

A Dickensian origin for Sherrington's enchanted loom?

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ABSTRACT Sherrington's image of the mind-brain as an 'enchanted loom' has intrigued scientists for decades. Its origin, however, has been unclear. Here, we make a new suggestion as to where it may have come from. The article sheds light on the connections between literary and scientific similes and metaphors.

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Scientists have often used similes and metaphors when describing concepts from their field to non-specialists. One of the most celebrated comes from the Nobel Laureate neurophysiologist Charles Scott Sherrington. In his Gifford lectures, delivered in Edinburgh from 1937–38, he described the process of arousal in the mind-brain in the following terms:

'The great topmost sheet of the mass, that where hardly a light had twinkled or moved, becomes now a sparkling field of rhythmic flashing points with trains of travelling sparks hurrying hither and thither. The brain is waking and with it the mind is returning. It is as if the Milky Way entered upon some cosmic dance. Swiftly the head-mass becomes an enchanted loom where millions of flashing shuttles weave a dissolving pattern, always a meaningful pattern though never an abiding one; a shifting harmony of subpatterns'.¹

Sherrington's enchanted loom image has captured the imagination of more contemporary researchers. The neuroscientist Colin Blakemore, for example, used it as a subtitle for one of his 1983 Royal Institution Christmas lectures,² while Rodney Cotterill paraphrased it in the title of his book on computational neuroscience.³ Its precise origin, however, has remained unclear.

Sherrington was a man of wide general learning and even a published poet.⁴ It is not surprising, then, that commentators have searched for both literary and scientific sources for his simile. McIlwain⁵ suggested that it came from the 17th century alchemist, philosopher and poet Henry Vaughan. In Vaughan's poem *Man* the poet compares humanity's restless journey through life to a 'shuttle' passing through a loom.⁶ Sherrington was certainly aware of alchemical literature. The Gifford lectures, for example, were published as *Man On His Nature* and in the text Sherrington explicitly refers to

the hermetic belief in the divinity of stones and the search for unity between microcosm and macrocosm which had driven men like Vaughan.⁷ However, we would argue that Vaughan's image of the loom does not seem to quite capture the sense of mental activity, as intended by Sherrington.

Finger⁷ argues that Sherrington's image was borrowed from an 1886 paper by the psychical researcher Frederic Myers.⁸ It is easy today to satirise the prolix Myers, who, among other things, equates right hemisphere dominance with 'a lower degree of evolution'⁸ and comments on the 'monkey-like impudence' with which a psychiatric patient espoused 'radicalism in politics'.⁸ In this sense, Myers' understanding of the brain was distinctly pre-Sherringtonian. He did, however, compare the brain to 'a vast manufactory, in which thousands of looms, of complex and differing patterns, are habitually at work'.⁸ It is also possible that Sherrington would have known of Myers' work, if only via William James,⁹ whose work we know Sherrington followed.¹⁰ However, Myers extends the loom image in a way which departs from Sherrington. He suggests, in terms that might anticipate Freud, that the 'loom' weaves our outward character, actually masking our true nature: 'it is the cloak which our rude forefathers have woven themselves against the cosmic storm'.⁸ We would argue that this is slightly different to Sherrington's enchanted loom, which refers explicitly to inner mental activity.

We have recently identified a much earlier, and far less obscure, reference for the 'mind as loom' simile. It comes from Chapter 3 of Dickens' novel *Little Dorrit*.¹¹ The hero, Arthur Clennam, has been reminded by Mrs Flintwich, his mother's servant, of Flora Casby, the lost love of his boyhood. Dickens writes that 'Mrs Flintwich had introduced into the web that his mind was busily weaving, in that old workshop where the loom of his

youth had stood, the last thread wanting to the picture'.¹¹ The loom image is used here to describe Clennam's mental state as he gazes out of the window of his mother's house in the City of London on a grim Sunday evening. This image clearly combines the 'mind as loom' with Sherrington's sense of the busy working of the mind-brain.

What is the evidence that Sherrington was aware of *Little Dorrit*? Certainly, Sherrington's education at Ipswich Grammar School had a literary emphasis and he was to maintain this interest throughout his life.¹² We have not, however, found any direct references to Dickens in works by Sherrington. We would argue, though, that Dickens' writing permeated the Victorian culture in which Sherrington was raised. Johnson¹³ estimates that 1 in 10 readers in the UK had read Dickens' work during the author's lifetime. Furthermore, *Little Dorrit* had been one of Dickens' bestselling works, with one instalment selling 35,000 copies.¹⁴ Hobsbawm,¹⁵ who regarded the

novel form as one of the 'supreme achievements' of the arts of the mid-19th century and Dickens as the 'master',¹⁶ points, in addition, to the social breadth and international scope of Dickens' contemporary readership. We also know that during the 1890s the Sherrington family had regularly attended social events hosted by Sherrington's half-brother, Edward Rose, where they met George Bernard Shaw.¹⁷ Shaw regarded Dickens as the greatest English writer since Shakespeare¹⁸ and had championed *Little Dorrit*, describing it in 1908 as 'one of the greatest books ever written in the English language'.¹⁹ Interestingly, Shaw seems to have been on Sherrington's mind towards the end of his life, when he expressed mischievous satisfaction at having outlived him.⁷ Overall, we would suggest that it is not unreasonable to suppose that Sherrington would have known *Little Dorrit*.

It is fascinating to reflect, then, that Dickens may have been the unacknowledged inspiration for one of neurological science's most evocative metaphors.

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