of the Sun. This will be the first transit of Venus visible from Earth since 1882.

The reproduction of photographs in 25 cm × 35 cm format on heavy stock is outstanding. For example, we see Saturn's rings extending across a double page for almost half a metre in a Hubble Space Telescope image. The authors justify using this image, which shows the shadow of Saturn's satellite Titan on Saturn's clouds, by pointing out that it corresponds to an eclipse of the Sun by Titan as seen from Saturn. It's a pity, though, that Brunier calls himself an "eclipse chaser" — that common but misleading phrase seems to imply that people can outrun, or even outfly, eclipses, which has never been done.

Brunier is responsible for some of the most magnificent photographs, such as one from the 1991 total solar eclipse visible from the Mauna Kea Observatory in Hawaii, with a few telescopes in the foreground. But the image I found most arresting is not one of his: it is a wide-angle shot of the 1991 eclipse viewed through a hole in the clouds and showing the front of Reims Cathedral in the left foreground.

In his chapters on the history and cultural significance of eclipses, Jean-Pierre Luminet reproduces a remarkable set of historical images related to solar and lunar eclipses from around the world. These are no doubt related to his work on an exhibition of astronomical atlases held in Paris at the Bibliothèque Nationale in 1998.

It was good to read about myths that cast eclipses in a favourable light rather than as evil omens. Luminet also describes the history of scientific discovery through observations of solar eclipses. One example is the discovery at the 1868 total solar eclipse of the spectrum of the solar chromosphere — the layer of the Sun just above its surface that becomes briefly visible at the beginning and end of totality. The element helium was also discovered at this eclipse.

Unfortunately, though, the scientific observations of eclipses are not brought up to date. The authors describe Serge Koutchmy's wonderful work on Mauna Kea at the 1991 eclipse, but do not discuss the work of the many eclipse teams and the eclipse observations that have been made since then. Eclipse science continued in Chile and Bolivia in 1994, in India in 1995, in Aruba and across the Caribbean in 1998, and across Europe, Turkey, Syria and Iran in 1999. As a result of these omissions, the book does not give proper credit to contemporary eclipse science.

It is also a shame that the authors do not consider the current status of ground-based eclipse studies. These still have many useful observations to make that are beyond the capabilities of the solar spacecraft now aloft. And today's ground-based eclipse experimenters often work in collaboration with instruments aboard the Solar and Heliospheric Observatory (SOHO) spacecraft and the Transition Region and Coronal Explorer (TRACE), or use space data to orient their telescopes in preparation for totality. This trend will continue in southern Africa, notably in Zambia, at the total eclipse of 21 June this year. But SOHO is mentioned in only three paragraphs and TRACE is represented by a single picture. Neither spacecraft appears in the index, which is, *ipso facto*, inadequate.

But there is much that is excellent in the book. The charts of future eclipses at the end of the book are redrawn at the highest quality. Lunar eclipses are included in the text, photos and charts, looking almost as dramatic on the page as the solar eclipses, even though they are much less so in reality. As a book of history, myth, literature, photography and expeditionary experiences, *Glorious Eclipses* is outstanding, despite its omission of the solar research carried out at recent eclipses. ■

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Feeling our way

Emotion: The Science of Sentiment
by Dylan Evans
Oxford University Press: 2001. 204 pp. £9.99, $15.95

Simon Baron-Cohen

This is a fun little book, no bigger than your palm, and with a bright pink cover, summarizing in a popular science format what we know about emotion. Dylan Evans is a researcher at the Darwin Centre at the London School of Economics, and his account is, predictably, about the evolution of human emotions. Highly accessible, this little gem deserves to sell well.

Typically, only about 5% of what we teach on undergraduate psychology courses is emotion, the remainder being cognition. This is despite the fact that all the important stuff in our everyday lives is determined by emotion. Evans' agenda is to redress this balance, and, given how student-friendly this little book is, we can hope to see emotion become more central in behavioural neuroscience research. Evans admits that his book leaves out a fair bit. For example, it doesn't touch on individual differences or on development. You might think that these are two big omissions, for many of the interesting questions centre on why you and I experience our emotions differently, and on the role of development in creating these individual differences. Psychotherapists will therefore find that this book contains little of relevance to their clinical work.

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Let it out: all the important aspects of everyday life are governed by emotion.

But the strength of the darwinian approach is to sweep aside individual differences in an effort to highlight the universals. Universals are compelling, because we can then rule out the role of culture and focus on the products of evolved biological systems. This is Evans at his best. Following Paul Ekman, the psychologist most well known for his comparative studies of emotion in Western and non-Western cultures, Evans lays out some central examples of emotion that you will find the world over, and for which one can make a convincing argument for their adaptiveness.

The obvious case of an emotion being adaptive is fear. Those of our ancestors who experienced too little fear may have stood for too long at the edge of a cliff or staring into the face of a lion, and their genes would in all likelihood have died with them. Ancestors who experienced too much fear may have been equally unlikely to reproduce if they were too afraid to even venture out of their cave. A midway level of fear seems therefore to have been adaptive and optimal. Evans makes similar arguments for other emotions, such as revenge, guilt, embarrassment, romantic love and sexual jealousy, as well as the usual ('basic') list of emotions — happiness, sadness, fear, anger, surprise and disgust.

I was somewhat surprised that there was no comprehensive list or taxonomy of emotions. It may be that Evans decided, wisely, to avoid grappling with this, given the controversies that exist in this field. There is no consensus as to how to classify emotions, because the dimensions along which they could be sorted rely on which features of a given emotion a researcher highlights. But this does not mean a taxonomy of emotions cannot be attempted and defended. In our lab, for example, we have been collecting emotion words in the adult English lexicon and have now classified close to 1,000 discrete emotions into 23 mutually exclusive categories. But Evans's excellent introductory book makes clear that we have a long way to go before we can give a full account of the richness of human emotions in terms of both their evolved and their experiential components. ■

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