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Please note the following:

Title:	Upper and lower case bold
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Abstract:	Usually 70-120 words; reduced font; first word is 'Abstract' in bold. This must be included
Headings:	Bold, upper and lower case
Subheadings:	Capitals, not bold, not italic
Paragraphs:	Flush left after Headings and Sub-headings, then indented
Quotations:	Long quotations (over 30 words or so) are indented, and have reduced font. Author, year and page number follow the quote. There is no need for inverts with indented quotes, the indent serves the purpose of the inverted commas.
Referencing:	The Harvard System is used; that is, name, year, page number follow the quotation, or the allusion. Readers then refer to Bibliography for full details
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Font:	Times-Roman, 12pt is the usual font; with 14pt for Title, and 11pt for quotations. But this is not required. Authors are free to use their preferred font

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SAMPLE MANUSCRIPT FOR STYLE AND FORMAT

Thomas Kuhn's Impact on Science Education: What Lessons can be Learned?

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Abstract: Thomas Kuhn has had an impact in all academic fields. In science education, Kuhnian themes are especially noticable in conceptual change research, constructivist theorising, and multicultural education debates. Unfortunately the influence is frequently compromised by researchers having a limited understanding of Kuhn's original ideas, little exposure to the tradition of philosophical opposition to Kuhn's theories, and minimal appreciation of how Kuhn progressively qualified his initial 'irrationalist' views of scientific development. One lesson to be learnt is is that the science education community should more seriously and effectively engage with on-going debates and analysis in the history and philosophy of science. This is the same lesson that was learnt from the science education community's wholesale embrace of logical empiricism during the 1950s and 1960s. Another lesson is that there are powerful disciplinary, institutional and sub-cultural barriers that mitigate against science educators seriously engaging with historical and philosophical scholarship

Thomas Kuhn has arguably been the most influential historian of science in the twentieth century. His impact has been felt in all academic fields. By the mid-1990s, his landmark *Structure of Scientific Revolutions* (first edition 1962, second edition 1970, hereafter *SSR*) had sold over one million copies in 16 languages. It was the most cited single 20th Century book in the Arts and Humanities Citation Index in the period 1976-1983; and even forty years after its publication, as the twentieth century closed, there were 400 references to the book in the 1999 Social Science Citation Index. Kuhn's epistemology, his account of the nature of science, and especially his views on theory change and incommensurability in the history of science, have been exhaustively examined.

Recognition of Kuhn by Science Educators

After a late start, Kuhn's impact on education, and specifically science education, research was considerable. Kuhnian notions of 'paradigm', 'incommensurability', and 'theory dependence' –became the stock-in-trade of most educational researchers. For the most part, science educators interpreted these terms in the prevalent relativistic and anti-realist manner; they did not attempt to give a fallibilist and realist rendering of the terms. Perhaps there is no better example than the influential work of Yvonna Lincoln and Egon Guba. In their major publication, *Naturalistic Inquiry* (Lincoln & Guba 1985), they draw on the work of Hesse, Heron, Patton and a few other writers inspired by Kuhn, to claim that: 'paradigms represent a distillation of what we *think* about the world (but cannot prove)' (p.15), 'Since all theories and other leading ideas of scientific history have, so far, been shown to be false and unacceptable, so surely will any theories that we expound today' (p.16), 'people are not so much *compelled* by the logic of a situation as they are *persuaded* to accept a new set of values … the value shift is crucial; without it, rational movement cannot occur', and, finally,:

> There is, in this ontological position, always an infinite number of constructions that might be made and hence there are multiple realities. Any given construction may not be (and almost certainly is not) in a one-to-one relation to (or isomorphic with) other constructions of the same (by definition only) entity. (Lincoln & Guba 1985, pp.83-84)

KUHN'S RECAPITULATION THESIS

Kuhn popularized Piaget's 'cognitive ontogeny recapitulates scientific phylogeny' thesis among historians and philosophers of science, saying: 'Part of what I know about how to ask questions of dead scientists has been learned by examining Piaget's interrogations of living children.' (Kuhn 1977, p.21). In *Structure*, Kuhn remarked on how accidental was his discovery of Piaget, saying that 'A footnote encounted by chance led me to the experiments by which Jean Piaget has illuminated both the various worlds of the growing child and the process of transition from one to the next' (Kuhn 1970, p.vi). It is easy to accept that Piaget's view that the conceptual development of children was stage-like, and that it exhibited discontinuities, played a central role in Kuhn's characterisation of scientific development.

How Novel was Kuhn's Philosophical Position?

Kuhn was a key figure in the demise of the long dominant logical empiricist programme in philosophy of science. The programme was initiated by Ernst Mach in the late nineteenth century, and contributed to by such influential philosophers as Morris Schlick, Otto Neurath, Rudolf Carnap, Carl Hempel, Herbert Feigl, Fredrick Ayer, Hans Reichenbach, Ernst Nagel and countless less famous others.[1] Largely through Kuhn's efforts, philosophy of science took an historical turn in the 1970s - it was simply no longer acceptable for philosophers of science to discuss issues of methodology, explanation, values, theory structure and so on, without reference to how these matters are manifest in the history of science. Rudolf Carnap might have proudly said of himself that he was 'as an unhistorically minded a person as one could imagine' (Suppe 1977, p.310) but, after Kuhn's impact on the field, such confessions were a rarity. A marriage, if somewhat uneasy, was enacted between philosophy and history of science.[2]

Notes

[1] The standard survey of this logical empiricist tradition, the 'Received View' in mid-twentieth century philosophy of science, is that of Frederick Suppe (1977). See also the brief summary by Ian Hacking in the 'Introduction' to his *Scientific Revolutions* (1981).

[2] Kuhn addresses the relationship between history and philosophy of science in the lead essay of his *The Essential Tension* (Kuhn 1977). Useful discussions of the marriage of history and philosophy of science can be found in Hacking (1992), Lakatos (1971), McMullin (1970, 1975), Shapere (1984) and Wartofsky (1976).

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