

should attempt to determine what intervention strategies are effective with each type of sociopathy, regardless of social class.

Putting cognition into sociopathy

R. J. R. Blair and John Morton

MRC Cognitive Development Unit, London WC1H 0BT, and Department of Psychology, University College, London WC1E 6BT, England.
ucjrjb@ucl.ac.uk; john@cdu.ucl.ac.uk

Abstract: We make three suggestions with regard to Mealey's work. First, her lack of a cognitive analysis of the sociopath results in under-specified mappings between sociobiology and behavior. Second, the developmental literature indicates that Mealey's implicit assumption, that moral socialisation is achieved through punishment, is invalid. Third, we advance the use of causal modelling to map the developmental relationships between biology, cognition, and behaviour.

The target article is an interesting attempt to relate sociobiological theory, the physiological data on various antisocial populations, and criminal behaviour. During the attempt, Mealey joins the growing band of authors (e.g., Fagan & Lira 1980; Moffitt 1993) who distinguish between primary and secondary sociopaths. The groups display similar behaviour, which we might expect to be controlled by roughly equivalent cognitive structures. Finally, we are in total agreement with at least one of Mealey's descriptions of sociopaths, that they will acquire a theory of mind without access to empathic responding. Indeed, we have shown that psychopaths perform well on complex theory-of-mind tasks in the absence of physiological arousal responses to distress cues (Blair 1994).

Our major problem with Mealey's work is the lack of a cognitive analysis; there is little reference to the kinds of cognitive structures that might mediate sociopathic behaviour. Indeed, some of the core features of her model, for example cheating strategies, are not considered at a cognitive level at all. We believe that if such an analysis had been carried out, some of the difficulties in Mealey's argument might have become clear. For example, Mealey claims that rape and spouse abuse are "genetically influenced, developmentally and environmentally contingent cheating strategies" (sect. 2.2.1, para. 4) that have been selected for. It seems unlikely that these behaviours *per se* are part of the phenotype; that motor programs for antisocial behaviours, such as spouse abuse, are laid down in the genotype. Thus, Mealey's position requires that some more general cheating mechanism has been selected for – what she calls the cheating strategy – which appears, from her argument, to correspond to some form of inborn personality trait. Presumably, given Mealey's position on cost-benefit analysis in the sociopath, this corresponds at the cognitive level to some form of value-specifying mechanism that undervalues prosocial actions and overvalues antisocial actions. Of course, even if this reading of her theory is correct, an account of how the cheating strategy leads to the development of particular cheating strategies such as spouse abuse still needs to be formulated.

Our second problem concerns the claim that sociopaths suffer from a hypoaroused nervous system. First, it should be noted that the data concerning this claim are, at best, equivocal (e.g., Patrick et al. 1993). Second, and far more important, the theoretical importance of this claim is unclear. Mealey makes the assumption, as others in the sociopath/psychopath literature have done before her (e.g., Eysenck 1964; Patterson & Newman 1993), that moral socialisation is achieved through the use of punishment. The difficulty with this assumption is that there is no evidence for it. Indeed, the evidence that exists indicates that moral socialisation is best achieved through exposure to and focus on the victims of moral transgressions (see, for review, Hoffman 1977). Moreover, much of the exposure and focus on

victims appears to be independent of primary caregivers and occurs in interactions with teachers and peers (Nucci & Nucci 1982).

Finally, it should be noted that we applaud the fact that Mealey is attempting to model a disorder developmentally and at several levels simultaneously. Too often, models of sociopathy have ignored development (e.g., Gorenstein & Newman 1980). However, we suggest that this developmental multiple level modelling must be formalised to increase clarity. One way to increase clarity is to use causal models; formal models of developmental interlevel relationships – genetics, physiology, social, cognitive, and behaviour (Morton & Frith, *in press*). Causal modelling has been used to model the development of several disorders, including autism (Morton & Frith, *in press*), dyslexia (Morton & Frith 1993), and psychopathy (Blair, *in press*). These models require the clear representation of the cognitive underpinning of behaviour and are a particularly powerful tool for representing the fact that behaviours could arise from different developmental histories. With specific reference to criminal behaviour, high levels of violence are associated with a variety of different groups. With delinquents, this violence has been linked to disinhibition caused apparently by frontal lobe deficits and/or maldevelopment (e.g., Moffitt 1993). Although the high level of aggression in psychopaths has also been attributed to a particular frontal lobe deficit (Gorenstein & Newman 1980), psychopaths do not seem to be any more deficient in general frontal lobe functioning than other criminal groups (see, for a review, Kandel & Freed 1989). The second crucial developmental relationship that causal models clearly express is that the behavioural consequences of particular structures are mediated by the rest of the cognitive system. This phenomenon is hinted at in the target article; Mealey suggests that the genotype for sociopathy that is expressed in males as sociopathy may be expressed in females as Briquet's Syndrome. However, she offers no consideration of what differences in the cognitive structures of males and females might mediate this distinction.

In conclusion, we appreciate that other researchers are now using a multiple level, developmental approach to sociopathy. We only suggest that without cognition sociopathy cannot be fully understood.

Sociopathy or hyper-masculinity?

Anne Campbell

Psychology Department, Durham University, Science Laboratories, Durham DH1 3LE, England. a.campbell@durham.ac.uk

Abstract: Definitional slippage threatens to equate secondary sociopathy with mere criminality and leaves the status of noncriminal sociopaths ambiguous. Primary sociopathy appears to show more environmental contingency than would be implied by a strong genetic trait approach. A reinterpretation in terms of hypermasculinity and hypofemininity is compatible with the data.

Mealey's criteria for distinguishing primary and secondary sociopaths are that the former show a greater genetic predisposition, less environmental contingency of their behaviour, an absence of secondary emotions, and more marked hypoarousal. But when we turn to the data, this distinction, critical to policy and program development, starts to dissolve. Primary sociopaths become equated with chronic criminal offenders (sect. 2.2.2, para. 2), despite Mealey's initial statement that sociopaths may constitute as few as 33% of this population (Introduction, para. 1). In accounting for secondary sociopaths, who are more canalised by early developmental experiences, she asserts that studies of juvenile delinquents can be used as a reliable guide to their childhood environments. If secondary sociopaths are simply criminal offenders who begin their careers as juvenile