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

Johnny Christensen

All reasoning is of the form of a syllogism, i.e. something like "p . q \( \implies \) 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 \( \implies \) 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, topos 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 states¹,

τῇ περιγραφῇ μὲν ἀριστεῖος, τοῖς δὲ καθ᾽ ἑκάστα ἀριστος.

Or in modern terms, defined as to form, undefined as to content. Thus Aristotle transforms, through his preoccupation with logic, the older conception of topos as standard arguments² 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,

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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. \((x) \ (y) \ (f) \ (g) \ [x \ o \ y . \ f \ o \ g : \iff : f x \iff g y]\)
   (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" =_{\text{syn}} "g" \iff \ "f^*" =_{\text{syn}} "g^*"

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

3. \((x) \ (y) \ [x \ R \ y . \iff . \ (E \ R^c) \ (y \ R^c \ x)]\)
   
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. \(P(f x) > P(f y) \iff \neg f x \implies \neg f y.\)
   
   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 \(f x\) is false, \(f y\) 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. \(F \equiv G \lor H\)
   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. \(D \Rightarrow A \lor B \lor C\) (granted)
   2. \(-A \cdot -B\) (proved)
   3. \(-C\) (granted by opponent)
   4. \(-A \cdot -B \cdot -C\) (2,3 adjunction)
   5. \(-\left( A \lor B \lor C \right)\) (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 \textit{ta endoxa}.

12. A version of the topical law (\textit{Top. II.4}):

\[
(x)[Gx \Rightarrow (E F_i) \ (GF_i . F_i x)]
\]

or: if a genus \((G)\) is ascribed to \(x\) then there is some definite species \(F_i\) \((=F_1 \text{ or } F_2 \text{ or } F_3 \text{ etc.})\) 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 :\(\Rightarrow\) \(x\) is good

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


\(F_0\) opposite quality of \(F\) \hspace{1cm} (speak rightly-wrongly)
\(R_0\) opposite relation of \(R\) \hspace{1cm} (love-hate)
\(m\) opposite of \(g\) \hspace{1cm} (men-gods)
\(a\) subject

(1) \(F_0 a \Rightarrow mR_0 a \cdot F a \Rightarrow gR a\)

(1) according to the theory of opposites implies however

(2) \(F a \Rightarrow mR_0 a \cdot F_0 a \Rightarrow gR_0 a\)

Thus a double argument is possible. This is still, it seems, Protagorean in its emphasis on "two sides to every question". Cf. also the \textit{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 \(fa \cdot g_\circ a\) demonstrate the absurdity of \(f_\circ b \cdot gb\)

17. \((x) (y) (z) (w) [x = y \Rightarrow iz (z C x) = iw (w C y)]\)

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

18. states:

\[-N [A.B.C :\Rightarrow c D :\Rightarrow c A.B.E :\Rightarrow g D]\]

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 \((2)\))

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 con-
verse \((A’s\ being\ believed\ on\ account\ of,\ say,\ obervation)\) becomes very high.

This is an interesting rule of inductive evaluation of information.
22. In general a reference to an application of modus tollens.

\[ \therefore \Rightarrow \text{ implies strictly or logically} \]

(1) \((p) \text{ (E} q) \text{ (} p \Rightarrow q),\) therefore if
(2) \(\neg q\)
(3) \(\neg p\)

you may assert

[Cf. Top. II.5]

23. \(N [p \Rightarrow q]. \neg p \Rightarrow \neg N [q]\)

If \(q\) is asserted on grounds of the alleged truth of \(p\) plus the granted necessity of \(p \Rightarrow q\),
show the falsity of \(p\),
and the necessity of \(q\) can be denied.

24. \((x) (y) [xCy \Rightarrow Px \Leftrightarrow Py]\)

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) \ \[(E \ G^\circ) \ (G^\circ > G) \ . \ (\sim E \ F^\circ) \ (F^\circ > F) :\Rightarrow (\sim GF)]\]

(Correlative degrees of genus and species)

2. Theory of Opposites

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

(a) \[x = y :\Rightarrow : (f) (fx \leftrightarrow fy)\]

(b) \[f = g :\Rightarrow : (x) (fx \leftrightarrow gx)\]

(= "Leibniz's Law")

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*. 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; and to myself, with the result that I undertook a study of the doctrine in ancient times.

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 CIMG L 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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