Corrugation trends in Southwestern Pottery
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Introduction
Prehistoric American Southwest pottery shows a general pattern of change from predominately plain and neck-banded wear to corrugation. Corrugation consists of multiple overlapping horizontal bands of clay that typically cover the complete external surface of a vessel. Based on studies by Sakai (2005), deposits in the Mt. Trumbull region contain ceramics documenting this shift towards corrugated ware. Since corrugation potentially has decorative and stylistic components, a detailed examination of the change through time provides information that allows us to explore how ceramic technology shifted.

Aim
The goal of our analysis is to examine patterns of change among assemblages of corrugated ceramics and to document the details of the shift in surface treatment. Using metric and qualitative measurements of corrugation we compare our results to Pierce (2005), who noticed the transition from plain to corrugated ware in southwestern Colorado. His conclusion suggested that these changes were predominately performance related, though this conclusion has yet to be tested. We hypothesize that our assemblages will produce similar results those documented by Pierce and will show trends of changing corrugation from level to level, representing change over time in ceramic technology.

Method
Our ceramic samples were derived from 10 levels drawn from five excavation units at sites 136 ASM in the Mt. Trumbull area in the southwestern United States. These excavations were conducted by Sakai and Buck in the summer of 2006. Based on measurement system developed by Pierce (2005) we analysed each sherd for corrugation depth, height, and percentage of overlap for overlapped coils (see Figure 3).

After conducting t-tests and chi-square tests, we determined that the levels of the five excavation units could be combined to form a single set of ceramics for each level. For the t-tests, we used our measurements for depth and height to see if there were significant statistical differences between the units. For the chi-square tests, we differentiated between overlapped, filleted, and indeterminate corrugation. Our results show no significant differences between levels from different excavation units.

Although we examined only corrugated sherds, we also took the numbers of plain and corrugated sherds found within each of our test units from the site report in order to compare those numbers for any possible trends or patterns. Once we produced our measurements, we made boxplots to compare the distribution of values between levels and to compare the data to Pierce’s results.

Results
Our results did not produce an obvious linear trend in the change of corrugation across levels. There was definitely variation in all three metric attributes, but this variation did not seem to be selective, unlike the results from Pierce’s work. Our boxplots (below) reveal that there are only slight differences when comparing corrugation from level to level.

When we looked at all the numbers of plain versus corrugated sherds from the site report, there was an obvious pattern of increase in corrugation. This perhaps indicates performance benefits of corrugated versus plain vessels, but when comparing the differences within the corrugated sherds, there is no obvious indication of performance benefits with one variant (i.e. greater junction depth) having greater selective pressure than another.

There are possible distortions to our results that should be addressed. For one, the total number of sherds that we were able to measure was greatly diminished due to the high number of indeterminate sherds in our assemblages. In addition, our sample sizes were relatively small suggesting that a larger set of excavation units would be required to fully evaluate these findings.

Conclusion
We can conclude that there was an increase in the production of corrugated vessels over time as plain vessels decreased, showing selection for corrugated versus plain. Our analyses of corrugation variability, however, did not demonstrate a clear temporal trend that was evident in Pierce’s work. It is possible that this is the result of limited temporal duration of the deposit. The fact that the abundance of corrugation were relative to plain ware increased from the lower to the top units suggests that the assemblages represents at least some time depth.

Thus, since on our results, corrugation in our assemblages did have at least some variability in depth, height, and percent of overlap for each of the distinct levels within the test pits, our results might indicate that in at least the Mt. Trumbull area, patterns of corrugation are not functional but neutral or random with respect to selection. This indicates that corrugation may be playing largely a stylistic role in this part of the American Southwest.

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For more information
Please contact mgalindo@csulb.edu. More information on this and related projects can be obtained at http://www.webdataworks.com/cpierce/content/category/10/28/50/