

## ANTHROPOLOGY

## Sifting Myths for Truths About Our World

Abigail A. Baird

The Indonesian island of Simeule is the closest inhabited land to the epicenter of the 26 December 2005 Sumatran earthquake. Its inhabitants were the first to experience the full force of the subsequent tsunami, which killed more than 150,000 people. Within 30 minutes of the initial seismic activity, the tsunami slammed into the island's northern coast. Waves 10-m high left little behind. Yet when all was said and done, only seven of the island's 75,000 inhabitants had died. Unlike hundreds of thousands of others who thought the worst was over when the earthquake's shuddering stopped, the people of Simeule—remembering a story passed down from their grandparents—fled to higher ground, thus saving their lives. The story describes angry gods who shake the ground and then produce giant waves called “smong.” Interestingly, this oral history is believed to result from accounts of an actual tsunami that struck in 1907 and killed thousands of islanders.

It has been suggested that language-dominated cognition among human beings enables a “mythic culture” whose primary function is to pass collective knowledge about survival through a vast mythic heritage, complete with oral lore, totemic art, mimetic song, dance, and ritual (1). In *When They Severed Earth from Sky*, Elizabeth Wayland Barber and Paul T. Barber effectively argue that myths, while enabling survival, also serve as carriers of important information about real events and observations. To this end, the authors (2) provide not only a compelling and highly readable collection of mythic interpretations but also a framework through which to decode those stories and uncover seismic, geological, astrological, or other natural events that preceded written history.

Previous scholarship has described myth as an aesthetic device for bringing the imaginary but powerful world of preternatural forces into a manageable collaboration with the objective, experienced facts of life in such a way as to excite a sense of reality amenable to both the

unconscious passions and the conscious mind (3). To this end, humans have been equipped with an ability, which lies somewhere between curiosity and compulsion, to discern meaning in our experience. Although this ability is largely useful, problems with accuracy can result from the fact “that our brains are constructed to seek out patterns so avidly that they will happily pounce onto single cases” and give them causes or meanings. Barber and Barber give the example of a reaction to finding a corpse in the kitchen: spatial proximity may lead one to conclude

therefore that the cook did it—*prope hoc, ergo propter hoc*. The problem of accuracy also arises in regard to the human quest for meaning; there are few occurrences, either natural or otherwise, that are devoid of meaning to human beings. For example, you might think that you did not get the job because it was not meant to be or the tsunami was meant to reflect the gods' anger.

The authors' discussion of the problems with accuracy is but one example of the way that they deftly deal with human cognition in the presence of actual events. The Barbers' technique, the “stripping procedure,” facilitates the discernment of the true original events by removing the offered explanations (“meaning making”) from the story, more clearly singling out the observations.

In one of the book's highlights, the authors unpack myths involving fire-breathing dragons. Working with the text of *Beowulf* (among other legends), they use their stripping procedure to interpret the myth. In the story of *Beowulf*, they identify six usable observations: (i) “Someone steals a cup from an old barrow” (a burial mound in the ground). (ii) “Fire erupts from the barrow and spreads.” (iii) “Near the stone entrance, our hero stabs blindly at the

source of flames.” (iv) “It smells bad.” (v) “People stab deeper, and eventually the flame goes out.” (vi) “Inside the barrow is treasure but no trace of a dragon's body.”

Barber and Barber offer an integrated interpretation of these data points: People do steal from tombs, which often do smell bad and contain valuable items. Because these tombs were well constructed, it was often the case that the gasses from the decomposing bodies were held within the tombs, creating large amounts of horrible smelling, and highly flammable, methane (or “marsh gas”). If a tomb thief has broken in at night with a lantern or torch in hand, a fire is likely to start. Stabbing at the mound, as *Beowulf* did, likely further aerated the barrow and provoked larger fiery bursts, until all combustible material was gone and the fire and dragon were no more. Through the authors' framework, *Beowulf's* fight with a dragon is revealed as the natural properties of a burial mound.

Although this account is both compelling and convincing, it also reflects the book's principal weakness. Throughout the text, the authors pay little attention to the human psyche itself—more specifically, to the importance of these myths in identity and personality. Jerome Bruner has described myth as the synergistic blend of external reality and the internal vicissitudes of man (4). His account effectively emphasizes the importance of the individual in both the construction and propagation of myth. In addition to their value as repositories of natural history, myths also speak to us about who we are and help us as individuals make sense of both our external

**When They Severed  
Earth from Sky  
How the Human Mind  
Shapes Myth**

by Elizabeth Wayland Barber  
and Paul T. Barber

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09986-3.



**The Churning of the Ocean of Milk** (circa 1785, Pahari school, Kangra, India). In Hindu and Buddhist mythology, the axis around which Earth and sky are organized is analogized as the shaft of a churn that gods and demons use to stir the Milky Way.

and internal worlds. Given these other values, it is possible for myths to reveal important data about what character traits and virtues were desirable at different points in history. It is clear that the framework provided by Barber and Barber is able to excavate natural facts from linguistically based myth. It would have been interesting to see the same type of approach applied to social or individual processes. However, those questions clearly lie beyond the scope set out by the authors, and that they were ignored detracts in no way from the flow or impact of the book.

Quite simply, the Barbers' book is for people who prefer "just because" to "just so" stories. In the tradition of books by Merlin Donald (1) and Daniel Schacter (5), *When They Severed Earth from Sky* provides an intellectually challenging and parsimonious new framework. It not only sheds light on the planet's natural history but also offers alluring insights about human cognition.

#### References and Notes

1. M. Donald, *Origins of the Modern Mind: Three Stages in the Evolution of Culture and Cognition* (Harvard Univ. Press, Cambridge, MA, 1991).
2. E. W. Barber is a professor of linguistics and archaeology at Occidental College; P. T. Barber is a research associate with the Fowler Museum of Cultural History at the University of California, Los Angeles.
3. R. V. Chase, *Quest for Myth* (Louisiana State Univ. Press, Baton Rouge, LA, 1949).
4. J. S. Bruner, *On Knowing: Essays for the Left Hand* (Harvard Univ. Press, Cambridge, MA, 1962).
5. D. L. Schacter, *The Seven Sins of Memory: How the Mind Forgets and Remembers* (Houghton Mifflin, Boston, 2001).

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## NEUROSCIENCE

# One Cause for All Confabulations?

Armin Schnider

Even though it is no shame to fabricate stories—and some make a living doing so—the term “confabulation,” which means exactly this, has always had a negative connotation. It was toward the end of the 19th century that clinicians first described the curious tendency of certain memory-impaired subjects to make up stories about their recent doings (1). Some patients appeared to believe in their stories; others produced them only when questioned. To some observers, the significance of these stories—soon termed confabulations—rapidly appeared obvious: the patients desired to fill gaps in memory (2). Variants of this idea have survived to the pres-

ent, and new hypotheses positing defective “monitoring” processes have been added. Interpreting confabulations has become more delicate with the observation that even healthy people may unknowingly confabulate. Memory is now considered a reconstructive process in which memories are constantly reactivated, associated, and again encoded. In his magnificent book, Daniel Schacter describes the imperfections of normal memory as “the seven sins of memory” (3). These sins are particularly pertinent in the context of legal testimony.

Fabricated stories also occur as a result of inaccurate perception. I vividly recall a patient, blinded by a stroke of the back part of her brain, watching emptily into the room and complimenting me on my “yellow tie with pink spots.” I knew she was blind, and I would never wear such a tie, but she was totally unaware of her blindness. Similar confabulations, mostly with unawareness of deficit, also occur in other disorders of perception and language (4).

On this background—with multiple forms of confabulations emanating from diverse lesions and reflecting failures of memory or perception—the idea of reducing all confabulations to one specific mechanism appears quite unlikely. In *Brain Fiction*, William Hirstein, a philosophy professor at Elmhurst College, takes a different stand: “The apparent diversity of confabulation syndromes invites a search for something they have in common.”

Working primarily with extracts from the recent literature, Hirstein first gathers evidence pinpointing the orbitofrontal cortex at the base of the anterior brain as the critical area for the occurrence of confabulations. This area has recently received much attention because damage to it may produce socially inappropriate behavior or flagrant confabulation. Patients with acute lesions may invent stories about their doings and act according to plans for the future that completely disregard their current brain damage, a disorder called spontaneous confabulation (5). However, other false productions from memory have no comparable anatomical specificity. Hirstein extends the thesis of a frontal origin of confabulations to cover those emanating from false perception. Although this idea is shared by some neurologists, the argument runs aground when one considers, for example, the confabulations of patients who have visual defects following isolated posterior brain damage. The author's suggestion that right hemisphere damage would be particularly critical for the occurrence of confabulation also holds only as long as one forgets confabulations produced by patients

with visual agnosia after left hemisphere damage: who see objects but fail to understand their meaning, misname them, and sometimes even use them according to this false name.

What would be a common mechanism for all forms of confabulation? Hirstein proposes that confabulations result from disinhibition like that responsible for socially inappropriate remarks. Confabulators would be unaware that it is socially inappropriate to provide false information and would fail to notice that others disapprove of their false statements. Thus, their common problem would be a failure to read the mind of others. As the author notes, this explanation has difficulty in accounting for the confabulations in the first place, before listeners hear the false statements. In more general terms, he

suggests that “confabulation occurs when a perceptual or mnemonic process fails and the failure is not detected by frontal processes.” How could this be checked? “If you combine a representation-evaluating process with a behavior-inhibiting process, the combination can function as a checking process.” The idea is reminiscent of previous monitoring hypotheses, now applied to all forms of confabulation. Unfortunately, Hirstein offers no suggestion of an experimental approach to test it.

*Brain Fiction* offers one of the most extensive accounts of false memories and perceptions, although it leaves out important forms, including those occurring in healthy subjects. Hirstein proposes that one mechanism (a mind-reading difficulty based on frontal-lobe dysfunction) accounts for all forms of confabulations. It is inspiring to consider such a wide-ranging thought-monitoring process, but the book also shows to what degree current neurobiological evidence has to be selected and generalized to maintain such a unitary concept. At a time when neuropsychological experimentation and modern imaging technologies allow us to dissect cognitive processes ever more finely, some might prefer a more evidence-driven, analytical approach to the all-inclusive, hypothetical one Hirstein takes.

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MIT Press, Cambridge, MA, 2005. 301 pp. \$35, £22.95. ISBN 0-262-08338-8. Philosophical Psychopathology: Disorders in Mind.

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