The 'Vinland map' appears to be of Viking origin. It came to light in 1957 when two book dealers brought it to the attention of London's British Museum. It was acquired by Yale University in 1965. Take a good look at the map and see how many places you can (and cannot!) identify.

Here are some facts scholars have agreed on more or less from the beginning:

1. The map is drawn in ink on a piece of parchment (dried animal skin); the skin has been carbon-dated to about 1400-1440.

2. It seems to show fifteenth-century Viking knowledge of Europe, parts of Asia and north Africa, Greenland, and what appears to be a part of the east coast of North America, labeled *Vinlanda Insula* — Vinland Island. (This latter fact is consistent with archeological discoveries made only in 1960, *after* the map was discovered.)

3. The text on the map claims specifically that Europeans reached "Vinland" well before the map itself was made, in fact as early as the eleventh century, 400 years before Columbus. This too is consistent with modern archeological evidence, and not wholly surprising since it is known that the Vikings reached Iceland by about the year 870.

4. The map's ink contains some traces of titanium dioxide, which is a modern synthetic chemical. Also, there are some puzzling geographical anomalies; for example, Greenland is drawn more accurately than Scandinavia.

5. "Book worms" are a variety of insects that eat old manuscripts, generally burrowing through from one page to the next, and wormhole patterns in the Vinland map *exactly* match those in the Speculum Historiale, an unquestionably genuine medieval book that has pages missing.

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In science, in history, and in life, we often have to choose which among competing theories to believe, based on imperfect evidence. A question to bear in mind: *What factors make a theory seem fishy, or plain ridiculous, or reasonable-but-unpersuasive, or plausible, or even... true?*

Imagine hearing each of the following stories. Based on what you do know, can you put them in a rough order, from most to least believable? *Why* do you rank them that way? Finally: if you could Google just two or three facts to help you to become more confident in your judgment, which facts would you check? Or can you be confident of your judgment(s) *without* doing any extra research? (Again, why?)

(1) "The whole map is a forgery. Eugene Jacobsen, of Amarillo, Texas, sold it to Chicago antiquities collector Myron Abell in 1956 in order to pay off debts. Abell said later that he was suspicious, but he managed to pass it off as genuine to experts in London, and later at Yale University, where it is now. Later, Yale scientists ran improved forensics tests, didn't like what they saw, and tracked the map back to Jacobsen. At that point, he admitted that the map had been made from scratch by his grandfather, Knut Jacobsen. The older man was an industrial chemist by training but also an enthusiastic amateur historian who became obsessed with the idea that America was "really" Scandinavian. He created the map in the late 1950s using a steer skin from his own ranch (rubbed with uranium ore, to fool the detectors) and an ink he'd made by mixing black tea with horse manure — a common technique in the early Middle Ages."

(2) "The skin is genuinely medieval, but the map itself is a forgery and can be dated with certainty to 1628, when it was created in Rome by the famous Jesuit scholar Beniamino Xavier Moretti, who was a friend of Pope John Paul II and personally involved in the trial of Galileo. Moretti was also responsible for the fraudulent Codex Tagliatelle in the Vatican's Bodleian Library. According to another document recently discovered there, in 1632 he signed a deathbed confession, and his last words were 'La cosa que era vinlandes - sí, obviamente, lo hice' – 'The Vinland thing - yes, sure, I did it.'"

(3) "Get real! The skin's genuine, sure, but the map has to be a forgery! The outline of Greenland is way too modern! And the language looks genuine, superficially — it's medieval Latin and all — but there's a bunch of mistakes in it. And the ink looks pretty genuine too, superficially — it's a so-called iron-gall ink, which everyone used back then — but it's full of titanium dioxide, a modern chemical. Gotcha!"

(4) "The whole map is almost certainly genuine, despite all those skeptics. Nobody has ever explained how anyone could have forged something so historically convincing, or who did it, or why. (Anyway, where would they have acquired a genuine but unused piece of medieval vellum?) As for the alleged problems, they can all be explained away. The titanium dioxide, for example: it's obviously a case of later surface contamination. And the real clincher is the bookworm holes: nobody has ever denied that the Speculum Historiale is genuine, and the map was clearly ripped from the same book. The truth is, some scholars are prejudiced about the achievements of the Vikings."

(5) "Amazingly enough, the whole thing is a forgery created by a species called the Gørkk — hyper- intelligent silvery-blue wombat-like creatures who come from a planet at the left-hand end of the Sombrero Galaxy. There's a piece about them on weirdcosmicmystery.com. They did the map because they thought it would be fun to see if humans were smart enough to figure it out. They did the Mona Lisa too, and most of Shakespeare. But the government is denying that the Gørkk even exist."

Bonus challenge: estimate how long it took the Gørkk to get here.

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