Temporality and causality:
The case of Greek subordinating connectives[*]

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1. Introduction

Language is not a random event. It exists because the world exists and "the world is all that is the case", as Wittgenstein put it. Language is the picture of reality. Language depicts the world and the world is reflected in it. It is within this conventional earlier Wittgensteinian framework that I propose to view connectives at an initial stage.[1] This approach is adopted because I believe that whatever meanings and functions of connectives exist, or rather are current, in language usage, they all derive from a conceptual brand of meaning describable as part of a pictorial form. Extrapolating from Wittgenstein's view that,

> Pictorial form is the possibility that things are related to one another in the same way as the elements of the picture.
> *That* is how a picture is attached to reality; it reaches right out to it,
>
> (1921: 2.151, 2.1511)

[1] As rightly pointed out by one of the reviewers, Anscombre, this earlier Wittgensteinian approach seems to be impervious to the later view of the two-way interaction between language and the world. I fully accept this latter view (see Kitis, 1995, 1997, Kitis and Milapides, 1997, Kontoulis and Kitis, forthcoming), but for the purposes of an initial examination of the meanings of connectives at their propositional level (one of at least three levels of the organization of conversation) it is convenient to adopt the earlier Wittgensteinian picture theory of meaning.

we will initially assume that connectives are those forms that are used as tools in order to relate or combine, not elements, but pictures of states of affairs, correlating them with various configurations of such states.

Whatever framework we assume, however, both the linguistic world and the natural world are intertwined in intricate ways. And this epistemological issue is very current.[2] Indeed, Dascal (in progress) writes:

> Philosophers of science will need to follow other contemporary philosophers in examining, to a previously unprecedented depth, the manner in which *language fits the world*, asking how terms attach to nature, how those attachments are learned, and how they are transmitted from one generation to another by the members of a language community.

The aim of this paper falls within the framework of examining how this picturing of the world is imprinted in linguistic matter. Connectives, as semantic artefacts, connect propositions,[3] the latter depicting events, states of affairs, relations, etc. In this function, connectives function as articulators joining together in a number of relations those propositions portraying the world. It is, therefore, not totally unwarranted to start examining the linguistic connectives by reflecting upon the human perception and conception of physical 'reality'.

2. Space, time and cause.

Whether our conception of ourselves and, or rather in, our physical environment is a naive conception or a rather sophisticated Einsteinian or even Newtonian one,[4] in our western civilization of the last centuries we place ourselves within the frame of the construct of 'spacetime'. Whether we visualize time as flowing along an horizontal dimension with an egocentric point signifying the eternal 'now', that is, each present moment moving into the future in an ever forward flowing motion, or whether we perceive of time in a Shakespearean fashion (sonnet 60) as a moving line flowing over fixed events, what remains prevalent in our human perceptions and conceptions of time is its spatial character. In other words, time is visualized as either a local point or a force within a limited

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[2] As Anscombre pointed out, what is current need not necessarily be true. I fully subscribe, of course, to this.

[3] By this I do not wish to claim that connectives function solely at the propositional level. But at an initial stage of investigation, as I have already stated, it is not totally unwise to examine them as connecting configurations of concepts, hence propositions; (for an account of connectives, and specifically of *but,* as an argumentative operator within discourse, see Kitis (1982), on *mais*, Anscombre and Ducrot (1977) and Roulet (1984), and more generally Žagar (1996) and Anscombre (1995)). The term 'proposition' is very troublesome but we can equate it roughly with the bare representational (conceptual) meaning of a sentence that can be represented as a propositional function. The issue of the finitary character of propositions need not concern us here.

[4] Let it be noted that the concept of time in Einsteinian or Newtonian physics is not considered adequately developed by physicists.

space construct or as a relation between such constructs. A description of events involves the identification of their location in what can be called their spacetime; we view such events as static unchanged moments in a sequence. So, this is why when we say *when* something happened, we locate it at a point in spacetime, or rather in just space; "No flow of time is involved when we say *when* something happened, any more than a 'flow of distance' is involved if we say *where* it happened." (Deutsch, 1997: 265). But when we start looking at events as being interconnected, that is, when we start *explaining* events as causes and effects of each other, we adopt the subjective point of view of the 'now', the present moment. "...[A]s soon as we say *why* something happened, we invoke the flow of time." (Deutsch, 1997: 265). However, we can modify Deutsch's statement to include the following view: we do not need to be explicit about causal relations between events or states; when we say that something happened before something else, we are asked to locate them in some sequential order; this order often gives rise to the perception of a certain relation between them. In the former case, when we say *when* something happened, we do not invoke the flow of time, despite its chronological anchoring. In the latter case, when we talk of the connection of certain events, even when this connection amounts to no more than a chronological ordering, not only do we invoke the flow of time, since we are asked to relate them in a certain way, but we also implicitly try to detect any other way in which these events relate to each other. So the flow of time will not be invoked just in cases where we explicitly explain why something happened, but also when we identify the locations of some events that took place.

The idea of time as 'flow', i.e. as a movement along a direction (both concepts invoking a spatial frame) is common sense, even though it may well be wrong. Its common sense is assumed in the structure of language and explained in grammar books (Quirk et al., 1972: 3.23). Hill (1978: 524) writes,

> …all languages that anchor time in horizontal space presuppose a line along which either movement or static relationships between fixed points can be measured. It is as if time is pictured as a straight line stretching out into the visual field…Such line may be identified as a **spatio-temporal** line.

Moreover, we customarily conceive of causation as *unidirectional* that is, we visualize causation as a forceful relation sweeping in one direction, towards its effects. Therefore, we could say that causality can be *additive*, too, (Itkonen, 1983), just like events being located in a certain linear placement can be said to bear an additive relation to one another.

Teasing out the various strands of relations between events, then, we can say that the basic primitive relations are the locative or spatial and the temporal. Not only that, but we are also led to conclude that the temporal relation is the product of spatial mappings. All other relations are derivative and outgrowths on these basic relations: additive, causal and contrastive. I would also like to claim,

although I won't be in a position to demonstrate it here in any detail, that contrastive relations are derivative relations drawing on causal ones.

Now, assuming for our purposes that language has a biological substratum[5] (Johnson, 1987, Lakoff, 1987, 1997), that is, assuming that language is an outgrowth on our biological perceptual system, then it is not totally unreasonable to also assume that our perceptions and the perceived relations are more or less reflected in our language. In other words, we must detect the same basic and derivative relations portrayed in linguistic matter.

While spatial or topological relations gave rise to temporal and causal ones, they do not surface in language in this primitive function, since the human cognitive system transcends and configures them into a variety of derivative relations (Sanders et al, 1993, Rudolph, forthcoming). So the developing schema (adapted here) that has been offered in the literature:

spatial > temporal > additive > causal > conditional > contrastive > concessive > etc.

seems to hold in the case of connectives, the paradigms of semantic artefacts to relate our propositions initially. As I claimed in the preface to this paper (not included here) and elsewhere (Kitis, 1987, forthcoming), I consider all functions of connectives, or at least the majority of them, as deriving from their conceptual semantic function. Since space is limited, I will initially try to prove the aforementioned in relation to the evolution of causal aspects of the main temporal connectives in Modern Greek (MG). I have demonstrated in previous research (Kitis, forthcoming) that *exclusively* causal connectives in MG derive from temporal functions which, in their turn, derive from spatial ones. In this paper I will focus on primarily temporal connectives which, however, are also used to encode causal relations, too.

3. Temporal connectives of Modern Greek.

Temporal connectives or, more precisely temporal subordinating conjunctions of MG introducing adverbial clauses, is a legion. I will, however, concentrate initially on monolexemic ones. They are listed together with their etymologies (Tzartzanos, 1946)[6]:

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[5] This assumption need not contradict a picture theory of meaning, as along with it we do not have to assume an 'objectivist' stance (Johnson, 1987, Lakoff, 1987).

[6] Basic MG gloss: ou=ου, ei=ει, oi=οι, eu=ευ, ai=αι, u=υ d=δ, th=ϑ, p=π, g=γ, ks=ξ, ps=ψ, f=φ, v=β, x=χ, l=λ, n=ν, s=σ, final *s*, mb=μπ. Basic AG gloss: ô=ω, ê=η, only stress indicated. Accents, breathings in AG not indicated.

1. *ótan*[=when]
   ó[=neut.dem&rel.pron.]+*te*[=coord. partl.] > *óte*
   óte[=when] +*án*[=modal. partl.]
2. *enó*[=while, whereas, so long as, provided, since]
   en[=in(prep.)]+*ó*[dat.rel.pron.], (*xrónô*[=dat.noun 'time', omitted)
3. *afoú*[=when, after, since]
   apó[=prep.(from)]+*oú*[=gen.rel.pron.[which])
4. *afótou*=[since, ever since]
   apó[=prep.(from)]+*ótou*[=adverb]
5. *óso*[=as long as, while]
   óso[=rel.pron. of size, quantity, space]
6. *efóson*[=in so far as, as long as, if, on condition that]
   epi[=prep.(on)]+*óson*[=acc.rel.pron. of size]
7. *enóso*[=(in) while, so long as, provided, since]
   en[=in(prep.)]+*óso*[=dat.rel.pron]
8. *kathós*[=as]
   katá[=prep.(down to)]+*ós*[=adv.(thus)]
9. *ópote*[=when(ever)], (used much like '*óte'* in AG and '*ótan'* in MG.)
   ópou[=loc.adverb]
10. *áma*[=when, if]
11. *mólis*[=as soon as]
12. *prin*[=before]
13. *protoú*[=before]
    pro[=in front, before(prep.)]+*toú*[=gen.def.art.]

While I have listed the majority of monolexemic temporal connectives, I will only try to substantiate my claims by examining closely one or two of them and their translational equivalents in English.

3. 1. Connection of causality

The majority of the temporal connectives listed above have developed causal meanings as well, so that causality is inferred so long as the propositional meanings are amenable to such an interpretation. Tzartzanos already includes *afoú*, *efóson* and *kathós* (3, 6, 8) within the class of causal connectives as well, noting that the causal meaning is their secondary function (59). However, the causal meaning of (9) can be traced back to Ancient Greek (AG) (L&S) whereas even the paradigmatic adverb of time, (1) *ótan*[=when], has developed causal meanings.

In the next section I will examine closely the subordinator *afoú*, (3), in order to demonstrate my claims. We will see how from a temporal connective it has come to be used in a multiplicity of functions, extending also to conditionality and contrastingness, while retaining its principal function as a temporal connective.

3. 1. 1. Temporal 'afoú'

Afoú is a MG subordinator that does not occur in AG in its present form. But it did occur as a two or three word construction: *af' oú (xrónou)*.[7] As a temporal connective of MG it expresses anteriority in relation to the main clause:

1. *Afoú   írthe,   káthise   na   faei*
   afou   came-S3   sat down-S3   to   eat
   'When he came, he sat down to eat'

Afoú in (1) introduces an event that is anterior to the event of the main clause: First he came and then he had his dinner. However, the English translation does not quite correspond to this anteriority signified by *afoú*. This is shown diagrammatically below:
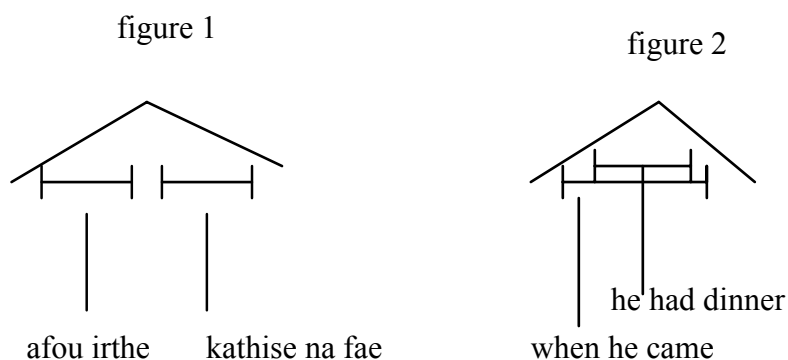
It goes without saying that the *afoú*-clause in (1) cannot be the ground of the head clause, as can be its translational near-equivalent *when*-clause (Cf. Ford, 1993).[8]

3. 1. 2. Causal 'afoú'

As is shown in figure (1), *afoú* signifies an event or a state anterior to the inception of the one in the head clause. There is then a temporal linearity signified by *afoú* introducing an anterior event in this temporal line. As we have seen above, this temporal sequence often gives rise to an inferred causality that is either intended or just implicated or merely inferred by the hearer.

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[7] 'xrónou' is the gen. of the noun 'xrónos' [=time]. So this construction, whether the noun was omitted or not, meant 'since [from] which (time)'

[8] Let it be noted that Greek affords a near translational equivalent to *when*, *ótan*, whose adverbial clause would be the ground of the head clause. The *afoú*-clause can also be translated with the English *after: After he came, he sat down to eat*. The *after*-clause, just like the *afoú*-clause, cannot be the ground either. Instead, it stresses the chronological anteriority of its adverbial clause.

From this situation there is only a small step to be taken towards investing the conjunction with constant meanings of causality (provided the propositions are amenable to such an interpretation):

   2.   *Afoú   epiméneis,   tha   sou   káno   to   xatíri*
       afou   insist-2S   will   you-D do   the   favour
       'Since you insist, I'll do you the favour'

   3.   *oi   polítes   tha   vgoúne kerdismenoi*
       the   citizens will   benefit
       afoú   den   tha   plirónoun
       since   not   will   pay-3P
       'The citizens will benefit since they won't pay'

Both (2) and (3) are causal: I'll do you the favour because you insist, and The citizens will benefit because they won't pay. While the order of the clauses is iconic in (2), this is not so in (3). In both (2) and (3), however, the *afoú*-introduced clause is the prerequisite and cause for the event or state of affairs portrayed in the proposition of the main clause. In both examples the *afoú*-clause depicts an anterior state of affairs. The connection between temporal sequence and causality is more than clear.

   Afoú, as *af' oú* (a two-word construction) in AG was a temporal prepositional expression. Already in Thucydides we observe *af' oú* being used in the sense of 'from this circumstance', which points to the spatial origin of the expression (see below), but it also extends to causal meanings:

   af' oú *kaí Iônôn toús presvutérous katá t*ó *ksuneggés epí polú aútê ê skeuê katésxen.*
   'Owing to which the elderly of the Ionians took a while to make this preparation'
                                                 (Hist. Á 3-6)

3. 1. 3. The etymology of 'afoú'

The temporal meaning of *afoú* and its derivative causal meaning are explained on the grounds of its etymological make-up. As I said above, *afoú* is not listed as an AG conjunction. It derives, however, from the AG expression *af' oú*[=from whose]:

   apó[=from/of] + *oú*[=gen.relative pronoun] < *af'* + *oú*[9]

The expression used in AG, therefore, was a prepositional phrase actually meaning 'since the time when'. The noun 'xrónos' in the genitive case ('xrónou') either followed the relative pronoun *oú* or was omitted but implicit:

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[9] The vowel /o/ is elided before another vowel and the labial stop /p/ becomes a fricative /f/:
apó o*ú* > ap' o*ú* > af' o*ú*

AG		MG

af' oú xrónou > af' oú   >   *afoú*[temporal > causal]

(both uses being current in MG)

The temporal meaning is implicated in an iconic manner in the development of the causal meaning (*post hoc ergo propter hoc* fallacy). But this is not the whole story. As I claimed earlier, in most cases the temporal meanings are spatial mappings and this is shown clearly in the case of *afoú*.

3. 1. 4. The spatial origin of 'afoú'

The main compounding morphemes of *afou* are lexemes signifying spatial concepts. First, the preposition *apó* [=from/of] signifies place. In Homer its prevailing sense is that of place. In particular it encodes the meaning of motion from a place: *apó Troíêthen*[from Troja]*.* In Lakoff's (1987) terms it activates a SOURCE-PATH-GOAL schema, i.e. a kinesthetic image schema (Johnson, 1987). It apparently developed its other senses later and already in Herodotus it signifies cause as well, of the cause, means or occasion 'from', 'by' or 'because of' which a thing is done (L&S):

>   ***apó** toútou krioprósôpon tôgalma toú Diós poieúsi*   (Hdt. 2.42)
>   'from this to make [with a] ram's face the statue of Dias'

>   ***apó** lêsteías tón víon éxein*   (Xenophon)
>   'from(by) robbery earning one's living'

In the prepositional phrase *af' oú* (*xrónou)   >   af' oú,* the spatial concept is projected onto temporality:[10] [away] from the [point in] time.

Moreover, the singular genitive *oú* of the relative (initially **demonstrative**) pronoun*, ós, ê, ó,* is also used as an adverb of place signifying locality, 'where'. It is used to introduce local clauses (Murray, 1902). Not only that, but also this pronoun, is often implicated in causal meanings. So, the evolution we can witness in the case of *afoú* follows the well attested pattern:

<p style="text-align:center">SPACE > TIME > CAUSE</p>

This spatial meaning served as the template for the development of the temporal meaning initially, and the latter served as the template for the development of subsequent causal meanings; both the temporal and the causal meanings of *afoú* are current in MG.

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[10] An instance of Lakoff's (1987) spatialization of form hypothesis.

4. Temporal connectives of English

In this section, I will focus on those temporal subordinative connectives of English which are generally assumed to correspond translationally to the Greek ones examined above. *Afoú*, probably due to its initial conceptual domain (that of a span in time), is usually considered to correspond to *since* (duration). In the next subsection, therefore, I will examine *since* as the English translational equivalent of *afoú* in order to demonstrate the development of a parallel course.

4. 1. Temporal 'since'

Since, as a conjunction, denotes 'from the time that'. It denotes a point of time to which the action or event mentioned is subsequent (Quirk et al., 1972) and this has been its meaning all along:

> *We sayled further that nyght thanne we dyde in anye daye **syns** we departed from Jaffe.*
> 1511 *Guylforde's Pilgr.* (Camden, 70) (OED).

In some cases *since* is best translated as *afótou* (as above)*,* which is very similar to *afoú* both in constitution and in meaning; however, *afótou* has not developed any causal meanings*. Since,* just like *afoú*, signifies a span of time and this is why in its temporal use it requires the present perfect (Quirk et al, 1972).

4. 2. Causal 'since'

The factive character of *since* and what I would call its potential for existential quantification (there is no space to go into this issue here but see Kitis, 1999, to appear), both traits characterizing *afoú,* too, soon gave rise to the development of causal meanings (c 1450): 'because that', 'seeing that', 'inasmuch as' (OED):

> *But since all humane flesh is mortall...what auailes my sorowful grones and passions?*
> c 1489 CAXTON *Blanchardyn* liv. 213

Both the temporal and the causal *since* in the examples above are best translated as *afoú.*

4. 3. The etymology of 'since'

Since acquired various forms as it went through various stages of its development, but it is basically a reduced form of *sithence,* which derives from *sin,* an adverb. Rudolph notes its evolution from Old English *siththon* (properly *sith thon'* [=after that], or from an adverb in a dialect *sin* from *sithen* plus '-es'. But Rudolph is interested in the temporal sources in causality and does not delve more deeply into the spatial origin of these connectives to which we will now turn.

4. 4. The spatial projection of 'since'

As Closs Traugott and Köning (1991) note, in Old English texts between ca. 850 and 1050 AD *siththan (siþþan)* as a preposition was used to mean 'after'; it can be noted, however, that 'after' has a spatial meaning as well; *siþþan* "marked the lower temporal boundary of the event in the main clause, and signalled an overlap with some point in an earlier event" (Closs Traugott and Köning, 1991: 195). Although in the case of *since* we cannot isolate a spatial preposition as in the case of *afoú*, we might nevertheless claim that the initial meaning of the conjunction *since* involved locality, too. While in English *since* originally meant 'then' 'thereupon', 'immediately afterwards' (OED), we can detect in this temporal meaning a spatial projection:

> *In a myrour...hue made me to loke, And* **sutthe** *[sennes] seide to me [etc.]*
> <div align="right">c 1450 Langland's P. Pl. C. v. 15) (OED)</div>

Just as in *afoú* we can detect the compounding of *apó* (prep.) and the genitive *oú* of the demonstrative / relative *ó,* so, too, in *sithence*, from which *since* evolved, is compounded of *sith than* (after that) or of the adverb *sithen* plus the ending *es* (see Rudolph, 1998; Closs Traugott and Köning, 1991). In the following example from OED the spatial meaning of *since* is rather transparent:

> They were …browght upp theyr and syns sworne unto the jurdyccyon of the towne.
> <div align="right">1483 Cely Papers (Camden) 139</div>

5. Temporal connectives with causal meanings originating from reference to substantives

In this section I will point out that substantives, or rather lexemes referring back to substantives, form part of the constitution of conjunctions. The relative pronoun (or demonstrative) *ós, ê, ó,* in various cases, is a constituent part in the majority of connectives: (1) *ótan,* (2) *enó,* (3) *afoú* and (4) *afótou,*[11] while the relative correlative pronoun *óso,* signifying size or quantity, is encountered in (6) *efóson* and (7) *enóso; ósos, ósê, óson,* is a (AG and MG) relative and indirect interrogative adjective used of size, 'as great as', 'how great'; of quantity, 'as much as', 'how much'; of space, 'as far as', 'how far'. We find it in composition with the preposition *epí* [=on, upon]:

> *ef' osonoún*   (Thphr. *HP* 6.7.5)

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[11] I need to note at this point the correspondence of the etymology of these Greek connectives to that of German ones. Rudolph states the pronominal origin of *da*, the temporal and causal German connective, although she writes that she does not find the explanation of origin convincing. However, the pronominal origin of Greek connectives is not only beyond doubt, but also well understood, as I hope to show.

The two-word constructions *es óson, ef' óson, kath' óson,* (*es*[=prep.'in', *ef'*[=syncoped form of prep. *epí*(=on, upon)], *kath'*[=syncoped form of prep. *katá*(=down to)] are frequently used much like the monolexemic *óson*:

> *eis óson sthénô*
> 'to the extent that I am strong'   (Id. Ph. 1403)
> *ef' óson edúnato*
> 'to the extent that he could'   (Th. 1. 4)
> *ef' óson estín dunatós*
> 'as far as he can'

Only later is *óson* used in the temporal domain:

> *es óson dúnamís moi upêrxen*
> 'as long as there was strength in me'
> *ef' óson periêsan*
> 'as long as they lived'   (ii B. C.)
> *en ósô*
> '[in] while'

Moerover, MG *efóson* is not only temporal but has also developed causal and conditional meanings:

> 4. *Mia mikrí núksi tha sas káno, **efóson** mou kánete tin timí na me filoksenísete sto kanáli sas.*[12]
>   'I will only make a small point, as (since) you are doing me the honour of hosting me on your channel'
>
>   (Karatzaferis, on TV)

6. Conditionality, contrastingness

Further, I want to claim that the development of conceptual domains of conditionality and contrastingness on mappings of causal, temporal and spatial domains as proposed above is operative in the cases of some connectives. At least numbers (1), (2), (6), (7), (8) and (10) have developed either conditional or contrastive meaning or both. It can be noted that *afoú* is currently developing both conditional and, consequently, contrastive meanings, too. (5) was a translation of (6):

> 5. Well, if you must go, you must go.
> 6. *Afoú*   prépei   na   fúgeis, fúge.
>   *afoú*   must   to   go-2S, go-IMP

The paradigmatic conditional conjunction *an* will not translate equally well in this case for reasons that will take me astray to explain, while both *afoú* and *áma*, a

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[12] Another polylexemic connective that would do the job here is *mia kai*[=once and].

conditional connective with a strong dosage of temporality integrated into its semantics, will fit the translational bill. In short, it may be the etymology of *an* that actually discourages its occurrence in such factive environments (although there are cases of factive *an*), while both *ama* and *efóson* (initially and concurrently temporal connectives) will translate (5) competently.

      Moreover, *efóson,* has not developed only causal meanings, as we have already seen in (4), but also functions in the domain of conditionality:

  7. *Tha mboroún na ta sósoun* (ta akínita) *efóson ómos ta dilósoun*
     'They will be able to save them (their property [houses]) on the   condition though that they declare them'

      From the semantics of causality and conditionality there is only a small step to be taken towards the development of meanings of contrastingness. Example (8) exhibits a rather contrastive meaning of *afoú*:

  8. *Afoú   den   arései   se   ména,*
     afoú   not   like-3S   to   me-ACC
     giatí   na   arései   se   séna?
     why   to   like-3S   to   you-acc
     'If/?Since I don't like it, why should you like it?'

  (8) probably instantiates a specific *afoú*-construction involving features such as special modalities of the head clause and might be best accounted for in terms of construction grammar (Kitis, 1999). In my view, *afoú* operates as a **bounded existential quantifier** (Kitis, to appear) and this function is accountable on grounds of its etymological make-up and evolutionary aspects of its meaning; this characteristic property of *afoú* (of *since* also) is implicated in its potential for factive conditionality (example (6)) and contrastingness (example (8)). Pursuing this issue, however, will take us astray, so I will leave it for another occasion.

      Conditional meanings as well as causal and contrastive ones have developed in the semantics of the temporal *ótan.* The evolution of this function of *ótan,* as conditional and contrastive, can be traced back to its original make-up:

      ó te > óte > óte án > ótan
       ó [=rel.pron.neutr.] + *te*[=conj.'and'] > *óte* + *an*[=indf.modal partl.] > *ótan*
      (*an* = if [*an* is the main MG conditional connective])

  This comes as no surprise since temporals are the commonest group of lexical sources for conditionality (Traugott, 1985, although she does not include this case). Moreover, as Traugott (1985) notes, as well as modality markers, demonstratives or words marking something as known or given (topic markers) are resources for marking conditionality; and *ótan* consists of the demonstrative *o*, which has a resumptive function, as well as of *an*, a modal particle used (with

verbs) to indicate that the action is limited by circumstances or defined by conditions (L&S).

What is very interesting, however, is the fact that *ótan* (just like its conventionally regarded as translational equivalent *when*) is currently used as the main rhetorical contrastive connective in ideologically charged contexts (Kitis, 1999); this situation probably corresponds to similar situations in other languages, but I am not aware of relevant research. For example, Declerck notes an 'adversative', as he calls it, use of *when*, but judging from the space allotted to discussing this use, he does not regard it as very frequent; moreover, his orientation in his research is dissimilar to mine. There is hardly any space to go into this use here, but for the purposes of this paper suffice it to say that *ótan*, as an adversative or rather rhetorical contrastive connective, as I prefer to call it, functions in a rather co-ordinate manner, simply juxtaposing two clauses of equal significance and intonational foci. The situation is similar to contrastive *when*. The *when*-clause is not subordinate to the other clause, presumably the main, to which it is conjoined. Similar contrastive uses of *eno* (number [2]) are very frequent in MG. However, while *ótan* will always in this use signify strong contrast (*anti-parathesis*), the conjunction of the propositions of the two clauses not being ideologically countenanced by the speaker (often specific modalities contributing to this rhetoric), *enó* is often currently used to just juxtapose two clauses whose propositions represent events or states of affairs that are neither contrasted, nor conceded to in any way (Kitis, 2000). So we are warranted to offer corroboration to the hypothesis that we are led back to co-ordination through subordination. If this is so, then one might entertain the idea that courses that have been assumed to be unidirectional are in fact cyclic.

7. From lexical meanings to grammatical categories, From the concrete domain to the abstract domain, From conceptual meaning to procedural meaning

As becomes clear, subordinating connectives of Modern Greek derive from the conjunction of prepositions and substantives, or other particles, that is, from elements functioning **within** the proposition (clause-internally). Indeed, prepositions, which form part of the connectives' constitution, were derived from adverbs, a class of lexemes considered to have a rather freer distribution in the clause as compared to prepositions. Prepositions were steadily used as adverbs both in Homeric Greek and in Herodotus: *ek dé kaí autoí vaínon* [=**out** they went]. Sometimes these adverbs co-occurred with oblique cases of nouns to signify usually concepts of locality, and from this use they developed their prepositional use: *strémmata éxôn **en xersín*** [=having acres **at hand**] (Homer, A 373), ***Ithákén katá*** [=**towards** Ithaca].

A significant constituent part of many of these connectives can be traced back to lexical items referring to substantives, as we saw in section 5. In the majority of

the connectives we can follow their constitution back to a pronoun. The use of a pronoun at the opening of a sentence was a method of connecting two independent clauses. The pronoun, either demonstrative or relative, was pointing back to a substantive and functioned in a resumptive manner:

> *Derkulídas estáthê tên aspídan éxôn , **ó** dokeí kêlís eínai toís spoudaíois (**ó**= tó*
> *stathênai*[=infin. as noun] *tiná éxonta tên aspídan)*
> 'Dercylides stood holding the shield, **a thing that** seemed to be a punishment to the
> important people'

(Xenophon)

So, we witness a process of reanalysis in the case of adverbs and pronouns of AG. They gradually shed their semantic adverbial or pronominal meaning (semantic bleaching) to acquire more restricted prepositional meanings in the case of adverbs; that is, their meanings are complemented by the co-occurring nominals. At the same time they shift grammatical categories, too. Grammaticalization processes (Traugott, 1994), therefore, are in full swing in the case of connectives in the Greek language.

Moreover all these prepositions derive, on the one hand, from adverbs signifying spatial concepts, from which temporal ones were developed, the latter in their turn giving rise to causal concepts. On the other hand, they derive from pronouns, (1), (2), (3), (5), (7), referring to rather concrete concepts, such as person, or quantity and size as in the case of *efóson* and *enóso*. Conjunctions, therefore, derive from lexemes denoting concrete concepts to transcend this reference to the abstract sphere. However, these initial ingredients of their original reference are consequential for the development of their abstract meanings (such as temporality, causality and contrastingness) and functions.[13] This comes as no surprise as it has been amply demonstrated in the literature that abstract meanings are derivative and concrete meanings are more basic both diachronically (Traugott, 1988, Sweetser, 1990) and synchronically (Lakoff and Johnson, 1980).

8. From parataxis to hypotaxis to subordination to coordination

In the majority of these connectives, their constituent parts (morphemes) originate from free lexemes that referred back to either substantives, such as relative pronouns, or adverbs and prepositions, the latter being used as adverbs. As is appreciated, these items functioned intra-sententially; that is, they all were part of the proposition, whereas their developed conjunctions operate inter-sententially. They are used to introduce propositions in the case of subordinate clauses or to conjoin them in the case of co-ordinate constructions. If we could envisage a cline of connectednes viewed from the point of view of the degree of the connectives' inclusion within the propositional meaning, then we could say that subordinating

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[13] On prepositions in Homer see Horrocks (1984).

conjunctions are more closely connected to the propositional meanings than are co-ordinating ones. In the latter case the meaning of connectives, broadly speaking, does not spill over the propositions the co-ordinating connective conjoins;[14] in the former case of subordinating connectives, the introduced proposition comes into the scope of the meaning of the connective. So rather than postulating a unidirectional course from parataxis to hypotaxis to subordination, at least in the case of Greek (from AG to MG) we witness a cyclic course from parataxis to hypotaxis to subordination to co-ordination. As we have seen, this is the case with *ótan* and *enó*. In MG there are subordinating temporal connectives which, apart from their temporal function, are also currently used in a rather paratactic manner, occasionally to juxtapose contrasting events, facts or states of affairs, but also to just conjoin propositions in little more than a co-ordinating fashion. *Enó*[15] is a prime example of this case.

According to a certain prevalent view, hypotaxis and subordination are later developments of asyndeton and parataxis (Tzartzanos, 1946; Hopper and Traugott, 1993). Tzartzanos's (1946) claims can be presented in the following schema:

asyndeton [parathesis] > parataxis > hypotaxis

He writes: "As two sentences were juxtaposed in an asyndetic manner, it was often the case that one word (usually an adverb or a pronoun) occurring initially in one of the two clauses, and mostly in the one that was semantically subsidiary, assumed a connective function as was pronounced in a differential manner; moreover, it [this word] was assumed, not only to introduce the clause, but also to express the logical connection between the two clauses. This type of juxtaposition is frequent in Homer's poetry". And he adds: "This phenomenon can be seen in late and current stages of the evolution of our language [Greek]" (my translation, Tzartzanos's, 1946: 11-12).   This view in relation to the Greek language was expressed in older research, too. Denniston (1934: xli) writes "as expression develops, subordination largely replaces co-ordination."

Indeed, we frequently find in Homer two co-ordinate clauses in an asyndeton schema when one is semantically (logically) subordinate to the other. This type of parathesis has been called *parataxis* (*para*[=next to] is a preposition, *taxis*[=order, sequence] is a noun):

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[14] For very detailed criticism of Grice's implicatures of connectives, see Koutoupis-Kitis (1982).

[15] This is not meant to imply that this particular connective is not currently used both as a temporal, but also as a contrastive one. I disagree with Tzartzanos who groups *enó* both with temporal but also with concessive connectives. See Kitis (2000).

> *oi dê nún éatai sigê, pólemos dé pépautai,*
> *aspísi kekliménoi*   (Odyssey)
> 'They now are seated in silence, (for) the battle hath ceased,
> with the shields lying down.'

The pronoun *ós, ê, ó* in Homer is frequently used to somehow conjoin clauses. As a weak demonstrative pronoun it can even mark a change of subject and it then is often followed by an adversative particle (Stanford, 1959). From the demonstrative meaning there developed relative meanings later; and in particular, the accusative neuter *tó* is often used adverbially ('wherefore') (ibid.):

> *tó kaí moixágri' oféllei*
> 'on that account he owes him...'

The pronoun *óson,* (neuter here), that forms the second compound of the conjunctions *efóson* and *enóso,* is also used in a connective function in early AG:

> *oudé ti oíde péntheos, ósson órôre*   *(Iliad: 11.658)*
> *'neither did he know grief, while he was in action'*

This course from parataxis to hypotaxis to subordination is witnessed in English, too, as is well known. For example, there was no conjunction in Old English (OE) originally corresponding to Middle English *when*, and the reason is that early OE did not really have adverbial time clauses, but used paratactic structure instead (sources cited in Declerck, 1997).

Coming now to the issue of the prepositions, which compound most of the connectives we examined, we can say that these prepositions were used adverbially intra-sententially as free lexical items. All of them, as we have seen, signified spatial concepts: *en* meant 'there', *epí* meant 'over', 'besides', 'behind' and *katá* meant 'down from', 'down on'. So, there have been in the case of connectives in the Greek language massive shifts from full-blown lexical items, which were part of the proposition, to rather desemanticized grammatical items, which now function clause externally as subordinating hypotactic connectives.

9. Conclusion

What has become clear from the above is that connectives, both of the Greek language but also of English and other languages (cf. Rudolph, Traugott, 1985, 1998), are derived lexemes; as a result, I have claimed that their current meanings and functions owe much to their original constituent parts.

In actual fact, in connectives of Greek we witness mass shifts from more 'lexical' meanings and categories (*mots principaux*) to more 'grammatical' categories (*mots accessoires*, Meillet, 1912) involving such processes as desemanticization and narrowing of free adverbs and substantives to markers of

connectivity. That is, grammaticalization can be regarded as involving a reanalysis of a pattern in the domain of propositional language as a pattern in the domain of language structure and further as patterns in discourse. Shifts in the latter domain have not been discussed here. This course is not the prerogative of conjunction only; it has been shown to hold for propositional meanings of spatial (motion) verbs to emotions to propositional attitude verbs to predictive speech act verbs and near-performativity (Kakouriotis and Kitis, 1999).

It is also extremely interesting to note the development of causal meaning of connectives on their temporal uses. This recurrent but consistent phenomenon leads us to the hypothesis that what meanings (causal) are now regarded as core semantic meanings were initially derived through inferential reasoning as pragmatic implicatures or as implicated meaning. So Traugott's hypotheses concerning semantic change:

1. Semantic-pragmatic change is regular, and progresses in minimal steps

2. New terms that are recruited for abstract grammatical purposes (s.a. marking conditional relations) are not arbitrary but are recruited for these abstract purposes from more concrete semantic domains that have some semantic and pragmatic connectedness to the new grammatical functions, seem to be confirmed in our case.

Just as Traugott (1998) predicts, the case of the Greek connectives we have examined, provides evidence for such characteristics of grammaticalization as decategorialization, generalization, increase in scope and subjectification (see Kitis, forthcoming on connectives and subjectivity). Just as the semantics of these connectives transcend from the sphere of space and time to the more abstract domains of causality, conditionality and contrastingness, so too their scope is enlarged and their potential for conveying more subjectified meanings is broadened. Indeed, through an understanding of the processes of grammaticalization we are in a position to account for further 'layers' of meanings of connectives and we will eventually (or hopefully) underpin the intimate relationship between discourse phenomena and emergent grammatical structures.

The view taken here proposes a rather different perspective for the analysis of, not only connectives (Blakemore, 1987, Kitis, 1982, 1987), but what are currently called 'discourse markers' (Schiffrin, 1987, Fraser, 1999): The identification and analysis of the functions of the latter will be greatly informed by an analysis of their conceptual counterparts from which they probably derive. Probing more deeply, therefore, into their evolutionary stages is, in my view, highly enlightening and recommended.[16]

This perspective takes me back to the earlier Wittgensteinian view of language, since I propose that the analysis of connectives should start at the level of their initially conceptual signification and hence at the level at which they are used to picture the world. In other words, *contra* Blakemore (1987) and other relevance theorists (Jucker and Ziv, 1998), I would propose viewing connectives as

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[16] *giatí*, a MG causal connective that has developed discourse-organizational functions, owes this potential, in my view, to its etymological make-up and its AG functions (Kitis, forthcoming).

linguistic matter progressing along a rather unidirectional line from conceptual meaning to procedural function.

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