Psychology Academic Enrichment Session

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13:37

Um, hi everyone. So, I'm Sophie and I'm going to take you through what makes a criminal. So it's quite a. It's, it's going to be a lecture that is mainly based on psychology, and even though it's about criminality, my field at the moment is in the field of criminology, so I'm doing a PhD in the Institute of Criminology here at Cambridge. And what I'm currently studying is child sexual exploitation networks, but we're not going to cover any of that in this specific session, this is going to be about looking at the various traits and factors that contribute towards criminality. And as I say, the large influence here is going to be coming from psychology so any of you interested in psychology, hopefully this gives you a bit of a taste for that. Just out of interest or that I don't have to chat here pulled up so it might be a bit difficult for me to look at I just wonder if any of you recognize the faces at the top of here or there. I can't see the chat so I'm not sure how I would facilitate that. I'm happy to read out any comments in the chat. Any Does anybody recognize any of the people at the top of the screen.

15:03

Marian says, is the one to the left Ted Bundy,

15:06

yes. Okay so that is one of the notorious American serial killers, and he is. There's like a documentary I think about Ted Bundy on Netflix at the moment and he was interested. And we've also got, there was the title Jamie Bolger who was killed by Robert Thompson and Jon Venables and in the middle, we have Myra Hindley, and Ian Brady who murdered I think six children. And so, here we can see like in popular culture there's huge obsessions around Siberia of Syria, serial killers and criminals, and the mindset of these people because I think there's a big curiosity as to what leads somebody to commit crimes and do things of this kind of nature because it seems so repugnant to most people. To do this kind of thing. And I think that's what's so fascinating about psychology, especially in this branch forensic psychology in the branch of criminology and getting to have an idea as to like what drives this kind of behavior. So we'll cover a bit of that today. Oh, no I don't want to leave the meeting. Okay, so I'm going to just give you a bit of a background on what criminology is. So it's the study of crime from lots of different angles, so the causes, its effects, and social impacts of criminality, and it's my job as a criminologist, to do things like analyze data to determine why a crime was committed, and then try to find ways to predict and prevent further criminal behavior. And as you can probably tell from that explanation as to what criminology is, it's a really multidisciplinary subject. So it draws on loads of different disciplines. And so, it involves psychology which as I said is going to be the main discipline

that we draw upon. In this session, and that's looking more at why somebody committed a crime. What led somebody down that to commit that kind of behavior, it looks, it uses sociology so looking at things like societal consequences of crime and cultures surrounding criminal behavior, things like that and then it also involves things like philosophy so is a criminal responsible for example for their actions, and things like this, hopefully we'll get to have a bit of a discussion about at the end of the session, given some of the things that we'll learn today. And then you've also got the various practitioners involved in things like criminology, so you've got police, which are involved in detection and prevention, and you've got the government when it comes to things like policies around crime and the criminal justice system, and you've got prison services, and dealing with things around rehabilitation and punishment. So it's, it's a big broad field. But today, we're going to look at nature and nurture debate which hopefully it was in some of the pre, the pre reading material so you might have a bit of an idea on that, but if not, not too much for worry we can, we'll go through today. You've also, we're going to look at the inherited influences of criminality and the environmental influences on criminality and then we'll have a look at the impact of these things on policy. Okay, so just to get us started, the nature nurture debate. So, this is a central debate in psychology. So hopefully you'll have heard a little bit about it, even if it wasn't in the pre reading, you should have maybe heard about it and things that you've studied before because I know that you guys have just finished your GCSE ease. And so it's basically asking the question, is a person, a product of their environment, Or are they a product of their genes. And so, the thing is we are past the stage really of arguing for one side or the other so we don't believe that a person is purely a product of the way they are raised, or purely a product of their genes anymore. We know that one, that both influence what's going on, and instead we're now looking at how much one like nature contributes compared to the other to various factors. So in this sense, we're looking at crime, we're looking at criminality and we're looking at how much of an influence to somebody's genes have on their likelihood of committing crime, and how much does their environment, have an influence on them like going out and committing crime. And so we're going to have a look at both sides today.

20:04
Okay, so this is actually going to be the first thing I want us to have a think about so here's a list of various traits, and I want us to have a think about whether these are likely to be inherited or environmental. So I'm going to ask us to go into breakout groups for this one, and have a think about these various factors, and think about whether you think it's likely to be a product of nature, a product of nurture, or a combination of both. And then we'll come back together and have a bit more of a conversation, as a whole group. Just give me one second to assign the breakout room. Okay.

20:47
There you go. So you should have been allocated one now. Those who haven't can use the main room as their breakout room.

21:51
Hi, everyone. Oh, what do you guys think about the hair color one.

22:36
Do you think it's jeans or do you think it's more the environment. Any ideas. Well I personally think that environment, ology is mixed together because you blow the hair color, but that doesn't stop you from

dyeing your hair, and some and some societies some environments that's more common, but some are not very common. Yeah, as long as this, you know, if you live in a warmer climate. And you have more exposure to the sun your hair color can change through that sort of way, as well as dying it. Oh, I didn't know what was the next one. I mean, the university attendance were like, and I think that's to do with your environment, how you brought up some of some people are brought up in, and where discipline is a very important thing, and maybe the way they're brought up, make them very committed every day and working hard every day.

24:34
You heard us very interesting I double it go with that was a nice way of looking night tonight. You guys know that the list, I don't remember the list.

25:12
Oh yeah the fashion style. Yeah, so the eye color and the fashion style I think that I feel is very similar to the hair. Yeah, so the icon is very similar to the hair, you can have colored contact lenses or you bought a different color, and with a, with a natural eye color but that is a mixture of both, and the fashion style is yes largely culture. Yeah, definitely. Some people are not exposed to many fashion because of where they live. Well, yeah. Know when we could get the ones that we can't remember. I can't remember the rest of them.

26:04
She did, we did not have them.

26:29
Thank you. Um, drug addiction, seems like a pretty good one to discuss. Does anybody have any ideas about drug addiction.

26:49
I think it's based on the environment. I don't think anybody is born to be addicted to certain drugs, but I'm very open to other opinions. This is very interesting to discuss that. You could argue it's because most people try. Yeah, definitely. And then more deprived areas. You might be the selling or exchange of drugs. So you might be exposed to that from an early stage, but mean slightly if you from a higher class even though people in higher classes tend from middle class, tend to have poor people who are addicted. Because we've got so many people addicted to drugs.

27:54
Oh, that's very interesting. Me and put something really interested in, let's put some babies are born addicted to drugs or alcohol, they were exposed to it and that's very interesting. I didn't know that it's really sad. But unfair to be honest. But yeah, about personality that or lack up really decides between that and between the environment or the genetic stage or that I can't decide between that what anybody has any opinions you'd like to share for the personality one. Yeah, it's a combination to hard one to figure out really, Which one, which bit is the which one is the genetic bitten, which part of your personality is just from your environment, mental illnesses, some mental illnesses are inherited I'm very

sure of that. And some are not. Some are just so mental illnesses, could be just a combination of both of them. So yeah, I think that's all I've uncovered.

29:17
Guys, five, is that everybody is everybody finished that, Are we able to all come back together. Everyone should be back in the main breakout room now. Yeah. Okay, awesome. So, and is, are you all able to, you've muted yourself Sophie. Sorry, sorry. Um, are you able to see the presentation because it isn't on my screen. I can't know. Okay, do I need to reshare. Probably yes. Okay, it's not okay for everyone is showing a black screen for me. Oh no that's fine now. There we go. Yeah, everyone can see. Great. Okay, so we were talking, hopefully in the groups that was helpful for everyone. And you managed to get through most of the things on that list, but I'll just go through a couple of that those things with you now. So, when it comes to a couple of these things, it's really obvious, It's really black and white as to whether it's nature and nurture, but for most of them, it's a real mix. Okay, so things like eye color. That's 100% determined by your genetics, it's 100% nature. Unless, as we actually mentioned in agri people to put in colored contact lenses, but in terms of the eye color that you're born with. That's, that's 100% determined by your genes. And that's quite a rare exception in the kind of things that we'll be talking about. But then things like taste in fashion, that's almost 100% based on nurture. So, and that's why you see such drastic differences in styles in fashion in different places around the world and across different time periods. So you don't have a gene that increases your likelihood of being having a preference to a particular fashion style. And then if we look at some of the others like height for example is a good example of a mix now height comes across as being very determined by nature, and you're more like if your parents are tall, You're also likely to be tall. But it has got an environmental influence, so your genes might allow might code for you to be able to reach a particular height, but if you're malnourished if you don't get the right nutrients you're unlikely to reach that potential. So you'll end up shorter than you could have been based on your genes. And so that's an example of a bit of a mix, and some of the others I heard at the end, when we came back from the breakout room there have been a discussion about mental illness. And I wasn't sure who it was sort of speaking but they're absolutely right. The rest of them, mental illnesses that are much more likely that run in families. And so we know that the root genetic components to them, but there are also other forms and the huge environmental influences on people suffering from mental illnesses and things like PTSD, for example, are created because of a situation and environment or situation that you've been through. But you might also be more genetically predisposed to suffering from PTSD than somebody else so it's like it's a big mix things like drug addiction, again we know some people are much more likely to be predisposed to addiction so if addiction runs in your family, you are much more likely to suffer from addiction than somebody else at the same time, you can't, for example, become an alcoholic, if you've never had a drink. And so there is an environmental impact there. You're also if you view somebody taking drugs or drinking, etc. And it's somebody acting as a role model to you becomes much more normal, and that's also likely to influence you going on and to become an addict addict yourself. So it's a big mix between nature and nurture for most of these things. And again, we've only got about two in there that you can really separate out as one being very nature and one being nurture, and that's tasting fashion and eye color. Okay, so, from that, I want to just to have a look at the concept of IQ.

34:20

So, this is just an example for us to have a think about why we care. So, we're talking about the nature nurture debate how much of one trait is influenced by nature and how much of it is influenced by nurture but the question is, why should we care, why does it matter, why do we need to look at how much one contributes compared to the other. And one of the things that is highly debated in the realm of psychology and the nature nurture debate is IQ. So, I think I figured out how to look at the chat. So if any of you guys can think about why we would care, why is it important, and let's think of it in the context of IQ, and you can pop it in the chat, or just take off. Take off your mute, and let me know what do you think, why is it important. What difference does it make if we know that IQ is more based on nature was more based on nurture.

35:46

If you've got any ideas literally just pop oh sorry, I've just changed sides. Okay. Sorry, what was the question. Okay so the question is, why do you think it's important for us to understand whether a trait is determined by nature or nurture, and we're using IQ as that trait. So why is it important for us to know whether somebody is IQ is something that is determined by their environment or something that's determined by someone's genes. And so, I've got IQ is considered a measurement of intelligence, slash, ability, so if it's based on nature, then we can better understand someone's innate abilities. Okay. And if society decided to assign value based on IQ then some people would face discrimination. Okay, yeah, so. That's true. However, it's not completely answering the question. And so, what difference would it make like what would be the advantages of us knowing why IQ and how IQ became determined. For example, how would it affect schooling. Okay so Jonathan Zed, yes that's totally right. So if we knew that somebody his IQ was, say for example 100% determined by their genes, then we don't actually need to spend a really long time going through things with them to understand where their ability was we can say okay well we've measured that we know where they're at and we can make decisions about how much we educate somebody even, we might say well we're not going to bother educating this group because we know that they've got very low IQ, or we might go the other option and say this person needs intensive intensive education because we know their IQ is going to be pretty low, etc. And yes, Sarah, a perfect, because you can manipulate it, and that's the point, if we know how much something is determined by genes or something is determined by nurture, then we can manipulate the situation. So, for example, imagine we were to find out that the biggest influence on IQ is your environment, the government might decide to put in huge amounts more money into the education system into children's early learning and development, and things like this. So if we know how something has influenced, then we can go about trying to change those things so that we can get the desired outcome. Does that make sense. Just give me a thumbs up if it does, Or if you've got any questions on that.

39:01

Some of you already touched on a bit of a topic here already. And that was going to bring up which is why is this highly sensitive, why is the nature nurture debate in these things, it becomes a real sensitive issue, and we have to ask ourselves lots of ethical questions, which is a big part around psychology you'll have whole modules on it, if you go on to take it at a level. And, again, at university. And Miriam, I think earlier in the chat said something touched on that when she said that if we assign value based on cues and some people would face discrimination. So, beyond this idea however though of placing value on IQ. If we look if we found out that IQ was genetic. And imagine we did some within our research

people born with blond hair, have higher IQs than somebody born with brown hair. What are the ethical implications of that information and how will that impact society. We know that it might cause discrimination, We know it might cause problems. And then you have to ask yourself as a researcher what your job is in that. So these topics can become really, really sensitive, you have to be tread carefully and really think about implications of your research. And there were various arguments for that about what your role is the researcher is it to find truth, which is what I would argue is to find truth and then what people would do with it from there is, is then a decision that somebody else has to make. but you can see why these topics become really sensitive areas, and you have to tread carefully in these arenas, but it is important to find these things out because being able to manipulate certain things to manipulate traits, especially things like IQ and some of the traits that we'll be talking about a bit later when it becomes a connection to criminality and can have huge positive impact on people's lives. So understanding it better, means that we can influence outcomes. The next slide. Okay. So again, I'm going to ask for some feedback from you guys. And if any of you want to turn on the cameras and have him speak, or put it in the chat, it doesn't matter which one, but I want to ask if any of you guys can think of any traits that you think might impact criminality. Yep, that's a great one childhood environment, and that's one that we're going to cover in this session, but yeah, that's great. Any, any of us, anyone can think of. Yeah childhood trauma. Emotional apathy, lack of money, okay, yeah, so these are all great. And so we're going more towards peer pressure. Yeah, that will come into today's lecture as well. And so these are we're leaning more towards environmental influences here, and emotional apathy, so I'm thinking here that I guess that's an idea that's true but that could come from nature or nurture and again we'll, we'll have a little bit of a look at that. So yeah, so these are all really good ones and we'll cover a bunch of them. In this lecture, so hopefully you'll get some more info on them. Okay, so we'll move to the next slide. Okay, so first I'm just gonna give you a bit of an overview as to, we're going to look at inherited traits first. And this is just a bit of an example as to how we can see criminality, transcend generations, Even when we separate environmental influence. And so this is how we can see the pathway of inherited traits here with the story so it's just a bit of a case study. To give you an idea. And so this is a story of a guy called Jeffrey Landrigan, and he was adopted at birth. So adoption studies are a really great way of trying to disentangle the effects of nature and nurture, because it allows you to completely take away, shared environmental influence, and therefore follow genetic influence from parent to child.

43:49

So Jeffrey Landrigan he was adopted at birth into a middle class professional family, but he had trouble from childhood, with certain behaviors. So abusing alcohol. And, and various forms of criminality. And so he was arrested a lot through his youth, and he was actually imprisoned and put on death row, when he was around 20 years old. And, and he while he was on death row, he met a man called Darrell Hill, and this guy looked at him and he recognized him, even though that never met, and it transpires that Darrel Hill had met Landrigan his father, who was also on death row Landrigan and Jeffrey Landrigan and his father had never met, there was, he was separated at birth and adopted into a different family, and his father was also on death row for murder. So both of them had wound up in the same place by having very very different environmental backgrounds, and it goes on from there that even Landrigan his father, his grandfather had also been in prison, most of his son's life, and was a notorious bootlegger and had a vast violent criminal history. So these are three men three generations that have not shared the same household haven't been raised together to, one of which two I think two had a

fairly similar, and deprived background but one of which had a very different upbringing very different childhood that all engaged in violent criminal behavior. So this is just a story in which you can see inherited influences, passing through the generations. Okay, so we're going to have a look at these two traits, Mano, Amy oxidase Ag, and the prefrontal cortex. And so but before I go into it, this is kind of a disclaimer. There is no specific gene for crime, it doesn't exist, and you don't, it doesn't work that way. What we have is certain traits and differences that have incremental influences on somebody's propensity to commit crime. And so you could have. We'll go through the Monterey mean oxides aging and the prefrontal cortex, all of the traits that we'll talk about here could exist in the group that I'm talking to you now, you guys, it doesn't mean that you're going to go on to commit crime. These are small factors that add up and interact together, that increase one's likelihood, but it is not a determined a determining factor, and they're all very small influences that when added together can have a significant effect. But none of these are in themselves determinants of crime, that that's not what I'm telling you about today. Okay, so we're gonna start with mano a mean oxidase aging. So this is a gene that produces an enzyme that breaks down, chemical messengers that exists in the brain. So this is things like serotonin and dopamine, a big chemical messengers that are used often in the brain, and this gene produces the enzymes that breaks down those chemicals. Okay. And so, this gene can be expressed in two ways. It can be, you can have a high activity, Ma, or a gene, or you can have a low activity, ma or aging. And if you have a low activity version of this gene.

47:47

Oh sorry, let me just move this because it's covering up my screen. Yeah, if you have a low activity version of this stream. This gene, it means that you have a deficit in the enzyme that this gene produces and this enzyme is the thing that breaks down, serotonin and dopamine, so if you don't have enough of this enzyme, it means that you're going to have very high levels of serotonin and dopamine in the brain that aren't being broken down and high levels of these two chemicals can lead to impulsive, violence and aggression, it's more highly associated with violence and aggression in people if you have it into high levels. So we know that people would love activity, ma genes are more likely to be to have behaviors, including impulsive violence and aggression. Okay. But again, like I said, the MA gene, we all have this dream, we might have a high activity or a low activity version of this gene that activity is associated with high levels of aggression and violent behavior, but this is by incremental increases. It's not in itself a predictor of crime. Okay, this, you've probably may have heard about the scene it's been called before the warrior gene. So it's something that might have been seen as a benefit at some point in time when we needed to be more aggressive to survive. And you might have read about it in various like newspapers and magazines because it became quite a big talking point. Because, it became a topic within the media, and within the criminal justice system as to whether this should be taken into account when people are being sentenced for violent crime. Let me just, oh sorry, I couldn't go on to the next. Okay so this is just an example of a route like the where that ma oh a gene came into the real world, and started having an impact. So, in 2009, an Italian court reviewed the sentence of Abdulmalik buyout. So this was a man that had murdered somebody that he had previously had an argument and an altercation with, and he did methods to stabbing this man that apply appeal, peel, they found that abnormalities in brain imaging scans and in five genes, had been, they'd found this within this man that were linked to violent behavior, including the MA Oh Ag, and upon this they reduced to sentence. So, this was the first time that we that behavioral genetics, had been used as an appeal to influence somebody sentence. So this was quite a landmark moment, and this was in 2009 in an Italian court. so

you can see this guy, he didn't just have a low activity, ma gene, you had a bunch of other things that were also associated to violent behaviors and aggression. And so I've only told you about the MHA gene but there are a number of different things as well, so he had a number of these, and they decided to take this into account and reduce the sentence, on that basis. Whether or not that is something that should be done is something we can have a chat about at the end of the session, because that enters more ethics and what we think prisons are for. And, and that side of things. Okay, so the other aspect of, when we're looking at inherited factors and biological markers for increasing the likelihood of criminality is the prefrontal cortex. So you can see in this image, the prefrontal cortex is in purple. And so it's just this bit here at the very front of your brain. Okay, and this is involved in lots of really important things for our day to day lives so it's where executive functioning and takes place. So this can include things like decision making. It really highly active for decision making, impulse control, emotional regulation, your ability to feel empathy and things like cognitive flexibility so that's basically your ability to adapt your behavior to a certain environment or a certain situation. So as you can imagine, these things, things like empathy, impulse control, really important when it comes to situations that might involve criminality, whether you're likely to react to somebody's provocative behavior.

52:49
You're ability to empathize with somebody that may be a potential victim, things like that so it becomes, it's quite important. So bear with me a second.

53:06
Okay,

53:08
so this is a study looking at the prefrontal cortex, and it's looking at the prefrontal cortex in people that have been convicted of murder, and a control sample. Okay, so what we're actually looking at is a PET scan, so that's positron emission tomography, and, and this is basically functional brain imaging, and it uses radioactive substances called radiotracers where you allows you to visualize the metabolic processes taking place in the brain so metabolic processes. In this case, meaning the blood flow. And so when we activate when we're using a particular part of our brain, and it requires a higher level of blood flow, so more blood will go to the area that we're using, and that is shown up in this PET scan, so the areas that are in red and green are more active, and we're seeing more blood flow, go to those areas. So this image is letting us see how the brain is functioning and which areas are active. And so in this study, it was a study by Raina Sol and included 44 participants 22 of those people were imprisoned for murder. And this group had also the whole group had pleaded not guilty by reason of insanity, and the other group were 22 people that were age matched, and gender matched to the murders, but they themselves had never committed any crimes. And they underwent the PET scan, While they were completing a 32 minute continuous performance task which required sustained attention. So, this would require a lot of activity in the prefrontal cortex. Okay, and as we can see in the control group, You see a huge amount of activity in the prefrontal cortex. So that's why you're seeing, like, a lot of the orange, that are lining up at the front of the brain, right, compared to in the murderer group, where you see very low activity so you see like quite a market difference in the level of activity between these two groups, so that would suggest that there is a dysfunction in the prefrontal cortex in this group. And as we know, the prefrontal cortex is really important for things like empathy, and for emotional control so the

prefrontal cortex acts as a kind of emotional break, And it's important for things like decision making. So having poor activity in this area could have some quite serious consequences. And so while this is a biological marker, we know that it doesn't necessarily distinguish for us, whether it is based on nature or based on nurture. So one of the reasons that you might have really low activity in the prefrontal cortex could be based on traumatic brain injury, for example. And we know that people the prison population has a much much higher rate of prefrontal traumatic brain injury, sorry, than we do in the general population. So it's possible that this group had had brain injuries. And that's what led to the low activity in the prefrontal cortex, for the murderer group. But we also know, through really early development studies, and even studies of fetuses in utero, that we have, you can identify poor prefrontal cortex activity, even at that really early age, in which case we can rule out things, certain environmental influences, which means it's much much more likely to be a genetic issue which has led to poor development or disruption in the activity in the prefrontal cortex. So we know that it can be influenced by both things. But the prefrontal cortex function is a really big correlate for criminal activity. Okay so now we're going to move on to some of the environmental factors.

57:30

And so there are a number of different types of environmental factors and you guys covered some of them when I asked you some questions about it earlier. And so, fetal alcohol syndrome childhood maltreatment and deviant peers, they're the ones that I'm going to cover with you. In this session, but we've got other ones we've got head trauma which we just talked about traumatic brain injuries being a correlate with criminality, poverty, poor maternal attachment and birthing complications. And so, birthing complications, tends to be very similar to head trauma because it's things like the lack of oxygen, leading to certain neurological issues after birth or the use of for sex, for example, causing certain brain injuries, and during the birthing process. So the birthing and head trauma are quite linked. Okay, so we're going to start with fetal alcohol syndrome. Oh no, We're not. We're going to start with childhood maltreatment. I'm just gonna answer some of the questions because I've seen some coming up in the group, which I wasn't spotting before so before we move on to the environmental factors, I'm just going to answer any questions that come up that have come up in the prep for the previous section. I heard somewhere that factor in drug addiction was the body growing accustomed to certain chemicals, I'm not sure if it was just a drug or happy chemicals associated with drugs as well. With that, having gene. With that having gene, encourage abnormal behavior because the brain might need high levels of dopamine to feel content. That's really good question. So, people that are all addicts become accustomed to certain chemicals that's right so and it's usually with chemical dopamine, that's associated with addiction. So you don't mean is a rewarding chemical he acts as a messenger in the brain but you feel you tend to feel very very rewarded when you get a spurt of dopamine in the brain. And when you take drugs that increases the release of dopamine, or alcohol, or whatever it is that's, that you become addicted to it because it becomes a rewarding feeling. And so people that become addicted tend to have dysfunctions in the area that is associated with that dopamine loop, but I couldn't tell you exactly how, what that dysfunction is or, to be honest because it is not my area of expertise, but it is a dysfunction in that area. With the dopamine reward loop. So people that are more inclined to become, to have addictions have dysfunction within that area.

1:00:23

Would a soldier who has killed soldiers in the enemy troops have the same PT scan, as the murderer. Okay, so that's a really good question. So we do see dysfunctions in the, in functional brain imaging scans for people with P PTSD. So, you say, a soldier who's killed soldiers and enemy troops have the same PCs kind of smarter. So, but it's not necessarily the same thing. So, a soldier for example, that has killed another soldier. They are doing it under instruction as part of a disciplined job, etc. So it's not the same as if somebody that's lost control, based on being really angry in a particular situation goes and commits a murder you would seek to quite different personality types likely and different neurological functioning. However, you do get people that are more inclined to be aggressive or violent, or more likely to find themselves in the army for example and become soldiers, right. So, you would see that they would probably be, have different activity to maybe civilian, but not necessarily that matched with somebody that was in the murder a group, if that makes sense. So it's not that. It's not that, committing a murder is likely to cause causes that change, it's the door more somebody that has that change is more likely to commit a murder, if that makes sense. Okay. So that's those questions if anybody has any other questions just keep popping them group and I'll try to remember to keep having a look at the questions as I go through the rest of the slides. Okay, so we're looking at the environmental impacts on criminality. Okay, so starting with childhood maltreatment. And so, you get four different types of maltreatment, physical abuse, emotional abuse, sexual abuse, and neglect, and the majority of children that suffer from maltreatment, will, will receive more than one type of abuse, so we'll receive a mixture, and this combination of over abuse will impact, have different impacts on children, and the influence it has on neurological and emotional outcomes.

1:03:13
So childhood maltreatment it's associated with poor and mental health and elevated delinquent behaviors. So, it increases things like depression, anxieties, we talked a little bit about PTSD, conduct disorder and personality disorders and substance abuse, so it can have dramatic devastating impacts on children that suffer from this kind of abuse, and it leads to a much much higher likelihood of somebody involved becoming involved in delinquent behavior. So, the question is, I guess, on that basis, why. So, if you can, in the chat or again like just unmute yourselves and speak to me. Why do you think childhood maltreatment is likely to increase chances of criminality.

1:04:27
Just any guesses. It doesn't have to be right. Just have a think what you think that might be.

1:04:45
Okay, I've got a couple so children may mimic their parents abusive behavior when they grow older, so Exactly, that's a really good one. No parents are role models, and we create scripts as to how we should behave based on the people that we observe around us. So if what we see is really violent, aggressive behavior, we're much more likely to go around and believe that that's how we should interact with the rest of the world. And that's also true, a child abuse is a criminal offence, so child is exposed to crime from an early stage so I guess also, the idea that having a lack of respect for rules and the law, etc. Again, using this role model example that's being demonstrated for child from very early on, we don't actually know what's right, when, and when they're older. So as in, they're being taught. They're not being taught the correct sorry So, Annika and just reading those I'm not fully understanding, okay so they're not being taught right and wrong from an early age because you've got

parents that are clearly demonstrating wrong behavior to them from, from very young. So, all of these yeah touching on this idea of role models, and you're being shown some terrible behavior from a really young age and then you believe that that's how you should interact with the rest of the world and the people around you because that's, that's what you know. And you've seen it, it's successful for that adult. Okay. And so I've got from Teagan, they might not hold people to the same respect as others, they've been treated poorly so they don't see what's wrong with treating other people that way and the way that they were treated exactly. Okay, so, so we know. Poor, poor role model. And from a young age, I'm teaching you that that behavior is the way that you should navigate life. So, but we have another element as well, which is touches on, we're going back to genetics, and this is where it's seeing it's so interweaved environmental influences, and the influences of nature and nurture. So just take you to the next slide where I explain that a little bit. Okay, so, childhood maltreatment, and it leads to really high levels of sustained levels of stress, so we all experience stress, and we know it has an impact on our body's racing heart, and you get a hormone called cortisol. Cortisol being released and it increases blood flow to your muscles, and it gets you in that position being ready to fight or flight, but children that are from abusive homes or experience abuse throughout their childhood, they are exposed to really high levels of stress for really long periods of time, because they have to be prepared to fight or flight. A lot. Okay, and this influences the expression of some genes. Okay and this is a thing called epigenetics. And this changes your brain function. So environments influence. We know with, let me start that again. I'm rambling. So we know that for example with the MA gene, you can have a gene that's expressed as high activity or low activity, and it can be this, this is how epigenetics is how the environment can influence the genes that we already have. So, the environment can't change, we can't suddenly get a different set of genes, because of the environment we're in, we have the same set of genes, but the way in which they're expressed as in high activity or low activity can be influenced by the environment that we're in. So if you are in an environment with really high levels of stress, this can influence for example, whether a certain gene is high or low activity, which in turn can change the way that your brain functions and change various behaviors, it can change the amount of chemicals in your body, the amount of chemicals in your brain, the structure of your brain and how you develop from childhood into adulthood. So, even at an environmental level. We can see things have an impact on our genes. So, this makes it so difficult to try and disentangle of nature and nurture and epigenetics is a fascinating field. For this reason, But it means that how do we start looking at causation, if we know that from,

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from a small child, your genes can be influenced by what's going on in your environment. So trying to really get down to specific causes becomes very difficult. We do do it and we attempt to do it but that's why it's such a difficult job. If you have any questions on that because that is a bit of a tricky topic, pop it in the chat. I see if I've got any others. I know. Hey guy but if you do let me know. Okay, and again this is just a bit of real life application. So, you may, I'm sure all of you have heard of Charles Manson so he was the leader of a cult that committed to a total of nine murders that he himself had a really terrible childhood he was terribly neglected by his mother, and sold to strangers and abandoned in various places and not fed properly etc so he experienced a really high amount of neglect. And this is not uncommon in people that we see with really strong criminal histories and high levels of violence, etc like this childhood maltreatment comes up a lot. And you've also got Arlene wareness, And so she, you might have heard of her, she, there was a film made about her called Monster. And she killed six men

along a Florida hot along Florida Highway is usually truckers, and she has our she was also abandoned by her mother, and raised by addicts and a grandfather that physically and sexually abused her, so really terrible childhood maltreatment is correlated with criminality. However, we also get huge amounts of people that were experienced terrible maltreatment through childhood and don't become criminals, and this is the idea of each thing having an impact but not being specific causes so each of these things might contribute to your likelihood, but it's not the determining factor, and it's not usually, it's never just one thing it's multiple factors added together that tend to push people into that direction. Okay, so fetal alcohol syndrome is the other one that we can have a look at so fetal alcohol syndrome is something that develops due to significant exposure to alcohol during pregnancy. So people born with fetal fetal alcohol syndrome tend to have cranial facial abnormalities. So some of these things, for example, is having really low SAT is not having that the crease between the nose and the mouth and not having a furrow in the tongue, for example, so it causes physical, developmental issues, from birth. It also leads to. It's highly associated with learning disabilities and low IQ and neurological functional and structural abnormalities, just got a question. Do you think that criminals who suffer from childhood maltreatment should get a low sentence. So that's a really good question, and that's something we're going to tackle at the end so we're gonna have go into breakout groups, again, just for a couple of minutes and have a think about some of these questions and what, what do you think we should do in terms of policy about how we apply this information to questions like that. What should we do if we know it has this kind of impact. And it does that make them responsible, but also how do we look at how do we protect society, etc so we'll get a chance to go through some of those things, great question. Oh no, so we're not gonna go into breakout rooms just now sorry. We'll do it at the end. Okay so fetal alcohol syndrome, so yeah so it's associated with these things, developmental physical abnormalities in terms of like cranial facial, learning disabilities, and neurological dysfunctions. And

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so, the thing about fetal alcohol syndrome is not very common in the general population. So in fact, per 1000 people in the population around two to seven people will qualify for this disorder. So it's not something that you'll find very often within the general population and prenatal alcohol exposure, it's associated with some of the things I mentioned but specifically behaviourally it things like poor impulse control, which we also saw with like poor pre poor activity in the prefrontal cortex and impaired judgment, An inability to delay gratification. So you can see how these things might be associated with certain things, certain criminal activities like, for example, theft, if you have an inability to delay gratification even sexual sexual offenses, things like that. And we have a Canadian study that recently estimated that people would feel alcohol syndrome, or 19 times more likely to be incarcerated than people without fetal alcohol syndrome. So we're seeing like a huge correlate there compared to the number of people in the general population with the disorder, you say way overrepresented in criminal populations, but there's a mixed reason for this, and you can argue. There are two reasons that you can argue for this one is that these people are much more likely to commit crimes for the various reasons that we just talked about poor impulse control, impaired judgments, etc, but also the People with this disorder that end up in the criminal justice system. So, arrested, but perhaps not not charged or sentenced are also much more likely to become incarcerated than people without the disorder. And this is for other things that are also associated with their disorder so things like they have diminished capacity, they're less likely to be able to defend themselves against in a courtroom or they're much more likely to give false confessions, because they have trouble with confusing fact and fiction. So, and

they're also much more likely to be victims of crime. So but what we do see is that largely over represented in the criminal justice system, in itself, and this is because of some of the things that we're seeing here poor impulse control impact judgment. Also, you can imagine that if a child has been born with fetal alcohol syndrome, then their environment is also likely not to be the best environment, it could be. So being with negligent parents, perhaps, or even having been taken into care at a young age, things like that which might have an environmental impact, in addition to their disorder alone. Okay, and then, oh, sorry, I didn't switch. And then the last one we're going to look at just really briefly is deviant peers. So, individual individuals that affiliate with deviant peers are more likely to participate in crime themselves, I think that's pretty obvious. We knew that people that people that associate with criminals are also more likely to be criminals. Studies show that the majority of crimes committed by teenagers occur in groups. So this is deviant peers hasn't much is much more associated with criminality in. In, teenagers in youth and association with deviant peers is actually one of the best predictors of participation in anti social activity. So that's beyond any of the other things that we've talked about here. Beyond the m aG and and childhood maltreatment, etc, you'd like this is our best predictor of criminal behavior is association with deviant peers. So, This is, this is one of the best predictors we have. Okay, so I'm just going to quickly talk about the interaction of two factors.

1:18:14
Sorry, just bear with me. I'm not very good with this technology as you can probably tell, I'm okay. So

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factors

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to various two factors can come together and interact to create a bigger impact than either of them could have had alone. Okay, so we're going to take for example, low activity, ma gene and childhood maltreatment. Okay, so these two factors can interact with one another, and increase the risk of criminality above that if the sum of both risk factors when they exist in isolation. So like I said, people don't tend to people that go on to commit crimes and don't tend to just have one of these risk factors, they have loads of risk factors, and then these add together to, to push somebody towards criminality. And so if we take the example of that activity, Mr. Ma oh a and childhood maltreatment. And these are just. And this is fictitious the I'm not using correct risk factors here this is just an example to give you an understanding of what I'm talking about. If lo ma Oh A has a risk factor of one so it increases your likelihood of getting involved in criminality by a factor of one, and childhood maltreatment has a risk factor of three, then together they might have increases your risk of becoming involved in criminality by a factor of 10. Okay, and that's the idea of the interaction effect. So they on both of them together, a more than the sum of its parts. Okay, so we know that certain combinations of risk factors can be very problematic when it comes to increasing somebody's likelihood of criminality in the same. In the same vein of this however, we know that interaction effects can have a positive impact. So if you into, if you have, for example, the activity, mha, interacts with great maternal attachment, then that might mean that that might mitigate the impact of the low activity, ma gene and have an interaction effect that actually reduces your likelihood of becoming involved in criminality, more than the sum of either of those two. So, just hope that makes sense. So the idea is that there are certain combinations of factors that can increase the likelihood of criminality by a lot more than either of them alone, and vice versa.

Okay so this is why we're gonna go into some breakout groups and have a talk about the following questions. And just to put them up, just based on the information that we've been talking about here. So the impact of nature, the impact of nurture, and these various factors. What, what, what do you think, should we be putting people in prisons, but within this question, how to think about the individual at the individual level, the victim level, the societal level. Should the focus of prisons be punishment or rehabilitation. What should we do if we know somebody has many risk factors for criminality but hasn't yet committed a crime. So and should somebody with many risk factors for criminality be considered responsible for their criminal activity. So I just want us to have a little bit of a think about this a little bit of a debate there really isn't a right or wrong answer here. And we are still grappling with these questions, and people couldn't tell you a straight answer here, but just try and think about how you could support your various arguments, using the information that we've learned just now in this little workshop. Okay, so if we go into the breakout groups now.

1:22:26
I should have opened up the breakout rooms, and if you have not been assigned one, Then you can use the main room as your breakout room.

1:23:27
Hi everyone. Um, so the first one is that should we be putting people in prisons. And I guess that's the function of a prison is kind of to teach other people's a society kind of that action is wrong. The left not accepted and that shouldn't be a punishment for it that's why prison is there and if we take prisoners out what's going to what we're going to do to do that job how what how we're going to teach society that this action is one where it's acceptable and there is consequences for these actions. If we take prison out. So I guess we should put people in prison. Well, that depends on their case, I mean if they're have a mental illness or physical and this I think there should be something other than prison of punishment. But yeah, what does everybody think. Please share your opinions. I agree with you that about, people have certain mental illnesses. There should be a different place for them to go not necessarily different, but sort of something where they could get more help or that, for whatever they have, because just being sent to prison. It's not going to help them, it will just, you know, it might cause more problems than it's solving by taking them out of society and not giving them the help they need. Yeah, I mean, and then we could consider like and putting that one person in prison, may harm that one person may make them even worse, worse person that they were, but it kind of full teach 100 people or 50 people in society, that this action is not acceptable. So which one do we do, and we put that one person in prison, even if it's not for the good, even it's not going to teach them anything, it's not going to be beneficial for them. Are we going to do that but I think we should keep putting people in prison as well. Again, the mental health and physical disabilities. I think that should change. I also think, for many prison system. Yeah, that's absolutely true. And the second one is, what should be the focus of prison punishment or rehabilitation. Not so sure about that. What do you think, I mean, that is really interesting, but, but I feel I have two people and one did the same crime as other person, but that person didn't have any of the factors and the person did have the factors do you think it's fair to sentence them to the same prison time. Do you think that's fair. I generally don't think that's fair. I don't think that if two people did the same crime, what had the risk factors, and the other didn't. The person with the genetic risk factors should get a lower sentence because it's not. I can't think. I do agree that many people experienced traumas and still document crimes. But then, when we have when we have a lot of criminals, but some

have respect as some don't kind of need to differentiate between them. That's what I think. But yeah, it's very, that's a very valid. Really nice, very interesting.

1:28:14
We'll move on to the next one. What should we do if we know somebody has many risk factors for criminality, but has not yet committed the crime, and eaten nothing. Why would you pursue but haven't committed a crime. That just a normal person.

1:28:57
Oh yeah, definitely not avoiding prison time. They deserve prison time. But, yeah, that's absolutely true. They should not like avoid prison time entirely because factor that's absolutely true, they should not do that.

1:29:34
Yeah, maybe. That's what Katherine sage saying maybe we could prevent crimes by providing free therapy for childhood mistreatment and things like that. Yeah, but I'm not sure everybody will be up for that. It's really hard to remember this kind of thing, never mind going through therapy, and some people don't want to, you know, get out of work or stop doing what they're doing and go to therapy to travel things, but it's a really good idea, it's a really good option for those who are willing to do it. It's just a difficult thing to do. I think that people with risk factors should not, should not doing that because I haven't cried yet, and that's because they're fully normal humans fully normal people but haven't got anything that makes them less of a normal person, therefore they should be treated like a normal person. I have no reason just because of southern childhood maltreatment, doesn't mean that we should get an extra two extra treatment, I guess, in that kind of sense, you know, that might bother them, that they might want to just normal. I don't know. Does anybody have, I mean I think fault for that one. What should we do if we have somebody who has the risk factors. I think there's many people who would disagree me. Yeah, I agree with that just because a chance to come in crying behind doesn't mean that they are criminals yeah yeah and it shouldn't be like trauma people should not evolve with them and that's I think what usually happens, and less people who suffer from child childhood maltreatment, they seek help than that when they get the help, but I feel I don't think we have something like criminal and pre criminal last night I think so. We should not kind of judge people, and we're going to say, Oh, you have genetic risk factors, you're probably going to be a criminal, then that's going to increase their chance of being at criminal, So I think we should leave them alone. I agree with what you're saying, but I think the option to go have free therapy if they want, would be a good way to try and decrease the likelihood of them becoming a criminal because they found a healthy way of coping with the things they've gone through, or, you know, the, the genetic predisposition, making them known that fact might help them, so they're more aware of the sorts of behavior that they might show. Yeah, absolutely, That's a really good point. Yeah, definitely. I definitely will.

1:32:39
And the last one, and I don't really have a strong opinion on it, because I'm split between a solo and should somebody with many risk factors be considered responsible for their criminal activity. I don't know I can say yes or I could say no I'm genuinely don't have a stronger theory on that question. How much is many. That's the question how much is learning so I don't know, what do you guys think. I think

it's quite a situation based thing, because like you said, it depends how many actors people may have. But obviously, anyone who commits any crime should be held accountable. But the, yeah, maybe they should take into account, depending on how many factors they have, whether you know the punishment should be as great. Yeah, I mean, for the risk. I some some luck convinced and I still don't know what to say for that one should somebody with many risk factors, because you don't know how much you really don't know how high is a risk factor. Because we can we can say a lie, we can say if your risk factor, if you have this many risk factors, then you're not considered responsible for your criminal activity. We could do that, but then that's where we have to manage.

1:34:35
Okay, we should all be back in the main room now. So I'll pass over to Sophie.

1:34:42
Hi everyone, so I hope you got into some of those questions. It was just there just that as examples for the kinds of things that you have to grapple with, when you start looking into things that are so sensitive, and have such a huge impact on the world and society in all of us. When it comes to things like looking up risk factors and potentials for committing crimes and things like that. And like I say, there really isn't a right or wrong answers here with these things, but hopefully you can use some of the knowledge that you've acquired through this session to help you think about what what your answer is to some of these questions. But like I say there is no written answer here for this. And I think there was an option for some post session work, if you guys wanted to do it and I think the suggestion in that was to have a guy that like writing a short essay or a short answer to some of these questions, using some of the information and the knowledge that you've got from this section. But yeah, they're, they're really difficult ones to grapple with, but hopefully you guys got to initiate a bit of a conversation about those things. And this is me done really with the session but if anybody has any questions relating to this lecture, if I just pull up the chat again, or feel free to just take off your mic, and talk to me straight away. But if you have any questions that can be about this lecture or about studying psychology or something like that, I'm happy to answer them.

1:36:26
So, I've seen some things here in the chat that I've not had a chance to look at. And so I think that people who actually harm others should be isolated but presence needs to be reformed okay so this would be. These are some of the answers that you guys have put together in the breakout rooms I think what's really interesting. Okay, so is psychology at a level necessary to be able to do psychology at university. No. So you don't have to study psychology a level to study psychology University and I think some schools probably don't even offer psychology a level so that's not something you need to worry about but what you should do is look up the kinds of places that you're thinking of studying psychology at university and look at what their requirements are, but psychology as an A level isn't a necessity. I don't think for any course in psychology but there are certain things that are recommended so things like biology are usually quite helpful. But like it, you can use a good range of subjects really quite a broad range of subjects that will be accepted on a psychology course but do look up the specific requirements for the kind of courses you're interested in because they'll advertise it while on the website but that isn't a specific necessity now. Is there any admission tests you have to take so to do, psychology, here I am in Cambridge, there isn't admission test. And I didn't do my undergraduate

degree here in Cambridge, I studied as a graduate student here. And I can't think of what the name of that test is but that is a test that you have to take, and he in Cambridge, psychology is called I think psychology in behavioral science. But again, if you go on the website here to look at the admissions criteria, it'll tell you everything that you need to know about that there but yeah, for here but usually I think that most of the universities, maybe they probably want to Oxford and there is one here, admissions tests but most of the places that there won't be an admissions test.

1:38:47
And now. Oh, do you have any favorite books about psychology that you'd recommend, and yeah I do actually one of my, the books that really got me into wanting to study psychology is a book called The TellTale Brain, and it's by an author called Ramachandran, but I will. I'll write the title here in the chat, which I think is really interesting. It covers some really cool aspects of psychology, and so if you're interested in just finding a bit more about the brain and the way we think, and that kind of thing, definitely, I would recommend reading that, I think, also, if you're interested in more like clinical sides like certain neurological disorders or mental health conditions. Oliver Sacks, is a really good author and he's written lots of books. So one of them, which I think is really good is called the man that Mistook His Wife for a Hat, which, again, I'll just put this in the chat. Wit again yeah it's really good book. So, yeah, I would recommend those.

1:40:12
If you're interested in reading a bit more around psychology. Oh no, I send them to somebody as a direct message. Sorry,

1:40:27
let me remove that.

1:40:36
Okay,

1:40:37
I don't know how to but. Alright, I've got it. Here we are, put those into the rest group. Okay, so hopefully you guys find this interesting. I hope you found the lecture interesting if you've got any. Anybody got any big questions about what we covered today, I hope everything was clear and useful. Okay.

1:41:31
If nobody has any questions, um, we can end there. Thank you so much, Sophie for that session I found it really interesting, and I'm sure all the students said to. I'll post kind of the recording and resources online. After the session, and if anyone has any questions for Sophie. I can always pass them along to you, so do let me know if you've got any. But yeah thank you I hope everyone enjoys the rest of the evenings. And yeah, see you.