

# **The Medieval Inquisition: Scale-free Networks and the Suppression of Heresy**

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## ***Abstract***

*Qualitative evidence suggests that heresy within the medieval Church had many of the characteristics of a scale-free network. From the perspective of the Church, heresy can be seen as an infectious disease. The disease persisted for long periods of time, breaking out again even when the Church believed it to have been eradicated. A principal mechanism of heresy was through a small number of individuals with very large numbers of social contacts.*

*Initial attempts by the Inquisition to suppress heresy by general persecution, or even mass slaughter, of populations thought to harbour the 'disease' failed. Gradually, however, inquisitors learned about the nature of the social networks by which heresy both spread and persisted. Eventually, a policy of targeting key individuals was implemented, which proved to be much more successful.*

## 1. Introduction

There is a great deal of current interest in the dynamics of epidemics. The classical approach of the Susceptible-Infected-Recovered model of epidemiology (for example, [1]) assumes implicitly that all agents have an equal probability of meeting any other agent. It is well known that in such models there is in general a critical threshold of the proportion of agents which is infected. Below this threshold, the virus or bacteria will not spread throughout the system.

A recently demonstrated characteristic of scale-free networks is the spread and persistence of infection no matter how small the spreading rate [2,3]. In these networks, a small number of agents have a very many connections to others, and most agents have very few. An important feature of scale-free networks is that diseases both persist for much longer, and are harder to eradicate, than is expected from conventional epidemiology models [4]. Once a disease appears in the system, strategies to eradicate it require targeting the highly connected few rather than the much less connected many [5].

Important social networks such as the world-wide web [for example, 6] and sexual contacts [7] have been shown to have a structure which approximates a scale-free network, though the possibility exists of exponential truncation of such power law behaviour [8].

The medieval Church in Western Europe, and particularly in France, faced strong and persistent outbreaks of heresy. The Church undoubtedly regarded heresy as a disease. This paper presents qualitative evidence that the Inquisition, a body charged with the eradication of heresy, learned to behave as if it knew that the spread of heresy in medieval society did so on a scale-free network.

## 2. Heresy in the 13<sup>th</sup> and 14<sup>th</sup> centuries

After centuries of almost uniform orthodoxy the western Church was challenged in the twelfth century by both individuals and organised religious movements operating outside its auspices and putting forward radical critiques of its doctrines and ceremonies. Such movements as the Cathar/Albigensian and Waldensian heretics offered their own ‘clergy’, usually leading severely ascetic lives and providing spiritual care to the laity.

The chronicler of the Albigensian Crusade of 1209, a crude attempt at the extirpation of the Cathar heresy in the south of France by armed force, shows quite clearly that medieval observers were well aware of the parallels with disease [9]:

“Just as one bunch of grapes can take on a sickly colour from the aspect of its neighbour, and in the fields the scab of one sheep or the mange of one pig destroys an entire herd,” so, following the example of Toulouse, neighbouring towns and villages in which heresiarchs had put down their roots were caught up in the shoots put out by that city’s unbelief, and became infected with the dreadful plague.

The Albigensian Crusade involved general intimidation, up to the point of mass killing, of populations believed to be infected with the heresy. The policy of suppression was essentially random, with individuals and groups singled out and punished. The problem was famously recognised in the quote attributed to the papal legate and monk, Arnaud Aimeric at the storming of Béziers [10]:

Knowing from the confessions of these Catholics that they were mixed up with heretics, [the crusaders] said to the abbot.

‘What shall we do, lord? We cannot tell the good from the bad.

The abbot, .....is said to have said: “Kill them. For God knows who are his.” Thus innumerable persons were killed in that city.

By the time the account was written in the early 1220s, then the futility of indiscriminate ferocity in extirpating heresy was acknowledged. The reason for its failure appears to be that the structure of the social network of the time had many of the characteristics of a scale-free network.

For example:

- despite the fact that in the whole of Europe there were only three universities worthy of the name, ideas travelled remarkably quickly via the network of educated clerks [11].
- a small number of individuals exercised a disproportionate influence in the spread of ideas [12].
- heresy tended to linger for very long periods of time. For example, Catholic writers preparing reports for the 1274 Council of Lyon thought the threat was over [13], yet the last Cathar was only burnt in 1321 and a Cathar revival led by only ten *perfecti* (Cathar ‘priests’) around 1300 caused a major panic among churchmen. [14].

As expertise on heresy grew in the thirteenth century there is evidence that expert observers recognised that what they were dealing with was a scale-free network. The fight against heresy instituted the use of prison as a punishment (as opposed to a holding tank for suspects “on remand”) and the 1229 Council of Toulouse stated [15]:

Heretics...who return to Catholic unity...not...voluntarily  
are to be imprisoned by the bishop of the place....to prevent

their having the power of corrupting others.

Medieval prison building was inevitably small scale and though it had a penitential purpose inquisitors acknowledged its usefulness for the containment of important individuals, particularly those who might be able to provide further information later.

The next question is then to what extent ‘heresy hunters’ targeted the highly connected individuals. In the twelfth century hardly at all, but after 1231 specialist inquisitors started to be employed, mainly drawn from the learned order of Dominican or black friars. Modern researchers tend to talk of ‘inquisitors’ in the middle ages, rather than ‘the Inquisition’ since there was no centralised office, however there was a certain *esprit de corps* among individuals given the task of combating heresy and after early failures they began to assemble a body of expertise which was summarised from around 1250 in a number of handbooks for inquisitors. The best known of these was by the Dominican friar, Bernard Gui (the name was used by Umberto Eco for the caricature of an inquisitor in *The Name of the Rose*), the *Practica Inquisitionis*, completed in 1323-24 from which most of the following is taken. The sickness metaphor was still present, but Gui saw himself as a physician applying ‘different and specific medicines’ for the varied diseases of heresy. He was interested in the connections of heretical sects; in the section dealing with Cathars he suggests suspects be asked [16]

Whether he had any familiar association with heretics; when; how;  
And who was responsible for it.

As well as how the network was physically organised;

Whether he received any heretical person or persons in his home;  
Who they were; who brought them there;...who visited them there  
and escorted them thence.

Although Bernard also asked what went on in houses as regards preaching or ceremonies, he was not at all interested in beliefs. Instead he targeted the guides and messengers.

This singling out of guides and messengers, the contacts of the key heretics, rather than the heretics (*perfecti*) themselves is now known as ‘acquaintance immunisation.’ It is usually more efficient to inoculate one of the contacts of a node rather than the node itself [17].

Gui was well informed about how heresy spread, in talking of the Waldensians he describes the activities of their spiritual elite; having recognised their high mobility ‘fleeing from city to city’ he describes a visit to a local community [18]:

When they have come to a place, word of their arrival is put about and many gather at their lodging place to hear and see them. People send whatever they have in the way of food and drink.

Gui was able to see that such mobility could only be achieved through considerable wealth and that the Waldensians could pass as merchants if need be [19]:

Also, every year they hold or celebrate one or two chapters-general in some important community, as secretly as possible, gathering, as if they were merchants, in a house leased long before by one or more of their believers.

It then remains to see how this knowledge might have translated into action on the ground. The weapons the inquisitors had to deal with these highly connected individuals were the penances set to ‘repentant’ supporters of heresy. Roach has analysed a group of 224 of these from Gourdon, north of Cahors in France in 1241-42 [20]. At first, inquisitors used pilgrimage as a punishment, related to the sentence of exile in previous

centuries: 68.7% of the Gourdon penitents were packed off on pilgrimages as wide ranging as Canterbury, Rome and Constantinople as well as a variety of French shrines. But as early as 1243-44 observers noted the problems of penances involving travel 'lest through [the penitents'] perfidy the dam of faith be breached' [21], by the end of the century penitential pilgrimage was being dismissed as a temptation to misbehaviour because of the many contacts they would inevitably make across a broad geographical area [22].

There was also an attempt to mop up the wealth of well-heeled patrons of heresy. Simple fiscal penalties were not regarded as sufficiently morally improving so penitents were ordered to pay for the upkeep of a number of paupers for terms ranging from one year to life, a variation made four penitents responsible for the support of priests. Some 15.7% of cases in Gourdon had this penalty imposed on them, but despite its appropriateness as a redirection of charity which had previously gone to heretics, the penance rapidly fell into disuse. It seems to have been too discreet, in that there was little element of public recognition of wrongdoing.

Attention turned instead to punishments which restricted movement or marked the penitent out, making social intercourse difficult. None of the Gourdon group were imprisoned, probably because the inquisitors felt too politically insecure to enforce the sentence, but in 1246, 23 from 207 suspects (11.1%) were sentenced to imprisonment in newly built jails. By the early years of the fourteenth century in nearby Toulouse, this had risen to over 60%[23]. At first sight this may seem a return to the indiscriminate prosecution of earlier days, since the prison population had expanded beyond the repentant heretics or persistent supporters recommended for the punishment in the earlier councils of the 1240s. But there was now a more constructive use of imprisonment to remove prominent supporters of heresy from society and only release them at the inquisitor's pleasure when he felt the maximum information had been gained from them, thus combining imprisonment's punishment and interrogational function [24]. Imprisonment was always tilted to the punishment of the wealthy, after all prisoners had

to pay for their own upkeep which could become difficult since jail was usually accompanied by the confiscation of personal wealth.

The inquisitors solved the problem of ‘inoculating’ society against the few highly connected individuals with conspicuous success. The penance of ‘cross wearing’, having two yellow crosses sown on the back and front of all visible clothing, is resonant of twentieth century totalitarian oppression, but probably started as a genuinely penitential act initiated by Saint Dominic himself at the turn of the thirteenth century [25]. In Gourdon, this was a common sentence for supporters of heretics, just over a third, (34.3%) were given it, often in conjunction with other punishments [26]. In the intensely repressive atmosphere of Languedoc in the 1240s the social implications of cross wearing quickly became disastrous. By 1246 it became necessary to forbid people to ridicule cross wearers or refuse to do business with them. This penalty was particularly disruptive to the networks of supporters of the highly connected individual heretical preachers. To be seen consorting with a known heretic, while wearing a cross was a sure sign that the ‘penitent’ was insincere and laid him or her open to more severe punishments including imprisonment and burning. The gathering of individuals to listen to heretical preaching now became almost impossible as just to be seen with a cross wearer was to risk the accusation of heretical sympathies oneself [27, 28].

Finally, over the course of two decades or more the inquisitors developed a network of spies and agents, who often targeted key heretical figures. An example from 1293 to capture a Milanese heretic, William, on the run in the remote lands of what is now Slovenia, demonstrates how professional this operation had become. A spy was sent by inquisitors based in Pavia into the lands east of Venice to find out where the heretic was staying. Then a task force was assembled to apprehend William consisting of ‘hunters’ from the Franciscan friars. The heretic was brought back into Italy, staying in various prisons en route, tried and finally burnt in his home town of Milan for maximum deterrent effect [30]. The cost of the operation to arrest William was 25 *libri imperiales* or £25-30 000 in modern terms [31]. But by then the inquisitors knew the value of securing highly mobile, connected individuals.

The inquisitors never did ‘cure’ heresy. Medieval society continued to throw up groups protesting against the Church and more rarely, the State and there were outbursts of popular prejudice against groups such as Jews and lepers in which inquisitors sometimes became involved. Modern research has shown many late medieval inquisitors to have been corrupt, lazy or both, yet their policy of containment worked remarkably well. Groups such as the followers of Fra Dolcino or the Spiritual Franciscans never became an organised threat on the scale of the Cathars or Waldensians.[31] The exceptions proved the rule: Wyclif and the Lollards appeared in England, the teachings of Jan Hus swept Bohemia, but both were areas where inquisitors were not allowed to operate [32]. Techniques similar to those described above may well have limited the impact of Protestant doctrines in southern Europe in the sixteenth century. However, the early modern Inquisition with its centralised office and preoccupation with Jews and witches was a rather different organisation.

### **3. Conclusion**

The evidence from medieval history is inevitably far more qualitative than quantitative, and is not open to the kind of rigorous analysis which can be carried out on, for example, the structures of the world wide web. However, what is presented here does suggest that medieval heresy, regarded as a disease by the Catholic Church, existed on what appears to have been an approximately scale-free network. Heresy could persist for long periods of time, and erupted again even when the Church believed it had been eradicated. Despite the popular view of medieval Europe as a stagnant society, ideas could and did travel rapidly. Further, a small number of people exercised a disproportionate influence on the spread of ideas.

Initially, the authorities adopted a policy of what might be thought of as random inoculation. Intimidation and even mass slaughtering of ‘infected’ populations were tried as policies, principally in the Albigensian Crusade in the early 13<sup>th</sup> century. Such policies, however, were unsuccessful.

Gradually, as specialist inquisitors emerged, they learned to adopt a much more subtle strategy, obtaining information on the nature of the network across which heresy spread, and concentrating on individuals with high levels of social contact. In particular, guides and messengers rather than the heretics themselves were targeted, following the strategy of ‘acquaintance immunisation’. These polices proved much more effective.

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