

Zaidel's book on the basis of evidence from those established visual artists who suffered left or right hemisphere damage. She proposes that since the damage in either side did not abolish the artistic skills, talent, or creativity, art production cannot be viewed as a "one hemisphere specialization." Similarly, in the musical arts, she concludes, in agreement with others, that music's multiple facets are processed by different circuits spread between the hemispheres. In attempting to move closer to explaining the brain's role in visual art productions, the book separates eye disease from brain control, by analyzing works of well-known artists such as Monet, Van Gogh, Cassatt, or Degas who suffered from eye conditions, not brain damage. She proposes that what visual artists produce can be greatly influenced by alterations in the health status of the eyes, but, ultimately, it is the brain in artists with visual or auditory sensory deficits that controls the final product.

Unlike Semir Zeki's (1999) well-known book on brain and art, with its emphasis on vision, colour, and the visual cortex, and very little by way of brain damage in artists, Zaidel has compiled a sizeable and impressive series of rare cases of established and lesser-known visual and musical artists with focal and diffuse brain damage together with those suffering with autism. She makes use of Oliver Sacks' (1995) insights about absence of creativity in the presence of artistic skill in autistic savants to distinguish between skill and creativity. By bringing together this disparate literature into a single source, she examines the effects of perceptual and conceptual deficits on artistic representation and expression. Neurological evidence from these cases is critical, because, ultimately, the brain pathology breaks behaviour into units that help shed light on the artist's brain and cognition.

There are a number of limitations to this research which must be highlighted however. Neuropsychological and neurological reports of visual and musical artists with brain damage are rare, the original case reports are by and large observational rather than empirically-driven, and presented in the scientific literature by academics or clinicians rather than artists. Innate talent, creativity, technique, and productivity across the different reported cases is impossible to quantify, which raises the question of whether general principles can be extracted from something which is, at this point of scientific understanding, so indefinable and variable between individuals.

Despite these limitations, and the inherently tentative nature of the conclusions that can be drawn from the study of art-brain relationship, the author provides a number of important insights. Firstly, from the compilation of single cases of visual artists in chapter 2, autistic savants with special artistic skills in chapter 4, composers in chapter 5 and trained musicians in chapter 6, a

distinct recurrent type of artistic composition post-damage has not emerged, either across or within different brain pathologies. This absence suggests preservation of artistic capabilities despite onslaught of neuronal damage (following stroke, or dementia, or with autism). Secondly, artists are also as susceptible to visuo-spatial deficits as are other individuals, but because of their preserved artistic skill, their work can appear visually eloquent in incorporating deficits like neglect into their visual art. This is illustrated in this book in two post-stroke drawings by Otto Dix (1891-1969) who suffered a unilateral right hemisphere stroke aged 75 years. Initially, Dix was paralyzed in the left hand and suffered hemi-neglect of the contralateral visual field. Both paralysis and neglect resolved over time. The reproduced sketches show a centering of his image in the right half of the page, and greater concentration of detail in the right half of the image. Similar observations had been made by Jung (1974) of the painter Anton von Raderscheidt, whose stages of left hemi-neglect recovery were incorporated into his self portraits, the images can be viewed here <http://www.raederscheidt.com/english/default.htm> (click on 'auto portrait of the late work'). Also, the highly-regarded film director, Federico Fellini continued to create cartoons despite having left hemi-neglect (Cantagallo and Della Sala, 1998). Thirdly, regardless of laterality or lesion location, artists with acquired brain damage showed an adherence to their premorbid artistic style, although a more variable effect was noted for technique. An example described in the book is a newly implemented post-stroke technique of Bulgarian artist Z. B. where images were organized on the canvass with a striking left-right symmetry. The pre-stroke style of depicting realistic figures remained unchanged. Another example described by the author is the work of the famous abstract expressionist painter, de Kooning, who adhered to his abstract art style despite progressive Alzheimer's Disease symptoms but now implemented a technique of painting long, rounded sinuous brush strokes. Fourthly, preservation of artistic skill which include creativity and aesthetic preference remain relatively intact, modified, enhanced, or even generated in individuals who, premorbidly, had not displayed any artistic tendencies. She has identified a number of studies which have reported the initiation of visual artistic abilities in the context of progressive frontal brain pathology. She cites published work by Miller et al. (1996) describing neurological patients who developed artistic skills in the course of fronto-temporal dementia. The patients' productions as a group varied widely (paintings, photographs, and sculptures), and on the whole, their works were realistic productions with little abstraction. Miller et al. (1996) suggested that disconnection of frontal from temporal areas led to enhanced interest in the

visual world and desire to reproduce this in a tangible form. Finally, Zaidel's neuropsychological evidence suggests that whilst both artistic and language expression represent diverse communication forms with potentially infinite combinations, the two forms are not necessarily related. Artists with brain damage can display severe aphasias whilst art expression is only minimally affected. This dissociation in turn raises the possibility that during evolution of the human brain, art and language expression were not closely related. These issues are raised briefly in chapter 1 but are explored in depth in chapter 10.

Illustrations in the printed book are in grey scale but a web site by the publisher provides colour figures, some overlap with what is in the book and some are new, <http://www.psypress.co.uk/zaidel>. In addition, the book's chapter subheadings can be viewed here <http://dahliaz.bol.ucla.edu/newbook.html>. It should also be mentioned that there is a detailed Subject Index with artists' names as well as a useful Glossary.

The diverse material covered, together with the clarity of the writing, makes *Neuropsychology of Art* of interest to all scientists, scholars, students, and those working with the brain-damaged. Those in the rehabilitation field and researchers in psychology or the neurosciences will find this book

on art and the brain a useful and fascinating source of information on important current developments in neuropsychology in general and the neuropsychology of art in particular.

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