

Introduction – The science of eugenics *[Tour begins at Warren Street Tube Station]*

00:00 At the turn of the 20th century in the UK, United States and Europe, a popular, progressive scientific movement set out to improve the human species, by controlling who could have children. It was called eugenics.

Welcome to the Bricks + Mortals Walking Tour, a UCL Culture Podcast about the history of eugenics, told through buildings. This is a story about a science – how it was made and how we choose to remember it. My name is Subhadra Das, and I'm a museum curator and science historian at University College London, which everyone here calls UCL. Over the next hour or so, we are going on a tour of UCL buildings to uncover a history hidden in plain sight. This is the history of eugenics and the pivotal role this university played in that history.

Eugenics is the science of working out how to breed better humans. It combined a scientific approach to studying the human body and ability, with a political stance. Eugenicists believed that once scientists had worked out who were the best humans, the government should take steps to encourage them to marry and have children. That way they would pass on their positive traits and make even better humans.

At its core, eugenics is the science of deciding who gets to live and who gets to die. Any of us could benefit from or be victim to it, depending on who gets to make that decision.

The most notorious example of applied eugenics was the science used by the Nazis to carry out the Holocaust. There are lots of other examples from the United States and Europe, but what most people don't know is that the very idea that eugenics could be possible, came from Britain. In fact, it came from UCL.

Like many other universities, UCL names campus buildings and spaces after its famous staff and students. As such, a number of these places are named after famous early eugenicists. Those people appear to be memorialised and publicly celebrated. Eugenics developed out of the scientific concept of 'race' and its purpose was strongly influenced by colonial ideas relating to the British Empire. These racist associations make those building names inherently problematic for us today.

Through this podcast, I want to tell you the story of the origins of eugenics and consider the implications for how we have chosen to remember it. By incorporating the characters that UCL buildings are named after and exploring their relationships and research, we're going to uncover a history hidden in plain sight. It's a story that's as remarkable for what we have chosen to forget as who we've chosen to remember.

Our story begins with one of the most influential women of the 20th century.

03:22: You can now move onto the next stop; the directions are as follows:

Directions: Warren Street Station to Ramsay Hall for Marie Stopes House, Whitfield Street

Our walk starts at Warren Street tube station. The first stop is the UCL student accommodation at Ramsay Hall, which is opposite Marie Stopes House, at 108 Whitfield Street. To get there from Warren Street station, walk south on Tottenham Court Road, past the McDonalds until you reach Boots on the corner with Grafton Way. Turn right on Grafton Way and then walk a block to take the first left on Whitfield Street. Ramsay Hall is the large block of buildings to your right, while Marie Stopes House is in the middle of the block on your left. It's easy to spot as it's marked with a blue plaque.

Marie Stopes, and How Eugenics Was Going to Make the World a Better Place (Ramsay Hall, for Marie Stopes House)

04:05 If you stand facing Marie Stopes House on Whitfield Street, the building directly behind you is Ramsay Hall. Ramsay Hall is named for Sir William Ramsay who was Head of Chemistry at UCL at the turn of the 20th century and Britain's first winner of the Nobel Prize for Chemistry in 1904. Although he doesn't feature in our story, the fact that Ramsay Hall is called Ramsay Hall is worth noting – like many other universities, all over the world, UCL commemorates notable figures from its history by naming buildings after them. For our story about the commemoration of the history of eugenics, the building we're interested in is across the street.

This view of Stopes House means a lot to me personally because I lived in Ramsay Hall during my first year as a student at UCL. One of the windows you can see on the first floor was mine.

Stopes was a UCL student too, albeit nearly a hundred years earlier when she graduated with a BSc in geology and botany in 1902. When she gained her Doctorate, which was also from UCL, she was the youngest ever person to do so in Britain. She was the first female member of staff at the University of Manchester where she lectured in botany, and also a Fellow and Lecturer at UCL until 1920.

As remarkable as it was, Stopes' academic career is not the thing for which we have chosen to remember her best. There is a blue plaque on the building named for her that commemorates Stopes as a feminist social reformer and pioneering advocate of birth control. Her books *Married Love* and the follow-up *Wise Parenthood* outlined her vision for how women should have control over their own reproductive abilities. To that end, she set up a clinic in Holloway Road in the 1921. It moved to its current location four years later. Here midwives and doctors administered to women supplying them with advice about contraception and spermicides. Women could also be issued with Stopes' own brand 'Pro Race' cervical cap.

That last curious bit of branding hints at what is less commonly considered when talking about Stopes, which is what motivated her feminist campaign. This is not surprising given that the answer is: eugenics. The reason Marie Stopes concerned herself with who should or should not be having babies is because she believed that too many poor and uneducated working-class families were having too many children. Many of her progressive, social reforming contemporaries across the political spectrum, including Winston Churchill, George Bernard Shaw and H.G. Wells thought the same. The middle and upper classes, who were considered to be inherently more intelligent and better human specimens all round, were in danger of being overrun. If things continued as they were, both the country and the Empire would be at serious risk.

According to the historian Jane Carey, Stopes and her US counterpart Margaret Sanger "launched into eugenic crusades that were both national and transnational in scope, in which birth control was the centrepiece and the ultimate eugenic tool." Stopes had been involved with the Eugenic Society since 1912, in fact she set up her own clinic in reaction to the Society's unwillingness to put birth control on their agenda. Her book *Married Love* was dedicated to 'all those who wish to see our race grow in strength and beauty.' If anyone is in any doubt as to what Stopes meant by race, a good example appears in the letter she wrote to US President Woodrow Wilson in 1915. In the letter, Stopes defended Margaret Sanger who had come to England having been arrested in the States for distributing literature about birth control. Birth control, Stopes wrote, would "hasten the establishment of a new era for the white race when it may escape the sapping of its strength and the diseases which are the result of too-frequent child-birth."

Along with birth control, Stopes advocated the sterilisation of those considered 'feeble-minded', along with people who had known heritable diseases like epilepsy to ensure these conditions were not passed on to the next generation. While we can see that her views were classist as well as being

racist, one thing she can't be accused of is inconsistency. One part of the story that is better known and adds to her notoriety is that she disowned her only son because his wife suffered from myopia and she balked at his lack of concern of passing poor eyesight on to her grandchildren.

08:40 Before carrying on, I will give you directions for how to get to the next stop:

Directions: Ramsay Hall to 1 – 19 Torrington Place

Our second stop is the UCL building at 1 – 19 Torrington Place. To get there from Ramsay Hall, walk south down Whitfield Street and take the first left onto Maple Street. Walk a single block and turn right onto Tottenham Court Road before walking down to the traffic lights at Torrington Place. Cross Tottenham Court using the pedestrian crossing which will bring to you the corner next to the Habitat department store. Continue to walk down Torrington Place, No. 1 – 19 is the second building on the left.

09:21 Stopes' influence extends far beyond her own family. While eugenics was discredited as a science after the revelation of the horrors carried out by the Nazis during the Second World War, birth control was central to efforts to hold on to what was left of the British Empire and curb populations which in those parts of the world which seemed to be growing out of control. From the 1950s, British birth control campaigns were rolled out as far afield as the Caribbean and Japan. As recently as 1976 – four years before I was born – the Indian Prime Minister Indira Gandhi signed a deal with the British government which guaranteed food aid in return for a purportedly voluntary sterilisation program.

Before we move on, I need to make it clear that my sharing this story with you does not mean that I am anti-birth control – if anything, as a feminist, I am the exact opposite. I think the work Marie Stopes UK does today is hugely important. They provide women and men with abortion and contraceptive services and advice at a time when these same services and rights are denied to people in countries as close as Ireland and are being dismantled in the US. But history is complicated. The eugenic motivations and racism of Stopes and her progressive contemporaries are worth pointing out. This is a story that does not get told often enough.

11:12 So, how did eugenics become the engine for social justice at the turn of the 20th century? To find out we need to go back to the 1860s and move on to our next stop.

Francis Galton and the Birth of Eugenics (1 – 19 Torrington Place)

11:26 The UCL building 1-19 Torrington Place looks almost as uninspiring as its name, but it contains a room of central importance to our story. Entered from the 1st floor and extending into the one below is the Galton Lecture Theatre. And without Galton, we wouldn't have eugenics.

There is not much to physically see here, so once you've had a chance to take in the building, you can walk on to the next stop on the tour while listening to the story unfold. Please be mindful of traffic and other pedestrians.

11:58 The directions are as follows:

Directions: 1 – 19 Torrington Place to 50 Gower Street

The third stop is the former site of the building at No. 50 Gower Street. To get there from 1 – 19 Torrington Place, continue east on Torrington Place until you get to Gower Street. Then turn right and walk south down Gower Street, passing Chenies Street until you see a bus stop. The bus stop is in front where No. 50 Gower Street used to stand.

12:26 The Galton Lecture Theatre is named for Sir Francis Galton. He is the most important Victorian scientist you've probably never heard of. Now, I'm not judging anyone here – I had never heard of Francis Galton until I started to work as the Curator of the Galton Collection. As I started to find out more, I started to feel that the fact that I hadn't heard this story before was – and this is putting it mildly – disquieting. By the end of this podcast, you may well feel the same.

Francis Galton was born in 1822 and died in 1911, so he is pretty much as solidly Victorian as you can get. He was rich, and he was well-connected. The Galton family fortune was made by his grandfather, Samuel, who manufactured guns to arm the trade in enslaved Africans. The Galtons socialised and inter-married with the Wedgewoods and the Darwins. Charles Darwin and Francis Galton were first cousins. They shared a grandfather in the noted doctor and scientist Erasmus Darwin. Galton and Darwin's fathers and grandfather were at the centre of an intellectual and economic powerhouse based around Birmingham. Together they used the scientific ideas of the Enlightenment to fuel the Industrial Revolution which ensured Britain's position as the most powerful country in the world. When you hear people talking about how they want to return Britain to her former greatness, this is the period they're talking about – the time of slavery, colonialism and Empire.

Like Charles Darwin, Francis Galton was one of a class of independently wealthy gentleman scholars whose work laid the foundation for modern science. Also like Darwin, he was a Club Man with memberships of the Royal Society, the Royal Geographical Society and the British Society for the Advancement of Science. Having gained fame as an African explorer, Galton was the first person in Britain to draw up and publish a weather map. He was also the person who worked out that no two people have the same fingerprints. He would go on to single-handedly establish the science of psychometrics, which is the measuring of psychological phenomena, particularly intelligence. Fundamentally, Galton was a statistician, breaking new ground in the earliest days of the field. His greatest contributions are the principles of regression to the mean and correlation. These are mathematical concepts that help us understand how traits are distributed throughout and regulated within populations of living things. They are the foundations of mathematical biology.

Sounds like a pretty important guy, right? And yet most people have never heard of him. I think the reason for that is because of what happened next.

In 1859, Charles Darwin published *On the Origin of Species* (or more completely, *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*). *Origin* is arguably one of the most influential books in history, and one of its many legacies was that it inspired Galton to carry out the research that laid the foundation for the science of eugenics. In fact, coining the term 'eugenics' is another key point to add to Galton's already impressive CV.

Darwin had demonstrated how new species were the result of series of fortunate accidents whereby individual members of that species happened to be better suited to their surrounding environment. One of the ways he went about proving this was through the example of domesticated animals like dogs and pigeons. Galton thought this idea was immense. And when applying his genius to the situation, he thought it could go one step further. If we have controlled the development of species of domesticated animals, then why not do it with humans?

Six years after *Origin*, Galton published an article called 'Hereditary Talent and Character', which outlined two main principles: 1. the laws of inheritance applies to humans, in the same way they to all the other animals; and 2. along with physical traits, an individual's intelligence and character are also inherited from their parents. According to Galton, these traits could be improved through institutionalized good breeding. In writing this paper, Galton was the first person to argue that evolution applied to human nature, and also the first to call for state intervention in who should and should not be encouraged to have children.

17:06 Galton coined the term 'eugenics' in his book *Inquiries into Human Faculty*, which was published in 1883. He explained that by 'eugenics' he meant "good in stock, hereditarily endowed with noble qualities" and that it was a principle "equally applicable to men, brutes and plants." And if it was going to work effectively, there needed to be the same amount and quality of information as there was in animal and livestock breeding.

Galton was determined to take a scientific approach to finding this out, and he believed that valid statistical studies of populations could be used to develop the perfect eugenic state. As he also believed that "Until the phenomena of any branch of science have been submitted to measurement and number it cannot assume the status and dignity of science." So, he set up a laboratory to start measuring people. He called it the Anthropometric Laboratory (another Greek portmanteau combining 'human' and 'to measure'), and it was originally set up at the International Health Exhibition of 1884 in the grounds of what is now the Science Museum in South Kensington. Visitors would pay 3p on entrance, fill in a form to establish their pedigrees and then run through a battery of physical tests designed to measure traits like eye colour and strength of grip along with physical abilities like eyesight and hearing (Galton invented the dog whistle by accident whilst developing a whistle which could vary in pitch). The Anthropometric Laboratory was an audacious move and, in terms of attendance, an unmitigated success – in the first year it was open, nearly 10,000 people came to be recorded and measured.

Through his statistical methods, Galton made the science of measuring people a success, even with those who did not share his political views. For example, Alfred Russel Wallace, the co-discoverer of evolution, did not agree with eugenics, but nonetheless appreciated the scientific value of Galton's work and approach. He was one of several eminent Victorians who found Galton's views entirely plausible.

Politically, Galton was concerned that the Britons would go the way of the ancient Athenians (who had degenerated and disappeared) without the intervention of the state to deliberately take charge of their evolution as a nation and a people. To prevent this he advocated 'positive eugenics' that is, encouraging those individuals with traits considered to be good – for Galton this was intelligence – to marry and have children and improve the race by passing on these positive traits. This would eventually result in a new species of super-humans. Galton thought the U.S was a good example of this, where a self-selecting 'superior' group of white Europeans had succeeded in 'wiping out' the Native Americans. All this rested on the scientific knowledge for breeding humans being as good as that of breeding cattle or other domestic animals. He employed this as a metaphor in the closest thing he came to feminism, when he proposed a scheme to one of the co-founders of Newnham, the newly founded women's college at Cambridge, that their graduates should be given £50 if they married before the age of 25, and £25 on the birth of each child. "It is a monstrous shame," he said "to use any of these gifted girls for hack work, such as bread winning... as bad as using up the winners of the Oaks [a famous horse race] in harness work."

Galton started thinking and writing about the subject that he would eventually call 'eugenics' in the 1860s. It was the one great project of his scientific career, but it would be 40 years before anyone took any real notice. At the turn of the 20th century the course of events that brought eugenics to public attention happened at UCL. And it all started at our next stop.

The Eugenics Records Office at University College (50 Gower Street)

21:25 In 1904 Francis Galton wrote to Sir Arthur Rucker, Principle of the University of London (as UCL was then), saying, "I desire to forward the exact study of what may be called National Eugenics, but which I mean the influences that are socially controllable, on which the status of the nation depends." Eugenics, according to Galton, was a serious science and it needed to be conducted in an established academic institution if the results were going to be taken seriously by the government. The UCL Senate jumped at the chance. They replied within a week, enabling Galton to found the Eugenics Records Office at University College which he funded with a donation of £500 a year for three years. It had its rooms at 50 Gower Street.

Galton was part of a movement of middle-class gentlemen scholars who wanted science to be seen as a profession, rather than the private pursuits of a group of middle-class gentlemen scholars. Despite this, he himself never held an official university post. His connection to UCL was through a man called Karl Pearson. You should remember that name, because Pearson is a crucial figure in our story of eugenics at UCL – he's going to turn up many more times throughout the course of this podcast, not least because he has a building named after him. Pearson is often called Galton's disciple. While both of them would have not been keen on the religious associations of this title, it is certainly the case that Pearson hugely respected Galton, was inspired by his work, and spent much of his career advocating for and developing the statistical principles of the science of eugenics.

When the Eugenics Records Office was set up at University College, Pearson wrote: "If in the future the question arises when and where did Eugenics as an academic branch of study take its origin, the answer can only be: In the autumn of 1904 in the two rooms at No. 50 Gower Street under the direction of Francis Galton..." Pearson went on to say, "When Eugenics becomes a great factor of academic and political life -- as important as State Medicine -- which I have no doubt it will be in the future, then that house will deserve to be commemorated!"

No such commemoration happened. The spot you are now looking at, where that building of 50 Gower Street stood has since been replaced by a larger, monolithic Art Deco block, and there is nothing to mark the spot unless you count the bus stop. As we're coming to see, though, the individuals who played a part in the story of eugenics at UCL have been commemorated. Their and our story continues over the next few stops.

24:24 You can now move onto the next stop. The directions are as follows:

Directions: 50 Gower Street to The Darwin Building

For our fourth stop, we are going to walk north back up Gower Street to the UCL Darwin Building, which is the large block on the east side of Gower Street on the corner with Torrington Place.

Revising Charles Darwin, and the Galton Laboratory for National Eugenics at UCL (The Darwin Building)

24:46 At some point between 1904 and 1906, the Eugenics Records Office moved from number 50 Gower Street to number 88, on the corner of Gower Street and Torrington Place. In 1907 it was renamed the Francis Galton Laboratory for National Eugenics with UCL Professor of Statistical Science Karl Pearson as its head.

The original building would have looked similar to the Victorian terraced houses which still survive on the opposite side of Gower Street. When the UCL main building was hit by an incendiary bomb in 1941, much of the surrounding neighbourhood including number 88 was destroyed by the resulting fires. The building which now stands on the corner of Gower Street and Torrington Place was built at the end of the 1950s as the new UCL Biological Sciences Building. It was named the Darwin Building in 1984 to mark Charles Darwin's death centenary – a nod to the fact that the Charles and Emma Darwin spent the early years of their marriage at 112, a few doors off where you are standing now.

I was really excited when I discovered that the historical site of the Galton Laboratory has now been consumed by a building named after Charles Darwin. I was excited for the purposes of our story because: it's one giant metaphor. You see, the way the history of eugenics is usually told, Galton and Darwin are placed two on opposing sides. Galton is called the 'evil' 'half-cousin' who corrupted the theory of evolution with political motivations, while Darwin is the pure scientist who was above material and political considerations.

It may or may not surprise you to learn that this was not the case. Darwin and Galton were cousins and they were close. Galton went to Cambridge to study maths on Darwin's recommendation; Darwin helped with Galton's experiments with sweet peas. The two dramatically – and temporarily – fell out when, through an experiment, Galton inadvertently disproved pangenesis – which was Darwin's idea that the units of heredity were transmitted from parents to offspring through their blood.

Darwin was all over the book *Hereditary Genius* which Galton published in 1869. Before he even finished reading it, he wrote to Galton saying "I must exhale myself, else something will go wrong with my inside. I do not think I ever in all my life read anything more interesting and original." "I must exhale myself, else something will go wrong with my inside." Charles Darwin was so excited by Galton's writing that he felt like he was going to burst. Before you feel that this was an overblown first reaction and that Darwin eventually saw sense and changed his mind, it is worth noting that Darwin frequently quoted *Hereditary Genius* and Galton's other articles in his next book *The Descent of Man*, published in 1871.

Also, like Galton, Darwin believed the state should intervene in family matters, particularly in the case of cousin marriage. Darwin and his wife Emma had 10 children, many of whom were sick and died young. Darwin was concerned that this was because he and Emma were first cousins. While it was certainly the case that Galton's vision was much more prescribed and extreme, the difference between the two men is one of degree; it is by no means black and white.

28:28 You can now move onto the next stop. The directions are as follows:

Directions: The Darwin Building to the Petrie Museum

To get to our fifth stop we need to enter the UCL Campus through the gate at Malet Place. To get there from the Darwin Building, walk east on Torrington Place, passing the Waterstones bookshop on the other side of the street. Enter through the black wrought-iron gates by turning left onto Malet Place and then walk North up Malet Place, past the Engineering Building, the Institute of Making and the DMS Watson Science Library until you get to the Petrie Museum, which will be on your left.

29:08 Like lots of UCL departments, the Galton Laboratory moved around a lot. In 1968, The Galton Laboratory (we had dropped the 'Eugenics' part of the title after the Second World War), as part of the Department of Genetics and Biometry, moved to Wolfson House, a new UCL building across the Euston Road. A few decades, growth spurts and several name changes later, the UCL

Department for Genetics, Evolution and Environment came back to what was 88 Gower Street in 2010, to what is now known as the Darwin Building.

So, you see, the Darwin building is one giant metaphor. I wouldn't go so far as to say this is an active white-washing of history, but in the context of our story, it is interesting to see who we have chosen to remember and what we have preferred to forget. This landmark space in the history of eugenics at UCL is named after a man whose story and genius – on the surface – is much more palatable for us all to celebrate.

The same principle applies to our next noteworthy figure, who has a whole museum named after him.

Flinders Petrie and the archaeology of 'race' (The Petrie Museum)

30:42 In Malet Place, off to the south of the UCL main building on Gower Street, there is a smaller, rather squat dark brick off-shoot to the DMS Watson Science Library (which, by the way, is named for a former UCL Zoology Professor). The building used to be the stables block of the warehouse of Scholbreds, which was once a big department store on the Tottenham Court Road. It houses the Petrie Museum, which is considered to be the most important collection of ancient Egyptian objects outside of Egypt.

The museum has been temporarily housed in this building since 1951, which is interesting for our story for what it says about the nature of institutional intent. A statement which isn't deliberate can still say something.

The Petrie Museum is named after William Matthew Flinders Petrie, who was born in 1853 and died in 1942. Petrie is called the Father of Modern Archaeology. He was the first person to excavates sites systematically and take note of contexts – what was found where, and what that can tell us.

When it comes to names, it's important to note that Petrie was not the founder of the Petrie Museum. That was a woman called Amelia Edwards -- a 19th century novelist who developed an overwhelming passion for Egypt and its ancient past. Edwards' own personal collection are the first objects to be brought together as a museum collection, and she supported Petrie financially for much of his early career. When she died, the money she left to UCL established Petrie as the first Professor of Egyptology in Britain. And as he worked to grow the collection, the museum came to gain his name.

By any standards, Petrie is an interesting character. Born into a middle-class family, he was home-schooled and his childhood interests in collecting coins and surveying landscapes culminated in a life-long obsession with and a discipline defining career in the study of Ancient Egypt. He first travelled to Egypt in 1880 where, with the help of an Egyptian guide named Ali Ghabri, he surveyed the Great Pyramid complex at Giza. Over the next six decades Petrie carried out excavations in Egypt and the country that at the time was called Palestine, pioneering techniques and interpretations that earned him the title of 'Father of Modern Archaeology'. It's Petrie's key contribution to archaeology that relates to our story about the history of eugenics at UCL.

In 1902 Petrie published an article in the journal *Man* which included a graph entitled 'Diagram of Climate and Intelligence of Races'. In it he reproduced ideas about the effects of climate and environment on a species – in this case historical and modern humans – along with a scientifically racist assumption which was based on the idea that skull size correlated with intelligence. This assumption dated back to the early days of the Enlightenment and was one of the scientific principles used to justify the enslavement of African people.

Petrie had excelled at and appreciated the value of maths from the start. In one of his earliest papers, published in 1879, even before his first trip to Egypt, he emphasised the importance of accurate measurement in past societies and related it to racial success. Petrie's mathematical prowess was what first caught the attention of Francis Galton, who made Petrie his protégé. Supported financially for a time by Galton, Petrie became part of a growing intellectual and scientific focus on the idea of 'race' and the developing science of eugenics at UCL. Petrie was particularly interested in how the scientific data could be represented visually, to aid both interpretation and teaching.

In the 1890s, Karl Pearson – who was Petrie's colleague at UCL and his neighbour in Hampstead – put out a call for skulls to be collected and measured in order to define racial difference. Petrie responded by sending 100 skulls from his excavations at Naqada in 1894. Through his own analysis of the Naqada skulls, Petrie proposed these individuals represented a 'New Race' which had migrated into Egypt, probably from Palestine or Syria, and, due to their racial superiority as he saw it, supplanted the native populations and then brought forth the flowering of ancient Egyptian dynastic civilization (you know, Tutankhamun and all the other really bling pharaohs). Pearson eventually went along with this theory, based on comparisons with skull measurements from modern populations.

Petrie's views on 'race' were commonplace at the time, but as the historian Debbie Challis has pointed out, Petrie along with Galton and Pearson were uniquely placed at UCL to continue to develop and legitimize scientific ideas about 'race' and race theory. Petrie's article about skull triangles and one that was to follow was one of the ways in which they did this.

It's that second article that lies at the centre of the next part of our story. Interestingly, its authors were two women.

36:03 You can now move onto the next stop. The directions are as follows:

Directions: The Petrie Museum to the Haldane Room

The easiest way to get to our sixth stop, which is the Haldane room, from the Petrie Museum is to go through the main UCL building. UCL can be a bit of a maze, so pay close attention to these directions. From the Petrie Museum, walk North up Malet Place, under the brick arch and follow the path through the small courtyard and around to the right, past the Print Room Café until you reach the entrance to the South Junction, which is the first door you come to on the left. When you go through this and the next set of double turns, make a U-turn left. This will bring you to the foot of a staircase which is on the Lower Ground floor of the South Wing. Go up one storey to the Ground Floor, using either the lift or the stairs. Carry on through the building from the top of the stairs, through the double doors and then through the doorway immediately on your left. This will bring you outside into the Main Quadrangle, encased by the main UCL campus building on Gower Street. Continue through the Main Quad, passing the stairs leading up to the UCL dome on the right. Make your way to the middle of the three entrances to the main building. The windows between here and the far entrance ahead of you belong to the Haldane Room.

Alice Lee and Cicely D. Fawcett – The Making of a Science (The Haldane Room)

37:22 The Haldane Room is one of UCL's public spaces, used to host events, conferences and concerts. It's named for JBS Haldane, a British geneticist and former UCL Professor in the 1930s. Haldane did study eugenics, but his views were considerably more nuanced than any we've heard so

far. He also took a stand against the developments of German eugenics as it developed within the Nazi state.

Admirable as this was, it is not the focus of our story here. We are stopping by because the UCL Main Quad is as good a place as any to stop and question the nature of memorialisation and building names, and more practically because the people involved in this part of our story have not been memorialised at all.

The people in question are two women, and you may well think that this is the reason for the lack of any memorial. There is only one UCL building named for a woman: the Kathleen Lonsdale Building, which has its main entrance on Gower Place. Lonsdale was one of the first women Fellows of the Royal Society and she was a specialist in the practice of X-ray crystallography.

Back to our two women, who were Alice Lee and Cicely D. Fawcett (I couldn't even find out what the 'D' stood for). Both were 'computers' in the Galton Laboratory, which meant their main role was to carry out calculations. You may have seen a film called *Hidden Figures*, which tells the story of women who did the same work at NASA in the 1950s and 60s. Alice Lee was part of the first generation of women allowed to study maths at Bedford College for Women, and she became the first Bedford College woman to graduate with a BSc in 1885.

Together, Lee and Fawcett undertook a project to re-measure the skulls Petrie had used in his study to define the 'New Race'. According to Petrie, this was a group of whiter, cleverer people who were responsible for the flowering of Ancient Egyptian culture, having taken over from the darker, less intelligent pre-Dynastic people who lived there before. For both Lee and Fawcett, the basic principle that a larger skull correlates to higher intelligence was inherently a problem. Men tend to have larger skulls than women, which – if the skull size theory were right – would mean that men tend to be cleverer than women.

Lee developed an original technique for accurately measuring skull size in living people, which allowed for the comparison of skull size and intelligence for the first time. She made the bold move of showing that her own thesis supervisor came near the bottom of a list of his contemporaries when only skull size was taken into account.

At the same time, Fawcett went back to Petrie's original data set and re-measured the skulls from Naqada using the most detailed protocols for doing so at the time. Each skull had 30 different measurements taken by four different observers. The combined result of these efforts was a paper published in the UCL-based journal *Biometrika* which firmly established both the reputation of the new journal and the place of skull measuring as a valid scientific technique in anthropology, archaeology and statistics.

It is important to point out that when Fawcett called for more accurate skull measurements, and when she suggested Petrie was wrong about the 'New Race', it was not because he was a racist, but because his methods were at fault. The blows that Lee and Fawcett struck for the feminist cause rested on perpetuating racist scientific theories. Even though their names have been lost to history, their scientific and social legacy remains.

1902 is a key year for our story of the history of eugenics at UCL. Not only did Petrie and Lee and Fawcett publish their skull measurement papers, it's during this year that Marie Stopes gained her PhD from the University. Eugenics was on the cusp of becoming an intellectual force to be reckoned with. And the man who made it possible is the subject of the final chapter of our story.

41:48 You can now move onto the next stop. The directions are as follows:

Directions: The Haldane Room to the North-West Wing, formerly the Pearson Building

It is a short journey across the Main Quad to get from the Haldane Room to the Final stop on our tour: the Pearson Building. Make your way west across the Main Quad as if going to the Main Gate on Gower Street. You will see two small domed buildings on either side of a single path leading to the Main Entrance. Walk down this path, and before you come to the two lodges at the Gower Street entrance, you will see some steps leading up to a building wing on your right. This is the Pearson Building.

Karl Pearson and Eugenics at UCL (The North-West Wing, formerly the Pearson Building)

42:23 It was originally called the Bartlett Building to acknowledge Sir Herbert Bartlett, who paid for it to be built. The Bartlett Building was officially opened in 1920 and was home to a number of UCL departments including Architecture, Engineering and Eugenics. It was renamed in honour of Karl Pearson in 1980.

When thinking about how eugenics came to UCL, it is safe to say that Karl Pearson brought it here. He was an avid admirer of and collaborator with Francis Galton, a friend and colleague of Flinders Petrie, and an ardent eugenicist.

Like the other historical figures we have encountered so far who have buildings named after them, Pearson is an influential and an interesting character. He was a Germanophile, he was originally called Carl Pearson -- with a 'C' -- but changed it to a 'K' so as to be more German.

Pearson first came to UCL in 1884 and he was appointed Professor of Maths that same year. Over the following decade and a half he developed a raft of statistical tools, including the chi-squared test, which is his most important and famous contribution to science. It is a foundational statistical principle used by scientists to assess the validity of their data, that is, whether the thing that they are measuring is in fact the thing that they think they are measuring. Pearson also developed statistical techniques around standard deviation, correlation and regression coefficients.

Pearson is credited with conceiving of the science of statistics (literally the 'science of the state'). Much of that work was done in the 1890s in collaboration with Francis Galton and UCL biologist Walter Raphael Weldon. Together, the three men set themselves up as a new movement in biology which involved taking a mathematical approach to the study of populations of living things. They called it biometrics. They opposed traditional zoology, which limited itself to simply describing species. By doing that, they also ended up in opposition to the then up and coming Mendelian school which became the science of genetics.

Talking about the history of genetics, I'd like to interject a short observation about who and what we have chosen to remember. While they were born in the same year, and both used statistical methods to make landmark contributions to the history of science, the relative fame of the Austrian monk Gregor Mendel and Francis Galton are completely the opposite of each other. In their lifetimes, Galton was a British Victorian celebrity, while Mendel was a complete unknown. Nowadays, Mendel's experiments with pea plants are the bulwark of the science and history curriculums, while, as I've said before, Francis Galton is the most important Victorian scientist most people have never heard of.

45:08 Back to biometrics. Along with Walter Raphael Weldon and Francis Galton, Karl Pearson co-founded the journal *Biometrika* at UCL in 1901. Its role was to be the official mouthpiece for their ground-breaking work, disseminating as efficiently as possible their new developments in biometrics. As we heard in the last section, *Biometrika* got off to a running start by publishing Lee and Fawcett's paper reassessing the skulls from Petrie's excavations at Naqada. It continues to be printed, quarterly, today. Pearson also set up the Biometric Laboratory to further the study, originally a distinct department from the Galton Laboratory which I told you about earlier. The

Biometric Laboratory specialised in measuring human features and characteristics, while the Galton Eugenics Laboratory specialised in gathering family health records and other pedigree data.

When talking about Pearson's work, it is important to point out that he was not just in it for the maths. Often called Galton's disciple, Pearson's eugenic views were Galton's and then some. Not only did he encourage the marriage of individuals with positive eugenic traits, in 1897 he wrote, "Society will have in some fashion to interfere with and to restrict the anti-social in the matter of child-bearing." He matched and excelled Galton in his racism, and in his time at UCL carried out biometric studies on the children of Jewish immigrants. One result was a paper entitled 'The Problem of Alien Immigration into Great Britain.' In carrying out this work, Pearson used the same scientific instruments as the German eugenicists whose work informed the Nuremberg Laws – the scientific anti-Semitic foundations of the Nazi State.

Pearson's work also shows how turn-of-the-20th-century feminism was fundamentally influenced by eugenics. Both the Biometric and Galton Labs under Pearson were notable supporting the work of women as 'computers' who carried out the calculations needed for mathematical tables that were used before computers as we now use the term were invented. As is the case today, women were cheaper to employ and this helped because both labs were run on tight budgets. Pearson himself was an early feminist in so much as he believed that by confining women to the home allowed their brains to languish and ruined them as eugenic projects.

When Francis Galton died in 1911, he left a bequest of £45,000 to fund the world's first professorial Chair of Eugenics. Pearson was the first Galton Professor, and he eventually combined the Biometric and Galton Laboratories into a single department, which made him UCL's founding Professor in Applied Statistics. The two departments were separated again after Pearson retired in 1933 and, many incarnations, name changes and building moves later, they are now the UCL Departments of Statistical Science and Genetics, Evolution and Environment.

Conclusion – What we choose to remember

48:40 From after the Second World War, the word 'eugenics' is nowhere to be seen at UCL. Part of this is down to how, when they learned about the Holocaust, scientists here were rightly adamant they wanted nothing to do with eugenics. But it also has something to do with the growing reputation and popularity of genetics. The word 'eugenics' didn't disappear overnight in 1945, it gradually faded over the course of the 1950s and 60s.

Yet we still have the buildings.

The practice of naming buildings at UCL goes all the way back to its founding. The main university building with its iconic dome and columns is called the Wilkins Building after the architect who designed it. One of the reasons the Wilkins Building is so grand is that from the day of its inception University College faced strong opposition to its value and legitimacy, and understandably so – it was going to take a lot of money away from Oxford and Cambridge. The founders of University College needed a building that could speak to as big a game as they wanted to play.

The trouble with buildings, and similar monumental things like statues and naval ships is that on the face of it, there appears to only be one way to read them. When confronted with something huge and solid, hewn in bricks and mortar, there is no room for nuance or doubt.

What I hope this podcast has done, though, is show that buildings named for famous people can be read in other ways if we choose to look at those histories. Those names are the hooks whereby we hang our tale.

Through this podcast, using buildings named for famous UCL eugenicists, I've told you the story of how eugenics was established as a scientific discipline. It's the story of how scientists at UCL used the established reputation of the University as the firm foundations on which to build their new science. It's by no means a unique story – the subjects we agree are scientific are so by dint of their association with academic institutions.

From its earliest days in the work of Francis Galton, through to the foundational statistical science of Karl Pearson, and the progressive social work of Marie Stopes, the legacies of eugenics extend beyond the realms of science. They are political, and they are still with us.

While mathematical biology and genetics are not the same thing as eugenics, the histories of these subjects are irrevocably tangled up. The buildings of the UCL campus are solid and unmoving; the people they were named after and those of us that work and study here are not. We, at the university and beyond, need to acknowledge this history and understand its implications. We need to do this actively and with the goal of doing better in the future. And we can start to do that by looking beyond the bricks and understanding the mortals.

Credits

51:38 Thank you for listening to the Bricks and Mortals Podcast, presented and written by Subhadra Das.

The research groundwork for this podcast was done by Tessa Harvey. Research into the history of the Galton Laboratory at UCL was by Ananda Rutherford.

The Bricks and Mortals exhibition design is by Jen Slater, and the music is by Jeriah Nadesan.

Thanks to UCL Culture for their support and funding this project.

This podcast was produced by Cerys Bradley.