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# Boléro: 'Beautiful symptom of a terrible disease'



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Unravelling Boléro by Anne Adams is a bar-by-bar representation of the popular classical piece Boléro by Maurice Ravel. Some paintings are meant to be appreciated in silence – but not this one. It is called *Unravelling Boléro*, by Canadian artist Anne Adams, and is a bar-by-bar representation of the popular classical piece *Boléro* by [Maurice Ravel](#).

The painting also provides a scientific window into the creative mind.

When Adams completed *Unravelling Boléro* in 1994, her brain was starting to be affected by a neurodegenerative condition called primary progressive aphasia. It later robbed Adams of speech, and eventually took her life.

In its early stages, however, the condition seemed to unleash a flowering of neural development in a brain area that integrated information from different senses. In part, *Unravelling Boléro* may be a beautiful symptom of a terrible disease.

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## Repetitive patterns

This is the view of a group of neurologists led by [William Seeley](#) and [Bruce Miller](#) of the University of California, San Francisco.

And here's the jaw-dropper: Ravel is thought to have suffered from the same condition, which may have drawn him towards repetitive patterns such as the themes that cycle through *Boléro*. Adams was unaware of this, and of her own condition, while working on her painting.

Adams started out as a scientist, teaching chemistry at the University of Toronto, before moving to Vancouver in 1966 with her husband Robert Adams, a mathematician. Later, after raising four children, she retrained as a cell biologist, gaining a PhD.

But in 1986, life took an unexpected turn. Expecting to nurse her son Alex through a long recovery after he was involved in a car crash, Adams gave up scientific work and began to explore her artistic talents.

Alex soon recovered, but his mother never looked back. "Anne had decided what she was going to do and just went after it," her husband recalls.

## Music in the detail

In *Unravelling Boléro*, each of the vertical figures represents a bar of music, with its height corresponding to volume, and the colour representing the pitch of Adams' favourite note within the bar.

Like the music, the theme repeats and builds until a change of colour to orange and pink, representing the key change that precedes *Boléro*'s dramatic conclusion. "Every last detail has some meaning," says Seeley.

At this time, Adams had no obvious symptoms of aphasia. But in retrospect, MRI scans taken from 1997 to monitor a benign tumour on her auditory nerve suggest that regions of her frontal cortex involved in processing language were already starting to degenerate.

"It was pretty subtle," says Miller, who is not surprised that her radiologists failed to spot it.

By 2000, however, Adams' speech was becoming laboured. She was diagnosed with primary progressive aphasia in 2002 by Dean Foti, a neurologist at the University of British Columbia. After finding out about her paintings, he referred her to Miller, who has shown that some patients with progressive aphasia develop a passion for creating art.

This may be caused by enhanced function in parts of the brain that are normally held in check by the dominant frontal regions affected by the disease.

## Connected senses

Adams was a particularly remarkable example. Brain imaging reveals that regions involved in integrating information from different senses were unusually well developed. Miller suggests that these areas may have sprouted new neural connections as her language centres began to deteriorate.

Adams did not perceive colours when she heard musical notes – a condition known as [synaesthesia](#). But her creative blurring of the boundaries between the senses has rubbed off on Seeley, who now thinks of *Boléro* and the painting it inspired almost as parts of a whole. “I’ve ‘listened’ to them together and the synchrony is spooky,” he says.

Although Adams was unable to communicate with Seeley and Miller verbally, she was fascinated by the neurologists' findings. “She actually brought in a scientific paper and showed it to me,” says Seeley. That paper, published in the [European Journal of Neurology \(DOI: 10.1046/j.1468-1331.2002.00351.x\)](#), suggests that Ravel suffered from the same condition as Adams.

As well as losing language, patients with progressive aphasia can develop repetitive behaviours. Could the repeating themes of Ravel's *Boléro* and Adams' interest in the piece be early signs of their neurodegenerative conditions? It's a fascinating idea, but impossible to know for sure.

Today, *Unravelling Boléro* hangs in Miller's office – a fitting location for a painting that has contributed to our understanding of the neural roots of artistic creativity.

Journal reference: [Brain \(DOI: 10.1093/brain/awm270\)](#)

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