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*Maaïke van der Lugt*

GENERATION IN THE MIDDLE AGES  
PAST, PRESENT, FUTURE

From its inception, *Micrologus* has stood for opening up and broadening perspectives as well as crossing disciplinary boundaries in the history of medieval science. This commemorative issue of *Micrologus Library* offers me the opportunity to take a retrospective and prospective look at one area of research in particular: generation. The history of generation can be defined in both a narrow and a broader sense. In a narrow, more traditional sense, it concerns medical and scientific theories of human, animal, and plant reproduction across the ages. Considered more broadly, the history of generation also encompasses norms, beliefs, and values, in addition to social, religious, legal, and cultural practices and customs around sexuality, childbirth, and marriage. In the spirit of *Micrologus*, this article will focus on this broader definition.

To date, the most ambitious effort to pool historiographical expertise about generation from different fields and horizons is undoubtedly *Reproduction. Antiquity to the Present Day*, published in 2018. Spanning three millennia, this voluminous work compiled over the course of many years ventures far beyond the traditional narratives of scientific theories and ideas into cultural and social history, politics, art, and material culture. It contains a substantial section on the Middle Ages and will likely remain the starting point for anyone interested in the matter in years to come<sup>1</sup>.

1. N. Hopwood, R. Flemming, L. Kassel (ed.), *Reproduction. Antiquity to the Present Day*, Cambridge 2018. Chapters on the Middle Ages: N. Fancy, «Generation in Medieval Islamic Medicine», 129-40; P. Biller, «The Multi-

The aim of this article is more modest. I will provide a brief overview of how the field has developed since the 1970s, while also identifying some overlooked areas in existing scholarship and avenues for further research. I will conclude with some general reflections on key terms. Semantic anachronism is a major pitfall for students of medieval generation. It is also hard to avoid entirely and perhaps proves occasionally useful. For the moment, suffice it to say that the broad medieval concept of generation (*generatio*) is preferable to that of reproduction, even though the latter term is more familiar today<sup>2</sup>.

I will only be focusing on human generation, even though this involves some distortion. Aristotle's *Generation of Animals*, a key text for medieval debates, deals generally with animals. In some contexts, the medieval concept of generation could even encompass both animate and inanimate things. However, as I shall discuss, medieval scholars were able to use different definitions simultaneously and distinguish between them. Aristotle's zoology has a clear anthropocentric bias, and medieval interpretations expanded upon this tendency<sup>3</sup>. The stakes were highest for medieval thinkers in the context of human generation, and that form of generation more clearly became the focus of intertwining religious, legal, medical, philosophical, and social concerns<sup>4</sup>.

tude in Later Medieval Thought», 141–51; K. Park, «Managing Childbirth and Fertility in Medieval Europe», 153–66; M. van der Lugt, «Formed Fetuses and Healthy Children in Scholastic Theology, Medicine and Law», 167–80. Short commentaries on images or objects by M. E. Fasler, «The Tree of Jesse»; G. Zuccolin, «The Hermaphroditic Hyena»; L. Kassell, «Medieval Birth Malpresentations»; L. T. Olsan, «A Medieval Birth Girdle».

2. The editors of the volume *Reproduction* are well aware that the term 'reproduction' is problematic for the premodern period. See N. Hopwood, «The Keywords 'Generation' and 'Reproduction'», in *Reproduction*, Hopwood, Flemming and Kassell (ed.), 287–304.

3. G. Guldentops, «Albert the Great's Zoological Anthropocentrism», *Micrologus. Nature, Sciences and Medieval Societies*, 8 (2000), 217–36; T. W. Köhler, *Homo animal nobilissimum. Konturen des spezifisch menschlichen in der naturphilosophischen Aristoteleskommentierung des dreizehnten Jahrhunderts*, Leiden 2008; M. van der Lugt, «L'autorité morale et normative de la nature au Moyen Âge. Essai comparatif et introduction», in *La nature comme source de la morale au Moyen Âge*, Firenze 2014 (Micrologus Library, 58), 3–40, on 11–19.

4. In her pioneering book, *Naître au Moyen Âge. De la conception à la naissance: la grossesse et l'accouchement*, Paris 1989, Sylvie Laurent brought

*The Broadened Study of Medieval Generation*

Since the 1970s, generation no longer exclusively concerns historians of medicine and biology primarily interested in scientific theories and ideas. Historians of generation can notably draw on expanded knowledge of the legal history of the family and kinship, as well as the social history of women and gender, pregnancy, and childbirth.

Legal historians have charted the construction and evolution of the medieval pastoral discourse on sex, marriage, and child-bearing. In particular, much attention has been paid to the reformulation of the principles outlined by canonists and theologians (offspring as the prime purpose of marriage, a ban on all non-reproductive sex, the marital debt, the indissolubility of marriage, and so on) in penitentials and manuals for priests and preachers and their transmission to the faithful in sermons and confession. Historians have also studied how these norms translated into judiciary practice, shedding light on both the early stages of the criminalisation of abortion and lay people's ability to use the law of the church about marriage to their advantage<sup>5</sup>.

together a large number of themes. The intertwining of perspectives is the main subject of my forthcoming book on the fetus in the medieval West. It is based on my *habilitation à diriger des recherches*, entitled *Le fœtus au Moyen Âge entre science, théologie et droit* (2016). See also Van der Lugt, «Formed Fetuses and Healthy Children».

5. For example, J. Gaudemet, *Le mariage en Occident. Les mœurs et le droit*, Paris 1987; J.-L. Flandrin, *Un temps pour embrasser. Aux origines de la morale sexuelle occidentale (VI<sup>e</sup>-XI<sup>e</sup> siècle)*, Paris 1983; J. Brundage, *Law, Sex and Christian Society in Medieval Europe*, Chicago 1987; A. Lefebvre-Teillard, *Autour de l'enfant. Du droit canonique et romain médiéval au Code Civil de 1804*, Leiden 2008; D. L. d'Avray, *Medieval Marriage Sermons. Mass Communication in a Culture without Print*, Oxford 2001; L. Schmutge, *Ehe vor Gericht. Deutsche Paare der Renaissance vor dem Papst*, Berlin 2008 (English translation: *Marriage on Trial. Late Medieval German Couples at the Papal Court*, Washington DC 2012); Ch. Donahue Jr., *Law, Marriage and Society in the Later Middle Ages. Arguments about Marriage in Five Courts*, Cambridge 2007; F. Harris-Stoertz, «Pregnancy and Childbirth in Twelfth- and Thirteenth-century French and English Law», *The Journal of the History of Sexuality*, 21 (2012), 263-81; W. P. Müller, *The Criminalization of Abortion in the West. Its Origins in Medieval law*, Ithaca, London 2012.

The realities of pregnancy and childbirth have also generated substantial interest. From the sparse documentation available, historians have pieced together how medieval babies were born and reconstructed the lived experience of women and those who assisted them before, during, and after labour<sup>6</sup>. The role, expertise, and social standing of midwives and matrons have been major topics of discussion<sup>7</sup>. Medieval women also called upon higher powers to help them conceive and safely give birth to healthy children, by invoking saints and using relics, amulets, and special birth girdles<sup>8</sup>. The fourteenth century saw the emergence

6. For a rare and rich eye witness account of a difficult birth in fifteenth-century Aragon: M. del Carmen García Herrero, «Administrar del parto y recibir la criatura: Aportación al estudio de la obstetricia medieval», in *Aragon en la Edad Media*, 1989, 8, 283, reedited in Ead., *Las mujeres en Zaragoza en el siglo XV*, 2 vols, Zaragoza 1990, II, 293-95, and «Del nacer y el vivir: Fragmentos para una historia de la vida en la Baja Edad Media», A. Muñoz Fernández (ed.), Zaragoza 2005, 42-46. English translation by M. Cabré: «Public Record of the Labour of Isabel de la Cavallería», Online Reference Book for Medieval Studies, <https://the-orb.arlima.net/birthrecord.html>. For the use of miracle stories, see P. Sigal, «La grossesse, l'accouchement et l'attitude envers l'enfant mort-né à la fin du Moyen Âge d'après les récits de miracles», in *Santé, médecine et assistance au Moyen Âge*. 110<sup>e</sup> Congrès national des sociétés savantes, Montpellier 1985, Paris 1987, 23-42; D. Lett, *L'enfant des miracles. Enfance et société au Moyen Âge (XII<sup>e</sup>-XIII<sup>e</sup> s.)*, Paris 1997; A. Foscati, «Retracing Childbirth through Hagiographical Texts and Canonization Processes in Italy and France between the Thirteenth and Sixteenth Centuries», in *Pregnancy and Childbirth in the Premodern World. European and Middle Eastern Cultures, from Late Antiquity to the Renaissance*, C. Dopffel, A. Foscati ed., Turnhout 2019, 195-224.

7. S. Flügge, *Hebammen und heilkundige Frauen. Recht und Rechtswirklichkeit im 15. und 16. Jahrhundert*, Frankfurt a/M and Basel 1998; K. Taglia, «Delivering a Christian identity: Midwives in Northern French Synodal Legislation, c. 1200-1500», in *Religion and Medicine in the Middle Ages*, P. Biller, J. Ziegler (ed.), Woodbridge 2001, 77-90; M. Cabré, «Women or Healers? Household Practices and the Categories of Health Care in Late Medieval Iberia», *Bulletin of the History of Medicine*, 82 (2011), 18-51; T. D. Vann Sprecher, R. Mazo Karras, «The Midwife and the Church: Ecclesiastical Regulation of Midwives in Brie, 1499-1504», *Bulletin of the History of Medicine*, 85 (2011), 171-92; F. Harris-Stoertz, «Midwives in the Middle Ages? Birth Attendants 600-1300», in *Medicine and the Law in the Middle Ages*, W. Turner, W. Butler (ed.), Leiden 2014, 58-87.

8. See for instance M. Elsackers, «In Pain You Shall Bear Children (Gen. 3:16): Medieval Prayers for a Safe Delivery», in *Women and Miracle Stories: A Multidisciplinary Exploration*, A.-M. Korte (ed.), Leiden 2001, 179-209;

of special sanctuaries where bereaved parents brought their dead infants to wait for a sign of life in order to baptise and bury them in consecrated ground<sup>9</sup>. Historians have also analysed the construction and deconstruction of taboos surrounding lochial and menstrual blood as well as the social and ritual separation and reintegration into medieval society of postpartum women through the practice of lying-in and churching<sup>10</sup>. The social stakes and consequences of female and male infertility have likewise attracted increasing attention<sup>11</sup>.

As for the study of medieval embryology, gynaecology, and obstetrics, it has benefited from the edition of a substantial number of key texts<sup>12</sup> and recent interest in communication and

P. Murray Jones, L. T. Olsan, «Performative Rituals for Conception and Childbirth in England, 900-1500», *Bulletin of the History of Medicine*, 89 (2015), 406-33; L. Olsan, «A Medieval Birth Girdle», in *Reproduction. Antiquity to the Present Day*, Hopwood, Flemming, Kassell ed, Exhibit 11. See, most recently, Dopffel, Foscati (ed.), *Pregnancy and Childbirth in the Premodern World*.

9. J. Gélis, *Les enfants des limbes. Mort-nés et parents dans l'Europe chrétienne*, Paris 2006.

10. Ch. de Miramon, «Déconstruction et reconstruction du tabou de la femme menstruée (XII<sup>e</sup>-XIII<sup>e</sup> siècle)», in *Kontinuitäten und Zäsuren in der europäischen Rechtsgeschichte, Europäisches Forum Junger Rechtshistorikerinnen und Rechtshistoriker*, München 22.-24. Juli 1998, A. Thier, G. Pfeifer, P. Grzimek (ed.), Frankfurt a/M 1999, 79-107; Id., «La fin d'un tabou? L'interdiction de communier pour la femme menstruée au Moyen Âge. Le cas du XII<sup>e</sup> siècle», in *Le sang au Moyen Âge*, Montpellier 1999, 163-81; P. Rieder, *On the Purification of Women. Churching in Northern France, 1100-1500*, New York 2006. For a comparison between Christian and Jewish postpartum rituals, see E. Baumgarten, *Mothers and Children: Jewish Family Life in Medieval Europe*, Princeton 2004, 105-15.

11. For an overview of available scholarship, see C. Rider, D. Oren-Magidor, «Introduction: Infertility in Medieval and Early Modern Medicine», *Social History of Medicine*, 29 (2016), 211-23.

12. Giles of Rome, *De formatione humani corporis in utero*, ed. R. Martorelli Vico, Firenze, 2008 (Aegidii Romani Opera omnia, II.13); Mondino de Liuzzi, *Expositio super capitulum de generatione embrionis canonis Avicennae cum quibusdam quaestionibus*, ed. R. Martorelli Vico, Roma 1993; B. Blumentrost, *Quaestiones disputatae circa tractatum Avicennae de generatione embryonis*, ed. in R. Krist, *Berthold Blumentrosts Quaestiones disputatae circa tractatum Avicennae de generatione embryonis et librum meteorum Aristotelis. Ein Beitrag zur Wissenschaftsgeschichte des mittelalterlichen Würzburgs*, Würzburg 1987; Ps-Albert the Great, *De secretis mulierum*, ed. J. P. Baragán Nieto, *El De secretis mulierum atribuido a Alberto Magno. Estudio, edición crítica y traducción*, Porto 2011; M. H. Green, *The Trotula. A Medieval Compendium of Women's*

reading/writing practices. We have a better understanding of how technical knowledge about generation developed in medieval schools and universities from the twelfth century on, thanks to fresh interpretations of texts adapted into Latin from the Greek and the Arabic<sup>13</sup>. We are also able to determine how this knowledge assumed new forms and meanings as it reached wider segments of medieval society through translations into the vernacular or incorporation into less formal genres (such as encyclopedias, compilations, household, and ‘how-to’ books) and found its way into consultations and correspondences<sup>14</sup>. Contrary to common assumptions, texts about women’s health and generation were overwhelmingly produced by and for men, who started to claim expertise in the field of gynaecology and generation beginning in the twelfth century. Due to medieval conceptions of the value of theoretical, Latinate learning, the exclusion of women from universities, and their lower levels of literacy across all segments of society, women could never enjoy the same level of authority as men, even in the field of gynaecology. To what extent men succeeded in supplanting women and their hands-on orally transmitted skills on the ground is more difficult to assess. We know that

*Medicine*, Philadelphia 2001; Aristotle, *De animalibus*. Michael Scot’s Arabic-Latin Translation. Part Three: Books xv-xix. *Generation of Animals*, ed. A. van Oppenraaij, Leiden 1992; *De generatione animalium*. *Translatio Guillelmi de Moerbeka*, ed. H. J. Drossaart Lulofs, Brugge and Paris 1966; J. Vath, *Questiones super De generatione animalium*, ed. L. Cova, *Archives d’histoire doctrinale et littéraire du Moyen Âge*, 59 (1992), 175-287; Michael Scot, *Liber particularis et Liber physionomie*, ed. O. Voskoboynikov, Firenze 2019 (Micrologus Library, 93).

13. M. A. Hewson, *Giles of Rome and the Medieval Theory of Conception. A Study of the De formatione corporis humani in utero*, London 1975; D. Jacquart, Cl. Thomasset, *Sexualité et savoir médical au Moyen Âge*, Paris 1985 (English transl.: *Sexuality and Medicine in the Middle Ages*, Princeton 1988); R. Martorelli Vico, *Medicina e filosofia. Per una storia dell’embriologia medievale nel XIII e XIV secolo*, Milano 2002.

14. M. H. Green, *Making Women’s Medicine Masculine. The Rise of Male Authority in Pre-Modern Gynaecology*, Oxford 2008; G. Zuccolin, «Nascere in latino ed in volgare. Tra la *Practica maiore* e il *De regimine pregnantium*», in Michele Savonarola. *Medicina e cultura di corte*, G. Zuccolin, C. Crisciani (ed.), Firenze 2011 (Micrologus Library, 37), 137-210; J. Cadden, *Nothing Natural is Shameful. Sodomy and Science in Late Medieval Europe*, Philadelphia 2013; D. Jacquart, «Au nom de la nature. Le plaisir sexuel selon le médecin bolonais Mondino de’ Liuzzi († 1326)», in *La nature comme source de la morale*, 335-57.

male practitioners were rarely present in the birth chamber and their access to the bodies of pregnant women and those in labour was usually mediated by matrons and midwives<sup>15</sup>.

Alongside the strong interest in the dissemination of technical knowledge beyond urban schools and universities, broadened perspectives on generation have also led historians to recognize the ways in which generation transcended disciplinary divides within the structure of scholastic learning. While every scholastic field had its own authoritative texts, interpretative traditions, and collective identities, philosophers, theologians, jurists, and physicians evolved in the same institutional setting and shared a common method and basic training in the arts and Aristotelian philosophy. In that respect, scholasticism also sparked interdisciplinary cross-fertilisation.

Attention has been given to the fact that medieval theologians were not only responsible for arming the church with a moral and legal code, but also actively participated in debates about the physiology of procreation. Theological debates about doctrines like the transmission of original sin, the virginal conception of Christ, and the human condition before the Fall, in addition to metaphysical questions about the unicity and plurality of substantial forms, led to sophisticated discussions about the existence and role of female seed, the causes of sex determination, sex ratios, and the stages of embryogenesis. In these debates, theologians directly and indirectly used technical embryological theories and positioned themselves in relationship to the Aristotelian and Galenic heritage<sup>16</sup>. The foremost medieval treatise on embryology was written by Giles of Rome (d. 1316), an Augustinian canon and one of the most eminent theologians of his

15. Green, *Making Women's Medicine Masculine*; Cabré, «Women or Healers?».

16. L. Cova *Originale peccatum e concupiscentia in Riccardo di Mediavilla. Vizio ereditario e sessualità nell'antropologia teologica del XIII secolo*, Roma 1984; J. Cadden, *Meanings of Sex Difference in Medieval Medicine, Science, and Culture*, Cambridge 1993; P. Biller, *The Measure of Multitude. Population in Medieval Thought*, Oxford 2000; M. van der Lugt, *Le ver, le démon et la vierge. Les théories médiévales de la génération extraordinaire*, Paris 2004; G. Zuccolin, *I gemelli nel medioevo. Questioni filosofiche, mediche e teologiche*, Pavia 2019.



generation<sup>17</sup>. Albert the Great's influential zoological works are another case in point<sup>18</sup>.

One final and more recent example of the broadened study of generation worth briefly noting is a series of collective projects devoted to the concept of heredity. Despite falling outside our time frame, special mention must be made of the large scale and multifaceted investigation into the transformations and vicissitudes of the concept of heredity from the early modern period to the present, which led to a collective publication in 2007 and a survey published in both German (2009) and English (2012)<sup>19</sup>. The results of a concurrent complementary project on heredity in medical and natural philosophical, legal, political, and historical sources of the later Middle Ages and early modern period were published in *Micrologus Library* in 2008<sup>20</sup>. This book showed that the concept of hereditary disease, race, and noble blood were all medieval creations. More recently still, the notion of blood and its relation to the structure and representation of kinship in the *longue durée* was the subject of an important collection of essays<sup>21</sup> and a special journal issue<sup>22</sup>.

17. Giles of Rome, *De formatione humani corporis in utero*, ed. Martorelli Vico cit.

18. Albert the Great, *De animalibus libri XXVI*, ed. H. Stadler, Münster 1926 and 1920 (English transl. *Albertus Magnus on Animals: A Medieval Summa zoologica*, K. F. Kitchell Jr., I. Resnick, Baltimore 1999; Albertus Magnus, *Quaestiones super De animalibus*, ed. F. Filthaut, Münster 1955 (English transl. *Albert the Great. Questions concerning Aristotle's On Animals*, I. Resnick, K. F. Kitchell Jr., Washington DC 2008).

19. H.-J. Rheinberger, S. Müller-Wille (ed.), *Heredity Produced: at the Crossroads of Biology, Politics, and Culture, 1500-1870*, Cambridge, Mass., London 2007; Rheinberger, Müller-Wille, *Vererbung: Geschichte und Kultur eines biologischen Konzepts*, Frankfurt a/M 2009 (English transl. *A Cultural History of Heredity*, Chicago 2012).

20. M. van der Lugt, Ch. de Miramon (ed.), *L'hérédité entre Moyen Âge et Époque moderne. Perspectives historiques*, Firenze 2008 (*Micrologus Library*, 27).

21. Chr. H. Johnson, B. Jussen, D. W. Sabeen, S. Teuscher (ed.), *Blood and Kinship: Matter for Metaphor from Ancient Rome to the Present*, New York 2013. Contributions on the Middle Ages: A. Guerreau-Jalabert, «Flesh and Blood in Medieval Language about Kinship», 61-82; S. Teuscher, «Flesh and Blood in the Treatises on the *Arbor Consanguinitatis* (Thirteenth to Sixteenth Centuries)», 83-104; T. F. Ruiz, «Discourses of Blood and Kinship in Late Medieval and Early Modern Castile», 105-24; G. Delille, «The Shed Blood of Christ: From Blood as Metaphor to Blood as Bearer of Identity», 125-43.

22. «Les lois du sang», *Annales de démographie historique*, 137 (2019). Con-

Despite the rich and varied scholarship available, the last word on generation in the Middle Ages has certainly not been said. More detailed and in-depth studies will substantiate, qualify, relativize, or criticise the picture that has emerged. Our knowledge may also be further expanded in other directions.

### *Avenues for Further Research*

A first and rather obvious avenue pertains to chronology and periodisation. In general accounts and monographs, the Middle Ages are often reduced to or represented by the centuries following 1100. There are fewer sources for earlier periods, and such documentation is mostly normative and hagiographical. The underrepresentation of the early Middle Ages, however, can only be partly justified by the lack of sources. There is no dearth of relevant scholarship demonstrating the possibility and necessity of specifically studying the early Middle Ages. Recent studies devoted to the history of abortion, for instance, rightly warn against projecting the categories of scholastic systematic theology and embryology about fetal development and ensoulment onto early medieval texts<sup>23</sup>. Historians have also highlighted the absence of documentation attesting to the existence of midwives before the thirteenth century. In that respect, the early Middle Ages represent a clear break in birth practices compared to the ancient world (where trained and literate midwives had a broad mandate over childbirth and women's health) as well as to the late medieval and early modern periods<sup>24</sup>.

tributions on the Middle Ages: Ch. de Miramon, M. van der Lugt, «Sang, hérédité et parenté au Moyen Âge: Modèle biologique et modèle social. Albert le Grand et Balde», 21-48; L. Loviconi, «Réflexions autour des maladies héréditaires dans les traités médicaux des XIV<sup>e</sup> et XV<sup>e</sup> siècles», 49-73.

23. M. Elsackers, *Reading between the Lines: Old Germanic and Early Christian Views on Abortion*, PhD Universiteit van Amsterdam, 2010; Z. Mistry, *Abortion in the Early Middle Ages, c. 500-900*, Woodbridge 2015.

24. See M. H. Green, «Bodies, Gender, Health, Disease: Recent Work on Medieval Women's Medicine», *Studies in Medieval and Renaissance History*, 2 (2005), 1-46, on 15-17; Green, *Making Women's Medicine Masculine*, *passim*; Cabré, «Women or Healers?»; Harris-Stoertz, «Midwives in the Middle Ages?»; Park, «Managing Childbirth and Fertility in Medieval Europe», 157.

The available scholarship also invites us to rethink conventional periodisations. Despite some efforts to integrate the later Middle Ages and the early modern period in studies devoted to generation, there is still a tendency to implicitly or explicitly consider the years around 1500 as a watershed. While this stands to reason in some respects (the printing press facilitated the dissemination of knowledge about generation, and the revival of Hippocratic medicine ended the hegemony of Aristotelian physiology)<sup>25</sup>, other moments of inflection seem just as relevant. The late thirteenth and early fourteenth centuries saw the creation of several crucial concepts (noble blood, hereditary disease)<sup>26</sup> as well as the emergence of the new literary genre of 'women's secrets'<sup>27</sup>. While the fascination with the female body as a site of generation reflected in these texts often has a decidedly misogynistic tone, these and other sources also hint at new anxieties among later medieval elites about their capacity to produce healthy heirs, preferably male. This new fear of defects must be understood in the context of a growing concern for health in later medieval society: as texts on generation and women's secrets proliferated, so did regimens of health and treatises on the prolongation of life<sup>28</sup>. The demographic crises of the fourteenth

25. P. Murray Jones, «Generation between Script and Print», in *Reproduction*, Hopwood, Flemming, Kassell (ed.), 181-93; G. Pomata, «Innate Heat, Radical Moisture and Generation», *ibidem*, 195-208.

26. Ch. de Miramon, «Aux origines de la noblesse et des princes du sang. France et Angleterre au XIV<sup>e</sup> siècle» in *L'hérédité entre Moyen Âge et Époque moderne*, van der Lugt, Miramon (ed.), 157-210; Id., «Noble Dogs, Noble Blood. The Invention of the Concept of Race in the Late Middle Ages», in *Racism in Western Civilisation before 1700*, M. Eliav-Feldon, B. Isaac, J. Ziegler (ed.), Cambridge 2008, 200-16; M. van der Lugt, «Les maladies héréditaires dans la pensée scolastique», in *L'hérédité entre Moyen Âge et Époque moderne*, 273-320; Loviconi, «Réflexions autour des maladies héréditaires». For the early fourteenth century as a turning point, see Van der Lugt, Miramon, «Penser l'hérédité au Moyen Âge: Une introduction» in *L'hérédité entre Moyen Âge et Époque moderne*, 3-40 and Van der Lugt, Miramon, «Sang, hérédité et parenté au Moyen Âge».

27. K. Park, *Secrets of Women. Gender, Generation, and the Origins of Human Dissection*, New York 2006; Green, *Making Women's Medicine Masculine*.

28. M. Nicoud, *Les régimes de santé au Moyen Âge. Naissance et diffusion d'une écriture médicale (XIII<sup>e</sup>-XV<sup>e</sup> siècle)*, Roma 2007; C. Crisciani, L. Repici, P. B. Rossi (ed.), *Vita longa: vecchiaia e durata della vita nella tradizione medica e aristotelica antica e medievale*, Firenze 2009 (Micrologus Library, 33).

century probably exacerbated concerns about preserving one's lineage, although the surge in works devoted to fertility preceded the great famines and the Black Death<sup>29</sup>. The fear of degeneration seems symptomatic of a more general awareness of the fragility and fickleness of life. The wheel of fortune might turn, the political situation might change; no one is safe from illness, bankruptcy, disgrace, and banishment. Resignation or placing one's fate in God's hand was one option; trying to counter uncertainty with technical knowledge was another. The later Middle Ages saw the flourishing of astrology, divination, and physiognomy, sciences that promised help in choosing and cultivating friendships, recognising enemies, and taking the right decisions. The late medieval 'art of generation' was another way to try to control one's destiny.

However, general narratives and chronologies only go so far. It has been shown, for instance, that some texts on generation and gynaecology were widely circulated across medieval Europe, while others had a more regional reach or were adapted in some, but not all, vernaculars<sup>30</sup>. A lot of our evidence comes from Italy and cannot be automatically applied to the rest of medieval Europe. It is important to acknowledge that there were no universities and medical faculties in the lands of the Holy Roman Empire until the late fourteenth century, Britain lacked medical guilds until the sixteenth century, and the licensing of midwives occurred according to different chronologies and took different trajectories in different parts of medieval Europe. The cults of saints specialising in fertility and childbirth were often local, and respite sanctuaries for the temporary revival of dead infants only existed in some regions. More comparative studies acknowledging regional differences in institutional, social, and cultural landscapes are needed.

29. On the impact of the plague, see P. Biller, «The Multitude in Later Medieval Thought», in *Reproduction*, Hopwood, Flemming, Kassell (ed.), 141-51, on 150. Monica Green, *Making Women's Medicine Masculine*, also repeatedly relates the interest in generation to the demographic crises of the fourteenth century.

30. See for instance *ibid.*, 246-65, for a comparative description of the production of gynaecological literature in different countries in the fifteenth century.

Non-Christian perspectives in general accounts of generation in the Middle Ages also merit further attention. An argument can certainly be made for restricting narratives on the subject to Europe and even to the Latin West. However, while Muslim populations declined considerably in the wake of the Reconquista and the Norman conquest of Sicily and Southern Italy, sizeable Jewish communities subsisted in many parts of Western Europe (especially the Mediterranean and Northern France) until the later Middle Ages and beyond, despite repeated expulsions.

Moreover, as is well known, Jewish medical practitioners catered not only to their own communities, but also to Christians, including clerical and lay elites<sup>31</sup>. From the 1230s on, the promulgation of ecclesiastical and secular decrees prohibiting or restricting Christian recourse to Jewish physicians, midwives, and wet nurses largely remained a dead letter<sup>32</sup>. In crisis situations, Jewish practitioners were nevertheless more at risk than their Christian counterparts. At the early fifteenth-century trial in Marseille of a Jewish midwife accused of having caused the death in childbirth of a Christian woman, anti-Jewish sentiments clearly came into play<sup>33</sup>. Distrust surrounding the hiring of midwives and wet nurses across religious borders was mutual. Christian midwives and, more commonly, wet nurses also worked for Jewish families, despite Jewish fears that they might try to convert Jewish mothers during labour or kill or secretly baptize their babies. It seems likely that, wherever possible, Christian and

31. J. Shatzmiller, *Jews, Medicine, and Medieval Society*, Berkeley-Los Angeles 1994, 56-77, 94-95.

32. *Ibid.*, 78-99; M. McVaugh, *Medicine before the Plague. Practitioners and their Patients in the Crown of Aragon (1285-1345)*, Cambridge 1993, 59-64; J. Sibon, «Échanges de pratiques et de savoirs entre médecins juifs et chrétiens à Marseille au XIV<sup>e</sup> siècle», in *Acteurs des transferts culturels en Méditerranée médiévale*, D. König, Y. Benhima, R. Abdellatif, E. Ruchaud (ed.), München 2012, 157-67, on 160; G. Dumas, *Santé et société à Montpellier à la fin du Moyen Âge*, Leiden 2015, 38-39.

33. M. H. Green, D. L. Smail, «The Trial of Floreta d'Ays (1403). Jews, Christians and Obstetrics in Later Medieval Marseille», *Journal of Medieval History*, 34 (2008), 185-211. J. Shatzmiller notes, however, that in many trials, the Jewishness of the accused practitioners seems to play no role (*Jews, Medicine, and Medieval Society*, 83).

Jewish mothers preferred calling on birth assistants and wet nurses from their own religion<sup>34</sup>.

Jewish physicians owed their ability to attract and retain Christian clients in large part to their education. Despite some fourteenth- and fifteenth-century examples of Jewish students being allowed to attend medical courses at the universities of Montpellier and Bologna, Jewish access to Greco-Arabic learning relied on the development of medical literature in Hebrew from the twelfth century on. Most of these treatises were translations or adaptations from Latin texts, which were themselves often translations from the Arabic or the Greek<sup>35</sup>. Generation, obstetrics, and women's health make up a sizeable portion of this new medical corpus in Hebrew<sup>36</sup>. Strikingly, most of these texts are faithful to their Latin models, probably in order to allow Jewish physicians to rival their Christian counterparts<sup>37</sup>. In Islamic lands, Jewish physicians also adapted their work for their Muslim patrons by writing their medical texts in Arabic, the language of medical and scientific learning, and ignoring Jewish prohibitions concerning contraception and abortion<sup>38</sup>.

34. See Baumgarten, *Mothers and Children*, 49–52.

35. Shatzmiller, *Jews, Medicine and Medieval Society*; C. Caballero Navas, «Medical Knowledge in Hebrew. Manuscripts and Early Printed Books», *Medicina nei secoli. Arte et scienza*, 17 (2005), 275–92, and Ead., «Medicine among Medieval Jews. The Science, the Art and the Practice», in *Science in Medieval Jewish Cultures*, G. Freudenthal (ed.), Cambridge 2011, 320–42. Some scholastic medical texts have been translated from Latin into Hebrew, see N. Cohen-Hanegbi, «Transmitting Medicine across Religions: Jean of Avignon's Hebrew Translation of the *Lilium medicine*», in *Latin-into-Hebrew. Texts and Studies*, R. Fontaine, G. Freudenthal (ed.), Leiden 2013, I, 121–45.

36. R. Barkai, *A History of Jewish Gynaecological Texts in the Middle Ages*, Leiden 1998, and C. Caballero Navas, «She Will Give Birth Immediately. Pregnancy and Childbirth in Medieval Hebrew Medical Texts in the Mediterranean West», *Dynamis*, 34 (2014), 377–401.

37. As suggested by C. Caballero Navas (oral communication).

38. See B. Musallam, *Sex and Society in Islam. Birth Control before the Nineteenth Century*, Cambridge 1983, 66; Ch. Burnett, «The Latin Versions of Maimonides' *On Sexual Intercourse (De coitu)*», in *Between Text and Patient: the Medical Enterprise in Medieval and Early Modern Europe*, F. E. Glaze, B. K. Nance (ed.), Firenze 2011 (Micrologus Library, 39), 467–80; G. Bos, *Maimonides On Coitus, A New Parallel Arabic-English Edition and Translation*, Leiden 2018.

However, at least one medieval treatise in Hebrew shows clear signs of Judaisation. Composed in Southern France between 1197 and 1199<sup>39</sup> and based on the late antique Latin adaptation by Muscio of Soranos' *Gynaecia*, the *Book on Generation* (*Sefer ha-toledet*) assumes the form of a dialogue between two biblical figures, Jacob and his daughter Dinah. It is laced with biblical and Talmudic citations and takes into account Jewish norms and values. Soranos' and Muscio's remark about the dangers of pregnancy for a woman's health has been eliminated, and the idea that eternal virginity is conducive to health toned down<sup>40</sup>.

As this example suggests, the ways in which the same Greek medical and scientific heritage about generation was transmitted, assimilated, and adapted according to various cultural, social, and religious settings merits more systematic scrutiny<sup>41</sup>. Comparative studies of Christian, Jewish, and Islamic perspectives and customs related to generation and childbirth and integrating a wide variety of sources would also be particularly valuable<sup>42</sup>. They would allow us to identify affinities and differences in reception and better understand how specific norms, beliefs, and practices related to marriage, sex, and childbearing informed the study of generation and how knowledge of the physiology of generation in turn influenced social and religious practices, norms, and beliefs.

39. See R. Barkai, *Les infortunes de Dinah: le Livre de la génération. La gynécologie juive au Moyen Âge*, Paris 1991; Id., *A History of Jewish Gynecological Texts, passim*. In *A History*, Barkai refutes the identification of the author and date he proposed in *Les infortunes de Dinah*, accepting the date 1197-1199 already proposed by Moritz Steinschneider.

40. Barkai, *Les infortunes de Dinah*, 137-38; Idem, *A History*, 33-34, 56.

41. For theories of generation and ensoulment in medieval Islamic medicine, notably Avicenna, see Fancy, «Generation in Medieval Islamic Medicine». A. Giladi, *Infants, Parents and Wet Nurses, Medieval Islamic Views on Breastfeeding and their Social Implications*, Leiden 1999, draws on theological, legal and some medical sources.

42. E. Marienberg, *Niddah. Lorsque les juifs conceptualisent la menstruation*, Paris 2003, offers comparisons between Jewish thought on menstruation and Christian theology. E. Baumgarten, *Mothers and children*, 105-15, effectively compares postpartum rituals in medieval Christian and Jewish communities.

*The Use and Abuse of Semantic Anachronism*

The broadened approach to the history of generation has been very fruitful and can, as I have suggested, be extended in several other directions, including the early Middle Ages and non-Christian perspectives both within and outside the medieval West. In order to communicate effectively with specialists studying other medieval societies, it is necessary to be aware of the terms and concepts being used. This is even more crucial when medievalists engage with historians of the more recent past, representatives of other disciplines, and the general public. Like other historians, the historian of medieval generation must connect the universal biological mechanism between times and cultures and try to delineate the specificity of generation in the Middle Ages. Some use of modern terms is inevitable to allow for dialogue and comparisons, but uncritical use of modern terms should be avoided.

In order to respect medieval terms and concepts, the term 'generation' is more appropriate than 'reproduction'. Reproduction in a biological sense does not have an equivalent in medieval Latin. Medieval thinkers used the Aristotelian notion of generation as the production of a new being of the same kind. However, reproduction according to its current meaning refers less to this artisanal idea of the replication of a form than to species as a population inhabiting a specific place<sup>43</sup>.

The medieval concept of generation in living beings was a subcategory of generation in a broader sense. Coupled with cor-

43. The notion that generation was replaced by reproduction in the mid-eighteenth century was first introduced by François Jacob in his classic *La logique du vivant. Une histoire de l'hérédité*, Paris 1970; English translation *The Logic of Life. A History of Heredity*, New York 1973. See Hopwood, «The Keywords 'Generation' and 'Reproduction'». For its part, at the turn of the nineteenth century, the concept of generation acquired a new sense: that of a group of coevals. See S. Weigel, «Generation, Genealogie, Geschlecht: Zur Geschichte des Generationskonzepts und seiner wissenschaftlichen Konzeptionalisierung seit Ende des 18. Jahrhunderts», in *Kulturwissenschaften: Forschung - Praxis - Positionen*, L. Musner, G. Wunberg (ed.), Wien 2002, 161-90; S. Wiler, O. Parnes, U. Vedder, *Das Konzept der Generation. Eine Wissenschafts- und Kulturgeschichte*, Frankfurt a/M 2008, 64-68.



ruption, generation referred to the process of coming into being and disappearing of everything that exists in the sublunary world: plants, animals, and humans, as well as the elements, gemstones, and metals.

Like the modern concept of reproduction, generation could also be used analogically. In alchemy, the vocabulary of generation, digestion and growth was used to describe the transformation of metals<sup>44</sup>. Analogical and metaphorical uses of generation were even more common in theology. Medieval theologians used generation as an analogy for baptism and the relationship between Father and Son in the Trinity. They also conflated generation and creation as different ways for God to produce human beings. God foresaw all of humankind in Adam and intervened in human generation on a daily basis by creating and infusing the immortal soul into the embryo. In this respect, generation was quite literally procreation, the daily continuation of creation through sexual intercourse, which was thereby justified.

Does this 'spiritualisation' of generation mean that there was no embryology and no physiology of conception and development, as some specialists of modern biology have claimed<sup>45</sup>? In my view, this is going too far. While it is certainly the case that the doctrine of the immortal soul infused by God set apart and sacralised human generation, this did not preclude the development of physiological accounts of its mechanism. Medieval physicians largely ignored the soul. They also adhered to a notion of life based on the Galenic concept of spirits (*spiritus*): warm, subtle, invisible yet material fumes circulating throughout the body, agents and vehicles of all vital functions<sup>46</sup>. More fundamentally, the notion of some deep incompatibility between embryology and the soul seems symptomatic of preconceived ideas about medieval thought and the relationship between science and religion. Conversely, materialism does not necessarily

44. Cf. J.-M. Mandosio, «Basilisks, Lettuce, and the Stone which is not a Stone: on the Relationship between Living Things and Inert Substances in Medieval Alchemy», in *Substances minérales et corps animés. Mineral substances and animate bodies (1100-1500)*, D. Jacquart, N. Weill-Parot (ed.), Paris 2012, 111-43.

45. Wiler, Parnes, and Vedder, *Das Konzept der Generation*, 64-68.

46. J. J. Bono, «Medical Spirits and the Medieval Language of Life», *Traditio*, 40 (1984), 91-130.

imply desacralisation. The fact that, since the nineteenth century, the soul has become a non-issue in embryology, aside from a handful of neo-scholastic thinkers, has not led to a desacralisation of the human embryo<sup>47</sup>. We are perhaps closer to the fascinated horror of scholastic readers before a magical text proposing a procedure for creating a homunculus by crossing a male human and a cow than some specialists of modern biology would like us to believe<sup>48</sup>.

The disqualification of medieval thought about generation as too imbued with religion to be scientific also reflects the tendency to consider medieval thought as monolithic and homogeneous. The specific characteristics of genre and type and level of discourse are often ignored. But a bestiary is not the same as a commentary on Aristotle, a sermon is not a code of law, and a devotional meditation is not a theological *summa*. While it is true that generation could be both material and spiritual, sacred and profane, medieval thinkers also used polysemic words like generation or spirit in highly technical and circumscribed meanings. Terminological and conceptual precision is the hallmark of the scholastic method.

The student of medieval generation should also be aware of false continuities. The use of words like ‘conception’, ‘embryo’, ‘fetus’, ‘population’, ‘infertility’, and ‘heredity’ is far from straightforward. Even though these terms have Latin equivalents in medieval sources, they must be understood according to the medieval theory of generation, which ignores ovules, spermatozoa, and cells. In that respect, terms like ‘fertilisation’ and ‘implantation’ are better avoided<sup>49</sup>. According to medieval theory, the embryo developed from a mixture of liquids. Once constituted, it was nourished by menstrual blood. Conception and

47. Cf. F. Bellivier, «Espèce humaine», in *Dictionnaire du corps*, M. Marzano (ed.), Paris 2007; M. van der Lugt, Ch. de Miramon, «Penser l'hérédité au Moyen Âge. Une introduction», in *L'hérédité entre Moyen Âge et Époque moderne*, 1-38, on 9-10.

48. Cf. W. Newman, *Promethean Ambitions. Alchemy and the Quest to Perfect Nature*, Chicago 2004; M. van der Lugt, «'Abominable Mixtures'. The *Liber Vaccæ* in the Medieval West or the Dangers and Attractions of Natural Magic», *Traditio*, 64 (2009), 229-77.

49. See for instance, Hewson, *Giles of Rome*, 167.

embryogenesis were considered in terms of the coagulation, solidification, and modelling of unformed and easily moulded matter. The analogy of curdled milk, already found in the Old Testament and in Aristotle, was widely shared. Within this conceptual framework, *conceptio* refers either to this process of formation, with the *conceptum* as its result<sup>50</sup>, or to the moment of the emission of sperm into the female body or the mixing of the ‘first principles’ of generation<sup>51</sup>. This mixing of male and female seed, or male seed and menstrual blood, according to the more Galenic or Aristotelian views adhered to by authors, is nothing like the fateful encounter of sperm and egg. Many other factors were thought to influence the sex and individual features of the fetus, from the direction of the wind, astral constellations, the embryo’s place in the uterus, and parental (and especially maternal) imagination to a woman’s food and drink intake during pregnancy and lactation. It was believed that the same blood that fed the fetus *in utero* was transformed into milk to nourish it once it was born. According to this perspective, lactation was less the early stage of raising a child than the last phase of gestation. Significantly, the term *fetus* could refer not only to the unborn child, but also to the infant. Scholastics talk about the nourishment of the fetus ‘before and after birth’ or ‘inside and outside’ the womb. In medieval medicine, infant care was closely associated with obstetrics, gynaecology, and embryology. Up until the late fifteenth century, paediatrics was part of a broader ‘art of generation’, which covered the time frame between conception (and even before) and weaning (or even several years after)<sup>52</sup>. In

50. For instance Augustine, *De diversis quaestionibus octoginta tribus*, ed. A. Mutzenbecher, Turnhout 1975 (CCSL, 44A), 95. In certain penitentials, *ante conceptum* refers to the first phase of pregnancy, see Flandrin, *Un temps pour embrasser*, 90. See also Johannitius, *Isagoge*, par. 71, ed. Gregor Maurach, «Johannitius Isagoge ad Techne Galieni», *Sudhoffs Archiv*, 62 (1978), 148–74, on 167.

51. See for instance Mondino de’ Liuzzi, *Expositio super capitulum De generatione embryonis Canonis Avicennae cum quibusdam quaestionibus*, lectio 7, ed. cit., 77, and *Secrets of Women*, ed. cit., 232.

52. On the beginnings of paediatrics, see L. Demaitre, «The Idea of Childhood and Child Care in Medical Writings of the Middle Ages», *The Journal of Psychohistory*, 4 (1977), 461–90; D. Jacquart, «Naissance d’une pédiatrie en milieu de cour», in Ead., *Recherches médiévales sur la nature humaine. Essais sur la réflexion médicale (XII<sup>e</sup>-XV<sup>e</sup> s.)*, Firenze 2014 (Micrologus Library,

that respect, the historian of generation should not cut the cord too abruptly at birth<sup>53</sup>.

For medieval authors, conception was a process, not just an event. One of the consequences of this way of thinking, associated with the practical difficulty of establishing the presence of the embryo in the early stages of pregnancy (not least for medieval women themselves), is the absence of a clear distinction between contraception and abortion<sup>54</sup>. In medieval sources, the term *aborsus* could refer not only to abortion according to its current definition, but also to spontaneous miscarriage, the accidental loss of a fetus by third party assault, and deliberate efforts to deliver a woman of a fetus that had already died. In normative texts, the meaning of *aborsus* is usually clear, but medical texts are often more ambiguous. While one should not efface these ambiguities, systematically translating *aborsus* as abortion has some drawbacks<sup>55</sup>.

Like *aborsus*, the medieval concept of infertility (*sterilitas* or *impedimenta conceptionis*) is broader than our modern notion. In most medical treatises, the category comprised general recommendations for conception and regimen, as well as gynaecological and even obstetrical advice<sup>56</sup>. Moreover, there was no distinct division between a general concern about fertility and advice for the production of a male fetus. The popularity of such advice was probably related to the growing importance of male heirs in

63), 195–210; Al-Râzî, *On the Treatment of Small Children (De curis puerorum)*. *The Latin and Hebrew Translations*, ed. M. McVaugh, G. Bos, Leiden 2015, introduction. See also W. Macle hose, *A Tender Age. Cultural Anxieties over the Child in the Twelfth and Thirteenth Centuries*, New York 2006, 60.

53. See M. van der Lugt, «Nature as Norm in Medieval Medical Discussions of Maternal Breastfeeding and Wet-Nursing», *The Journal of Medieval and Early Modern Studies*, 49 (2019), 563–88, on 565–66.

54. See J. Cadden, «Medicine and Natural Philosophy», in *Handbook of Medieval Sexuality*, V. Bullough, J. Brundage (ed.), New York 1996, 51–80, on 61.

55. In his recent monograph, Zubin Mistry, *Abortion in the Early Middle Ages*, XIII, has for his part chosen to translate *aborsus* systematically as abortion in order to respect the Latin. Mistry uses «abortion by assault» for miscarriage caused by the violence of a third party.

56. See J. Cadden, *Meanings of Sex Difference*, 228–58. At least two medieval treatises did, however, define infertility in a more limited way. See *Tractatus de conceptu. Tractatus de sterilitate mulierum*, P. Conde Parrado, E. Montero Cartelle, M. Cruz Herrero Ingelmo (ed.), Valladolid 1999.

late medieval society, but it was neither a treatment for what we call infertility nor necessarily a response to childlessness.

'Population' and 'heredity' should also be used prudently. While it is reasonable to use modern demographic terminology while discussing the realities of medieval population levels, growth/decline, fecundity, and mortality, it is important to remember that *populatio* in medieval Latin only referred to the act of peopling an area. When medieval authors thought demographically, they used the term multitude (*multitudo*). Moreover, medieval demographic thought was not a field or a discipline, but instead emerged in several circumscribed and not necessarily interconnected contexts<sup>57</sup>.

Genetics also developed late, over the course of the nineteenth century and the first half of the twentieth century. The modern concept of heredity presupposes a clear distinction between the transmission of characteristics and their production in the organism. Before the 'Mendelian revolution', there was no such general and 'hard' notion of heredity, as distinguished from the contingencies of conception, gestation, birth, and lactation<sup>58</sup>. Moreover, learned medieval discourse was often hostile to the idea of heredity. Christian theology insisted on the unity of humankind, a tendency that Aristotelian philosophy emphasised. Meanwhile, medicine and physiognomy concentrated on the individual, often minimising or ignoring parental determinism. Medieval society was based on kinship and inheritance but lacked a coherent ideology to justify this structure.

Even so, biological heredity did not come out of nowhere<sup>59</sup>. As previously mentioned, the notion of noble blood is of

57. See Biller, *The Measure of Multitude*, 5-16; Id., «The Multitude in Later Medieval Thought», 141.

58. Jacob, *La logique du vivant* (tr. *The Logic of Life*); R. Olby, *Origins of Mendelism*, Chicago, London 1985; P. Bowler, *The Mendelian Revolution. The Emergence of Hereditarian Concepts in Modern Science and Society*, London 1989; J.-L. Fischer, W. H. Schneider (dir.), *Histoire de la génétique. Pratiques, techniques et théories*, Paris 1990; J. Gayon, «Entre force et structure: genèse du concept naturaliste de l'hérédité» in *Le paradigme de la filiation*, J. Gayon, J.-J. Wunenburger (dir.), Paris 1995, 61-75; Müller-Wille, Rheinberger, *Vererbung* (tr. *A Cultural History of Heredity*).

59. Müller-Wille, Rheinberger, *Vererbung* (tr. *A Cultural History of Heredity*); Id., (ed.), *Heredity Produced*; Van der Lugt, Miramon (ed.), *L'hérédité entre Moyen Âge et Époque moderne*.

medieval origin, as is the introduction of the term race. Medieval physicians were the first to transfer the vocabulary of the transmission of goods from the legal to the biological realm and clearly distinguish between hereditary diseases and other congenital diseases. However, hereditary disease was not yet perceived as an urgent public health matter, discussion on the subject remained rare, and hereditary vocabulary was limited to pathology and almost only used as an adjective or a verb. The introduction of the noun in the nineteenth century indicates the reification and generalisation of the concept<sup>60</sup>. In that respect, generation, and not heredity, remained the central concept in medieval medicine and natural philosophy. It encompassed what would later be separated into reproduction, heredity, and development.

Broader historical perspectives on medieval generation, combined with the extensive study of scholastic texts, have increased our awareness of the complexity of words and concepts, as opposed to a naïve approach to the history of science, fixated on finding the present in the past. However, like comparison, controlled anachronism is also an essential analytical tool.

On a final note, I would like to suggest that confronting medieval generation with eugenics can be productive. As is well known, the term eugenics was forged by Francis Galton in 1883 and bears ominous connotations. Nonetheless, it may provide a better understanding of the specificity of medieval concerns about the health of offspring. Eugenics is usually understood as the aim to improve the human race or avoid its degeneration through controlling marriage and childbirth (racial laws, forced sterilisation campaigns, and abortion). Understood in this way, the exposure of newborns in Sparta, Plato's *Republic*<sup>61</sup>, and early modern Iberian laws on the 'purity of blood' may be termed eugenic<sup>62</sup>. Before the mid-nineteenth century, such concerns

60. See C. López-Beltrán, «Forging Heredity: from Metaphor to Cause, a Reification Story», *Studies in History and Philosophy of Science*, 25 (1994), 211-35.

61. F.-X. Ajavon, *L'eugénisme de Platon*, Paris 2002; J. Gayon, D. Jacobi (ed.), *L'éternel retour de l'eugénisme*, Paris 2006.

62. A. A. Sicroff, *Les controverses des statuts de 'pureté de sang' en Espagne du XV<sup>e</sup> au XVII<sup>e</sup> siècle*, Paris 1960 remains relevant. More recent bibliography is cited in M. Jonin, «De la pureté de foi vers la pureté de sang. Les

remained marginal, whereas the fortune of eugenics as a scientific and political ideology is associated with the development of the modern state and the rise of the life sciences.

However, we may also understand the term in a broader sense, according to its etymological meaning of 'a good birth'. In this sense, eugenics involves any discourse, method, or policy favouring the birth of beautiful, healthy children of the right sex or avoiding the opposite. There was ample room in medieval theories of generation for such interventions. Most of these concentrated on individual couples, rather than groups or populations, and took the form of advice for adapting behaviour and the environment before, during, and after conception, rather than the selection of marriage partners. By targeting the ways in which individual couples might produce healthy children of the right sex, the medieval 'art of generation' diverges sharply from classic nineteenth- and twentieth-century eugenics. It is perhaps more akin to today's methods of preventing disease through counselling and prenatal and preimplantation testing and the increasingly stringent lifestyle advice targeting pregnant women and those trying to conceive. Some modern scholars have deemed these new methods eugenic, associating them with adjectives such as 'individual', 'liberal', 'home', and 'new' to distinguish them from the classic eugenics of old<sup>63</sup>. Today's new methods to avoid hereditary and congenital disease posit the agency of would-be parents with regard to manipulating a biological process in order to produce the offspring they desire. In this sense, modern parents are again making and shaping their babies. Generation in the Middle Ages was also a field with multiple actors: parents, physicians, midwives, theologians, and lawyers. Like today, generation reveals a great deal about a society and its values.

ambiguïtés orthodoxes d'un plaidoyer *pro converso*», in *L'hérédité entre Moyen Âge et Époque moderne*, Van der Lugt, Miramon (ed.), 83–102. As shown by Peter Biller (*The Measure of Multitude*), the Middle Ages have also reflected on the necessity and admissibility of demographic control.

63. J. Gayon, «Le mot 'eugénisme' est-il encore d'actualité?», in *L'éternel retour de l'eugénisme*, 119–42.

## ABSTRACT

Maaïke van der Lugt, *Generation in the Middle Ages. Past, Present, Future*

This article takes a retrospective and prospective look at the study of the history of generation in the Middle Ages. Whereas early studies focused on theories and ideas developed in the medieval schools and universities, historians have, since the 1970s, become increasingly interested in the dissemination, circulation and vernacularisation of medical and philosophical learning and in hands-on skills, especially of women. Norms, beliefs, and values around sexuality, childbirth, and marriage, in addition to social, religious, legal and cultural practices have likewise attracted increasing attention. The article identifies several avenues for further research. The available scholarship invites us to rethink conventional periodisations. More comparative studies acknowledging regional differences in institutional, social, and cultural landscapes within the Latin West are needed. Jewish and Islamic perspectives also merit further attention. In-depth comparative studies would allow us to identify affinities and differences in reception of the same Greek heritage and better understand how specific norms, beliefs, and practices related to marriage, sex, and childbearing informed the study of generation and how knowledge of the physiology of generation in turn influenced social and religious practices, norms, and beliefs. The last section proposes some methodological reflections on key terms (generation, reproduction, conception, heredity, infertility, abortion, etc.) and on the danger and uses of anachronism in the study of generation.

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