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of Ancient Greek
Language *and*
Linguistics

PREVIEW



Edited by

Georgios K. Giannakis

BRILL

Encyclopedia of Ancient Greek Language and Linguistics

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Abstract Nouns

Abstract nouns (ANs) are a very heterogeneous and diverse class. Any semantic definition of such a class cannot describe it in its totality (cf. Flaux et al. 1996). However, ANs can be described by means of the functional (semantic and pragmatic) criterion of reference, i.e., the property of linguistic signs to refer to objects in the extralinguistic world. In comparison with concrete nouns (such as ‘cat’ or ‘house’), they have a lower degree of reference. Even if an extensive definition of ANs cannot be given at any other level, the following sections will describe the category in Ancient Greek (Gk.) from the perspective of the linguistic levels which show its most significant facets, i.e., mainly morphology, but also syntax.

1. MORPHOLOGICAL MARKEDNESS

Because of their low referentiality, ANs are considered less typical members of the noun category (compared to concrete nouns, which are highly referential). According to typological predictions, we should expect these nouns to be marked at some level by specific features that underline their peculiar position in the noun class (cf. Croft 1991:67). For instance, at a morphological level such forms should contain morphological markers, e.g. suffixes, that carry specific functions (→ Derivational Morphology). In Gk., a language with extremely rich morphology, this is certainly true at least for part of the category, i.e., event/state/process nominals. Such nouns are semantically complex because their semantic-pragmatic function is not to refer to objects (‘reference’, which is normally a property of nouns) but to predicate something (‘predication’, which is normally a property of verbs; → Predicative Constituents). Hence their morphological complexity matches such kinds of markedness.

In most cases, as in (1)–(4) below, ANs are deverbal nouns (DNs) that nominalize the event/state/process encoded by the verbal base (the root or the stem) from which they are derived by means of suffixes. Suffixation is indeed the most frequent morphological device for forming DNs in Gk.

- (1) (*hē*) *kri-sis* ‘separating, decision’ < *kri-* ‘to separate, decide’
- (2) (*tò*) *boul-ē-ma* ‘purpose, will’ < *boul-* ‘to want, wish’
- (3) (*ho*) *ula-g-mós* ‘barking’ < *ula-* ‘to bark’
- (4) (*hē*) *orkhē-s-tús* ‘(the) dance, art of dancing’ < *orkhe-* ‘to dance’

In all these cases it is quite simple to recognize the suffixes (*-sis*, *-ma*, *-mós* and *-tús*, respectively) as separate elements which nominalize the predicative content of the verbal bases (*kri-*, *boul-*, *ula-* and *orkhe-*, with phonetic enlargements in the latter three cases). See also Lallot (2008) for the idea of the non-simple/constructed word (“mot non simple/mot construit”) in Gk.

[This article has been shortened for the preview.]

GERMANA OLGA CIVILLERI

Accommodation

Language accommodation (LA) is the tendency of a speaker to modify linguistic behavior according to interlocutor characteristics. “Language Accommodation Theory” was developed in the 1970s (Giles 1979) in the area of social psychology and is based on the assumption that speakers are motivated to adjust their speech style, or accommodate it, to express their attitude to others. The motivation for accommodation lies in the (unconscious?) desire of speakers to associate themselves with (positive LA), or keep themselves apart from (negative LA), given social groups. In order to have one of the two typologies of LA, speakers should possess different languages and/or social and regional dialects (→ Dialects, Classification Of). In order to predict instances of LA, a model based on the interaction of linguistic (structural differences between dialects) and sociolinguistic (degree of reciprocal prestige of interlocutors) factors was developed, namely the “ethnic boundary model” (Giles 1979). The model suggests that structural distance (→ Structural Linguistics And

Greek) and sociolinguistic prestige determine the degree of LA.

An example of positive LA is present in an archaic dedication from the Peloponnese (Cartledge 2000) in which two different dialects, namely → Arcadian and → Laconian, belonging to distinct groups, combine in an unexpected manner. Here, the use of the proper name of Poseidon (→ Theonyms) in Arcadian (*Posoidâni*) can be understood as chosen by the author of the dedication—maybe a powerful person from Laconian society—to address the people of Tegea, in order to testify to his political power in a period during which Sparta was interacting with some Arcadian cities (Consani 2012). On the other hand, the chancery of the City of Larisa's meticulous separation of Philip V's decrees written in Koine (→ Koiné, Features Of) from the city law decrees in the local dialect, and the translation into the dialect of the Macedonian sovereign's decrees (*IG IX 2, 517*, end 3rd c. BCE), can be interpreted as negative LA in that the dialect is heralded as a symbol of city independence from external political power. A similar tendency indicating distance with respect to the Koine, but with greater variety in both local and regional linguistic forms, is exhibited by another inscription from the early 2nd c. BCE (Tziafalias-Helly 2004–2005); in this example local forms from Larisa's dialect (*-nthi/-nthein* third pl. active/passive) appear together with → Thessalian (*-men* inf. ending added to thematic verbs) and Northwestern items (*toi* nom. plur.). A further example of the problematic nature of the differences between spoken and literary language is represented by the use of different dialects in literary works, particularly in plays which are characterized by greater realism compared with other literary genres, such as the Old Comedy (→ Comedy, Diction Of). The sociolinguistic analysis of Aristophanes' plays conducted by Colvin (1999) reveals an unexpected absence of LA phenomena in the language of the characters from → Boeotia and Acarnania, whose dialects were perceived as quite different from the → Attic dialect. By reproducing the characters' use of dialect, without any LA, the author achieved humor and realism: this could be a strictly literary strategy. But, according to the "ethnic boundary model", the absence of LA could also be due to the structural and sociolinguistic distance (→ Ancient Greek Sociolinguistics

And Dialectology) between the dialect of Athens and that of the → Doric area.

CARLO CONSANI

Activa Tantum

Activa tantum ('active only') are verbs that lack a → middle (→ mediopassive) and a passive voice (→ Passive (syntax), → Passive (morphology)) in the present, aorist and perfect stems. *Activa tantum* are typically intransitive (→ Transitivity). Examples are: *áēmi* 'blow', *baínō* 'come, go', *eīmi* 'go', *eimí* 'be', *emēō* 'vomit', *ethélō* 'want, be prepared', *geláō* 'laugh', *gēthēō* 'rejoice', *hērpō* 'creep', *khézō* 'ease oneself', *ménō* 'stay', *noséō* 'be ill', *nostéō* 'return', *omikhéō* 'urinate', *ózō* 'smell', *pēdáō* 'jump', *phéugō* 'flee', *piptō* 'fall', *rhéō* 'flow', *steikhō* 'go', *stílbō* 'shine, glisten', *tréō* 'tremble', *zō* 'live'. *Activa tantum* often have a middle future form, as e.g. *gelásomai* 'I will laugh', *pēdésomai* 'I will jump' (Attic). Schwyzler and Debrunner also count as *activa tantum* verbs of which middle forms occur with a passive meaning (but not with (in)direct reflexive, reciprocal or intransitive meaning), e.g. verbs of eating and drinking such as *bibrōskō* 'eat', *dáknō* 'bite', *esthíō* 'eat', *pínō* 'drink', *trógō* 'gnaw'. For *activa tantum*, see further Schwyzler and Debrunner (II:225–226), Rijksbaron (2006:155). For the occurrence of the middle voice in the future stem, → Voice.

Semantically, *activa tantum* tend to be stative verbs, verbs of motion or verbs denoting physical (bodily) or mental processes. Many *activa tantum* refer to events in which the subject is physically or mentally affected as a result of the event. This can be explained by the semantic unmarkedness of the active voice, i.e., the active voice is neutral with respect to the semantic feature of subject-affectedness. For the semantics of *activa tantum* of bodily motion, see Allan (2003:243–244).

RUTGER ALLAN

Active

The verbal grammatical category of voice pertains to the relationship between syntactic roles and semantic roles (agent, patient and experiencer). Ancient Greek has three morphologically distinct

voice categories: active voice, middle voice, and passive voice (→ Voice). The act. voice is marked by act. endings: *-ō, -eis, -ei*, etc. (→ Diathesis/Voice (Morphology Of)). The act. voice can be viewed as the unmarked member in a privative opposition (García Gual 1970:11–12, 29–32, Ruipérez 1988, Duhoux 2000:114, Allan 2003:19–30), i.e., the act. form is neutral with respect to the semantic feature of subject-affectedness: it does not signal the *absence* of subject-affectedness.

Act. verbs can be transitive and intransitive (→ Transitivity). In the prototypical act. transitive event, the subject is a visible, volitional, controlling and non-affected agent while the object is a visible, result-registering patient. Prototypical transitive clauses are marked with the act. voice, e.g. *ho país* NOM *anéōixe* ACT *tèn thúran* ACC ‘the child opened the door’. In prototypical transitive clauses, the subject is marked by the nominative case, while the object is put in the accusative. The act. voice is also used to code intransitive events, such as *apothnēiskō* ‘die’, *baínō* ‘go, step’, *basileúō* ‘be king’, *geláō* ‘laugh’, *eimí* ‘be’, *eími* ‘go’, *eruthraínō* ‘be red’, *ménō* ‘stay’, *ózō* ‘smell’, *katheúdō* ‘sleep’, *píptō* ‘fall’, *siōpáō* ‘be silent’, *zō* ‘live’. Many of these verbs designate states (often derived from nouns or adjectives). A large number of these act. intransitive verbs occur only in the act. voice (→ Activa Tantum).

Numerous act. verbs can be used both transitively and intransitively (so-called labile verbs), e.g. *ágō* ‘lead’ (trans.): ‘march’ (intr.), *elaúnō* ‘drive’ (trans.): ‘drive, ride, proceed’ (intr.). More examples in Kühner and Gerth (I:91–96), Smyth (1956:389). In some cases, the intransitive use is the result of an ellipsis of the typical object. An example is the verb *elaúnō* which can be used transitively *elaúnō híppon* ‘I ride a horse’ as well as intransitively (with ellipsis of the object) *elaúnō* ‘ride’.

[This article has been shortened for the preview.]

RUTGER ALLAN

Adjectives (Morphological Aspects Of)

On the basis of two criteria Ancient Greek adjectives fall into four groups:

- 1) They have either (a) three (masc., fem, neut.) or (b) two (masc./fem., neut.) inflections; simply speaking, they are ‘of three endings’ or ‘of two endings’;
- 2) Masc. and neut. are inflected as either (c) 2nd declension stems (*o*-stems) or (d) 3rd declension stems.

Feminines, if there is a separate form, are always inflected as 1st declension stems; however, their types differ according to whether the masc. (and neut.) forms follow the 2nd or 3rd declension. Beside 2nd declension masc./neut. *o*-stems, Att. fem. forms have long *ā* (after *e, i, r*: → Attic Reversion) or *ē* in the nom. and acc. (and gen. and dat.) sing.; beside 3rd declension masc./neut. stems, they have short *ǎ* in the nom. and acc. sing. (and long *ā* [after *e, i, r*] or *ē* in the gen. and dat. sing.). Attic *ē* beside *ā* is an innovation of Attic-Ionic; → Ionic went even further than Attic, with *ē* also after *e, i, r*. The other dialects have kept original *ā*. As a rule, simple adjectives are of three endings, and compound adjectives of two endings.

Examples (nom. + gen. sing.):

(a)+(c) masc. *dikaíos, dikaíou*—fem. *dikaía, dikaías*—neut. *dikaíon, dikaíou* ‘just’

masc. *sophós, sophoû*—fem. *sophé, sophês*—neut. *sophón, sophoû* ‘wise’

(b)+(c) masc./fem. *ádikos, adíkou*—neut. *ádikon, adíkou* ‘unjust’

(a)+(d) masc. *takhús, takhéos*—fem. *takheîā, takheîās*—neut. *takhú, takhéos* ‘swift’

masc. *mélās, mélanos*—fem. *mélainā, melainēs*—neut. *mélan, mélanos* ‘dark, black’

(b)+(d) masc./fem. *eugenés, eugenoûs*—neut. *eugenés, eugenoûs* ‘noble’.

In → Proto-Greek, feminine forms were derived from masculine stems by means of a feminine suffix: **h₂*

or (b) IE/Proto-Gk **ih₂* (becoming *iā/yǎ*) after consonants. Thus from masc. *né(w)o-s* ‘new’, fem. **néwo-h₂* > **néwah₂* > *nēā* was formed; and from masc. *mélās*, stem *mélan-*, we get fem. **mélan-yǎ* > *mélainā* (with metathesis *any* > *ayn* [= *ain*]) (→ Indo-European Linguistic Background).

[This article has been shortened for the preview.]

FRITS WAANDERS

Anaptyxis

Anaptyxis or vowel → epenthesis is the insertion of a → vowel between two consonants. Cross-linguistically, anaptyctic vowels (also referred to by the Sanskrit term as *svarabhakti* vowels) develop between clusters of stop + sonorant (Skt. *ratna* ‘jewel’ > Pali *ratana*), sonorant + stop (Lat. *argento* ‘silver’ > Osc. *aragetud*) and sibilant + stop (Eng. *speed* > Korean [sip^hidi]). Dissimilatory in nature, vowel epenthesis is due to a tendency to broaden the perceptual and articulatory distance between two segments (Ohala 1992, Hall 2011). Like the related phenomena of prothesis and paragoge, anaptyxis is sourced from hyper-articulated forms of speech (Blevins 2004).

Some Anc. Gk. prehistoric changes are due to sporadic anaptyxis: **septmo-* (cf. Lat. *septimus*) > Att.-Ion. *hébdomos*, Dor. *hébdemos* ‘seventh (masc.)’. An epenthetic *-i-* has been used to explain several developments (Vine 1999): **k^wtures* > Lesb. *písures* ‘four’, **sp-nó-* > **sipnó-* > *ipnós* ‘oven’, **pt-n(e)-h₂-* > **ptnā-* > *pítnēmi* ‘spread out’, **skd-n(e)-h₂-* > **skdnā-* > *skídnēmi* ‘disperse’ (but a morphological innovation cannot be ruled out in the last two examples). The prehistoric evolution of inherited syllabic sonorants (→ Syllabic Consonants) is also anaptyctic:

IE * *C_rC* > Gk. *CarC* or *CraC*

IE * *C_rHC* > **CrVHC* or **CVrHC* > Gk. *CrV̄C* or *CVrVC*

IE * *C_lC* > Gk. *CalC* or *ClaC*

IE * *C_lHC* > **ClVHC* or **CVlHC* > Gk. *ClV̄C* or *CVlVC* etc.

(→ syllabic consonants and → laryngeals for examples).

Evidence for word-initial and word-internal anaptyxis within the history of Gk. is marginal and unsystematic: PN *Baránkhos* = *Bránkhos* (Hippon. fr. 105.6 West), *manasios* = *mnasíous* ‘corn-measure (acc. pl.)’ (Olympia, 5th c. BCE), Att. *Heremês* = *Hermês* ‘Hermes’, *Askalapiós* = *Asklépiós* ‘Asclepius’ (Thessalia, 3rd c. BCE), place name *Salamóna* = *Salmónē* (Olympia, 5th c. BCE). Some of these examples may be due to anticipatory or perseverative graphic repetition of the vowel. Arguably, Hom. *pélethron* is a variant of *pléthron* ‘measure of length of 100 feet’ with epenthetic *-e-*. The anaptyctic vowel mirrors the vocalic nucleus of the syllable con-

taining the resonant. Deviations from this norm are extremely rare and may be due to spelling mistakes: *peristiraphésthō* = Att. *peristrephésthō* ‘whirl round (3rd sg. pr. impv. med./pass.)’ (Selinous, 475–450 BCE), *ethinôn* for *ethnôn* ‘race (gen. pl.)’ (papyrus, 3rd c. BCE), *galoios* for *gloiós* ‘thick (masc.)’ (papyrus, 4th c. CE).

In → Lesbian and → Thessalian, when an *r* was preceded by a stop and followed by the → semivowel /j/ (from older prevocalic /i/), an epenthetic *-e-* or *-a-* developed; subsequently, as frequently in these dialects, gemination of *r* occurred (e.g. *kúrion* > Thess. *kúrron* ‘lord’; → Synizesis):

PN *Príamos* > Lesb. *Pérramos* (Alc. fr. 42, L.-P.)

Agriánios > Lesb. *Agerránios* ‘the (month) Agerránios’

Lagétria > Thess. *Lageitárrai* ‘to (Athena) Lagetarra’ (Larissa, II BC)

* *Korótria* > Thess. *Koroutárra(i)* ‘to (Ennodia) Korotarra’ (ca. 350 BC).

A similar phenomenon seems to have developed in Mycenaean, resulting in an epenthetic *-i-*: *a-ke-ti-ri-ja* | *askētri(j)āi* | ‘finisher (fem. nom. pl.)’ > *a-ke-ti-ra₂* | *askētírrāi* | (but this interpretation has not gained universal approval).

Lento-style articulation is probably responsible for the strictly orthographic epenthetic vowels in → Mycenaean and → Cypriot syllabaries, e.g. Myc. *ti-ri-si* ‘three (dat. masc./fem.)’ for /trisi/. In a similar fashion, vowel epenthesis occurs once in the first Delphian hymn (128 BCE), one of the few documents of antiquity attesting to musical notation: *pétras* ‘stone (gen. sg.)’ was sung as trisyllabic and thus spelled *peteras* (Bélis 1993). This is paralleled by the 1971 song *Annabella Umbrella*, in which Cliff Richard systematically sings *umbrella* as /Δm¹be:relə/.

ALCORAC ALONSO DÉNIZ

Ancient Bidialectalism And Bilingualism

One of the most outstanding characteristics of the ancient Mediterranean world is the great variety of languages and dialects which have coexisted within this vast area. In the ancient world as a whole, individual or social unilingualism is the exception, while bilingualism is the rule. How-

ever, by contrast to other regions in the Near East, the Hellenic world can be characterized as a monolingual area (Rochette 2010:282). From Herodotus (8.144 [Miletti 2008:29]) we learn that the Greeks were conscious of their cultural and linguistic unity as Greeks: they were united by common race, language, religion and customs. Non-Greeks, on the other hand, spoke ‘barbarian’, a language which was thought to sound like the twittering of birds. Archaic and classical Greece was little concerned with bilingualism and with contacts with other languages (Werner 1983, 1989). Even during the Roman Empire, Greeks who knew Latin—still a barbarian or ‘mid barbarian’ tongue according to the Greeks—are few (for example Plutarch, Lucian, Appian). For the Romans Greek was like a mother tongue, as demonstrated for example by the → code-switching in Cicero’s *Letters to Atticus* (Adams 2003:308–346), for the Greeks Latin remained a foreign language.

THE ARCHAIC AND CLASSICAL PERIOD

Before the 5th c. BCE, the evidence of contact with other languages is scant. Only two passages in the *Iliad* mention the linguistic diversity among Trojans’ allies (2.803–805, 4.436–438). In the Catalogue of the Trojans and their allies (*Il.* 2.867), the Carians are called *barbaróphōnoi* ‘barbarian-speaking’. The most ancient evidence of bilingual people in the Greek literature appears in the Homeric *Hymn to Aphrodite* (7th c. BCE?). The goddess says that she is the daughter of Otreus, the king of the Phrygians, adding that she knows the language of the Trojans because she had a Trojan nurse (111–115). Herodotus is the first Greek author who manifests an interest in foreign languages and bilingualism (Miletti 2008). According to him, the Pharaoh Psammetichus instructed Ionians and Carians to teach Greek to young Egyptians who were intended to become interpreters in Egypt (Torallas Tovar 2010:257–258). He met their descendants during his travels in that country. One of them read and translated for him a hieroglyphic inscription engraved on the walls of Cheops’ pyramid (2.125, 6 [Miletti 2008:48]). Herodotus alludes to contacts between various languages like Lydian and Persian (1.86, 4.6) or Greek and Persian (3.38, 4; 140, 3) (→ Greek And Iranian). He mentions the seven tongues used by the Scythians for the trade in the Borysthenes river and in the Pontus (4.24

[Miletti 2008:47]). We also find in his work bilingual people, for example the Scythian Skyles, born from a woman of Istria. His mother, who was presumably Ionian, taught him Greek language and letters (4.78 [Miletti 2008:51]), which was a reason of anger for the Scythians and even the cause of his death (4.80). We know the name of a few other bilinguals (*díglōssoi*), i.e., men who knew Greek and a barbarian tongue: the Carian Mys, who during the Persian wars received from Mardonios the mission to consult all the Boeotian oracles (Hdt. 8.133 [Miletti 2008:56–57]) and another Carian, Gaulites, sent by Tissaphernes as ambassador to the Spartans (Thuc. 8.85, 2) (→ Greek And Carian). Thucydides gives evidence of the knowledge of the Persian language in Athens when he refers to Artaphernes who was sent to Sparta by the Great King and led to Athens as a prisoner in 425 BCE. The Athenians read the letters Artaphernes carried after having translated them from Assyrian letters (*ek tōn Assuríōn grammátōn*) (4.50, 2). In Xenophon’s *Anabasis* there are some references to interpreters’ bilingualism, especially between Persian and Greek (1.2, 17; 2.3, 17; 4.2, 18; 4.5, 34; 5.4, 4). In Plutarch’s *Lives* we find other attestations of bilingualism: Greek and Persian (*Themistocles*, 28, 1), Greek and barbarian tongues (*Themistocles*, 6, 4), → Greek and Latin (*Sulla*, 27, 2; *Cato Maior*, 12, 5). He also mentions the multilingualism of Queen Cleopatra (*Antonius*, 27, 4).

Aristophanes’ comedies reflect linguistic diversity in Greece in another way, but it is difficult to tell to which extent the barbarized (incorrect) Greek of the foreigners is supposed to reflect the real talk of foreign speakers from various countries. In the *Thesmophoriazusae*, staged in 411 BCE, a Scythian archer talks in a tongue half Scythian, half Attic. According to Willi (2003:198–225), the language of non-Greeks in Aristophanes is a literary expression of Greek ethnocentrism, but not in an absolute way. In a passage from the *Acharnians* (100–107), an envoy of the Great King delivers before the assembly of the Athenians a sentence which nobody can understand (100: *ιαρταμαν ἐξαρξαν απισσονα σατρα*, *iartaman exarxan apissona satra*). Even if this verse has a humorous character, it is possible to reconstitute its meaning taking into account what one knows today about the Old Persian at the end of the 5th c. BCE (Willi 2004). If this sentence is authentic Old Persian (with the verb “write” as a central element),

we can conclude that there were some bilingual speakers in Athens (Greek/Persian) able to translate Greek into Persian or Persian into Greek. But such an assertion remains speculative.

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BRUNO ROCHETTE

Aorist

The aorist is one of the so-called temporal stems of the Greek verbal system (→ Aorist Formation, → Aorist—ἀόριστος). However, its function is primarily aspectual (→ Aspect (And Tense)), and its temporal value is limited to the indicative form. Non-indicative moods have no specific temporal meaning, but they must be interpreted as purely aspectual (→ Consecutio Temporum et Modorum).

The aorist indicative corresponds to a past tense, although it may show a deviation from past meaning. It may substitute for the present, as “a dramatic device found only in the literature of the stage” (Cooper 1998:638), or with a gnomic value (i.e., tenseless; → Gnomic), especially in maxims, sentences, → proverbs, in order to convey a statement of universal validity (this use is more common in poetry than in prose; cf. Gildersleeve 1900:109; Schwyzer and Debrunner 1959:260–262, Humbert 1960:145). The aorist indicative may also have a pluperfect function and denote a past action which precedes another past action, by conveying anteriority. Finally, already in Homeric Greek, it may be used to express future events, especially when the speaker is emotionally involved (Duhoux 1992:385).

Since Brugmann (1885/1913), many scholars have defined the aorist as punctual or as non-durative, consistently with the idea that it denotes the event without considering its duration: more specifically, it is defined as expressing “une action pure et simple” (Meillet 1922:212).

More recently, it has been pointed out that the aorist has an aspectual value comparable to the value proper to the cross-linguistic category of the perfective aspect. As is characteristic of a perfective form, the Greek aorist depicts the event as a single whole, i.e. as ‘global’ or ‘bounded’, without taking into account the individual phases of which it is made up. From this perspective, it is possible to account for the fact

that the aorist is the form normally found with adverbs of cardinal count, which is connected with its denoting countable events (cf. Armstrong 1982:10), and, at the same time, it may co-occur with durative expressions in order to focus on the duration of the state consequent to the completion of the action (cf. Napoli 2006:77–82). As demonstrated by cross-linguistic studies, “duration can be explicitly asserted in sentences with the perfective view-point” (Smith 1997:72). A Greek example is the following:

- (1) *tês thalássēs tês kath’ heautoûs ekrátēsan hēméras perí téssaras kai déka*

“They were masters of the sea about their own coasts for fourteen days” (Thuc. 1.117.1.4–5)

The perfective function of the aorist also explains why, as observed in the literature, it often assumes an ingressive value, by focusing on the beginning of the action, or a terminative value, by focusing on its end-point. This makes its use with telic verbs particularly frequent in indicative and non-indicative moods.

Its relationship with the notion of telicity has also been considered as a possible explanation for the fact that the passive forms in *-(th)ē-* are exclusively associated with the aorist stem, which typically implies a high degree of affectedness since it denotes a completed event (Allan 2003:176–177).

MARIA NAPOLI

Aorist—ἀόριστος

The Greek term *aóristos* (ἀόριστος) is a privative verbal adjective built on the root of the verb *horízō* ‘to define, determine’, thus meaning ‘undefined, undetermined’. Apart from other applications in grammar, the word referred to one of the tenses of the Gk. verb (→ Tense/Aspect), the morphology of which is characterized by the morpheme *-sa* (1 sg.), e.g. *é-lu-sa*, the aorist corresponding to present *lú-ō* ‘(re)solve’. The reason for designating this tense, which was generally seen as ‘perfective’ by ancient scholars (see below), as ‘undefined’ is somewhat surprising. According to the Scholia on the *Techne* ascribed to Dionysius Thrax (see in particular *Schol. Dion. Thrax* 250.26), it may be explained within the framework of a description of the

Gk. verbal system of Stoic origin (→ Ancient Linguistics: Philosophers On Language). According to this description there are three tenses which refer to the past: the perfect tense (*parakeímenos*, lit. ‘adjacent’) refers to the recent past, which has just been completed, and is opposed to a pluperfect (*hupersuntélikos*) which refers to a distant past; in opposition to these two forms of past tense defined by their ‘quantity of pastness’, the aorist is negatively qualified as ‘not specifying’ the temporal distance separating the related facts from the moment of utterance—and from this point of view it is ‘undefined’, *a-(h)óristos*. In this description, the imperfect tense is considered to be applied to actions almost completed but still taking place at the moment of utterance; therefore, strictly speaking, it is not a fully past tense (→ Aorist).

As the aorist employs a sigmatic paradigm, it lends itself to a parallel (termed ‘kinship’, *sungéneia*) with the other sigmatic tense of the temporal system, the future (e.g. *lú-sō*): since anything in the future is inherently uncertain, the future as a tense is *undefined by nature*. Thus, the aorist is declared *katà tèn aoristían tōi mél-lonti sungenés* ‘by its indefiniteness related to the future’ (*Schol. Dion. Thrax* 251.9).

If we leave the “technographical” discussion and turn to the philological one, we find the aorist (called *suntelikós* by Aristarchus) being opposed to the imperfect (*paratátikós*, lit. ‘extensive’), seen here as a past tense proper: in numerous passages of the ancient Homeric scholia, the Alexandrian grammarians (above all Aristarchus) declare that one of the two tenses is used (incorrectly) instead of the other, the two past tenses not being, normally, synonymous or interchangeable. If an explanation is to be given (a rare fact; the Greek reader of the critical commentary is supposed to ‘sense’ these things), this is an aspectual one: thus, *Schol. Hom. Il.* 11.368: . . . *exenárizen* *hoútō dià tōu z’ ou gàr etélesen* [‘we should read] *exenárizen* with *zeta* [i.e., an imperfect, not the aorist *exenárizen*], *for he has not completed* [his action]. The aorist is viewed here, as its Aristarchean name indicates, as perfective, and is opposed to the imperfect which presents the action in its *extension* (*parátasis*) and as incomplete. We see a similar intuition in Apollonius Dyscolus (*Synt.* III 102.358.3), who opposes the extensive value of the present imperative *skápte* ‘go on digging’ to the terminative value of the aorist imperative

skápson ‘finish digging’. But it is remarkable that, where modern scholars call *skápson* an aorist imperative, Apollonius, like the Homeric scholiast, does not use the term ‘aorist’, even though he knows it (*Apoll. Dysc. Synt.* III 143–146) and applies it both to indicatives like *édeira* ‘I flayed’ and the subjunctive *deirō* (*Synt.* III 144.392.5); neither does he use the term *suntelikós* ‘completed’, which would fit well with his account of the perfective value of aorist forms. Without naming this ‘tense’, he finds it sufficient to present the perfective value as an effect of the ‘past’ meaning (*parōikhēménon*: *Synt.* III 102.358.9), a value which in his eyes attaches to all aorist stem forms, even the modal ones.

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JEAN LALLOT

Aorist Formation

The Greek aorist exhibits a range of verbal forms equaled only by the present tense. The semantics of the aorist obscures the core function of its morphology. Since aorist finite forms generally refer to anterior events, the aorist is treated as a preterite and historical tense. (Indeed, Dionysius Thrax counts it among the four past tenses; Aorist—ἀόριστος.) But the aorist indicative refers to time other than the past in Homer, Plato, Greek Tragedy and the New Testament.

Anterior reference, however, is not an essential function of the aorist from the PIE point of view, as demonstrated by the aorist’s capacity to express ingressive, resultative and gnomic senses (see Sihler 1995:447–452; → Aorist; → Indo-European Linguistic Background). This range of temporal and aspectual reference may result from the PIE aorist’s development as a punctual category. In oblique moods, the aorist contrasts with the present aspectually (the aorist is atemporal and non-iterative; the present is progressive or iterative; Apollonius Dyscolus, however, suggests that the aorist conveys completion). From the perspective of IE languages, the aspectual distinction of the aorist has been claimed as a Greek development although probably incipient in IE (see Sihler 1995:442ff., 510–511, Szemerényi 1987:16–17).

The Classical Greek aorist has finite indicative forms with an augment, is productive in the

same range of moods as the present (imperative, subjunctive and optative) and exhibits a full complement of participle and infinitive forms. Unlike the present, aorist morphology distinguishes between middle and passive forms. For most regular verbs, the aorist generates active and middle forms from the same stem, while the passive forms are generated from a different stem. From our earliest evidence, Greek developed two general morphological systems for the aorist: sigmatic aorists and root aorists (or second aorists).

The path to this picture is not quite clear. → Mycenaean Greek offers some evidence for aorist and perfect alternation as well as for the passive stem (see Palmer 1963:58 and 266). Early Greek evidence supports the gradual development of the *s*-aorist. Largely, Homeric evidence reveals multiple aorist morphologies and an opportunistic form selection with a high percentage of second aorists. While Watkins (1962:52–60) has argued that the sigmatic aorist developed in the middle voice first, in Homer the aorist is more productive in the active (see Drinka 1995). The older PIE sigmatic aorist is reflected in Homer in combination with roots that end in consonants. In this category, the sigma is lost during athematic formation. For example, *élexa* ‘I said’ has the middle forms *elégmēn* and *élektō*; *ôrsa* ‘I incited’ has middle *ôrto*, and participle *ôrmenos*.

Homeric forms also display overlapping morphologies from the perspective of Classical Greek. Some sigmatic stems follow *e/o* vocalization instead of alpha vocalization (e.g., *edúseto* ‘entered, put on’ and *ebéseto* ‘went, walked’, instead of *edúsato* and *ebésato*). Homeric sigmatic aorists may also present double sigmas (convenient for metrical reasons; e.g., *etélessa* ‘I completed’ and *ekómíssa* ‘I entertained’). Following Doric, some Homeric dental consonant stems use *-xa* instead of *-sa* (e.g., *hérpaxe* ‘snatched away’). Often Homeric verbs, like Vedic and some Avestan, have no augment in the aorist; traditionally these verbs have been assumed to have injunctive or conjunctive force (see Hoffmann 1967).

Homer frequently exhibits second aorists where Attic has a sigmatic aorist, as in *peíthō* ‘convince’ (*epíthonto* vs. Attic *epéisanto*); there are also places in Homer where second aorists coexist with *s*-aorists (e.g. *díon* ‘they feared’, and *edíesan*). Unlike Attic Greek, some Homeric aor-

ists seem to form directly from nouns as in *góon* (‘they mourned’; not *goáō*) and *thérmeto* (‘was heated, became warm’). Additional variations include verbs with middle athematic aorists alongside active thematic forms (*éktato* and *éktanon* ‘killed’; cf. Chantraine 1973:381–383); thematic aorists with different vowel grades (e.g., ‘to gather, assemble’: *égreto*, *égreto*; *agéronto*; *égéresthai*) and lengthened vowels for metrical needs (*genómenos*, *geinómenos* from *gígnomai* ‘become’).

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JOEL CHRISTENSEN

Aphaeresis

In Ancient Greek aphaeresis, or prodelision, refers to the → elision of a short word-initial *a* or *e* preceded by a long word-final vowel. It occurs mainly in poetry (particularly drama) and archaic prose inscriptions. Aphaeresis is rarer than → crasis or elision, two other phenomena related to vowel contact across word boundaries (→ Prosody).

Aphaeresis is usually triggered by a long vowel or diphthong in a proclitic word (→ Clitics), normally the definite article or the negative *mé*. The elided vowel mostly belongs to a clitic (prepositions, such as *es* ‘to’), forms of the copula (*estí* ‘(he) is’, *éstō* ‘let (it) be’), preverbs in compound verbs (*apó*, *epí*) or the → augment in the past tenses (*e*-): El. *mā* ‘pénpoi’ (‘if he) did not pronounce a sentence’, *toí* ‘ntaúta ēgram(m)énoi’ (‘in the penalty) written here’, Arg. *mē* ‘npipaskésthō’ ‘let (him) not acquire’, Ion. *ē* ‘s Ermónossan’ (‘the road) which (leads) to Hermonossa’, Lac. *toí* ‘s ásista’ ‘the closest (relatives)’, Selinous *ē* ‘pakoustōn ē phoratōn’ ‘to be listened to or looked upon’, Locr. *ha* ‘piwoikía’ ‘the colony’, Tiryns *mē* ‘xsthōásaijen’ (‘if they) did not pay the penalty’. The following examples are taken from poetic texts: *khórei* ‘s *tēn naún* ‘run to the ship!’ (Aristoph. *Lys.* 605), *ē* ‘pò manteías’ ‘or by some sort of divination’ (Soph. *Trach.* 239), *ei* ‘pitaxómestha’ ‘if we accept orders’ (Eur. *Supp.* 521), *koú* ‘sti’ ‘where is (Pyrrias)?’ (Herodas 5,9), *kelētísai* ‘kéleuon’ ‘I ordered (her) to get on top’ (Aristoph. *Vesp.* 501).

Aphaeresis can also occur after lexical words: Lesb. *sâma* ‘pí Stheneíai’ (‘I am) the monument upon Stheneias’, *aretē* ‘stin’ ‘the virtue is’

(Thgn. 147), *gunà 'ntì ténōn* 'the woman (will have her reward) for those things' (Theoc. *Ep.* 20.3), *euphēmía 'stō* 'let it be a sacred silence!' (Aristoph. *Av.* 959), *ek potamou 'panérkhomai* 'I return from the river' (Anacr. fr. 40 Page *PMG*).

Aphaeresis of the initial vowel of a content word is less common: Aigina *tēi 'phaíēi* 'to Aphaia', Ion. *mē 'lássones* '(let) no less (than three hundred judge it)', Att. *phthiménē 'khō* 'I, dead, have (him dead)', *ē 'niautōi* '(more) than a year' (Ar. *Ra.* 18).

In some cases the ambiguity of archaic scripts (→ Epichoric Alphabets) makes aphaeresis indistinguishable from crasis and elision. For instance, Arg. TONUWALIO (sc. *toû Enuáliou*, 'of Enyalios') may be seen as aphaeresis (*toû 'nuáliou*), crasis (*tounuáliou*) or even elision (*t' Enuáliou*). Similarly, it is not clear whether Aeginetan KHOLEPHAS (sc. *kai ho éléphas* 'and the ivory') should be read as crasis of *kai* plus *ho* followed by aphaeresis (*khō 'léphas*), elision of *kai* and crasis of *ho* plus *éléphas* (*k' hōléphas*) or just crasis of the three vocalic elements (*khōléphas*).

ENRIQUE NIETO

Arabic Tradition, Translation

Even before the rise of Islam, the Arabian Peninsula was exposed to the cultural heritage of the Hellenized cities of Palestine and Syria, mainly through the medium of caravan trade. Together with goods and religious ideas, traders, travelers and religious figures transmitted scraps of Greek philosophical and scientific knowledge to the Arabic-speaking population of the peninsula (Rosenthal 1975:1–2; Berkey 2003:39–49).

The foundation of Islam in the early 6th c. CE was followed by a period of rapid expansion. In the 7th and 8th c., the early Islamic state took control of large areas of North Africa and the Middle East formerly ruled by Byzantium and Persia. Rather than replacing existing administrative structures, the new Muslim authorities frequently relied on local administrators, who continued to use their respective languages, including Persian, Greek and Aramaic (Gutas 1998:17–18, 23). Only at the end of the 7th or the beginning of the 8th c., administrative record-keeping was 'Arabized'.

Many of these areas, especially Egypt, Syria and Mesopotamia, had been more or less strongly

Hellenized before the advent of Muslim rule. Remnants of the Hellenistic scholarly tradition still remained active at some of the ancient seats of learning, e.g. in Alexandria or the more recent schools of Edessa and Nisibis in Syria and Gondēšāpūr in Persia (Endress 1987:402–7). Where secular school structures had faded, Christian monasteries and schools had become key transmitters for Greek science and philosophy, either in the original Greek or in the form of translations into local languages, especially Syriac. Those remaining carriers of Hellenistic culture—Greek manuscripts, translations into Syriac and the scholars who read and taught these texts (cf. Conrad 1999)—became the seeds for a Greek-Arabic translation effort that ultimately far outgrew preceding Greek-Syriac translation activities, both in terms of the range and number of translated texts and the linguistic, philosophical and scientific proficiency of its protagonists (cf. Gutas 1998:136–41).

In the multilingual environment of the early Islamic state, translation was a daily necessity. Such exchanges were in all probability mostly oral and fulfilled the immediate practical needs of administrators and traders. We know little more than the names of some translators active at this stage. Probably apocryphal reports credit an Umayyad prince, Ḥālid ibn Yazīd (d. 704), a grandson of the Umayyad caliph (r. 661–680), with commissioning a translation of an alchemical text. Such accounts document a strong desire to profit from the scientific and technological know-how preserved by speakers of other languages (cf. Ullmann 1978; Endress 1987:416–20).

The political and religious shifts that accompanied the accession of the 'Abbāsīd dynasty in 749 and the foundation of Baghdad as the new capital in 762 laid the groundwork for a genuine and systematic translation 'movement'. In parallel with the first officially commissioned translations, e.g. of Aristot. *Top.* by the caliph al-Mahdī (r. 775–85), we hear of a budding infrastructure to support research and translation. During the reign of Hārūn al-Rašīd (r. 786–809), a library devoted to the study and transmission of the scientific heritage, the so-called *ḥizānat al-ḥikmah* [storehouse of wisdom], was established in Baghdad, possibly based on an earlier caliphal library. Under the caliph al-Ma'mūn (r. 813–33), this institution, renamed *bayt al-ḥikmah* [house of wisdom], was apparently expanded, but its exact size, function and

connection to the translation movement are still a matter of debate (Gutas 1998:28–104). The sources clearly show that members of the ‘Abbāsid court society, including caliphs such as al-Ma’mūn and his successor al-Mu’taṣim (r. 833–42), actively encouraged and supported translators and that this support extended beyond court circles.

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UWE VAGELPOHL

Argolic

The dialectal varieties of West Greek (→ Doric) spoken in the Argolid (northeastern Peloponnese) are generally referred to as Argolic. Argolic dialects are known almost exclusively from epigraphic sources from Argos, Mycenae and Tiryns in the Western Argolid, and from Epidaurus and its Asclepieion, Troezen and Hermion in the East. Most inscriptions with dialectal features come from Argos and from the Epidaurian Asclepieion, and can be dated between the 8th c. BCE and the 1st c. CE. There are also some Argolic *glossae* in the lexicon compiled by Hesychius (→ Dictionaries Of Dialects: From Antiquity To The Byzantine Period).

According to Bartoněk (1972; followed by Fernández Álvarez 1981), the Argolic dialect was divided into two geographical areas referred to as Western and Eastern Argolic respectively, which became differentiated shortly after the Dorian invasion of the Peloponnese. Since Eastern Argolic shares some innovations with Corinthian and Megarian, it is thought to be a member of the so-called → Saronic dialects (the vernacular dialects spoken around the Saronic gulf). Bartoněk’s conclusions, accepted by most scholars, are based on the results of the secondary (i.e. not inherited) long vowels (→ Compensatory Lengthening): Argos *bōlá* ‘assembly’, *ágon̄sa* ‘to bear’ (ptc. fem.), *xénos* ‘foreigner’, *dámou* (sg. gen.) ‘of the people’ vs. Epidaurus *boulá*, *ágousa*, *xénos*, *dámou*. Previous studies (e.g., Bechtel 1921, Thumb-Kieckers 1932) assumed that such differences were due to the early influence of the Attic-Ionic koine on Eastern Argolic. Secondary vowels in Hermion differ from the rest of the Argolid: *bōlá*, *ágōsa*, *xénos*, *dámō*. According to Bartoněk, this is due to a supposed influence

of neighboring Laconian, of which there is no further evidence.

According to Nieto Izquierdo (2009), however, the Argolic dialects share three linguistic features which suggest a period of dialectal unity between ca 1200 and 800 BCE. To begin with, <io> for <eo> (→ synizesis) is confined in both areas to *theós* > *thiós* ‘god’ and its derivatives: Argos *Thiokléos* ‘of Theocles’, Epid. *thiōi* ‘to the god’. Futures and aorists of verbs ending in *-ízō* and *-ázō* have /ss/ or /ks/ depending on the phonetic context (/ss/ only if the radical has a velar stop): *edikássato* ‘(he) judged’, but *parenephánixe* ‘(he) showed’. Finally, unlike other West Greek dialects, the preposition *poi* (< *potí* = Att. *prós* ‘towards’) is only found before a dental stop: *poidéσαι* ‘to bind to’, but *potispastéra* ‘thong which draws the bolt of a door’ (sg. acc.).

After ca 800 BCE, Argolic split into three dialectal areas: Epidaurus–Troezen, Argos–Mycenae, and Hermion. Three linguistic features separate the first two varieties: a) the aspiration of intervocalic /s/, which is only attested in Argos and Mycenae after the early 5th c. BCE: Arg. *epoíwēhe* vs. Epid. *epoíēse* ‘(he) made’; b) the diphthong /ew/ < /eo/, which only appears in Epidaurus in the ending *-eos* (ca 400 BCE): Epid. *Damopháneus* ‘of Damophanes’ vs. Argos *Epikráteos* ‘of Epikrates’; and c) the simplification of secondary *-ns-* between vowels and of final *-ns*, which is only attested in Epidaurus–Troezen (4th c. BCE): Epid. *enkathéúdousa* ‘to sleep’ (fem. ptc.) vs. Argos *hápansan* ‘whole’ (fem. sg. acc.). As was said above, Hermion differs from both areas in the secondary long vowels.

ENRIQUE NIETO

Aspiration

Aspiration is the friction made by the air passing through an open glottis (Eng. *heaven* /^hheɪvən/). In Classical Greek /h/ was a phoneme almost restricted to word-initial position. Archaic alphabets used the sign <H> (originally called *hēta*, see Sch. D.T., p. 486, 32–35) for aspiration. Although <H> was gradually abandoned after the 4th c. BCE, due to the extension of the Ionic script (in which <H> was recycled with a new value /ɛ:/, due to the early loss of /h/ in Asia Minor Ionic, see *infra*), Greek loanwords to Latin and other languages show that initial aspiration

was retained until Roman times. The sign <+>, originally a handwritten variant of <H>, was introduced by Alexandrian scholars and eventually evolved into the *spiritus asper* (*pneûma dasú*) of modern editions (i.e. <'>).

Historically, initial /h/ is the outcome of PIE *s and *sw-: *heptá* 'seven' (cf. Lat. *septem*), *hístēmi* 'I stand' (cf. Lat. *sisto*), *hēdús* 'pleasant (masc.)' (cf. Lat. *suavis*). It may also go back to a word-initial cluster of a laryngeal + *j: pronoun *hós* (< **h₁jo-*, cf. Lat. *is*). Some words with original *w- (→ Semivowels) unexpectedly show aspiration: *hēsperos* '(of) evening (masc./fem.)' (cf. Lat. *vesper*), *heîma* 'garment' (cf. Lat. *vestis*). Since *sw- developed into voiceless /m/ and later /h/, initial /w/ in these forms may have been pronounced /m/ by hypercorrection. For reasons not well understood, aspiration was generalized to all words beginning with PIE *u-: *húdōr* 'water' (Ved. *udán-*), *hústeros* 'latter (masc.)' (Ved. *úttara*). In other cases *h-* is clearly analogical: e.g. Heracleian *hoktó* 'eight', Theran and Locrian *hénatos* 'ninth (masc.)', after *heptá* 'seven' and Dor. *hēbdemos* 'seventh (masc.)'. Initial aspiration in *híppos* 'horse' is puzzling: see however p.n. *Leúkippos*, not ***Leúkippos*, with the expected outcome (cf. Lat. *equus*).

Voiceless stops become aspirated before /h/: *katá* + *háper* > *katháper* 'just as' (spellings like *kathháper* with < *thh* > in Attic inscriptions are rare), *apò* + *hairéō* > *aphairéō* 'I take away from', *ouk* + *Helénēs* > *oukh Helénēs* 'not of Helen'. Aspiration is written in compounds in early inscriptions after other consonants and vowels: Att. *párhedros* 'assessor', *proshékētō* 'belong to (3 sg. imp.)', *ahórios* 'unseasonable' (masc.). /h/ does not block crasis or: *kai hoi* > *khoi* 'and the (masc. pl.)', *tà hátera* > *thátera* 'the rest (nom./acc. pl.)', *apò hoû* > *aph'hoû* 'after'. In addition, /h/ does not create heavy quantity for a preceding syllable: see the beginning of the hexameter *hímeros hairései* 'desire will seize (him)' on → Nestor's Cup.

Aspiration from inherited intervocalic *s, which eventually disappeared in later Greek, was still preserved in → Mycenaean. The special syllabogram <a₂> represents /ha/: *pa-we-a₂* /*phárweha* / 'piece of cloth (nom./acc. pl.)', *me-zo-a₂* /*mézoha* / 'bigger (nom./acc. pl.)'. In other cases aspiration is presupposed by orthographic hiatus: *e-e-si* / *éhensi* | 'they are', *e-ke-e* / *ék^hehen* / 'have' (inf.), *te-qa-i* / *t^hég^wāhi* | 'at Thebes' (cf. Class. *Athēnēsi* 'at Athens', with analogically restored /s/). Inter-

vocalic aspiration word-internally in Classical Attic is restricted to the → interjections *eíhen*, *euhoí*, and to the loanword *tahós* 'peacock'.

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ALCORAC ALONSO DÉNIZ

Assimilation

Assimilation is the most common phonological process cross-linguistically, examples from English including 'gimme' for 'give me' or 'impossible' from the prefix 'in-' before [p]. The opposite process is → dissimilation. Despite its prevalence, its causes and effects are not always easy to identify (Miller 2010:178–181). Assimilation of consonants may be usefully categorized according to a number of parameters, of which the main subtypes are given below. The extent to which vowel assimilation occurred in Greek is disputed (Sihler 1995:88–89, van Beek 2011).

1) Regressive vs. progressive assimilation. In regressive assimilation AB changes to BB (more common in Greek and typologically); in progressive assimilation:

regressive: *trib-tós* → *trip-tós* 'rubbed'

leg-tós → *lek-tós* 'chosen, spoken'

progressive: **thárs-os* > *thárr-os* 'boldness, daring' (Early Att. > Class. Att.).

2) Place vs. manner vs. laryngeal setting. Place and manner of articulation often assimilate, as does laryngeal setting (state of the glottis: aspiration and voicing in Greek):

place: *en-bállō* > *em-bállō* 'I throw, put in' [labial]

manner: *gé-graph-mai* > *gé-gram-mai* 'I have been written' [nasal]

lar. setting: *plék-dēn* > *plég-dēn* 'entwined, plaited' [voice]

e-plék-thēn > *e-plékh-thēn* 'I was entwined' [aspiration]

These assimilations may be seen in the regular alternations of root-final labial and velar stops before following dentals and /m/:

gráph-ō 'I scratch, write' *gráb-dēn* 'scraping, grazing' *gégram-mai* (1.sg.pf.mid./pass.)

plék-ō 'I weave' *plég-dēn* 'entwined, plaited' *pé-pleg-mai* /*péplegmai*/ or /*péplegmai*/ (1.sg.pf.mid./pass)

Although two successive stops agree in aspiration (*plék-ō*, *eplékh-thēn* 1 sg. aor. pass.), if they have the same place of articulation the first is conventionally written as the unaspirated stop, e.g. *Sapphō* <Σαπφῶ>, not **Saphphō* <Σαφφῶ> (on the phonetics of these clusters see Lejeune 1972:69, Threatte 1980:541–546 and 570–571 with bibliography).

Not all combinations are so regular. Contiguous dental stops, for instance, do not assimilate as simply as a labial or velar before a dental, but surface instead as a cluster of /s/ + dental: underlying *oīd + tha* (2.sg.pf.act. of *oīda* ‘I know’), presumably assimilated to **oīt-tha*, is realized as *oīs-tha*; diachronically, this cluster reflects an → epenthesis (or affrication) of PIE date (PIE *TT > *TST > Greek /st/), e.g. PIE **wid-tós* ‘known’ > Greek *is-tós* (Mayrhofer 1986:110–112, Sihler 1995:201–203).

3) The degree to which the assimilation occurs is also to be distinguished, ‘partial’ vs. ‘total’ assimilation. Labial-final stems before /m/ show total assimilation, since the labial segment becomes identical to the following /m/: *gráph-ō*, *gégram-mai*. On the other hand, velar-final stems show a partial assimilation before /m/, assimilating in voicing and perhaps nasality but not in place: *plék-ō*, *pépleg-mai* /péplen^mmai/ or /péplegmai/. See → Greek Phonotactics.

4) Finally, we should distinguish whether the sounds are contiguous or separated by some material, ‘contact’ vs. ‘distance’ (or ‘harmonic’) assimilation. Contact assimilation is very frequent and all of the preceding examples are cases in point. Distance assimilation is exceptional in Ancient Greek (p.n. ‘*Mekakléios*’ for ‘*Megakléios*’, *IG* II² 8491). Distance dissimilation, on the other hand, is more common (cf. → Grassmann’s Law).

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JESSE LUNDQUIST

Attic Reversion

Attic-Ionic differed from other dialect groups in its treatment of PIE **ā*. While other dialects typically retained * *ā* as [ā] (written as α), in Att.-Ion. **ā* merged with inherited **ē* (written as η), as seen with *timé* below. In Att., however, some cases of expected [ē] after [e, i, r] surface as [ā], as seen with *neá*, *oikíā*, and *khórá*:

Att.	Ion.	other dialects	
<i>timé</i>	<i>timé</i>	<i>timá</i>	‘honor’
<i>neá</i>	<i>neé</i>	<i>neá</i>	‘new’
<i>oikíā</i>	<i>oikíē</i>	<i>oikíā</i>	‘house’
<i>khórá</i>	<i>khóre</i>	<i>khórá</i>	‘country’

Inherited **ā* raised to [ē] through the intermediate value [æ̃], as attested in Cycladic Ion. inscriptions from the 6th c. BCE, which maintain a three-way distinction between etymological **ē* (written as E), etymological **ā* (H), and a new [ā] (A) arising from → compensatory lengthening (Buck 1955:90, Gates 1976:190).

Two possible scenarios for the Att. development have been proposed. One holds that the development of **ā* to [æ̃] was never fully completed after *e*, *i*, and *r* (Schwyzer et al. 1939). The other proposes that the development of **ā* to [æ̃] was a P(roto)-Att.-Ion. sound change (Brandenstein 1954, Gates 1976, Lejeune 1972, *inter alia*). Under this analysis, Att. later reversed this, taking [æ̃] back to [ā] in certain environments (d and h below). Peters (1980) proposes the following relative chronology (slightly emended by Samuels 2008):

a) Unconditioned shift	[ā] > [æ̃] (PAtt.-Ion.)
b) Contraction	[eæ̃] > [æ̃]
c) Dissimilation	[æ̃] ... [æ̃] > [ē] ... [æ̃]
d) Reversion: rhotic lowering	[æ̃] > [ā] / r __
e) Contraction	[ea] > [æ̃]
f) Loss of digamma	[w] > ø
g) Quantitative metathesis	[ē] > [e] / __ {æ̃, ā, ō}
h) Reversion: dissimilation	[æ̃] > [ā] / {i, e} __
i) Merger	[æ̃] > [ē]

Phonetically, a reversion could be explained if **ā* did shift to [æ̃] in all positions in Att., but the pronunciation of the new [æ̃] remained a bit more open after *e*, *i*, and *r*. The lowering effect of rhotics on a following vowel is well documented (Walsh Dickey 1997). The effect of [i] and [e] on [æ̃] can be explained as → dissimilation (Szemerényi, 1987 [1968]), particularly given that in other cases in Greek where two front vowels came into → hiatus, → contractions or other avoidance strategies occurred. Other

dialects exhibit either rhotic-induced lowering or front vowel dissimilation, while only Att. shows both. Examples include occasional substitutions of *e* for expected *i* after *r* in Aeol. and a few scattered examples in Sicilian Dor. and El. (Buck 1955:25–26); *e* also lowered to *a* before *r* in NW. Gk (Buck 1955:22).

BRIDGET SAMUELS

Augment

The augment is an inflectional verbal prefix, associated with past tense, occurring (in Greek) only in the indicative of the aorist, imperfect and pluperfect. Although attempts have been made to argue for its presence in other branches such as Slavic, Germanic (e.g. Gothic *iddja* ‘I went’, as the reduplicated imperfect of *yā* ‘go’) and Hittite (*ēsun* ‘was’ from **e-Hes-m*) (Szemerényi (1996:297–299), the data are few, weak, and unconvincing. Its limited distribution to a few members of the Indo-European language family (Greek, Indo-Aryan, Iranian, Armenian and Phrygian) suggests a late common innovation within this group of languages. The reason for this restricted occurrence is not known. Sihler (1995:485) hints at some sort of aspectual significance, an insight supported by evidence from both Ancient Greek and Old Indic: in Old Persian and Avestan optatives the augment is used to mark repeated or habitual past action. In Greek, iteratives in *-sk-* both in Homer and Herodotus usually have no augment, suggesting some type of aspectual incompatibility.

The augment was, in origin, an unaccented, independent word (**h₁e-*) of adverbial or deictic nature, meaning ‘yonder’, or ‘there’, extended metaphorically to refer to distance in time, rather than space. When added to a form already characterized for tense by “secondary endings”, it clarified or reinforced the notion of the ‘past’ tense: *é-lūon* ‘was loosening’ (impf.), *é-lūsa* ‘loosed’ (aor.), *e-lelūkē* ‘had loosed’ (pluperf.). Without the augment, forms were ambiguous and could be variously interpreted, as modals (injunctives, in the oldest usage), or with past, timeless, or even (occasionally) present reference (for the injunctive see → Indo-European Linguistic Background).

TYPES OF AUGMENT

The augment is of two types: (1) the (original) syllabic, “qualitative” (also “epsilon”) augment, added to roots beginning with a consonant, of the shape *e-* (*a-* in Sanskrit, *e-* in Armenian), sometimes *ē-* (*ā-* in Sanskrit), if the root began with a digamma in Greek, or a resonant in Sanskrit: Homeric *ēēidei* from **ēweid-* ‘knew’; Sanskrit *āvar* ‘covered’ from root **wer* ‘cover’; and (2) the “quantitative” or “temporal” augment, which is a feature of Greek only, whereby augment and root-initial (short) vowel are contracted, giving a long vowel: *a* > *ē* (*akoúei* ‘he hears’ > *ékouse* ‘he heard’), *ai* > *ēi* (*aídō* ‘I sing’ > *ēidon* ‘I sang’), *e* > *ē*, *i* > *ī*, *o* > *ō*, etc. If the stem already begins with a long vowel, a “long” diphthong or *ou*, there is no change (Smyth 1956:146, §§ 435,436; Mastronarde 1993:114).

Certain ancient parallel forms suggest that, in the mother language, or a dialectal variant thereof, the augment contracted with a root-initial vowel or laryngeal (and possibly *s* (Palmer 1980:294), the so-called “long augment”): **h₁e-h₁es* > **ēs* ‘was’ in (Homeric) *êa* ‘I was’, Vedic *āsam* ‘I was’ (→ Laryngeal Changes). Sihler suggests that it was on this pattern that the temporal augment developed (1995:485).

Exceptional or irregular cases of the augment usually involve roots beginning with *r*, *s*, or *w*, or a combination thereof. For instance, if the root begins with *r*, the *r* is doubled after the augment: *rīptō* ‘throw’ > *érripton* ‘threw’; sometimes the double *rr* is due to assimilation of *wr* (Homeric *érrēxa* ‘did’ < *wreg-* ‘do’), or *sr* (*érreon* ‘flowed’, cf. Skt. *sravati* ‘flows’). Since digamma disappeared early in the history of the language, many augmented forms show no trace of it, as *óikoun* from *oikéō* ‘dwell’ (< (*w*)*oikos* ‘household’). There are cases of “double augments”, such as from the verb *méllo* ‘be destined to’, with imperfect *émellon* as well as *émellon*, aorist *ēmellēsa* as well as *emellēsa* (Mastronarde 1993:132, nt.2).

In Greek and Sanskrit, the augment is accented: *é-pheron* ‘carried’, Skt. *á-bharam*. In compound verbs, that is verbs composed of a prefix and a root, both in Greek and Sanskrit the augment occurs closest to the verbal root, between the prefix(es) and the root, and bears the accent (which may not precede it): *prosbállō* ‘I attack’ > *pros-é-ballon* ‘I attacked’, *kat-é-graphon* ‘I was writing down’, *sun-é-legen*

'collected', Sanskrit *abhi-á-gacchat* > *abhyágacchat* 'approached'.

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SARAH ROSE

Bartoli's Law

'Bartoli's Law' (Bartoli 1930) describes the phonological process in Greek by which words that were originally oxytone (stressed on their final syllable) became paroxytone (stressed on their penultimate syllable) if they ended in a sequence of a light followed by a heavy syllable: e.g. **thugatér* > *thugatēr* 'daughter', **eretés* > *erētēs* 'rower'. Note that word-final syllables containing a short vowel followed by a consonant (e.g. the masculine nominative singular ending -*os*) count as light for Bartoli's Law: e.g. *khthamalós* 'on the ground' rather than **khthamálos*. Words that contained fewer than three syllables were unaffected by Bartoli's Law: e.g. *patér* 'father' instead of **pátēr*. The original analysis of the Greek material was proposed by Matteo Bartoli (1873–1946).

Intra-paradigmatic alternations resulting from Bartoli's Law are normally eliminated by → analogy; thus, alongside the nominative singular *erētēs* we find a nominative plural *erétai*, which has generalized Bartoli's Law accentuation instead of preserving the expected **eretaí* (word-final -*ai* and -*oi* are treated as short by the rules of accentuation, cf. Probert 2006:61). The notable exception to this tendency is the word for 'daughter', which faithfully preserves the alternations arising from Bartoli's Law: hence nominative singular *thugatēr* beside accusative singular *thugatéra*, which displays the expected accentuation without application of Bartoli's Law.

While numerous exceptions to Bartoli's Law have been observed (see Bartoli 1930:29ff. for further discussion), some of these violations belong to certain morphological categories that systematically do not obey Bartoli's Law, but rather have created unified patterns of accentuation that are not sensitive to → syllable weight or the historical placement of the accent. One of these categories consist of first-declension *o*-grade deverbative action or result nouns (i.e., the "tomé" type), which are consistently oxytone:

e.g. *agoré* 'assembly' < *ageirō* 'I gather' or *molpé* 'dance' < *mélpomai* 'I dance' (see Risch 1974:10 for examples; → Action Nouns). Bartoli (1930:32) notes that a large percentage of *tomé* nouns were disyllabic and thus were not susceptible to Bartoli's Law, and therefore, he claims that oxytone accentuation spread to the few *tomé* nouns whose accent would have been retracted by Bartoli's Law, such as *agoré*.

The chronology and dialectal distribution of Bartoli's Law is controversial, in part because our knowledge of the accentuation of dialects other than Attic, Ionic and Lesbian (which has generalized recessive accentuation) is limited (see Buck 1955:85, Probert 2006:70ff. for discussion). Bartoli (1930:34) regarded this sound change as pan-dialectal. Kiparsky (1967:77), on the other hand, proposed that Bartoli's Law applied in Attic only, in an attempt to unify it with → Vendryes' Law, which is uncontroversially limited to Attic. While there is little doubt that it applied in Attic, it is probable that Bartoli's Law also applied in Ionic; there is no example of a lexical item that is affected by Bartoli's Law in Attic but not in Ionic: e.g. *thugatēr* is the only version of this word attested in Ionic, while we never find **thugatér*.

The phonetic motivation for Bartoli's Law remains unclear, but it is one of several accent retraction processes that is sensitive to syllable weight, alongside → Wheeler's Law and Vendryes' Law.

STEVEN FAULKNER

Causative Formation

Causatives are verbs which refer to a causal relation between two events, i.e., verbs meaning 'cause to V_0 ', 'make V_0 ', where V_0 stands for the non-causative (anticausative) member of the opposition.

Ancient Greek has no specific causative or anticausative morphemes. However, there are several morphological means to express causative meaning (for monographic studies of this category see Kuehne (1882) and Hildebrand (1889)).

(i) The commonest formal type of causative opposition is associated with → diathesis (active/middle voice distinction): causative members of the opposition take active morphemes, while

anti-causatives (sometimes also called, quite infelicitously, ‘pseudo-reflexives’ or ‘pseudo-passives’) are inflected in the middle; see e.g. Rijksbaron (2002:151ff.), Allan (2003:2, 60ff., 82ff. et passim). For some such pairs in the → present tense system, the diathesis opposition is accompanied by the alternation of root vowel (*o* in causatives, *e* in non-causatives), which corresponds to the Common Indo-European present causative with the suffix **-ey e/o-* and *o*-grade in the root (cf. Vedic *pāt-áya-ti* ‘makes fly’ < **pot-eye-ti* etc.), as in the case of *phobéō* (*phobô*) ‘terrify’—*phéboimai* ‘panic, flee in terror’ (cf. <*h*>ós te kai álkimon ándra phobeî ‘who terrifies even the warlike man . . .’ (Hom. *Il.* 16.689)—*allà kai autoi hup’ Argeioisi phébonto* ‘but they themselves were running in fear from the Argives’ (Hom. *Il.* 11.121)), see Lavidas (2009:65ff.). This morphological type, still attested in (Old) Germanic and Slavic and very productive in Indo-Iranian, virtually disappeared in Greek (see Brugmann 1913:360ff.; Margulíes 1930:87ff.; Schwyzler 1950:222; Tucker 1990:138ff.; Sihler 1995:504); according to Tucker (1990:143), even in the case of the handbook example *phobéō*, the causative opposition exists between *phobéō* and *phéboimai* ‘panic’, not between *phobéō* and *phéboimai*. Very few are also examples of causatives associated with other present types, such as nasal, reduplicated or *-skō* presents (Margulíes 1930:98ff.; Schwyzler 1950:222). Thus, for most present causative oppositions, the active morphology is the only marker of the causative meaning, cf. *élpō* ‘cause to hope, give hope’—*élpomai* ‘hope’, *koimáō* ‘make sleep’—*koimáomai* ‘sleep’, *komízō* ‘carry’—*komízomai* ‘travel’.

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LEONID KULIKOV

Code-Mixing

Code-mixing (CM), which is also referred to as intrasentential → code-switching, is a phenomenon whereby elements belonging to different language systems or sub-systems of the same language are included in a single utterance. This phenomenon, similar to code-switching, is indicative of individual bi- or plurilingualism. CM appears largely independent of speaker intent and is caused by the difficulty of keeping

separate two language systems, which generally overlap; it is not motivated by any evident communicative function. Structural phenomena of CM have been researched extensively in the last decade, which has provided a classification of typologies of CM processes, namely the following three: 1) insertion of linguistic items from one language into the structure of another; 2) alternation between structures from different systems; 3) ‘congruent lexicalization’ of lexical items from different languages into a shared grammatical structure (Muysken 2000).

Ancient Greek texts evidence cases of CM which are due to contact among various dialects and between the Koine and dialects (→ Language Contact), and in cases where it was used abroad, with other languages in highly bilingual areas, such as Magna Graecia and → Sicily. Examples of CM can be found in areas of Hellenistic Greece. In digraphic inscriptions of Kaphizin (Cyprus), the syllabic *a-po to-i we-te-i* (*apò tói wétei* ‘from the/this year’) formula appears with the preposition *apó* in the phonetic form of the Koine and with the Cypriot flexional case. Interference between the Koine and the Cypriot dialect also appears in the same inscriptions and produces mixed artificial forms such as *u-na-po-re-i* (*unaphorêi*) ‘offers’, which results from a fusion of the preverb of the dialect (*on-*, *un-* with apocope) and of the preverb of the Koine (*aná*). Many interesting examples are found in → Thessalian. In Larisa the inscription IG IX, 2, 516 (end 3rd c. BCE), presents a case for CM in the syntagm *tàn dè állan* ‘but the other one’ (*dè* replaces the dialect particle *má*), however, in a dialect phonetic context. A Hellenistic inscription from Scotussa features the artificial form *oidenós* (= *oudenós* ‘of no one’), which derives from the incorrect application of the conversion rule according to which Koine *-ou* (→ genitive morpheme) corresponds to Thessalian *-oi*. In the honorary decree (Tziafalias-Helly 2004–2005) from Larisa (early 2nd c. BCE), dialectal forms are found above all in nominal and verbal morphology. There are also many mixed forms, for example, *opeidéi* ‘for’, which results from a fusion of *hópei* (dialect) and *epeidé* (Koine) or *hupárkhonsa* ‘existing-fem.’ with the feminine present → participle morpheme, typical of the dialect, added to a lexical item of the Koine. Further examples of CM, due to the presence of the Koine and residues of ancient Doric dialects as well as Latin, are documented during late antiquity in Sicily.

CM is also seen in an inscription on a lead cross from Syracuse (5th/6th c. CE) with the following syntagm *atās, hō theós, tīs douílīs* ('of (your) servant, o Lord'): in the first word, a reduced form of the diphthong *aw-*, in accordance with the iotacism of the entire text, co-exists with the → Doric dialectal form of the morpheme.

CARLO CONSANI

Code-Switching

"The juxtaposition within the same speech exchange of passages of speech belonging to two different grammatical systems or subsystems" (Gumperz 1982:59) or code-switching (CS), without taking into consideration the degree of diversity of the language systems involved, is the outcome of → language contact and bilingualism. The analysis of a vast repertory of ancient Greek texts provides two types of CS: the first pertains to the language domain of Greece and concerns varieties of Greek dialects and their relation to the Hellenistic → Koine; the second type is a result of the external contacts that the Greek language had during the course of its long history with other languages of the Mediterranean basin. Language repertoires which exhibit CS phenomena belonging to the first type are characterized by diglossia (i.e., 'bidialectism' or the use of two functional varieties of the same language, vs. bilingualism which involves two different languages). In fact, the Hellenistic Koine is a proper standard language, which was promoted and diffused by the Macedonian monarchy at the supra-regional and international levels, assuming thus a privileged position in relation to various ancient dialects connected with individual city-states. On the other hand, the second type of CS phenomena is characterized by bi- or plurilingualism, not necessarily by diglossia.

Examples of the first type are encountered in two long inscriptions that alternate between Thessalian and the Koine (*IG IX 2, 517*) and between → Boeotian and the Koine (*IG VII, 3172*). The one is characterized by a noticeable capacity to maintain the two separate codes distinct, while the other shows frequent instances of → code-mixing. An interesting instance of CS is found in the proxeny decrees from Olus (*IC I, XXII, 4a*), dated to the 3rd c. BCE, which display

several code alternations in correspondence with the provenance of the proxenos who was to be honored. The second type is found in numerous inscriptions that alternate between → Greek and Latin which come from Greece as well as from other Mediterranean countries, and in inscriptions from Anatolia that alternate between Greek and various local languages, e.g. Pisidian and Phrygian (→ Greek And Phrygian). Given the presence of diverse ethnic groups and their geographical distribution, the island of Cyprus has supplied several texts that either use the two varieties of Greek which were diffused on the island (Cypriot and Koine; Cypriot) and Phoenician or Egyptian (→ Greek And Egyptian) or → Eteocypriot.

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CARLO CONSANI

Cohesion

The concept of cohesion is closely tied up with that of → coherence. The latter refers to the property of a discourse 'hanging together' (from Lat. *cohaerēre* 'to stick together'), which may remain implicit. Cohesion, on the other hand, can be regarded as the visible 'glue' between the parts of a discourse. In other words, cohesion is the explicit linguistic marking of discourse coherence. On this view, coherence primarily is a cognitive phenomenon, whereas cohesion is linguistic.

The landmark work on cohesion in English is Halliday and Hasan (1976), which defines the concept as the possibilities in a language for making texts 'hang together'. The authors argue that there is cohesion whenever the interpretation of an element in a discourse is dependent on that of another element. Thus, it involves the explicit linguistic marking of relations between parts of a discourse, as expressed through both grammar and vocabulary. Such explicit marking helps hearers/readers to understand a discourse. According to Halliday and Hasan, the different expressions of cohesion in English are reference, substitution, ellipsis, conjunction and lexical cohesion.

Halliday and Hasan's description of cohesion has been criticized (e.g. Carrell 1982, Sanders et al. 1992, Sanders and Pander Maat 2006) for

treating the concept as a necessary condition for the connectedness of a discourse. In Carrell's view (1982:486), cohesion is not the cause, but the effect of coherence. Similarly, Sanders et al. (1992:2–3) point out that cohesive elements are “important though not necessary features of discourse; they are linguistic markers, expressing the underlying conceptual relations that are of a cognitive nature”. These authors present coherence and cohesion as alternative approaches, but in fact (the students of) both concepts look at different phenomena, and can therefore also be seen as complementary. Investigating cohesion means focusing on the linguistic reflections of coherence. Tanskanen (2006:7), for instance, adopts this milder view, assuming that cohesion contributes to coherence.

Regarding Ancient Greek, research on cohesion is most elaborately undertaken in Bakker and Wakker (2009), a collection of essays dealing with several cohesive devices in the language. The editors explicitly adopt the basic tenets of Halliday and Hasan's framework, while at the same time recognizing that a discourse may sometimes display coherence without explicit marking. Some papers in that volume discuss anaphoric pronouns, complement clauses or particles, all of which are elements that may mark the familiarity of information or help to structure the discourse. Others focus on the cohesive function of different tenses. Although lexical cohesion is sometimes touched upon as well, there does not yet exist any full-fledged work on lexical cohesion in Greek.

Without explicit reference to the concept of cohesion, however, there are many other works dealing with grammatical cohesive devices in Greek. Examples are Lallot et al. (2011) on different functions of the → historical present, and the great number of publications on particles, such as the monographs by Bäumllein (1861), Denniston (1954) and Hartung (1832–1833), to mention just a few. These works suggest that a wide range of functions is performed by the grammatical features in question.

ANNEMIEKE DRUMMEN

Compensatory Lengthening

Compensatory lengthening (CL) is the process whereby a segment deletes and a neighboring

(usually, adjacent) segment lengthens to compensate for its loss. Ancient Greek manifests three basic instances of CL named 1st, 2nd, and 3rd, owing to the chronological order of their appearance. Samuels (2006) argues that the 1st CL was a Proto-Attic-Ionic change (early 1st millennium BCE), while the 2nd CL occurred before the Attic-Ionic dialect split (ca. 8th century BCE). The 3rd CL happened sometime within the first millennium (Rau 2010:178).

The 1st CL refers to a set of processes whereby **h* derived from Proto-Greek **s* or **j* (also symbolized by **y*) deleted in consonant clusters with subsequent lengthening of the preceding vowel. The clusters implicated were (Crist 2001:76):

- (a) **hC* clusters: **hm* **hn* **hl* **hr* **hw*
- (b) **Ch* clusters: **mh* **nh* **rh* **lh* **wh*
- (c) **nj* **rj* **wj* after **u*, **i* and **e*

Notably, vowel lengthening occurred everywhere save the → Aeolic dialects Lesbian and → Thessalian. There, the segment affected by lengthening was a consonant either preceding or following the deleted segment (Buck 1955:61–62, Ingria 1980:476–478).

(1) Prehistoric	Lesb./ Thess.		Att.
* <i>éstelsa</i>	<i>éstella</i>	<i>ésteila</i>	'set in order, arrange-aor.'
* <i>phthérjō</i>	<i>phthérrō</i>	<i>phtheírō</i>	'destroy-pres.'
* <i>selásnā</i>	<i>selánnā</i>	<i>seléne</i>	'moon'
* <i>esmí</i>	<i>émmi</i>	<i>eimí</i>	'(I) am'

Note that the orthographic <ει> (here *ei*) and <ου> (here *ou*)—known as *spurious diphthongs*—that were produced through CL (and → contraction) in Attic-Ionic were not pronounced as diphthongs but as long ε:/ο: with a tongue position higher than and distinct from the original long mid vowels ε:/ο: (Samuels 2006:2, → Phonetics).

The 2nd CL involves vowel lengthening after the deletion of the consonant *n* before *s*, e.g. *mélan-s* > *mélās* 'black', *pán-sa* > *pása* 'all-nom.fem.sg.'. A related process is the loss of *n* + *t, d, th* clusters before an *s* in inflection with subsequent CL of the previous vowel, e.g. *pant-si* > *pási* 'all-dat.pl.', *spend-sō* > *speisō* 'shall make libation', *penth-somai* > *peisomai* 'shall suffer'. However, the deletion of *n* alone before the *si* of the dative

plural causes no lengthening, hence, *daimon-si* > *daímōsi* and not *daímōsi* ‘the gods-dat.pl.’ (Goodwin 1900:20–21).

The 3rd CL affected the *digamma w*. While preserved in Mycenaean, *w* was gradually lost from the onset in the dialects. An onset is the position a consonant holds before a tautosyllabic vowel, e.g. in Mycenaean *wiriza* ‘root’ all of *w*, *r* and *z* are onsets to their corresponding syllables. The deletion of onset *w* had no effect when preceded by an open syllable or when word-initial, e.g. *wánax* > *ánax* ‘lord’. It was accompanied by CL, however, if *w* was post-consonantal. This was true for Ionic, but not for Attic or Aeolic where no CL arose (Steriade 1982:118).

(2)	Ion.	Att.	
	<i>odwós</i>	<i>oudós</i>	<i>odós</i> ‘threshold’
	<i>xénwos</i>	<i>xéinos</i>	<i>xénos</i> ‘stranger’

Finally, it is significant that in some instances of the 2nd and 3rd CL, e.g. *émēnsa* > *émeina* ‘I remained’, *stenwós* > *steinós* ‘narrow’, no direct adjacency between the lengthened and deleted segments existed in the original form; rather, a segment intervened and yet CL ensued. This fact has been difficult to analyze and has stirred interesting theoretical discussion. See for instance Steriade (1982) and Hayes (1989).

NINA TOPINTZI

Conjunction Reduction

Conjunction reduction, or → coordination reduction (Harris Delisle 1978), occurs when some common feature of two coordinated sentences or clauses, which is overtly encoded in the first, is not repeated in the second. Often, the definition of conjunction reduction involves overt vs. null realization of an argument, as in the case of the → subject in an English sentence like (1):

(1) *I eat and drink.*

In Gk. conjunction reduction applies both to the subject and to the → direct object. In addition, grammatical categories can also be subject to conjunction reduction. The following examples contain various types of conjunction reduction:

(2) *háma dè tēi hēmērāi tēi pólei prosékeito ousēi ou megálēi kai Ø hairēi*
 ‘At daybreak he assaulted the town, which is not a large one, and took (it)’. (Thuc. 7.29);

(3) *hōs tō g’antibíoisi makhessaménō epéessin anstētēn, Ø lúsan d’agorēn parā nēusin Akhaiōn*
 ‘So when the two had made an end of contending with violent words, they rose, and broke up the gathering beside the ships of the Achaeans’. (Il. 1.304–305)

In example (2), the two verbs *prosékeito* and *hairēi* share the same direct object, which is encoded in the first clause through the → dative noun phrase *tēi pólei* (it is indicated as Ø in the second). Note that the verb *hairēō* takes the → accusative: this shows that the dative in the preceding clause must be taken as a real direct object (Gk. has transitive verbs that take non-accusative objects, Luraghi 2010). Conjunction reduction affects constituents which have the same grammatical relation, and is not sensitive to morphological coding. If one now considers the categories expressed by the verbs, another type of reduction emerges: while the form *prosékeito* is a past tense, the form *hairēi* is a present. This type of reduction, whereby a present follows a past or future tense, has been described in Kiparsky (1968), where it is argued to be a feature of Proto-Indo-European.

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SILVIA LURAGHI

Contraction

Contraction is the coalescence of two adjacent vowels into a long vowel or a diphthong. It is one of the possible strategies for eliminating hiatus (→ Diphthongization; → Synizesis). In Ancient Greek contractions ensued from loss of intervocalic /s/, /j/ and /w/. The term ‘contraction’ refers to coalescence of vowels word-internally. For the same phenomenon in word junctures, see → Crasis.

Similar vowels coalesce into the corresponding long vowel: **kréwaa* > *kréā* ‘meat (nom./acc. pl.)’, **pólui* > Ion. *pólī* ‘city (dat. sg.)’, *basilées* ‘kings (nom. pl.)’ > Old Att. *basilēs*, **dēlóōsi* > *dēlósi* ‘to show (3rd pl. subj.)’. *e + e* and *o + o* become close-mid vowels /e:/ and /o:/ (spelled

ei and *ou*) in Attic-Ionic and the dialects of the so-called *Doris mitior* (→ Doric): **tréjes* > **trées* > *treís* ‘three’, thematic gen. sg. **-o(j)o* > *-ou*. On the other hand, → Aeolic, → Arcadian and the dialects of the so-called *Doris severior* exhibit open mid-vowels /ɛ:/ and /ɔ:/: *trés* ‘three’, thematic gen. sg. *-ō*. → Analogy may explain some uncontracted forms: *Hērakléēs* ‘Heracles’ for *Hēraklēs* (after gen. *Herakléous*), Arg. *grophées* ‘secretary (nom. pl.)’ for *grophéis* (after gen. sg. *grophéos*). All things being equal, the more two vowels are similar, the more likely they are to coalesce: **histāsi* > *histāsi* ‘to set up (3rd pl. pres.)’ vs. *tithéasi* ‘to place (3rd pl. pres.)’, *didóasi* ‘to give (3rd pl. pres.)’, *pléete* > *pléite* ‘to sail (2nd pl. pres.)’ vs. *pléomen* ‘to sail (1st pl. pres.)’.

Contraction of dissimilar vowels is governed by various factors. In → Attic *ě* + *ǎ* and *ǎ* + *ě* behave differently: *génea* > *génē* ‘race (nom./acc. pl.)’, but **eníkai* > *enikā* ‘to win (3rd sg. imperf.)’. However, *ǎ* + *ǔ* / *ǔ* and *ǔ* / *ǔ* + *ǎ* always contract into *ō*. In other dialects the length of *a* plays a major role. When contracted, *ǎ* + *ě* and *ě* + *ǎ* yield *ē*, and *ǎ* + *ǔ* and *ǔ* + *ǎ* yield *ō* in Doric: **eníkai* > *enikē* ‘to win (3rd sg. imperf.)’, *basiléa* > Arg. *basilē* ‘king (acc. sg.)’, p.n. *Sawo-* > *Sō-*, Delph. **awóa* > *aō* ‘dawn (acc. sg.)’. However, *ā* + *ě* or *ǔ* / *ǔ* and *ǔ* + *ā* and *ě* + *ā* become *ā*: **āwélios* > *hálíos* ‘sun’, gen. sg. of masc. in *-ās -āo* > *-ā*, gen. pl. *-ǎōn* > *-ân*, Rhod. *Boādrómios* > *Bādrómios* (month’s name), Selinuntian *krēa* > *krā* ‘meat (nom./acc. pl.)’. When contracted, *ǔ* + *ě* become /ɔ:/ or /ɔ:/: **dóhelos* > *doûlos* or *dôlos* ‘slave’. Contraction of *ě* + *ǔ* is mainly Attic: *philéomen* > *philoumen* ‘to love (1st pl. pres.)’.

The contraction of *a*, *e*, *o* + *i/u* yields *a* → diphthong: **h₁es(s)i* > **ehi* > *eî* ‘to be (2nd sg. pres.)’, **h₁su* > **ehu* > *eû* ‘well’. *a* or *o* + diphthong become a long diphthong: **erôtāei* > Dor. *erôtêi*, Att.-Ion. *erôtāi* ‘to ask (3rd sg. pres.)’. However, *e* or *o* + *ei* or *oi* is always *-ei* and *-oi*: **philéei* > *phileî* ‘to love (3rd sg. pres.)’, **philéoi* > *philô* ‘to love (3rd sg. opt.)’.

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ALCORAC ALONSO DÉNIZ

Cypro-Minoan Syllabary

Cypro-Minoan is the modern name given to several different but related Cypriot syllabic scripts

of the second millennium BCE. These syllabaries seem to be linked in some way with the Minoan scripts, which were used mainly on the island of Crete. The Cypriot ‘Greek’ (or ‘classic’) syllabaries (→ Cypriot Syllabary) of the first millennium BCE clearly derive from these Bronze-Age Cypro-Minoan scripts. The main characteristics of the Cypro-Minoan corpora are the following (after Olivier 2007; since then, four short Cypro-Minoan (= CM) inscriptions have been published: Cadogan et al. 2009):

Cypro-Minoan 0: One clay tablet found in Enkomi (Cyprus); 23 signs in total; 20 or 21 different signs; the text is too short to venture an estimation of its signary’s total number of signs; dated not later than 1525/1500–1425/1415 BCE. Eight signs are common to CM 0 and CM 1–3. This script is frequently considered as an archaic form of the other Cypro-Minoan syllabaries.

Cypro-Minoan 1: 204 inscriptions found in Cyprus (whole island; written on clay, ivory, metal, stone, glass); 1079 syllabograms in total; 72 different syllabograms—ca 77 according to the Mackay formula; theoretically dated 1600/1575–850, but more likely to 15th/14th c.–950 BCE. There are 45 and 41 CM 1 syllabograms common to the CM 2 and CM 3 respectively.

Cypro-Minoan 2: Three clay tablets found in Enkomi (Cyprus); 1369 syllabograms in total; 61 different syllabograms—ca 64 according to the Mackay formula; dated no later than 1190–1125/1100 and 1125/1100–1050 BCE; 34 syllabograms are common to the CM 2 and CM 3.

Cypro-Minoan 3: 8 clay tablets found in Ugarit, modern Ras Shamra (Syria); 253 syllabograms in total; 50 different syllabograms—ca 62 according to the Mackay formula; dated 1320–1190 and 1190–1125/1100 BCE. CM 3 is generally supposed to be a variant of other CM scripts, but there are good arguments for considering it as a distinct system. 9 and 16 CM 3 syllabograms are absent from CM 1 and CM 2 respectively. Since CM 1 and CM 2 corpora are four and five times larger than CM 3, these absences seem highly significant. It is especially impressive that no less than seven CM 3 syllabograms are totally unknown in both CM 1 and CM 2.

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YVES DUHOUC

Derveni Papyrus

A carbonized papyrus-roll found in 1962 near Derveni, a site about 10 km northwest of Thessaloniki, Greece, among the debris from a funeral pyre that had been strewn over the slabs covering a tomb. The tomb has been dated to the end of the 4th or the beginning of the 3rd c. BCE, the *terminus ante quem* for the papyrus, whose script can be cautiously dated to between 340 and 320 BCE (Kouremenos et al. 2006:8–9).

The papyrus, the oldest Greek manuscript found to date, preserves substantial parts of a hitherto unknown prose work by an unidentifiable author. It is a detailed and fanciful allegoresis of a hexametric poem ascribed to the mythical singer and sage Orpheus. The poem, a theogony, is interpreted by the author as a coded cosmology built on the same general principles as the physical theories advanced in the wake of Parmenides of Elea by Empedocles of Acragas, Anaxagoras of Clazomenae, the atomists, and Diogenes of Apollonia (Kouremenos et al. 2006:28–45). Such a work can be plausibly assumed to have been composed in the 2nd half of the 5th or at the beginning of the 4th c. BCE. We have no way of knowing if it continued in one or more rolls or what the purpose of the allegoresis might have been. The author's Greek belongs to the Ionic-Attic dialectal group. In the surviving fragments of the work some prominent Ionic features are unexceptionally preferred over their Attic alternatives, but there is a remarkable inconsistency with regard to other features, occasionally even in the same line or sentence, whereas, on the other hand, there are quite a few instances of unexceptional adherence to Attic usage (see Kouremenos et al. 2006:11–14). Among the prominent → Ionic features consistently present in the surviving parts of the text are: -ss- for Att. -tt-; *gínesthai/ginóskein* for Att. *gígnesthai* 'become' /*gignóskein* 'know'. But we find -ē and -ā after *r*, *e* and *i* (cf. → Attic Reversion); uncontracted as well as contracted -ea; *eón* and *ón* (masc. ptc. 'being'); *o* -stem dat. pl. -oisin and -ois; *ā* -stem gen. pl. -eōn, possibly -ōn, too; *én* occurs only once, but the Att. *eán* 'if' might occur in an unplaced fragment. Notable unexceptional deviations from strict Ionic include: *mónos*, not *moúnos* 'alone'; *héneken*, not *heíneken* 'on account of'; *aeí*, not *aieí* 'always'; *adelphé*, not *adelphéé* 'sister'; *thaumázein*, not *thōmázein* 'wonder, marvel'. The author's style is

informal and careless, its most prominent characteristic being the very frequent use of asyndeton. Irrespective of the author's identity or his/her real intent, the main interest of the work lies in the fact that its discovery in the Derveni papyrus reveals a hitherto unsuspected though insolubly puzzling offshoot of the 5th c. BCE Parmenidean revolution in cosmology.

THEOKRITOS KOUREMENOS

Desideratives

Desideratives are secondary derivatives from verbal and nominal roots displaying stems consisting of two thematic formants (i) *-i-á* and (ii) *-s-ei*. Both are documented already in Homer (*Iliad*): *glauk-i-á-ei* 'glares fiercely' (of a lion), *op-s-ei-ō* 'I wish to see' (based on the sigmatic future *óp-s-omai* 'I will see'). Their lists are available in Schwyzer (1939–1950:732 and 789).

(i) A closer look at those formed by *-i-á* allows us to distinguish two closely related sub-categories:

- those expressing strong desire or emotions (Schwyzer's "krankhafter Trieb")
- those describing bodily conditions:

(i.a)

<i>khēzēt-i-á-ō</i> 'to be eager	<i>khéz-ō</i> 'to ease oneself'
to ease oneself'	
<i>binēt-i-á-ō</i> 'to want to	<i>biné-ō</i> 'copulate'
copulate'	
<i>ōnēt-i-á-ō</i> 'to be eager	<i>ōnēt-ós</i> 'bought'
to buy'	

(i.b)

<i>ophthalm-i-á-ō</i> 'to have	<i>ophthalm-í-a</i>
diseased eyes'	'ophthalmia'
<i>ōkhr-(i)-á-ō</i> 'to be pale'	<i>ōkhr-ó-s</i> 'pale'
<i>eruthr-i-á-ō</i> 'to be apt to	<i>eruthr-ós</i> 'red'
blush'	
<i>lith-i-á-ō</i> 'to suffer from	<i>lith-os</i> 'stone'
stone'	
<i>ilingiáō</i> 'to be(come)	<i>ilingos</i> 'vertigo'
dizzy'	
<i>splēn-i-á-ō</i> 'to have an	<i>splēn</i> 'spleen'
enlarged spleen'	

There are also formations in *-a* (*phon-á-ō* ‘to be murderous’ versus *phon-eú-ō* ‘to kill’) or the formants *-i-á* can be added to the stem of the sigmatic future (*klau-s-i-á-ō* ‘to desire to weep’) as in *tò thúrion klausiái* ‘the door is like to weep’ (Aristophanes).

Some examples for (ii) include *dra-s-eí-ei* ‘he is going to do’ (Sophocles) versus *drá-s-ei* ‘he will do’; *gela-s-eí-ei* ‘he is ready to laugh’ (Plato) versus *gelá-s-e-tai* ‘he will laugh’. In the later language this formation (called ‘Doric future’) was understood as possessing simple future time reference: *klau-s-eí-tai* ‘he will weep’ (next to the ordinary sigmatic future *kláu-s-e-tai*). Outside Attic and Ionic this formation is found above all in →Doric dialects: ‘strict’ Doric (Crete) *prak-s-i-omen* ‘we will do’ (Attic *prák-s-o-men*), *speu-s-i-ō* ‘I will hurry’ (Attic *speu-s-é-ō* < **speud-s-é-ō*), ‘mild’ Doric (Rhodes) *apo-dō-s-eú-nti* ‘they will give back’ (Attic *dō-s-ou-si* < **dō-s-é-o-nti*) with regressive (*eo* > *io*) and progressive height → dissimilation (*eo* > *eu*), respectively, see Bubenik (1983:65–8).

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VIT BUBENIK

Eteocretan

‘Eteocretans’, *Eteókrētes*, is the name given by the ancient Greeks to a group of Cretan people. The meaning of the Greek word is ‘true Cretans’, implying that the Eteocretans were supposed to be the oldest inhabitants of the island. The first mention of the word ‘Eteocretans’ that we know appears in Homer (*Od.* 19.175). The Greek tradition adds that they were barbarians, viz. people speaking a language other than Greek. Eteocretans were supposed to dwell in the southern part of Crete, especially in Praisos, ca 20 km southwards of Sitia.

In 1884, an inscription in Greek letters but written in a non-Hellenic language was unearthed in the ruins of the ancient city of Praisos. Four other similar texts were discovered in the same place, and still later a sixth one was found in the small town of Dreros (near Neapolis, in the gulf of Mirabello; this damaged inscription could perhaps be bilingual). This proves that the Eteocretans were actually not concentrated in the southern part of Crete, but in its oriental half.

The six undisputed Eteocretan inscriptions date between ca 650 (?) and the 3rd or 2nd c. BCE. All of them are fragmentary and their texts are short—their grand total amounts just 422 letters, less than approximately six printed lines of today (!). Moreover, their internal analysis is greatly hindered by their scarce use of dividers. The best-identified word is the Eteocretan form of the name of Praisos, which is spelled *-phraiso-*. A sequence *-komn-* is written three times. It also appears in the Hellenized month’s name *Komnokários* in the Eteocretan city of Dreros, but we are in no position to assess its meaning. The same is true for autonomous sequences like *barze*, *et*, *inai*, *lmo* or *men*. The Eteocretan spelling rules opted for the omission of many vowels, as shown for instance by the sequence *-stnmt-* (division unknown). It is, then, no wonder that the identification of the Eteocretan language has proved to be an extremely difficult task. Several solutions have been proposed, such as, for instance, Balto-Finnish, Greek, Hittite, an independent Indo-European language akin to Venetic, a mixed idiom, Phrygian or Semitic. None of these proposals has succeeded to convince the scholarly community. What seems reasonably certain is that although the Eteocretan inscriptions are written in the Greek alphabet their language is clearly not Greek.

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YVES DUHOUX

Formulas

The term ‘formula’ is broadly used to denote the verbal building blocks of ancient Greek poetry, primarily of the dactylic hexameter epic verse form. Formulas are the standardized phrases that were ‘stitched’ together—to use an ancient metaphor—by epic poets to describe the typical characters and objects and to narrate the typical actions of heroic epic: ‘rosy-fingered Dawn’; ‘dark-prowed ships’; ‘standing opposite him he spoke...’; ‘he fell with a thud and his armor rattled about him’. Concentrated study of the essential nature of the formula was the key to determining that the *Iliad* and the *Odyssey*, and, by extension, all early Greek epic verse, were fundamentally oral in nature: composed by a poet who did not know how to write, performed

for an audience that did not know how to read, and transmitted for generations through an oral rather than manuscript tradition. Milman Parry, who was at the center of this concentrated study, defined the formula in his 1928 thesis as “an expression regularly used, under the same metrical conditions, to express an essential idea” (Parry 1971:13 and 272). The story of the evolution of his research offers an excellent prism through which to examine the essence of the Homeric formula.

It had been recognized, even from the earliest period, that there was something unique about the style of Homeric epic. The language was notoriously repetitive. Highly ornamental epithets were attached to all the main characters: ‘swift-footed Achilles’ occurs 33 times in the *Iliad*; ‘much-suffering Odysseus’ occurs 37 times in the *Odyssey*. Half- and whole-verse formulas described the most common actions: ‘So he spoke, and all of them were stricken with silence’ occurs 10 times in the *Iliad*, 5 times in the *Odyssey*; ‘They put their hands to the good things that lay ready before them’ occurs 3 times in the *Iliad*, 11 times in the *Odyssey*. Entire speeches were repeated almost verbatim: Agamemnon’s promise of rewards to Achilles in *Iliad* 9.122–57 and again in 9.264–99. Indeed not just words and phrases but entire scenes were very stereotypical in nature, with close verbal and structural similarities, especially scenes that narrated frequently occurring activities in the epics: arming for battle (*Il.* 3.328–38; 11.15–46; 16.130–44; 19.364–91); preparation of feasts (*Od.* 1.136–40; 4.52–6; 7.172–6; [10.368–72]; 15.135–9; 17.91–5); as well as sacrifice, libation, dressing, bathing, bed-preparation, departure by ship, arrival by ship, decision-making, and so forth. Homer could draw upon a rich inherited tradition of poetry that provided for him the very words (epithets, formulas, type-scenes) that were the building blocks of epic verse.

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STEVE REECE

Glides

Although the term ‘glide’ can be used as a synonym of → semivowel, in a narrower sense it describes the transitional semivowel between

/i/ and /u/ and a following mid or low → vowel, cf. French *plier* /pli(j)e/. Glides have no phonological status in Ancient Greek and they are not usually represented in writing. However, glide-notation appears sometimes in early Greek inscriptions.

A [j] glide, spelled with *iôta* <i>, is found in the Ion. p.n. *Diôphânês* and in Sicyonian *Sekuwónios* ‘Sicyon (gen.)’. Such spellings typically occur in Greek regions like Argos (→ Argolic), Tiryns and → Pamphylia: Arg. *Políiádi* ‘(Athena) Polias (dat. sg.)’, Pamph. *diía* ‘through’, *hiároisi* ‘the holy ones (dat.)’. Similar spellings also occur between a → diphthong in /j/ and a following vowel: Arg. *Athanaíias* ‘Athena (gen.)’, *Karneíias* ‘Karnea (gen.)’, Tiryinthian *aliiaíian* ‘assembly (acc.)’.

A [w] glide, written with *waú* <w>, appears between /u/ and a following vowel: El. *dúwo* ‘two’, *kathúwēn* ‘to sacrifice’, Sicyonian *Sekuwónios* ‘of Sicyon’. In Euboean, where <u> was pronounced /y/ or /y:/, the <w> in *dúwe*, *dúwo* ‘two’ probably stands for a glide [y]. It is also attested between a diphthong /ew/ and a following vowel in the Cor. p. n. *Eúwarkhos* and in Cypr. *ka-te-se-ke-u-wa-se* / *kateskeíwase* ‘he built (aor.)’. In late → Laconian appears for <w> after a diphthong /ew/: p.n. *Eubámeros* = Att. *Euémeros*, p.n. *Eubáberos* (= *euáeros* ‘with good air’ <*eu + *áberos*). Cret. *tawúros* ‘bull’, Att. *awutár* ‘but’, and Eub. *awutós* ‘himself (nom.)’ cannot represent bisyllabic [awu] with a glide, but are likely to reflect a combination of the two possible archaic spellings of the diphthong, *tawros* and *taúros*. It has been suggested that a [w] glide may have appeared between /a/ and /o/ in Corinthian p.n. *Tlasíawo* ‘Tlasias (gen. sg.)’, *Potedáwōn* ‘Poseidon’, but the former is probably analogical, based on the gen. sg. of the compound p.n. in *-lawo* (= Ion./Att. *-leō*) and the latter, on *Paiáwōn* ‘Paeon’.

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ALCORAC ALONSO DÉNIZ

Greek Loanwords In Slavic

There are about 150 loanwords in the Old Church Slavonic corpus of the texts of the 9th–11th c. CE. Prominent among them are (i) theological terms, (ii) names of professions, and those reflecting (iii) biblical realia. After the 11th c. Greek borrowings and loan translations appear in hundreds, in

correspondence with the needs of the fast developing ecclesiastic and secular literature. Most of the Old Church Slavonic texts are translations into the Macedonian Slav dialect made most likely during the years 863–865 by two bilingual Greek missionaries, Constantine (Cyril as a monk) and his brother Methodius, natives of the city of Thessaloniki. Their work was continued by their disciples after 885 in Bulgaria and Central Europe (Moravia and Pannonia).

The extant corpus of the 9th–11th c. includes biblical translations, homilies, lives of saints, panegyrics and others. Their somewhat artificial language was intended from the very beginning for liturgical purposes and the translators behaved as *fidi interpretes* of the Greek originals (very much as the earlier translators into Armenian and Syriac, cf. Brock 2001). In their translational technique (*verbum e verbo* ‘word by word’) they reproduced many morphosyntactic grammatical categories of the New Testament and Septuagint Greek (such as the progressive aspect <h>όπου ἐν <h>o Iōánnēs baptízōn > idě že bě Iōánnŭ krestę ‘where Ioannes was baptizing’, and absolute constructions), they rendered consistently Greek particles (*gár* > *bo* ‘for, because’, *dé* > *že* ‘and, now, but’) and adhered as much as possible to the Greek word order.

(i) Theological terms

anŭngelŭ/angelŭ < *ángelos* ‘angel’
 ijerei < (*h*) *iereús* ‘priest’
 olokavŭtōma < *olokaútōma* ‘holocaust’
 skanŭdalŭ < *skándalon* ‘scandal’

(ii) Professions

arkhitektonŭ < *arkhitéktōn* ‘architect’
 arkhitriklinŭ < *arkhitríklīnos* ‘table master’
 gnaphei < *gnapheús* ‘a fuller’

(iii) Biblical realia

akridŭ < *akrís* ‘locust’
 aromatŭ < *árōma* ‘perfume’
 kitŭ < *kétos* ‘sea monster, whale’

[This article has been shortened for the preview.]

VIT BUBENIK

Heteroclitics

A combination of *r*- and *n*- stems is found in a small group of Indo-European neuter nouns called heteroclitics. The *r*-stem appears only in the nom./acc., the *n*-stem elsewhere, as in Latin *femur* ‘thigh’, gen. *feminis* (without any cognates in other IE languages) and well known examples such as Greek <h>údōr ‘water’, gen. <h>údat-os from *<h>údn̥t-os, with syllabic -n̥- from PIE *uód-ŋ, gen. *uód-n-os. The insertion of -t- must have taken place during the pre-historical period.

Their exhaustive list can be found in Schwyzer (1939–1950:517–21). Various proposals regarding their origin and distribution are available in earlier studies by Petersson (1922), Benveniste (1935), Shields (1979), and more recently by Friedman (1999). The following list of cognates in Hittite, Sanskrit, Greek and Latin presents the words with heteroclitic cognates in three or at least two daughter languages, i.e. those with the highest probability of IE ancestry.

The evidence of other IE languages allows us to reconstruct more heteroclitics for PIE, but their Greek cognates are not heteroclitic; some are athematic *r*-stems and some are thematized (*ro*- and *no*- formations, → Thematic Vowel, Stem Formation). For instance, the PIE heteroclitic *sṵwóp-r/n- ‘sleep’ can be reconstructed on the basis of Gk. <h>úpar and <h>úp-no-s (thematized), Ved. *sváp-na-s* and Hitt. *suppar-ya-*. There is another PIE expression for ‘excrement’ reconstructible as heteroclitic based on the exclusive evidence of Skt. *sákŕt*, *sákn-ás*, but its Gk. cognate *kóp-ro-s* is thematized. The reconstruction of the PIE word for ‘feather, wing’ rests on the exclusive evidence of Hitt. *pattar*, *paddan-as*, while there are *ro*- and *no*- formations elsewhere: Skt. *pát-ra-m*, Gk. *pterón*, OIr. *én* ‘bird’. There is no direct evidence for heteroclitism in one of the PIE reconstructions for ‘hand’, *méH-r/n (Mallory & Adams 2006:181), based on cognates in Lat. *manus*, Gk. *márē* ‘hand’ (if indeed related), Hitt. *māniahḫ-* ‘hand over’ and Alb. *marr* ‘take, grasp’ (< *mar-n-(y)e/o-), cf. Hom. *márptō* ‘catch, seize’.

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VIT BUBENIK

Table 1: Heteroclitics

		Hittite	Sanskrit	Greek	Latin	PIE
‘liver’	nom.		<i>yákr̥t</i>	<h> <i>ēpar</i>	<i>iecur</i>	* <i>īē^ku-r/n-</i>
	gen.		<i>yakn-ás</i>	<h> <i>épat-os</i>	<i>iecin-eris</i>	
‘blood’	nom.	<i>ēṣhar</i>	<i>ásrk</i>	<i>êar, (e)íar</i>	<i>aser, assyr</i>	* <i>esh₂-r/n-</i>
	gen.	<i>sakkar</i>		<i>skôr</i>		* <i>sók-r/n-</i>
‘udder’	nom.	<i>(udne ?)</i>	<i>ūdhar</i>	<i>oúthar</i>	<i>uber</i>	* <i>uHdh-er/n-</i>
	gen.		<i>udhn-ás</i>	<i>oúthat-os</i>		
‘water’	nom.	<i>wātar</i>	<i>(udán)</i>	<h> <i>údōr</i>		* <i>uód-r/n-</i>
	gen.	<i>witen-as</i>	<i>udn-ás</i>	<h> <i>údat-os</i>		

Internal Reconstruction

1. INTRODUCTORY REMARKS

Reconstruction implies the reversion of language history and the reduction of diversity to identity. While external reconstruction based on the → comparative method uses different, but genetically related languages or dialects to reconstruct an earlier stage from which the subsequent forms of the daughter languages have evolved, internal reconstruction (IR) seeks to reduce alternations attested in one language to a uniform previous pattern by defining them as the result of a split development.

Beside the comparative method (CM) as the most important tool of reconstruction in historical linguistics, IR was used successfully already towards the end of the 19th c., most famously by F. de Saussure in his reconstruction of the Proto-Indo-European laryngeals (de Saussure 1879, see below; → Laryngeal Changes). While CM interprets data from different languages or dialects as indicators of historical developments, IR uses data from a single language to make assertions about an earlier state of affairs. The crucial concept involved is that of alternation, usually patterns of distribution on the phonological and morphological level which are interpreted as the result of language change. Like CM, IR relies on the notion of the regularity of language change leading to a rule-based set of alternations that it seeks to reduce to a single pattern (phoneme, morpheme, etc.) in the prehistory of the language. Both methods rely on basic principles such as Occam’s razor (prefer the simplest analysis possible) and takes into account the typology

of language change, e.g. the frequency of sound changes attested in languages in general: the alternation in Old Church Slavonic nom. *bogъ* : voc. *bože* ‘god’ could in principle be reduced either to an original paradigm **bogŭ* : *boge* or **božŭ* : *bože*. Apart from our historical knowledge, the former is advisable as assimilation of stops to the palatal quality of a following vowel and subsequent affricatization and fricativization is a common sound change. Narrowed down to the individual language, this typologically informed way of reasoning could be called the “language consistency principle”: IR should aim at reconstructing features consistent with the structural characteristics of the language and its cognate languages.

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DANIEL KÖLLIGAN

Labiovelars

Myc. inscriptions show that the three labiovelars *k w*, *g w*, and *g wh* inherited from Proto-Indo-European were still distinct from other velars and from labials in most environments during the second millennium BCE. They were represented with the letter qoppa, written Ω . A notable exception was when adjacent to [u]; in such instances, the labiovelar unrounded, as it also did before [j]. Both of these developments took place in Proto-Greek (→ Proto-Greek And Common Greek) (Stephens & Woodard 1986, Woodard 1997).

Myc.	Later Gk.	PIE	
qe-to-ro	<i>téttares/</i> <i>téssares</i>	*k ^w etwor	'four'
qo-u-ko-ro	<i>boukólos</i>	*g ^w ou-k w ol-	'cowherd'
e-u-ke-to	<i>eúkhetoi</i> <i>péssō</i>	*weg ^{wh} *pek ^w -yo	'(s)he proclaims' 'I ripen'

Later, the → labiovelars palatalized or labialized according to environment. Before [i], the development of *k^w in all dialects was a dental, while *g^w and *g^{wh} yielded labials; one notable exception is *kís* 'who?' from *k^wis in Thess. (see Stephens & Woodard 1986).

<i>tís</i>	*k ^w is	'who?'
<i>bíos</i>	*g ^w ih ₃ os	'life'
<i>óphis</i>	*og ^{wh} is	'snake'

[This article has been shortened for the preview.]

BRIDGET SAMUELS

Merger

Several mergers took place in the consonantal system between PIE and the Classical period, while later mergers transformed the vowel system as it developed into Koine.

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BRIDGET SAMUELS

Vocative

1. GENERALITIES

The vocative is the grammatical case (→ Case (Including Syncretism)) used to address the per-

son or entity (divinity, animal, seldom object) the speaker is talking to. Its function is to establish and identify the class within a given speech act, e.g. *Sókrates* 'oh Socrates!'. In other words, the vocative functions as a 2nd person marker on nouns, i.e., it is a 2nd person deictic form (→ Deixis (Including 1st and 2nd Person)), since it realizes its reference by linking to the extra-linguistic context in which the speech act takes place.

In the Stoic tradition, the term for the vocative case is *prosagoreutikón*, from *prosagoreúō* 'to greet' (Belardi and Cipriano 1990). From the Alexandrian grammarian Dionysius Thrax (2nd–1st c. BCE) on, the standard term among Greek grammarians is *klētiké* (*ptôsis*), from *kaléō* 'to call'.

2. FORMAL CHARACTERISTICS

The vocative displays specific forms only in some masculine and feminine nouns when singular. Otherwise, in the dual, plural, as well as in the neuter nouns, it always has the same form as the → nominative. This case syncretism took place at an early stage of Proto-Indo-European: in PIE the vocative plural had the same form as the nominative except for stress. Vocative forms were atonic except when occurring at the beginning of an utterance or at the beginning of a verse. In that case their initial syllable was stressed (cf. Ved. voc. pl. *pítaras/ pítaras* 'oh fathers!' vs Ved. nom. pl. *pitáras* 'fathers' (Sihler 1995:250). This prosodic differentiation, however, is lost in Greek.

[This article has been shortened for the preview.]

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