

**PHILOSOPHY, SCIENCE AND ENVIRONMENTAL REALISM:  
EDUCATIONAL, ETHICAL AND ENVIRONMENTAL ISSUES OF CONCERN  
TO MANKIND**

**Giridhari Lal Pandit (October, 2007)**

**XIX Heidelberg Physics Graduate Days: 9:30-12:30, Monday 8. – Friday 12. Oktober 2007, at the  
Department of Physics and Astronomy of the University of Heidelberg**

**LECTURE NOTES:**

**1. ARTICULATING THE CHANGING CONTEXTS OF SCIENTIFIC  
DISCOVERY (3 h)**

Introduction; Science, political economy and society; Science studies; The 20<sup>th</sup> century perspectives on philosophy and science; Philosophy of science in the analytic tradition; A century of opposition to the context of discovery; Reconnecting physics with the philosophy of physics; Present scenarios: Stewen Weinberg (1992), Thomas Kuhn (1962, 1970, 1974), Steve Fuller (2000), Ted Sargent (2006); Contexts of scientific discovery: Physics during 1880-1930; Dynamic core-context of development of physical theory; Freedom of scientific research; The criterion of Nützlichkeit (Wie nützlich ist die Forschung?); The big nexus of state, industry, market forces and business interests; Asymmetry between industry and university; Holism; Ambivalence of science; Ethics and technology; Discussion.

**2. PROGRESS AND SCIENCE POLICY (3 h)**

Introduction; Problems of access in the age of knowledge society; Different kinds of tradable goods and services; Role of the WTO; Can cultural goods and services be regulated?; Knowledge viewed as a tradable good; Asymmetries of information; Public goods; Beyond the rituals of knowledge society; How we might change science policy despite scientific progress; Problems of moral progress; The UN-Millennium Development Programme; The well-being of the children of the world; The recent findings of the UNESCO; The question of values; Discussion.

**3. PROBLEMS OF GOVERNANCE (3h)**

Introduction; Why ethics in public domain?; Identifying the most challenging frontiers; Crises of knowledge production without wisdom; Stakeholders in moral progress, Freedom of scientific research; Challenges of biomedical research; Ethical guide-lines for bio-medical research on human subjects; Experimenting with human subjects: How informed can informed consent be?; The Indian Council of Medical Research; Problems

of universal consensus; State of the art of UN debate on ethical issues; Human rights (UDHR 1948); Health care reform; Public Health; Water; Reproductive health technologies *and* Assisted reproductive technologies; Embryonic stem cell research; A question of access to new technologies; Enforcement mechanisms: What should ethics consultation committees be and do?; What about *informed access* to new technologies (IANT)?; Discussion.

#### **4. ENVIRONMENTAL REALISM (3 h)**

Introduction; Issues in the philosophy of environmental policy; Changes in the developmental paradigm; Sustainable development; The tragedy of the commons; (Technological) environmentalism; Moral significance, culture and environment; Beyond environmentalism and the Cartesian paradigm of knowledge; The Man-Earth asymmetry; Part-whole relationships; Disappearing cultures and values; Ecologies of environmental nesting in traditional cultures; Ecological turn; The task of the philosophy of ecology; The principle (s) of environmental nesting - die Prinzipien der Einbettung in die Umwelt; **Environmental realism** (Umweltrealismus): How to decide what is in the best human interest?; Integrated environmental and human interest studies; Can ethics committees help?; Environmental impact of buildings; Nature and the paradigm of environmental nesting type<sup>2</sup> in architecture; Domestication vs. environmental nesting of ecosystems; Discussion.

#### **5. EDUCATION AND SCIENTIFIC RATIONALITY: SCIENCE AND ITS FUTURE (3 h)**

Introduction; Does science have a sub-culture and a sub-text?; Science, values and wisdom: A framework for science and the humanities; Universities at the cross-roads; Challenge of inter-disciplinary studies; Re-disciplining or breaking the boundaries; University-Society interactions; Territoriality: A roadblock in the way of moral progress; Paradox of exclusion and structural violence; Turning the tree of knowledge around; The methodology of interdisciplinary studies; The future role of liberal education; Making contact with multiple images of knowledge and value; The scientist as Kulturtraeger; The State, its institutions and the media; The institutional failure; Ethical tasks of media advocacy in the 21<sup>st</sup> century; Discussion.