

BOOKS & ARTS

Orange revolution

Stories of seventeenth-century scientists and aristocrats show how Dutch ingenuity benefited England.

Going Dutch: How England Plundered Holland's Glory

by Lisa Jardine

HarperPress: 2008. 400 pp. \$35, £25

Harold Cook

History is often told from a national perspective, but big ideas usually have cross-border entanglements. Lisa Jardine's carefully crafted and highly readable book describes how people and concepts from the Netherlands percolated English high culture in the seventeenth century, influencing early science. *Going Dutch* may unsettle those raised on the parochial view of the English as driving their own independent destiny.

Historian Jardine begins with the Dutch invasion of England known as the Glorious Revolution of 1688–89. No blood was shed, yet England was subjected to a massive *coup d'état* at the point of a foreign prince's sword. The head of the Dutch army, Prince William of Orange (also the nephew of England's King James II), gathered a fleet of more than 500 ships to convey his battle-hardened troops across the water, an operation the size of which was not repeated until D-Day in 1944.

Marching on London, the prince was greeted by cheering crowds. Meanwhile, James II's army withdrew rather than offering battle. A cabal of Protestant lords provided political cover by inviting William to take over the English government. The imprisoned James II was allowed to escape to France, while a hastily convened Parliament pronounced William and his wife Mary (daughter of James II) as joint sovereigns, giving legitimacy to the new regime. But William's Dutch guard garrisoned an occupied London for years afterwards, just to make sure.

Why was this quiet coup seen as importing a king rather than suffering a conquest? Jardine argues that Dutch victory was subverted by English opportunism. By 'going Dutch' and adopting the commercial and administrative methods of their new masters, the English quickly gained the upper hand, replacing the Netherlands as the major international power.

Jardine suggests that a common cause was possible between the sometime enemies because the countries were culturally close.

Providing a family history of the English and their Dutch first cousins, Jardine explores personal networks between influential characters. The main vehicle is the Huygens family, including elder statesman Constantijn and two of his sons Constantijn and Christiaan, the notable

book's core: the debates about the accuracy of Huygens's pendulum clock for finding longitude in the 1660s and his balance-spring watch of the mid-1670s, and the discussions around Robert Hooke's famous book *Micrographia*, reproducing microscopic biological observations in exquisite detail.

The careful reconstruction of events surrounding the adaptation of Huygens's clock shows how much he depended on the innovations and experiments of his English friends. Jardine discovered new evidence in Samuel Pepys's papers about how sea-trial reports to the Royal Society regarding the pendulum clock were exaggerated by Admiral Robert Holmes. In doing so, Holmes, who helped to start the Second Anglo-Dutch War, ironically gave the Dutchman Huygens a claim to priority that obscured the contributions of the English.

Showing the further intertwining of Anglo-Dutch intellectual networks with those of France, Jardine demonstrates how in the mid-1660s, Henry Oldenburg, the first secretary of the Royal Society, tried to raise doubts about Hooke's *Micrographia* internationally. This helped to undermine Hooke's reputation, contributing to the later failures of Huygens and Isaac Newton to acknowledge his contributions. Jardine remains one of Hooke's chief advocates, placing him and Huygens on the international stage.

Jardine's circles move outwards beyond the Huygens family and science to links between the house of Orange and the Stuarts, and to the lives of English royalists in exile in

the Low Countries during Cromwell's government. Although this creates the impression that both countries were tied by conversations and intermarriages among the great and the good (genealogical tables are supplied in the book's appendix) rather than by the connections of ordinary people, Jardine's strategy lets her highlight many topics without resorting to generalizations. She addresses fine art (mostly painting), music, gardening and botany, science and commerce, accompanied by colour illustrations.

Going Dutch is richly evocative. One feels present at a masque in The Hague sponsored by



Christiaan Huygens's scientific reputation was boosted by English boasts.

scientist. Constantijn Huygens junior accompanied William during the invasion of England, whereas Constantijn senior, a long-lived Anglophile, had served as the principal secretary to the house of Orange for many decades before.

The two chapters concerning the scientific work of Christiaan Huygens and Robert Hooke are the most original. Jardine emphasizes the exchanges between the virtuosi of England and the Netherlands that amounted to an international scientific forum, even through the period of the Second Anglo-Dutch War of 1665–67. Two case studies form the

nobles of the Winter Queen's court, with dancing until 4 a.m., or walking through the estate garden of the elder Huygens, or accompanying his third son Lodewijk through Somerset House in London after the execution of Charles I to view the impressive royal art collection.

This fascinating book is an excellent introduction to seventeenth-century Anglo-Dutch relations. Jardine does not try to summarize the whole field. She avoids, for instance, examining the Anglo-Dutch wars of the period or the bitter rivalries abroad, gives much more space to royalists than republicans, scarcely deals with religion, and treats the formative period of English philosopher John Locke's exile in the Netherlands very lightly. She does not develop fully an account of how the Dutch

coup launched the Bank of England, nor how it affected Scotland and Ireland. These subjects are left to other works, many of them cited in her bibliography. Jardine presents the view from England more than that from across the North Sea, and her subtitle is perhaps more relevant to the eighteenth century than the seventeenth. Yet by exploring pertinent examples, *Going Dutch* demonstrates that personal connections helped to shape the cultures of both countries. ■

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both sets of virtues remains an open question.

Marcus closes with experimentally verified ways for people to deliberate more effectively, a welcome change from the usual self-help prescriptions. For example, he suggests imagining that your decisions might be checked by someone else. Although few biologists will need to be convinced of the evolutionary arguments in this book, it remains intriguing to contemplate which aspects of our minds could be improved and how we might compensate for those weaknesses.

A Portrait of the Brain is constructed with equal care, but in a very different style. Neurologist Adam Zeman takes on an ambitious project: explaining brain function from atoms to neural networks to, unexpectedly, the soul. Clearly an Oliver Sacks fan, Zeman weaves case studies of patients together with basic science, history, etymology, classical literature and art to produce an erudite discourse on brain components.

Describing the many aspects of neurons, the fifth chapter explains, for instance, how early neuroanatomists determined that brains are composed of cells, tells the story of a bus driver with religious feelings caused by epileptic seizures who ultimately became a priest, and is laced with asides about scientific rivalry, brain development, the hobbies of neuroscientist Santiago Ramón y Cajal and how action potentials are generated. The science is clear, and the stories of patients are suspenseful and gripping. Yet in some places, the relationship between topics feels a bit forced.

In the final chapter, Zeman grapples with consciousness. He outlines how brains that are predisposed to tell stories and that attribute actions to agents rather than chance might lead us to believe in an immortal soul. His own view is that this is "no more than a wonderful fiction". (Marcus makes the same point less gently.) Zeman struggles with science's failure to find an emotionally satisfying replacement story, conceding that such questions may be more in the realm of art than science.

What is the impetus for this deluge of brain

Biased brains, messy memories

Kluge: *The Haphazard Construction of the Human Mind*

by Gary Marcus

Houghton Mifflin: 2008. 224 pp. \$24

A Portrait of the Brain

by Adam Zeman

Yale University Press: 2008. 256 pp. \$27.50

Sandra Aamodt

Public interest in the brain seems to be insatiable, judging from the many popular books about the topic that have been published in the past few years. Highlighting the diversity of this expanding genre, two books aimed at general readers provide views of brain science in very different styles.

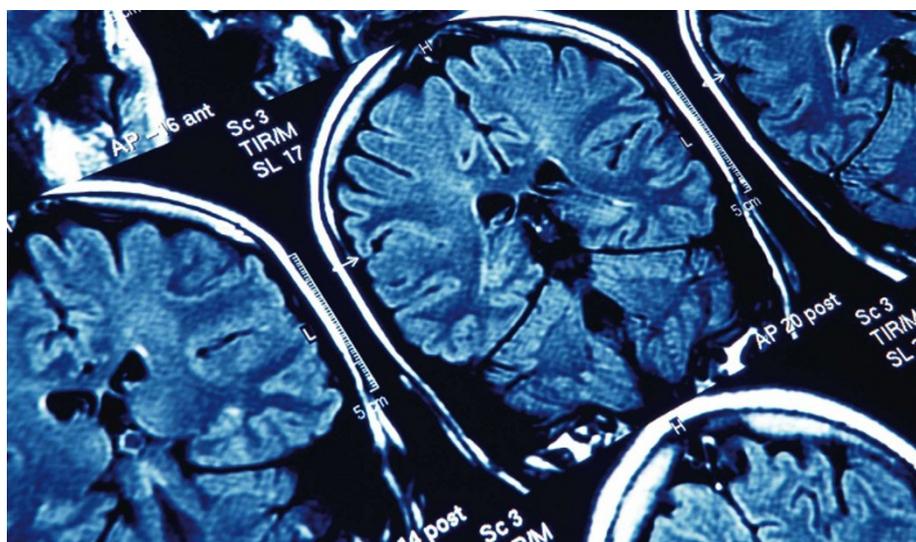
In *Kluge*, psychologist Gary Marcus presents a lively tour of the shortcomings of human minds and concludes that evolution has left us with something of a mess. In an argument reminiscent of David Linden's *The Accidental Mind*, Marcus makes his case by describing cognitive difficulties, including false beliefs, linguistic ambiguity, impulsiveness and mental illness.

The blame, he asserts, rests with our imperfect memory, "arguably the mind's original sin". Perhaps we would reason more effectively if the brain could store and retrieve data as accurately and as simply as a computer. Instead we must contend with a limited system. Brains locate memories by matching them to the current context rather than having unbiased access to all of our experiences. This contextual dependence makes it hard during an argument, for example, to recall how often our spouse does the housework, because thinking of one failure inclines our brains to remember similar situations rather than contrary examples.

Many of these problems result from conflicts between the brain's two basic styles of thinking.

The reflexive system, having evolved earlier, controls most behaviour. It is fast and can accurately assess statistics — such as the likelihood of finding food in certain locations — but is prone to overgeneralization and snap judgements. The deliberative system, by contrast, is slow, effortful and logical, at least intermittently. The reflexive system readily overrides the deliberative system, especially when we are tired or rushed. Marcus believes our lives would be improved if we engaged the deliberative system more often, although he acknowledges that "it often settles for reasoning that is less than ideal".

Evolutionary psychology has tempted many scientists to indulge in just-so stories, as Marcus notes; asserting that our brains are poorly engineered is an equally risky business. Computer memories are more factual than those of humans, but computers lag far behind the reflexive system on other problems, such as distinguishing cats from dogs. Whether any biological system (or a computer) could combine



Powers of persuasion: human brain images have piqued public interest in neuroscience and psychology.