

Science, People & Politics

Kingdom of the fungi | UNGA High Level Meeting and Universal Health Coverage

The gap between human caused climate change realities and political responses.

Should children be allowed on Court premises when criminal courts are sitting?

THIS ISSUE WAS PUBLISHED 22ND SEPTEMBER, 2019 TO MARK THE HISTORIC UN HLM ON UNIVERSAL HEALTH COVERAGE, TO BE HELD ON 23RD SEPTEMBER, 2019. WE AT *SCIENCE ,PEOPLE AND POLITICS* MAKE A PROPOSAL AND CONTRIBUTION TO THE DEBATE.

Calling clinicians, geographers and scientists. Politics and your World need you.

ON 23RD SEPTEMBER 2019 THE UNITED NATIONS WILL HOLD THE FIRST EVER HIGH-LEVEL MEETING ON UNIVERSAL HEALTH COVERAGE. JOURNALIST AND EDITOR, **HELEN GAVAGHAN**, ARGUES THAT WITH CLINICAL INPUT FROM THE COAL FACE OF PRACTISE THE INITIATIVE COULD ENHANCE GLOBAL HEALTH.

It was 1989 and I was staying as a guest in the diplomatic compound in Hanoi with a friend from the British Embassy. This was before Vietnam re-united. One still needed consent to leave the city. With our lawful pass we went into the hills for a picnic. There we ate strawberries and drank champagne. Village children gathered around. In the jeep on the way back to Hanoi I remarked on the cute red tint in the hair of some of the little ones. "That," said my friend, "is a result of malnutrition." I didn't know. She is no more a doctor than I, but she seemed well informed. She added a comment about how poverty can look pretty, and she said we cannot judge the old because they live in another country and face what we do not yet have knowledge of.

Next I took a road trip with another member of British embassy staff, this time to the port of Haiphong. The journey there and back dodged potholes made by American bombs. People scavenged all waste to make whatever living they could. My arm resting on the jeep's open window was grabbed in anger by a young man. I was not harmed, and I understood the anger. Later I stood next to the British diplomat as the first of the boat people from Hong Kong disembarked at Hanoi airport from a plane sent by the British Government to return the refugee "boat people" to their homeland. When I got back to Bangkok, and my modest hotel accommodation, I went to the Mandarin Oriental Hotel for dinner. I cried, and I did not even realise I was crying.

It was casual chance my friend mentioned the red tinted hair was a result of malnutrition. During that visit I interviewed the head of the North-Vietnamese medical academy, and he treated a bite I had acquired but we did not discuss the red-haired children. I would not have known the questions to ask. I am a journalist. I know a doctor sees with a clinical eye. I understand what that is about, but I cannot do that. No more than I know why a young woman camped temporarily in the rain by my local convenience store had no front teeth and was dirty and smelly, even though she lives in one of the richest countries in the World, and one of the best educated.

Back in London I struggled to write the article I did write for *New Scientist*. It was an effort, and, truth to tell, it is often an effort to make myself write. For example, I leave the Court where I am reporting a criminal case, and in the press room I have more than once wept. I sit down to write my news report, and I think why should I? Is anyone reading this? Does anyone care? Can anyone do anything about what I am writing, and why me, because there are others who can write this story. Except often that is not the case. Often, I am the only journalist in the Court room. So, I write, and I trust the system to use what it can of what I do with my job.

Imagine if instead of me a doctor had been the guest in the diplomatic compound and the British Embassy in 1989. What might she/he have written and said to the doctor who gave me a salve for a bite? Fast forward to 2019 and tomorrow's High-level meeting (HLM) of the UN.

HLM is UN speak for having undertaken legal groundwork to create a safe, lawful international framework for Member States to make what they will of both the HLM and the concept itself - Universal Health Coverage. Each word can now go on the table formally and informally for experts to define and argue about in the light of different health care models, ranging from communist to capitalist. Diplomats, ethicists, patients and the global general public have a focal point to discuss health care for all. That is consistent with the Charter of the World Health Organisation (WHO), which is a specialised agency of the United Nations formed under Article 57 of the United Nations' Charter. It is unlikely a doctor speaking and writing within this negotiated framework will find him or herself arrested as a spy.

Yet how, amid the hullabaloo of insistent voices, can clinicians from doctors and surgeons to nurses, psychologists and physiotherapists etc... be heard? It seems to me they will need a megaphone, and what better megaphone than bodies in the UK like the Royal Colleges and professional organisations? Most nations have their equivalents. Without medical input from clinical practise it is hard to see how the HLM will achieve its aims. I'd like to propose ideas for medical experts to evaluate. Though I have in my career interviewed, among other senior medical practitioners, leaders of National institutes in the US, and India - the latter while attending a World Health Organisation meeting in Geneva as a reporter - these are my ideas not theirs. If what I explore is impractical or naïve I, not those I have in the past interviewed, am responsible.

My starting point has been to jot down unconnected random thoughts. I'd like to share these in case they prompt clinically informed random jottings from qualified practitioners. People who know how to protect medical confidentiality, and where public health intersects with the health of an individual. Perhaps then clinicians could engage with the committees and structures of their professional bodies, and through them filter insights to the United Nations. Probably the most useful path would be via regional offices of the World Health Organisation. It might even look good if the covering letter were signed by the heads of professional medical bodies.

Here are my notes to myself - and not as a prescription for medics.

1. Do not seek to reconcile socialist and capitalist delivery methods of medicine.
2. Do not in the first instance worry about who pays and how.
3. Figure out international vaccination programmes.
4. Recall we live in a world of big data, satellites and the internet. How can they be deployed in the service of medicine?
5. There is a genetic lottery making some people susceptible to inherited illnesses, such as Tay Sachs' Disease. How can genetic testing be made available to all?
6. Some environments are a prey to infectious agents not prevalent elsewhere: malaria, Chagas, Ebola. How can both public and personal health be protected given the realities of global travel and international trade?
7. The World Health Organisations exists to promote global health within the widest possible meaning of the word health. See the Constitution of the World Health Organisation (WHO).
8. The World Trade Organisation insists on phytosanitary protective measures.
9. Orphan diseases impact comparatively small groups of people compared with common forms of cancer, but in aggregate orphan diseases affect a lot of people. Both Europe and the US have sought fiscal and political means to promote research into cures for orphan diseases.

UN HIGH LEVEL MEETING ON UNIVERSAL HEALTH COVERAGE 23 SEPTEMBER, 2019

10. Children do not get to choose whether they are conceived, and, having been conceived, they and their mothers and fathers deserve a chance to stay alive.
11. Medicine broadly splits into prophylactic, diagnostic, curative and palliative. The palliative can tip back into a curative phase.
12. Some people in the UK live closer than do others to major hospitals. Some ambulances in the UK are better equipped than others. I imagine that is not uncommon around the world.
13. Some illnesses and conditions and infections are unbearably cruel.
14. Global warming is driving changes in climate, increasing it would seem, the chances of untimely death caused by excessive heat or cold.
15. How do you imagine a route to Universal Health Care would look, and how would that deliver more than the World Health Organisation already delivers? How can resources and capabilities be shared?
16. If we lengthen life, will there be more people with some form of dementia? Ought any young person to live their life with dementia hanging over them, or any older person experience the indignity of loss of identity. Understanding, preventing and curing dementias surely needs to be at the top of the global health agenda. That would be consistent with the human dignity the UN system is supposed to further.

Continued on page 5.

**“The health of all
peoples
is fundamental to the
attainment of
Peace and security
and is
dependent upon
the fullest co-operation
of individuals and States.”**

From the Constitution of the World Health Organisation.

All that said I think a good first step toward a sustainable universal health cover needs to be an anonymised global data-collecting exercise, probably one designed by experts in geographic information systems. Questions I would ask are what specific resources do you have access to? What is missing? If you are fighting Chagas, don't tell the database about what is lacking in a fight against environmental pollution in the Chernobyl region. What do you think will be the needs in 5 and 10-years' time? If you could have a regional centre within one hours' travel, what would you like it to specialise in to meet your patients' needs. What diagnostic equipment do you lack? Which illnesses do you think are ones which should be treated by experts in global centres of excellence, or by experts travelling to the patient? This is where I suspect experts could devise a global network of centres and active responders. If you had access to telemedicine, would that extend medical care among your patients? Is mental illness a problem among your patients, and what conditions do you consider fall under the heading of mental as opposed to physical illness? I am sure experts could design and devise something much more pertinent to global health than my questions, but perhaps medics would like to turn my ideas into a straw woman and knock them into workable shape? From the fabric of the United Nations' structures it seems likely the WHO will be the lead agency. WHO policies are determined by its decision-making body, the World Health Assembly (WHA). When the WHA held its most recent annual meeting in Geneva in May this year it endorsed international efforts to promote primary health care, namely that accessible by going to see a general practitioner.

The HLM coincides with the 2019 UN General Assembly (UNGA), and if universal health coverage is ever to exist it will need to draw on many elements of the UN's formidable structures. September's HLM on 23rd September will be historic. Its theme in full is "Universal Health Coverage: Moving Together to Build a Healthier World." Given that the population division of the Department of Economic and Social Affairs at the United Nations (UN DESA) estimates that in 2019 there are 7,713,468,000 people in the World, the UN is being ambitious with this HLM. And about time, too, many, including me, would argue. It would be an understatement to say such a theme will stand or fall by the sophistication and quality of global politics and political Will as much as on the UN's ability to create legal frameworks for aspirations.

This article is a result of a member of the BMJ raising the topic of the HLM during the biennial meeting of the World Federation of Science Journalists, held in July 2019 in Lausanne, Switzerland.

And they all lived in little boxes, and they all looked just the same.

HELEN GAVAGHAN VISITS THE FUNGARIUM INSIDE THE ROYAL BOTANIC GARDENS AT KEW IN SOUTH WEST LONDON. IT IS A MYCOLOGIST'S DREAM WORLD, WITH MORE THAN A MILLION SAMPLES IN A COLLECTION WHICH WAS STARTED IN THE LATTER HALF OF THE NINETEENTH CENTURY.

The Fungarium at Kew is stacked floor to ceiling with equally sized, neat green sturdy cardboard boxes. Inside each is a fungal sample. "Are they dead?", I asked Lee Davies, one of the

collection's curators. I was concerned about what might happen to my packed lunch, even though it was tightly and securely wrapped.

The curatorial answer, "We hope so, but that is not to say some of them might not be revivable." Temperature and humidity, he assured me, are maintained to prevent fungal rejuvenation. And, indeed, one sample he showed me looked for all the world like a strand of thick inert rope, or the tie back of curtains. It was cream coloured, like something one would expect holding back drapes in the living room of Miss Havisham from *Great Expectations* by Charles Dickens. Despite my biological science degree and having assured the curator I was sound on matters biological I do not actually know whether I was looking at fungal matter or something which a fungus had ravaged. The Curator had cleverly distracted me with a tale told with relish about zombie fungi which can take over a small organism so that it cannot control itself. "That can't be pleasant," he said, with what seemed to me significant understatement. In fact, fungi can infect the brain of ants altering their behaviour.

The Fungarium is tucked in a building inside the Gardens. To visit one must make an appointment. It is the largest in the World, with 1.25 million samples collected from around the globe. It was opened in 1879. The green boxes are arranged to reflect each specimen in correct phylogenetic relationship to others in the collection. When I visited in August 2019 Dr Davies told me of a new insight into the biology of fungal taxonomy. Another family has been discovered, and to maintain correct phylogenetic relationships Dr Davies will need to rearrange the stacks. The task will be as if a new letter of the alphabet had been discovered, and the British Library was rearranging its physical stacks of books accordingly.

The carefully labelled green boxes are in the same building as labs for work on fungi, and Dr Davies thinks it would be a good idea to step up fungal sequencing efforts. It is thought that many species of fungus have not yet been discovered, with some of them as close as in the grounds at Kew. When I arranged the visit on behalf *Science, People & Politics* I had thought I would see live samples, arranged as plants are in any one of Kew's hothouses. In that I was naïve and clearly ignorant of fungi, many of which are tiny and spend significant portions of their life cycle hidden in soil or within plants and animals. That or only the fruiting body is visible, and the fruiting bodies are connected underground by networks of tubular cells, known as hyphae. Collectively the hyphae form a mycelium. The fungal cell sap is in the hyphae, and organelles can move around if not stopped by walls within the hyphae. These walls are called septa, but the septa sometimes exist in a perforated form enabling movement within the hyphae.

One form of fruiting body is a mushroom. Honey mushrooms connected by underground hyphae sprout from one famous humongous fungus in mountains in Oregon. Kew Gardens covers 300 acres. The record setting fungus in Oregon spans nearly 2900 acres. It is thought to be between 1900 and 8650 years old ("Where to hike to (and through) the Worlds' Largest Organisms." <https://www.smithsonianmag.com/travel/take-hike-through-largest-living-organisms-180962427/>). To an organism without consciousness age might have a different meaning from that of a mammal such as a human being. More importantly fungal and human age might not be comparable because the two species occupy different kingdoms of life and rely in different strategies for maintaining their organismal physical and nutritional requirements.

Fungi are important for decomposing dead matter. They are eukaryotes but belong in a kingdom of their own, separate from the other eukaryotic kingdoms of plants and animals. Fungi were

once thought to be plants, and fungi are still studied and written about within botany departments despite it being widely known and accepted they are, in fact, a separate kingdom. Fungi are closer to the animal than plant kingdom because they do not create their own food as a plant does by utilising sunlight in photosynthesis. Additionally, fungi have chitin in their cell walls, which is also found in the exoskeleton of arthropods like crustaceans and insects. Arthropods are, of course, invertebrates.

Fungi come in many shapes and sizes and have different life cycles. They may be microbial in some part of their life cycle. They reproduce sexually, asexually and parasexually. The latter involves combining genetic material from different individuals, but without forming sex cells. Yeast, including brewers' yeast, are fungi. So too are species of penicillium, one of which produces the antibiotic, penicillin. A number of devastating crop diseases are fungal.

Yet fungi form many beneficial relationships with other kingdoms of life. Mycorrhiza, for example, is the symbiotic relationship between the mycelium of a fungus and the roots of a seed plant. The relationship benefits both organisms. Fungi help plant uptake of nitrogen and phosphorous, without which life cannot exist. In return the plant provides sugars made as a result of photosynthesis. Fungi in the soil affect the balance of the microbial content in soil which also impacts both soil and plant health. Cultural practices such as tillage, which impacts fungal hyphae, are important for maintaining a healthy quantity and diversity of fungi. Fungi excrete the enzymes needed to digest their food and then absorb the metabolised food into their hyphae. The hyphae also transport nutrients from some distance away back to trees and plants. There is evidence that fungi evolved first a billion years ago. Sequencing Kew's collection fully could provide valuable evolutionary information.

Noting my disappointment at not seeing a great glass house of fungi the curator took me to a nearby lab. One of his colleagues was developing a protocol for staining fungi which had grown round and between plant cell walls. We viewed the fungi under the microscope. It looked to me like thin lines around plant cell walls. This was a work in progress, with a globular mass also under the microscope which, the scientist assured me, was simply an artefact of poor staining. Kindly the scientist told me I might adjust the viewing platform, but it seemed to me better to leave her carefully constructed slide in place. There was a time in my life when moving a slide under a finely focused microscope could have undone a lot of work. This scientist seemed more proficient with focussing than was my 20-year-old self, but I wasn't taking a chance.

BUYER BEWARE

Be cautious about what you tell the police, at least in the UK. One of the things I do when not editing and writing for *Science, People & Politics* is to report from Crown Court. And I have seen a defendant in serious trouble in the dock because he had sought to possess psychoactive mushrooms. It turned out he had the wrong species, and his mushrooms were not psychoactive. Having bought a harmless product did not lessen the defendant's charge sheet. Dr Davies told me of someone who had bought what he thought were portobello mushrooms. Out of interest the purchaser got the genomes of the mushrooms sequenced and discovered other species in addition to portobello. Though portobello mushrooms may not fall foul of criminal law, they are subject to labelling regulations.

Further reading. The State of the World's Fungi (2018)

<https://www.kew.org/science/state-of-the-worlds-fungi>

Thank you to Lee Davies for his courtesy in drawing to my attention post publication that he is Mr Lee Davies, not Dr Lee Davies.

CHILDREN ON PREMISES WHEN CROWN COURT SITS

Helen Gavaghan. Comment published 22nd August, 2019.

Are you bored I asked the young person sitting in one of the small rooms next to the Court? The room's usual purpose is for advocates to confer with their clients. The answer to my question from the young person was that he was bored. He was sitting quietly. Other young people were playing and romping at Bradford Crown Court in the public area, under the benevolent eye of the Court's security staff who were blocking access to the Court. The door to the Court was locked, and we were all waiting for the judge to finish his sentencing arithmetic. He had "risen" (by which I mean, he had left the bench). The judge had a complicated task, involving charges related to a serious public disorder by people who were all older than those romping outside the Court. Other than those in custody the defendants were all there among the romping children and youngsters and their families. The judge had warned us we would have a wait, saying as he went to his chambers, "I may be some time."

I decided to sit and chat with the young woman with a baby. We discussed such things as, "It's supposed to get warmer tomorrow". I have no idea who she was related to, and do not know her name. The baby was learning how to crawl and was picking up speed. I told her friend about the sausage dog, cuddly toy I had just bought from Marks and Spencer for my neighbour's new baby. The romping continued, and grew quite boisterous. I found myself standing up and saying, "stop it". Teenagers can be heedless without malicious intent, and might not notice when a baby which is crawling quickly ends up among them as they horse play. The horse play was as much out of boredom as anything else, I would think.

I moved to one side of the Court we were waiting to re-enter, and a representative of local press moved to the other side. I had not brought my mobile. I noticed pressure around the Court room door and a terse exchange about who would get in. There was a plan by Court staff, and the other Courts were not sitting. The situation was being managed. But I still could not stop myself asking the prosecutor if there were not some law about 'reckless endangerment of a baby'. Not too long after my exchange with the prosecutor five uniformed police officers appeared, and I breathed more easily.

I am not criticising the Court, nor its staff, nor the defendants, nor all those wanting to be in the Court for the sentencing. I am questioning the wisdom of my elected representatives in not banning by law the presence of children of 10 or younger on Court premises when a Crown Court is sitting. There is nothing for them there. Nothing at all, and I do not accept not being able to get child care is a reasonable excuse for any youngster of 10 years old or younger being on Court premises when Crown Court is sitting.

PUBLISHED ONLINE AT 20.20 British Summer Time.

Human Nature. Comment

The news reports which follow are from Crown Court. I have removed names, though when I published the report contemporaneously I included names where, according to British law, it was lawful to do so.

I do not think human nature differs according to the language an individual speaks nor the country in which they were born. I do think education and environment can influence our nature as we grow up, but that the story is so much more complicated.

In one news report below a judge says the concept of grooming is not yet defined in British law. Has the concept been defined in the jurisprudence of any nation? Otherwise, the reports below are about knives, guns and drugs. In other words they are about the sale of illicit drugs which take money out of the economy and rob people of their will, and about violence instead of reason. Given the degree of sophistication involved in many criminal transactions it is not lack of intelligence which underpins criminality.

As for the concept of grooming – it would seem to underpin sexual violence. That is an issue which the United Nations is making a concerted effort to oppose and eliminate. Now might be the time for jurisdictions to learn from one another.

OUR REVELS NOW ARE ENDED, by Helen Gavaghan, Bradford.

Judge David Hatton QC began today with his valedictory. His morning continued with the routine administration of justice. His honour's final action on the bench on his valedictory day was a committal for sentence enabling him to show compassion in the interest of justice. Yet as is so often the case the Court heard an account of events which made clear it was by pure luck the victim did not experience serious injury. The defendant in this case was 21-year old Bobbie-lea Cowans. Judge Hatton cited his reasons for imposing a community order rather than a custodial sentence.

At the preceding valedictory Judge Jonathan Rose was the Master of Ceremonies. There were scurrilous tales, humorous stories and an awful lot of lawyers present, many of them Crown Court judges in full regalia.

Judge David Hatton QC graduated from the University of Bristol. He drove a milk float and worked as a labourer to pay for his pupillage for the Bar. Judge Hatton was called in 1976, became a Recorder in Sheffield in 1994, took silk in 1996, and was appointed a Crown Court Judge in 2012. In practise he specialised in criminal law and personal injury. In his speech Judge Hatton QC said, "Good advocacy can and does make a difference. I wish you well in your futures."

During the routine cases in the administration of justice which came before Judge Hatton this morning, advocate after advocate said, "It has been a pleasure and a privilege. I wish you a long and happy retirement", or words to that effect.

Published 15.00 30th August, 2019.

I include the report above as a tribute to His Honour Judge David Hatton QC because I have reported from his Court room, and because at least one female member of the bar told me that we (meaning herself and other members of the Bar) valued his honour's courtesy.

Cannabis distribution, judge's sentencing reflects responsibilities.

Helen Gavaghan, Crown Court, Bradford, 16th August, 2019.

This afternoon Judge Hatton QC sentenced six men for their respective roles in a conspiracy and distribution between West Yorkshire (Halifax) and, prospectively, Middlesbrough of significant amounts of cannabis. The crime, which has financial implications by shifting value and revenue into a criminal arena, took place in January 2018. In response to a prosecution request His Honour Judge Hatton QC ordered forfeiture and destruction of the Class B drugs involved. Proceeds of crime hearings will take place mid 2020.

XX (30) was sentenced to 2 years and 10 months for conspiracy, and production of cannabis plants. Mr XX, among other things, allowed lock-up premises he had access to in Halifax to be used for wholesale supply. XXs (33) was sentenced to 33 months, reduced to 27, for conspiracy, and to 9 months for producing cannabis with Mr XX. Mr XX' sentences were consecutive. Judge Hatton next sentenced Mr XX (34) for his role providing a link between Mr XX and two brothers (XX, aged 48 and XX, aged 50) who collected a large consignment of cannabis for distribution to Middlesbrough. Mr XX played his criminal part in the conspiracy during a suspended sentence, and thus was given 20 months (conspiracy) and four months (breach) to be served consecutively. Each of the two brothers were sentenced to 18 months for their part in the conspiracy, which involved the prospective role of taking cannabis to Middlesbrough, where it would have been distributed. The judge said he could make no distinction between the brothers. The role of each of these five men in the conspiracy was decided by the judge to be significant and not leading. The distinction impacts the length of sentence proposed by guidelines. Conditions imposed while awaiting trial impact the length of sentence the men will serve.

The sixth man to be sentenced, XX (38), had no previous convictions of any kind. The judge described as folly the action of Mr XX in delivering cannabis to the premises used by Mr XX. Mr XX has lost his job in public service, his pension in that role is cut short, and he now has a criminal record. Mr XX was sentenced to 12 months for conspiracy, suspended for 2 years. Mr XX must complete 200 hours unpaid work and complete 10 rehabilitation activity days. The judge called Mr XX's actions "a grave error of judgement".

Interest of justice cited by judge waiving immediate custody in knife crime.

Helen Gavaghan, Bradford Crown Court. 19th July 2019.

Judge Hatton QC this morning sentenced Mr XX (30) to two months (reduced from 3 months) suspended for two years for a knife crime on Keighley railway station earlier this year. Mr XX had objected to being told he might not smoke on the station and had threatened the rail safety officer who told him to put out his cigarette and then to leave the station. Mr XX had doubted the rail safety officer's right to instruct Mr XX in the situation. His honour told the defendant that if he offends during the next two years the defendant would have to serve his sentence. After the sentencing Mr XX's interpreter told me Mr XX had understood the judge, and that Mr XX English was quite good. Mr XX was present and aware I am a member of the press. Mr XX's advocate told the Court that Mr XX had felt intimidated in his place of residence. The judge explained to the defendant how seriously Parliament views knife crime, and the limitations placed by Statute on his judicial powers to avoid imposing an immediate custodial sentence. The judge spoke of a psychiatric report which said that though Mr XX was not currently ill, it was the psychiatrist's view that prison would lead to deterioration in Mr XX's psychiatric health.

Trial reaches early end. Guilty pleas to conspiracy to possess firearms

News report by Helen Gavaghan, 13th June 2019.

Mr XX (24) and Mr XX (25) today pleaded guilty at Bradford Crown Court to possessing a firearm with intent to cause harm or fear of harm. The firearm was a shotgun. They had faced more serious charges, and had their victim died the judge said these foolish young men would have faced murder charges. The crime took place a 22.32 on 15th August 2017 in Bradford. Mr XX (24) pleaded guilty to assisting an offender. The three defendants will be sentenced at 11 am on Monday, 17th June 2019. All three have bail and have surrendered their travel documents. Mr XX and Mr XX must report to the relevant police station on Saturday. Events clearly took place within a feud. The guilty men are from Bradford and Blackburn.

The pleas entered this lunch time came two weeks into a trial and are alternate counts to those the three men had faced. A fourth defendant, Mr XX, from Keighley was told by the judge to leave the dock, and was not asked to plead to new counts, and is not guilty. The counts which the jury were considering initially included conspiracy to commit murder.

Evidence placed before the jury included analysis of telephone connections to masts in Batley, Huddersfield, Halifax, Keighley and Bradford, and information about the direction the phone was pointing in when calls were made. The judge was clearly unimpressed by the use of a burner phone at the critical time. He said there was clearly a conspiracy, but it was unclear what the conspiracy was, but that as the judge he agreed with the prosecution's view that the appropriate Counts were those the defendant's today pleaded to in the presence of the jury. There had been evidence presented of a lot of talk about Class B drugs, but it seemed that might have been a ruse to provide cover for the conspiracy.

The Court heard evidence of a false name, false number plate and very severe injuries.

His honour told the jury it had been a pleasure to meet them, and that they had asked sensible questions.

SENTENCING

17 June, 2019. Mr XX and Mr XX were today each sentenced to 7 years in prison, less relevant deductions, for possessing a firearm with intent to cause harm or fear of harm. Mr XX was sentenced to 27 months in prison for assisting an offender. His Honour Judge Durham-Hall QC, the recorder of Bradford, was both the trial and sentencing judge. He commended the work of those whose names the prosecution presented to him. Ms Kama Melly QC was lead prosecutor.

This item was published contemporaneously as a news item on www.gavaghancommunications.com and included names where it was lawful to do so. HG.

Victim B waives anonymity as judge sentences those who groomed her for sex.

News report by Helen Gavaghan, 27th February 2019.

Judge Durham-Hall QC clarified with Kama Melly QC this afternoon that Victim B¹, born in XXXX, has today waived her right to anonymity in a case in which six men were yesterday found guilty of raping her. Mr XX (37) was today found not guilty of raping Victim B. The crimes took place in Bradford and Dewsbury.

Three men also committed sexual offences other than rape against Victim B. At lunch time his honour sentenced the nine defendants who had been taken into custody yesterday.

Judge Durham-Hall QC said, "No major city in our country has escaped the scourge of grooming of vulnerable young persons by older men." Addressing the dock his honour said, "Victim B sits in Court and has shown utmost courage. No doubt for years she thought she had no voice. Well she has a voice now, gentlemen."

His honour passed the following sentences:

XX (37*) 16 years concurrently for each of five counts of rape of victim A, who at time of writing had not renounced her anonymity, and 4 years to run consecutively for an assault on Victim B; Mr XX (55) - 20 years in total; XX (43) - 17 years; XX - 17 years; XX (32) - 16 years; XX (28) - 17 years; XX (28) - 7 years; XX (31) - 17 years; and XX (32) - 18 months. These sentences for some defendants include concurrent tariffs.

The Court heard victim impact statements. Kama Melly QC read out that from Victim A. "Not only have I had to share personal details once, but twice --- I have lived in fear --- I have the most irrational thoughts -." Victim A is making reference to this being the first time a full trial has taken place, though there was one earlier which had to be abandoned.

Victim B read out her own statement. Seated in the press box with a police officer beside her Victim B told the Court that since the age of 15 she has been diagnosed with mental health disorders, that she self harms, and has made multiple suicide attempts. Calmly she recounted many harrowing details. She said that as a child she had excelled academically, had been predicted to get A* grades, and had even once dreamt of becoming a lawyer.

The judge said he could not find sufficient words to praise the jury for their work on the case, went out of his way to thank court staff, including those in admin and commended all police who had worked on the case.

Online 18.30 gmt on 27th February, 2019.

**This article was published first contemporaneously on www.gavaghancommunications.com
The original news report included the names of the defendants.**

Concept of grooming central to multi-defendant, sexual-offences trial

News report by Helen Gavaghan, 26th February 2019

Today a jury at Crown Court in Bradford found nine men guilty of serious sexual offences. The men are now in custody awaiting sentencing tomorrow morning. The trial for rape continues in the case of XX (37), and resumes tomorrow morning. All events took place in Bradford or Dewsbury, said Kama Melly QC, the prosecutor. The junior prosecutor is Miss Beattie.

There are two victims, who are now adult women.

Those awaiting sentencing are: XX (37), found guilty on five counts of raping victim A and one count of assault by penetration of victim B.

XX (55) was found guilty of two charges of causing or inciting child prostitution and one charge of rape. All three counts relate to victim B.

XX (43) was found guilty of two charges of rape of victim B, and not guilty of a third count of rape of the same person.

XX (36) was found guilty of three charges of rape of victim B.

XX (32) was found guilty on one count of rape and one count of attempted rape of victim B. Mr XX was found not guilty of two counts of raping complainant B.

XX (32) was found guilty of sexual assault of victim B.

XX (28) was found guilty of two counts of rape of victim B. On one of those counts XX (28) was found guilty of aiding and abetting XX in the rape of victim B.

XX (31) was found guilty of two counts of raping victim B.

His Honour Judge Durham-Hall QC told the jury before sending them out to deliberate that this was the first full trial.

An issue in the trial was whether the victims had been groomed. "It has no definition in law," said the judge. "One of the consequences of grooming is that it has the capacity to subvert free choice."

Both victims were in care when the activities called grooming began. The offences took place between mid 2008 and mid 2011.

Noisy agitation from the public gallery greeted the verdicts. His honour made clear further such displays would not be permitted tomorrow. However, once the jury had been sent out to continue their deliberations the judge remarked to counsel that he had noted that relatives of one of the defendants though understandably distressed had behaved decorously.

His honour made clear that any victim impact statement tomorrow would be heard respectfully. On leaving the Court room I noted at least eight uniformed police officers immediately outside and intermingling with those who had left the public gallery. I observed no arrests. Plain clothes officers and Court security staff were also present.

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Climate change action gap

By Helen Gavaghan, Lausanne. 3 July, 2019.

There is a mismatch between science conclusions on climate change and the political Will to address consequences of what the science indicates, said Hoesung Lee, chairman of the International Panel on Climate Change (IPCC) to the World Federation of Science Journalists (WFSJ) this evening at its biennial meeting held this year in Lausanne, Switzerland*. The IPCC is the organisation tasked with quality control of science underpinning the assertion that human activity is causing the average global temperature to rise above what would otherwise be the case. That temperature increase puts additional energy into the atmosphere, with the rise being greater than average at the polar ice caps. The additional energy has to be dissipated in some way, in, for example, storms or regional climate modifications.

The problem arises because of gases such as carbon dioxide, which are given off when burning oil and coal. Carbon dioxide (and other gases) prevents heat escaping from the Earth, trapping warmth as though in a greenhouse. The data underpinning the observation of a global average rise in temperatures are extensive**, and beyond the control of any power lobby or individual nation to manipulate. The science of the consequences of such temperature rises is not in anyway new. The well established laws of thermodynamics drive the meteorological changes.

Human behaviour contributes to the problem both by adding "greenhouse" gases to the atmosphere and treating Earth's natural environment in a way which takes away the Earth's natural ability to sequester damaging gases. Though the problem is both known and incontrovertible, political countermeasures are not in line with the need science has revealed, and Lee told the WFSJ he did not know why. Though there are resource issues they are only a part of why politics is not responding, he said. In Lee's view infrastructure is important. "I live in a City with good mass transport, but if I lived in another part of the country or another country I may not have that luxury." Lee added that though the consumption in the developed world of an item might have a comparatively low carbon footprint, the item consumed does not, and may well have a much high carbon footprint created in other parts of the world.

Lee said that the global carbon dioxide levels must peak as soon as possible, and start to decline. Changes in behaviour which combat global climate warming must be sustainable, he said. The IPCC's next major report is due out in September. Lee was unsure whether it would include analysis of what is leading to the gap between science conclusions and political action, because he was uncertain whether the needed information existed on political motivations.

This article was published first on www.sciencepeopleandpolitics.com on 4th July, 2019 and moved to *Science, People & Politics* on 21 September 2019. On 20th September global strikes led by young people demanded that World leaders act now to combat human caused climate change.