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A PROGRAMMATIC NOTE: ON TWO TYPES OF INTERTEXTUALITY

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Abstract. — The note addresses briefly some reactions to a previous article "*Deuteronomic Texts: Late Antiquity and the History of Mathematics*". In particular it looks at the question: if indeed any text must depend on previous texts, what makes the dependency of commentary and commentary-like text so special to justify my emphasis on this form of writing ? A suggestion is developed, trying to define Deuteronomic texts through their precise semiotics of intertextuality: in general, it is argued, intertextuality may be paradigmatic (= allusion) or syntagmatic (= commentary). The consequences of syntagmatic intertextuality can then be seen to hold for Late Antiquity and the Middle Ages. The note further opens up the question concerning the historical process underlying the transition between modes of intertextuality.

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Résumé (Une note programmatique: sur deux types d'intertextualité)

On répond ici brièvement à quelques réactions suscitées par un précédent article intitulé « Deuteronomic Texts : Late Antiquity and the History of Mathematics ». On y traite en particulier la question suivante : si tout texte doit effectivement dépendre de textes antérieurs, qu'est-ce qui particularise la dépendance de commentaires, et de textes ayant caractère de commentaires, au point de justifier que je mette en avant cette forme d'écriture ? Une suggestion est faite – tentative de caractériser les textes deutéronomiques par la définition sémiotique précise de leur intertextualité : de manière générale, l'intertextualité peut être paradigmatique (= allusion) ou syntagmatique (= commentaire). Il se trouve que les conséquences qui découlent de l'intertextualité syntagmatique sont valables pour les mathématiques de l'Antiquité tardive et du Moyen Âge. La note creuse un peu plus la question du processus historique sous-jacent à la transition entre types d'intertextualité.

I am grateful that several of my colleagues reacted to my article from *Notes & Débats* 1998 "Deuteronomic Texts: Late Antiquity and the History of Mathematics". These include Jens Hoyrup [2000], Karine Chemla [1999] in this forum and Alain Bernard [2003] more recently, in a long article published once again in this forum. (I apologize if I may have missed any further reactions to my article).

I will not discuss here the many particular useful comments made by all of the authors above. Also, I will only mention in passing two very general methodological comments made by many of my readers. One has to do with "lumping together" as against "splitting apart" (readers point out that my article lumps together Late Antiquity and the Middle Ages, crossing traditional language barriers between Latin, Greek and Arabic. Of course, there are important differences between and within all those cultures, but my aim is to find the threads holding all of them together). Another has to do with the historiographical question of the role of value-judgment in the history of mathematics (I think everyone agrees that such value judgments should be used as heuristic terms only. That is: we first make explicit our subjective intuition that a certain piece of mathematics is "good" or "bad" as the case may be. Following that, we analyze the intuition and uncover the concrete, objective features triggering our subjective reaction. We end up transforming subjective intuitions into objective observations. Bernard, in particular, has discussed at length this methodological issue. If I understand him correctly, he ended up recognizing my heuristic approach and approving of it).

My purpose in this reply is to concentrate on the major observation made by all readers, having to do with the opacity of my term "deuteronomic". The issue is not terminological, but substantial: just what is it about those texts I call "deuteronomic" that makes them stand apart from other texts? Here is yet another subjective intuition that cries out to be made objective and explicit. I admit I did not articulate this question at all in my original article. Thanks to the comments made by my readers, I was forced to address this question heads-on, and I now offer an account of the nature of deuteronomic texts. The implications of such a discussion are wide, indeed going beyond the history of mathematics itself. In this programmatic note I bring up issues having to do with textuality as such. But there is no harm if the scholars of the wider culture of writing should now have to turn to journals in the history of mathematics: they should have done so long ago.

The issue raised here is of deep significance, calling for treatment at the level of a monograph – which is precisely what I hope to do in the future. But at this point I wish simply to state my thesis, boldly and programmatically, waiting for what I hope to be a response as vigorous and challenging as that raised by my original paper.

The fundamental point – as recognized also by Bernard [2003, p. 158] – was made by Chemla [1999, p. 127], questioning my very notion of "deuteronomic" texts understood merely as "secondary" or "dependent upon previous texts" (my unpacking of the concept in my original article). I translate Chemla's question into English:

"Have there been mathematical writings that were in no sense 'secondary' "?

The answer is clearly negative. Indeed the adjective "mathematical" is irrelevant: all texts, everywhere and always, are, among other things, secondary. Texts depend on previous performances and previous texts. The web of intertextuality is the existential condition of writing itself.

Hoyrup [2000], recognizing the same problem, suggests that we identify levels of dependence (texts that are first-step deuteronomic, and those that are even more derivative), while Bernard himself ends up suggesting that we characterize Late Antiquity as being "more bookish". Such suggestions affirm the validity of the intuition underlying my original article – there does appear to be something remarkable about the writings of

Late Antiquity and the Middle Ages, having to do with their heavy intertextual dependence – but ultimately there ought to be something deeply unsatisfying about any purely quantitative account of this phenomenon. Hoyrup's and Bernard's suggestions, offering gradations of intertextual dependence, still do not address the problem in its full magnitude. For if indeed we recognize the web of intertextuality for its full significance, it is no longer possible to think of the texts of Late Antiquity as simply "more intertextual" than those of previous epochs. Surely, Eustathius' commentary to Homer is totally dependent upon its source text for commentary; but the same is true for the way in which Homer himself – the foundational text of antiquity! – was dependent upon previous performances of the Trojan myth. Imagine a world where all such experience of previous performances is removed, a world where no one knows the myth – and the authorial significance of Homer is completely lost. Eustathius, and Homer, are both dependent upon their intertext in order to survive as texts: such indeed is the condition of texts in the first place.

And yet the intuition remains intact: there is something deeply different about Eustathius, on the one hand, and Homer, on the other hand. Their manner of dependence upon their intertext is different. And this immediately suggests to us a way forward: the distinction between the types of intertextuality is qualitative, not quantitative. What we should look for is a manner of dependence upon previous texts that is different in the case of Eustathius than in the case of Homer. "Deuteronomic" texts are texts whose dependence upon previous texts has a certain character, distinct from that of the intertextual dependence of texts in general.

Let us first be clear about the alternative to deuteronomy. When we say that all texts are intertextual, what we mean – reverting now to the jargon of an older generation of literary critics – is that all texts are allusive. Among other things, all texts bring up in the readers' mind reference to previous works treating of similar material or using similar representations. This is relevant not only for literary but also for scientific texts: while not necessarily "allusive" in the strict literary sense, scientific texts often refer to previous texts and, even when silent about this reference, they may call up in the reader's mind a previous text. A contemporary reader of Euclid would definitely be reminded of previous treatments of the *Elements*; a reader of Archimedes was certainly reminded often (even

explicitly) of Eudoxus. Regardless of the question of intended reception, an author such as Euclid or Archimedes clearly uses a previous source, and uses it in the way in which an allusive text does: the author picks up the contents of the previous work, and offers some kind of variation on it (we shall return to characterize this more precisely below). This return-with-variation is what my readers have in mind especially when pointing out that dependence on previous texts is ubiquitous in science, and my task therefore is to characterize the way in which what I call "deuteronomic texts" differ from this ubiquitous phenomenon.

To make this claim, let us also remind ourselves of the fundamental model of deuteronomy: this is the commentary. Authors in Late Antiquity and the Middle Ages, even if not writing commentaries, operate within an intellectual climate where commentary-writing is the dominant model. My main claim is that the nature of commentary has important consequences for the contents of science produced in such a culture. To make this claim follow from the textual nature of commentaries, then, I need to characterize the nature of intertextuality involved in the writing of commentary.

Our task now becomes much clearer. We seek a qualitative distinction in the manner of intertextuality, between allusion (widely understood), on the one hand, and commentary, on the other hand.

In fact the distinction is not difficult to make. Allusion is fundamentally a relationship of similarity: what makes a text allusive to another, or (in the case of science) repeating-with-a-variation, is the fact that it treats a similar material, typically using a slightly different approach (indeed the similarities between scientific texts can be much stronger than those between literary texts). As for commentary, there the relationship is somewhat less obvious (a fact to which I shall return). A lemma taken from the work commented upon, and the comment following the lemma, do not stand to each other in the relationship of original and variation. The comment is not a variation upon the original, but is instead some kind of completion of it. Most often, in the texts we are interested in, the original is a statement, while the comment is a brief argument showing the validity of the statement, so that original and commentary stand to each other in a specific relationship of completion, namely: argument