The Logic of Avicenna between al-Qiyās and Mantiq al Mashriqiyīn
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Avicenna’s logic is presented in commentaries of Aristotle, such as al-Shifāʾ, al-Qiyās (Prior Analytics). But the treatise entitled Mantiq al-Mashriqiyīn, seems to differ from the preceding and is said to express Avicenna’s own logical theory by some commentators. So the problem is the following: Is this treatise in conflict with al-Shifāʾ? What are the differences between them?

In this contribution, we will try to answer these questions by comparing between the opinions defended in these treatises with regard to the analysis of the categorical propositions. We will show that there is no radical difference between these analyses, since some of the new ideas developed in the last treatise can already be found in al-Qiyās. The absolute propositions are divided, in al-Qiyās, into several kinds depending on the conditions they contain, which are temporal for some of them and descriptional for others. This classification becomes the following in Mantiq al-Mashriqiyīn: 1a: S is P (as long as S exists), 1b: S is P (as long as it is S); 2/ Factual (Tāriʿa): S is P (not perpetually); 3/ Determined (mafrūda): S is P (in some determined time), 4/ Spread (muntashira): S is P (in some undetermined, but regular times), 5/ Temporal (waqtīya): S is P (at present). This classification differs from that of al-Qiyās, since some propositions, such as those containing ‘as long as it is P’ and ‘always’ are no more cited, (1a) and (1b) are grouped here, while they are separated in al-Qiyās, but we find nevertheless many common points, for (3), (4) and (5) are already present in al-Qiyās. Thus, there is a real continuity between both treatises, for the temporal analysis of the propositions initiated in al-Qiyās is developed more systematically in Mantiq al-Mashriqiyīn.

Richard Kilvington and the Theory of Obligations
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Kretzmann and Spade were led by Richard Kilvington’s apparent revisions to the rules of obligations in his discussion of the 47th sophism in his Sophismata to claim that the purpose of obligational disputations was the same as that of counterfactual reasoning. Angel d’Ors challenged this interpretation, realising that Kilvington’s objection was precisely that he found the art of obligation unsuited to the kind of reasoning which lay at the heart of the sophismatic argument. He realised that the way irrelevant propositions are treated in obligations can lead to unwarranted inconsistencies when employed outside their natural home. In his criticism, Kilvington focussed on a technique used by Walter Burley to force a respondent to grant an arbitrary falsehood similar to Lewis and Langford’s famous defence of ex impossibili quodlibet. Kilvington observes that just as in obligational disputation, one may be obliged to grant a false proposition and deny a true one, so in counterfactual reasoning one may be obliged to doubt a proposition whose truth or falsity one knows, on pain of contradiction. However, rather than proposing simply to revise the rule for irrelevant propositions, Kilvington is best understood, as argued by d’Ors, as proposing to set aside the common practice of obligations and to realize that in reasoning about counterfactual situations one cannot separate relevant propositions from irrelevant in the usual way. For seemingly “irrelevant” propositions would take a different truth-value if things were as signified by the positum. Consequently, far from obligations having the aim of modelling counterfactual reasoning, as suggested by Kretzmann and Spade, they are inconsistent with that aim and unsuitable for its prosecution.

Aristotelian Diagrams for Multi-Operator Formulas in Avicenna and Buridan
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It is well-known that the categorical statements from syllogistics have modal versions, such as "all men necessarily run". The fourteenth-century philosopher John Buridan showed that the Aristotelian relations holding between such formulas do not yield a classical square of oppositions, but rather an octagon (see the work by Stephen Read and others). The Aristotelian relations holding between formulas that involve a
quantifier and a modality were already studied by Avicenna in the eleventh century (although he did not actually draw an octagon). Furthermore, it has recently been shown by Saloua Chatti that Avicenna extended this analysis in two directions by considering more fine-grained quantifiers and modalities (such as those in "some but not all men necessarily run" and "all men possibly but not necessarily run") and thereby obtained two 12-formula analyses. In this paper, we will examine how these analyses are connected to each other, and present one further extension, in which all other analyses are integrated. We start by "decomposing" Buridan’s octagon into two independent squares: one for the quantifiers (all, some, no, not-all) and one for the modalities (necessary, possible, impossible, not-necessary). The "product" of these squares yields 4x4=16 pairwise equivalent formulas, and is isomorphic to the octagon. Next, we move to the Boolean closure of these squares, by adding two quantifiers (some-and-not-all, all-or-no) and two modalities (possible-and-not-necessary, necessary-or-impossible), thereby obtaining a quantifier hexagon and a modality hexagon, respectively. We now consider the "product" of the quantifier hexagon with the modality square, and that of the quantifier square with the modality hexagon: these consist of 6x4=4x6=24 pairwise equivalent formulas, and correspond exactly to Avicenna’s two 12-formula analyses. Finally, one can also consider the "product" of the two hexagons, which consists of 6x6=36 pairwise equivalent formulas, and which subsumes all previous analyses in an octadecagonal diagram.