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The colonisation of scientific uncertainty: liminality & agency in science boundary work

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**THE COLONISATION OF SCIENTIFIC UNCERTAINTY:
LIMINALITY & AGENCY IN SCIENCE BOUNDARY WORK**

A thesis submitted in fulfilment of the
requirements for the award of the degree

DOCTOR OF PHILOSOPHY

from

UNIVERSITY OF WOLLONGONG

by

Sandrine A. Thérèse

DEPT. OF SCIENCE, TECHNOLOGY & SOCIETY

2003

THESIS CERTIFICATION

I, Sandrine A. Thérèse, declare that this thesis, submitted in fulfilment of the requirements for the award of Doctor of Philosophy, in the Department of Science, Technology & Society, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualifications at any other academic institution.

A handwritten signature in black ink, appearing to read 'S. Thérèse', written in a cursive style.

Sandrine A. Thérèse

15th December 2003

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ABSTRACT

The Colonisation of Scientific Uncertainty: Liminality & Agency in Science Boundary Work

The thesis focusses on the traditional problem of demarcation in science through the study of the politics of scientific “boundary work”{ and cultural cartography amidst scientific controversies where claims about the constitution of science and its “other” are asserted, contested and renegotiated. Human and non-human agents and agency are characterised via recourse to a critical practice theory and performative idiom approach where dialectical interactions between social structures and between collective, individual and natural agents are axiomatic. The study aims to provide a multi-sited ethnography of how notions of scientific convention and deviance are (re)defined in the course of scientific practice.

Scientific texts and qualitative data yielded from ethnographic interviews and participant observation are analysed to provide insights into how the demarcation of science is achieved, contested and renegotiated by various science boundary workers. The symmetrical analysis of two case-studies of recent controversy in (Australian) science will show the ways in which both orthodox and controversial scientists and other scientific boundary workers deploy similar discursive tactics in order to “seduce” and “colonise” the minds (and therefore the bodies and resources) of their audience(s). The colonisation of uncertainty in scientific controversies involves the discursive upgrading of certainty in one’s own methods, claims and motives while undermining those of opponents. Hegemonic visions of ideal scientific agency as value-free, acultural and apolitical are reproduced in both dissident and orthodox discourses, despite the strategic deployment by dissidents of a quasi-sociological critique of their denouncers. Both controversial workers and their denouncers engage in justificatory discursive work that “domesticates” or “colonises” uncertainty in descriptions of natural agents and in the general trustworthiness of scientific claims. The strategic presentation through various public ‘performances’ of scientific work as the product of a scientific collective is seen to provide a highly seductive means by which scientific boundary workers galvanise confidence and support.

However, an asymmetry in the scientific boundary work sampled can be seen in dissident workers’ definitions of the non-human or natural agents they study as complex, dynamic and non-linear. Linear, machine-like or “machinic” visions of “natural” agency provide an ontological ground from which new scientific work may be denounced as liminal or ambiguous and thus suspect or controversial, or as clearly “polluted” and thus “deviant” and stigmatised.