This past week, the Israel Antiquities Authority announced that the inscription on the so-called James ossuary -- a stone box for burying human bones -- was a fake. The Authority, the government body charged with supervising archaeological work and finds, had assembled 14 experts to examine the inscription that read, "James the son of Joseph, the brother of Jesus."

The inscription, had it been real, would have suggested that the box had contained the bones of James, who was a central leader in the early church and is recognized by some forms of Christianity as Jesus’ brother. The experts, who ranged from linguists to experts on alphabets and writing to archaeologists and geologists, unanimously declared the inscription a fake. It is modern writing carved onto an ancient ossuary.

Three key aspects need to be examined to determine how they made this decision. The first is the material. Is the object made out of material appropriate for its supposed time and place? The early newspaper stories on the James ossuary indicate that its limestone is much closer in chemical composition to that of Cyprus or northern Syria than it is to Jerusalem limestone.

Another aspect of analyzing the material is to determine whether there are any features that might indicate modern workmanship. This study was difficult for the James ossuary, because there were no obvious gouges made by a metal chisel or another modern tool. However, it turns out that the inscription's letters were cut through the ancient patina, that is, the almost microscopic, silicate coating that develops on limestone when it is exposed to weather. This silicate coating is made by a process similar to the creation of stalagmites in a limestone cave; part of the rock is dissolved by water, carried outside the rock, and then, as it evaporates, leaves behind the residue in a crystal-like form. Thus the letters were cut into stone with a patina coating, but the letters themselves lacked the same patina.

The way the letters were formed also requires examination. Styles of carving and writing letters change over time. Scholars have studied these changes for ancient Israel and can date them to specific time periods, link them to different social classes, and determine whether the writer was professional or an amateur. Rochelle Altman has been credited by several news reports as the first scholar to raise serious questions with regard to the way the letters were formed on the James inscription. Her early stance raised the ire of the people promoting the inscription's authenticity and earned her public vilification and printed libel. Since they could not answer her questions, they ridiculed her instead. Altman has now been vindicated.

A Laramie County Community College professor played a role in making Altman's work known to the scholarly community and the public. Mark Elliott, who runs the Web site Bible and Interpretation (http://www.bibleinterp.com), published Altman’s analysis, providing solid scholarship at a time when nearly everything else was hype or rumor.

The third aspect that needs to be studied in authenticating an inscription is whether its use of language and dialect fits into the time and place of its supposed composition. The regular writer of this column, Paul Flesher, did one of the earliest analyses of the inscription's dialect, as reported in this column last fall. I argued that the dialect used in the inscription was more appropriate to Galilee of the third through seventh centuries than to Jerusalem of the first century. While this point does not indicate that the inscription cannot be what was claimed, it suggests that it was more likely to be from another time and place.

These three areas of analysis all contributed to the Antiquities Authority’s decision that the inscription on the James ossuary is a modern fake. Will this end the debate? Unlikely. Those who have a vested interest (and an investment) in its authenticity surely will not accept this judgment and will come back with additional arguments in its favor. If nothing else, they say, it will remain a matter of debate for many years to come.