Orality and Literacy : The Development of Philosophy into Logical Thought

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Preface

According to the theory of Generative Anthropology, the ostensive form is the originary form of the linguistic utterance from which the imperative and then the declarative are derived. The first linguistic sign must have occurred in the originary event or scene. As Richard van Oort notes: "By presenting an explicit model of the origin of language--one based on the *scene* of the originary performative context of the first linguistic sign--we seek to introduce precisely what is lacking in metaphysical models of language, namely, the *entire scene in which language must be conceived to have evolved.* It is only with the advent of the declarative, a later development of linguistic evolution, that language can divorce itself from its context, and thus appear to be wholly independent of its scene of production."(1) In our work we attempt to shed light on the process--in the course of historical time and space--in which the true declarative utterance grew out of more elementary forms of speech acts, stripping itself of the context of the actual speech situation. This development originally took place in early Greek culture, bringing into existence the linguistic prerequisites of formal logic and metaphysics. With our historical analysis we intend to underscore the importance of the *originary hypothesis* of GA according to which "the first occurrence of language was in the originary event or scene of language."

Introduction

Scholars have thoroughly studied the development of logic in the subject "philosophy." There is, as far as I know, scarcely any work about the preconditions of logic itself. All the linguistic patterns of logical thinking can be found in the epic poems of Homer. In my present work I propose to show through reference to the most important logical structure of the pre-Socratics that European logical thinking is predetermined by two factors: on the one hand by a traditional or an everyday language,(2) on the other hand by the transition from orality to literacy in the early Greek culture.

The Eleatics as the most important champions of logical argumentation

Jonathan Barnes wrote of pre-Socratic thinking that: "Arguments characteristically require complex syntax: 'if' is the philosopher's most important word, and his discourse will be crammed with particles and other sentential connectives--with 'but' and 'and' 'either' and 'or', 'so' and 'because', 'for' and 'therefore'."(3) By 'if' Barnes obviously thought of a special form of logical conclusion: "supposed the case (if) 'p', it follows--with logical necessity--'q'. The first

explicit logical(4) assertion of this kind is to be found in Parmenides: B8, 20:

> For if it came into being (*ei gar egenet'*), it is not: nor is it if (*oud' ei pote*) it is ever going to be in the future.(5)

To better understand the logic of this inference it is useful to examine the preceding lines: B8,15-21;

> And the decision about these things lies in this: it is or it is not. But it has in fact been decided, as is necessary, to leave one way unthought and nameless (for it is no true way), but that the other is and is genuine. And how could what is be in the future? How could it come to be? For if it came into being, it is not: nor is it if it is ever going to be in the future. Thus coming to be is extinguished and perishing unheard of.

Alexander P. D. Mourelatos makes the following comments on the first four lines: "Now if one thing can be certain about Parmenides, it is that he intended the choice between the two routes to be exclusive, involving mutually exhaustive alternatives, that is, contradictories. The emphatic decision (*krisis*) between 'is' and 'is not' in B8, 15f. has the same force as the decision between the two routes in B2, as we can see from the fact that Parmenides refers back to the latter with the remark 'it has already been decided (*kekritai*) as is necessary, to leave the one route unthinkable and nameless [B8,16f.].'"(6)

2

Line 20 is introduced by two questions: "And how could what is be in the future? How could it come to be?" The questions shed light on the following logical statement, which in fact answers the questions: "For if it came into being, it is not: nor is it if it is ever going to be in the future." Arpad Szabo explains the line convincingly:

> Besonders lehrreich ist für uns aus diesem Zitat die Begründung, warum nach Parmenides die Möglichkeit des Entstehens des Seienden geleugnet werden muß. 'Entstehen' heisst: aus dem Nichtseienden Seiendes werden. (Vor dem 'Enstehen' müsste das Seiende *nichtseiend* sein!) Der Begriff des 'Entstehens' setzt also sowohl das Nichtseiende, wie auch das Seiende voraus . . .(7)

> [In this quotation, it is particularly instructive for us why the possibility of the coming into being of the existent must be denied according to Parmenides. Coming into being means the coming into being of the existent from the nonexistent. (Before coming into being, the existent must be nonexistent!) Consequently the concept of coming into being presupposes the nonexistent as well as the existent . . .] We have previously seen that "Being" and "non-

Being" are mutually exclusive. Consequently, this hypothetic inference shows the impossibility of the "coming into being." (If a "coming into being" existed, the philosophical system of Parmenides would be contradictory, because "Being" and "non-Being" would exist at the same time [not temporal but logical].)

If we look at the discussed inference from the perspective of Zeno we can easily come to the conclusion that this kind of inference(8) is the most significant among the assertions of Parmenides.

The only unquestionably authentic fragment of Zeno is B3,(9) which runs as follows:

> If there are many things (*ei polla estin*), it is necessary (*anagke*) that they are just as many as they are, and neither more nor less than that. But if (*ei de)* they are as many as they are, they will be limited.

> If there are many things (*ei polla estin*), the things that are are unlimited. For (*gar*) there are always others between the things that are, and again others between those. And thus the things that are are unlimited.

In the first half of the fragment are to be found two interconnected inferences of the kind "if 'p' then 'q'"; their logical necessity is to be understood as evident. In the first statement the word "logically necessary" (*anagke*) joins together the two parts ('p' and 'q') of the inference.

The second half of the fragment contains three sentences. The first sentence is an inference of the type "if 'p' then 'q'." The second sentence--because the inference is obviously not immediately comprehensible--makes clear the logic of the first sentence. The role of the second assertion is shown by the explanatory connective "for" (*gar*). The third sentence emphasizes the necessity of 'q', which is the result of the inference.

This fragment demonstrates that the Zenonic argument is marked by the thought pattern "if 'p' then 'q'."(10)

The influence of Zeno must have been enormous on the subsequent development of philosophy. Arpad Szabo wrote about this influence as follows:

> 'Dialektik' heisst bei ihm [in Aristotle] 'die Kunst des Debattierens, Disputierens'. Er sagt, dass der Begründer der Dialektik Zenon gewesen sei,(11) da bekanntlich dieser, indem er die Lehrsätze seines Meisters, Parmenides zu verteidigen suchte, die Kunstgriffe des Wortstreit-Führens erfand. In demselben Sinne bekommt Zenon bei Platon wegen seiner erfindungreichen Gewandtheit im Wortstreit den Beinahmen:

'eleatischer Palamedes'(12).(13)

['Dialectic' means for him (Aristotle) 'the art of debate, argumentation.' He says that Zeno was the founder of dialectic, since he is well known to have invented the art of waging a word-battle as he sought to defend the teachings of his master, Parmenides. In this vain, Zeno is nicknamed the 'Eleatic Palamedes' [the legendary inventor of the alphabet] by Plato because of his inventive skillfulness in word-battle.]

Similarly Klaus Oehler assesses the later development of "Wortstreit-Führen":

die Impulse der Sophistik, die Sokratisch-Platonische Reflexion auf die Struktur von Argumentationen, die Systematisierung von logischen Tatsachen in der *Topik* des Aristoteles,--in diesem Dreieck einer einmaligen philosophiegeschichtlichen Konstellation ereignete sich der Ursprung der formalen Logik."(14)

[waging a word-battle: the impulses of the Sophistic movement, the Socratic-Platonic reflection on the structure of argumentation, the systematization of logical facts in the*Topics* of Aristotle,--it is in this triangle of a unique constellation in the history of philosophy that the origins of formal logic emerged.]

The discussed mode of inference, which we have investigated in Parmenides and Zeno, is relatively often to be found in Herodotus. I shall mention only two examples. The Historian comments on a narration concerning the floods of the Nile. According to this account, the "year-winds" are responsible for the deluges of the Nile. Herodotus criticizes this assertion:

However, the Etesian winds often do not blow at all, and the Nile nonetheless floods. Besides, if the Etesian winds were the cause (*ei etesiai aitioi esan*) other rivers that face these winds would surely be (*chren*) affected in the same way as the Nile and even more so, since, being smaller, they have feebler streams.[2.20](15)

3

The expression "would be" (*chren*) constitutes a logical necessity here.(16)

On another occasion Herodotus attempts to describe a bird:

If he is indeed like his pictures (*ei te graphe paromoios*), he would be of this kind and this size: . . . [2.73]

The logical content of this inference is to be immediately realized.(17)

For our purpose it is irrelevant whether the inferences in question are indirect or direct.(18) It is important, however, that the soundness of these inferences is due *only* to certain formal relations between the given statements.(19)

The Homeric poems as "oral mirrors" of philosophical language

At the beginning of our discussion the intent to deal with the original linguistic forms of the most important kind of inferences in the pre-Socratics was expressed.(20) However, this task presents some problems. In the Homeric epics there is not to be found, to my knowledge, any purely logical inference of the kind "if 'p' then 'q'." For that reason I must "dilute" the discussed form of inference. We shall look for the following linguistic pattern in the epics: "supposed the case 'p', it follows *in some way*(21) 'q'." This structure occurs in numerous different speech acts in Homer. For a better understanding of "oral mentality," let us take a look at some characteristic occurrences of the pattern in question. Because Hector is fiercely attacking the Achaeans, Odysseus shouts to Diomedes:

> Son of great Tydeus, what has come over us?
> Have we lost all our power of attack?
> Come here and stand with me, old horse. <u>Dishonor</u>
> <u>lies ahead if (*ei ken*) Hector fires the ships.</u>[Il.11.313-15](22)

The "inference"(23) highlighted above appears here in the form of an *exhortation*. The speech act shows that Odysseus is friendly towards Diomedes. Odysseus doesn't intend to insult Diomedes, but the hard battle situation compels him to call on him to fight together with him. The "inference" which, strictly speaking, gives a reason for an order weakens--in addition to the questions--its provocative character. Therefore I have characterized this "inference" as an *exhortation;* it is even impossible to consider it as a pure logical inference by separating the "inference" from the order. The force and the comprehensibility of the "inference" depend more on the given speech situation(24) than on its "logical content."

In the *Iliad*'s twenty-first book the river Scamander is excited on account of the numerous slaughtered Trojans:

> O Achilles, you are first in power
> of all men, first in waywardness as well,
> as gods forever take your side. <u>If (*ei*) Zeus</u>
> <u>has given you all Trojans to destroy,</u>
> <u>destroy them elsewhere, do your execution</u>
> <u>out on the plain!</u> [For (*gar*)](25)now my blue watercourses

back up, filled with dead [Il.21.214-18]

This "inference" is, though stronger than a *request,* weaker than an *order.* The reason for the order (*gar*) and the relatively low social position of the river mitigate the tone of the order. Therefore we have here a speech act that is to be located between a *request* and an *order.* Interesting for us is that the same explanatory connective (*gar*) which we saw in Zeno [B1] supports the "inference."

In the following scene Hera puts Zeus to sleep so that Poseidon may harm the Trojans. Zeus, having woken up and seeing the helpless Hektor lying, is angry with his wife. Hera, however, insists on her innocence and swears that she herself didn't urge Poseidon on. Hera ingeniously tells the truth. For she "only" diverted Zeus' attention from the battle; Sleep informed Poseidon that Zeus' attention was turned from the fight, granting him the opportunity to support the Achaeans. It is clear that Hera wants to deceive Zeus by her oath. Zeus realizes this, for he says:

> If what you say is honest (*ei de rh' eteon*), then rejoin
> the gods' company now, and call for Iris,
> call for Apollo with his wondrous bow.
> Iris will go amid the mailed Achaeans
> with my word to Poseidon: Quit the war,
> return to your own element. Apollo
> must then brace Hector for the fight . . .[Il.15.53-59]

4

During his speech Zeus is smiling and this shows that he is playing a joke on his wife. This joke however is bitter for Hera. She has to go and support the Trojans notwithstanding her partiality towards the Achaeans. Therefore this speech act--as well as the "inference"--is not a plain *order;* there are also some other nuances such as *joke, humiliation, and punishment* to be seen.

In the twenty-third book of the *Iliad*, Achilles offers a spear and a cauldron as prizes for a javelin-contest. Meriones and Agamemnon present themselves for the competition. But Achilles is not willing to let them compete against each other. He wants to give the first prize to Agamemnon and the second to Meriones, saying that:

> Son of Atreus,
> considering that you excel us all--
> and by so much--in throwing-power, I'd say
> that you should simply carry off this prize.
> We'll give the spear, though, to Meriones,
> if (*ei*) you agree. That is what I propose.[Il.23.890-4.]

The structure in question here is obviously a *proposal.* By the first member of the inference--"if (*ei*) you agree"--Achilles politely weakens the tone of his speech.

In another scene Hektor, after withdrawing from the Achaeans because of their fierce resistance, cries to his warriors:

> 'Trojans, Lycians, Dardans, fight hard here!
> They cannot hold me, not for long,
> by making bastion, closed in line together!
> <u>No, I can see them break before the spear</u>
> <u>if (*ei eteon*) it is sure I have the first of gods</u>
> <u>behind me, Hera's consort, lord of thunder!'</u>
> Shouting, he cheered them on the attack… [Il.13.150-4.]

Here are to be found nuances like *order, encouragement, promise.* The "inference" is now strictly speaking a *flaunting* because Hektor suggests to his comrades that the outcome of the battle finally depends on him.

In the twenty-second book of the *Iliad*, Hector remains outside the Trojan city walls, desiring to fight with Achilles. His mother Hecuba, holding her uncovered breast and wailing, says to him:

> '<u>Hector, my child, be moved by this,</u>
> <u>and pity me, if (*ei*) ever I unbound</u>
> <u>a quieting breast for you.</u> Think of these things,
> dear child; defend yourself against the killer
> this side of the wall, not hand to hand.
> He has no pity. [<u>For (*gar*)</u>](26) <u>If (*ei per*) he brings you down,</u>
> <u>I shall no longer be allowed to mourn you</u>
> <u>laid out on your bed, dear branch in flower,</u>
> <u>born of me!</u> And neither will your lady
> so endowed with gifts. Far from us both,
> dogs will devour you by the Argive ships.'[Il.22.82-7]

This speech act is an *entreaty.* The first "inference," a request, is supported by the second "inference," which in fact is a conjecture. The two together constitute a very impressive entreaty. Here it is the speech situation--*e.g.* the emotions, the imminent danger--and not a logical compelling force which connects the parts ('p' and 'q') of the "inferences."

5

Before Menelaus' and Alexander's duel, which takes place in accord with their agreement, Agamemnon speaks to the gods:

> O Father Zeus!
> Power over Ida! Greatest, most glorious!
> O Helios, by whom all things are seen,
> all overheard; O rivers! O dark earth!
> O powers underground, chastisers of dead men
> for breaking solemn oath! Be witness, all:
> preserve this pact we swear to! <u>If in fact (*ei men ken*)</u>
> <u>Alexandrus should kill Lord Menelaus,</u>
> <u>let him keep Helen and keep all the gold,</u>
> <u>while we sail home in the long ships.</u>
> <u>But if (*ei de k'*) Alexandrus be killed, the Trojans</u>
> <u>are to surrender Helen and the treasure-</u>
> <u>moreover they must pay a tribute, due</u>
> <u>the Argives now, renewed to their descendants.</u>
> <u>In the event that (*ei d' an*) Priam and his sons</u>
> <u>refuse this--though Alexandrus be killed--</u>
> <u>then I shall stay and fight for my indemnity</u>
> <u>until I come upon an end to war.</u> [Il.3.276-91]

In this speech are three "inferences." The first two are *prayers* that "ratify a treaty." The third is a *threat* in case of the Trojans' breaking the agreement. The whole speech act is an *invocation* of the gods.

Thetis having communicated to her son Zeus' resolution that Hektor's corpse is to be returned to Priam, Achilles speaks as follows:

> Let it be so. <u>Let someone bring the ransom</u>
> <u>and take the dead away, if (*ei de*) the Olympian</u>
> <u>commands this in his wisdom.</u>[Il.24.139-40]

This is clearly an *assent.*

In an other scene Priam is speaking to Hektor:

> . . . Ah, were (*aithe*) he [Achilles]
> but dear to the gods as he is dear to me!
> Wild dogs and kites would (*ken*) eat him where he lay . . . [Il.22.41-3]

This is a *malediction.*

As Priam doesn't see two of his sons returning back from the battlefield he breaks out:

> . . . <u>If (*ei men*) they are alive</u>
> <u>amid the Achaean host, I'll ransom them</u>
> <u>with bronze and gold:</u> both (*gar*) I have, piled at home,
> rich treasures that (*gar*) old Altes, the renowned,
> gave for his daughter's dowry. . . . [Il.22.49-51]

This "inference" is a *promise,* an *obligation.* The two explanatory connectives (*gar*) support not a logical coherence--as was the case with Zeno--but the seriousness of the utterance. Afterwards Priam goes on like this:

> . . . If (*ei d'*) they died,
> if they went under to the homes of Death,
> sorrow has come to me and to their mother. [Il.22.52-3]

This speech act is a *lamentation.*

6

In the twenty-fourth book of the *Iliad* Hekabe tries to dissuade her husband from retrieving Hektor's corpse from Achilles:

> . . . If (*ei gar*) he sees you, takes you,
> savage and wayward as the man is,
> he'll have no mercy and no shame. [Il.24.206-8]

This "inference" is a *warning.*

In the ninth book of the *Iliad* Achilles explains his absence from the battle with the following words:

> My mother, Thetis of the silvery feet,
> tells me of two possible destinies
> carrying me toward death: two ways:
> <u>if on the one hand (*ei men*) I remain to fight</u>
> <u>around Troy town, I lose all hope of home</u>

> but gain unfading glory; on the other,
> if (*ei de*) I sail back to my own land my glory
> fails--but a long life lies ahead for me. [Il.9.410-6]

Here the two "inferences" are *prophecies.*

Thetis arrives at the house of Hephaestus in order to ask him to forge new armaments for her son. Hephaestus receives her in a friendly manner:

> Ah, then we have a visitor I honor.
> She was my savior, after the long fall
> and fractures that I had to bear, when Mother,
> bitch that she is, wanted to hide her cripple.
> That would have been a dangerous time, had not (*ei me*)
> Thetis and Eurynome taken me in-- [Il.18.394-8]

This "inference" is an expression of *praise.*

In the thirteenth book of the *Iliad* Idomeneus mortally wounds Orthryoneus with his lance. Orthryoneus has previously promised Priam that he would expel the Achaeans from Troy if Priam were to give him as wife his daughter Cassandra gratis. After the fatal strike Idomeneus boasts as follows:

> Othryoneus, I'll sing your praise
> above all others, if (*ei eteon*) you do your part
> for Priam! He had promised you his daughter. [Il.13.374-6]

It is clear from the circumstances that this "inference" is not a plain *praise* or *promise* but rather an *irony*, even a *mockery.* This "inference" could be an *oral "indirect reasoning."* The difference between the oral and logical *reductio ad absurdum* reasoning is that the oral "inference" does not stand in contradiction with other propositions--as is the case with a logical inference--but with the given speech-situation.

After Iris delivers Zeus' order, that Poseidon should refrain himself from helping the Achaians lest Zeus chastise him, Poseidon shouts angrily:

> ...The gall of him!
> Noble no doubt he is, but insolent, too,
> to threaten (*ei*) me with forcible restraint

who am his peer in honor. [Il.15.185-6]

This "inference" is an expression of *indignation*.

7

In the eighth book of the *Iliad* Iris was sent by Zeus on a mission: She is to go to stop Hera and Athena, who were about to march out on the battleground in order to help the Achaeans. Iris finishes her speech to the goddesses as follows:

> With Hera he cannot be so furious:
> her habit is to balk him, say what he will;
> but as for you, you are a brazen bitch
> if (*ei eteon*) you dare lift your towering spear against him! [Il.8.421-4]

This "inference" is a *chiding.*

When Achilles is about to return the corpse of Hector to Priam, who had killed his best friend Patroclus, he is filled with remorse:

> ... Patroclus,
> do not be angry with me, if (*ai ke*) somehow
> even in the world of Death you learn of this--
> that I released Prince Hector to his father.
> The gifts he gave were not unworthy. . . . [Il.24.592-4]

In this case the discussed "inference" is an *apology*.

In the twenty-third book of the Odyssey Eurycleia tries to persuade Penelope that her husband Odysseus has already come home. First she speaks about her recognition of Odysseus' scar on the beggar's leg, then she assures Penelope of the certainty of her perception:

> ...So come with me, and I will set my own life at stake that, if (*ai ken*) I deceive you, you may kill me by a most pitiful death.' [Od.23.78-9]

This "inference" is a *bet.*(27)

In some cases the narrator himself makes use of the discussed "inference," *e.g.*, when Hektor is at

the Achaean ships the narrator interjects the following remark:

> . . . And soon
> he would have set the ships ablaze--had not (*ei me*)
> a thought from Hera come to Agamemnon,
> to rouse himself and rally his Achaeans. [II.217-9]

This "inference" is apparently a poetic device. The audience would have surely known that the Trojans wouldn't overcome the Achaeans, and the burning of their ships would have meant their defeat. The poet had the following purposes with this device:

1. The "inference" had to attract attention. For the audience was very likely to be astonished by the mention of an unexpected possibility.

2. This device often emphasized the role of a person or of a circumstance. (In this case the role of Hera is highlighted.)

3. By means of this device it was possible to make a sudden change in the course of events. (In this case: at the urging of Agamemnon the Achaeans start to slaughter the Trojans.)

In order to better understand the situation of an oral performer, let us investigate the reaction of the audience to a similar presentation. Odysseus and Aias are wrestling in honor of Patroclus for the prizes offered by Achilles:

> ...neither could Odysseus
> throw his man and pin him, nor could Aias,
> countered by Odysseus' brawn.
> At last when the tied match began to bore the soldier (*aniazon*),
> Aias muttered: 'Son of Laertes, royal
> Odysseus, master mariner and soldier,
> hoist me, or I'll hoist you. What happens then
> is god's affair.' [II.23.719-24]

8

The audience of the wrestling can be compared with the audience of the epic poems, for the epic poet (or poets) tries also to present his stories as if they actually had taken place in the course of the performance. The audience has become bored by the uneventful, longwinded wrestling-match.

And this makes Aias angry, this is the cause of his urging. The public must be entertained. As soon as they first knock each other down the audience "looks hard and marvels at the fall."

At last there is movement in the performance, although the match remains a draw. They knocked each other down once again--without a final decisive result. Obviously they are equal in this competition. At the moment in which the audience probably becomes disappointed once more, the narrator intervenes in the action:

> They would have roused and tried for a third fall,
> had not (*ei me*) Achilles held them back. he said:
> 'Nor more of this bone-cracking bout.
> The victory goes to both. Take equal prizes.
> Off with you, so the rest here can compete.' [Il.23.733-7]

In this case the poetic device in question is explained by Achilles: other Achaeans have to compete with each other in order for the performance to remain entertaining.

In one single case the discussed "inference" is used by the narrator as a simile, which may be regarded as a *description*. In the sixteenth book of the *Iliad* Homer presents the Myrmidons launching an attack :

> they charged the Trojans--Myrmidons in waves,
> like hornets that small boys, as boys will do,
> the idiots, poke up with constant teasing
> in their daub chambers on the road,
> to give everyone trouble. If (*ei per*) some traveler
> who passes unaware should then excite them,
> all the swarm comes raging out
> to defend their young. [Il.16.259-265]

It is probably appropriate to consider this description as an "empirical statement" although in this expression an important function of the simile disappears behind such a label: the entertaining of the audience. However, both moments of this "inference"--the "entertaining" as well as the "empirical" ones--aren't to be thought of outside of the relationship between the performer and the audience, which includes the authority of the narrator, the taste of the audience, the momentary mood of both, etc. To confirm our conjecture let us provisionally suppose that we are dealing here with a logical inference and that the inference is grounded on certain formal propositions. In this case the inference has the following formal structure:

1. The disturbed hornets attack everyone--without exception--who are in their vicinity.

2. Let us suppose that a certain wanderer comes to the vicinity of disturbed hornets.

3. (The conclusion): This wanderer must be (in any case) attacked by the hornets.

We have here a syllogism. To make it clear that it is false to suppose that Homeric men are able to execute a syllogistic inference we must first examine some "Homeric syllogisms" more closely. For example, Odysseus prays to a local river-god after having been thrown out onto the high sea by Poseidon:

> Hear me, king, whoever you are. As to one greatly longed-for do I come to you seeking to escape out of the sea from the threats of Poseidon. <u>Reverend even in the eyes of the immortal gods is that man who comes as a wanderer</u> (*aidios men t' esti kai athanatoisi theoisi andron hos tis hiketai alomenos*) <u>as I have come to your stream and to your knees, after many toils. Pity me, king;</u> I declare myself your suppliant. [Od.5.445-50]

This *prayer* has a perfect "syllogistic form":

1. For the immortal gods are all men reverend who come after many toils to them.

2. I'm Odysseus who am coming to you after many toils.

3. So, have pity on me!

9

If Odysseus were able to carry out a syllogism, he wouldn't have to make a prayer. The "conclusion" would in this case be not a request but a statement. Here the first premise is actually a request, an exhortation to the god: it is not a universal statement. This conjecture is underpinned by the following example. Odysseus was brought by the Phaeacians back to his native land. After unloading Odysseus' gifts they sailed away. When Odysseus wakes up he doesn't recognize his own land and thinks that he has been deceived by the Phaeacians and brought to a foreign land. Therefore he is angry with the Phaeacians and speaks as follows:

> May Zeus, the suppliant's god, requite them, who watches over all men, and punishes him who transgresses. [Od.13.213-4]

Odysseus doesn't make an inference based upon the "fact" that Zeus punishes all men--without exception--who commit a transgression. According to the rule of formal logic the Phaeacians would

have to be necessarily punished by Zeus. But for Odysseus this form of reasoning is obviously not at hand. He has to pronounce a *malediction*. The universal statement pertains only to the given speech situation as a psychological underpinning or background of the malediction. My findings are also supported by Alexander Luria who investigated the formal logical abilities of illiterate communities: "(One) . . . factor was the unacceptability of the premises as universal. Rather they were treated as particular messages reproducing some particular phenomenon. Premises deprived of universality yield, naturally enough, only particular information creating no firm logical system or basis for logical inference. Even when the subjects could remember the premise, therefore, they continued to make independent guesses or resort to personal experience."(28)

It is then comprehensible that the *description* discussed above cannot be a genuine logical inference. This pertains also to all "inferences" in Homer. The people in Homer's epic poems are not able to carry out a logical inference of the type "if 'p' then 'q'."

By the time of Xenophanes this situation has changed:

> Wenn Xenophanes die Verschiedenheit der Gottesvorstellungen beobachtet, so erkennt er zugleich, daß diese Vorstellungen bedingt sind von Faktoren, die gleichsam in den Verehrern selbst liegen und für diese ganz selbstverständlich sind. Und er sieht ferner, daß eine solche Abhängigkeit ganz unvermeidlich ist.

> Die Äthiopier stellen sich ihre Götter plattnasig und schwarz vor, die Thraker aber die ihren blauäugig und rotharig. ..."Ein jeder bildet seine Götter nach seinem Bilde": Das war die Einsicht, die Xenophanes gewonnen hatte. Und um seine These von der Relativität jeglicher Gottesvorstellung möglichst drastisch zu demonstrieren, macht er ein gedankliches Experiment. Vorausgesetzt, die Tiere könnten malen und Bildwerke erstellen, dann würden ihre Götter tierische Gestalt haben und z.B. wie Ochsen oder Löwen aussehen.(29)

> [As Xenophanes observes the diversity of god-images, he at once recognizes that these images are dependent on factors which are in the worshippers themselves, being completely self-evident for them. He moreover notices that such a dependency is entirely unavoidable.

> The Ethiopians imagine their gods flat-nosed and black, the Thracians imagine theirs blue-eyed and red-haired. "One pictures one's god in one's own image." This was the insight Xenophanes gained. And to demonstrate his thesis of the relativity of the god-images as drastically as possible, he makes a thought-experiment. Assuming that animals could paint and make pictures, their gods would have animal figures and, for example, they would look like oxen or lions.]

The fragment referred to (B15) runs as follows:

> But if (*all' ei*) cattle and horses or lions had hands, or were able to draw with their hands and do the works that men can do, horses would draw the forms of the gods like horses, and cattle like cattle, and they would make their bodies such as they each had themselves.(30)

Here is an implicit logical inference of the form "if 'p' then 'q'." To be able to make such an assertion Xenophanes must have in his mind an abstract Thesis: *every human race forms the gods according to its own shape, and this is likewise the case with all species of animals.* This thesis cannot be found among Xenophanes' extant fragments, it can only be induced from them. The thesis is not directly grounded on personal experiences but rather suggests itself from an analogy: *If some human races form the gods according to their own respective appearances, then not only do all human races behave in this manner, but also all species of animals would, under certain circumstances, behave similarly.* This shows that the thesis can be taken as a hypothesis.(31) This also clarifies the fact that the implications of the thesis (B15) are to be deduced by formal logical processes. For the thesis and its consequences don't directly resort to actual practical experiences. Furthermore the validity of the thesis and its implications don't depend on personal authority or on a certain speech-situation but hinge rather on a detached logical comprehensibility of the thesis and its consequences.(32)

10

The structure of the argumentation is like this:

> 1. (unarticulated thesis): Every human race forms the gods according to its own shape, and so do all species of animals.

> 2. Suppose the case (*all' ei*) that a particular species of animals was able to form shapes.

> 3. This particular species would form the gods according to its own shape.

Xenophanes was already able to carry out a logical inference of the sort "if 'p' then 'q'."

But what is the difference between a "Homeric" and a logical inference? **A "Homeric inference" is not comprehensible and thus not valid**(33) **without the speech-situation it is embedded in.**Speech-situation means in my terminology all circumstances accompanying--and at the same time lying outside of--the Homeric utterance: *e.g.*: the speaker, the hearer or the audience,(34) the relationship between the speaker and the hearer or the audience, the motive of the speaking person, the occasion of the speaking and so forth. **A logical inference--in contrast with the**

"Homeric inference"--is to be construed or reconstructed without any speech-situation.
Besides the given propositions there is nothing else which may be admitted for consideration, not even personal experience.(35)

What might have brought it about that logical inferences emerged from "Homeric inferences"?(36) One thing is sure: The speech-situations must have been eliminated. But could it have been possible that in certain early Greek genres they were abruptly eliminated? In my opinion it is not accidental that this process coincided with the rapid spread of the Greek alphabet. Writing might be the only possible reason for the disappearance of the role of speech-situations in utterances which had previously been non-logical. A written text does not have the same authority as a speaking person. Sentences may be compared with each other without the influence of circumstances outside the written text. A detached survey of a text makes it possible to discover contradictions or to draw logical inferences on the ground of given--that is, written--propositions.

At first sight it seems obvious that logical inferences arise out of certain "objective Homeric inferences," that is, from *descriptions*. But this assumption deals rather one-sidedly with this mental process. For we have seen that in Zeno's B3 fragment the expression "it is necessary" (*anagke*) connects the two parts ('p' and 'q') of a logical inference. However, this word is to be found on two occasions in the *Odyssey* as an adjective enhancing the force of a word meaning "order": [Od.17.399; 20.344]. It is likely that the compelling force of the order was abstracted from the "order" and then applied to mark the compelling force of the logical inference.

It is instructive to make the comparison between an "oral" and a logical inference.(37) In the preceding discussion we saw that Herodotus tries to underpin the reliability of the description of a special bird by using a logical inference:

> If he is indeed like his pictures (*ei te graphe paromoios*), he would be of this kind and this size: . . . [2.73]

As Priam is on the way to retrieve the corpse of Hector from Achilles he meets Hermes, who claims to be a follower of Achilles. Thereupon Priam inquires about his son:

> If (*ei men de*) you belong
> to the company of Achilles, son of Peleus,
> tell me this (*age de*), tell me the whole truth: (*pasan aletheien*) [Il.24.406-7]

The common characteristics of these two "inferences":

> 1.They have the formal structure: "if 'p' then 'q'."

2.They try to find out the truth with the help of a proposition ('p').

The differences between the two "inferences": in Herodotus the validity or the comprehensibility of the inference hinges on its logical consistency, while in Homer comprehensibility hinges on the given speech-situation, particularly on the personal relationship between the two talking persons. Hermes must be called upon (*age de*) to tell the truth. If Hermes is reliable in the given moment, he will tell the truth. In Homer it is a personal request which goes after the truth, while in Herodotus it is an impersonal logical compelling force. I don't want to suggest by this comparison that logical inferences came into being out of a special sort of Homeric speech-act. It doesn't make sense to look for a *particular* Homeric "inference" which may have been the starting point of the mental process that led to logical inferences. In fact all Homeric "inferences" served in like manner as a basis for the transformation leading to formal logical thinking. In order to comprehend the changes in early Greek thinking it is most important to grasp the differences between logical and non-logical "inferences."

11

It is perhaps expedient to cast a glance on an "inference" which might be in a transitional state between an "oral" and a logical inference. In the *Seven Against Thebes* of Aeschylus, Eteocles speaks about Thebes' assailants--who are threatening the city with extinction by word and deed--as follows:

> Oh! would they might but get (*ei gar tukhoien*) from Heaven the things whereof they dream, themselves with all their unhallowed boastings; full surely then in utter ruin and in utter misery would they be destroyed (*he tan . . . oloiato*) [550-2](38)

The assailants are boasting about the imminent destruction of the city and consequently--according to Eteocles' *malediction*--if they themselves received that of which they boast then they would perish. Were this utterance a detached statement, it would comply with the requirements of a logical inference. However, this utterance is not to be construed without its speech-situation, that is: without the really imminent danger or without the personal *desire* of Eteocles. As the "logic" of the "inference" is fully conceivable by means of the given "proposition" ('p')(39) the difference between this and a logical inference seems to be a small one. On the other hand, it is likely that people possessing such a "half-oral" mentality would be perplexed by the request to think of this "inference" without its actual speech-situation.(40) They would possibly react by saying that this procedure could have no intelligible motivation.(41) However, it is also manifest that the underlying "logic" of the whole utterance underpins the effect of the "inference." This "half-oral inference" is already--for the reason of its underlying "formal-logic"--rather un-Homeric. And yet as it is built from the underlying speech-situation, it is not a genuine logical inference. I do not mean to single out this one example as a paradigm. There may have been numberless examples of this kind of transition

from an "oral state of mentality" into a literate one. Of course oral "situation-thinking"(42) remains extant to this very day, but upon its linguistic foundation formal-logical thinking, triggered by the spread of literacy, has won the upper hand in certain genres such as mathematics and philosophy. I suppose that the process of emergence of logical thinking occurred in several genres simultaneously, each development having been relatively independent of the others. However, the formation of logical inferences had a pattern which, as we have seen, can be described in its main characteristics.

In Herodotus, there is a case where the inference in question is an imperative in spite of the fact that it is a formal logical inference.

According to Herodotus, the Scythian world traveler Anacharsis was shot down by the king of Scythia, Saulius, because Anacharsis celebrated a foreign god. Herodotus then investigates the family tree of Anacharsis:

> . . . Anacharsis was uncle of Idanthyrsus, king of Scythia, and the son of Gnurus, son of Lycus, son of Spargapithes. So if (*ei*) Anacharsis was of this descent, he should (*istoo*) know that he was killed by his own brother! For Idanthyrsus was the son of Saulius, and it was Saulius who killed Anacharsis. (4.76)(43)

This example shows again that the role of speech situations was sacrificed for the birth of formal logical thinking. Although here the speech situation does not interfere with the argumentation, Herodotus feels the need of stressing the importance of his findings by a personal imperative addressed to the dead Anacharsis. It was a long way for the early Greeks to become accustomed to the impersonal force of logical reasoning.

12

Notes

1. "Performative-Constative Revisited: The Genetics of Austin's Theory of Speech Acts," *Anthropoetics* II, no.2 (January 1997)(back)

2. When I speak of everyday language I speak of the language of the Homeric epic poems. Everyday language is essentially reflected in the Homeric poems notwithstanding their formulaic character.(back)

3. Barnes, J., "Aphorism and Argument," in: *Language and Thought in Early Greek Philosophy*. Ed. by Robb, K. The Hegeler Institute, 1983, p.91(back)

4. Explicit, because the inference is based on given, fully expressed statements; logical, because

the inference is sound only considering the given statements, taking no account of the given speech situation.(back)

5. All the English translations of the pre-Socratics I took over from *The Presocratic Philosophers* by G. S. Kirk, J. E. Raven, M. Schofield, Cambridge, 1983, p.266.(back)

6. The Route of Parmenides, New Haven, London, 1970, p.71.(back)

7. Beiträge zur Geschichte der griechischen Dialektik, in: *Acta antiqua Acad. Sci. hung. I*, 1953, p.386.(back)

8. "Supposed the case (if) 'p' it follows--with logical necessity--'q'." (back)

9. The Presocratic Philosophers, p. 266.(back)

10. This conjecture is also supported by two other "genuine" fragments of Zeno.(back)

11. Aristot. *Fragm.* ed. V. Lipsiae 1886.fr.65 (Diog.1.9,25): *fesi d'Aristoteles en to sophiste eureten auton (sc. Zenona) genesthai dialektikes* etc.(back)

12. Plato, *Phaidrus* 261D.(back)

13. p.385.(back)

14. Der geschichtliche Ort der Entstehung der formalen Logik, in: Studium Generale, 1966, 19, p.459.(back)

15. Translated by David Grene, in: *Herodotus. The History*. Chicago, London, 1987.(back)

16. About another inference wrote Herodotus thus: "...as necessity proves (*hos he anagke elegkei*)." [2.22] Herodotus here marks the logical connection with the same word (*anagke*) as Zeno.(back)

17. Cf. Zeno, B3,1-3.(back)

18. It is also in Zeno a direct inference of the type: if 'p', then 'q'. [B1,3](back)

19. Cf.Ernst Heitsch, *Parmenides und die Anfänge der Erkenntniskritik und Logik*, Donauwörth, 1969, p.81.(back)

20. Cf. "Form und Gedankenführung sind gerade bei archaischer Poesie nicht voneiander abtrennbar, und was die griechische Geistesgeschichte betrifft, so ist eines ihrer wesentlichsten

Probleme das der Ablösung der Archaischen Aussageformen durch eine 'logische' Gedankenführung." [Form and thought-order are not separable in archaic poetry, and one of the most essential problems in the history of Greek thought is that of the dissolution of the archaic forms of speech through a "logical" thought-order.] Hans Schwabl, "Hesiod und Parmenides," in: *Rheinisches Museum für Philologie*, 106. 1963, p.132.](back)

21. Also not necessarily in a logical way.(back)

22. Translated by Robert Fitzgerald.(back)

23. From now on I make use of this term in accordance with the second definition I have given.(back)

24. It is also a constituent part of the situation, along with the personality and the social background of the actors.(back)

25. Supplement by me.(back)

26. Completion by the author.(back)

13

27. Translated by A. T. Murray. In: *Homer: The Odyssey*, Cambridge, Massachusetts, 1995. (back)

28. A. R. Luria, *Cognitive Development*, Cambridge, Massachusetts, 1976, p.115(back)

29. Ernst Heitsch, *Xenophanes und die Anfänge kritischen Denkens*, Stuttgart, 1994, p.15(back)

30. The Presocratic Philosophers, p.169(back)

31. Luria gives the following summary of the problem-solving abilities of illiterate people living in isolation:

> When the conditions of the problem contradicted actual practical experience, the solution most often completely exceeded the capacities of our basic group of subjects. . . . the subjects usually refused flatly to try to solve the problem, declaring that the condition was wrong, that 'it isn't like that', or that they couldn't solve such a problem. (p.126)

> ...as a result of the cultural revolution [this means among others the introduction of the school education (the author)] we see the possibility of drawing inferences not only on the basis of one's own practical experience, but on the basis of discursive, verbal, and logical processes as well.

> It becomes possible to take assumptions as they are formulated in language and use them to make logical inferences, regardless of whether or not the content of the premise forms a part of personal experience. The relationship to logical reasoning is radically restructured; we see the creation of the rudiments of discursive thinking, whose inferences become as compelling as those from direct, personal experience. p.163(back)

32. The word "validity" pertains not to the truth or to the falsity nor to the success or to the unsuccess of an utterance but to the rules by which an utterance "works," that is by which it is to be applied. Thus 'validity' means a sort of human consent to certain rules by which a given utterance is to be applied. In a case of a "logical" assertion the validity of the assertion depends on and only depends on formal logical considerations. (*E.g.* If a "logical" inference is inconsequent and based solely on a personal desire then the given inference is invalid; it cannot be comprehended as a logical inference.) In a case of a "non-logical" assertion *e.g.* of an "order," the validity depends on the actual speech situation that is for example whether or not the order is made under suitable circumstances. (*E.g.* If someone orders to assail a non-existent enemy during a funeral march without having any authority, his/her order is out of place and so the order is not comprehensible and therefore invalid.) As speech-situations are practically countless the rules concerning the non-logical utterances have innumerable nuances. An utterance is valid if it is used according to its most often commonly accepted application rules. It is interesting, however, that in the pre-Socratics the invention of the rules of formal logical reasoning preceded the common acceptance of them. Therefore some of the early Greek philosophers tried to ground the validity of their logical reasoning not only on formal logical rules--which were at the moment largely unaccepted but also on a divine authority--and thus on a speech situation--which was familiar to the people; see *e.g.* Parmenides' goddess or Heraclitus' "logos." This shows that the pre-Socratics concerned themselves more about the common acceptance of their newly invented method of reasoning.(back)

33. For the meaning of the concept "valid" see fn.32.(back)

34. Including also their momentary mood.(back)

35. This is characteristic of an oral community; see Luria, p.102-126(back)

36. *Cf.* "Wieviele Arten der Sätze gibt es aber? Etwa Behauptung, Frage und Befehl? - Es gibt *unzählige* solcher Arten: unzählige verschiedene Arten der Verwendung alles dessen, was wir 'Zeichen', 'Worte', 'Sätze', nennen. Und diese Mannigfaltigkeit ist nichts Festes, ein für allemal Gegebenes; sondern neue Typen der Sprache, neue Sprachspiele, wie wir sagen können, entstehen und andre veralten und werden vergessen." [But how many kinds of sentence are there? Merely assertive, interrogative, imperative? - There are *innumerable* such types: countless different ways of using what we call "sign," "word," "sentence." And this multiplicity is not stable, given for all time; new types of speech, new language games, as we might call them, arise and others

become old and are forgotten.] Ludwig Wittgenstein, *Philosophische Untersuchungen*, Frankfurt am Main, 1971, 23§

"Perhaps neither of these abstractions [performative contra constative utterances] is so very expedient: perhaps we have here not really two poles, but rather an historical development." J. L. Austin, *How to do Things with Words*, Cambridge, Massachusetts, 1962. S.145(back)

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37. We have already seen an "oral indirect inference" (p.7).(back)

38. Translated by Herbert Weir Smith, in: *Aeschylus*, Cambridge, Massachusetts, 1973 (back)

39. In fact it is not a proposition but a *curse*.(back)

40. In this case the curse ('p') would be transformed into a detached statement without the influence of the actual speech-situation.(back)

41. Perhaps they would say that without being in such a danger there were no reason to make such an "inference" without any desire or malediction.(back)

42. The concept was used first by Alexander Luria.(back)

43. Translated by David Grene. The University of Chicago Press, 1987. (back)

[corrected 1/20/00]