

## Student Comments on this week's blog post:

1. Anna Soifer says:

March 11, 2015 at 8:21 am

I found Dr. Walton's hypothesis of multiple firings intriguing, partially because it argues against the generally accepted single firing, but also because, if true, it would lead to a complete reevaluation of a number of materials from the archaeological record. Specifically, there are pieces of pottery that, until now, we have assumed were test pieces used to evaluate progress during firing because their decoration is incomplete. However, if pottery underwent multiple firings, these pieces could have been ones that failed part of the way through production and were thus caught in an intermediate stage of decoration. The idea of multiple firings could also lead to interesting explorations into the ideas of efficiency and production time.

2. Arthur Zhang says:

March 11, 2015 at 1:15 pm

Thank you Ashley for the great post! The multiple firing hypothesis might also suggest that there were some extent of experimentation with different techniques of pottery making during the ancient Greek period. However, that would be a different kind of science: the ancient "science" looked for differences in outcomes (possibly without knowing the underlying reasons) while modern science looks for the underlying reasons (but not necessarily able to recreate those ancient objects).

3. Lauren Aldoroty says:

March 11, 2015 at 1:55 pm

Until Dr. Walton's presentation, I was not convinced that the black slip was necessarily unique from the clay body due to processing (rather than the slip clay coming from a different source than the body clay). The evidence he presented that changed my mind about this was the distribution pattern of rare earth elements found in the clay body and slip. They were very similar, except for a sharp drop in Cerium (Ce) in the slip. Alone, this was not enough to convince me that the slip gained its properties through processing. However, once Dr. Walton showed us the same data for black slip from Athens, Corinth, and Etruria, it seemed extremely likely that there was a single slip processing technique (or at least one very popular one) throughout Ancient Greece and its surrounding areas.

4. Haley Huang says:

March 11, 2015 at 2:54 pm

Thanks for the post Ashley! It was great to hear Dr. Walton give us evidence for several "novel" theories, such as the multiple-stage firing discussed above. I

particularly found his approach to analyzing the minerals and their quantities within the composition of both the slip and the clay body fascinating. From a scientific perspective, the tests were a very clever way to determine whether or not the slip was chemically modified compared to “normal” clay. Discovering that a very specific type of clay was used also spoke to the fact that selecting clay beds was a more complicated process than I originally believed it to be. There may have even been a method that ancient potters used to determine that the clay in fact offered the correct mineral recipe.

5. Hana Chop says:

March 11, 2015 at 7:06 pm

It was very exciting to get to hear from Dr. Walton himself about the very experiments and theories we read about last week. It was especially helpful to have the visual aids! In terms of what he discussed, I really appreciated his perspective on the material science of what we are accomplishing in this class. Before this, we were very much focused on the history of kylikes and the artistic methods by which they were accomplished. We had done some work with UV analysis in the Museum, but none of the science behind how the kylikes came out of the kiln fired! In addition, Walton’s point that the slip was not remarkably different than the clay body was very surprising; I hadn’t before really understood that the slip, as a black paint, could be so similar in composition, yet produce such a different texture/result on the surface.

6. Dane Clark says:

March 11, 2015 at 8:06 pm

Thank you so much for the excellent post, Ashley. Expanding upon Anna’s observation about the misfired “test pots”, Dr. Walton explained that these could be used as very clear evidence for the multiple firing theory. These pots are often times thought to be used as a way to test the kiln temperature, but this might not actually have been the case. Upon closer observation of the effects of the misfiring, the contour lines don’t seem to have been affected. According to Dr. Walton, these pots might have been originally prepared as redfigure or black-figure pots that and, as Anna mentioned, were misfired during an intermediary phase. If they were meant to have been fired in one round, the misfiring should have had visible affects on the contour lines. The fact that these lines don’t appear to have been affected at all, according to Dr. Walton, is very strong evidence that the contour lines had already been fired and vitrified, thereby protecting them from the misfiring.

7. Maddy Brancati says:

March 11, 2015 at 9:35 pm

At the beginning of his lecture, Dr. Walton made a great analogy, comparing ancient Greek pottery to an iPhone. The gist of it was that if someone in the distant future wanted to recreate an iPhone they might be able to create a

perfect, functioning facsimile, but they will never understand its biography beginning with the invention of the first transistor. This was a very sobering introduction, because it made very clear the strict limitations of the information this experiment can provide us. Understanding pottery production on a microscopic level can provide wonderful insights as to the materials used, the steps taken, and even the order of those steps, but it can never tell us the full evolutionary biography of the vessels.

8. Elizabeth Winkelhoff says:

March 11, 2015 at 11:23 pm

Great post!

All throughout Dr. Walton's a lot of the things about the slip that he was saying was reassuring and interesting to learn. When we started talking about relief lines, for example, he proved that it was most likely animal hair that made the lines but showing us the form of the lines and the topography of the relief, which was something I didn't even know we could do. But trying to recreate these conditions is incredibly hard. So far with the experiments with the slip, I haven't been able to create a solid relief line (with the topography) with such a small instrument. It makes me wonder if we're missing something in the slip recipe.

9. Travis Schmauss says:

March 11, 2015 at 11:57 pm

This was certainly my most unique class experience – I've never had an online lecture before.

Thank you for simplifying the firing process! It really was exciting when even Dr. Balachandran was surprised to hear about the multiple-firings hypothesis. We should definitely discuss the implication of that in class, as well as a review of the general materials science issues that came up, as suggested by Dr. B. It was nice that Dr. Walton did a survey of all aspects of slip, not just the materials science, but also the application of the slip (with which we struggle oh so much) and the elements of the decoration.

As someone who is very interested in the field of heritage materials, Dr. Walton was an inspiration.

10. Kelly McBride says:

March 12, 2015 at 6:54 am

Great post! Thinking about the "test pots" as you talk about Dane, it strikes me how lucky we are to have this evidence. In the beginning of the course, we were made aware of one key statistic, somewhere around 1% of the pots that were thrown in antiquity are extant. Not only am I heartbroken by this fact, I am awed that we have these fragments available to us when so many of their finished counterparts are forever lost. They seem to be key to a breakthrough in the understanding of how the Athenians fired their pots. Perhaps if Professor

Balachandran repeats this class they can test out the theory of multiple firings in later years.

11. Angie Fallon says:

March 12, 2015 at 8:02 am

I found this post to be very interesting. I am not an archeology major, nor have I ever examined or studied pottery yet I found this post to be explained in simple enough terms in which I could understand despite my lack of expertise in the subject. Some very interesting facts to contemplate and look further into. Sounds like a lot of fun. Great job!

12. Carolyn Riccardelli says:

April 5, 2015 at 9:59 am

What an exciting blog you have here. Nothing compares to this kind of "replication" experiment to humble even the most knowledgeable scholar. Reading through this post and learning about the relief lines being more vitrified made me wonder...rather than looking to multiple firings as an explanation, I wonder if there is any evidence that the composition of the gloss used to make them might be different from that used to make the flat areas. Perhaps the slip used to make relief lines contained more flux, and therefore vitrified at a lower temp than the broad flat areas. Some deflocculants like ash, can also act as a flux. More deflocculant, more flux, more vitrification. I wonder if that theory was thrown around by your class, and if so, what did you think?