

Earlier this year, the team put Clemmons's unlikely theory to the test, using a 40-square-metre rectangular nylon sail. The kite lifted the column clean off the ground. 'We were absolutely stunned,' Gharib says. 'The instant the sail opened into the wind, a huge force was generated and the column was raised to the vertical in a mere 40 seconds.'

The wind was blowing at a gentle 16 to 20 kilometres an hour, little more than half what they thought would be needed. What they had failed to reckon with was what happened when the kite was opened. 'There was a huge initial force – five times larger than the steady state force,' Gharib says. This jerk meant that kites could lift huge weights, Gharib realised. Even a 300-tonne column could have been lifted to the vertical with 40 or so men and four or five sails. So Clemmons was right: the pyramid builders could have used kites to lift massive stones into place. 'Whether they actually did is another matter,' Gharib says. There are no pictures showing the construction of the pyramids, so there is no way to tell what really happened. 'The evidence for using kites to move large stones is no better or worse than the evidence for the brute force method,' Gharib says.

Indeed, the experiments have left many specialists unconvinced. 'The evidence for kite-lifting is non-existent,' says Willeke Wendrich, an associate professor of Egyptology at the University of California, Los Angeles.

Others feel there is more of a case for the theory. Harnessing the wind would not have been a problem for accomplished sailors like the Egyptians. And they are known to have used wooden pulleys, which could have been made strong enough to bear the weight of massive blocks of stone. In addition, there is some physical evidence that the ancient Egyptians were interested in flight. A wooden artefact found on the step pyramid at Saqqara looks uncannily like a modern glider. Although it dates from several hundred years after the building of the pyramids, its sophistication suggests that the Egyptians might have been developing ideas of flight for a long time. And other ancient civilisations certainly knew about kites; as early as 1250 BC, the Chinese were using them to deliver messages and dump flaming debris on their foes.

The experiments might even have practical uses nowadays. There are plenty of places around the globe where people have no access to heavy machinery, but do know how to deal with wind, sailing and basic mechanical principles. Gharib has already been contacted by a civil engineer in Nicaragua, who wants to put up buildings with adobe roofs supported by concrete arches on a site that heavy equipment can't reach. His idea is to build the arches horizontally, then lift them into place using kites. 'We've given him some design hints,' says Gharib. 'We're just waiting for him to report back.' So whether they were actually used to build the pyramids or not, it seems that kites may make sensible construction tools in the 21st century AD.