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# What D. H. Lawrence Understood of 'The Einstein Theory': Relativity in *Fantasia of the Unconscious* and *Kangaroo*

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Towards the end of his 1922 essay *Fantasia of the Unconscious*, D. H. Lawrence provides an extended summary of 'what I understand of the Einstein theory':

> As far as I can see, Relativity means, for the common amateur mind, that there is no one absolute force in the physical universe, to which all other forces may be referred. There is no one single absolute central principle governing the world. The great cosmic forces or mechanical principles can only be known in their relation to one another, and can only exist in their relation to one another. But, says Einstein, this relation between the mechanical forces is constant, and may be expressed by a mathematical formula: which mathematical formula may be used to equate all mechanical forces of the universe.[1]

Despite his claim elsewhere that 'I like relativity and quantum theories | because I don't understand them', [2] here Lawrence demonstrates a perhaps unexpected grasp of Albert Einstein's special theory of relativity: there is no one absolute force in the physical universe; mechanical principles can only be known in their relation to one another, or, more accurately, in relation to their particular frame of reference; and the relation between mechanical forces is constant and is expressed using the Lorentz Transformations.

[1] D. H. Lawrence, *Psychoanalysis and the Unconscious and Fantasia of the Unconscious*, ed. by Bruce Steele (Cambridge: Cambridge University Press, 2004), p. 190. Further references to this edition are given after quotations in the text.
[2] *The Complete Poems of D. H. Lawrence*, ed. by Vivian de Sola Pinto and Warren Roberts, 2 vols (rev. repr., London: Heinemann, 1972), I, 524.

*Fantasia* is peppered with references to relativity and to Einstein, from the light-hearted opening of the second chapter where 'We are all very pleased with Mr Einstein for knocking that eternal axis out of the universe' (p. 72), through to Lawrence's explanation of 'what I understand of the Einstein theory' above. Einstein's presence in *Fantasia* is hardly surprising when we consider what Lawrence was reading while writing this text, as I will show, but what is surprising is Lawrence's repeated absence from critical texts exploring the impact of relativity on literary works. In this paper I will explore Lawrence's direct engagement with relativity in *Fantasia of the Unconscious* and *Kangaroo* (1923), and consider some of the reasons behind the critical tendency to overlook and underestimate this engagement.

In addition to Lawrence's apparent grasp of the special theory of relativity (as evidenced in the quotation above), *Fantasia* also demonstrates Lawrence's understanding of some of the key principles behind the general theory of relativity, which had received experimental confirmation during the solar eclipse expeditions of 1919.[3] Lawrence employs a series of images related to curved and straight lines and deflections which tie in directly with Einstein's suggestion that light from distant stars is bent by the gravitational field of the sun before arriving on earth, thus travelling in curved lines, rather than straight lines as had previously been supposed. Lawrence writes that there is 'no straight path' between individuals, highlights 'some strange deflection as your music crosses the space between us', and describes 'the long curve of your own individual circumambient atmosphere', a particularly resonant image given that Einstein had shown that space-time itself is curved (pp. 72-73). While Lawrence's language is obviously not that of a scientist, it is clear from moments like these that Lawrence had internalized some of the fundamental ideas associated with relativity, and was seeking to work through them for himself while writing *Fantasia*.

Early in June 1921, at about the same time that Lawrence was starting work on *Fantasia*, he wrote to his friend Samuel Koteliansky with the following request: 'Lend me, or send me, a simple book on Einstein's Relativity'.[4] By 1921 there were plenty of books which would have met Lawrence's brief: indeed, a 'Bibliography of Relativity' in *Nature* that year lists ten such books in English published in 1920 alone.[5] While there is no direct evidence regarding which

[3] 'Joint Eclipse Meeting of the Royal Society and the Royal Astronomical Society', *Observatory*, November 1919, pp. 389-98.
[4] *The Letters of D. H. Lawrence*, ed. by James T. Boulton and others, 8 vols (Cambridge: Cambridge University Press, 1979-2000), IV (1987), 23 (4 June 1921).
[5] 'Bibliography of Relativity', *Nature*, 17 February 1921, pp. 811-13.

book Kotelianksy sent to Lawrence, it has been suggested that it was Einstein's own popularization, *Relativity: The Special and the General Theory*, which was first translated into English in 1920.[6] Einstein states in his preface that his 'popular exposition' is aimed at 'those readers who, from a general scientific and philosophical point of view, are interested in the theory, but who are not conversant with the mathematical apparatus of theoretical physics', adding his hope that his book may 'bring some one a few happy hours of suggestive thought!'[7]

Although Lawrence's reading must have had a significant impact on his ability to understand, and then to write about, some of the ideas associated with relativity, it is clear from *Fantasia* that there are certain aspects of the theories which he failed to grasp. Most important among these is the place of absolutes within the theory: while Lawrence acknowledges that 'the velocity of light through space is the deus ex machina in Einstein's physics', he also goes on to claim that 'there is nothing absolute left in the universe. Nothing.' (p. 190). In fact, Einstein's special theory of relativity revealed that the speed of light 'plays the part of a limiting velocity, which can neither be reached nor exceeded by any real body'; that is to say, it is an absolute.[8] Thus when Lawrence states 'I feel inclined to Relativity myself. I think there is no one absolute principle in the universe. I think everything is relative' (p. 191), we see him making what A. S. Eddington called the 'common mistake' of conflating relativity with relativism.[9] However, Lawrence does not stop there, ending his paragraph with a reflection on the relative and absolute natures of individuals:

> But I also feel, most strongly, that in itself each individual living creature is absolute: in its own being. And that all things in the universe are just relative to the individual living creature. And that individual living creatures are relative to each other. (p. 191)

[6] See Lawrence, *Letters*, IV, 30 n. 2, and Rose Marie Burwell, 'A Catalogue of D. H. Lawrence's Reading from Early Childhood', *The D. H. Lawrence Review*, 3 (1970), pp. 193-324 (p. 258). Note that there is some confusion as to whether Lawrence read one or two books on relativity, as emphasized by Burwell's switch from 'and' to 'or' in a later version of her catalogue: 'A Checklist of Lawrence's Reading', in *A D. H. Lawrence Handbook*, ed. by Keith Sagar (Manchester: Manchester University Press, 1982), pp. 59-125 (p. 93). For further details, see my 'Sharing the Moment's Discourse: Virginia Woolf, D. H. Lawrence and Albert Einstein in the Early Twentieth Century' (unpublished doctoral thesis, University of Oxford, St John's College, 2010), pp. 125-26.

[7] Albert Einstein, *Relativity: The Special and the General Theory. A Popular Exposition*, trans. by Robert W. Lawson (London: Methuen, 1920), pp. v and vi.

[8] Einstein, p. 36.

[9] A. S. Eddington, *The Nature of the Physical World* (Cambridge: Cambridge University Press, 1928), p. 23.

The shift in this paragraph from the scale of the universe as a whole towards a more human, individual scale is highly significant, and also appears much earlier in *Fantasia*:

> I am I, but also you are you, and we are in sad need of a theory of human relativity. We need it much more than the universe does. The stars know how to prowl round one another without much damage done. But you and I, dear reader, in the first conviction that you are me and that I am you, owing to the oneness of mankind, why, we are always falling foul of one another, and chewing each other's fur.
>
> (p. 72)

While the tone here, as in much of *Fantasia*, is mocking, there is also a serious point being made which, as I have argued elsewhere, is relevant to the whole of Lawrence's output with its almost obsessive focus on the nature, and difficulties, of contemporary human relationships.[10]

It is in his suggestion that 'we are in sad need of a theory of human relativity' that we see the main difference between Lawrence's engagement with Einstein's theories and that of many of his contemporaries: Lawrence does not mention relativity in passing, like Rose Macaulay in *Potterism* (1920); nor does he transform Einstein into a representation of a means by which man can 'get outside his body' as Virginia Woolf does in *Mrs Dalloway* (1925).[11] Rather, Lawrence uses Einstein's theories of relativity, extending and developing Einstein's ideas in the direction that interested him most: human relationships. It could be argued that such employment of scientific ideas is not out of place within a non-fictional text like *Fantasia*; yet if we turn to *Kangaroo*, the first of Lawrence's novels to appear after the publication of *Fantasia*, we find a similar exploration of ideas of absolutes and relatives on the human scale in a fictional work.

Chapters thirteen and fourteen of *Kangaroo* contain Lawrence's most prolonged, and most confusing, explorations of the nature of relatives and absolutes. Initially Lawrence's, or rather

[10] See Crossland, 'Sharing the Moment's Discourse', Part II.
[11] Rose Macaulay, *Potterism: A Tragi-Farcical Tract* (London: W. Collins, 1920), pp. 231-32; Virginia Woolf, *Mrs Dalloway*, ed. by Stella McNichol (London: Penguin, 1992), p. 30.

his character Richard Lovatt Somers's, claims seem straightforward: 'Life makes no absolute statement: the true life makes no absolute statement' and, a little later, 'Life is so wonderful and complex, and *always* relative'.[12] However, as Michael Bell has written, 'Lawrence's absolutes are always relative and his relatives are never simply relative', [13] and Lawrence soon presents us with the idea that the statement '*Blessed are the pure in heart*' is 'absolute truth, a statement of living relativity' (p. 267). Relativity itself becomes an absolute here, a concept which is emphasized by the phrase 'It depends' which is added to four of the following six further statements from the Sermon on the Mount (p. 268). This complication of the terms relative and absolute continues in the following chapter when Somers returns to these questions the following day, and it is worth quoting this section at length:

> 'Everything,' said R. to himself, in one of those endless conversations with himself which were his chief delight, 'everything is relative.'
>
> And flap he went into the pot of spikenard.
>
> 'Not quite,' he gasped as he crawled out. 'Let me drag my isolate and absolute individual self out of this mess.'
>
> Which is the history of relativity in man. All is relative as we go flop into the ointment: or the treacle or the flame. But as we crawl out, or flutter out with a smell of burning, the *absolute* holds us spellbound. Oh to be isolate and absolute, and breathe clear.
>
> So that even relativity is only relative. Relative to the absolute.
>
> (p. 280)

This passage starts with the idea of relativity as an absolute, but this idea is not sustained for long, as the human self soon emerges as its own absolute, just as it did in *Fantasia*. Thus we are left at the close of this passage with the opposite idea to that with which we started: 'even relativity is only relative. Relative to the absolute'. As readers, we definitely start to feel that Lawrence is forcing us to go around in circles here; after all, making relativity itself relative in some way also makes it more absolute.[14]

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[12] D. H. Lawrence, *Kangaroo*, ed. by Bruce Steele (Cambridge: Cambridge University Press, 1994), p. 267. Further references to this edition are given after quotations in the text.
[13] Michael Bell, *D. H. Lawrence: Language and Being* (Cambridge: Cambridge University Press, 1992), p. 149.
[14] See Jeff Wallace, *D. H. Lawrence, Science and the Posthuman* (Basingstoke: Palgrave Macmillan, 2005), p. 239: 'If all is relative, then relativity is an absolute'.

That Lawrence was thinking of Einstein while writing his own theorization of the nature of relatives and absolutes in *Kangaroo* is suggested most forcefully by the fact that Lawrence makes direct reference to Einstein's work on relativity in *Kangaroo*, although on this occasion he does not mention Einstein by name. When Somers first goes to meet and lunch with Kangaroo, the latter 'started a discussion of the much-mooted and at the moment fashionable Theory of Relativity' (p. 109). Interestingly, we do not hear Kangaroo's own contributions to this discussion, but they gain significance a little later when Somers reflects on Kangaroo's 'kindly love for real, vulnerable human beings' which 'had given his soul an absolute direction, whatever he said about relativity' (p. 111). Lawrence tells us that the lunch itself 'passed frivolously' and that 'Somers was bored' (p. 110), but the choice of relativity as a topic for lunchtime conversation does not seem purely coincidental in light of the reflections on relatives and absolutes that appear later in the novel.

Despite these direct mentions of Einstein and his theories, critics have questioned the extent to which Einstein takes precedence in Lawrence's thinking of relativity, and Jeff Wallace has suggested that Lawrence's theory of human relativity and 'the modes of linguistic and cultural relativism which might inform it, were first impressed upon Lawrence by James's *Pragmatism*' which Lawrence read in 1907.[15] In *Pragmatism*, William James provides reflections on the interrelatedness of all things and on the relative nature of human views of reality in ways that seem relevant to some of Lawrence's later explorations of similar concepts.[16] However, it seems to me that Lawrence's suggestion of the need for a theory of human relativity owes at least as much to Einstein as it does to James: Einstein's influence can be seen in terms of the language and ideas associated with the theory of human relativity, whereas James's influence may instead be more evident in the structure of such a theory, in that James introduces pragmatism as a system combining 'the scientific loyalty to facts' with 'the old confidence in human values'.[17] Lawrence's theory of human relativity, although never explicitly formulated by Lawrence himself, would seem to provide exactly this: a scientific formulation of the contemporary situation, alongside a recognition of the importance of human values. After all, a theory of human relativity would be, to some extent at least, a theory of human values, a theory of humanity.

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[15] Wallace, p. 95; Jessie Chambers, *D. H. Lawrence: A Personal Record* (Cambridge: Cambridge University Press, 1980), p. 113. It is worth noting that William James is the name given to a character in *Kangaroo*.
[16] See William James, *Pragmatism: A New Name for Some Old Ways of Thinking* (London: Longmans Green, 1907), pp. 137 and 246.
[17] James, p. 20.

The question that remains, then, is why Lawrence is absent from so many accounts of the literary response to Einstein and relativity. Lawrence is not included in Alan Friedman and Carol Donley's *Einstein as Myth and Muse*, nor in Thomas Vargish and Delo Mook's *Inside Modernism*.[18] In addition, while Michael Whitworth has made the useful suggestion that Lawrence 'resembles Conrad in combining a negative valuation of science with an enthusiasm for the new physics and its philosophical consequences', his analysis of relativity in *Fantasia* is brief, and he does not mention *Kangaroo*.[19] This combination of negativity and enthusiasm may remind us of Nancy Katherine Hayles's assertion of Lawrence's 'ambivalent approach', although it is worth noting that Hayles's assessment is rather drawn into question by her misplaced claim that Lawrence was 'essentially ignorant of the New Physics'.[20] Bruce Clarke has also considered Lawrence's 'literary relativity', highlighting the importance of relativity for Lawrence as 'an authoritative metaphor with which to express, paradoxically, the metaphysics of individuality'.[21] However, these case studies also serve to make Lawrence's absence from broader surveys of modernist literary responses to relativity more striking.

Part of the reason behind this absence clearly lies in the common perception of Lawrence's negative approach to science, but I would suggest that there is more to this critical omission: Lawrence's approach to contemporary scientific concepts does not fit easily into standard critical models for analysing a literary author's response to science. For example, Morse Peckham has described the range of responses to Charles Darwin's *On the Origin of Species* (1859) as follows:

> Those who totally rejected it; those who completely misunderstood it; those who incorporated it into their existing set of attitudes by misinterpreting it; and finally those who understood it and subjected their personal cultures to a complete restructuring.[22]

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[18] Alan J. Friedman and Carol C. Donley, *Einstein as Myth and Muse* (Cambridge: Cambridge University Press, 1985); Thomas Vargish and Delo E. Mook, *Inside Modernism: Relativity Theory, Cubism, Narrative* (New Haven: Yale University Press, 1999).

[19] Michael H. Whitworth, *Einstein's Wake: Relativity, Metaphor, and Modernist Literature* (Oxford: Oxford University Press, 2001), pp. 124 and 188.

[20] Nancy Katherine Hayles, 'The Ambivalent Approach: D. H. Lawrence and the New Physics', *Mosaic*, 15 (1982), 89-108 (p. 107) (repr. in slightly different form as 'Evasion: The Field of the Unconscious in D. H. Lawrence', in N. Katherine Hayles, *The Cosmic Web: Scientific Field Models and Literary Strategies in the Twentieth Century* [Ithaca: Cornell University Press, 1984], pp. 85-110).

[21] Bruce Clarke, *Energy Forms: Allegory and Science in the Era of Classical Thermodynamics* (Ann Arbor: The University of Michigan Press, 2001), p. 210.

[22] Morse Peckham, 'Darwinism and Darwinisticism', *Victorian Studies*, 3 (1959), pp. 19-40 (p. 33).

In order to explain Lawrence's response to Einstein's theories of relativity, we need a new category which would include elements of Peckham's third and fourth categories, but also acknowledge that Lawrence restructures Einstein's theories in order to apply them to the question which interested him most: human relationships. Rather than 'appropriating' the language of relativity in order to 'debunk' its theories, as Fiona Becket has suggested,[23] Lawrence uses Einstein's theories, appropriating their language and some of their ideas in order to create a new theory of his own.

Reading about Einstein and writing about his theories in *Fantasia* certainly seems to have had an effect on Lawrence's fictional writings, and yet, writing to Koteliansky after reading that 'simple book on Einstein's Relativity', Lawrence stated that 'Einstein isn't so metaphysically marvellous'.[24] In the foreword to *Fantasia*, Lawrence describes a metaphysic as a philosophy which 'governs men at the time, and is by all men more or less comprehended, and lived' (p. 65). Later in *Fantasia*, Lawrence appears to suggest that relativity itself may have played such a role in the early twentieth century when he writes that 'people have got the word Relativity into their heads, and catchwords always refer to some latent idea or conception in the popular mind' (p. 190). Lawrence's increasing use and privileging, after 1921, of concepts such as relatives and absolutes to discuss human identity and relationships, an area with which he had been engaging since his earliest writings, suggest that Lawrence saw some kind of parallel between Einstein's theories of relativity and his own explorations of relationships and relatedness. 'Einstein isn't so metaphysically marvellous' for Lawrence in his apparent revelation of the relatedness of all things because Lawrence was already aware of something similar: 'He knew and approved of Einstein's Theory of Relativity because it confirmed his belief in the total interdependent connectedness of the universe', [25] and Lawrence's reading of William James no doubt played a part in this belief.

Gerald Holton has proposed that when literary writers include science in their work they make 'a new alloy'.[26] The new alloy which Lawrence created in the early 1920s, combining what he had read of Einstein with what he had read by James along with his own ideas on human individuals and relationships, was his 'theory of human relativity'. Lawrence's

[23] Fiona Becket, *D. H. Lawrence: The Thinker as Poet* (Basingstoke: Macmillan, 1997), p. 43.
[24] Lawrence, *Letters*, IV, 37 (16 June 1921).
[25] Michael Wutz, 'The Thermodynamics of Gender: Lawrence, Science and Sexism', *Mosaic*, 28 (1995), pp. 83-108 (p. 84).
[26] Gerald Holton, *Einstein, History, and Other Passions: The Rebellion Against Science at the End of the Twentieth Century* (Cambridge, MA: Harvard University Press, 2000), p. 137.

highlighting of our need for such a theory in *Fantasia*, and his subsequent explorations of relatives and absolutes in relation to human individuals in *Kangaroo*, suggest that Lawrence did indeed find in his reading of Einstein the 'suggestive thought' that the latter had hoped for his readers, a thought which resonated in some way with Lawrence's own understanding and vision of the world, and of human relationships in particular.

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