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Biological Determinism, Free Will and Moral Responsibility: Insights from Genetics and Neuroscience

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Book Review

Biological Determinism, Free Will and Moral Responsibility: Insights from Genetics and Neuroscience. By Chris Willmott. Pp. 100. London: Springer. 2016. £44.99 (pb). ISBN 978-3-319-30391-8.

Chris Willmott is a Senior Lecturer in Biochemistry at the University of Leicester with a strong interest in the ethical implications of new developments in medicine and biosciences.

Biological Determinism, Free Will and Moral Responsibility: Insights from Genetics and Neuroscience explores the relationship between biological determinism (the notion that our decision making is pre-determined by our genetics and the structure and function of our brains) and our free will and moral responsibility. In this book, Chris Willmott examines the influence that new discoveries in genetics and neuroscience have on our understanding of human behaviour, and in particular our understanding of criminal behaviour and responsibility.

New developments in the study of genetics and neuroscience have led to a far greater understanding of how the interaction of our genes and our environment influences both the structure and function of our brains and our ability to make decisions. Increasingly, these discoveries have called in to question our ability to exercise free will when making decisions, and suggest that biological determinism plays a far more significant role than previously thought.

For philosophers reflecting on the free will vs biological determinism debate, the extent to which our behaviour can be explained by 'biological determinism' is crucial. If our decisions and actions are all truly pre-determined by our genetics and brain structure, as hard determinists postulate, then we have no free will but also cannot be held morally responsible for our actions. If this is the case, then by extension we should not be held criminally responsible for our actions either. Libertarianists refute the biological determinist argument, instead believing that we are moral agents capable of making our own decisions and taking moral (and criminal responsibility) for our actions.

The wealth of new data arising in the field of genetics and neuroscience presented by Willmott suggests that the reality is likely to lie somewhere in between, with compatibilism. Compatibilism is the 'view that free will and a deterministic universe can be brought together' (p. 3), the idea that our genetics and our brain structure and function interact with our environment and our past experiences to influence our decision making but that ultimately we still have sufficient free will to make our own decisions and are morally responsible for them.

From a legal perspective, this new knowledge has potentially very serious implications. If hard determinists are right and we have no free will or moral responsibility, can this be used as a legal defence? If this is admissible as evidence, at what stage

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in the legal process should it be introduced? Should it be used to assess the defendant's fitness to stand trial, during the trial stage or as a mitigation factor during sentencing? How the law interprets this evidence from genetic and neuroscience studies is key to the effect that this new knowledge has on our legal interpretation of criminal responsibility. In Chapter 2 Willmott discusses the history and evolution of the law with regards to mental disorders and criminal responsibility, setting the background against which this new knowledge is being introduced. This explanation illustrates not only the areas in which the existing legislation is a little ambiguous but also why there are so many discrepancies between cases where genetic and neuroscientific evidence has been used and where its use has been rejected.

In order to understand the legal and moral implications of this emerging evidence it is important to have some understanding of the evidence itself. In Chapter 3, the 'Biological Basis of Behaviour', Willmott focuses on 'the scientific approaches which offer insight into the underlying biology of behaviour' (p. 19) and takes the reader through a brief explanation of the wealth of neuroscientific and genetic research and diagnostic approaches currently in use before going on to discuss the philosophical and moral implications of these. This chapter provides the vital link between the science and how neuroscientific evidence may be used in the courtroom (and beyond) to explain behaviour. Willmott clearly outlines the strengths and weaknesses of these scientific approaches and how this influences their reliability, both for research purposes and in a court of law.

Willmott further expands this in Chapter 4, 'A Brief History of "Neurolaw"', by introducing specific legal cases from around the world where evidence from genetics and neuroimaging has been presented in court. These cases illustrate the range of genetic and neuroscientific evidence that has been used in criminal cases to date, with varying levels of success, and again emphases the difficulty of applying this new, and often contested, knowledge to already ambiguous legislation. Willmott's use of cases also serves as reminder that the crimes in question have a very real impact on the victims, their families and the wider public in general and that the effects of using biological determinism to absolve ourselves from moral and criminal responsibility are not confined solely to the defendant.

The philosophical, legal and scientific deliberations are neatly brought together in the final chapter, 'Are We Ready for an Expanded Use of Neuroscientific Evidence in the Courtroom?'. Willmott draws together the various threads of the philosophical, legal and scientific arguments to discuss first whether the scientific evidence is robust, and second if it supports a deterministic world view before debating whether the science is robust enough to be used in court and, if so, how this should be done to maintain both the integrity and purpose of the courts.

Willmott leads us through this fascinating and insightful topic in a structured and logical way. He offers a clear and concise explanation of the current positions taken by both philosophers and by the legal system, explaining where appropriate the relevant history and evolution of these positions.

His descriptions of the various neuroscientific and genetic methodologies in question are easily understood and the use of relevant legal cases throughout the book places them in context. Willmott offers a careful consideration of the current use of genetics and neuroscience in criminal proceedings and how these may be used

in the future, and reflects of the philosophical implications of such use and the impact that they have on the biological determinism vs free will debate. Willmott's conclusion that the use of neuroscientific and behavioural genetic evidence will play an increasingly significant role in explaining behaviour but that the robustness of this evidence and the time at which it is introduced to criminal proceedings are crucial (and as yet lacking) is well thought out and also serves as a timely reminder of the moral and philosophical consequences of this new evidence and where it might take us in the future.

This book is informative and engrossing and would appeal to anyone interested in the link between neuroscience, genetics and behaviour, the philosophy of moral responsibility, free will and determinism or criminal law.

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