

Genetic Mitigation

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On 30th October of last year, *Nature* ran a story entitled ‘Lighter sentence for murderer with bad genes’. According to the article, expert evidence about the effect on offender’s behaviour resulting from his genome led to a shorter sentence than the offender would otherwise have received. In this paper, I will consider a number of ways in which behavioural genetic evidence might be used in a plea in mitigation in New South Wales and consider some of the theoretical and practical implications of such mitigation.

I will argue that a plea based on genetic mitigation could be put to the New South Wales courts and that in some circumstances it would be consistent with the rationale that, I argue, lies behind existing New South Wales mitigation practices to take note of the genetic factor in granting mitigation.

I will first of all note that evidence of a genetic predisposition perhaps be used as *evidence* to support the view that an offender has a mental illness which has contributed to the commission of the offence. Thus genetics could perhaps be used as *evidence of some other mitigating factor*; mental illness.

However it would be more radical if behavioural genetics were used to argue that a mitigating factor deserves more weight. This would be different from providing evidential support for a diagnosis of mental illness.

I will show that New South Wales courts have an existing line of authority to the effect that if an offender has experienced childhood maltreatment this can be a mitigating factor in punishment. I will then put forward the rationale that, in my view, lies behind such acceptance; I will call this *the causal theory of mitigation*. After that I will outline some research from behavioural geneticists that suggests that some offenders may have a *genetic susceptibility* to the adverse effects of such maltreatment and argue that it would be consistent with the rationale that I have constructed in relation to the existing mitigating factor to, in some circumstances grant *further mitigation for those with genetic susceptibility* or, to put it another way, to give extra weight to mitigating effect of the maltreatment by reason of the offender’s genetic predisposition. This more radical use of behavioural genetics I will call *genetic mitigation*.

I will argue that a similar approach might be taken in respect of other environments that the courts have taken to predispose people to criminal conduct. Thus it may be that some people are genetically predisposed to be significantly impacted upon by the social circumstances referred to by Justice Wood in *R v Stanley Edward Fernando* (1992). It is possible that some offenders who have been affected by the combination of a genetic susceptibility to such circumstances deserve further mitigation beyond that which the courts already grant.

After that I will consider some implications of my view for certain debates in legal theory and will briefly consider some practical considerations relating to the use of such pleas in court.

The use of genetics to provide support for a diagnosis of mental illness

As has already been mentioned, behavioural genetics might be used as evidence to support the view that an offender has a mental illness. If a mental illness has a role in the commission of an offence, it may be relevant as a mitigating factor. Thus in *R v Hemsley* (2004) Justice Sperling stated that:

where mental illness contributes to the commission of the offence in a material way the offender's moral culpability may be reduced; there may not be the same call for denunciation and the punishment warranted may accordingly be reduced (para 33).

Bernet and Alhatib have noted that behavioural genetics could be used to support the view that an offender had or has a mental illness that contributed to the commission of the offence (2009:291). They point out that if a particular gene is linked to depression and an offender has been clinically diagnosed as depressed, the fact that he or she also has the gene that is linked to depression may support the view that they were depressed at that time of the offending (2009:292).

Used in this way, the genetic information merely *provides evidential support for an existing mitigating factor*: the mental illness. It does not give any reason to give *extra weight* to the mitigating factor, it just provides some empirical support that raises the epistemic probability that the mitigating factor is *applicable*.

However, perhaps a more interesting application of behavioural genetics would be to use it in support of the view that an existing mitigating factor deserves *extra weight* as a result of a genetic predisposition; this would be to argue for genetic mitigation. In the following sections I will argue that it may be possible to extend the existing lines of authority relating to mitigation for childhood maltreatment to include genetic mitigation.

Mitigation relating to childhood maltreatment and the causal theory of mitigation

The New South Wales courts are currently able to take into account childhood maltreatment when they determine the appropriate sentence for an offender. Thus in the New South Wales Court of Criminal Appeal case *R v Cunningham (2006)*, in sentencing an offender for sexual offences against children, Justice Bell noted that if an offender has been a victim of child sexual abuse, this is a factor that may be taken into account as a mitigating factor. However it was noted that in the matter under consideration, there was no evidence that the childhood abuse had contributed to the offending (para 67).

So it seems that if an offender can show a link between the offender's own experience of maltreatment in the form of sexual abuse and their subsequent offending, the New South Wales courts can recognize the offender's experience of abuse as a mitigating factor in sentencing.

What could be the rationale behind such mitigation and why do the courts not merely focus on the motives and intentions of the offender at the time of the offence? Why do the temporally remote *origins*¹ of the offenders psychology and offending matter?

On one view, the court sees the offender as less deserving of punishment because at least part of the origins of the criminal behaviour lie outside his or her control. This is why the causal link is important. If an offender has suffered sexual abuse and no causal link with the offence is shown, as Justice Bell found to be the case in *Cunningham*, then no mitigation is to be granted as it would seem that the offender has not successfully displaced the court's presumption that the origins of the offence lie within the offender's control.

So on this view, sentencing courts assume that the origins of sexual offences lie within the offender, however this is *presumption that can be rebutted* by evidence that at least part of origins of the offence can be traced to factors *outside the control of the offender*, such as whether the offender has been sexually abused or not.

In this way, the causal origins of offending are at least sometimes important and the sentencing courts can mitigate where the offender's *original* contribution to the offending appears to be small and external causes over which the offender has no control seem to be more significant.

The New South Wales Court of Criminal appeal case *Henry v R (2009)* could be read this way. This case concerned an offender who had been convicted of a number of indecent assaults on children and procuring children for pornographic purposes. The Court of Appeal considered the effect of the offender's experience of sexual abuse on his moral culpability. The sentencing judge had accepted that Henry had been sexually abused at a very young age but on appeal it was argued that the court had failed to grant appropriate mitigation in relation to these childhood experiences. It is useful to consider the written submission on this point. It ran as follows:

¹ I am using the language of 'origination' used in Kaye (2007).

There appears to be a statistically established empirical connection between the sexual abuse of the offender at a young age and his perpetrating similar offences as an adult. The connection is not present in every case but the high preponderance of histories of sexual abuse suffered by offenders during their childhood suggests that there is a connection between the two. It would be difficult to demonstrate with absolute or near certainty in any particular case that the offender's abuse at the hands of an adult when a child was a causal factor in his offending as an adult in any particular instance. However, the significant preponderance of the occurrence of adults who sexually offend against children having such a history must make it more likely than not that the abuse of the offender as a child did have a causal psychological connection to the offender's behaviour as an adult.

The need to demonstrate a causal connection between the history of sexual abuse as a child and the offender's conduct when it is not immediately apparent does not justify an approach of rejecting the history of sexual abuse of a child in respect of adult offending against children without further evidence establishing the link between the two (para 14).

After noting that mitigating factors are to be demonstrated on the balance of probabilities, Justice Grove of the Court of Appeal noted that 'there was no evidence supporting what was stated to have been "statistically established"' (para 15). He went on to endorse the view of Justice James in the unreported New South Wales Supreme Court case *R v AGR (1998)* when he made the following comments:

If it is established that a child sexual assault offender was himself sexually abused as a child and that that history of sexual abuse has contributed to the offender's own criminality, that is a matter which can be taken into account by a sentencing judge as a factor in mitigation of penalty as reducing the offender's moral culpability for his acts, although the weight which should be given to it will depend very much on the facts of the individual case and will be subject to a wide discretion in the sentencing judge (para 15).

However in the matter under consideration, the sexual assault was established but there was no evidence of a statistical link. The sentencing judge found that the contribution to the offender's conduct which resulted from the abuse was not established (presumably evidence of the statistical link would have helped). The appeal court found that the ground of appeal based on erroneous failure to grant mitigation based on the offender's experience of being sexually abused had not been made out.

In these kinds of case, a causal contribution to offending mitigates and it seems possible that statistical links may be of use in demonstrating a causal link between childhood experience of sexual abuse and subsequent offending. Where this can be done the effect may be to reduce the offender's moral culpability and mitigate punishment.

In legal philosophy there has been much discussion of the ‘causal theory of the excuses’; the view that the law excuses and/or ought to excuse where conduct is caused by factors outside a person’s control (Morse 2000, Vuoso 1986, Kaye 2005 and 2007). The above cases do not bear upon excuse as they deal with offenders who have been convicted but perhaps it could be said that they are evidence of a *causal theory of mitigation* in New South Wales.

Alternative rationales for mitigation as a result of childhood maltreatment

However this causal theory of mitigation might be challenged. Morse has suggested that when the law excuses, it does so either for a defect of rationality or as result of a ‘non-culpable hard choice’ (2000: 121).

Whilst it may be difficult, but perhaps not impossible, to argue that victimization in childhood predisposes offenders to criminal conduct in a similar manner to duress, it is possible that sentencing courts could infer that offenders who have been sexually abused have impaired rationality. On this view the knowledge that someone has been sexually abused and that this has contributed to the person’s criminal conduct operates as a kind of heuristic, a crude way of inferring a defect of rationality².

However, whilst it is possible that this is how the courts reason, if the courts do see evidence of having been subject to childhood sexual abuse as warranting an inference of impaired rationality it is strange that in sentencing decisions, such discussions appears *apart* from discussions of mental states.

It seems that the impairment of rationality view would explain mitigation for mental illness but from *R v Hemsley (2004)* it can be seen that mental illness is a *mitigating factor in its own right*. Victimization through experience of child sexual abuse also appears as a *separate* mitigating factor rather than merely *evidence of Hemsley* mitigation.

As victimization is a mitigating factor in its own right and defect of rationality is dealt with under the mental illness mitigation it seems that the rationale for recognizing the victimization is something other than mitigation for impairment of rationality. That issue is dealt with elsewhere.

Morse also notes that Martha Klein has put forward a view in which offenders, through their having experienced hardship which has contributed to their offending, have paid for their wrongs (through their suffering) in advance (2000:151).

However it is not clear that this view would explain the New South Wales practice as the existing practice does not appear to inquire into the degree of suffering experienced by the offender. This would be highly relevant on such an approach however for the courts, the concern appears to be solely with whether the abuse has taken place and whether there is a link with the offence.

² The idea that inferences about rationality might be made from knowledge of social conditions has been discussed by Kaye (2007: 390-393).

Because of the lack of support for the payment in advance or impaired rationality interpretations, it seems that the causal theory of mitigation best explains the New South Wales practice in this respect. This causal approach would appear to be supported in the sentencing remarks of Justice Bell in *R v Mathew James Harris (2000)*. This case related to mitigation for deprivation rather than proactive acts of abuse and in sentencing the offender for three counts of murder and armed robbery, she stated that she approached the matter:

upon the basis that the prisoner did experience a significant level of emotional deprivation and rejection in childhood and that this led him to leaving home and living the of a 'street kid'. In his teenage years he prostituted himself with men and experienced the feelings of debasement and worthlessness that almost inevitably flow from that lifestyle.

I consider that this unfortunate background was causally related to the commission of the present offences... This view causes me to refrain from concluding the prisoner's culpability for his offences is so extreme that the community interest in the various objects of sentencing may only be met by the imposition of a sentence of life imprisonment (para 90-91).

Whilst justice Bell stated that this did not *automatically* lead to a lesser punishment, it does appear to support the view that there *can* be mitigation in respect of causal influences on an offender and this provides support for causal mitigation theory .

In the next section, I will consider a view that suggests that genetics may also exert a causal influence on behaviour.

The interaction of genetics and the experience of abuse

As has been mentioned there is some research that suggests that some people may be particularly susceptible to the impact of having experienced maltreatment and more particularly sexual abuse in childhood. This research also suggests that others are more resilient in the face of such childhood adversity. A team lead by Avshalom Caspi published an influential paper on this subject in *Science* in 2002.

Caspi's team were interested in the question of why some males who are maltreated in childhood engage in antisocial behaviour in adulthood whereas others do not. The hypothesis was that genetic factors may increase susceptibility to the adverse effects of environmental circumstances in the form of maltreatment. Their results indicated that individuals with low monoamine oxidase activity (reduced production of a neurotransmitter) were more likely to exhibit antisocial behaviour as adults but this only happened if they had also experienced maltreatment. The paper indicates that 85% of those who were *both* maltreated and had a low activity monoamine oxidase (MAOA) gene developed some type of antisocial behaviour and that the 12% of who had both the genetic and environmental predisposition were responsible for 44% of the violent convictions noted in the study (Caspi et al 2002:853).

The researchers make the interesting point that “Genes are assumed to create vulnerability to disease but from an evolutionary perspective they are equally likely to protect against environmental insult.”(Caspi et al, 2002: 853)

Ducci et al have considered the question of whether a low activity MAOA gene interacts with the experience of having been a victim of child sexual abuse to predict alcoholism and/or antisocial personality disorder in a sample of American Indian women (2008). As in Caspi et al’s research it was noted that the experience of abuse at an early age was generally linked to serious problems later in life but although Ducci et al were interested in why some who suffered child sexual abuse appeared to be impacted less than others.

They concluded that;

carriers of the low activity allele who have been exposed to sexual abuse are at higher risk of developing alcoholism with antisocial features, whereas individuals with the high activity genotype are protected from developing antisocial behaviour (Ducci et al 2008: 344).

This research suggests that some people are more susceptible to the adverse affects of having been abused as a child. If this research is correct, their increased susceptibility results from their genome. It seems that maltreatment has a predisposing effect but the genetic factor has *a further predisposing effect* through increased susceptibility to the adverse affects of maltreatment.³

The New South Wales courts already accept events from an offender’s childhood social environment can sometimes mitigate, but can they also accept such biological mitigation?

Is it feasible to take note of genetic mitigation?

It appears that it would be feasible for the courts to take note of the MAOA gene and although there are no genetic mitigation cases in New South Wales that I am aware of there are other cases which relate to biological mitigation. Thus both frontal lobe damage and the hereditary brain condition multiple cavernous haemangioma was viewed as relevant in the fraudulent misrepresentation case *R v Child (1999)* notwithstanding the fact that it comes from a very different context (the biological context) from other mitigating factors. It seems that the biological rather than social nature of the MAOA gene would not be an impediment to its use as a mitigating factor in sentencing.

Applying the causal theory of mitigation to MAOA

³ However a paper by Weder et al (2008) suggests that where a person has experienced extreme levels of environmental adversity, the MAOA status is not significant. The genetic influence operates only at moderate levels of adversity.

In this section I will assume that credible evidence is available that an offender has both been a victim of child sex abuse and has shown that he or she has a *further* genetic susceptibility to the adverse affects of such abuse which has had a *further* contribution to the commission of the offence under consideration.

A relevant similarity between childhood environment and genetics is that both are factors that are outside the control of the offender that can have the effect of predisposing an offender to crime. As Glover has pointed out it is hard to see a morally relevant difference between genetic and environmental predispositions (1996) and if the courts are right in taking environmental factors into account in sentencing it may be that there is no good desert related moral reason for **excluding** genetic factors or the interaction of environmental and genetic factors.

If I am right and New South Wales espouses a causal theory of mitigation at least in relation to experience of child sexual abuse, then it seems that *further* mitigation should be granted for the genetic contribution, in addition to the mitigation available for the effect of childhood environment.

This would be consistent with current practices of mitigation and would avoid the rather strange idea that a court might *accept* that experience of sexual abuse is a mitigating factor but *deny* further mitigation to those who as a result of a biological condition acquired at birth, are particularly likely to be affected by the abuse.

This approach would be in keeping with my claim that when sentencing, the New South Wales courts operate with a presumption that offenders are to some degree self-formed. The evidence of the genetics in conjunction with the evidence of the childhood environment indicate that factors outside the offender's control have had an even greater impact on the offender than is normally presumed to be the case and the offender's *original* contribution to their own self-formation is less than is normally presumed to be the case, and so punishment is mitigated.

Perhaps then the thinking could run as follows;

- 1 The correlation between the genetic (low activity MAOA) and environmental factors (experience of sexual abuse) and bad behaviour suggests that there might be a *causal link* between these factors and the development of people's moral selves.
- 2 If it were highly probable that *most offenders* who have the genetic susceptibility plus the environmental susceptibility (through experience of sexual abuse) have had adverse causal influences on their moral selves, then it would be probable that any *particular offender* who has both the genetic and environmental factors has this causal influence on the development of his or her moral self.
- 3 At sentencing the law presumes that people are to some extent responsible for the way their moral selves are and can mitigate where they demonstrate themselves to be less self-formed than the law normally presumes to be the case of offenders. Mitigating factors are to be proved on the balance of probabilities.

- 4 Evidence that an offender has both the genetic susceptibility and environmental susceptibility of type 2 above may suggest a causal link on the balance of probability. This would allow a judge to infer that an offender's original contribution to his or her self-formation is less than the law normally presumes and the sentencing judge can mitigate punishment accordingly.
- 5 If low activity MAOA in conjunction in having been a victim of childhood abuse exhibits a *stronger correlation* with offending than the correlation between the environmental predisposing factor only and offending then it may be possible for judges to grant *further mitigation* for offenders with *both* predisposing factors. Such offenders with both predisposing factors may seem *even less self-formed* than those who have experienced the abuse without the genetic susceptibility.

It would seem easier to use this form of argument in mitigation than aggravation. The standard for proving aggravating factors is *beyond all reasonable doubt* and it would be hard for the prosecution to prove beyond all reasonable doubt that an offender had a *greater* original contribution to his or her self-formation than the law normally presumes of offenders.

Of course all of this presupposes that I am right in saying that the criminal law has a causal theory of mitigation. However if one of the rival theories is correct, it seems possible that they might too offer further mitigation for those with a genetic predisposition, over and above the environmental mitigation.

On an impaired rationality interpretation of the rationale behind the acceptance of the child sexual abuse as a mitigating factor in sentencing, it might be thought that if it is reasonable to infer that those who have experienced child sexual abuse have impaired rationality then it would be just as reasonable to infer that those with the genetic susceptibility to the adverse effects of abuse would *experience greater impairment*. Mitigation would then be granted for the greater impairment.

On the payment in advance theory of mitigation it might be possible to infer that those with the genetic susceptibility to the adverse effects of abuse have experienced greater hardship and have paid more in advance (than those without the genetic susceptibility) and are deserving of more mitigation. However this inference is more of a leap than the impairment inference.

Thus it seems there may be scope for the New South Wales courts to engage in genetic mitigation in a way that is consistent with existing practices.

However child sexual abuse would not appear to be the only line of authority that might be expanded to include genetic mitigation. Some may be particularly susceptible to the adverse effects of *Fernando* environments as a result of genetic predisposition.

Genetic predispositions and Fernando environments

Justice Wood in *R v Stanley Edward Fernando* (1992) enunciated principles which concern the mitigating effect of certain social circumstances in respect of the sentencing of aboriginal offenders.⁴

In *Fernando* an aboriginal man had plead guilty to the malicious wounding of his de facto partner after a bout of heavy drinking. In sentencing him Justice Wood stated that:

[w]hilst drunkenness is not normally an excuse or mitigating factor, where the abuse of alcohol by the person standing for sentence reflects the socio-economic circumstances and environment in which the offender has grown up that can and should be taken into account as a mitigating factor.

According to the causal mitigation theory proposed above, it is proper for the courts to grant mitigation in respect of Fernando environments because those environments are unchosen and outside an offender's control. It is possible that some are particularly influenced by adversity in the unchosen environments in which they have grown up. According to causal mitigation theory it would also be proper to grant further mitigation to those who are likely to have been especially impacted by such environments.

The precise nature of the relevant environment for Fernando purposes is not described in the decision but would presumably include elements of offender's family, peer and broader community circumstances and it is on the community circumstances that I will now focus.

Some research in behavioural genetics is now starting to suggest that, for some but not all, *there is a genetic susceptibility to the predisposing effects of one's local community environment*, or in American terminology, one's neighborhood and this is one way in which genetics might become relevant to mitigation based on the Fernando principles.

In a recent paper, Hart and Mamorstein have suggested that neighborhoods with a high proportion of children predispose *some* towards aggression *more than others* (2009: 971). It suggests that some young people are especially affected by this aspect of their neighborhood. Those with the low activity MAOA gene are influenced towards aggression by neighborhoods with a lot of other children but those with the higher activity version of the gene seemed to be less susceptible to the influence of child saturation in the neighborhood.⁵

If this sort of research were to show that, as a result of a genetic predisposition, some were more influenced than others by Fernando environments, then according to the causal theory of mitigation, some offenders may deserve further genetic mitigation. Correspondingly, if an offender was thought to be particularly resilient in the face of

⁴ Such mitigation is not restricted to aboriginal offenders. See *Jones v R*.

⁵ This research focused in particular on children who had moved neighborhood

an adverse environment, then the court might not be warranted in granting mitigation where mitigation would have been granted but for evidence of the genetic resilience.

Some observations in relation to legal theory

If my preferred rationalisation of the criminal law's mitigating practice in relation to the experience by an offender of child sexual abuse or Fernando type social circumstances is correct then it has implications for those in legal theory who suggest that the criminal law is a compatibilist system.

Compatibilism is a view of free will that suggests that even if it turned out that determinism was true of all human actions, determinism, of itself, would not pose a problem for our moral practices. On a compatibilist view, our practices of blaming remain may remain unscathed even if it turned out that all human behaviour was deterministically caused by factors that predate the birth of moral agents. Compatibilists specify necessary conditions for our responsibility practices which are often unrelated to causation. An example of such a necessary condition would be that agents have the capacity to respond to reasons (Fisher 1998). The compatibilist view has achieved some popularity in legal philosophy.

Kaye has asserted that '[a]ccording to the dominant view in criminal theory, we have a compatibilist criminal law' (2005:1158). This view is echoed by Norrie who states that 'the law adopts in practice the compromise between free will and determinism, known as compatibilism' (1991: 51). Whilst neither Kaye nor Norrie are compatibilists, many in legal theory are.

For example Norrie points out that Hart is a compatibilist when he states that 'the soft determinist⁶ position is compatible with the free will required to found a satisfactory concept of criminal responsibility' (Hart in Norrie 1991:143). Another prominent compatibilist Morse contends that 'only compatibilism can explain and justify our legal practices' (2004:173).

Thus for some legal theorists, compatibilism can explain the practices of the criminal law. However as noted by David Hodgson⁷, compatibilism has difficulty in explaining why hard social conditions should mitigate. It may also have difficulty in explaining why experience of child sexual abuse should mitigate. Thus the existing mitigation practices described in this paper pose a problem for the many legal theorists who assert that the criminal law is a compatibilist system.

⁶ Soft determinism is a form of compatibilism. It asserts the compatibility of moral responsibility and determinism and also asserts that determinism is true. Many compatibilists are agnostic on the question of whether determinism is true.

⁷ David Hodgson put forward this argument at a conference the Law Faculty at the University of Sydney on 14 November 2009

In compatibilism, the ability to trace causal links between behaviour and earlier factors outside agents control is, *of itself*, no problem.⁸ However causal mitigation theory does not work well within a compatibilist framework; under the compatibilist view, moral responsibility and deserved punishment are supposed to be compatible with criminal conduct having causal origins that are entirely determined by factors that are outside an offender's control. Under causal mitigation theory, if factors outside the agents control were sufficient conditions for criminal conduct (as they would be if determinism prevailed), then no punishment would be deserved as the offender would not be self-formed at all and would receive total mitigation of punishment. The offender would have no original contribution to their self-formation and deserve no punishment.

On this view, compatibilism's resources do not easily deal with mitigation in respect of adverse formative circumstances and as the New South Wales courts do mitigate in this respect (for example in cases of sexual abuse, and *Fernando* environments) *it would seem that they are not acting in line with compatibilist theory* as it currently stands. The courts seem to be espousing the causal theory of mitigation which appears to be at odds with compatibilism.

So for the New South Wales courts, although perhaps determinations of criminal liability may be compatible with determinism, at *sentencing, elements of causal mitigation appear*. It seems that regarding criminal liability, it would be possible for determined agents to have the necessary mens rea and perform the actus reus for a crime without any of the recognized defences. Thus criminal *liability* appears to be compatible with determinism. However at *sentencing* the courts inquiry takes on an increasingly historical aspect. In order to determine how much punishment an offender deserves it seems that it is necessary to know more than just their mental state at or about the time of the offence. It seems the courts become interested in questions of self-formation: how did the offender come to be the kind of person that they are? This explains the longer time frame at sentencing, the historical inquiry can extend to childhood where it is suggested that the offender has been a victim of child sex abuse. It is the inquiry into self-formation that explains why causal inquiry becomes important. This is because strong causal links to things or events that the offender has no control over suggests that a reassessment of the offender's degree of self-formation is warranted.

Watson notes that where a person who has committed offence has had a terrible upbringing we become ambivalent in our reactive attitudes towards him (2004:244). In the courts the ambivalence seems to creep in with the change of perspective that occurs in the move from the responsibility stage to sentencing.

Perhaps due to causal mitigation at sentencing, it would be wrong to suggest that New South Wales has a compatibilist criminal law. Or at any rate claims that the criminal law is compatibilist would need to be qualified. It may be that it operates in a compatibilist way at times and at other times in an incompatibilist way, but perhaps this should not be surprising as some research in the field of experimental philosophy

⁸ However many compatibilists accept that if an agent was manipulated by a neuroscientist, this form of causal chain would be relevant to a moral assessment of an agent.

suggests that people generally are not consistently one or another in their moral assessments (Appiah 2008: 101-102).

Some observations relating to legal practice

However none of this is to suggest that it is a good *strategy* for defence counsel to present arguments for genetic mitigation. As Farahany and Coleman have noted genetic mitigation has for some offenders been a 'double edged sword' and the defence can end up convincing the court that the offender is very dangerous (2009:205). Thus even though one can suggest that on a retributive view of punishment an offender is less deserving, evidence of a predisposition could increase a sentence for consequentialist reasons such as community protection.

It may be a better strategy where as Farahany and Coleman suggest, an offender can show that he has:

sought and responded favourably to treatment based on a newfound awareness of his genetic or neurological predispositions and therefore no longer poses a threat to society (2009:240).

However if the courts do accept genetic mitigation in the circumstances described in this paper, their acceptance of genetic mitigation may be hard to contain. There are many lines of inquiry in behavioural genetics including genetic links to psychopathy. It seems to be one thing to mitigate where impulsiveness has resulted from factors outside the control of offenders but perhaps it is more unpalatable to mitigate where an offender has displayed callousness, even where its origins are traced to genes and environment.

It may become necessary for the courts to grapple with the question of how to limit genetic mitigation and to consider how this form of mitigation would sit with the aims of sentencing that focus on community protection.

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