The Formal Character of *koinoi topoi* in Aristotle's Rhetoric and Dialectic. Illustrated by the List in *Rhetorica* II.23.

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All reasoning is of the form of a syllogism, i.e. something like *"p . q :=> . r"*. If the antecedent is demonstrably true we have an apodeictic syllogism, if the antecedent (= the premisses) is only probable *(hos epi to poly)* we have the more common form of reasoning or a dialectical syllogism, which in rhetoric is called enthymeme. Thus we get the following vocabulary:

protasis = proposition (logical notation *"p"*, *"q"*, etc.).
These are the "facts" of the case, which the disputant must gather, just as the scientist.

enthymema = a complex proposition, corresponding to the logical syllogism, although not always of the form of the *Analytica*, but roughly an "implication" as for instance *"p . q :=> r"*. The probability of the antecedent propositions determines the probability of the consequent.

stoicheion = *koinos topos* = 'elementary class of enthymemes' or 'general line of argument' (*Rh.* II.22). That is, in Aristotle's interpretation of the principles of rhetoric as an art, closely allied with dialectics, *topoi* are formal schemata of complex propositions, which will hold no matter what the content of the single propositions are. A *topos* is, as Alexander of Aphrodisias (after Theophrastus) very exactly states[1],

τῇ περιγραφῇ μὲν ὡρισμένος, τοῖς δὲ καθ' ἕκαστα ἀόριστος.

Or in modern terms, defined as to form, undefined as to content. Thus Aristotle transforms, through his preoccupation with logic, the older conception of *topoi* as standard arguments[2] into what is actually the first formulation of formal laws of reasoning. Therefore it is that among the *topoi* listed in *Topica* and *Rhetorica* we find numerous logical theorems,

1. Alexandri Aphrodisiensis in Aristotelis Topicorum libros octo commentaria, ed. M. Wallies, Commentaria in Aristotelem Graeca II.2, Berlin 1891, at 5.23-26. Cf. F. Solmsen, Die Entwicklung der aristotelischen Logik und Rhetorik (= Neue philologische Untersuchungen, hrsg. v. W.Jaeger, Heft 4), Berlin 1929, p. 66.
2. Cf. Arist. Sophistici Elenchi 34 183b34.

of a type which was first to be dealt with again in our time by symbolic logicians. - However, especially in the *Rhetoric*, we find as *topoi* not only formal schemata, say, of the logic of relations, but also what would now be called metalogical or semantic rules about the correct use and combination of terms, plus a few rules which are not strictly speaking logical, but certainly to Aristotle of complete universality, as the laws of causality. An exhaustive analysis of the logic of the *Topics* and *Rhetoric*, although badly needed, will not be possible here, but by using some of the devices of modern symbolization I shall try to show the formal character of the Aristotelian *topoi* and thus from one side try to classify the meaning of this ambiguous concept.

AD RHETORICA II.23

1. $(x)\,(y)\,(f)\,(g)\,[x \circ y \,.\, f \circ g :\Leftrightarrow: fx \Leftrightarrow gy]$

(thus if x is supposed opposite of y, but does not have the opposite quality of y, the original supposition is disproved). [Cf. *Top.* II.8]

2. Is a semantical rule:

$"f" =_{syn} "g" \,.\Leftrightarrow.\, "f^*" =_{syn} "g^*"$

or: two terms are synonymous if and only if their modifications (derivations) are synonymous. [Cf. *Top.* II.9]

3. $(x)\,(y)\,[x\,R\,y \,.\Leftrightarrow.\, (\mathrm{E}\,R^c)\,(y\,R^c\,x)]$

tells that if we know the converse relation (R^c) of some given relation (R) we can assert this relation of the objects in question.

4. $P(fx) > P(fy) \,.\Rightarrow.\, \sim fx \Rightarrow \sim fy.$

This law of probability is difficult to defend strictly, but Aristotle seems to be aware of this in the *Topics* (II.10). It asserts that if the probability of x having the property f is higher the that of y having f, then, if fx is false, fy can "be argued" to be false.

5. Seems to deal with so-called contrary to fact-conditionals but is difficult to formalize.

6. If your opponent will admit about himself *(a)*

1. $fa \Rightarrow ga$ and thereby tacitly imply
2. $(x)\,(fx \Rightarrow gx)$ you can infer about yourself *(b)*
3. $fb \Rightarrow gb$

7. Deals with "definition". Example: [Cf. *Top.* VII.3]

1. $F =_{df} G \vee H$
2. $H \Rightarrow G$
3. H
4. G (2,3. Modus ponens)
5. F (3,4,1)

Thus *F* can be asserted, granted a certain definition.

8. A semantical rule about different senses. [Cf. *Topics passim*]

9. A complex rule of "dilemma" + "modus tollens". Thus

1. $D \Rightarrow .\ A \vee B \vee C$ (granted)
2. $-A\ .\ -B$ (proved)
3. $-C$ (granted by opponent)
4. $-A\ .\ -B\ .\ -C$ (2,3 adjunction)
5. $-(A \vee B \vee C)$ (so-called "De Morgan's Law")
6. $-D$ (1, 5, modus tollens)

This is an interesting example of propositional logic, usually not admitted to have occupied Aristotle's attention.

10. Is the law of Induction by Simple Enumeration as applied in rhetoric by means of *paradeigmata.*

11. Recommends considering the present case as an instance of a law universally agreed upon

if: (1) $(x)\,(fx \Rightarrow gx)$
and (2) fa
then (3) ga can be argued to the degree of universality ascribed to (1).

This is a restatement of the general procedure of reasoning in dialectics, dealing as it is with *ta endoxa.*

12. A version of the topical law (*Top.* II.4):

$$(x)[Gx \Rightarrow (\mathrm{E}\ F_i)\ (GF_i \,.\, F_ix)]$$

or: if a genus (G) is ascribed to x then there is some definite species F_i (=F_1 or F_2 or F_3 etc.) such that F_i is subsumed under G and ascribed to x.

13. which deals with the transfer of goodness or badness from cause to effect seems more in the traditional vein and is ascribed to Callipus:

x causes y. y is good :=> x is good

Semantical rule for a certain general predicate, but of traditional flavour.

14. A variation of 13.

F_o opposite quality of F	(speak rightly-wrongly)
R_o opposite relation of R	(love-hate)
m opposite of g	(men-gods)
a subject	

(1) $F_oa \Rightarrow mRa \,.\, Fa \Rightarrow gRa$

(1) according to the theory of opposites implies however

(2) $Fa \Rightarrow mR_oa \,.\, F_oa \Rightarrow gR_oa$

Thus a double argument is possible. This is still, it seems, Protagorean in its emphasis on "two sides to every question". Cf. also the *Dissoi Logoi.*

15. Seems a pragmatic rule, the use of a psychological *eidos*, rather than a genuine *topos*. Perhaps a concession to the traditional *topos*-concept.

16. If in view of a general rule $(x)\ (fx \Rightarrow gx)$
a case is $fa\ .\ g_o a$
demonstrate the absurdity of $f_o b\ .\ gb$

17. $(x)\ (y)\ (z)\ (w)\ [x = y\ .\Rightarrow:\ \imath z\ (z\ C\ x) = \imath w\ (w\ C\ y)]$

or: if two events are the same, their causes are the same (substitution-instance of Leibniz's Law)

18. states: ["N" = "necessary that"]

$-N\ [A.B.C :\Rightarrow_c D\ .:\Rightarrow:.\ A.B.E :\Rightarrow_c D]$ ["$\Rightarrow_c$" = "causally implies"]

or: a change of condition may imply a change in effect.

19. to demonstrate (2) $A \Rightarrow_c B$, show first
(1) $M\ [A \Rightarrow_c B]$ (the possibility of (2)) ["M" = "possible that"]

20. By showing $M\ [A \Rightarrow_c B]$
and showing (in case of humans) A to be an existing human motive
and by assuming 17 to hold
you may assert "$A \Rightarrow_c B$" as holding in a specific case.

21. If $P(A)$ -i.e. the probability of A- is originally low, but A is held true by some persons
we change our value of P,
since the P of A being believed on the original P is so low that the converse (*A's* being believed on account of, say, obervation) becomes very high.

This is an interesting rule of inductive evaluation of information.

22. In general a reference to an application of modus tollens.

["->" = implies strictly or logically]

(1) *(p) (*E *q) (p -> q),* therefore if
(2) *~q* you may assert
(3) *~p*

[Cf. *Top.* II.5]

23. *N [p => q] . ~p :=>. -N [q]*

If *q* is asserted on grounds of the alleged truth of *p* plus the granted necessity of '*p => q*',
show the falsity of *p*,
and the necessity of *q* can be denied.

24. *(x) (y) [xCy :=>: Px :<=> Py]*

or: if *x* causes *y*, then *x* is present (*Px*) if and only if *y* is present.

25. Belongs really among the "spurious" enthymemes.

26. If a past action is inconsistent with an action in view, a reexamination is demanded. This is simply a general demand for logical consistency in a deliberative procedure.

27. is presumably like **25** "sophistical".

28. On the pragmatic use of etymology.

CONCLUSIONS

Of the 26 genuine rules in *Rhetorica* II.23:

One (**26**) is the general Law of Consistency.
Ten are theorems of deductive logic.
One deals with contrary-to-fact conditionals.
Three are "semantical" rules for the use of terms or, say the general predicates "good" and "bad".

Only one (15) seems a 'commonplace' in the usual sense about human psychology.

This seems to me to establish clearly that *topoi* in the *Rhetoric* as (more fully expounded) in the *Topics* are logical schemata, examples of the rich logical inquiry of Aristotle outside the syllogistic in the narrow sense. The use of the concept of variables, of places to be filled in by concrete instances, is here clearly manifested. It seems that Aristotle's logic grew not only from Plato's "dichotomy" but also from the tradition of argumentation in everyday forensic life. Aristotle did thus make rhetoric and dialectic an "art", because he discovered and formulated its general laws.

APPENDIX

Some examples of logical *topoi* from *Topica.*

1. Genus and Species (*G* and *F*):

$(G)\,(F)\,[(\mathrm{E}\,G^*)\,(G^* > G)\,.\,(\sim\mathrm{E}\,F^*)\,(F^* > F) :\Rightarrow (\sim GF)]$

(Correlative degrees of genus and species)

2. Theory of Opposites [Top. II] ["o" = "opposite of"]

a) $G \circ F\,.\,Fx \vee Gx :\Rightarrow: Fx \Leftrightarrow Gx$
b) $G \circ F.\,I\,[Fx] :\Rightarrow.\,\sim Gx$ ["I" = "impossible that..."]

3. Theory of Identity [Top. VII.1, 2]

(a) $x = y .\Leftrightarrow. (f)\,(fx \Leftrightarrow fy)$ (= "Leibniz's Law")
(b) $f = g .\Leftrightarrow. (x)\,(fx \Leftrightarrow gx)$

Both laws are identical with modern definitions of identity of objects (3a) and classes (3b).

AFTERWORD TO J. CHRISTENSEN's PAPER

Sten Ebbesen

The above paper was written in 1952 when the author was twenty-two and a student of classics and philosophy at the University of California, Los Angeles. The paper was not meant for publication and few people ever knew of its existence, yet it has been influential. In 1963 J. Christensen became professor of classics in the University of Copenhagen. Among his first pupils was Jan Pinborg, in whom J. Christensen kindled an interest in the *topoi*, the first public manifestation of which was to be Pinborg's 1969 paper *Topik und Syllogistik im Mittelalter*[1]. Pinborg in turn passed the interest on to N.J. Green-Pedersen, who was to produce the most comprehensive study of the medieval doctrine of *topoi (loci)* to date[2]; and to myself, with the result that I undertook a study of the doctrine in ancient times.[3]

Christensen's essay was known to Pinborg, for the manuscript turned up among his papers after he died in 1982. This was when I learned of its existence. I was reminded of it again when preparing a paper about ancient and medieval theory of topics for the 9th European Symposium on Medieval Logic and Semantics (Freiburg 1988). It struck me that apart from its importance for the history of research in Copenhagen, the essay might still serve a purpose as inspiration for others. For in spite of the great interest in ancient logic after World War II, and in spite of books having been written about Aristotle's *Rhetoric* and *Topics*, I found no complete formulaic survey of Aristotle's *topoi* from either work.

Johnny Christensen kindly gave CIMAGL permission to publish the paper from his student days. No attempt has been made to revamp it. For technical reasons a few symbols had to be changed, and some Greek words were transliterated into Latin alphabet, but otherwise the essay has been left as it was written thirty-six years ago.

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1. Jan Pinborg, 'Topik und Syllogistik im Mittelalter', in: Sapienter Ordinare. Festgabe für Erich Kleineidam. Erfurter Theologische Studien 24, pp., 157-178. - Rp. in J. Pinborg, Medieval Semantics, Variorum: London 1984.
2. N.J. Green-Pedersen, The Tradition of The Topics in the Middle Ages. Philosophia Verlag: München, 1984.
3. Sten Ebbesen, Commentators and Commentaries on Aristotle's Sophistici Elenchi (= Corpus Latinum Commentariorum in Aristotelem Graecorum VII), Brill: Leiden 1981; see vol. 1: 106ff.