Friedrich Nietzsche did not have many favorable things to say about the Middle Ages. It may therefore come as a surprise that in one of his *Notes (Nachgelassene Fragmente)*, written in the summer of 1875, Nietzsche observes that the Middle Ages demonstrated their power of thought by following one great idea, including all its complex implications, to its logical conclusion.\(^1\) This is certainly true of the Christian idea of God, which the Middle Ages discussed deeply and extensively, and without shying away from its most extreme consequences.

The Middle Ages, however, were also rich in alternative ideas. When Gaunilo of Marmoutiers argued against Anselm of Canterbury that the proposition “Non est Deus.” was a valid thought – even though only a fool might believe it –, he effectively set a landmark on the way to early modern atheism. Furthermore, it seems that – despite this idea’s being branded as foolishness by the church\(^2\) – many people actually believed that there

\(^1\) “Andre Zeiten haben ihre Kraft gezeigt im zu Ende Denken und im alle Möglichkeiten Verfolgen Eines grossen Gedankens: die christlichen z.B.” (Nietzsche, Nachgelassene Fragmente, Sommer 1875; Werke IV.1, 191, 1–4).

\(^2\) In psalter illustrations, the God-denying fool of Psalms 13 and 52 is almost always depicted as a madman or a jester (see Kolve 1997).
was no God. When Ockham discussed the question of whether one could prove God’s existence, he admitted that the proposition “Deus est.” is not self-evident since there are many who doubt it.\(^3\)

These alternative ideas – you may also call them heterodox or even heretic, depending on your point of view – are part of the medieval legacy, and they also show the power of thought that Nietzsche found so compelling in the medieval sources he studied.

In this paper, I will present some late medieval theories of emergence that aim at an understanding of the human intellect (\textit{intellectus humanus}) as having evolved from matter, or, using the technical term of these discussions, as being “educed from the potency of matter” (\textit{eductus de potentia materiae}). I will focus on the discussions in Paris during the fourteenth and fifteenth centuries, but will also touch on their reverberations at other late-medieval universities.

For someone looking back at the Middle Ages from Descartes’s dichotomy between \textit{res extensa} and \textit{res cogitans}, it may seem ridiculous to ask how something material, that is to say something extended in space, can produce something intellectual, that is to say something not extended in space and purely immaterial. How can matter actually \textit{become} mind? How can something as simple and dependent as matter produce something as complex and independent as human thought?

The difficulties in conceiving of such a notion were probably even greater during the Middle Ages. The concept of the Great Chain of Being was commonplace among philosophers. It was generally assumed that something intellectual could only derive from a higher-ranking being in this hierarchy, such as God or the celestial intelligences. Today, we are used to the idea that any degree of complexity can be produced from extremely simple rules or trivially basic initial conditions,\(^4\) but during the Middle Ages, such a kind of bottom-up approach was a bold idea indeed; the top-down approach was the usual way of thinking.

\(^3\) William of Ockham, \textit{Quodlibeta Septem}, I, q.1: “haec propositio “Deus est” non est per se nota, quia multi dubitant de ea” (Opera Theologica IX, 2, 27–28). See also \textit{In I Sententiarum}, d.2, q.9: “multi dubitant Deum esse et utrum sit possibile Deum esse” (Opera Theologica II, 313, 18–19).

\(^4\) This is especially apparent in the realm of cellular automata. Recently, Steven Wolfram has used the discoveries in this field as a guide for his magnum opus Wolfram (2002). Wolfram sets the agenda when he claims: “In fact, however, just how complexity arises was never really resolved, and in the end I believe that it is only with the ideas of this book that this can successfully be done.” (861)