

## Art and science

*Sir*— In the art and science discussion<sup>1</sup> it is suggested that art's influence on science is thinner than the other way around. Although the yardstick with which we measure such influences is imperfect, the influence of art is not so thin in neurological science, the study of the mind in the brain.

The mind is expressed in fine art works by artists whose studios are natural laboratories for neurological science. Here are some examples:

- (i) The ability of artists to paint masterfully even after cortical damage has shown that talent is diffusely represented in the brain, unlike speech, language comprehension or memory, which have focal brain representations<sup>2</sup>.
- (ii) Magritte's *The Rape* has led to insights about how faces are perceived in the two brain hemispheres in split-brain patients<sup>3</sup>.
- (iii) The selective emphasis on the left half of women's faces in portraits by Rembrandt, and by many other portrait painters over several centuries, has led to numerous psychological experiments, including discovering facial asymmetry in the manifestation of beauty in women's faces and speculating about

adaptive coevolution between face and brain<sup>4</sup>.

Because artistic productions reflect the mind in the brain, art holds many insights for behavioural brain researchers.

**Dahlia W. Zaidel**

*Department of Psychology,  
University of California,  
Los Angeles, California 90095-1563, USA  
e-mail: dahliaz@ucla.edu*

*Sir*— I should like to draw your attention to a little-known quotation from *The Notebooks of Raymond Chandler*<sup>5</sup>. On page 7 Chandler describes a "great thought" that occurred to him in February 1938:

"There are two kinds of truth: the truth that lights the way and the truth that warms the heart. The first of these is science, and the second is art. Neither is independent of the other or more important than the other. Without art science would be as useless as a pair of high forceps in the hands of a plumber. Without science art would become a crude mess of folklore and emotional quackery. The truth of art keeps science from becoming inhuman, and the truth of science keeps art from becoming ridiculous."

Charles Darwin realized that by solely doing science and by thinking only in theoretical terms his mind would change

into a machine, eventually depriving him of the possibility of experiencing happiness. As a consequence, Darwin resolved to read more poetry and listen more to music.

What Darwin experienced as an individual may well apply to the public and to science as a whole. People perceive science (without art) as a machine that continues to produce useful things but nevertheless detaches itself from human needs (and becomes inhuman). The growing public misunderstanding of science is not due to a lack of good explanations but to a lack of human aspects in its knowledge.

Getting artists and scientists to cooperate is crucial for future developments in both fields. Several years ago, a group of people in Germany founded a private university that no longer separates the arts and sciences but teaches both aspects of human endeavour as a unit.

**Ernst Peter Fischer**

*Hochschule Holzen,  
D-79400 Kandern-Holzen,  
Germany*

1. Campbell, P. *Nature* **389**, 213 (1997).
2. Gardner, H. *Art, Mind, & Brain* (Basic Books, New York, 1982).
3. Zaidel, D. W. in *Brain Circuits and Functions of the Mind* (ed Trevarthen, C. B., Cambridge Univ. Press, 1990).
4. Zaidel, D. W., Chen, A. C., & German, C. *Neuropsychologia* **33**, 649–653 (1995).
5. Chandler, R. *The Notebooks of Raymond Chandler* (Ecco Press, New York).