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Medicine or Magic? Physicians in the Middle Ages

by William Gries

According to Hannam's paraphrase of the subject in *The Genesis of Science: How the Christian Middle Ages Launched the Scientific Revolution*, Aristotle claimed that, "no object could continue moving without some object moving it."¹ Such an observation may seem quite obvious to the unformed observer, for, when one stops pushing a chair, the chair stops moving. This theory bumps into some problems, however, when it is extrapolated to all types of motion, such as a thrown ball that continues to move even after it has left the hand of the thrower. To make such an anomaly fit in with his theory of motion, Aristotle, "was convinced that something must be pushing it after it had left [one's] hand...the only thing he could think of was that the air behind the ball was propelling it forward."² Now, modern science, the product of the Renaissance and Scientific Revolution in the sixteenth and seventeenth centuries, tells any learned person today that these Aristotelian claims are quite wrong. Even natural philosophers in the middle ages were actually aware that, "this idea [of violent motion] is easily refuted"³ by basic empirical experimentation or just simple observation. The issue was that, "such was Aristotle's prestige that even his hairbrained ideas had to be taken seriously [and so] although critics were unconvinced by the air-pushing concept, they still accepted Aristotle's fundamental law that a moving object must be moved by something else."⁴ Clearly, even natural philosophy, through the study of physics, was plagued with grossly incorrect, at least in hindsight, theories and explanations for certain phenomena. Note, however, that these, rather hairbrained, theories do not detract from Hannam's claim that, "as scholars explore more and more manuscripts, they reveal achievements of the natural philosophers of the middle ages that are ever more remarkable"⁵ demonstrating that simply being tied to antiquity era writers, and their ideas, does not remove the label of 'science' from medieval era studies; in fact, such methods of thinking, that bound new thought up in the study and interpretation of ancient philosophers, appeared to have been the very basis for what did, and did not, constitute 'science' at the time.

There is one area, however, of intellectual study that Hannam specifically disqualifies from his argument for advance during the middle ages: medicine. He claims that "scholarly medicine operated in competition with both magic and miracles, but its 'cures' were far more likely to be actively harmful. Physicians could make good money hastening their patients to the grave."⁶ In effect, he is claiming that the term 'medical science,' in the middle ages, was more of an oxymoron than anything else, and that, "praying at a saint's shrine was the safest course of all and consequently, in all likelihood, the most effective."⁷ Of course, one must wonder how a medieval knight and later Duke of Lower Lorraine, such as Godfrey of Bouillon, who was fighting in the Crusades in August of 1097 and managed, while drawing his sword, to "mutilate the calf and sinews of his own leg with a serious cut,"⁸ would feel about such advice as he lay

¹ Hannam, *Genesis of Science*, 167.

² Ibid.

³ Ibid.

⁴ Ibid.

⁵ Ibid., xvii.

⁶ Ibid., 101.

⁷ Ibid., 101.

⁸ Mitchel, "Injuries and their Treatment," 149. The unfortunate Duke actually had the bad luck to inflict this wound on himself, not during a battle, but while fending off, "a wild bear that had attacked a peasant wandering in some wood." The injury, while not further explained in the actual chronicle than the above quoted text, probably was a

bleeding to death. Certainly than, in traumatic instances like these, physicians in the middle ages had to do more than simply refer their patients to a shrine for ‘spiritual healing’ or the hope of a miracle. In the Duke’s case, it is recorded that, “in January 1098, a full five months later, [he] continued as one of the prominent leaders of the First Crusade and became ruler of Jerusalem after it was conquered in 1099,”⁹ an outcome that could not have occurred if medical science in the middle ages was as backwards and muddled as Hannam claims.¹⁰ While medicine, in the middle ages, may have been riddled with errors of factuality, “to judge the theory and practice of medieval physicians solely by the standards of modern biomedicine is, in the last resort, as unproductive as it is predictable.”¹¹ Instead, to determine whether medicine, at this time, could rightfully be called a ‘science,’ on par with the various strains of natural philosophy in the medieval world, requires an analysis of its practice and study in the context of that world. Through this lens, just as John Buridan, a natural philosopher, came quite close to disproving Aristotle’s laws of motion¹², yet was still led astray by the authority possessed by ancient works, so also were medical practitioners and scholars led to their errors by the authority vested in the ancient writers; particularly Gallen.¹³ Just because, as Hannam points out, academic medicine in the middle ages was, “likely to be actively harmful,”¹⁴ in some instances, to the patient, this does not eliminate its standing as a fully developed science.

In common terminology, today one says of a doctor that he or she, after going to medical school for many years, ‘practices medicine’. In the world of the middle ages, this phrasing would be seen as more than a bit of an oxymoron. Those who would be considered ‘doctors’ or ‘physicians’ in the middle ages, those that undertook the trouble to, “travel a considerable distance to get a medical education, often at great expense”¹⁵ at one of the prominent medical universities such as Montpellier or Salerno,¹⁶ would never deign themselves to the physical work of letting blood¹⁷ or curarizing a wound. These duties went instead to the local ‘practitioners of medicine’ that actually administered care to those in the medieval world. Hannam points out this

“transection of an artery rather than a vein, where bleeding would be less.” In all respects than, this was a rather serious injury.

⁹ Ibid., 150.

¹⁰ The excessive bleeding of the wound was probably halted via a process known as ‘cauterizing.’ In this process a hot ‘olive cauteries’ would be applied to the wound in an effort to seal up the artery. A ‘cauteries’ was a metal disk, that was available in many different shapes a sizes, that could be heated up in a fire. The excessive heat, when applied to the artery would, “burn the artery and stop the flow of blood through the middle” (150) as Mitchel in *Medicine in the Crusades* says. While this may sound like a rather beastly procedure it was not done without a significant amount of skill as, “all the blood pouring from the vessel would make both instruments and body tissues very slippery to hold” (150). Therefore, while cauterizing may have been an example of ‘practiced’ medicine in the Middle Ages, as opposed to the university’s ‘theorized medicine’, it was also an example of the advancement of the field above simple magic.

¹¹ Rawcliffe, “Applying Science,” 162.

¹² Hannam, *Genesis of Science*, 181-2.

¹³ This point will be developed later, but, to emphasis this statement, French, in *Medicine before Science*, goes so far as to claim that, “the scholastics took their sources literally, without realizing the personal motives of their authorities and some procedures they adopted in trying to re-establish ancient medicine, such as surgical operations or dissecting the human body, were reconstructions from words only” (112). Clearly than, the medical corpus of the medieval physician was of the upmost importance to his work.

¹⁴ Hannam, *Genesis of Science*, 101.

¹⁵ French, “Scholastic Medicine,” 91.

¹⁶ Siraisi, “Western European Medicine,” 14.

¹⁷ The stereotype that Medieval Doctors held bloodletting as the most preferred treatment is flawed also. Instead, Nutton points out, in *The Western Medical Tradition 800 BC to AD 1800* that, “surviving account books show that therapy was almost entirely by diet (in some cases with an annual bloodletting in the spring)” (148).

division, briefly, by saying that, if one was ill in the middle ages they had, “two options; three if [they] had money. There is the church, the local healer, or a qualified doctor.”¹⁸ Hannam is right to introduce this tripartite division of the medical system for the ‘qualified doctor’ of his words, the ‘scholastic physician’ in French’s terminology, was quite different from the “apprentice barber surgeons and apothecaries”¹⁹ in London that needed their medical texts translated into ‘vulgar’ middle English as opposed to the scholastic Latin. This division of medicine between the, “busy practitioner” and the “wise physician”²⁰ certainly contributes to the false classification of medieval medicine as a bastard science filled with magic and thinly veiled guesses. Unlike mathematics or astronomy, which can be done exclusively in the brain or from a distance, the study of medicine is inextricably bound up with physical tasks and objects²¹ and so it remained, “intimately bound to the world of crafts, ‘secrets’ (magical or otherwise), skills, and techniques”²² making it a ‘lesser science’ even in the consideration of its contemporaries.

Those that could most definitively be said to have studied medicine as a science, at least in the medieval sense of the word science, were the ‘university’ physicians or ‘scholastic’ physicians. These were people that, just as scholars of the natural sciences would do, flocked to the great universities of Europe. However, due to, “the costs involved, the number of medical students were always small, both in themselves and in comparison with the total university population.”²³ It is notable though that, unlike the Alchemists who Hannam states were, “notorious for losing fortunes in their research,”²⁴ medical doctors stood to make huge sums of money if they could get through the course of studies. Indeed, French claims that, “what made this [getting a medical degree from a university] worthwhile for the prospective doctor was the financial reward of practice.”²⁵ Now in this sense, the word ‘practice’ means not to physically carry out procedures on the human body but instead to garner a position, which French describes as, “their idea form of practice...to be retained in a big household and to govern the regimen of people who were not ill.”²⁶ This sort of practice then, was not one of medical healing but of theory; medical theory that could be exercised not by delving into someone’s body but by managing the daily intake or ‘regimen’ of those he watched or by prescribing various sorts of baths. In fact, the classical university physicians, “poured scorn on the new empirics, a category they had helped to invent.”²⁷ In this condemnation the connection to other forms of medieval science, outside of medicine, can be found, for, the different schools of medical thought,

¹⁸ Hannam, *Genesis of Science*, 102.

¹⁹ Rawcliffe, “Applying Science,” 165.

²⁰ Rawcliffe, “Applying Science,” 164.

²¹ This fact is evident before one even considered the conception of empirical analysis. By virtue of being human, one studying medicine must have some physical interaction with the subject matter for he, himself, is that matter which he studies.

²² Siraisi, “Western European Medicine,” 16.

²³ Nutton, “Medieval Western Europe,” 156.

²⁴ Hannam, *Genesis of Science*, 123. It is interesting that Hannam lumps Alchemy, Astronomy, and Medicine together in his category of ‘erstwhile sciences’ and even more interesting that he does not include Astrology as a subsection of medicine for it was in this role that the pseudo-science was quite often pursued. Knowing the sign under which some event happened, physicians theorized, could help lead to its cure or management.

²⁵ French, “Scholastic Medicine,” 91.

²⁶ *Ibid.*, 113.

²⁷ *Ibid.*

empirics, rationalists, and Methodists, correspond quite closely with the ongoing “philosophical dispute between realism and nominalism”²⁸ present throughout much of medieval academia.

Empiricists, drawing their name from their stress on the need for empirical data, that is data garnered from the sense, believed that, “theory is completely useless for therapeutic purposes; that the task of the medical practitioner is to treat his patients; and the only reliable guide in so doing is experience.”²⁹ This sounds rather similar to the nominalist argument that William Ockham would put forward claiming that, “experience is the only way to know things” and that, therefore, ‘universals’ were, “merely names that humans ha[d] invented for convenience.”³⁰ Conversely, the rationalists, who depended on rational theories drawn from the authorities of antiquity era works, believed that, “the primary task of medicine was to use reason to investigate causes of health, disease, and physiological phenomena generally and to construct physiological theories.”³¹ This approach is notable in that it is based on the ancient medical writers, the literary medical tradition of Europe that will be addressed shortly, to an almost religious degree. French claims that, “the moral tone of the exhortations of some [medical] masters was consonant with the almost religious respect accorded to the ancient authorities.”³² French goes on to further claim that, “the ultimate aim of medical education was, by the devices of commentary and disputed question, to make the ancients so clearly understood it was as if they were in the same room.”³³ It was from these ancient writers that university physicians of this strain of thought got their overarching theories of medicine that cast health as a set of universally constant variables, such as the ‘four humors’ theory drawn from Galen, that could be managed and built on. This thought-process lines up with the realists of natural philosophy who, “believed that universals have real existence... such as [the term] ‘dog’ for all dogs.”³⁴ Methodist, representing the application based side of medicine that existed exterior of the university environment, saw medicine as “a few simple rules that could be mastered in six months.”³⁵ Medicine then, was no stranger to the great philosophic debates, concerning

²⁸ Hannam, *Genesis of Science*, 164. The division, highlighted here, between realism and nominalism and between the different schools of medical thought actually is quite close in appearance to the debates going on during the time of the Hippocratic writers. G. E. R. Lloyd, in his book *Early Greek Science: Thales to Aristotle*, claims that there were numerous competing theories on what the cause of disease was. Theories ranged from, “those who argued that all diseases have a single origin, to those who held that there were as many different disease as there are patients” (58). Those that claimed that there was one universal cause of disease could be seen as a very early example of the realist school of thought that postulated universals whereas those that saw an infinite number of individual disease could be seen as a proto-nominalist school of thought that wished to examine each and every single instance of illness by its own criteria and with no reference to universals. It is rather telling that the ‘correct’ answer, settled on today, is some balance of these two approaches to medicine and thought. It is true that the, “same symptoms may have different explanations” (59) but it is also true that there are specific types, or universals, of disease that can present themselves with different sets of symptoms. It should also not be surprising that the debates of the medieval era medicine men mirror those of the Hippocratic writers for, as will be shown, it is from these writer that the doctors of the middle ages received their medical training.

²⁹ Siraisi, “Western European Medicine,” 4.

³⁰ Hannam, *Genesis of Science*, 164-5.

³¹ Siraisi, “Western European Medicine,” 4.

³² French, “Scholastic Medicine,” 98.

³³ Ibid.

³⁴ Hannam, *Genesis of Science*, 165.

³⁵ Siraisi, “Western European Medicine,” 4. While this view of medicine may today seem absurd, at the time it was quite reasonable for much of the medical knowledge of the scholastic physicians was tied up in ‘Aphorisms.’ French defines these aphorism as “rules... [that are] mostly general and relate to the nature of medicine and the doctor...and designed to guide the doctor in good practice” (110). It was these sayings, such as the colloquial ‘like attracts like’ that were, according to Rawcliffe in her book *Leprosy in Medieval England*, disseminated through non-Latin texts to

methodology, evident in the other natural sciences. It incorporated and included them just as the others did, demonstrating its inclusion in the ranks of medieval science.

According to Hannam, what is defined as scholasticism was a, “carefully organized system that medieval philosophers used to construct rational arguments.”³⁶ The philosopher in question, in this case, would be St. Thomas Aquinas and the specific arguments he was making were in an effort to incorporate Aristotle into the Christian tradition. As such, the “entire body of medieval thought is often described by the single word ‘scholasticism’³⁷ and as such represents the deep integration of Aristotle into nearly all strains of academic thought in the middle ages. It has already been shown how even the smartest and brightest minds of the middle ages were loath to challenge ‘The Commentator’³⁸ until the very eve of the Black Death. Just as the natural philosophers, then, had their great masters and, so called, ‘inflatable’ sources of wisdom, so also did the university physicians, yet “medicine retained its separateness from Aristotelian natural philosophy in several important respects... foremost, in the Hippocratic and Galenic writings medicine possessed an equally venerable scientific tradition of largely independent origin (even though Galen himself adopted some Aristotelian concepts).”³⁹ Therefore, medicine had its own independent literary tradition, just as natural philosophy or, the queen of science, theology. While, “like other university-educated men, the doctor was rational in a dialectical way, in using Aristotle’s logic and its medieval developments”⁴⁰ and for some of these young men, “medicine was simply a stage in an ultimately theological education,”⁴¹ for many, the study of medicine was both grounded in the thought process of Aristotelian argument yet separate from it due to its factual basis in Galen and Hippocrates.

Galen himself was a Greek living in a Roman world during the second century C.E. ⁴² It is from Galen that much of the medieval world’s understanding of medicine comes for he is seen as the last man to truly understand nearly the whole scope of medical knowledge before the fall of the Roman Empire. More importantly though, Galen was the first person to truly advocate for “a split between theory and practice,” ⁴³ that same split so evident in the middle ages. This division quickly lead to a, “movement towards a definition of medicine in terms of specific books.” ⁴⁴ By establishing a set group of books that defined ‘medical knowledge’ Galen, and his followers, moved their writings from the realm of opinion to dogma. Of course, it was not Galen himself who did this but those studying his works, after his death, in the Roman world. Significantly, “Galen himself had commented on several Hippocratic texts and singled out the *Aphorisms* as essential.” ⁴⁵ As such it is also through Galen that the medieval world gets the works of the Hippocratic writers such as the *Epidemics* and *On The Sacred Disease*.⁴⁶ However,

the general populations of Europe (165). She then goes on to state that these saying were, “set down in verse, so that it could be more easily memorized and passed on to others” (165). Clearly than, while a gulf existed between the university physician and the local medic / barber, they still shared some common knowledge, or, at the very least, the latter gained a simplified understanding of the former’s extensive knowledge.

³⁶ Hannam, *Genesis of Science*, 88.

³⁷ Ibid.

³⁸ Ibid., 63.

³⁹ Siraisi, “Western European Medicine,” 16.

⁴⁰ French, “Scholastic Medicine,” 102.

⁴¹ Ibid., 93.

⁴² Nutton, “From Galen to Galensim,” 79.

⁴³ Ibid., 81.

⁴⁴ Ibid.

⁴⁵ Ibid.

⁴⁶ Siraisi, “Western European Medicine,” 8.

in order for Galen and Hippocrates to be the revered masters of the middle ages, they first had to be reclaimed from the east for the Latin speaking world after the fall of Roman Empire. Of course, Galen and medicine as a whole did not completely fade away in the immediate collapse of the Roman Empire, but instead, “like other learned disciplines, survived in western Europe between the seventh or eighth and the eleventh century mainly in a clerical or monastic environment.”⁴⁷ At the start of the middle ages then, both the Islamic and Western European worlds possessed some works of Galen, what differed was, “the extent of the material and the way it was used...between the two societies.”⁴⁸

It would not be until the tenth and eleventh centuries that the real meat of Galen’s (and his commentator’s) works would be translated into Latin and transported to Europe. This work was done by a select few people, as was true also of those that focused on translating Aristotle and Plato into Latin. These people tended to be situated in Spain or Italy, as these places had the best and most constant contact with the Islamic world in comparison to more landlocked places such as the University of Paris. In keeping with the theme that medicine survived through the truly dark years of the 700s and 800s in the monastic setting, the first real translator of Galenic works was “Constantine of African, a Tunisian monk”⁴⁹ from Monte Casino in about 1070. His work, “put the Latin-speaking world in touch with the tradition of Hippocratic learning promoted by Galen and extended by Arabs.”⁵⁰ It is important to note here that Constantine translated works ‘extended by Arabs’ for it was in the Islamic world that true growth in medical knowledge was being made at this early point of the middle ages. The next translator, Gerard of Cremona translated many Galenic texts but also, “concentrated on major Arabic practical texts, like the *Canon*”.⁵¹ The *Canon* is interesting for it was not written by an ancient Greek but by an Arabic writer who was a near contemporary to Gerard. Gerard translated the work, “about 100 years after [the writer] Ibn Sina’s death.”⁵² Gerard was followed by Burgundio, a “Pisan merchant”⁵³ and later by Niccolo da Reggio in the early 1300s who “translated over 50 writings by Galen.”⁵⁴ Each one of these translators brought more and more written medical works into western Europe in the centuries leading up to the Black Death, a test that would show the ultimate ineffectuality of many of the medical practices put forth in these works.

However, just because the medieval “authors composed their books on diet (or, better, lifestyle)”⁵⁵ based on inherently incorrect information provided to them by Galen does not mean that they were any less scientific than their natural philosopher counterparts. The difference, and

⁴⁷ Ibid., 8. To further highlight on this point, there was often little to no conflict between the church and both scholars and practitioners of medicine. French, in his work *Medicine before Science*, points out, “the church’s attitude to doctor’s was traditionally ambivalent” (90). Additionally, as will be further expanded upon, it was in monasteries and other religious institutions that the translation of medical works was often conducted and often for the stated purpose of, as Nutton in *The Western Medical Tradition 800 BC to AD 1800* says, “to lead to a better understanding of God and His Creation” (139). Notably, it was the monastic orders that eventually came to run the hospitals for, “the chronic sick and those suffering simply from the ravages of old age” (152). By no means were these hospitals seen as ‘death-traps’ (152), but were instead noted as being quite effective at their specified role of providing care to those who were old or suffered from some ‘acute disorder’ (150) such as a broken hand.

⁴⁸ Ibid., 12.

⁴⁹ Nutton, “Medieval Western Europe,” 140.

⁵⁰ Ibid., 141.

⁵¹ Ibid., 143.

⁵² Ibid., 115.

⁵³ Ibid., 144. It is not surprising that he had access, as a merchant, to many Arabic medical texts to translate.

⁵⁴ Ibid.

⁵⁵ Ibid., 141.

therefore the extra amount of scorn heaped on medieval doctors was that an incorrect understanding of the cosmology of the universe would not kill anyone (excepting possibly the bold philosopher that put such ideas forward if his statements edged on heretical), but a misunderstanding of the proper method by which to treat a certain illness (or the ineffectuality of those scholastically known methods) would almost certainly be fatal.

Even when a university physician had a full and complete understanding of the Galenic tradition, he was still sure to be faced with situations that were completely outside his understanding. While physical trauma, such as that suffered by those who went off to fight in the Holy Land, was, to some degree manageable by the medieval doctors, the invisible diseases caused by bacteria were quite another issue. For example, when confronted with the Black Death, even the most medically learned men of England had little recourse. When, in 1347, the disease encroached into France and worked its way towards Avignon, "Pope Clement consulted his personal physician, Gui de Chauliac... as a scholarly trained physician he was, of course, a firm believer in the Hippocratic epidemiological theory of miasma."⁵⁶ As such, his advice to one of the most powerful men in Europe, the Pope, was to "spen[d] day and night sheltering between to large fires."⁵⁷ While modern medicine would know that this is a foolhardy way to avoid bacterial infection, at the time it was supposed that the stench ridden, and therefore infected, air could be warded off by light and heat. Notably though, the Pope did not "believe that epidemic disease, in this case the Black Death, was an expression of the Lord's wrath at the abominable sins of his human subjects."⁵⁸ The fact that he turned to medicine at all then, is an endorsement of its respectability, regardless of medical factuality, in the middle ages.

Another bacterial, and so invisible, disease that medieval medicine attempted to deal with was leprosy. It was essentially impossible to cure a person of leprosy in the middle ages, the whole idea of a 'cure' is, itself, an 1800s idea that comes from modern medicine and a Victorian society obsessed with finding solutions to newly recognized problems. As such the real aspects of consideration that warranted medical study in the middle ages were diagnosis and comfort care to forestay the disease's ultimate end. One could point to some of the outlandish methods by which doctors, at this time, attempted to diagnose leprosy in an attempt to show the complete worthlessness of medicine in the middle ages. For example, one such test, "involves placing a freshly laid egg in the patient's urine and then cracking it open within an hour to see if it had been corrupted or 'cooked' by adust humors."⁵⁹ Of course, this does sound completely outlandish, but it was built off of an understanding of Galenic works and so, it represented a experimentation of sorts on these theories. Rawcliffe argues that, "this negative view of pre-modern diagnosis is largely unfounded"⁶⁰ pointing specifically to, "blood tests recommended by practitioners such as Gilbertus Anglicus and John of Gaddesden to determine abnormal levels of coagulation and adhesion."⁶¹ It is interesting also that Rawcliffe points to the 'practitioner' of medicine indicating that, "responsibility for the diagnosis of leprosy (or, indeed, any other medieval malady) was thus far from clear-cut, and certainly extended beyond a narrow cadre of university-trained physicians and licensed surgeons."⁶² This highlights that the tripartite division of medical science, while certainly evident, may not have been particularly rigid in some places.

⁵⁶ Benedictow, *The Black Death*, 97.

⁵⁷ *Ibid.*

⁵⁸ *Ibid.*, 98.

⁵⁹ Rawcliffe, "Applying Science," 166.

⁶⁰ *Ibid.*, 161.

⁶¹ *Ibid.*

⁶² *Ibid.*, 167.

Especially those places where the understanding of the malady, in this case the ever-elusive leprosy, was so minimal.

Medieval medicine was certainly not the most successful of sciences, but it was yet nevertheless a science. Through Galen and Hippocrates, it featured an enormous, yet distinct, body of writings that put it in parallel to the Aristotelian and Platonic works of the natural philosophers. Just as natural philosophy and reason was sheltered by, and arose out of, religious institutions, so also was the medical corpus of the day preserved and enlarged by those ambitious ecclesiastical men that acquired and translated Arabic texts. In some cases, such as those of physical trauma suffered by the men who fought in the crusades, medieval medicine could be rather effective in preventing imminent death and fostering long term recovery. Specifically, in these cases, medical men did not simply pray that their patient would improve but instead conducted, or directed the conduction of, rather complex surgeries based on the anatomical knowledge of the day. When faced with the invisible killer of the Black Death the non-microbial science of the middle ages was largely frozen in its tracks and could do little more than fruitlessly speculate. However, this represents a deficiency in the knowledge acquired to that point, not a lack of effort on the part of medieval doctors and practitioners. Where 'invisible death' caused by bacteria was less vigorous and disastrous, such as in leprosy cases, medical men began to turn to experimentation and development of practical diagnosis procedures that could be effectively implemented. Importantly though, these men, largely, did not turn to a supernatural explanation for these chronic diseases but instead saw in them some natural cause that had to be found and addressed. Therefore, while medieval medicine may have been, at some points, a "Bloody Failure"⁶³ as Hannam claims, it was still very much a science with a deep and complex, though equivalently deeply flawed, system of thought that was studied and debated in much the same manner as that of the natural philosophers.

⁶³ Hannam, *Genesis of Science*, 101.

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