

# Rigorous Logic and Amelia

Monday September 3, 2012

Anyone who knows me knows that I am highly skeptical regarding [pseudo-scientific](#) subjects. But, alas, I recently found myself falling prey to the very same.

As you probably know, Amelia Earhart was a famous aviator who disappeared in 1937, along with her navigator Fred Noonan, while attempting a circumnavigational flight. The prevailing theory is that Earhart ditched her Electra airplane in the Pacific after running out of fuel, and perished either in the crash itself or by drowning. There have been many “alternative” theories about her disappearance, many of them quite fantastic (she was captured by the Japanese and executed as a spy, she faked her death and lived out her life incognito, to name a couple.)

Recently, though, there’s been a lot of news coverage around the possibility that, instead of flying toward her original destination of Howland Island, she and Fred Noonan actually crash landed on Gardner Island (now called Nikumaroro), and lived there for a time as castaways. On the surface, the theory seems pretty compelling:

- Gardner Island has a flat reef that would afford an opportunity for a landing.
- A 1998 analysis of measurements of a skeleton found on the island suggested that the bones belonged to a “tall white female of northern European ancestry.” (The bones were misplaced in Fiji, and have not been located.)
- Artifacts have been found on the island that could be linked to Earhart: improvised tools, an aluminum panel (possibly from an Electra), an oddly cut piece of clear Plexiglas the same thickness and curvature of an Electra window and a size 9 Cat’s Paw heel dating from the 1930s which resembles Earhart’s footwear in world flight photos.

TIGHAR (the organization doing the research) subsequently conducted a search for Earhart’s airplane in the waters around Gardner Island. This is fascinating stuff, and I found myself really hoping they’d find something. Then, I found some articles doing a more clear-headed analysis of this theory:

- Radio navigation was well established and reasonably advanced in 1937. In order to fly to Gardner Island, they would have been a full 10 degrees off-course. Not likely for an experienced navigator like Noonan.
- Hundreds of people have lived on Gardner Island, off and on, for about a century. It would be expected that plenty of human debris would be located there. But, linking it to Earhart? Quite a stretch. Sounds like a bad case of [confirmation bias](#). The same goes for an [old photograph purported to show the Electra’s wreckage](#).

In short, it sounds like TIGHAR is way too heavily invested in a positive outcome and is conducting [pathological science](#).

Personally, I fell prey to a number of logical fallacies:

- [Argument from authority](#). Based on most of the popular news coverage, TIGHAR seemed like a legitimate scientific organization. (A little digging revealed otherwise.)
- [Occam’s razor](#). I wanted to believe that the artifacts found on Gardner Island belonged to Amelia Earhart, when in reality that’s the most unlikely scenario.
- [Non-sequitor](#). Flying to Gardner Island would have required a course alteration and distance that is unlikely to have been achievable.

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The lesson? Maintain logical diligence!

[critical thinking](#)

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