

Durham E-Theses

The Human-Animal Boundary: Adding a New Perspective to the Pre-Modern History of the Nervous System

EICHBERG, STEPHANIE

How to cite:

EICHBERG, STEPHANIE (2011) The Human-Animal Boundary: Adding a New Perspective to the Pre-Modern History of the Nervous System, Durham theses, Durham University. Available at Durham E-Theses Online: http://etheses.dur.ac.uk/641/

Use policy

The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- ullet a full bibliographic reference is made to the original source
- a link is made to the metadata record in Durham E-Theses
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

Please consult the full Durham E-Theses policy for further details.

The Human-Animal Boundary: Adding a New Perspective to the Pre-Modern History of the Nervous System

Stephanie Eichberg

Submitted for the degree of Ph.D. in Philosophy
Durham University
September 2010

Abstract

This thesis offers a fresh angle on the history of neuroscience by highlighting that the human-animal boundary has since Antiquity been a vital component of all philosophical, anatomical and experimental discourses on the nervous system and its associated properties. I argue that in this regard, the history of neuroscience is not as straightforward and progressive as traditional accounts convey; rather, the constant negotiation of what makes us differ from animals and the need to assert human bodily and mental superiority not only influenced philosophical debates, but at times even distorted the actual observation and description of corporeal structures. By focussing on key historical figures whose research helped shape our understanding of the nervous system, I want to show how crucial the model function of animals has been in establishing the importance of the brain and nerves as the executive members of the human mind and sensation. The aspect of the human-animal boundary is thereby the one thread that connects ancient philosophical and anatomical investigations with those of the early modern period. My overall aim is accordingly to assert that the negotiation of the difference vs. the similitude between humans and animals is a neglected but fundamental aspect that needs to be taken into account for a more comprehensive history of neuroscience.

Acknowledgements

I first want to thank my supervisor Holger Maehle whose own interest in the subject made my PhD project possible in the first place. His extensive knowledge about debates on animals in the early modern period helped me to navigate my way through the seemingly endless possibilities of conducting research on the subject. I also appreciate the freedom he gave me to try out different approaches before I finally settled on the finished product. My interest in the human-animal boundary goes far back and I would in this context also like to thank my MA supervisor at the FU English Institute in Berlin, Sabine Schuelting, with whose seminar 'The Beast Within' everything began.

Various people have provided their proof reading skills and support, and I want to say a big thank you to Daniel Becker, Claire Graham (especially for her expert glance on the sections on Descartes), Beth Hannon, and Liat G. Netzer (for no-nonsense talk) as well as to friends and family in Berlin

My PhD was funded by the Wolfson Research Institute; and I also thank the Department of Philosophy for travel and research grants that enabled me to make several trips to the Wellcome Library in London. The BSHS provided me with a generous research grant that enabled me to visit the archive at the History of Medicine Institute in Berne, Switzerland. At this institute, I am particularly indebted to Hubert Steinke who generously shared his archival resources on Albrecht von Haller with me.

Contents

<u>Introduction</u> 1
Literature Review7
Chapter Outline
1. Ambiguous Analogies: Human Faculties and Animal Bodies in the History of Neuroscience
1.1. Antiquity23
1.2. The 'New' Renaissance Anatomy49
1.2.1. Vesalius' De Humani Corporis Fabrica (1543)55
1.3. An Early Comprehensive Theory of the Beast Machine: Gómez Pereira's <i>Antoniana Margarita</i> (1554):65
Conclusion71
2. Seventeenth-Century Mechanical Philosophies of Human and Animal Bodies74
2.1. The Cartesian Beast-and Body Machine76
2.1.1. Mind over Matter: Descartes' Vision of the Soul and the Nervous System82
2.1.2. The Problem of Pain87
2.1.3. "What did Descartes really say?": Debates and Responses to the Concept of the Cartesian Beast-Machine97
2.2. Pierre Gassendi (1592-1655)110
Conclusion119

3. Neuroanatomy - The Human-Animal Boundary Made Manifest
3.1. Thomas Willis' Anatomical Project
3.1.1. "Unlocking the secret places of Mans Mind": Willis' Anatomical Gaze133
3.1.2. "Cloathing the Skeleton with Flesh": Willis' Discourses on the Corporeal Soul150
3.2. The Influence of Willis' Neuroanatomy on Philosophical Thought at the End of the Seventeenth-Century: John Locke's Theory of Sensationalism and Le Grand's Advocacy of Cartesianism
Conclusion
4. Constituting the Human via the Animal in Eighteenth-Century Neurophysiology: Albrecht von Haller's Sensibility Experiments
4.1. Albrecht von Haller (1709-1777)
4.2. The Importance of Experiment in Haller's Research
4.3. Sensation as the Constituent of Life
4.4. The Soul and Sensibility
Conclusion
Final Conclusions