Handout for “Epagōgē and syllogismos in Posterior Analytics I.1 (and beyond)”

Joshua Mendelsohn - AGARP

December 2, 2015

T1: Simultaneous learning in Post. An. I.1

Ἔστι δὲ γνωρίζειν τὰ μὲν πρότερον γνωρίσαντα, τῶν δὲ καὶ ἃμα λαμβάνοντα τὴν γνώσιν, οἷον ὅσα τυγχάνει ὀντα ὑπὸ τὸ καθόλου οὐ ἔχει τὴν γνώσιν. ὅτι μὲν γὰρ πᾶν τρίγωνον ἔχει δυσὶν ὀρθαῖς ἴσας, προῄδει· ὅτι δὲ τὸ ἐν τῷ ἡμικυκλίῳ τρίγωνόν ἐστιν, ἅμα ἐπαγόμενος ἐγνώρισεν. (ἐνίων γὰρ τούτων τὸν τρόπον ἢ μᾶθησις ἐστι, καὶ οὐ διὰ τοῦ μέσου τὸ ἔσχατον γνωρίζεται, ὅσα ἤξον τῶν καθ' ἐκατοστάσεως ὀντα καὶ οὐ καθ' ὑποκειμένου τοῦ.)

πρὶν δ' ἐπαχθῆναι ἢ λαβεῖν συλλογισμὸν τρόπον μέν τινα ἴσως φατέον ἐπίστασθαι, τρόπον δ' ἄλλον οὐ. ὥσις μὴ ἔχει εἴ ἔστιν ἁπλῶς, τοῦτο πῶς ἔστηθαί ὅτι δύο ὀρθαῖς ἔχει ἁπλῶς: ἀλλὰ ἄξον ὡς ὡδὶ μὲν ἐπίσταται, ὅτι καθόλου ἐπίσταται, ἁπλῶς δ' οὐκ ἐπίσταται. εἰ δὲ μὴ, τὸ ἐν τῷ Μένωνι ἀπόρημα συμβήσεται: ἢ γὰρ οὐδὲν μαθήσεται ἢ οὐδὲν.

It is possible to acquire knowledge when you have acquired knowledge of some items earlier and get knowledge of the others at the very same time (e.g. items which in fact fall under a universal of which you possess knowledge). Thus you already knew that every triangle has angles equal to two right angles; but you got to know that this figure in the semicircle is a triangle at the same time as you were performing epagōgē (ἐπαγόμενος).

(In some cases learning occurs in this way, and the last term does not become known through the middle term - this occurs when the items are in fact particulars and are not said of any underlying subject) Before you are led to the conclusion (ἐπαχθῆναι), i.e. before you are given a deduction (λαβεῖν συλλογισμὸν), you should perhaps be said to understand it in one way—but in another way not. If you did not know whether there was such-and-such a thing simpliciter, how could you have known that it had two right angles simpliciter? Yet it is plain that you do understand it in this sense: you understand it universally—but you do not understand it simpliciter. (Otherwise the puzzle in the Meno will arise: you will learn either nothing or what you already know) (71a.17–30).1

1Translation modified from Barnes (1993).
Supplementary texts

T2: Simultaneous learning in Pr. An. II.21

ὁμοίως δὲ καὶ ὁ ἐν τῷ Μένωνι λόγος, ὃτι ἡ μάθησις ἀνάμνησις. οὐδεμιοῦ γὰρ
συμβαίνει προεπίστασθαι τὸ καθ’ ἐκαστὸν, ἀλλ’ ἄμα τῇ ἐπαγωγῇ λαμβάνειν τὴν
τῶν κατὰ μέρος ἐπιστήμην ὅπερ ἀναγνωρίζοντας. ένια γὰρ ἐθύμοι ζημεύειν,
οἷον ὃτι δύο ὀρθαίς, ἐξαὶ ἱδὼμεν ὃτι τρίγυμον.

And the argument in the *Meno* that learning is being reminded is also
similar: for it never results that people know the particular in advance,
but rather they get the knowledge of the particulars at the same time,
by means of *epagōgē*, as though they were recollecting something. For there
are some things which we know right away (for example, we know that
something has 2R whenever we see that it is a triangle) (67a.21–24).²

T3: Learning by *syllogismos* and by *epagōgē*

ὁμοίως δὲ καὶ περὶ τῶν λόγων οἱ τε διὰ συλλογισμῶν καὶ οἱ δι’ ἐπαγωγῆς
ἀμφότεροι γὰρ διὰ προγινωσκομένων ποιοῦντα τὴν διδασκαλίαν, οἱ μὲν
λαμβάνοντες ὡς παρὰ ξυνιέντων, οἱ δὲ δεικνύοντες τὸ καθόλου διὰ τοῦ δῆλον
εἶναι τὸ καθ’ ἐκαστὸν.

Similarly with arguments, both deductive and inductive: they bring about
their teaching through what we already know, the former taking as from
among those things which we grasp, the latter showing something universal
by way of the the particular being clear (71a.5–9).³

T4: The definition of *syllogismos* in the Pr. An.

λόγος ἐν ᾧ τεθέντων τινῶν ἕτερόν τι τῶν κειμένων ἐξ ἀνάγκης συμβαίνει τῷ
tαῦτα εἶναι.

an argument in which, some things having been posited, something different
from the things supposed results of necessity by their being so (24b.18–
20).⁴

T5: *Epagōgē* in the Topics

ἐπαγωγὴ δὲ ἢ ἄπο τῶν καθ’ ἐκαστα ἐπὶ τὸ καθόλου ἔροδος· οἷον εἰ ἦτι
κυβερνήτης οἱ ἐπιστάμενοι κράτος, καὶ ἡμίχορος, καὶ ὅλως ἐστὶν ὁ
ἐπιστάμενος περὶ ἐκαστὰν δριστος.

Induction, however, is proceeding from particulars up to a universal. For
instance, if the pilot who has knowledge is the best pilot, and so with a
charioteer, then generally the person who has knowledge about anything
is the best (105a.13–16).⁵

²Translation modified from Smith (1989, 96).
³Translation modified from Barnes (1993, 1).
⁴The translation here is mine, based on Smith (1989), 2.
⁵Translation from Smith (1997, 11).
The “syllogism from *ἐπαγωγή*”

*Επαγωγὴ μὲν οὖν ἐστι καὶ ὁ ἐξ ἐπαγωγῆς συλλογισμὸς τὸ διὰ τοῦ ἑτέρου θέτερον θέτερον ἄκρον τῷ μέσῳ συλλογίσασθαι, οἷον εἰ τῶν Α Γ μέσον τὸ Β, διὰ τοῦ Γ δεῖξαι τὸ Α τῷ Β ὑπάρχον  οὕτω γὰρ ποιούμεθα τὰς ἐπαγωγὰς.

Induction, then – that is, a deduction from induction – is deducing one extreme to belong to the middle through the other extreme, for example, if B is the middle for A and C, proving A to belong to B by means of C (Pr. An. II.23, 68b.15–18).6

---

6Translation from Smith (1989).
Logical and temporal representations

<table>
<thead>
<tr>
<th>Passage</th>
<th>Temporal representation:</th>
<th>Logical representation:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Meno</strong></td>
<td>This is a square with double side-length (premise)</td>
<td>All squares with double side-length have quadruple area (premise)</td>
</tr>
<tr>
<td></td>
<td>This is a square with quadruple area (premise)</td>
<td>This is a square with double side-length (premise)</td>
</tr>
<tr>
<td></td>
<td>All squares with double side-length have quadruple area (conclusion)</td>
<td>This is a square with quadruple area (conclusion)</td>
</tr>
<tr>
<td><strong>Pr. An. 2.23</strong></td>
<td>The horse is long-lived (premise)</td>
<td>Everything not possessing bile is long-lived (premise)</td>
</tr>
<tr>
<td></td>
<td>The horse has no bile (premise)</td>
<td>The horse has no bile (premise)</td>
</tr>
<tr>
<td></td>
<td>Everything not possessing bile is long-lived (conclusion)</td>
<td>The horse is long-lived (conclusion)</td>
</tr>
<tr>
<td><strong>Post. An. 1.1</strong></td>
<td>All triangles have 2R (premise)</td>
<td>All triangles have 2R (premise)</td>
</tr>
<tr>
<td></td>
<td>This is a triangle (premise)</td>
<td>This is a triangle (premise)</td>
</tr>
<tr>
<td></td>
<td>This has 2R (conclusion)</td>
<td>This has 2R (conclusion)</td>
</tr>
</tbody>
</table>

References

