

Defective sight inspires artistic vision

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in Chester, UK**

FOR many years physicians and artists have debated the role of visual disturbance and the creative process. Some have held that eye dysfunction could be at the heart of some of the world's greatest art, with different disorders contributing to various art schools and the artistic styles of some painters.

Impressionism, for example, with its focus on contours and colour at the expense of detail, could be the product of myopia. It is already widely known that cataracts cause colour distortion towards the red end of the spectrum, and it very probably influenced the art of Monet.

Astigmatism, on the other hand, could have

Cassatt, Turner, Cezanne, Pissarro, Degas, Dufy, Derain, Braque, Vlaminck, Rodin, Segonzac and Matisse.

Speaking at UKISCRS 2003, Chintan Sanghvi MD reported that cataracts have a long history in art. He told the congress that the style of the later works by Claude Monet, Mary Cassatt and Joseph William Turner, may have been influenced by cataracts.

"As we know, cataracts impair visual acuity and contrast sensitivity and cause glare. For the artist with a cataract, these effects can result in a loss of fine detail and difficulty resolving form, but perhaps the most important effect is on colour perception," she said.

For example, Monet's 'Japanese Bridge,' done in 1900 is rich in detail, while another painting of the same scene, done in 1922, reveals muddy and darker tones and the bridge is now barely recognisable, Dr. Sanghvi told the conference.



"Many of these later paintings verge on the abstract, with colours bleeding into each other," she said.

Similarly, Mary Cassatt, probably the most famous female impressionist, was affected by cataracts at 56 years of age and Sanghvi noted that characteristic detail of her earlier work disappeared.

"This can be seen in her pastel of 'Margot' which was done at age 58," she said. "Although it is a great painting in its own right, in comparison to 'Lydia', it is marked by a

limited use of colour and relatively little detail. In her later work her canvasses became much larger, coinciding with her loss of visual acuity."

With Joseph William Turner there was a

colour shift in his paintings in the latter part of his career and this might be explained by nuclear cataracts, which absorb blue light.

"The paintings done at an earlier age illustrate the distinct outline of the subjects, in contrast to the hazy appearance and predominant yellow of his later works," said Dr. Sanghvi.

Ocular pathology in art is a perennial theme, and not only in ophthalmology. A paper in the Journal of Clinical Neuroscience by Australian neurosurgeon Dr. Noel G. Dan MD synthesised the theories and research that links defective sight to artistic vision.

"Edgar Degas was a high myope which influenced his art throughout his life. His loss of vision became so great that in the latter part of his life he used photographs of models and horses to bring them within his visual range," writes Professor Dan.

Degas moved to pastels when he could no longer work with oils, and towards the end of his life he sculpted by feel rather than sight.

Similarly, another theory links the work of El Greco to astigmatism. It has been argued that the elongated figures for which El Greco is famous were due to his astigmatism, notes Dr Dan.

Less controversially, Dr. Dan demonstrates, like Dr. Sanghvi, how cataracts affected the sight of Monet.

"Interestingly, after Monet's vision was restored, he felt that [his paintings] should be overpainted and his friends and advisers had to restrain him from overpainting the pictures with more normal colour values," Dr. Dan wrote.

Cataracts, astigmatism and myopia are not the only pathologies to affect major artistic styles, Dr. Dan believes. Internal deformities can affect both the style and the subject matter of an artist's work. After he suffered from a vitreous haemorrhage in 1930, Edvard Munch used the lens of his eye as a magic lantern to project the picture of his damaged eye directly onto paper.

"Art is a personal passion," Professor. Dan told Eurotimes in an interview by email. "The Clinical Neuroscience paper was a lecture to a group of neurosurgeons who asked that it be published. Art often gives certain insights and patients show many of the features which also present themselves in artists."

However, the theory linking defective sight to artistic styles causes controversy in the art world and his paper has since drawn sharp criticism.

"I strongly disagree! I am convinced that the artists discussed knew exactly what they were doing, and that their reasons for painting as they did were part of their basic artistic programmes, and had nothing to do with eyesight problems. Except, perhaps, a few late works by Monet which do seem to reflect the impact of his cataracts," said Professor John House of Courtauld Institute of Art, London.

The sensitivities of the art world were not lost on Dr. Sanghvi.

"Of course, all this is speculative and

these paintings may actually represent a mature change in style, but given the evidence the theory of visual problems should not be dismissed," she told the conference.

Nonetheless, the topic has drawn sustained academic interest. The University of Calgary's Division of Ophthalmology has a website, developed by its Vision and Aging Lab, where visitors can view a permanent tutorial on art and defective vision, (available online at www.psych.ucalgary.ca/pace/va-lab/AVDE-Website/default.html).

Professor Donald Kline, the lab's director believes that while visual problem have had an effect, Dan's article is unhelpful.

"The Dan article does not appear to have done a very thorough job of investigating the fascinating potential relationships between visual loss and artistic output. A great deal of care needs to be exercised in advancing these relationships since they almost inevitably draw a lot of criticism from the art community, many of whom would like to see all change as wholly "muse-inspired". While I too believe that vision loss can play a role in artistic work, even a few mistakes can lead to the inappropriate rejection of the "real" effects of vision loss."

Certainly scientific evidence supports some of the theories. "O. Alstrom demonstrated that the use of -1.0 D. astigmatism correcting lens at 15 (degrees) axis would normalise the shape of the figures [in some of El Greco's paintings]," Dr. Dan wrote.

"Ultimately the broader implication is the question raised by embodying deformations into mainstream artistic practice and then marketing them as happened with Impressionism initially. I suspect that photography also set the circumstances for realism not to be so important in artistic representation," said Dr. Dan.

At the conference, Dr. Sanghvi was also keen to emphasise that these paintings represent an opportunity for ophthalmologists.

"For art, these paintings provided the template for change and a natural evolution of 20 century abstract art. And for us (ophthalmologists), I think these paintings give us a unique insight into the world as our patients see it."

Dr Dan's paper, "Visual Dysfunction in Artists appeared in the March 2003 Journal of Clinical Neuroscience V. 10 n. 2, pp. 168-170. It is currently available to download free from Science Direct (www.sciencedirect.com/science/journal/09675868).

If you would like to read more about art and vision, you might want to have a look at *The Eye of the Artist - (1997 - Mosby)* by Michael Marmor & James Ravin; *The Artful Eye - (1995 - Oxford University Press)* Richard Gregory, John Harris, Priscilla Heard & David Rose (eds.) and "Vision of the Famous: the artist's eye", *Ophthalmic & Physiological Optics*, 1992, p. 82-90, David Elliott and Amanda Skiff.

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contributed to the elongated figures in some of the works by El Greco.

The list of artists who may have been inspired by their handicaps to create unique works is impressive, including Renoir,