Physics and mathematics versus the language of literature and ambiguity:
A methodological contrast

David A Reibel (Tübingen and York, UK)

The physicist Richard Feynman's finely worded distinction between 'physics' and its mathematical representation is itself compared and contrasted with William Empson's account of 'ambiguity' as a tool for the analysis of the language of literature.

Richard Phillips Feynman (1918-1988)

> 'In 1965, the Nobel Prize for physics was shared by Richard Feynman, Julian Seymour Schwinger (1918-1994), and Sin-Itiro [*aka* Shinichiro] Tomonaga (1906-1979) for their fundamental work in quantum electrodynamics, and its deep consequences for the physics of Elementary particles. *Ed*.' (footnote † p 11; see reference below)

The Rules of the Game

> If you are interested in the ultimate character of the physical world, or the complete world, and at the present time our only way to understand that is through a mathematical type of reasoning, then I don't think a person can fully appreciate, or in fact can appreciate much of these particular aspects of the world, the great depth of character of the universality of the laws, the relationships of things, without an understanding of mathematics. I don't know any other way to do it, we don't know any other way to describe it accurately . . . or to see the interrelationships without it. So I don't think a person who hasn't developed some mathematical sense is capable of fully appreciating this aspect of the world—don't misunderstand me, there are many, many aspects of the world that mathematics is unnecessary for, such as love, which are very delightful and wonderful to appreciate and to feel awed and mysterious about; and I don't mean to say that the only thing in the world is physics, but you were talking about physics and if that's what you're talking about, then to not know mathematics is a severe limitation in understanding the world. (Feynman 1981 / 1991:15, final paragraph)

Texts from: Richard Phillips Feynman (1918-1988), *The Pleasure of Finding Things Out. The Best Short Works of Richard P. Feynman*. Edited by Jeffrey Robbins. Foreword by Professor Freeman John Dyson (*b* 1923). London: Penguin Books. Allen Lane The Penguin Press, 2000. First published Cambridge, Massachusetts: Perseus Books, 1999.

Second text from chapter 1, 'The Pleasure of Finding Things Out'. '... edited transcript of an interview with Feynman made in 1981 and first broadcast in the BBC television programme *Horizon* in 1991, shown in the United States as an episode of *Nova*.' (p [1]). The interviews, first filmed in 1981, were issued as a 50-minute PAL VHS video: *Horizon*: *The Pleasure of Finding Things Out,* with Richard Feynman. A BBC TV Production in association with WGBH Boston MCPS. Producer Christopher Sykes. © BBC Worldwide Limited 1999. Distributed under licence from BBC Worldwide Limited by Christopher Sykes Productions, London.

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William Empson and literary 'ambiguity'

Sir William Empson (1906-1984). *Seven Types of Ambiguity*. Third Edition (revised) 1953. First edition 1930. Second Edition (revised and re-set) 1947. London: Chatto and Windus Ltd.

Contents: Chapter I: The sorts of meaning to be considered; the problems of Pure Sound and of Atmosphere. First-type ambiguities arise when a detail is effective in several ways at once, e.g. by comparisons with several points of likeness, antitheses with several points of difference, 'comparative' adjectives, subdued metaphors, and extra meanings suggested by rhythm. Annex on Dramatic Irony.

Chapter II: In second-type ambiguities two or more alternative meanings are fully resolved into one. Double grammar in Shakespeare Sonnets. Ambiguities in Chaucer, the eighteenth century, T. S. Eliot. Digressions on emendations of Shakespeare and on his form 'The A and B of C.'

Chapter III: The condition for third-type ambiguity is that two apparently unconnected meanings are given simultaneously. Puns from Milton, Marvell, Johnson, Pope, Hood. Generalised form when there is reference to more than one universe of discourse; allegory, mutual comparison, and pastoral. Examples from Shakespeare, Nash, Pope, Herbert, Gray. Discussion of the criterion for this type.

Chapter IV: In the fourth type the alternative meanings combine to make clear a complicated state of mind in the author. Complete poems by

Shakespeare and Donne considered. Examples of alternative possible emphases in Donne and Hopkins. Pope on dowagers praised. *Tintern Abbey* accused of failing to achieve this type.

Chapter V: The fifth type is a fortunate confusion, as when the author is discovering his idea in the act of writing (examples from Shelley) or not holding it all in mind at once (examples from Swinburne). Argument that later metaphysical poets were approaching nineteenth-century technique by this route; examples from Marvell and Vaughan.

Chapter VI: In the sixth type what is said is contradictory or irrelevant and the reader is forced to invent interpretations. Examples from Shakespeare, Fitzgerald, Tennyson, Herbert, Pope, Yeats. Discussion of the criterion for this type and its bearing on nineteenth-century technique.

Chapter VII: The seventh type is that of full contradiction, marking a division in the author's mind. Freud invoked. Examples of minor confusions in negation and opposition. Seventh-type ambiguities from Shakespeare, Keats, Crashaw, Hopkins, and Herbert.

Chapter VIII: General discussion of the conditions under which ambiguity is valuable and the means of apprehending it. Argument that theoretical understanding of it is needed now more than previously. Not all ambiguities are relevant to criticism; example from Jonson. Discussion of how verbal analysis should be carried out and what it can hope to achieve. (pp v-vi).

Like a Biblical text, a piece of poetry or other literature may be subjected to any arbitrary analytical interpretation or exegesis, extracting meaning and meanings on many different levels. This may be summed up as "the Empsonian attitude that the more simultaneous interpretations one can give to a poem the better." (Bowers 1959:27-28; see also pp 31*ff* for details, often with almost comic results, of Empson's "careless use of imperfect texts, complicated by a more than ordinary inaccuracy of quotation from these texts." [§]) This view is shared by other critics:

> *Seven Types of Ambiguity* brought instant fame and revolutionized literary criticism. Essentially what the book showed was that if you were ingenious enough in reading poetry you could find alterative meanings which no one, least of all the poet, had suspected before. Consequently you could rework the whole canon of literature an almost infinte number of times. There was no longer any question of looking for a final or "authorial" meaning—the critic's job was to extract these meanings which would appeal to his public. The vogue for "deconstruction" in the 1970s—regarded at the time as dazzlingly new and French—was basically a re-run of Empson's ideas.

One aspect of this approach is that the author ceases to matter, since literature is no longer regarded as the expression of a personality. For Empson this was an advantage. He always seems to have been happier with ideas than with people. (John Carey, *Sunday Times*, 3 November 1986 p 53. This quotation is due to J. W. Harper.)

This kind of critique, of which Empson was well aware, does not do justice to the richness of Empson's method. His book has the additional advantage of supplying the detailed analyses of the examples he takes from a rather catholic spectrum of English poetry. For a quick survey of the seven types of ambiguity, see the summaries of the individual Chapters in the Contents above. For a thoughtful critique of Empson's theory of types and his application of it to the interpretation of poetry, see William [Harvey] Righter (1927-1997), *Logic and Criticism* (London: Routledge and Kegan Paul Ltd, 1963), especially Part Two: Exactness in Criticism, chapter IV. The Pursuit of Logic, section 3, Empson's 'Ambiguity' (pp 100-107); and Righter's *The Myth of Theory* (Cambridge: Cambridge University Press, 1994), *passim*, with important bibliography in the Notes (pp 217-221).

If one thought in the cryptographer's terms of the coded text and the plain text, it is almost as if Empson was treating the ordinary language meaning of a poem as the coded text, and the secondary or derivative readings as the plain text. The code-breaker's criterion of success is whether the plain text derived by the key makes plain sense. The question now is whether, on this code-theory interpretation of Empson's application of his theory of types, what results makes plain sense. Perhaps it does not have to or is not even meant to, or has not even been considered. (Christopher Charles Norris. 1978. *William Empson and the Philosophy of Literary Criticism*. London: The Athlone Press).

Empson's kaleidoscopic concept of 'ambiguity' discussed here can usefully be contrasted with the carefully worded distinction which Richard Feynman draws between knowledge of physics and knowledge of mathematics.

Whereas the relationship between physics and the language of physics is abundantly clear, the relationship between Empson's 'ambiguity' and the language of literature is incoherent. This is because ambiguity is an epiphenomenon of the grammatical structure of the particular putative instance being analysed. The different types of ambiguity have nothing in common except their ambiguity, not their linguistic form. There cannot be

an independent science of ambiguity, only the disparate instantiations of ambiguity and the individual syntactic form of each type of ambiguity. There may be not seven, but an indefinite number of ambiguities depending on the syntax of the language. Further deconstructive critique of Empson's theory would be superrogatory.