
</tr>
</tbody>
</table>

The translations of both *eis* and *eis-* are discussed more fully in §4.3.2, so I do not review them here. The syntactic category of *eis-* has it as a functor which takes something of the category S'/N, which is the category of *erch-* and *elth-*. This makes *eis-* a verb stem modifier. The syntactic category of *eis* has it as a functor which takes an accusative noun, and results in the category of the same as *eis-* the preverb. After *eis* combines with an accusative noun, it becomes a verb phrase modifier.

The nouns and person markers in the lexicon are shown in Table 4.4.

The morphemes `-on`, `-esthe`, and `-etai` attach to the end of the verb stem and denote person and number of the subject. *Tēn-Ioudaian* denotes the region Judea.
Table 4.4: Nouns in the Lexicon

<table>
<thead>
<tr>
<th>Lexical entry</th>
<th>English gloss</th>
<th>Category</th>
<th>Translation</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>-on</td>
<td>3p Pl verbal</td>
<td>N[3, PL, AOR]</td>
<td>they′</td>
<td>e</td>
</tr>
<tr>
<td>-esthe</td>
<td>2p Pl verbal</td>
<td>N[2, PL, PRES]</td>
<td>you′</td>
<td>e</td>
</tr>
<tr>
<td>-etai</td>
<td>3p Sg verbal</td>
<td>N[3, SG, PRES]</td>
<td>3s′</td>
<td>e</td>
</tr>
<tr>
<td>tēn-Ioudaian</td>
<td>Judea.ACC</td>
<td>N[ACC]</td>
<td>tēn-Ioudaian′</td>
<td>e</td>
</tr>
</tbody>
</table>

In addition to all of the constants in the lexicon, the fragment contains free variables which are expressed \( x, y, \) or \( z \) (ranging over entities) and \( i, i', \) or \( i'' \) (ranging over intervals) in the fragment. Because of the simplicity of the fragment, there is no need to expand the set of variables to more than these two sets of three. The entire lexicon for the fragment is summarized in Table 4.5.
### Table 4.5: Lexicon for Koine Fragment

<table>
<thead>
<tr>
<th>Lexical entry</th>
<th>English gloss</th>
<th>Category</th>
<th>Translation</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>erch-</td>
<td>go/come</td>
<td>S’<em>[PRES]/N’</em>[PRES]</td>
<td>erch’</td>
<td>&lt;e, &lt;i, i&gt; &gt;</td>
</tr>
<tr>
<td>elth-</td>
<td>go/come</td>
<td>S’<em>[AOR]/N’</em>[AOR]</td>
<td>elth’</td>
<td>&lt;e, &lt;i, i&gt; &gt;</td>
</tr>
<tr>
<td>eis-</td>
<td>into (preverb)</td>
<td>(S’/N)/(S’/N)</td>
<td>λP&lt;,&lt;i,i&gt;∧λx,λy,λζ,λi[P&lt;,&lt;i,i&gt;∧(x)e∧(y)e∧(ζ)e∧(i)i)] CAUSE [BECOME x_e be-at y_e∧ i_i]</td>
<td>&lt;e, &lt;i, i&gt; &gt;</td>
</tr>
<tr>
<td>eis</td>
<td>into or to (preposition)</td>
<td>((S’/N)/(S’/N))/N’_[ACC]</td>
<td>λP&lt;,&lt;i,i&gt;∧λx,λy,λζ,λi[P&lt;,&lt;i,i&gt;∧(x)e∧(y)e∧(ζ)e∧(i)i)] CAUSE [BECOME x_e be-at y_e∧ i_i]</td>
<td>&lt;e, &lt;i, i&gt; &gt;</td>
</tr>
<tr>
<td>-on</td>
<td>3p PI verbal ending</td>
<td>N’_[3, PL, AOR]</td>
<td>they’</td>
<td>e</td>
</tr>
<tr>
<td>-esthe</td>
<td>2p PI verbal ending</td>
<td>N’_[2, PL, AOR]</td>
<td>you’</td>
<td>e</td>
</tr>
<tr>
<td>-etai</td>
<td>3p Sg verbal ending</td>
<td>N’_[3, SG, PRES]</td>
<td>3s’</td>
<td>e</td>
</tr>
<tr>
<td>tēn Ioudaian</td>
<td>Judea.ACC</td>
<td>N’_[ACC]</td>
<td>tēn-Ioudaian’</td>
<td>e</td>
</tr>
<tr>
<td>variables</td>
<td>–</td>
<td>–</td>
<td>x, y, z</td>
<td>e</td>
</tr>
<tr>
<td>variables</td>
<td>–</td>
<td>–</td>
<td>i, i’, i”</td>
<td>i</td>
</tr>
</tbody>
</table>
4.5.3 Semantic Rules for the Fragment

Semantic translation rules

The two semantic translation rules below show how the syntactic rules of forward and backward application apply with regard to the linear order, in the syntactic categories, and as a semantic rule.

\[
\frac{\gamma : A/B \quad \beta : B}{\gamma \beta : A} \quad \frac{\beta : B \quad \gamma : B/A}{\beta \gamma : A}
\]

Forward Application (FA)

Backward Application (BA)

The leftmost place in each triplet represents a word in the fragment, the middle place represents the syntactic category of that fragment, and the rightmost triplet represents the semantic interpretation of the word. The semantic rules ensure compositionality because for every syntactic rule operating in the syntax, there is a semantic rule which mirrors it in the semantics of the fragment.

In (4.41) and (4.42) the semantic rules corresponding to the syntactic AOR and PRES rules are given.

(4.41) a. syntactic rule - PRES: PRES operates on a sentence \( \phi \) of category \( S' \) to form a sentence \( \psi \) of category \( S \) by changing the Present form’s root (the underlying form) into the Present form stem.

b. semantic rule - PRES: If sentence \( \psi \) has been formed via the syntactic PRES rule from sentence \( \phi \) (which has the translation \( \phi' \)), then the translation of \( \psi \) is \( \psi' = \lambda P_{i,t} \exists \forall i' [i \subseteq i' \land P(i')] (\phi') \).

(4.42) a. syntactic rule - AOR: AOR operates on a sentence \( \phi \) of category \( S' \) to form a sentence \( \psi \) of category \( S \) by changing the Aorist form’s root (the underlying form) into an augmented Aorist form stem.

b. semantic rule - AOR: If sentence \( \psi \) has been formed via the syntactic AOR rule from sentence \( \phi \) (which has the translation \( \phi' \)), then the translation of \( \psi \) is \( \psi' = \lambda P_{i,t} \exists \forall i' [i < \text{now} \land i' \subseteq i \land P(i')] (\phi') \).

Semantic interpretation rules

I give a semantics for this fragment in the context of model \( M \), which is an ordered quadruple \( \langle A, T, <, F \rangle \). \( A \) is the set of individuals or entities, \( T \) is the set of moments \( t \), \( < \) is the linear ordering on \( T \), and \( F \) assigns a denotation to every non-logicial constant from set \( A \). A given variable assignment function \( g \) assigns an individual from set \( A \) or an interval from set \( I \) to a corresponding variable. A variable assignment function \( g \) also assigns a special variable \( \text{now} \) in set \( I \) to the time of utterance/speech time. The function \( \text{Loc} \) assigns an individual from set \( A \) to a location in space.

Below (4.43)–(4.50) recursively define the denotation of an expression relative to model \( M \) and variable assignment function \( g \).
(4.43) If $\alpha$ is a non-logical constant, then $\llbracket \alpha \rrbracket^M_g = F(\alpha)$

(4.44) If $\alpha$ is a variable, then $\llbracket \alpha \rrbracket^M_g = g(\alpha)$

(4.45) If $\alpha$ is a member the set of well-formed expressions of type $<a, b>$ and $\beta$ is a member the set of well-formed expressions of type $a$, then $\llbracket \alpha(\beta) \rrbracket^M_g = \llbracket \alpha \rrbracket^M_g(\llbracket \beta \rrbracket^M_g)$

Definitions (4.46) and (4.47) give rules for the interpretation of the logical constants $\land$ and $\lor$ in the fragment.

(4.46) If $\phi, \psi \in$ the set of well-formed expressions of type $t$, then $\llbracket \phi \land \psi \rrbracket^M_g = 1$ iff $\llbracket \phi \rrbracket^M_g = 1$ and $\llbracket \psi \rrbracket^M_g = 1$

(4.47) If $\phi, \psi \in$ the set of well-formed expressions of type $t$, then $\llbracket \phi \lor \psi \rrbracket^M_g = 1$ iff $\llbracket \phi \rrbracket^M_g = 1$ or $\llbracket \psi \rrbracket^M_g = 1$ or both $\llbracket \phi \rrbracket^M_g = 1$ and $\llbracket \psi \rrbracket^M_g = 1$

(4.48) If $\phi \in$ the set of well-formed expressions of type $t$, and $u$ is a variable ranging over intervals, then $\llbracket \exists u \phi \rrbracket^M_g = 1$ iff for some interval $i$ in $I$ $\llbracket \phi \rrbracket^{M, g}_{i/u} = 1$

Definitions (4.49) and (4.50) give rules for the interpretation of $be-at$ and $be-up-to$, respectively.

(4.49) If $x, y$ are variables of type $e$, then $\llbracket x be-at y \rrbracket^M_g = 1$ iff $\text{Loc}(x) = y$

(4.50) If $x, y$ are variables of type $e$, then $\llbracket x be-up-to y \rrbracket^M_g = 1$ iff $\text{Loc}(x) = \text{the perimeter of } y$

Below the definitions for BECOME and CAUSE are repeated.

(4.51) $[\text{BECOME } \phi]$ is true at interval $i$ iff (1) there is an interval $i'$ containing the initial bound of $i$ such that $\neg \phi$ is true at $i'$, (2) there is an interval $i''$ containing the final bound of $i$ such that $\phi$ is true at $i''$, and (3) there is no non-empty interval $j$ such that $j \subset i$ and conditions (1) and (2) hold for $j$ as well as $i$. (Dowty, 1979, p. 141)

(4.52) $[\phi \text{ CAUSE } \psi]$ is true iff (1) $\phi$ is a causal factor for $\psi$, and (2) for all other $\phi'$ such that $\phi'$ is also a causal factor for $\psi$, some $\neg \phi'$-world is as similar or more similar to the actual world than any $\neg \phi'$-world is.

And (4.53)–(4.54) define truth relative to model $M$.

(4.53) For any expression $\phi$ in the set of expressions of type $t$, $[\phi]^M = 1$ iff $[\phi]^{M, g} = 1$ for every value assignment $g$.

(4.54) For any expression $\phi$ in the set of expressions of type $t$, $[\phi]^M = 0$ iff $[\phi]^{M, g} = 0$ for every value assignment $g$. 
4.5.4 Sample Derivations

In §4.5.4 I show the categorial grammar trees and corresponding semantic translation derivations.

Derivation for (4.36)

This derivation is for (4.36), shown below as (4.55). It is a very simple sentence, requiring only two operations: the combination of the verb with the verbal person marker and the addition of Aorist aspect.

(4.55) έλθ-ον
έλθ-он
go.AOR-3p
“They went.”

Syntactic derivation for (4.36):

\[
\begin{align*}
\text{elth-: } & S'_{[AOR]}/N_{[AOR]} \\
\text{-on: } & N_{[3, PL, AOR]} \\
\text{FA} \\
\text{elthon: } & S'_{[AOR]} \\
\text{AOR} \\
\text{elthon: } & S \\
\end{align*}
\]

Table 4.6: Translation Derivation for (4.36)

<table>
<thead>
<tr>
<th>Translation</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. elth-</td>
<td>⇒ elth’</td>
</tr>
<tr>
<td>2. -on</td>
<td>⇒ they’</td>
</tr>
<tr>
<td>3. elthon</td>
<td>⇒ elth’(they’)</td>
</tr>
<tr>
<td>4. elthon (AOR)</td>
<td>⇒ λP. α, β. ∃∃i’ [i &lt; now ∧ i’ ⊂ i ∧ P(i’)] (elth’(they’))</td>
</tr>
<tr>
<td>5.</td>
<td>~ ∃∃i’ [i &lt; now ∧ i’ ⊂ i ∧ elth’(they’)(i’)]</td>
</tr>
</tbody>
</table>
Table 4.7: Truth Conditions for (4.36) Derivation

1. \([\text{elth'}][M, g = 1] \iff [\exists i < \text{now} \land i' \in i \land \text{elth'}(i')] [M, g = 1] \]
2. \([\exists i < \text{now} \land i' \in i \land \text{elth'}(i')] [M, g = 1] \iff \exists j \text{ s.t. } [\exists i < \text{now} \land i' \in i \land \text{elth'}(i')] [M, g = 1] \]
3. \([\exists i < \text{now} \land i' \in i \land \text{elth'}(i')] [M, g = 1] \iff \exists j \in I \text{ s.t. } [\exists i < \text{now} \land i' \in i \land \text{elth'}(i')] [M, g = 1] \]
4. \([\exists i < \text{now} \land i' \in i \land \text{elth'}(i')] [M, g = 1] \iff \exists j, j' \in I \text{ s.t. } [\exists i < \text{now} \land i' \in i \land \text{elth'}(i')] [M, g = 1] \]
5. \([\exists i < \text{now} \land i' \in i \land \text{elth'}(i')] [M, g = 1] \iff \exists j, j' \in I \text{ s.t. } [\exists i < \text{now} \land i' \in i \land \text{elth'}(i')] [M, g = 1] \]

The truth conditions in step 11 require that in order for (4.36) to be true, there are two intervals such that one interval is before the speech time (now); the other interval is a subinterval of the first; and ‘they go’ over the second interval.
Derivations involving eis- and erch-, for (4.37)

This syntactic and translation language derivation show compositionally how eis- combines with erch- and what meaning is contributed by the preverb. Note that in the final translation expression the CAUSE BECOME operators operate on an interval $i'$ which contains or equals the reference time $i$. This derivation is for (4.37), shown again below as (4.56).

(4.56) εἰσ-ἐρχ-εσθε
eis-erch-esthe
EIS-go.PRES-2p
“You are going in.”

Syntactic derivation for (4.37):

<table>
<thead>
<tr>
<th>Step</th>
<th>Translation</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>erch-</td>
<td>erch'</td>
</tr>
<tr>
<td>2</td>
<td>eis-</td>
<td>$\lambda P_{&lt;e, &lt;i, &gt;}(x e \text{ be-at } y e[i])$</td>
</tr>
<tr>
<td>3</td>
<td>eiserch-</td>
<td>$\lambda P_{&lt;e, &lt;i, &gt;}(x e \text{ be-at } y e[i])$ (erch')</td>
</tr>
<tr>
<td>4</td>
<td>-esthe</td>
<td>$\lambda x, i [erch'(x e[i])$ CAUSE [BECOME $x e \text{ be-at } y e[i])$]</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>$\lambda i$ [erch'(you')(i)] CAUSE [BECOME you' be-at $y e[i]$]</td>
</tr>
<tr>
<td>6</td>
<td>eiserchesthe</td>
<td>$\lambda x, i [erch'(x e[i])$ CAUSE [BECOME $x e \text{ be-at } y e[i])$ (you')]</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>$\lambda i [erch'(you')(i)]$ CAUSE [BECOME you' be-at $y e[i]$]</td>
</tr>
<tr>
<td>8</td>
<td>eiserchesthe (PRES)</td>
<td>$\lambda P_{&lt;e, &lt;i, &gt;}\exists i'[i \subseteq i' \land P(i')] [\lambda i [erch'(you')(i)]$ CAUSE [BECOME you' be-at $y e[i)]$])</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>$\exists i'[i \subseteq i' \land [erch'(you')(i')$ CAUSE [BECOME you' be-at $y e[i)]$])</td>
</tr>
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<td>10</td>
<td></td>
<td>$\exists i'[i \subseteq i' \land [erch'(you')(i')$ CAUSE [BECOME you' be-at $y e[i)]$])</td>
</tr>
</tbody>
</table>
Table 4.9: Truth Conditions for (4.37) Derivation

1. \([\text{eisercheste}]^{Mg} = 1 \iff [\exists \exists ! [i \subseteq i' \land \text{erch}(\text{you}'(i')) \text{ CAUSE } \text{BECOME you' be-at } y_e(i')]]^{Mg} = 1\) translation
2. \([\exists \exists ! [i \subseteq i' \land \text{erch}(\text{you}'(i')) \text{ CAUSE } \text{BECOME you' be-at } y_e(i')]]^{Mg} = 1 \iff \) for some \(j \in I\) there is some assignment function \(g^{i/i}\) such that \([\exists ! [i \subseteq i' \land \text{erch}(\text{you}'(i')) \text{ CAUSE } \text{BECOME you' be-at } y_e(i')]]^{Mg} = 1\) (4.48)
3. for some \(j \in I\) there is some assignment function \(g^{i/i}\) such that \([\exists ! [i \subseteq i' \land \text{erch}(\text{you}'(i')) \text{ CAUSE } \text{BECOME you' be-at } y_e(i')]]^{Mg} = 1 \iff \) for some \(j, j' \in I\) there is some assignment function \(g^{j/i, j'/i'}\) such that \([i \subseteq i' \land \text{erch}(\text{you}'(i')) \text{ CAUSE } \text{BECOME you' be-at } y_e(i')]]^{Mg} = 1\) (4.48), line 3
4. \([i \subseteq i' \land \text{erch}(\text{you}'(i')) \text{ CAUSE } \text{BECOME you' be-at } y_e(i')]]^{Mg} = 1 \iff [i \subseteq i']^{Mg} = 1 \text{ and } [\text{erch}(\text{you}'(i')) \text{ CAUSE } \text{BECOME you' be-at } y_e(i')]]^{Mg} = 1\) (4.46), line 3
5. \([i \subseteq i']^{Mg} = 1 \iff [\exists ! [i' \subseteq i'] \text{ CAUSE } \text{BECOME you' be-at } y_e(i')]]^{Mg} = 1\) (4.45), line 4
6. \([\exists ! [i' \subseteq i'] \text{ CAUSE } \text{BECOME you' be-at } y_e(i')]]^{Mg} = 1 \iff [\exists ! [i' \subseteq i'] \text{ CAUSE } \text{BECOME you' be-at } y_e(i')]]^{Mg} = 1\) (4.45), line 4
7. \([\text{erch}(\text{you}'(i')) \text{ CAUSE } \text{BECOME you' be-at } y_e(i')]]^{Mg} = 1 \iff [\exists ! [i' \subseteq i'] \text{ CAUSE } \text{BECOME you' be-at } y_e(i')]]^{Mg} = 1\) (4.45), line 7
8. \([\text{erch}(\text{you}'(i')) \text{ CAUSE } \text{BECOME you' be-at } y_e(i')]]^{Mg} = 1 \iff [\exists ! [i' \subseteq i'] \text{ CAUSE } \text{BECOME you' be-at } y_e(i')]]^{Mg} = 1\) (4.45), line 7
9. \([\text{BECOME you' be-at } y_e(i')]]^{Mg} = 1 \iff [\exists ! [i' \subseteq i'] \text{ CAUSE } \text{BECOME you' be-at } y_e(i')]]^{Mg} = 1\) (4.45), line 9
10. \([\text{your' be-at } y_e(i')]]^{Mg} = 1 \iff [\exists ! [i' \subseteq i'] \text{ CAUSE } \text{BECOME you' be-at } y_e(i')]]^{Mg} = 1\) (4.45), line 9
11. \([\text{be-at } y_e(i')]]^{Mg} = 1 \iff [\exists ! [i' \subseteq i'] \text{ CAUSE } \text{BECOME you' be-at } y_e(i')]]^{Mg} = 1\) (4.45), line 9
12. \([i' \subseteq i']^{Mg} = 1 \iff g^{i,i'}(i') = 1\) (4.44), line 9
13. \[\text{BECOME} \; [M, g^{ij}, \forall f] (\text{[you’ be-at y}_c]) [M, g^{ij}, \forall f] (i’)] = 1 \iff F(\text{BECOME}) (F(\text{be-at})(g^{ij}, \forall f (you’))(g^{ij}, \forall f (y}_c))) = 1 \] (4.43) x2, (4.44), lines 11,12 transitivity, lines 3,6,14

14. \[\text{CAUSE} \; [M, g^{ij}, \forall f] (\text{[erch’(you’)(i’)] [BECOME you’ be-at y}_c][i’)] [M, g^{ij}, \forall f] (i’)) = 1 \iff F(\text{CAUSE}) (F(\text{erch’})(g^{ij}, \forall f (you’))(g^{ij}, \forall f (i’)))(F(\text{BECOME}) (F(\text{be-at})(g^{ij}, \forall f (you’))(g^{ij}, \forall f (y}_c))) = 1 \] (4.43), lines 7,8,13

15. \[\exists i’ [i’ \subseteq i’’ \land \text{[erch’(you’)(i’’)] [CAUSE [BECOME you’ be-at y}_c][i’’]] [M, g] = 1 \iff \text{for some } j, j’ \text{ in } I \text{ there is some assignment function } g^{ij}, \forall f \text{ such that } F(\subseteq)(g^{ij}, \forall f (i’))(g^{ij}, \forall f (i’’)) = 1 \text{ and } F(\text{CAUSE}) (F(\text{erch’})(g^{ij}, \forall f (you’))(g^{ij}, \forall f (i’’)))(F(\text{BECOME}) (F(\text{be-at})(g^{ij}, \forall f (you’))(g^{ij}, \forall f (y}_c))) = 1 \] (4.43), lines 7,8,13

The final step in the derivation for the truth conditions for (4.37) states that eiserchesthe is true if and only if there is one interval (let’s call it interval j) and another interval (let’s call it interval k) such that the interval j is a subinterval of interval k and the addressee’s going over interval k is the primary cause of the addressee coming to be at a contextually provided location at the final bound of the interval k. The truth conditions require that the subject come to be at a contextually assigned location at the end of the event time (the interval k) which the subject was not at at the beginning of the event time.

The telicity of this sentence rests upon the formula [BECOME you’ be-at y}_c][i’’], which says that [BECOME you’ be-at y}_c] is true at an interval denoted by i’’. According to the definition of telicity in (4.3), [BECOME you’ be-at y}_c] should be true at interval i’’ but false at subintervals of i’’. According to the definition of the BECOME operator in (4.13), [BECOME you’ be-at y}_c] is true at interval i’’ iff (1) \(\neg[you’ be-at y}_c] is true at an interval containing the initial bound of i’’ and (2) [you’ be-at y}_c] is true at an interval containing the final bound of [you’ be-at y}_c] and (3) there is no subinterval of i’’ such that (1) and (2) are true. Because condition (3) on the truth of [BECOME you’ be-at y}_c] with respect to i’’ requires that at no subinterval of i’’ the formula is true, the formula is telic.
Derivation involving *erch* - and *eis*, for (4.38)

This last derivation— for (4.38), shown below as (4.57)—demonstrates how un-prefixed *erch* - operates in a sentence with *eis* the preposition. Note that the translation definition for preposition *eis* is different in that it has a disjunct, requiring that the subject be either at a location or at the perimeter of a location at the end of the event time (interval $i'$ here).

(4.57) \[ \text{έρχ}-\text{εται} \quad \text{eis} \quad \tauην \quad \text{Ἰουδαίαν...} \]

“He is going into Judea.”

Syntactic derivation for (4.38):

I refer the reader to Table 4.9 for a model of how the truth conditions for step 13 in Table 4.10.

The difference between the formula in step 13 of Table 4.10 and that in step 10 of Table 4.8 is that the former, when interpreted semantically, will require that the subject be *either* located within a location or located at the perimeter of that location. In the latter, however, the subject must be at the location.
Table 4.10: Translation Derivation for (4.38)

<table>
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<th>Translation</th>
<th>Operation</th>
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<tr>
<td>1. eis</td>
<td>[\lambda y_\epsilon\lambda y\lambda\iota\lambda\iota : \langle\epsilon, \langle\iota, \iota\rangle, \iota \rangle \mid \text{CAUSE} [\text{BECOME } x_\epsilon \text{ be-at } y_\epsilon \lor x_\epsilon \text{ be-up-to } y_\epsilon] ]</td>
</tr>
<tr>
<td>2. tén-loudaian</td>
<td>tén-loudaian′</td>
</tr>
<tr>
<td>3. eis tén-loudaian</td>
<td>[\lambda x_\epsilon\lambda y_\epsilon\lambda\iota\lambda\iota : \langle\epsilon, \langle\iota, \iota\rangle, \iota \rangle \mid \text{CAUSE} [\text{BECOME } x_\epsilon \text{ be-at } y_\epsilon \lor x_\epsilon \text{ be-up-to } y_\epsilon] ]</td>
</tr>
<tr>
<td>4. [\lambda x_\epsilon\lambda y_\epsilon\lambda\iota\lambda\iota : \langle\epsilon, \langle\iota, \iota\rangle, \iota \rangle \mid \text{CAUSE} [\text{BECOME } x_\epsilon \text{ be-at } y_\epsilon \lor x_\epsilon \text{ be-up-to } y_\epsilon] ]</td>
<td>beta reduction</td>
</tr>
<tr>
<td>5. erch-</td>
<td>erch′</td>
</tr>
<tr>
<td>6. erch- eis tén-loudaian</td>
<td>[\lambda x_\epsilon\lambda y_\epsilon\lambda\iota\lambda\iota : \langle\epsilon, \langle\iota, \iota\rangle, \iota \rangle \mid \text{CAUSE} [\text{BECOME } x_\epsilon \text{ be-at } y_\epsilon \lor x_\epsilon \text{ be-up-to } y_\epsilon] ]</td>
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<tr>
<td>7. [\lambda x_\epsilon\lambda y_\epsilon\lambda\iota\lambda\iota : \langle\epsilon, \langle\iota, \iota\rangle, \iota \rangle \mid \text{CAUSE} [\text{BECOME } x_\epsilon \text{ be-at } y_\epsilon \lor x_\epsilon \text{ be-up-to } y_\epsilon] ]</td>
<td>beta reduction</td>
</tr>
<tr>
<td>8. -etai</td>
<td>3s′</td>
</tr>
<tr>
<td>9. erchetai eis tén-loudaian</td>
<td>[\lambda x_\epsilon\lambda y_\epsilon\lambda\iota\lambda\iota : \langle\epsilon, \langle\iota, \iota\rangle, \iota \rangle \mid \text{CAUSE} [\text{BECOME } x_\epsilon \text{ be-at } y_\epsilon \lor x_\epsilon \text{ be-up-to } y_\epsilon] ]</td>
</tr>
<tr>
<td>10. [\lambda x_\epsilon\lambda y_\epsilon\lambda\iota\lambda\iota : \langle\epsilon, \langle\iota, \iota\rangle, \iota \rangle \mid \text{CAUSE} [\text{BECOME } x_\epsilon \text{ be-at } y_\epsilon \lor x_\epsilon \text{ be-up-to } y_\epsilon] ]</td>
<td>beta reduction</td>
</tr>
<tr>
<td>11. erchetai eis tén-loudaian (PRES)</td>
<td>[\lambda x_\epsilon\lambda y_\epsilon\lambda\iota\lambda\iota : \langle\epsilon, \langle\iota, \iota\rangle, \iota \rangle \mid \text{CAUSE} [\text{BECOME } x_\epsilon \text{ be-at } y_\epsilon \lor x_\epsilon \text{ be-up-to } y_\epsilon] ]</td>
</tr>
<tr>
<td>12. [\lambda x_\epsilon\lambda y_\epsilon\lambda\iota\lambda\iota : \langle\epsilon, \langle\iota, \iota\rangle, \iota \rangle \mid \text{CAUSE} [\text{BECOME } x_\epsilon \text{ be-at } y_\epsilon \lor x_\epsilon \text{ be-up-to } y_\epsilon] ]</td>
<td>beta reduction</td>
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<tr>
<td>13. [\lambda x_\epsilon\lambda y_\epsilon\lambda\iota\lambda\iota : \langle\epsilon, \langle\iota, \iota\rangle, \iota \rangle \mid \text{CAUSE} [\text{BECOME } x_\epsilon \text{ be-at } y_\epsilon \lor x_\epsilon \text{ be-up-to } y_\epsilon] ]</td>
<td>beta-reduction</td>
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</tbody>
</table>

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4.6 Conclusion

Both the preverb eis- and the preposition eis turn an otherwise atelic proposition to a telic proposition. I analyze them both in the translation language as containing two operators: CAUSE and BECOME. Both eis- and eis take an activity predicate like erch- and require that the activity result in the state of being in or at the perimeter of a specific location.
CHAPTER 5

CONCLUSION

5.1 Conclusions

This study argues that the preverb *eis-* causes the verb *erchomai*, an activity verb, to become a telic verb when *eis-* attaches to it. This conclusion was reached after careful study of all instances of *erchomai* and *eiserchomai* in the Greek New Testament. The study shows that while “intuiting” the lexical aspect of verbs might be necessary as a last resort or as supporting evidence of a verb’s lexical aspect, a range of aktionsart tests which are more rigorous can be used to study lexical aspect in texts. Application of the Imperfective Paradox to texts proves fruitful along with various interpretations which arise from specific combinations of lexical aspect and grammatical aspect, such as the habitual interpretation which can arise from dynamic verbs in an imperfective aspect. The test of whether *erchomai* and *eiserchomai* require a goal also gave insight into not only the (a)telicity of the two verbs, but also into the reliability of the test, as it confirmed the lexical aspect which was determined by the more textually based tests (the Imperfective Paradox, the interpretations of verbs in various aspects). Dowty’s 1979 aspect calculus formalizes the analysis of *eis-* and *erchomai* well. This shows how one might formalize the meaning of a preverb like *eis-* truth-conditionally.

5.2 Future Research

There are several areas rich with potential for future research that this thesis touches upon. The first area is to study the effect that *eis-* has on verbs other than *erchomai*. *Eis-* works compositionally with *erchomai*, but does it also work compositionally with other verbs? Other preverbs do not contribute meaning to the verbs they attach to in any systematic way. If after studying the meaning which *eis-* contributes to other verbs, one finds that *eis-* systematically telicizes verbs, then *eis-* itself could become a test for lexical aspect—if a verb
can be attached with *eis-*

Along a similar vein, another area of future research is how *erchomai* is affected by preverbs other than *eis*-. Since I have already done a complete study of *erchomai* in the New Testament, one would only have to research *erchomai* prefixed with another preverb in order to make an analysis for that preverb and *erchomai*. Possible candidates are *dierchomai* ‘go through,’ *proserchomai* ‘go/come to,’ and *sunerchomai* ‘go with.’

A third possible future area of research would be to develop a deeper understanding of how adverbials test for aktionsart in Koine. Genitive, dative, and accusative time constructions could be equivalent to English *in*-adverbials and *for*-adverbials, but only an in-depth study could reveal the extent of the similarity. In addition, adverbs like *tachu* ‘soon,’ *tote* ‘then,’ *euthus* ‘immediately,’ *pollakis* ‘many times,’ *êdê* ‘already,’ and *palin* ‘again’ could either affect the aktionsart of a proposition or reveal what the aktionsart of a proposition is. Again, an in-depth study of the adverbs could develop them into an aktionsart test.

Finally, research in the reliability of translation would be helpful. The primary concern regarding Fanning’s methods are whether he can accurately estimate the meaning of Greek verbs with regard to their lexical aspect. If one were to study the accuracy with which lexical aspect is translated in dictionaries and texts, and it turns out a verb’s lexical aspect is almost always or always preserved in translation, then the test for lexical aspect using dictionaries or translations might prove more reliable.
APPENDIX A

OCCURRENCES OF ERCHOMAI IN THE NEW TESTAMENT

Abbreviations

Mt ......................... Gospel of Matthew
Mk ......................... Gospel of Mark
Lk ........................... Gospel of Luke
Jn ........................... Gospel of John
Ac .......................... Acts of the Apostles
Ro .......................... Epistle to the Romans
1Co ........................ First Epistle to the Corinthians
2Co ........................ Second Epistle to the Corinthians
Ga .......................... Epistle to the Galatians
Ep .......................... Epistle to the Ephesians
Php ........................ Epistle to the Philippians
Col ........................ Epistle to the Colossians
1Th ........................ First Epistle to the Thessalonians
2Th ........................ Second Epistle to the Thessalonians
1Tm ........................ First Epistle to Timothy
2Tm ........................ Second Epistle to Timothy
Ti ........................... Epistle to Titus
Heb ........................ Epistle to the Hebrews
1Jn ........................ First Epistle of John
2Jn ........................ Second Epistle of John
3Jn ........................ Third Epistle of John
Ju ........................... Epistle of Jude
R ............................. Book of Revelation/Apocalypse of John

Occurrences of erchomai

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## APPENDIX B

### OCCURRENCES OF *EISERCHOMAI*

### IN THE NEW TESTAMENT

#### Abbreviations

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</tr>
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<td>Ro</td>
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<td>Heb</td>
<td>Epistle to the Hebrews</td>
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<td>Ja</td>
<td>Epistle of James</td>
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<tr>
<td>R</td>
<td>Book of Revelation/Apocalypse of John</td>
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#### Occurrences of *eiserchomai*

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APPENDIX C

ASPECTUALLY INDETERMINATE SENTENCES REMOVED FROM TABLES (3.1) and (3.2)

A number of examples from the New Testament lacked sufficient contextual evidence to make a decision with regard to at what time the events they denoted occurred or with regard to how they are aspectually interpreted (continuous, punctual, habitual, etc.). I discuss these because I have removed instances of the verbs which are unclear from Tables (3.2) and (3.1). I have removed them because they are unhelpful in a discussion of the tense/aspect or lack thereof of the Present form.

Example (C.1) refers to a past time but is consistent with both a continuous and a punctual reading. The scenario here is that a man named Simon Peter is following another man. The “other man” (who is nameless in the text) reaches their destination (Jesus’ tomb) first and stops and waits. Simon Peter catches up and enters the tomb ahead of the other man.

(C.1) ἔρχ-εται οὖν καὶ Σίμων Πέτρος ἀκολουθών αὐτῷ καὶ εἰσ-ῆλθεν εἰς τὸ μνημεῖον

“Then Simon Peter came, following him, and went into the tomb.” (John 20:6, ESV)

In one reading of the sentence, Simon Peter’s ‘coming’ is in tandem with the ‘following’, whereas the entrance into the tomb is punctual. But erchetai in the sentence could also have a punctual meaning, in which case the sentence would be interpreted, “Simon Peter was following someone, which included the act of coming upon the tomb and the act of entering into the tomb.” Because the Present form has exhibited both perfective and
imperfective aspects, it is difficult to determine how exactly *erchomai* should be interpreted in this sentence, and thus difficult to categorize in my tables at the end of this section.

Example (C.2) shows a participle of *erchomai* in what is called the ‘attributive position’–a syntactic position in which the participle follows an article and is used adjectivally. The Greek phrase *ta erchomena ep’ auton*–literally “the things coming on/upon him”–is translated ‘all that would happen to him.’

(C.2) Ἰησοῦς οὖν εἰδὼς πάντα τὰ ἐρχ-όμενα ἐπ’ αὐτὸν
Jesus then know.PART all.NEU the.NEU *come.PRES-PART.NEU* on him
ἐξῆλθ-εν καὶ λέγ-ει αὐτοῖς
go.out.AOR-3s and say.PRES-3s 3p.DAT...
“Then Jesus, knowing all that would happen to him, *came* forward and said to them...” (John 18:4, ESV)

It is unclear as to whether the ‘things’ are actually in the process of coming to him, or the ‘things’ will arrive at some point in the future. Since the aspectual and temporal reference is unclear, I exclude examples like these from my final tabulations for the Present form.

Example (C.3) illustrates a relatively common construction. That construction is the use of *erchomai* in its Present form to describe some time in the future.

(C.3) ὅτι ἐρχ-εται ὥρα ἐν ἧ ἡ πάντες οἱ ἐν τοῖς μνημείοις ἀκούσουν τῆς φωνῆς αὐτοῦ
...for *come.PRES-3s* hour in which all the in the tombs hear the voice 3s.GEN
“...for an hour is coming when all who are in the tombs will hear his voice” (John 5:28, ESV)

The phrase is translated ‘an hour is coming’ or ‘days will come’ (in cases other than (C.3)). As in (C.2), the aspectual and temporal reference is unclear. Given the fact that the Present form denotes events in both the past, present, and future, constructions like this could be denoting events in either the future or present. If they denote an event in the future, then the construction describes the future coming-into-existence of specified hour–or the future event of our coming upon this specified hour. If the constructions denote an event in the present, then they describe a situation in which the specified hour is in the process of approaching as time ticks by–or perhaps as we are in the process of approaching that specified hour. Either way, the construction seems idiomatic, as it is used very specifically in the context of an approaching ‘hour’ or approaching ‘days,’ and
there is insufficient evidence to form a conclusive opinion about what their temporal and aspectual reference is. I have not included a number of similar instances of the verb in final tables on the Present.

It is also difficult to determine the time reference for sentences such as example (C.4). In this example, which is not as idiomatic as that in (C.3), it is unclear as to whether the event is continuous in the present or punctual in the future.

(C.4) λέγει αὐτοῖς Σίμων Πέτρος ἀλλεύειν λέγουσιν αὐτῷ
   leg-ei autois Simôn Petros, hupag-ō halieu-ein. leg-ousin autōi,
   say.PRES-3s 3p.DAT Simon Peter, go.PRES-1s fish-INF. say.PRES-3p 3s.DAT,
   ἐρχ-όμεθα καὶ ἡμεῖς σὺν σοί
   erch-ometha kai hēmais sun soi.

“Simon Peter said to them, ‘I am going fishing.’ They said to him, ‘We will go with you.’ ” (John 21:3, ESV)

There is no evidence to show whether Simon Peter’s friends are in the process of going with him as he says this or they are merely stating intention to go later.

Because of the lack of evidence for what the temporal and aspectual reference in examples (C.2), (C.3), and (C.4) is, I do not include sentences like these in my total counts for temporal and aspectual reference with regard to the Present form in §3.1.1 and §3.1.1. However, I do include them in total counts for occurrences of the Present form in other sections in Chapter 3. This explains any discrepancies between total instances of the Present form and the sum of past-referencing, present-referencing, and future-referencing instances of the Present form.
LIST OF REFERENCES


