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Richard Rufus of Cornwall Project

Annual Performance Report, October 2018-September 30, 2019

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Annual Performance Report
Work Accomplished
October 2018 - September 2019

1. **Metaphysics**
   - *Memoriale in Metaphysicam Aristotelis* published at rrp.stanford.edu/MMet.shtml
   - TEI compliant version of *Memoriale in Metaphysicam Aristotelis* rrp.stanford.edu/MMet.xml

   - *Scriptum in Metaphysicam Aristotelis:* The *Redactio brevior* of *SMet* 3-11 is published online.
   - We completed about half the introduction to *SMet*.
   - We expect to submit *SMet* Books 1-6 to the British Academy at the end of 2019.
   - Lewis revised our provisional editions of SMet 5-6.
   - Toth and Wood transcribed sections from Assisi 186 on prime matter and on intensification.
   - Ottman has redone our Averroes footnotes to SMet books 1-4. This is a major undertaking which became necessary when we discovered that Rufus quotes passages not found in any of the printed editions of Averroes' commentary on Aristotle's *Metaphysics* available to us. Neither the *editio princeps,* nor the Iuntina editions published in the 16th century, nor even critical edition under preparation by Dag Hasse and George Stefan reflect the text used by Rufus. We know that because Rufus quotes at least one passage missing from those editions, and there could certainly be other omissions. Instead we have to base our citations and quotations of Averroes on manuscripts belonging to another manuscript tradition. We chose two manuscripts, Paris, Nat. Lat. 6300 and Avranches 220, since they include the passage missing in more standard editions. Paris Bibl. Mazarin 3467 also includes the missing passage, but its text of Averroes' commentary has numerous obviously mistaken readings, which if noted would result in a much longer apparatus that benefited readers very little.

2. **Chemistry**
   - *In Aristotelis, De generatione et corruptione* published at rrp.stanford.edu/DGen.shtml
   - TEI compliant version of *In Aristot. De gen. et corr.* published at rrp.stanford.edu/DGen.xml.

3. Psychology:
   - *Sententia cum quaestionibus in libros De anima Aristotelis* published by the British Academy in November 2018.

4. Physics: *In Phys. Aristot.*;
   - Edition published in December 2003 based on camera ready copy.
   - Text published on the RRP website at rrp.stanford.edu/physics.shtml
   - TEI compliant version published at rrp.stanford.edu/physTEI.xml

5. Theology: *Sententiae Oxonienses*
   - We are still studying the relation of the text of *SOx* in London, British Library, Royal 8 C IV to Oxford Balliol College 62's.
   - We have rethought our approach to finding parallel passages from *SMet* in *SOx* and *SPar.* In the summer of 2019 we began processing texts for computer assisted identification of parallel passages. We changed our approach chiefly for three reasons: (1) Its outcome is more dependable than what we can achieve by relying on our editors' memories. (2) This is particularly pressing, since we have a huge corpus (thousands of pages) to get through, and (3) we found a volunteer collaborator experienced in computer assisted editing, Wallace Hooper. Hooper identified a method based on Latent Symantic Analysis (LSA) which promises to provide a reliable method for identifying passages in which Rufus reuses texts from *SMet* in *SOx* and *SPar.* Hooper's experience is based on his success work on the project that publishes Isaac Newton's alchemical works.

6. Theology: *Sententiae Parisienses*
- Ottman transcribed Rufus' *Sententiae Parisienses (SPar),* book 2, 17-24.

7. Codicology: No codicological study was undertaken this year.

8. Computer programming:

   We are still working on adapting to Reledmac. This will move RRP away from its proprietary programs for preparing camera ready copy to a program that will be accessible to other scholars and collaborators. Christopher J. Martin is confident that only minor problems remain.

   Christopher J. Martin, Andrew Kaizer, and Wood have begun work on the transition to Reledmac, which will have two major advantages for us. It will make it possible to work more efficiently with outside collaborators, since it does not require special knowledge of a proprietary program for preparing camera ready copy. It will also spare us lots of time in the last stages of publication, since it automates the numbering of variants pertaining to lemmas that occur on multiple lines. It will also eliminate problems with running heads that delayed our edition of the *Sententiae cum quaestionibus in libros De anima Aristotelis.*   We are hopeful that this will expedite the process of preparing camera ready copy and consequently increase our rate of publication.

Comparison with the Goals Set in the Work Plan

Goals achieved on time:
- We published *Sententia cum quaestionibus in libros De anima Aristotelis.*
- We made great progress with the introduction to *SMet.*
- We introduced some parallel passages from *SOx* in *SMet* 1-4.
- We introduced parallel passages from Robert Grosseteste in *SMet.*
- Lewis, Ottman, and Wood revised our provisional editions of *SMet* 1-4.
- Ottman transcribed Rufus' *Sententiae Parisienses (SPar),* book 2, 9-16.
- We made up for the delay occasioned last year by Etzkorn's inability to transcribe Assisi 186, when Zita Toth joined us to transcribe passages on prime matter and intension and remision.

Goals exceeded:
- Ottman transcribed Rufus' *Sententiae Parisienses (SPar),* book 2, 17-26.
- Work continued on moving to the Reledmac program for preparing camera ready copy.
- Wood and Lewised revised our provisional editions of *SMet* 5-6
- Ottman discovered and introduced parallel passages from Thomas of York's *Sapientiale* in *SMet* 1-4.
- Ottman redid the lengthy notes that quote Averroes in *SMet* 1-4.
- Santiago Melo Arias began work on *Dialogus Ratii et Everardi*, which will be used in our annotations to *SOx,* since it reflects his dependence on Porretanean logic .
- Began testing a new method for identifying parallel passages as noted below.

Goals postponed:
- Collaboration with Alan Code was postponed, but we hope to meet with him in summer 2020.
- Work on references from Fishacre and Grosseteste for SOx.
- Work on references from SOx to SMet as we begin work on computer assisted identification of textual reuse.
- Work on transcription correction and preliminary editions of *SOx.*

Conclusion

Work is proceeding apace. Changes or postponements have resulted from the following

(1) Code continues to have trouble scheduling consultation with RRP, and we may eventually
have to find another scholar with whom to work.

(2) We encountered a huge problem with our notes from Averroes. The notes from Averroes are
the most important part of *SMet*'s scholarly apparatus, since Averroes is Rufus' principal
source in *SMet.* That is to say, as Rufus lectured on Aristotle's *Metaphysics*, he always had at
his side his copy of Averroes' commentary. Much of Rufus' exposition is based on or reacts to
Averroes. This was a comparatively simple undertaking when we were able to use existing
editions, since locating the parallels is easy. But now Ottman has to transcribe and collate
manuscripts (Paris, Nat. Lat. 6300 and Avranches 220), and that is time she did not have to
search for parallels from Grosseteste and Fishacre for *SOx.* And since Rufus constantly
responds to Grosseteste and Fishacre when lecturing at Oxford, we had to have these parallels
at hand before preparing preliminary editions of *SOx.* Hence the delay in our work on *SOx.*

(3) There has been a major change in our work scheduling as a result of complications in the
relationship between the London (British Library, Royal 8 C IV) and Oxford Balliol 62
manuscripts of *SOx.* These manuscripts though closely related also include considerable
unshared material. As we expected, they are different redactions of the *Sententiae Oxonienses.*
Unexpectedly we found that the relationship is close enough to permit collation for all of the
London material, and we have done that collation. Also, unexpectedly, it turned out the
differences between the two manuscripts did not permit us to conclude our study of their
relationship promptly.

The simplest explanation for what happened would be that, as is usually the case, the written
version of these lectures began with a *reportatio* of Rufus'lectures by his secretary and it was
followed by a *Scriptum,* a version revised and corrected by Rufus himself. This accounts for the
fact that Roger Bacon says these lectures began in 1250, and yet Balliol 62 also clearly includes
material that is dated after 1252, since Rufus reports that he has seen a work prepared in 1252,
"Adversus Eunomium," that has a lot to say about the procession of the Holy Spirit from the Son
(SOx 1.11, B62.43ra*).* Whether the London manuscript of *SOx* is the *Reportatio* is not certain,
though it seems likely that it was not, but rather it postdates the *Reportatio.* Clearer is the fact that
the London manuscript antedates the Balliol *Scriptum,* since some marginal material in the
London manuscript is found in the Balliol *Scriptum* at the point where the London manuscript
indicates it should be inserted. Thus a comparatively simple explanation of the differences we
find it just that London precedes Oxford.

However, the relationship may be much more complicated. There is considerable unshared
material in **both** the Balliol and the London manuscripts, and at least two, more probably three
scribes wrote in the London manuscript. One hypothesis, not considered in the earlier literature
(especially Peter Raedts) is that one person who wrote in the margins of the manuscript was not a
scribe but a reader. If that is so, then some of the unshared material was by another theologian
responding to Richard Rufus. This, unfortunately, makes our situation much more challenging
than had been anticipated, when we simply thought, as Raedts did, that London was earlier than
Balliol. Worse, it looks like we have at least a minor authenticity question to consider.

In response to this situation, we have decided we must look very carefully at the material that is found either both in the *Metaphysics (SMet)* and *SOx* or both in the Oxford (*SOx)* and the Paris (*SPar)* theology lectures. If we find the unshared material written by what certainly looks like a third London scribe anticipated in *SMet* or repeated *SPar*, then we can be reasonably sure that it is by Rufus and not by an unrelated reader. In any case, we need to spend more time looking at the unshared material that might militate against the view that London simply precedes the Oxford.

The first step in this task is to check for parallels in *SMet* and *SPar. SMet* should not take too long, since editions of *SMet* are ready, but *SPar* will take longer to examine for parallels, and we won't be able to complete our study of the London manuscript until we can consider *SPar*. So we have turned our attention to completing our transcription of *SPar* before attending to other tasks. That's why we are six months ahead of schedule in completing the *SPar* transcription. As we complete that transcription, we add annotations to *SOx* from *SPar,* and we will do that work before we annotate from Grosseteste. Also we will begin work on annotations by noting parallels from *SMet* in *SOx,* rather than the reverse. But, of course, that will make it much easier to complete the parallel notes in *SMet.* We hope this will not ultimately cause delay, but it certainly does mean we have to do things in a different order.

(4) We now realize that given the size of the corpus (*SMet* 2000 pages, *SOx* 5000 pages, *SPar* 10000 pages), we cannot rely on our memories to identify parallel passages. So we have found a computational method to assist us, a variation of Latent Semantic Analysis. (LSA). LSA is a recognized vector-space method in the field of information retrieval. It was originally designed to accomplish basic tasks in search with constructed user queries against a latent semantic space (Berry, Dumais and O'Brien 1995). In 2012 Wallace Hooper found that LSA can be used for editorial purposes. It can detect and describe larger-scale structural semantic similarity between distant passages in a corpus based on shared vocabulary.

Since there is only one complete manuscript of *SMet, SOx,* and *SPar,* it is too often the case that manuscript witness does not provide an adequate basis for establishing the text intended by the author. So an important resource is reference to an author's other works. Like lecturers then and now, Rufus frequently cannibalized his earlier works. So we can often better establish the text by reference to parallel passages in other works. In the past, however, we could not identify such texts rapidly and reliably.

LSA and a new algorithm developed by Hooper offers a tool that can be used systemmatically even with a massive corpus for the computational detection of text reuse by an author or authors in digital transcriptions of historical documents. The method has already been applied successfully to digital transcriptions of manuscripts of Isaac Newton by the Chymistry Project.

We plan to apply Hooper's methods to three texts in the Richard Rufus corpus. As noted, Hooper's approach to detecting shared phrases, sentences, and ideas in pairs of passages has worked for the Chymistry Project. However, Latin conjugations and declensions vary enough that we need to tweek it. A likely problem is that Hooper's current analyses could fail to recognize two related word-forms as having the same root. For example, if we start with *mirari,* we would want LSA also to find instances of *mirandarum.* But we could not do that unless one parameter were loosened to the point that other pairings that do not have a common root would be counted as shared vocabulary. To meet this challenge, we will add lemmatization to the preparation process in a strategy that should improve the effectiveness of the method.

All this will greatly improve the edition, but at least in the short run, it has led to some delays. Despite these delays, we expect to the first volume of *SMet* to the publisher in late 2019 or early 2020, which is earlier than we originally projected.