I was introduced to the philosophy of science by Popper's great book *The Logic of Scientific Discovery*. This has been fortunate, for the work, as indeed the entire corpus of Popper's achievement, is imbued by a sense of the freedom and creativity of the human intellect, particularly in its relation to science. This freedom and fecundity is however, prevented from degenerating into unreason, by the control of both logic and the aim of truth. The fundamental intuition therefore, underlying Popper's conception of science is both its creativity and its rationality. I have made this intuition my own.

Some re-reading and years later, however; and particularly in the wake of the critique of the Popperian position by philosophers both within the Popperian tradition and without; an angst has developed. This unease has to do, not merely with the erosion of the philosopher's position, but with the wider sense of crisis pervading the philosophy of science. It seems that at the heart of the scientific endeavour lies unreason; and its creativity after all is only another name for anarchy. The current metaphor for science today is, well, metaphor.

I have traced the root of this problem to the thesis of theory-ladenness which is at heart, a theory regarding universals. This has lead me to explore the semantics of
natural kinds; and in the seminal work of Saul Kripke, I think I have discovered clues which lead to a hidden treasure. For the fundamental intuitions underlying the thesis of naming are identity and indexicality. These seemingly unrelated notions converge in the metaphysic of Leibniz, in particular in his Principle of Identity of Indiscernibles.

This principle, I think is a key which turns many locks. In particular it sets us free from the tyranny of conceptual frameworks; and other confusions engendered by the web of theory-ladenness. For the relation of identity, as captured by Leibniz's Law is a rather marvellous concept. It is at the same time tautologous and completely empirical. This is on account of its nature as a 'primitive' relation which can never be intensionally defined but only extensionally exemplified. As a principle of classification it restores to science, I think, its empirical basis; as a mode of inference it satisfies the intuitions of both the creativity and the rationality of science, which inspired this research. Finally, it demands a minimal form of realism, namely referential realism whose ontological presuppositions are bare existents.

These ideas can be made much clearer, I think if the (guided) journey of exploration which leads from Popper's philosophy to the thesis of identity, is set forth in its
'Popperian Methodology' (Chapter I) examines the rationale of Popper's position of methodological falsificationism. Here, I have tried to show that, and how, the spectre of theory-ladenness (Popper's theory of universals) haunts his methodology from the very outset; and leads to the abandonment of the principle of empiricism which is the cornerstone of Popper's position. Induction, however, is also infected by the malaise of theory-ladenness, whilst probabilism wilts under the Popperian attack.

This sets the stage for the Weltanschuungen philosophers: Kuhn, Feyerabend (and Lakatos) are all philosophers in the Popperian tradition, and this perhaps, best equips them to expose the internal contradictions, engendered by 'The Thesis of Theory-Ladenness' (Chapter II), in Popper's position. This is the critique from within; the critique from without assumes the form of the Duuhem-Quine thesis of holism; but this challenge, I think, can be deflected by a slight modification of Popper's logical schematism of modus tollens. (As long as the 'holistic' philosophers operate from within the 'statement' view of theories, I do not think they pose a serious threat.) The critique from within however, completely undermines Popper's position. I must confess that Feyerabend's influencece has
been something of an eye-opener and a liberating influence. I do not think however that his thesis of incommensurability applies to science. It is in an attempt to justify this intuition that 'In Universals Revisited: The Logic of Identity' (Chapter III). I reinterpret the thesis of theory-ladenness. This reinterpretation is in the light of the 'new' theory of reference developed by Saul Kripke (to whom I am particularly indebted); as well as in the light of developments in cognitive science. The latter is a notoriously slippery field; but it has helped me, I think, to sift the grain from the chaff in the reference theorists' position. The insight that emerged has come as something of a revelation: I think that the concept of 'primitive classification' and of identity as the primitive principle for scientific classification, is the most significant result of my research.

This insight marks a watershed, from which flows the conception of identity as a 'creative' mode of inference. In 'Identity as the Logic of Scientific Discovery' (Chapter IV), I compare the non-truth-functional concept of logical identity with the truth-functional concept of logical equivalence. The contrast has been liberating: In Leibniz's Principle of the Identity of Indiscernibles we have a valid mode of inference which does not base itself on the bivalence-principle (of truth/falsity). Thus at last, (it
seems) we may free ourselves from the tyranny of truth-functional logics. Furthermore the examples of theoretical structure (within my competence) which I have examined, seem to exemplify Leibniz's Law(s).

Finally if we assimilate the two aspects of identity, i.e. identity as a 'primitive' principle for scientific classification, and identity as a creative mode of inference. I think we may succeed in satisfying both our intuitions regarding science - i.e. its empiricism and its (logically controlled) creativity.

I must however emphasize that the analysis at this stage is very tentative and preliminary, and much more work needs to be done in terms of substantiating/extending my insights by a detailed analysis of actual theoretical structures from science. It may well be that problems will crop up (as Popper always insisted they do); but I think the direction of research is clear.

In conclusion, I must make my acknowledgements: My greatest debt of gratitude is to my guide Dr. A.V. Afonso, who bestowed on me the great gift of freedom, freedom to work and think independently. But in the proper Popperian tradition, this has been a controlled freedom; for he has always been there to both guide and check my intuitions (when they ran too wild).
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I must also thank my husband for his forbearance. Finally, I dedicate this work to my children, Urvashi and Siddhesh.

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