

Abstract

Genetic Pain Disenchantment in the Context of Animal Research and Animal Ethics

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Genetically disenchanting animals' ability to feel pain and pain-related suffering (hereafter "GPD" for *genetic pain disenchantment*), is currently being discussed as an innovative, and potentially very powerful solution, to mitigate ethical problems of animal research. In the light of this, the project has three aims: (1) to analyze the biotechnological methods of GPD and their impact on disenchanted animals; (2) to investigate the normative rationale for GPD, and (3) to apply Kantian animal ethics, with its inclusion of non-sentientist harms¹ and the concept of instrumentalization, to GPD, in order to provide a comprehensive evaluation of the ethical issues raised by GPD specifically, and modern animal research in general. The project is interdisciplinary and will draw on expertise from biotechnology, philosophy and the ethics of human-animal studies.

Aims: Taking the latest empirical data into account, the overarching goal of this interdisciplinary project is to apply the tools of analytical ethics in order to critically evaluate the ethical acceptability of GPD within the framework of the 3Rs Principles², and Kantian animal ethics.

The interdisciplinary project will provide, for the first time, a comprehensive ethical evaluation of GPD that combines the latest biotechnological data and ethical theory. It will bring together robust empirical data in an ethical evaluation of GPD. Such data have been noticeable by their absence to date. Hence, the project will not merely deliver a realistic basis for assessing GPD as a potential means of satisfying the 3Rs, but also, with its application of Kantian animal ethics, introduce new perspectives for reflection on the ethical issues raised by modern animal research in general and genetic pain disenchantment specifically. Addressing ethical issues in animal research and modern gene-editing-technologies, the project will provide results shaping and enabling national strategies for handling modern biotechnology in animal research. These strategies will properly reflect animal dignity and the concept of instrumentalization. Both the GPD debate and the field of Kantian animal ethics will benefit significantly from the application of Kantian ethics to GPD. Animal review committees will benefit from the analysis of the inherent 3Rs problem of "refinement for refinement's sake". I also expect to obtain insights into internal conflicts between, and limitations of, the 3Rs Principles. Inviting relevant parties from academia, the federal authorities and NGOs, the aim is to bring different fields together to create an opportunity to develop national and international strategies to overcome ethical problems within animal research.

¹ In animal ethics two harm concepts are distinguished: sentientist and non-sentientist. Sentientist harms are defined as subjective, negatively experienced mental states (so-called "subjective harms") such as pain and fear. Non-sentientist harms include harms that do not necessarily cause or involve negative subjective experiences for the affected individual ("objective harms") such as changing the species-specific appearance or abilities of an animal.

² The 3Rs Principles – Replacement, Reduction and Refinement – were set out by William Russell and Rex Burch in *The Principles of Humane Experimental Technique* in 1959. They were introduced as a measure of scientific professional self-regulation. Since the 1980s the principles have become an integral part of national and international animal research regulations.