Exhibition
From science to art and back

When visitors enter the Embrace Arts space at the Richard Attenborough Centre, an award-winning building nested in the University of Leicester (UK), they are greeted by a big picture of two men splashing black ink on a transparent canvas. To the untrained eye this might seem an exercise in random dripping a la Pollock, but a close inspection reveals some perfectly organised structures resembling the neurons once drawn by Santiago Ramón y Cajal. This summarises what Rodrigo Quian Quiroga and Mariano Molina, the two men holding the brushes, have attempted to do in their exhibit *The Art of Visual Perception*: blend paintings and neuroscience, and take the maximum advantage of feedback in both directions.

Quian Quiroga graduated in Physics in 1993 at the University of Buenos Aires, Argentina, and is now a professor of Bioengineering and director of the Bioengineering Research Centre at the University of Leicester. He carved a name for himself in the specialty while he was a Sloan Fellow at the California Institute of Technology, thanks to his work with single-neuron recordings. There he discovered single neurons that can hold an abstract representation of a person or a concept, what famously became known in the press as “The Jennifer Aniston Neuron”.

Looking for research methods to investigate classic issues related to the human brain in new ways, a few years ago Quian Quiroga turned to art. For instance, investigators in his laboratory have used eye-tracking devices to study how we look at paintings, why we choose to focus our gaze only in certain regions, and how this can be affected by subtle changes in the picture, by our previous knowledge of the piece, or even by the environment we are in. This led him to the work of Mariano Molina, an artist born in Buenos Aires. Molina was already intuitively using neuroscientific principles in his pieces. The most obvious example might be *The Center of Gaze*, a painting in which he subtly directs the eyes of the viewer to a specific point of the canvas with simple techniques. Quian Quiroga eventually contacted Molina and offered him a unique deal: to be an artist in residence in his laboratory for 5 months in 2009. A grant from the Leverhulme Trust made their first collaboration possible.

Since then, Quian Quiroga and Molina have been working together to push the boundaries of painting and neuroscience, confronting the necessary objectivity of science and the natural subjectivity of art to see how each discipline could learn from the other. “This is probably the first collaboration of this type”, explains Quian Quiroga. “But science and art have been successfully mixed many times before, the best example being Leonardo.” Thanks to another grant, this time from the Beyond Text programme of the UK’s Arts and Humanities Research Council, Molina could spend a full year working with Quian Quiroga and his team. “Just as a student would do, he would participate in all the meetings and discussions, like any other member of the team”, explains Quian Quiroga. “We would discuss ideas and then he would go to a small atelier we arranged for

*The Art of Visual Perception* by Mariano Molina and Rodrigo Quian Quiroga. 
http://projects.beyondtext.ac.uk/perceptionandwellbeing-fo/index.php

For more on the work of Mariano Molina see http://www.mariano-molina.com/
him and would work translating the knowledge he had acquired into art.”

The exhibition comprises pieces that Molina and Quian Quiroga developed during this sabbatical. Most of the canvases are actually based on the famous optical illusions that have always fascinated Quian Quiroga, like the afterimage effect or the scintillating grid. Others exploit the concept of binocular rivalry: the visitor is presented with superposed blue and red images that can only be separated with the correct colour-tinted glasses. The pictures can therefore be seen either as abstract pieces of art or as new and engaging ways to show neuroscience principles. According to the authors, their goal is not only to appeal to the subjective taste of the viewer, but also to surprise them and to force them to consider what goes on in their brain when they look at a picture. Quian Quiroga is satisfied with the success of reaching for collaborators way outside his specialty, and he is planning to continue doing so. To further study the issue of attention, he is now considering interacting with those who know how to divert it the most: magicians.

The exhibit is a splash of basic colours on the white walls of the Attenborough Centre’s mezzanine. These are the sort of paintings that require an investment of time to absorb all the levels of information that they present to the viewer. The paintings have obviously been created with the idea to engage not only the eyes but also the brain of the viewer. Although some might have an immediate appeal for those fond of abstract minimalism, it is only when we discover the scientific principles behind them that the full effect is revealed. It is really the combination of the two aspects that makes this exhibit a very enjoyable experience, both visually and intellectually.

The Art of Visual Perception was officially opened on Jan 14. At the opening, Quian Quiroga explained the basis of the collaboration with Molina, who could not be at the inauguration. He also showed some of the original optical illusions that inspired the canvases and a video with highlights of the creative process. The exhibit will probably travel to Spain next, but there are no other showings scheduled in the UK as yet.

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