

#### **Session 4: Did the fire stop the plague?**

Speaker: Dr Vanessa Harding, Birkbeck, University of London (standing in for Justin Champion)

##### **Dr Vanessa Harding**

This is where I have offer to you a few thoughts about the plague, in answer to the question posed to or by Justin Champion: 'did the Great Fire stop the plague?' Justin Champion should of course be here because Justin's work in a research project on the plague of 1665, his published volume *London's Terrible Visitation* and the collection of essays edited by him on plague and epidemic death in London are absolutely central to our modern discussions of the plague. So I can only add, or offer a few thoughts on this. They fall under perhaps three headings. But the first thing to say is of course the fire does not stop plague absolutely in any case. There are still some more deaths from plague after the fire itself: not a great many, clearly the tail-end of the great epidemic, but it's certainly not as though there are no plague deaths after that. There are virtually no plague deaths after 1670 and there are no major plague epidemics on the continent of Europe through the late 17<sup>th</sup> century, though there are one or two in the 18<sup>th</sup> century. But there is an apparently quite close match between the Great Fire of London and the last great plague to hit Britain.

Let me just say a bit first of all, though, about the history of the plagues. England, Britain, Europe had been hit by a number of epidemics since the middle of the 14<sup>th</sup> century of a serious and devastating kind occurring at sporadic intervals, sometimes as close as ten years apart, sometimes something like fifteen to twenty years apart. We have no real means of measuring until we get to the 16<sup>th</sup> century when we have Parish Registers recording actual numbers of deaths. But the table by Paul Slack looking at mortality in London from 1485 to 1565 [slide], in which he is using the numbers of wills proved in different years will give you some sense of the rapidly fluctuating total of deaths. At the very end of the period he's looking at is the plague of 1563, but there are a number of other significant peaks, suggesting a large number of epidemic deaths in those years.

Once we get into the 17<sup>th</sup> century, we have parish registers and the bills of mortality to show us how many people died of plague and how many people died in ordinary years. The great 17<sup>th</sup>-century plague of 1603 is followed by an epidemic running on a little bit to 1609, a big one in 1625, comparatively small one in 1636, bits of epidemics here and there and then the plague of 1665. So, again at comparatively widely spaced intervals. The question of which of these was 'The Great Plague' is also debated by historians. It seems that although it's obvious that 1665 is the one in which the greatest number of people die, it's actually quite plausible that 1563 is the one in which the greatest number of people die in relation to the population of London. You have always got to balance those two together. There is such a huge increase in London's population between those two dates that 1563 seems to me to be plausibly the worst as far as Londoners in general are concerned.

The arguments about whether the fire helped to end plague in Britain seem to me to fall apart on two counts. One of them is simply the geographical one, the mismatch between the burnt area and the number of plague deaths. If I can remind you of the burnt area of the City of London [slide] stretching from the Tower, over the central part of London, getting up to the wall here, crossing the wall past St Paul's and out into the western suburb just about to the Temple: all therefore largely within the medieval City of London.

It's important to note that plague in London has a distinct geographical focus, but that this focus changes over time. Maps from Paul Slack's book, *Plague in Tudor and Stuart England*, show that the parishes worst affected by plague change over time [slide]. In 1563 the worst affected parishes are in the City centre, the least affected parishes are on the outskirts. There's a shift in the geography of the plague, until by 1665, the City centre parishes are the least affected and the suburban parishes are the worst affected.

And there is a marked disparity in the number of deaths by parish. This [slide] is a weekly bill for the 15<sup>th</sup> to the 22<sup>nd</sup> of August in 1665 listing all the parishes within the walls, the numbers of dead and the numbers of plague dead and then totalling them here: 538 (366 of the plague). Then this is the first ring of suburban parishes, 16 parishes without the walls, in which 2861 people died (2139 of the plague). There is an enormous disparity between the City centre and the outsides and the more remote parishes. It's clearer if one maps it [slide], using Justin's own map to show where the worst parts of the epidemic are in 1665: in these big parishes way outside the City. These are the parishes that are not affected by the burning of the fire though they may be by the movement of population. So, the great majority of the plague deaths are outside the City walls and outside the City. The great area that is burnt is inside the walls and inside the City; there is just no real match between the two. And as John Schofield reminded us, the London that is burnt is only a fraction of the London that existed. London in 1680 stretched right down from Westminster up towards Piccadilly and way over towards Wapping. It's only the centre part, important as that was, that's burnt in 1666.

The other arguments about whether the fire could have stopped the plague or could have been the agent that stopped the plague seem to me to be on the lines of epidemiology and plausibility. And here one gets into much more contested territory, The identity of the disease known to contemporaries as plague is one that is still, I think, up for grabs. There's been a lot of revisionist writing and thinking in the last few years and we now have, to my mind, a considerably different view of plague from the one we had before. What I want to stress is that the identification of the medieval and early modern plagues as bubonic plague, the identification of them as a specific form of disease with agents and vectors and so on, is comparatively recent in historical terms. It's not much more than a hundred years since that association and identification was made, and in the last 20 or 30 years there have been a number of serious and, to my mind, convincing attacks on that diagnosis.

When the diagnosis of bubonic plague was retrospectively applied to the medieval and early modern plagues, there was a lot of muddled thinking, drawing on recent plagues in the Indian sub-continent, contemporary ideas of health and disease and somehow muddling up what they thought they knew of the historic plagues with what they did know of the plague at the time. And it seemed, at that time, to be a satisfactory answer to the question, 'What was the disease that devastated Europe in the medieval and early modern periods?' But I think it's not a satisfactory answer for a number of reasons. The major one, I think, is that bubonic plague as it's identified in the 20<sup>th</sup> century does not move as fast as the plagues that existed in medieval and early modern Britain or medieval and early modern Europe. Bubonic plague simply doesn't move so rapidly through populations or from place to place as the disease that we know was in existence in Europe.

As far as we know too, bubonic plague doesn't kill quite as many people as the medieval and early modern epidemics. It's a very severe disease, but it doesn't have anything like 100 percent case fatality; and yet as far as we can see, most of those infected with the disease in the medieval and early modern periods actually died of it. I don't think you can get round that by arguing, 'well, there are different forms of bubonic plague and that it must have been this or it must have been that, or it must have been transmitted in this way or another.' This is a parish register from St. Giles Cripplegate which shows enormous numbers of people dying day by day, quite fantastic; thousands of people died in the parish of St. Giles Cripplegate alone.

Bubonic plague certainly has distinctive characteristic symptoms of the buboes in the groin and in the armpits, but other diseases have that too. Bubonic plague doesn't seem to have a symptom often referred to in descriptions of the early modern plagues: the plague spots or the plague tokens. In this image [slide] from a great tract about the plague, the pestilential body is covered in spots or pockmarks; it's not a picture of somebody with smallpox; it's meant to be a picture of somebody with plague. It doesn't look like the symptoms of bubonic plague.

There's the question of the vectors. Classic bubonic plague relies on fleas and rats to spread it. There has been an argument that in the very early medieval plagues there simply weren't enough rats in Britain to have spread it: they weren't widespread enough, they didn't live in the right sorts of places for this to have been the case. There are issues about the relationship between the rats and the fleas and the summer temperatures, whether the latter were high enough for it to spread, and how we explain the fact that medieval and early modern plagues seem to have, in some cases, quite serious winter fatalities when you wouldn't expect fleas to be around or to be active. There certainly is seasonality to the early modern plagues. The weekly crisis mortality rate through 1665 show that the great majority of deaths are between July and November; this epidemic does have a very marked summertime seasonality. That would be true of bubonic plague, but it also would be true of a number of other diseases.

I think there is the question of whether quarantine and the number of fatalities per household would really square up to the diagnosis of bubonic plague: whether if you shut a family up and it was bubonic plague spread by rats and fleas that would you not expect to have a still higher proportion of those dying. Once you start to analyse how many people die per household, or how many people survive in a household in which somebody has died of plague, you'd think it cannot be spreading from person to person in quite the same way that classic bubonic plague would.

And I think the other point to make is that there are plenty of other diseases at the same time. This again is the weekly mortality bill [slide]. By the 17<sup>th</sup> century the bills are telling you not only how many people die of plague (that's this column) but how many people are dying of other diseases at the same time. And you can see that in this week in 1665 the plague deaths are enormous: 4000 people dying of plague. But, there are also considerable elevations in some of the other causes: fever, consumption and so on. It seems to be characteristic of early modern epidemics that while the great majority of those who die, their deaths are attributed to plague, there is also a very marked elevation in other kinds of epidemic diseases. So, we might be looking a combination of diseases of which plague, whatever that was, played a significant part but others also had something to say as well.

At this stage people usually say, 'well okay if it wasn't bubonic plague, what was it?' I don't think we're close enough to answering that. There has been recent work that argues that it's a form of hemorrhagic plague, that it might be a viral infection, similar to Ebola fever. I think all of these are plausible, though I don't think anything can be proved at this stage. The point of my argument is that when we are looking at plague I don't think we should be focussing on rats and fleas, and we certainly should be avoiding the kind of circular argument which says because rats and fleas do this, this is what we're getting. It is important to look at the evidence without preconceptions about what the disease was, otherwise we'll get into a certain kind of muddled thinking and find it difficult to get any further forward.

**Question 1:** You've shown a slide of a mortality bill with two columns, one for other diseases and one for just the plague deaths. When did that become a feature, or was it always like that, where they made that distinction?

**Answer:** Vanessa Harding: From the very beginning the bills do show plague deaths. In the 16<sup>th</sup> century there are some bills, mostly in fact in plague years, not as a regular thing year by year, and what they're almost always trying to do is to say 'This is the total number of deaths, of which these are deaths by the plague'. However there is no systematic attempt to list other causes of death by parish, though the figures must have existed. They were aggregated for all parishes and broken down by disease. We would love to have a table that actually did give deaths by cause by parish, with goodness knows how many columns, parish by parish, week by week, which would be a fantastic resource for trying to understand the diseases that are about.

**Question 2:** What's 'rising of the lights' [reference to disease listed on mortality bill slide], do you know?

**Answer:** Vanessa Harding: It's not always possible to tell what they meant by these things. 'Rising of the lights' I think means a feeling of internal suffocation, so it's some kind of internal disorder; it's not a fever, it's not gastric. It's something going wrong inside that makes you feel as though you're being suffocated. 'The lights' being lungs, and the 'rising of the lights' means your breathing is obstructed.

**Question 3:** My question is, your picture of the different plagues being in different parts of the City is interesting because although we might think that the Great Plague is particularly virulent in the poor suburbs, your earliest plague was in the 16<sup>th</sup> century was in the middle of town around Cheapside, which we can confidently say, generally speaking, Cheapside was rich and people had good diets and, generally speaking, on the periphery they were very poor and didn't eat properly. So does that suggest that these four plagues that you showed were actually different diseases, some affecting the rich and well-fed and some being particularly prevalent among the poor and starving?

**Answer:** Vanessa Harding: I think that contemporaries thought they were the same disease, and I don't think there's a strong reason to suggest that they were not. The factors that people have pointed to in explaining this dispersal, the de-centring of plague, is partly the growth of population in the suburbs because in 1563 the suburbs are really not very densely populated and they're probably not the sinks of poor housing and poverty that they become. There is also the increasing tendency for the wealthy to get out of town and this does seem to have been a major factor in reducing mortality in the City centre parishes: initially they are the most densely settled but people haven't quite recognised that the best thing you can do for yourself in terms of plague is to get out. There is an enormous exodus of people from London during times of plague and obviously it is only the wealthier people who can get a pass, who have enough money to sustain them, who have somewhere to go, whose whole livelihood is not going to be ruined by getting out of town for a few months. The poor people stay because they can't afford to go and they can't afford not to be where their source of income is.

**Question 4:** Just sticking with the graph of incidences of the plague that we've been looking at here, what struck me when I looked at it and I just wondered whether there was any sense in this at all, is that it looks like the typical economic cycle. Are there any linkages between the incidences of plague-type occurrences and the overall economic conditions that are going on in the country at the time?

**Answer:** Vanessa Harding: I don't think it's close enough to be a satisfactory explanation. In some senses, if there is a correlation it might be a negative correlation in that things are actually pretty good for most of these years and

that this is when there are serious economic difficulties, as I'm sure Stephen Porter could say, during the Civil War. Even if you tried to match it with trade booms and slumps that too would not fit exactly. There's more of a trade depression in the early years of the 17<sup>th</sup> century than there had been at the times of these major plagues.

**Question 5:** There was a great panic in 1720, wasn't there, there was an outbreak in Marseilles, but it didn't come to England and I'm just wondering whether the measures for keeping it out of Britain altogether was one of the major reasons why we didn't suffer any longer after that. You know, the detention measures they had on the ships and so on.

**Answer:** Vanessa Harding: I think that's a very interesting question because if we could understand why it didn't come back then we would have a better understanding of what it was. By this period people are arguing that we're not talking about an endemic disease, we are talking about one that is re-imported. There's a virtual absence of plague during the 1650s and then something new is imported, so that would in a sense square with the notion that in 1720, it's a new appearance of the disease. If that is so, and you can keep it out, then it's not going to break out at home; it's not an epidemic disease bubbling along under the surface and occasionally flaring up. I think it must be the case that some of the quarantine measures worked. It's not clear why they worked, I mean what were they keeping out? Infected people? Infected clothing? Infected goods? Or indeed agents such as rats and fleas? That's what has been argued in the past. But I think my view would be that we've got to look a lot further than that.

**Question 6:** When exactly was it decided that it was bubonic plague that has struck London?

**Answer:** Vanessa Harding: I think it's in about the 1880s/1890s, after there had been a number of major plagues in British India, so they've had a lot of experience of bubonic plague and are beginning to think about the nature of diseases. But the big book about the Black Death – people start off by focussing on the 1348-51 plague that very obviously swept across Europe and identified that as being a bubonic plague epidemic – Cardinal Gasquet's book is published in 1893. People then say, 'well obviously if it was bubonic plague in 1348-51, it must have been bubonic plague later so we're talking about a long age of plague.' I think, again, interestingly, that the attack on the bubonic diagnosis also starts with the Black Death because it was Graham Twigg's understanding of the black rat that led him to write a book about the Black Death in the 1980s, arguing that there simply aren't enough black rats in Britain at this time and that black rats by their nature are not likely to be a serious vector for disease in this country.

**Question 7:** You said the other plagues were pan-European; the 1665 was that restricted to London, or Britain, or was that pan-European as well?

**Answer:** Vanessa Harding: After the first 1348-51 epidemic they become much more fragmented. There is nothing, there is no single epidemic that sweeps right across Europe in the way that did. What tends to happen is that it comes up in different places at slightly different times. So there is a long period of three centuries in which there is a disease in Europe which flares up, which bubbles up, which has epidemics every 15, 20, 30 years which seem to be all very similar, but there are, for example, long periods when Italian cities are free of it, possibly because of their better quarantine and public health methods. What tends to happen in Britain is that London has the first plague and it then spreads to provincial cities, it is communicated across the country. There is also a relationship, but not a close match, between plague in Britain and plague in France, for example, or plague in the Low Countries. So that there are clearly, as it were, cycles in which it looks as though one city infects another, but there is no moment at which it sweeps across Europe as it had once done.

**Question 8:** But in 1665 was that just British plague? It wasn't in the rest of Europe?

**Answer:** Vanessa Harding: I'm just trying to remember, I think Paris has a plague in 1670. So within a group of years I think you would say that there are the same diseases going around but it isn't the case that in the summer of 1665 all other European cities are struck by a major epidemic in this way. And indeed the British cities follow on rather than necessarily all participating in the same plague year.

**Question 9:** I saw an interesting theory put forward by somebody who suggested that diseases like the plague, like the Spanish flu epidemic in 1918, like myxomatosis in rabbits, were too virulent for their own good and that the successful long-living diseases were those which had milder effects and therefore had more vectors in which they could transmit themselves. Do you think there is any truth in that?

**Answer:** Vanessa Harding: Well I'm not an epidemiologist, but that seems to me not implausible, that there must be some diseases that actually burn up all their own potential fuel. Though I don't think that quite what's happening with this, and it doesn't even happen in the first major epidemic. Although huge numbers of people are killed across Europe nevertheless within 10 or 11 years there is another epidemic. So it looks as though whatever strikes Europe then does take root and can resurface from wherever it is. Equally I don't think that it could be said to be what happens in the 1660s. I don't think that the epidemic is so bad that there is no potential future fuel for it.

People are coming up with some interesting suggestions about the relationship between the famines of the early 1300s and the plague of the 1340s and 1350s and whether there is actually an inverse correlation between places that suffered badly in the famine and places that suffered badly during

in the plague. Some other questions also being raised, perhaps more by epidemiologists, about whether there is a relationship between acquired or innate immunity to whatever this disease is and to some modern diseases such as AIDS HIV.

**Question 10:** Vanessa could I bring you back to the question that you started with? Do you think the Great Fire put an end to or saw the back of the Great Plague? If so why?

**Answer:** Vanessa Harding: Only in chronological terms. I don't think we are talking about cause and effect. I don't know why but I can't find a plausible scenario in which the fire would have been the agent that meant that plague never returned to the UK.

**Question 11:** One thing that struck me was would you not think that an event like the fire where people were made homeless, lived in makeshift living conditions, population movement, okay not on a huge scale, but slightly like a modern refugee camp would actually exacerbate any epidemics that happened to be around?

**Answer:** Vanessa Harding: Yes I think that is very true. Somebody was asking earlier on whether living conditions improved as result of the fire and I would say in the very short term they certainly didn't because lots more people crowded into areas where they moved to get away from the fire to live for the meantime in virtual refugee camps. Now those are normally centres of disease. It's impossible to provide them with adequate sanitation and hygiene and so on. I suppose you might say that the disease of 1665 does tend to work in a cycle so that you wouldn't expect it to come back immediately anyway whatever it is, but I would agree with you, that I don't think London becomes noticeably more healthy as result of the fire or of the rebuilding. Indeed as John Schofield and Stephen Porter have pointed out there isn't that much change after the rebuilding, or at least we are not talking about a totally new, modern, sanitary city.

**Question 12:** I have heard that the reason for the spikes in these epidemics is that because after an epidemic there are people who are immune and then once they die then new people don't have an immunity. Is the reason that there aren't as many instances of it after the fire because the population that's left have some sort of immunity?

**Answer:** Vanessa Harding: I think it must be something like that because otherwise there is no real reason for the disease to burn itself out on any occasion. All of these plague years are not followed by a serious epidemic for a number of years and this one in fact is actually quite localised in London, so I think there is something to suggest that people who are still alive and still standing at the end of the plague have an innate, acquired, or social immunity to it which helps them. But given the huge turnover of London's population –

enormous amounts of migrants are coming in from the country every year in great floods in the years immediately after the plagues – it ought to be then that London should be repopulated by people who have no immunity. So that wouldn't really explain why it is a comparatively long time between epidemics if the disease has an opportunity to come back. I'm sure that's true that one of the aspects of London's early modern mortality level is because it has so many migrants who have come from country areas and different disease backgrounds, not exposed to the diseases of the City, that this contributes to its very high mortality rates. During the 16<sup>th</sup> and 17<sup>th</sup> centuries I suppose you've got the creation of a national disease pool whereas you once had one that was made up of much more provincial ones.

**Question 13:** You've talked considerably about approaching the plague from our modern frameworks of understanding of disease. Can I ask a little bit about the agency that was seen at the time engaged with the plague? Dr Haydon was introducing us to the popery and I know there are a whole range of ways in which the plague was understood to be spread and that there were agents who were spreading the plague.

**Answer:** Vanessa Harding: Yes this is a very interesting and complicated subject. There seem to be several incompatible, but somehow never completely contradictory views, about plague and spread of disease. One of the most common ones is that is a kind of miasma that is in the air and that it's spread from place to place through the air, or that it can be passed one from person to person. It is sometimes referred to as the 'contagion' suggesting that it can be passed through personal contact. People certainly believed that goods and clothes could be infected, so you were supposed to burn the bedding and not reuse the clothing of somebody who had been diseased so there was a sense that it inhered in fabrics and that it might be transmitted in those sorts of ways. So there is both the sense that it is blown on the wind, but also that there is some kind of material agent which can be transmitted, and I think that is what lies behind talk about plague-spreaders or plague-creators: they accuse them of sowing plague, in the almost literal sense of bringing poisoned or infected goods in such a way as to pass on the disease to others. There is an anxiety about malicious plague spreading which often segues into anxieties about witchcraft and about a whole range of other malign elements in society. It goes back to some things which Colin Haydon was talking about: the way in which a society that suffers from a great ill or evil has to find a satisfactory explanation for it. But certainly nobody at the time talks about fleas and rats. You would think if there were lots of rats dying in the street, as you might expect with a genuine bubonic plague epidemic, that somebody would have said something about it.

**Question 14:** I was just wondering, as we are getting rid of a few myths, the old chestnut about the Central Line being curved through the City because it avoids the old plague pits. Is that true?

**Answer:** Vanessa Harding: Well I'll hand you over to John Schofield for that for the moment but what I have to say is that I am a great plague pit sceptic. It is the case that anytime people come across a group of burials in London that they don't actually immediately know where they're from, they say 'oh it must be a plague pit'. This has happened to my knowledge: when I lived in Islington they were excavating a burial ground (that subsequently became yuppie flats!) and it was referred to as New Bun Hill Fields and people would say 'oh that must mean that it is a plague pit from the Great Plague', because Bun Hill Fields was open at that time. But in fact it was called New Bun Hill Fields because it was a 19<sup>th</sup> century subsidiary of the cemetery and there was no evidence that anybody was buried there during the plague itself. The second point to say is that, yes, there are actually some places where Underground lines have gone through burial grounds but as far as I can tell they went through them rather than avoiding them! For example the District Line from Moorgate to Liverpool Street – that clearly cut through dense burials. But as far as I can tell it didn't stop them doing it.

John Schofield: Those lines like the District and the Circle, the early ones, are 'cut and cover' – they are cut from the surface. They don't seem to have had any scruples. The Central Line is far deeper so it can't have even touched the bottom of even the Roman sites, it's way below the Romans.

Plague pits are very hard to identify actually. There might be one or two known from documents, like the one round the back of St Botolph Aldgate that kind of thing. But generally speaking (and we've demonstrated this several times) early Medieval cemeteries are so higgledy-piggledy because people dug up their relatives within 30 years, so the bones from the upper levels are not laid out like nice medieval people in rows – they are much more mashed up. And that's the ordinary way of things, not only in plague pits, so I think the actual documented studies of plague pits is very small indeed.

**Question 15:** I've got a question about the bills of mortality. You've showed us the bills of mortality for the plague months and weeks, and they show an increase in the rise of other diseases as well. If we look at the bills of mortality issued just after the fire, (we've agreed that the amount of people who were killed as a direct result of the fire is a debateable matter) but do the bills of the post-fire mortality bills in other deaths which might be related to fire in any way?

**Answer:** Vanessa Harding: I don't know the answer to that, because the bills are very defective after the fire. A lot of parish clerks' material was burnt and that my recollection is that the section of the bills that would cover the burnt part of the City records no burials for a number of years after the fire. The parishes were clearly burying within a few years of the fire but it is not clear where these burials were being recorded. Sometimes the bills seem to pick them up, sometimes they are kept in the parish register, and sometimes there is probably no formal register at all. So I think your point that it would be worth looking at the bills' totals for other casualties in the post-plague years to see what patterns they reveal would actually be interesting, but what it won't do is

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tell you what illnesses affected the people who had lived in the City centre and now presumably lived somewhere else – you wouldn't be able to pick those people out.