

The Eucharist.

- Transformation of bread and wine into body and blood of Christ during the Holy Mass.
- Key ideas present in S. Ambrose's *Sacraments*.
- *Berengar of Tours* (c.1000-1088). Criticism of the theory of substantial change (Paschasius Radbertus):
 - (a) problems with substance change,
 - (b) analysis of the pronoun in *Hoc est corpus meum*.Dialectical battle with Lanfranc.
Cf. T. J. **Holopainen**, *Dialectic & Theology in the Eleventh Century*, Leiden 1996.
- *Transsubstantiation* (1215): Bread and wine keep their accidents (taste *etc.*), but change substance.
- *Consubstantiation*: Lutheran, Anglican, Reformed.
Symbolism: Zwinglian.
Spiritual presence: Methodist.

Trinity and Incarnation (1).

● Trinity

- *Council of Toledo (675)*: “Although we profess three persons we do not profess three substances but one substance and three persons... If we are asked about the individual Person, we must answer that he is God. Therefore, we may say God the Father, God the Son, and God the Holy Spirit; but they are not three Gods, he is one God... Each single Person is wholly God in himself and ... all three persons together are one God.”
- *Modalism*. Plato is a teacher, a student and a philosopher at the same time.
- *Tritheism*. Father, Son and Holy Spirit are three persons. (Roscelin of Compiègne; c.1045-c.1120.)
- *homoousios vs homoiousios*. The **iota** that almost split the Christian church (Edward Gibbon). Arius vs Athanasius. Council of Nicaea (325).

Trinity and Incarnation (2).

● Incarnation.

- *Council of Chalcedon (451)*: We confess one and the same our Lord Jesus Christ... the same perfect in Godhead, the same in perfect manhood, truly God and truly man ... acknowledged in two natures without confusion, without change, without division, without separation.

So, God the Son has two mutually contradictory properties at the same time.

- *Kenotism*. When God the Son was incarnated, he was not divine.

Free will.

- **Predestination:** the fate of human beings is predestined. The only way to salvation is **Grace**. Your actions do not change your chances of being saved.
- **Pelagius** (354-420) and the Pelagians reject predestination.
- **Predestination** (catholic dogma); **double predestination** (Gottschalk, Calvin).

Anselm's Ontological Proof (1).



Anselm of Canterbury (1033-1109)

- Archbishop of Canterbury
- “*sola rationale*”
- *De Libertate Arbitrii, Cur Deus Homo*
- A combination of Christianity, neoplatonic metaphysics, and Aristotelean logic.

Nam potest cogitari esse aliquid quod non possit cogitari non esse, quod maius est quam quod non esse cogitari potest. Quare si id quo maius nequit cogitari potest cogitari non esse, id ipsum quo maius cogitari nequit non est id quo maius cogitari nequit; quod convenire non potest. Sic ergo vere est aliquid quo maius cogitari non potest ut nec cogitari possit non esse. (Proslogion 3)

Anselm's Ontological Proof (2).

- *Premiss 1.* It is better to exist than not to exist.
- *Premiss 2.* Everyone –even the atheist– can understand the meaning of the phrase “*aliquid quod maius non cogitari potest*” and imagine this in his mind.
- Suppose the atheist believes that “*aliquid quod maius non cogitari potest*” does not exist, and let the atheist imagine this non-existent “*aliquid quod maius non cogitari potest*”. Then he can imagine something greater than that, namely the same thing plus the property “existence”. Consequently, he cannot maintain the view that “*aliquid quod maius non cogitari potest*” does not exist.

Anselm's Ontological Proof (3).

- Criticized by Gaunilo (“the greatest conceivable island”); Thomas Aquinas (1264).
- Abstract impossibility arguments due to Kant (1787), in terms of first-order / second-order logic due to Frege (1884).
- Ontological proof (in a framework of second-order modal logic) due to Gödel (1970).

The Education System (1).

- **Trivium.** (*Artes sermocinales.*)
 - *Grammar.*
 - *Rhetoric.*
 - *Dialectic/Logic.*
- **Quadrivium.** (*Artes reales / Artes physicae.*)
 - *Arithmetic.*
 - *Geometry.*
 - *Astronomy.*
 - *Music.*

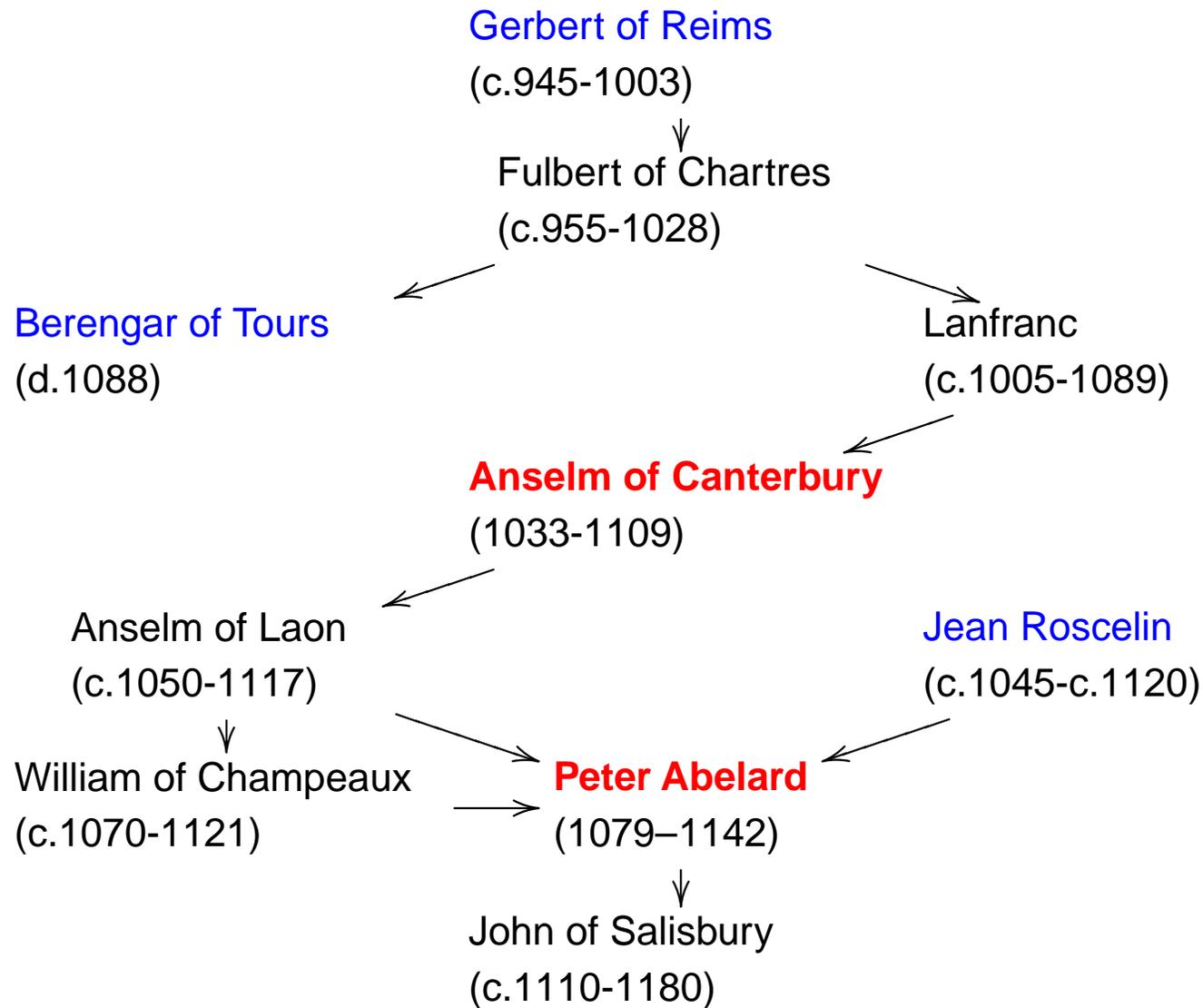
Ancient sources. Varro (116-28 BC), Cassidorus (c.490-c.585), Boëthius (c.475-524).

The Education System (2).

“Renaissances” of the Middle Ages.

- *Carolingian Renaissance.* Alcuin (735-804). Gottschalk and the first debate on double predestination. Johannes Scotus Eriugena (c.810-877).
- *Ottonian Renaissance.* Gerbert of Reims (later *Pope Sylvester II*; c.945-1003). Fulbert of Chartres (c.955-1028). Berengar of Tours (d.1088). Lanfranc (c.1005-1089). Anselm of Canterbury (1033-1109).
- *Renaissance of the XIIIth century.* Peter Abelard (1079-1142). John of Salisbury (c.1110-1180). The birth of the European University.

The Education System (3): A continuum?



Realism & Nominalism.

- Was not an issue in the 11th century (Gilbert the Porphyrist).
- Roscelin; Abelard (12th century).
- Aristotelian distinction:
 - **Universal substances: Animal, Human.**
 - **Particular substances: Socrates, Plato, Aristotle.**

Realists.

Universals exist independent of the particulars.

Problem. What is the ontological status of these universals?

Nominalists.

Universals exist only through the particulars.

Problem. Is it intuitively plausible that the concept 'tree' changes every time a tree is cut down?

Peter Abelard (1).



- 1079-1142.
- Abelard decides in favour of a clerical career against the will of his noble father. In 1094, he leaves home to study logic and dialectics under [Roscelin of Compiègne](#).
- Abelard comes to Paris and studies under [William of Champeaux](#). Public debates during lectures on universals.

Peter Abelard (2).

- 1102-1111. Abelard teaches in Melun, Corbeil, Paris.
- 1111-1113. Abelard goes to Laon to study theology with [Anselm of Laon](#).
- 1113-1118. Abelard is the mentor of Héloïse (1100-1163). They have a child, Astrolabe, and marry.
- 1118. Héloïse's uncle Fulbert hires thugs who castrate Abelard. Abelard becomes monk at St.Denis, Héloïse nun at Argenteuil.
- 1118-1136. Abelard lives as a monk.
- 1121. First condemnation (Council of Soissons).

Peter Abelard (3).

- 1136-1140. Abelard returns to teach in Paris.
- 1140. Second condemnation (Council of Sens).
- 1142. Abelard dies on the way to Rome.
- *Historia Calamitatum Mearum.* (1132)

Abelard's Logic.

- **The Square of Oppositions.** Discussion of the existential content of universal statements: Does “*Omnis homo est albus*” imply that there is a man?
- **Modal Logic.** Distinction of modal statements into *de re* and *de dicto*.
- **Temporal Logic.** Isolation of the concept of “true at a time”.
- **Propositional Logic.** Theory of conditionals.

Martin M. Tweedale, Abelard and the culmination of the old logic, *in*: N. Kretzmann, A. Kenny, J. Pinborg (eds.), *The Cambridge History of Later Medieval Philosophy*, Cambridge 1982, p. 143-158

Abelard: *quidam non* vs *non omnis*.

Abelard notices that the Aristotelian square of oppositions includes “existential import”:

“Every B is A ” implies “Some B is A ”,

so he reads “*omnis homo est albus*” as “there are men and all of them are white”.

Therefore, Abelard distinguishes between “*Non omnis homo est albus*” (“either there are no men or there are non-white men”) and “*Quidam homo non est albus*” (“there is a non-white man”).

Abelard: *de re* vs *de dicto*.

Abelard notices the modal logic distinction *de re* versus *de dicto*. (“*expositio per divisionem*” and “*expositio per compositionem*”), thereby developing a way to understand the Aristotelian “two Barbaras” problem.

However, he claims that *de dicto* modalities are not real modalities.

(This changes in Thomas Aquinas, *De Modalibus*.)

Abelard: true at time t .

Confusion in the Master Argument about tense and time.

Not all statements in past tense are necessarily true:

“Socrates did not talk to Plato.”

One attempt of a solution is to introduce a semantics of tense sentences that allows **truth at a time**.

One step in the direction of modern temporal logics.

Abelard: Conditionals.

A new (intensional) view of propositional logic:

“*Si non est A est B.*” is equivalent to “*Aut est A aut est B.*”

$$\neg A \rightarrow B \leftrightarrow A \vee B?$$

Abelard reads “*Si est A est B*” as “necessarily, A implies B ”, and thus has a different reading of the disjunction as “necessarily, $\neg A$ implies B ”.

Rediscovery of Aristotle.

- Until 1100: *Logica vetus*.
 - Aristotle, *Categoriae* (Boëthius).
 - Aristotle, *De interpretatione* (Boëthius).
 - Porphyrios, *Isagoge*.
- c.1120: Rediscovery of Boëthius' translations of
 - Aristotle, *Prior Analytics*.
 - Aristotle, *Topica*.
 - Aristotle, *Sophistici Elenchi*.
- c.1150: James of Venice translates
 - Aristotle, *Posterior Analytics*.
 - Aristotle, *De anima*.
 - Aristotle, *Metaphysica*.

Logica Nova.

Bernard G. **Dod**, Aristoteles Latinus, *in*: N. Kretzmann, A. Kenny, J. Pinborg (eds.), The Cambridge History of Later Medieval Philosophy, Cambridge 1982, p. 45-79

The historical situation around 1200.

- **Resources.** Rediscovery of Aristotle leads to a lot of new material.
- **Institutions.** The centres of learning (Paris, Oxford, ...) institutionalise learning in the **Universities**.
- *Consolidation of the XIIIth century.* Embedding of Aristotelian teaching into the Christian philosophy.



(Saint) **Albert the Great**

Albertus Magnus (c.1200-1280)

Doctor Universalis.

Founder of the *studium generale* in Cologne (1248).

Predecessor of modern concept of sciences:

The aim of natural science is not simply to accept the statements of others, but to investigate the causes that are at work in nature.

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(Saint) **Thomas Aquinas** (1225-1274)
Student of Albert the Great.
Doctor Angelicus.

The birth of the university (1).

● *Pre-universities.*

- Law School of **Bologna** since the early XIth century (“*Bononia docet*”).
- Cloister schools and cathedral schools in **Paris** (e.g., the cathedral school of Notre Dame).

● *Problems.*

- Non-citizen students and scholars in the cities.
- High prestige of the education requires canonical procedures.
- Intellectual atmosphere is hard to control for the church.

The birth of the university (2).

- **Bologna** (c.1200). Non-Bolognese **students** form interest groups, the so-called *nationes* or *universitates*.
 - *universitas legistarum citramontanorum*,
 - *universitas legistarum ultramontanorum*,
 - *universitas artistarum et medicorum*,
 - *collegium doctorum*.
- **Paris** (c.1200). Parisian educational institutions plan a more systematic way of teaching organisation, forming a *universitas*.
 - *Facultas Artium*.
 - *Facultas Iurisprudentiae*.
 - *Facultas Medicinae*.
 - *Facultas Theologiae*.

The birth of the university (3)

The Bologna model (*modus Bononiensis*).

- Each *universitas* elects their own *rector* (a student).
- No colleges.
- No university-wide structure.

The Paris model (*modus Parisiensis*).

- Each faculty has their own administration (*decanus*, Dean; *quaestor*, financial officer), elected by the *magistri*.
- *Concilium generale*, dominated by the *magistri* of the *Facultas Artium*. Elects *rector*, normally a professor.
- Colleges, offering accommodation for poor students (and sometimes professors).