"And all this is spoken of the naturall byrth . . .": Metadiscourse in *The Birth of Mankind* and its German source text, *Rosengarten*[1]

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Abstract

This paper provides an examination of the use of metadiscourse in the two versions of *The Birth of Mankind*, the first midwifery manual to be printed in English during the sixteenth century. It is a translation of a Latin text, which itself is a translation of the German *Rosengarten*. While much has been made of the differences in the use of medical terminology in various versions, little attention has been paid to what differences – if any – exist in the ways the various authors/translators signal text structure or use other overt markers to the reader as to how the text is to be read or understood. Corpus linguistic methods are employed to provide a quantitative angle on the analysis of these texts.

Keywords: metadiscourse, midwifery, translation, *The Birth of Mankind*

[1] I would like to thank Elaine Hobby for providing me with a PDF version of Raynalde's text, which – after some modifications – enabled me to apply the corpus linguistic methodology discussed here. Thanks are also due to David DeVore for assistance with the Latin *De Partu Hominis*. Finally, I would like to thank the two anonymous reviewers for the excellent, helpful feedback. Any mistakes made are, of course, my own.

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1. Introduction

In 1540, Richard Jonas published *The Byrth of Mankynde*, the first vernacular text devoted to childbirth and midwifery to be printed in English. It is a translation from Latin of the 1532 *De Partu Hominis* ('On the Birth of Man'), which in turn is a translation of the 1513 German-language *Der Swangernen frawen vnd Hebammen roszgarten* ('The Rose Garden for Pregnant Women and Midwives') by Eucharius Rösslin – one of the first texts concerning midwifery to be printed in a European vernacular.[2] This text enjoyed circulation and reprintings throughout Europe for well over a century, and it is crucial to understanding the sociohistorical context of childbirth, medicine and midwifery during the early modern period. In England, Jonas' translation was quickly superseded by Thomas Raynalde's revised and expanded version in 1545, which corrected Jonas' erroneous or vague medical terminology and provided more up-to-date descriptions of female anatomy and physiology (Raynalde was a physician, whereas Jonas did not have a background in medicine). Most significantly, both Jonas' and Raynalde's texts were geared towards a general audience, whereas Rösslin's intended audience was restricted to midwives and pregnant women. The substantive differences between the English-language *Byrth of Mankynde* (hereafter *Birth of Mankind*) and the original German *Der Swangernen frawen vnd Hebammen roszgarten* (hereafter *Rosengarten*) have already been discussed at length (Fissell 2004: 29-35; Hobby 2009: xv-xxii), as have the differences between Jonas' and Raynalde's translations (Hobby: xxv-xxxix, and in numerous footnotes and appendices to her annotated edition of Raynalde's translation). However, little if any attention has been devoted to the linguistic differences

[2] The 1532 Latin translation is by Rösslin's son, also named Eucharius.

pertaining either to the English translations and the German source text (and the Latin intermediary text), or between Jonas' and Raynalde's translations. The domain of metadiscourse – "talk about talk" or "discourse about discourse", that is, linguistic devices employed by the author to help structure and evaluate the primary content of the text at hand (Williams 1981a: 195; Vande Kopple 1985: 83; Boggel 2008: 2-3) – is particularly relevant here, as it goes hand-in-hand with writer-reader relationships and the presentation of new (or old) information. Consider the following:

(1) **And all this is spoken of the naturall byrth** when that fyrst procedeth the head/ and then the reste of the body ordinatly/ **as ye mayese in the fyrste of the byrth fygures folowynge**. (Jonas 1540: Fol. xxiii-recto)

The two bolded phrases are examples of metadiscourse: in the first one, the author points to what has just been said to clarify that this concerns the natural (normal) birth process with the head exiting first, whereas the second bolded phrase draws the reader's attention to an illustration of this process later in the text. In both instances, these phrases are not concerned with the general textual content (description of normal birth), but rather they are in place to help the readers keep track of and assimilate new information.

The goal of the present paper is to see what differences (if any) exist in the type of metadiscourse used in the German *Rosengarten*, geared towards midwives, and the *Birth of Mankind* translations, focused on a more general audience, as well as what role the Latin intermediary text might have played in any differences. Secondly, I wish to see if the use of metadiscourse markers differs between Jonas and Raynalde. Another desideratum of this study is to see if corpus linguistic methods can be employed successfully in the study of metadiscourse, a category well known for containing an unquantifiable amount of linguistic realisations (Crismore 1989: 46; Ifantidou 2005: 1330; Hyland 2005: 24-25; Ädel 2006: 22;

Boggel 2008: 39-42.). The paper is structured as follows: Section 2 provides an historical background to early modern medicine and midwifery, particularly as they relate to Rösslin's *Rosengarten* and Jonas' and Raynalde's versions of *The Birth of Mankind*; Section 3 is devoted to establishing a working definition of metadiscourse; Section 4 focuses on the corpus linguistic methodology employed in this paper; quantitative and qualitative analysis is provided in Section 5; and concluding remarks are made in Section 6.

2. Historical background to *Rosengarten* and *The Birth of Mankind*

Until well into the twentieth century, assisting with normal childbirth was the domain of the midwife; doctors and surgeons would only intervene in medical emergencies (Green 2008: x; McIntosh 2012). Even so, the first midwifery texts to be written by practising midwives were not published until the seventeenth century:[3] Louise Bourgeois' *Observations diverses sur la stérilité* . . . ('Diverse Observations on Sterility . . .'), published in 1609, was the first work devoted to childbirth and midwifery to be written by an actual midwife. Jane Sharp's *The Midwives Book* (1671) was the first such work to be originally written in English, while Justina Siegemund's 1690 *Die Chur-Brandenburgische Hoff-Wehe-Mutter* ('The Court Midwife') was the first originally German-language book written by a midwife (Bourgeois' work had been translated into both languages during the seventeenth century). *Rosengarten* comes from a different tradition of medical writing – that of the learned physician whose primary source of knowledge derives not from first-hand experience, but rather from the writings of antiquity in the style of medieval Scholasticism (Siraisi 1990; Lindemann 2010: 84-120). The writings of classical medical authorities such as Hippocrates and Galen, as well as later Arabic authors such as Avicenna and Rhazes, were viewed as the ultimate source of medical authority, and all knowledge was to be derived from what these texts had to say; any

[3] The one exception to this is the work of Trota of Salerno (12th century); see Green 2008: 29-69.

personal observations or experience would have to be contextualised and interpreted within the framework laid out in these works (see Wear 2000: 156-209, and Lindemann 2010: 86-90, for overviews of humoural medicine). Regarding *Rosengarten*, Rösslin (ca. 1470-1526) was an apothecary and physician who held positions in Frankfurt, Lüneburg (as court physician to Duchess Katherine of Brunswick and Lüneburg) and Worms. There is no indication he was ever involved in assisting with childbirth, and much of his text is a synthesis of the views and recommendations of classical authorities.

The front matter to *Rosengarten* contains a *Privilegium* concerned mainly with pecuniary matters related to the text's publication, a dedication to Duchess Katherine, a preface in which Rösslin acknowledges his reliance on the works of Galen, Rhazes, Avicenna and Averroës, and a lengthy poetic admonition (*Ermahnung*) in which he castigates midwives for their supposed ignorance and incompetence. For example:

(2) Ich meyn die hebammen alle sampt
Die also gar kein wissen handt
Darzů durch ir hynlessigkeit
Kind verderben weit vnd breit . . . (Rösslin 1513: 7)
"I mean all the midwives together
who have absolutely no knowledge
through their negligence
children perish far and wide . . ."

Scholars disagree as to the motivations behind Rösslin's hostility towards midwives: some argue that Rösslin mainly wanted to ensure financial viability of his work with pregnant women by discrediting potential competition from the midwives (Arons 1994: 12-17), while others believe he was attempting to open up the field of childbirth to male practitioners

(Fissell 2004: 30-31). Yet others see more benign motivations, claiming Rösslin was genuinely concerned with helping midwives acquire more advanced medical knowledge (Klein 1910: vii; Wiesner 1983: 31-36). Whatever his motivation, Rösslin's *Rosengarten* enjoyed tremendous success in the German-speaking world: it became mandatory reading for midwives seeking official recognition, as knowledge of its content was tested at the licensing examinations (Arons 1994: 5-11; Flügge 1998: 364-367).

Aside from being an assimilation of classical medical knowledge – a common feature of medical writing at the time (Siraisi 1994: 1-16, 48-77) – Rösslin's *Rosengarten* is actually based on an older, late fifteenth-century manuscript, possibly composed by one of Rösslin's family members (Kruse 1994: 227-233). This manuscript, in turn, is heavily reliant on an earlier German manuscript based substantially on the gynaecological and obstetric portions of Michele Savonarola's fifteenth-century *Practica* (Green 2009). Despite its complicated manuscript history, there are original contributions to Rösslin's printed *Rosengarten*, namely the incorporation of the illustrations of the foetus *in utero* (admittedly derived from Muscio's *Gynaecia*). There is also evidence that a substantial amount of the metadiscourse found in the 1513 printed text is of Rösslin's own composition (Kruse 1994: 229-230).

There is a paucity of scholarship devoted to the Latin translation of Rösslin's text, *De Partu Hominis*, which is generally viewed as a mere intermediary text between the German original and other European vernaculars. It contains its own original preface: it is explicitly geared towards a learned audience (those who know Latin) with the view that pregnancy is a dangerous event for women, and the author states his hope that this text will be of benefit to women who find themselves in such peril. The first English-language version, titled *The Birth of Mankind* (a translation of the Latin title), was published by Richard Jonas in 1540. Little is known about Jonas, although it is likely that he was also known as Richard Jones, a schoolmaster at St. Paul's School London. This would at least explain why there are several

mistakes concerning the translation of medical terminology in his version of the text (Hobby 2009: xxxi-xxxv). His prefatory admonition to the reader makes clear that this text is geared towards a general audience rather than being restricted to midwives or pregnant women, as there is an injunction against "rebawde and vnsemely communicacion of any thynges contayned" (Jonas 1540: v) within the text. There is also a lengthy dedication to Lady Katherine Howard, in which Jonas does express some concern for "ignorant" midwives, although it is much briefer and less of a sweeping generalisation than the invective found in Rösslin's poetic admonition. Jonas also contributed original chapters (not present in the German original or Latin translation) discussing various aspects of conception.

Jonas' version of *The Birth of Mankind* was short-lived, as it was supplanted in 1545 by Thomas Raynalde's translation, which enjoyed a lengthy afterlife and was in print until it fell out of circulation shortly after the publication of Nicholas Culpeper's *A Directory for Midwives* in 1651 (Hobby 2009: xxxix; Woolley 2004: 305-316). Unlike Jonas, Raynalde was a trained physician (although little is known about other aspects of his life) who thus made substantial revisions to Jonas' text, correcting the erroneous or vague medical terminology that was literally lost in translation. Raynalde also expanded several parts of the text, most notably with the inclusion of an entire book devoted to the new Vesalian anatomy (including illustrations) that supplanted the older, classical model undergirding both Jonas' text and the German *Rosengarten*.[4] As for front matter, there is only a lengthy prologue to the "women readers" in which Raynalde discusses his improvements over Jonas' translations and admonishes readers not to misuse the graphic nature of his anatomical descriptions or other aspects of the text for salacious purposes.[5] It has also been suggested that, based on this

[4] Raynalde was drawing on the work of Flemish anatomist Andreas Vesalius (1514-1564), who made some anatomical discoveries that were in conflict with the Galenic model; see Cook 2006 and Hobby 2009: xxv-xxx.
[5] Early editions of Raynalde's text also contained a Latin preface in which the author claims his text will surely go through several modifications and improvements. Indeed, it was the 1560 edition that proved to enjoy the greatest circulation, and it forms the basis of the discussion here (see Footnote 14).

prologue, Raynalde's text was meant to be read aloud for purposes of instruction rather than to be read merely in private (Richards 2015); whether this bears on any metadiscursive differences with Jonas' text or with the German original will be fleshed out in Section 5. Unlike *Rosengarten*, there is no evidence to suggest *The Birth of Mankind* was as instrumental in the licensing of midwives, which – in contrast to the German-speaking world – was organised more by the ecclesiastical rather than the civic authorities, although the former did work in concert with the College of Physicians.[6]

As has been hinted at already, each version of the text is structured in slightly different ways. Rösslin's *Rosengarten* and its Latin translation, *De Partu Hominis*, consist of twelve chapters. Jonas' translation divides the text into three books, with book one corresponding to chapters 1-10 of *Rosengarten*, and book two corresponding to chapters 11 and 12. Book three contains the additional material on conception. Book one of Raynalde's text is an original composition, featuring the discussion of Vesalian anatomy. Book two corresponds to Jonas' book one, although chapter 1 of Jonas (and Rösslin) – which discusses the foetus *in utero* – has been integrated into book one, and there is an additional chapter (chapter 9) on medicines a woman in labour can take. Book three corresponds to Jonas' book two, and book four corresponds to Jonas' book three with some further additions. A summary can be found in Table 1.

[INSERT TABLE 1]

3. What is metadiscourse?

Scholarship on metadiscourse is as varied as the category of metadiscourse itself; that is, there is lack of unity both in a theoretical understanding of the category and in the practical

[6] Little is known of how things operated outside of London, where the College of Physicians enjoyed their greatest sphere of influence; see Hitchcock 1967 and Guy 1982.

aspect of categorising metadiscourse markers. There is at least a fairly unified understanding of a broad notion of metadiscourse, with Crismore's definition serving as a representative description: "writing used to guide and direct the reader, to signal the presence of the author, and to call attention to the speech act itself . . . [it is] discoursing about discourse, talking about talk, and talking with readers about writing" (1989: 7). It should thus come as no surprise that the overwhelming amount of research devoted to this area is carried out in the field of academic writing (both by native speakers or foreign language learners) and the allied disciplines of rhetoric and composition (Williams 1981a, b; Crismore 1989; Vande Kopple 1985; Beauvais 1989; Hyland 2005; Ädel 2006; Hatipoğlu et al. 2017); very little scholarship on metadiscourse exists elsewhere.[7] Beyond such a definition along the lines of "discoursing about discourse", though, a great variety of approaches exists. The focus on the communicative interaction between writers and their readers has lead several scholars to apply speech act theory to their analysis, in which metadiscourse is presented as a series of illocutionary acts aimed at reader-interlocutors (Beauvais 1989; Boggel 2008; cf. Searle 1984 [1969]). Others see the Hallidayan notions of "textual" (related to text structure) and "interpersonal" (related to authorial stance and reader persuasion) functions in language as relevant here, although this approach has been met with much resistance and/or modification (Vande Kopple 1985; Hyland 2005; Ädel 2006; Boggel 2008; cf. Halliday 2004). Along these lines, both "narrow" and "broad" approaches to metadiscourse have emerged: those adopting the "narrow" approach view metadiscourse as encompassing only markers of text structure, whereas those who employ the "broad" approach also include ways in which

[7] Hensel's (1988) and Ifantidou's (2005) works are probably the most theoretically dense treatments of the subject, although there is some application to academic writing in Ifantidou's paper as well. In historical linguistics, Boggel (2008) has analysed the metadiscourse found in Middle and Early Modern English religious texts, while Taavitsainen (2000, 2012) and Taavitsainen & Hiltunen (2012) have focused on metadiscourse in the history of English medical writing. There has been some diachronically oriented work in the areas of "metacommunication" and "metapragmatics" (see papers in Busse & Hübler 2012, for instance), and although this does tie in with metadiscourse, it is broader in scope by focusing more explicitly on the linguistic realisations of cultural and genre-based artefacts of communication in texts.

writers relate to their readers through markers of stance, engagement and other interpersonal means.[8] There is also much disagreement in the literature as to how to view metadiscourse in regards to propositional meaning, that is, the actual, verifiable/falsifiable information about the world being expressed. Some see metadiscourse markers as discrete from propositional content (although there is an acknowledgement that the two work in concert to shape the overall text; see Hyland [2005] and Boggel [2008], for example), while others take a more nuanced approach, arguing that some metadiscourse markers – especially intertextual references (i.e. references to texts other than the present one) – are themselves part of propositional content (Infantidou 2005: 1335-1338). Ädel (2006: 16-17) rejects any connection with propositional content outright, arguing that such distinctions imply metadiscourse is a truth-conditional rather than a discourse phenomenon. She has also argued against considering intertextuality part of metadiscourse (contra Ifantidou, Hyland and Boggel), noting that intertextuality concerns a discourse other than the present one; and since metadiscourse is discourse about the discourse at hand, intertextuality should not be considered part of this domain.

The position taken here falls squarely into the "broad" category, as we are interested not only in how the author of *Rosengarten* and the translators of the English-language versions overtly structure their text, but also in how they interact with their readers.[9] We acknowledge that metadiscourse can convey varying degrees of illocutionary force, but it is not our intent here to focus on a speech act theory analysis of *Rosengarten* and *The Birth of Mankind*. Nor are we too concerned about the theoretical status of metadiscourse markers in relation to the proposition (a theoretical construct in and of itself), although we are in agreement with Ifantidou (2005: 1339-1340) that different semantic (and pragmatic) contributions are made

[8] Ädel 2006: 157-180 provides a good overview and literature review of this distinction.
[9] We are not, however, using a Hallidayan, Systemic Functional Grammar framework in the current analysis.

by different types of metadiscourse markers. Finally, we reject Ädel's dismissal of intertextuality and argue that this feature is one of the most salient metadiscursive features of medieval and early modern medical writing (Taavitsainen 2001, 2012); citing and synthesising a wide range of classical sources was a hallmark of medieval Scholasticism, which enjoyed an afterlife that progressed well into early modernity.[10]

The categorisation of metadiscourse markers is no less confounding than establishing a theoretical understanding of what metadiscourse is; although there is often overlap within the literature, no two scholars use the exact same approach. In one of the earliest treatments of metadiscourse, Williams (1981b: 48-51) categorised metadiscourse markers into three broad categories.[11] In a more thorough study of the subject, Vande Kopple (1985: 83-85) established seven categories of metadiscourse markers.[12] In his speech act treatment of metadiscourse, Beauvais (1989: 17-27) made a key distinction between "primary [first-person] expositive illocutionary acts" and "secondary [second- and third-person] expositive illocutionary acts"; that is, the key distinction is between whether the writer or someone else is attributed as producing the text, e.g. *I believe* vs. *Smith believes*. Ifantidou (2005: 1331-1332) makes a similar distinction (writer vs. someone else) with intra- and intertextuality, although she is not concerned with the speech-act aspects of metadiscourse, and the majority of her subclassifications fall within the realm of evidentiality and epistemic modality. Hyland's (2005: 48-54) main distinction is between markers that help guide readers through the text ("interactive" markers) and items that attempt to involve the reader in the text ("interactional" markers). Ädel (2006: 38), in a similar vein, distinguishes between metatextual markers – a broad range of items related to text structure – and items devoted to

[10] Intertextuality was also a key metadiscursive feature of medieval and early modern religious discourse (see Boggel 2008).
[11] Hedges and emphatics, sequencers and topicalisers, and attributors and narrators.
[12] Text connectives, code glosses, illocution markers, validity markers, narrators, attitude markers, and commentary.

marking writer-reader interaction. Finally, Boggel (2008: 39-63) shares Infantidou's key distinction between intra- and intertextuality, but she adds additional subclassifications related to personal vs. impersonal markers and speech act functions. Due to the plethora of options available, the current study employs a "bottom-up", text-driven approach (Pahta & Taavitsainen 2010: 563) in the classification of metadiscourse markers in *Rosengarten* and *The Birth of Mankind*, which will be explained in the next section.

4. Methodology and the classification of metadiscourse markers

In order to gain a thorough qualitative and quantitative understanding of how metadiscourse functions in *Rosengarten* and its English translations, corpus linguistic methods were deployed via the use of the WordSmith 6 concordancer programme (Scott 2012). That is, machine-readable versions for each of the texts were searched through automatically.[13] In the first instance, this required suitable electronic versions of each text: a diplomatic transcription of *Rosengarten* was taken from the *Nottingham Corpus of Early Modern Midwifery and Women's Medicine (ca. 1500-1700)*, or the GeMi Corpus (Whitt 2016b), but this only featured a ca. 10,000 word extract, so the remainder of the text had to be keyed in and corrected manually; a transcription of the Jonas version of *The Birth of Mankind* is available via *Early English Books Online* (EEBO);[14] and Raynalde's version is derived from a PDF file of Hobby's annotated edition.[15] The key challenge for using such a methodology to search for metadiscourse markers is, as mentioned earlier, the wide variety of forms metadiscourse

[13] For an overview of corpus linguistic methodology, see McEnery & Hardie 2012.

[14] URL: https://eebo.chadwyck.com/search/fulltext?SOURCE=var_spell.cfg&ACTION=ByID&ID=D000009985123100 00&WARN=N&SIZE=197&FILE=../session/1504600675_3915&SEARCHSCREEN=CITATIONS&DISPLA D=AUTHOR (accessed 5 September 2017).

[15] Additional steps had to be taking when working with Hobby's edition. For one, Hobby modernised the spelling, so all examples were double checked with the original text, available on EEBO, and are provided in their original spelling here. Secondly, Hobby's text is based on the 1560 rather than the 1545 edition of Raynalde's translation – the version that remained in print until finally being superseded by Culpeper's text a century later. There were some changes made between these two editions (see Hobby's Appendix 12 to Raynalde 2009: 232-241), but none of these would affect the qualitative or quantitative analysis of metadiscourse, so the results presented here are still representative of Raynalde's 1545 translation.

markers can take (ranging from a single word to entire phrases and clauses); it is thus impossible to know beforehand what exactly to search for. The "bottom-up", inductive method therefore must be employed, whereby a representative sample of the text is read and annotated manually, and the subsequent search is based on forms and patterns found during this process (Pahta & Taavitsainen 2010: 563; see also Bednarek 2006, Grund 2012 and Whitt 2016a). For *Rosengarten* and *The Birth of Mankind*, the first three chapters of each version proved a sufficient amount of text to establish recurring words and patterns that could be searched for.[16] Some manual culling was required to sort out the metadiscourse from the non-metadiscourse in the search results, as most – if not all – items that have metadiscursive functions can have other uses as well.[17]

This bottom-up method also provided the basis for establishing what type of metadiscourse markers were most prominent in the text. Although the categorisation here was established through inductive examination of the texts themselves rather than arrived at *a priori*, it draws most substantially from the works of Hyland (2005) and Boggel (2008). A total of nine types of metadiscourse markers were found recurring through the texts, which can be placed into three broad categories: markers devoted to assisting in the reader's comprehension of the textual content (attention-guiding, comprehension-guiding and code glosses); markers explicating some form of textual structure and cohesion (framing, structuring, restricting and intratextual); and those markers that specify some aspect of the author's relationship with textual material (intertextual, i.e. source of information, and stance, i.e. attitude towards the

[16] These texts also posed the challenge of spelling variation. Hobby's version of Raynalde's translation provided modernised spelling, but for Jonas' translation and *Rosengarten*, the most feasible solution was to use the wildcard (*) when conducting concordance searches. So, for example, searching for the string <sp*k*> would pick up not only *speak* and the early modern variant *speake*, but also past tense and participial forms (*spoke, spoken*) in one go.

[17] See Appendix 1 for a list of items that provided the basis of the concordance searches.

topic at hand).[18] Doubtless some markers were missed in the manual and automatic searches performed on the texts, given the non-finite number of forms that can serve metadiscursive functions. Even so, the searches turned up enough data to make some substantial observations about the use of metadiscourse in *Rosengarten* and its English translations.

4.1. Attention-guiding markers[19]

Attention-guiding markers are used to focus the readers' attention on a particular point the author wishes to make:

(3) vOn den zůfellen vnd kranckheiten so der geburt nachfolgen/ **ist zůmerckẽ** das gewonlich nach der geburt der frawẽ soliche zůfelkõmen/ als febris dz ist vnnatürlich bo̊se hitz/ zerblasung oder geschwulst des leibs/ schmertzen im leib/ vñ der bermůter bewegung oder verruckung der bermůter. (Rösslin 1513: 47)
"Concerning the hazards and sicknesses that follow the birth, it is to be noted that after giving birth, the woman normally suffers such happenstances as fever, that is unnaturally wicked heat, bloating or swelling of the body, pains in the body, and movement or displacement of the womb."

(4) . . . lyke **as ye maye see**, that when a man is let bloud in a basyn or other vessell, and that the bloud stande styll in it, the space of. v. or. vi. houres, it wilbe concret and congyled in a cludder lyke a lyver, the watery part therof swimming and flytting aboue vpon the face of it . . . (Raynalde 1545: Fol. xxxix-recto)

In (3), Rösslin draws the readers' attention to possible post-partum complications through the use of the phrase *ist zůmerckẽ* "is to be noted", while in (4), Raynalde draws his audience's

[18] This tripartite distinction is notionally similar to Ädel's (2006: 18) "reflexive model", as such a three-way distinction is also drawn there. However, the specific classification of markers is quite different here, most notably with the inclusion of intertextuality.
[19] This category is also used by Boggel 2008: 57.

attention to what happens to blood after bloodletting, making the point that this is something visible to all who can see.

4.2. Comprehension-guiding markers[20]

Comprehension-guiding items are used by the authors to emphasise that it is crucial for a certain point to be known or understood by the reader:

(5) Weyter **ist zů wissen** dz do ist zweyerley geburt. (Rösslin 1513: 17)
"Furthermore it should be known that there are double births [i.e. birth of twins]."

(6) . . . and yf the odour and savour of such thinges ascende thorowe her body vp vnto her nose, **ye shall vnderstande**, that sterilitie commeth not of the womans part; yf not, then is the defect in her. (Raynalde: Fol. cxxiiii)

Both cases involve the use of mental state predicates to indicate that the propositional content – the nature of giving birth to twins in (5), and in (6), the results of a fumigation test for sterility – can and should be understood by the reader.[21]

4.3. Code glosses[22]

Code glosses provide further elaboration to something which has already been stated in order to ensure reader comprehension:

(7) Vnd diß erst felin **ist genant zů latyn** Secundina/ vñ **zů teutsch**/ das büschelin/ oder nachgeburt . . . (Rösslin 1513: 15)

[20] This term is used by Boggel 2008: 54-57.
[21] Items classified here as attention-guiding and comprehension-guiding markers are described by Taavitsainen & Pahta (1998: 176-180) as "prescriptive phrases" with their roots in medieval Scholasticism, as they "emphasize the reliability of the statements, and as such reflect the trust in knowledge handed down from above" (176). This explains the use of these terms by Boggel (2008), who was concerned with metadiscourse in Middle and Early Modern religious texts, where scholastic traditions are also at play. Interestingly, however, the use of these markers is more frequent in the English *Birth of Mankind* rather than in Rösslin's original *Rosengarten* (see Section 5), even though the latter is more anchored in the scholastic tradition than the former.
[22] This term is used by both Hyland 2005: 52, and Vande Kopple 1985: 84.

"And this first cowl is called in Latin the *secundina*, and in German, the little bush or afterbirth."

(8) Of yerkenesse **or** appetyte to vomyte. (Jonas 1540: Fol. lxxi-verso)

In (7), both learned and vernacular terms for the placenta are provided, while in (8), a medical term (*yerkenesse*) and its description (*appetyte to vomyte*) are given, linked by the conjunction *or*.

4.4. Framing markers[23]

Framing markers are used by writers to introduce or briefly explain the nature of the following portion of text:

(9) **Das. x. Capitel sagt** wie man das neüwgeborn kindt handlen/ bewaren/ vnd behüten soll/ auch wie man sein pflegen soll. (Rösslin 1513: 73)

"The tenth chapter discusses how one is to handle, maintain and look after the newborn child, and how one is to care for it."

(10) Howe to cure and to remedye all these/ **nowe wyll I shewe in order**. (Jonas 1540: Fol. lx-verso)

The chapter heading in (9) makes the focus of the upcoming discussion explicit to the reader, and in (10), Jonas states that he will now discuss the cures and remedies to a number of ailments and diseases he has enumerated previously.

4.5. Structuring markers[24]

[23] Boggel (2008): 48-49. This term is also used by Hyland (2005: 51) although referring to what are called "structuring markers" in the current discussio (see Section 4.5). "Endophoric markers" is Hyland's preferred term for what is discussed here.

[24] This term is used by Boggel 2008: 49-50. Hyland (2005: 51) prefers the term "frame markers".

Structuring markers provide readers with overt indications of the text's logical or temporal sequencing of topics:

(11) **So nůn gesagt ist** von den dingen der vrsachẽ des mißlingen/ vñ auch võ den zeichẽ des mißlingẽs **So ist weyter zů sagen** wie sich die frawẽ hüten sollen vor dem mißlingen. (Rösslin 1513: 64)

"Thus now are stated the matters concerning the causes of miscarriage, as well as the signs of miscarriage. It should also be mentioned how the woman is to guard against miscarriage."

(12) Wherefore yf the Matrix be dystempered by the excesse of any of these foure qualities, then must ye reduce it again to temperancie by such remedies as I shall shewe you hereafter. **Lykewise** may there be defecte and lacke in the man: as if the seede be ouer hotte, the which the woman shall feele as it were burnyng hotte: or to colde, the which she shall feele as it were in maner colde as yse, or to fluye or thinne. (Raynalde 1545: Fol. cxxii-verso/cxxiii-recto)

In (11), the text structuring markers serve to transition between what has just been discussed (the causes and signs of miscarriage) and what is about to be discussed (self-care before an imminent miscarriage). In (12), Raynalde draws a thematic equivalence between female problems with the womb and male problems with semen through the use of the adverb *lykewise*.

4.6. Restricting markers[25]

Text restricting markers allow writers to make explicit what aspects of a given topic they will *not* be discussing in the immediate discourse context:

[25] This term is used by Boggel 2008: 52-53.

(13) Wañ aber die schwanger fraw laßen mo̊g/ vnd wañ vnd wie sie sich purgieren mo̊ge/ das ist gar lauter vnd clar in disem · viij · capitel obgemelt in zweyen stuckẽ nach einand' von den vrsachen des mißlingens/ mit eygentlichen fürwortẽ/ **nit not hie noch ein mal zů schreibẽ**. (Rösslin 1513: 65)

"But when the pregnant woman is able to relieve herself, and when and how she can purge herself, that is made very clear in two consecutive parts of this eighth chapter which concern the causes of miscarriage, each with its own introduction, and it is not necessary to discuss this again here."

(14) Thys difficultie in makinge water, may ensue by other meanes, **whereof we nede not to speake at this tyme**. (Raynalde 1545: Fol. cxix-verso)

In both these cases, the authors mention something relevant to the overall discussion (being able to relieve oneself) but also note that further elaboration is not germane to the immediate context.

4.7. Intratextual markers[26]

Intratextual markers direct readers to other, non-immediate parts of the current text for further elaboration of a topic under discussion:

(15) . . . Die ding stoß alle klein vnd tẽperier sie mit wermů̊t o̊l vnd mit bitter mãdel o̊l/ yeglichs vier lot/ vnd wachs ein lot/ mach ein salb daruß bruchs **wie obgeschribẽ stadt**. (Rösslin 1513: 97)

"Crush everything into small bits and mix them with wormwood oil and with bitter almond oil, four lots of each, and one lot of wax, make an ointment out of this and use as described above."

[26] This term is used by Ifantidou (2005: 1130) and Boggel (2008: 47ff.), although Boggel uses this term in a broader sense than is used here. Hyland (2005: 51) prefers the term "endophoric markers".

(16) Farthermore if by chanse or bysease it come to passe that the mouth of the matrice be exulcerat or apostumat/ so that the passage be made the narower by that meanes/ the dryer and the more contracte/ then muste ye fyrste studye and endeuour you to sople and ease the places by oyles & other greces/ **suche as I spake of sufficientlye before in the fyfth chapter** with bathes and fumigations. (Jonas 1540: Fol. liii-recto)

In (15), Rösslin lists the ingredients and steps necessary to prepare a salve to treat pinworms, and then points the reader to earlier in the text for application instructions. In (16), Jonas refers readers to a preceding section – chapter 5 – if they need to review various treatments available for "dryness" of the matrix (womb).

4.8. Intertextual markers[27]

Intertextual markers point outside of the text as comprising the source of what is being stated:

(17) Dañ die milch seiner můter ist im auch gesünder vnnd ist gnůg/ **Also spricht Auicenna**/ Wann es des tages zwey oder drey mal sauget/ Doch am erstẽ sol man das kind nit vberseygen/ auch nit zůvyl vff ein mal seigen . . . (Rösslin 1513: 76)
"For his mother's milk is also healthier and enough for it [the baby], as speaks Avicenna, if it feeds two or three times a day, but one should not overfeed the child initially, especially not too much at once . . ."

(18) **Wherefore Hipocrates writeth**: yf te ryghte breaste slake or flagge, the masculine or male byrth is in parell: yf the lefte, the female byrth, because that for the most part when there be two at once, the one is masculine, and the other femenine, the

[27] This term is used by Ifantidou (2005: 1130) and Boggel (2008: 42-47), and the concept is shared by several others, although other terms are used: Williams (1981b: 51-52) and Vande Kopple (1985: 84) prefer the term "narrators", while Hyland (2005: 51-52) classifies such uses as evidential.

man lieth in the ryght syde, and the woman in the lefte moste commonly. (Raynalde 1545: Fol. lxxxvi-recto/verso)

Both (17) and (18) contain textual information that does not originate from the authors themselves, but rather from the writings of older learned authorities (*auctores*): the Persian physician Avicenna in (17) and the Greek Hippocrates in (18).

4.9. Stance markers[28]

Stance markers allow writers to inject their own attitude or assessment of the topic under discussion into the text:

(19) Vñ ob die seygam̃ krãckwurd oder ein růrhet vest oder verstopfft were/ od' starck artzny die stůlgãg brĩgen yngenõmẽ het/ **so ist besser** dz ein ander fraw dz kindt seygte. (Rösslin 1513: 79)

"And if the wet-nurse becomes sick or has dysentery or is constipated, or if she has taken strong purgatives, then it is better that another woman nurses the child."

(20) But and yf the woman be any thynge grosse/ fat/ or flesshly **it shall be best** for her to lye grouelyng/ for by that menes the matrice is thrust and depressed downe warde/ anoyntynge also the preuy partes with the oyle of whyte lyllies. (Jonas 1540: Folio xxi-verso)

In both (19) and (20), stance markers are used by the writers to advise readers on what they believe to be the preferable course of action in a given circumstance: replacing the wet-nurse in (19) and crawling on the floor to adjust the position of the womb (matrice) in (20).

[28] The term *stance* enjoys wide usage in linguistics, see e.g. Biber & Finegan (1989), and it generally refers to the speaker's attitude or assessment of the proposition (so evidentiality and epistemic modality can be included in the category as well). In *Rosengarten* and *The Birth of Mankind*, however, stance markers – at least those found by automatic searches – seem to be restricted to what both Vande Kopple (1985: 85) and Hyland (2005: 53) refer to as "attitude" markers (e.g. *good*, *bad*, *hopefully*, *unfortunately*, etc.). Boggel (2008: 57-60) uses the term in a fairly broad sense (although, as with the present discussion, the marking of an information source as someone else is classified as intertextual rather than stance).

5. Results and discussion

The following figures provide an overview of the proportional usage of metadiscourse markers by Rösslin (Figure 1), Jonas (Figure 2) and Raynalde (Figure 3). Frequencies for Rösslin's text have been split into two sections – Ch. 1-9 and Ch. 10-12 – to facilitate comparison with the English translations. Similarly, results for Chapter 10 of Jonas' first book are actually presented as part of book two since Raynalde includes this chapter in his third rather than second book (Raynalde's book one contains completely new material).[30] Actual and normalised frequencies (per 1,000 words), along with the percentages presented here, are provided in Appendix 2. The prefaces are excluded from the following analysis, as each text contains unique prefatory material and thus no basis for comparison exists.[31]

[INSERT FIGURE 1]

[INSERT FIGURE 2]

[INSERT FIGURE 3]

Text structuring metadiscourse (framing, structuring, restricting and intratextual markers) dominates in frequency across both German and English versions of the text, the only exception being the first book of Raynalde's translation. That is, the majority of metadiscourse used in *Rosengarten* and *The Birth of Mankind* – 73.8% in Rösslin, 64.63% in Jonas and 50.72% in Raynalde – is devoted to indicating how exactly the text is structured. Within this category, however, text restricting metadiscourse is used rarely in both versions of the text (0.2% in Rösslin, 0.59% in Jonas and 0.93% in Raynalde); making explicit what *is not* going to be discussed is not of great concern to any of the authors.

[30] Refer to Table 1 to see how each version of the text is structured slightly differently.

[31] Metadiscourse can be found in the prefatory material as well. Indeed, Taavitsainen (2012: 440) refers to prefatory materials as "macrolevel metadiscourse" because they are devoted to providing additional information about the main texts themselves rather than contributing content to the topic at hand.

One of the most salient differences between *Rosengarten* and its English translations is the substantial reduction in the amount of intertextual references. Whereas 40 such references were found in the former, only about half that number were found in the comparable sections of the English versions: 19 in Jonas and 22 in Raynalde. To see exactly when and where this change occurred, it is helpful to also see what happens in the intermediary 1532 Latin translation, *De Partu Hominis*. Although quantitative information on metadiscourse in that text is unavailable, the following serves as a representative example of parallel passages:

(21) Dañ **als Ipockras spricht** Welche frawen zymlich leib haben/ nitt zů feißt noch zů mager/ vnd die schwãger werdẽ vñ ynen mißlingt im andern oder tritten monat/ on offenlich vrsach/ den selben frawẽ seind die band die das kind in můter leib behalten/ zů latin cotilidones/ voll bőser schlymiger feüchtikeit/ darumb sie brechen/ vnd die frucht võ irer schwere wegen nit behalten mőgen. **Dar zů spricht Auicenna** das den frawen gewonlichen mißlingt in dem andern vnd tritten monat von plesten vnd feüchtikeit der adren die da seind in der bermůter. (Rösslin 1513: 58)

(22) . . . **sic enim Hypo. ait. Quecũque** mediocri corpore, hoc es, neque crasso, neque gracili nimis fuerint imprægnatæ, eas si abortire contingat, altero aut tertio a conceptione statim mense, nulla euidente alia interueniẽ te caussa, necesse esse cotylidones malis atque uiscosis humoribus, distentas ac ruptas sustinere ac alere partum non potuisse. **Et Auicenna plerũque**, in quit, prægnãtes abortire circa alterum aut tertium mensem solent, Cotylidonibus, humoribus, atque inflatione distentis. (Rösslin (II) 1532: Fol. 37-verso)

(23) **wherfore Hypocrates sayth**: All suche women whiche be impregnat or conceaued being of a meane state in her bodye/ that is to saye/ neyther to fat or grosse/ ne to spare or leane: yf it chanse anye suche to aborce in the seconde or thyrde moneth (no other euident cause appearyng) knowe ye for certayne that it ensueth for

because the cotilydons be opplete/ stopped/ and stuffed with yll humours/ & be swollen and puffed therewith/ that they breake/ and so cõsequẽtly the feature dryeth for faute of fode. (Jonas 1540: Fol. xlii-recto)

(24) **Wherfore Hipocrates saith**: All suche women whiche be impregnate or conceaued, being of a mean state in theyr bodye (that is to say, neyther to fat or grosse, ne to spare or leane) if it chaunce any such to aborse in the seconde or thyrde moneth (no other euident cause appearyng), knowe ye for certaine, that it ensueth for because the Cotilidons be opplete, stopped, and stuffed with yll humours, and be swollen and puffed therewith that they breake, and so consequentlye the feature dyeth for faute of foode. (Raynalde 1545: Fol. lxxxiii-verso)

Since the reference to Avicenna is present in the Latin version, these passages make clear the omission of intertextual references is a feature of the English translations. Hobby (2009: xxxi) notes that these omissions are due to the appearance of new translations of Hippocrates and Galen, which subsequently reduced the interest in and reliance on intermediary Arabic texts. More generally, the authors/translators of *The Birth of Mankind* appear to be less concerned than Rösslin with classical medical authorities, most likely because they were gearing their texts towards mass distribution to a general audience, rather than intending their text to be used for specialised medical training, as was the case with *Rosengarten*, or in the case of *De Partu Hominis*, to be read solely by a learned audience (Hobby 2009: xxxi-xxxii). Some references to classical authors remain, but they are few and far between.

The other notable difference between *Rosengarten* and both versions of *The Birth of Mankind* is the prevalence of stance markers in the latter but a seeming paucity of such items in the former (35 in Jonas, 74 in Raynalde versus 3 in Rösslin). As with intertextuality, it is worth examining the intermediary Latin translation to see where exactly this discrepancy lies:

(25) Mer **die fraw sol** iren athem trengẽ vñ zwingẽ auch inhalten/ damit sie ir yngeweid nȯ̊t vnd vnd'sich truck. ¶ Item **die fraw soll** auch trinckẽ deren artzney eine so hernach stadt dañ sie treibt das kind vndersich zů̊ der geburt. (Rösslin 1513: 27)

(26) Præterea **conuenit** aliquãtis per anhelitum quoque retinere & cohibere, quod ea re intestina coguntur atque deprimuntur. Necnon & medicinam eam quam infra describemus, sumere **prodest**, ea si quidem partum impellit, & ad egerendum promouet. (Rösslin (II) 1532: Fol. 14-recto)

(27) Also **it shalbe very good** for a tyme to retayne and kepe in her brethe/ for because that thorow that meanes the guttes and intralles be thrust to gether and depressed downeward. Also **it shalbe verye good** to receyue the same medicine/ the which we shall describe hereafter/ for that medicine expellethe and sendeth forthe the byrth. (Jonas 1540: Fol. xx-verso/xxi-recto)

(28) And also **it shalbe verye good** for a tyme, to retayne and kepe in her breath, for because that thorowe that meanes the guttes and intrayles be thrust together and depressed downewarde. Also **it shalbe very good** to receaue some medicine to prouoke the byrth, of the whiche we will speake more hereafter. (Raynalde 1545: Fol. lxi-recto)

Interestingly, both the German and English texts use the same phrase here, whereas the intermediary Latin text features two distinct forms: *conuenit* "it is appropriate, suitable, fitting" in the first instance and *prodest* "it is useful, beneficial, profitable" in the second. On the other hand, only the German text is void of any explicit value judgement because only a command is given (indirectly) through the use of the modal verb *sollen* 'shall', whereas both the Latin and the English versions feature additional tones indicating the authors' assessment of these actions that are to be taken (i.e. that they are good or beneficial for the mother). In

this case, it appears the Latin version introduced the metadiscourse into the reading, which was maintained in the English versions, albeit in a simplified, less nuanced manner. To what exact degree the Latin version is responsible for the increased use of stance markers in the English versions is a question beyond the scope of the present paper, although this instance suggests this is a question in need of further investigation.

The differences between Jonas' and Raynalde's use of metadiscourse in their respective versions of *The Birth of Mankind* are not that substantial; although Raynalde made numerous changes and improvements to Jonas' version of the text – especially in the realm of correct medical terminology – it appears that in many places he copied over the metadiscourse markers verbatim. The only truly substantial difference in usage exists in Raynalde's first book (a completely new composition), whereby code glosses and intratextual markers are used more often than text structuring devices, which dominate all other books as the most prominent type of metadiscourse used. The quantitative figures for books two, three and four (Jonas' books one, two and three, respectively) are different mainly because Raynalde made additional contributions to each of them. Even cases that appear highly personalised through the use of the first- and second-person pronouns are taken directly from Jonas:

(29) Farthermore if by chanse or dysease it come to passe that the mouth of the matrice be exulcerat or apostumat/ so that the passage be made the narower by that meanes/ the dryer and the more contracte/ **then muste ye fyrste studye and endeuour you** to sople and ease the places by oyles & other greces/ **suche as I spake of sufficientlye before in the fyfth chapter** with bathes and fumigations. (Jonas 1540: Fol. liii-recto)

(30) Farthermore, if by chaunce or disease it come to passe, that the mouth of the Matrix be exulcerate or apostumate, so that the passage bee made the narower by that meanes, the dryer and the more contract: **then must ye fyrst study and endeuour**

> **you** to soople and ease the places by oyles and other greeses, **such as I spake of sufficiently before in the fourth Chapter**, with bathes and fumigations. (Raynalde 1545: Fol. xcv-recto)

Readers are addressed directly in an instance of attention-guiding metadiscourse, which is shortly followed by an intertextual reference. In both cases, it is obvious Raynalde left these phrases virtually unmodified (except changing a chapter number due to the slightly different structure of his book), so his self-mentions and direct admonitions to the reader are not as authentic as they might first appear. So in contrast to the more content- or topic-based innovations of *The Birth of Mankind*, it appears Jonas' contribution to the translation and use of metadiscourse is far more substantial than Raynalde's. Only book one provides a truly original display of Raynalde's use of metadiscursive features.

On a related note, much of the English data presented here features either authorial self-mentions with the use of the first-person pronoun (see examples 10, 14, 16, 29 and 30) or, as mentioned above, direct address of readers with the use of the second-person pronoun (see examples 1, 4, 6, 29 and 30). In Rösslin's *Rosengarten*, on the other hand, there is a paucity of first- and second-person pronoun usage in metadiscursive contexts. Consider Table 6, which provides the raw and normalised frequencies of such usage:

[INSERT TABLE 6]

Direct address of the reader through the second-person pronoun is particularly noticeable, occurring three times more often in the *The Birth of Mankind* (2.46 times per 1,000 words in Jonas, 2.19 times per 1,000 words in Raynalde) than in *Rosengarten* (only 0.73 times per 1,000 words). The Latin *De Partu Hominis* also appears to be void of such personalised usage, as several instances of metadiscourse involving personal pronouns in *The Birth of*

Mankind simply do not appear in the *Rosengarten* or *De Partu Hominis* (example 31 is a repeat of example 10):

(31) Howe to cure and to remedye all these/ **nowe wyll I shewe in order**. (Jonas 1540: Fol. lx-verso)

(32) but in the tyme or about the tyme of labor she may vse bathes/ **as I declared before for the redyar** and more expedite delyueraunce. (Jonas 1540: Fol. xliiii-recto)

Example 31 occurs between a list of numerous diseases that new-borns can suffer from and an in-depth discussion of cures and remedies for these diseases. The metadiscourse here frames the following text as a discussion of the diseases listed beforehand. The parallel passages in *Rosengarten* and *De Partu Hominis*, however, do not contain this framing sentence at all and simply proceed from the end of the list of diseases into the discussion. The intratextual reference in (32) is also absent from the German and Latin texts. Both examples are contributions of Jonas and indicative of a broader tendency in sixteenth-century English scientific writing to "involve" the reader more in the discourse through the use of personal pronouns (Taavitsainen & Pahta 1998: 163; Dorgeloh 2005a: 305-307, 2005b: 88-91; Moessner 2008: 80-81).[33] Given that *The Birth of Mankind* was intended for a general rather than a specialised audience, and possibly even intended to be read aloud (Richards 2015), the increased frequency of pronoun usage in metadiscursive contexts from the German *Rosengarten* – written in the learned tradition and intended only for midwives and pregnant women – and the Latin *De Partu Hominis* – intended only for a learned audience – should come as no surprise.

[33] A parallel development for German does not appear to be the case, as Roelcke (2010: 78-90, 178-207) never mentions changing pronoun usage as a significant feature in the development of German scientific writing.

6. Concluding remarks

This paper has provided a thorough overview of metadiscourse markers in one of the most prominent early medical texts to be printed in the vernacular. We have seen that text structuring metadiscourse dominates in the original German *Rosengarten* and in the English translation, *The Birth of Mankind*. The key difference between these two languages was found to occur with metadiscourse that indexes the writer's relationship with the textual content, i.e. intertextual and stance markers. Whether this is restricted only to *Rosengarten/The Birth of Mankind* or early modern scientific writing more broadly cannot be answered here and is worth further investigation. It was also found that although *The Birth of Mankind* went through numerous substantial changes between the Jonas and the Raynalde versions, metadiscourse is one area where few if any changes were made. Corpus linguistic techniques have proven successful in automatically retrieving metadiscourse markers after an initial stage of manual analysis, although post-search analysis required further manual work; manual and automated methods must work hand-in-hand for effective metadiscourse analysis, and this is an avenue of research that cannot rely solely on automated methods. Finally, it would be interesting to see how metadiscourse is used in other midwifery manuals published throughout the early modern period; the advent of practising midwives writing their own manuals to replace those of the learned physician, as well as the emergence of male midwives during the late seventeenth century, make for very different social dynamics concerning writer-reader relationships. Whether these social differences are reflected in the use of metadiscourse remains to be seen.

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Appendix 1

After closely reading the first three chapters of *Rosengarten* and the *Birth of Mankind* translations, the following items (listed in modernised spelling) served as the basis for the automated WordSmith searches of the texts:

[INSERT TABLE 2]

Appendix 2

Below are the tables featuring all quantitative data resulting from the WordSmith searches of *Rosengarten* and *The Birth of Mankind*: actual frequencies, normalised frequencies (per 1,000 words) and percentages:

[INSERT TABLE 3]

[INSERT TABLE 4]

[INSERT TABLE 5]