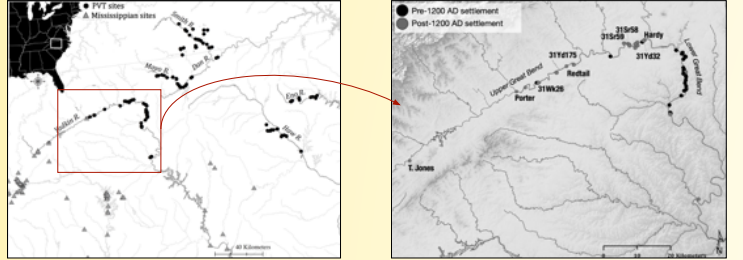


Alyssa Walton and Eric E. Jones

## Introduction

This project compares ceramic attributes among six Piedmont Village Tradition (PVT) sites in the upper Yadkin River Valley, 1200-1600 CE, to 1) assess ceramic production and social interactions among these communities; and 2) to assess the relationship between two loci at the Redtail site. We classified 350 sherds based on attribute combinations and compared sites using Brainerd-Robinson Coefficient analysis. Rogers (1993) and O'Saile (Jones et al. 2020) examined similar ceramic attribute patterns in the upper Yadkin River Valley, and our work here is an expansion on theirs by adding the Redtail 2 locus. In addition, the first author conducted a re-analysis of sherds examined by O'Saile in order to assess inter-observer classification differences. The two Redtail loci looked most similar suggesting a strong connection between dispersed areas at a single settlement. As a result we combined the loci into a single site and re-ran our analyses for a comparison. Patterns of similarity among the other sites are not based solely on geographic proximity, presenting several possible explanations for the cultural patterns behind our findings.

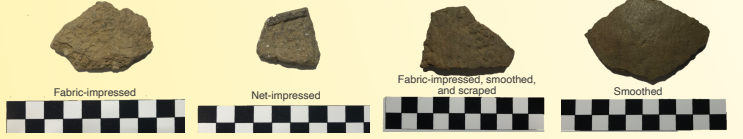


The map on the left shows PVT and Mississippian sites in the Piedmont, 800-1600 CE. The map on the right shows the upper Yadkin River Valley with the locations of the Redtail site and other PVT settlement sites. Almost all of the sites in the Upper Great Bend area date to 1200-1600 CE, including the six we analyze here: Redtail, 31Wk26, 31Sr58, 31Sr59, 31Yd32, and 31Yd175 (Barnette 1978; Jones 2017). Each was likely a 1-3 household settlement.

## Methods

Late Woodland PVT ceramic types include Haw River, Dan River, and Donnaha, all dating 1000-1600 CE (Rogers 1993; Ward and Davis 1999; Woodall 1990). Among these types, however, exterior treatments and tempering do not have strong temporal or geographic trends; they will be present, disappear, and appear again over short periods of time or vary greatly between proximate, contemporaneous sites. As a result, Rogers (1993) and O'Saile (Jones et al. 2020) focused on attributes rather than types. We follow their methodology.

In 2017, Grayson O'Saile conducted a re-analysis of Rogers' (1993) research, adding several attributes and increasing the sample size of sherds from Redtail from recent excavations. Survey work in 2016 identified an additional cultural area at Redtail 100m to the east of the identified housefloor. This is Redtail 2. Excavations from 2017-19 produced over 200 sherds. We undertook this project to assess if this new pottery assemblage impacted Rogers' or O'Saile's patterns of similarity between sites.



Model	1	2	3	4	5	6
Temper (small and large quartz combined)	Yes	Yes	Yes	No	No	No
Temper (small and large quartz not combined)	No	No	No	Yes	No	No
Exterior Decoration	Yes	Yes	Yes	Yes	Yes	Yes
Interior Decoration	Yes	Yes	No	Yes	Yes	No
Smoothing and scraping treated as the same treatment	No	Yes	No	No	No	No

Our initial analysis yielded extremely different patterns. We quickly realized it was due to inter-observer identifications of fabric vs. net-impressed. Thus, we re-examined samples of 50 sherds from all six sites and re-ran the analyses.

## Results

In both O'Saile's and our analyses, Model 4 had the most statistically significant p-values, so we use that to represent our findings below. All 6 models show the same patterns of intersite similarity; the one exception is Model 5 where Redtail and Redtail 2 are not the most similar.

Model 4 - All temper, including large and small quartz; exterior decoration; interior decoration; smoothing and scraping distinguished

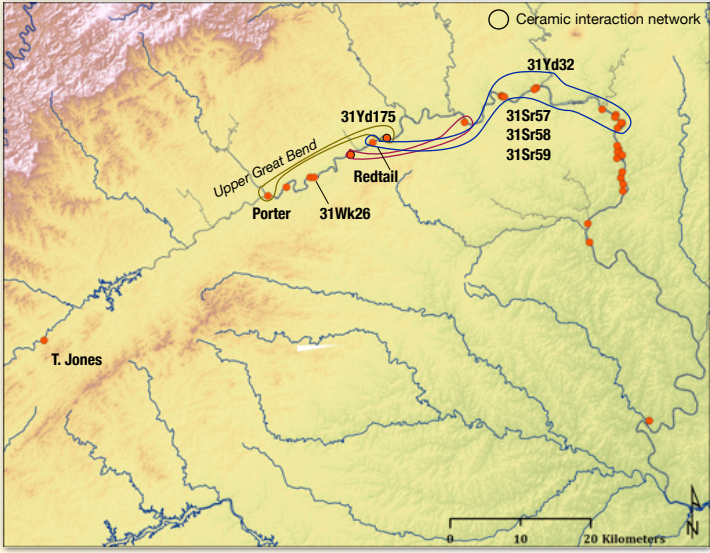
	31Sr58	31Sr59	31Wk26	Redtail	31Yd175	31Yd32
31Sr58		102	69	114	52	100
31Sr59	102		64	110	32	87
31Wk26	69	64		64	43	63
Redtail	114	110	64		35	105
31Yd175	52	32	43	35		48
31Yd32	100	87	63	105	48	

After excavations at Redtail 2 in 2017-2019, we analyzed the ceramic assemblage from there

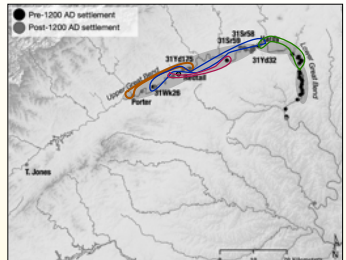
In O'Saile's analysis, Redtail showed the strongest attribute similarities with sites several miles to the east, 31Sr58, 31Sr59, and 31Yd32.

For all three results shown here, Brainerd-Robinson results were significant at 0.05 or less for most of the results. The Redtail results had lower rates of significance. However,

From these data and Rogers' (1993) results, Jones et al. (2020) created the map below of sites with ceramic similarities. The pattern did not show any strong influence of how spatially proximate sites were.



When we incorporate the ceramic attribute data from Redtail 2, the patterns of site similarity change from 3 to 4 groups



Jones et al. (2020) conducted an analysis of rhyolite distribution and found what looks like a gateway model where particular communities acquired the non-local lithic material and spread it to nearby communities via down-the-line mechanisms. O'Saile's ceramic analysis was part of this research, and when both the lithic and ceramic results were mapped onto sites in the valley, it was apparent that the economic and social interactions around these two technologies did not map onto one another. Our incorporation of Redtail 2 shows less geographic discontinuity between the lithic and ceramic spatial patterns.

We discuss what we think this means in the Discussion section.

	31Sr58	31Sr59	31Wk26	Redtail	Redtail 2	31Yd175	31Yd32
31Sr58		70	59	71	71	74	71
31Sr59	70		58	77	65	45	62
31Wk26	59	58		87	78	58	54
Redtail	71	77	87		102	28	83
Redtail 2	71	65	78	102		38	65
31Yd175	74	45	58	28	38		45
31Yd32	71	62	54	83	65	45	

The similarity between Redtail and Redtail 2 was expected

The similarity between Redtail and 31Wk26 and Redtail 2 and 31Wk26 was not

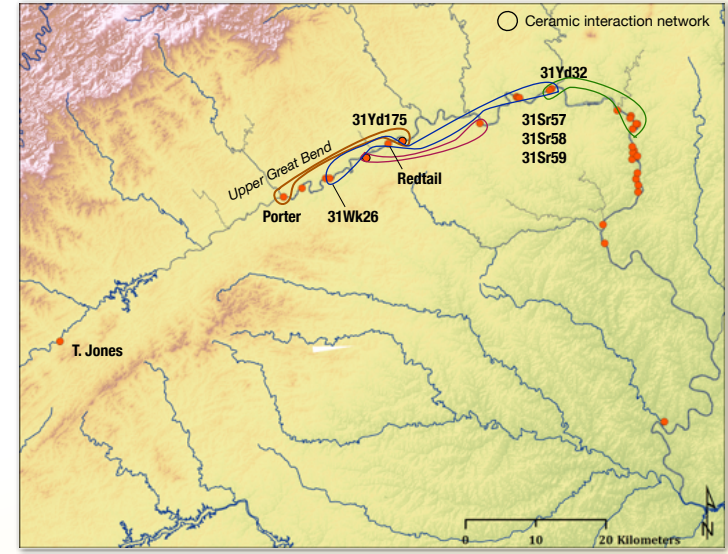
Analysis including Redtail and Redtail 2 as separate sites.

	31Sr58	31Sr59	31Wk26	Redtail	31Yd175	31Yd32
31Sr58		70	59	79	74	71
31Sr59	70		58	72	45	62
31Wk26	59	58		89	58	54
Redtail 1+2	79	72	89		33	75
31Yd175	74	45	58	33		45
31Yd32	71	62	54	75	45	

Combining Redtail and Redtail 2 shows the same similarity with 31Wk26 as when they are separated

Analysis combining Redtail and Redtail 2 as a single site.

The same map as to the left, but with our new ceramic similarity results combined with Rogers' and O'Saile's. We think this creates 4 groups of similar sites instead of 3.



While our new results have us rethinking social interactions between PVT communities based on ceramic attributes, they still continue to support previous findings that social interactions associated with ceramics did not follow economic interactions associated with lithics in a simple manner.

## Discussion

With regard to Redtail and Redtail 2, we think the strong similarity in ceramic attribute patterns between them is support that the latter is closely associated with the former. We have yet to date Redtail 2, but we are hypothesizing they would be quite similar. If that is the case, Redtail 2 could either be another (even related, possibly) household in the same floodplain, or it may be a non-dwelling structure (i.e. a shelter in fields or hunting blind) utilized by the residents of the household at Redtail.

The expediency of pottery production and abundant access to clay sources near most sites do not support that pottery was exchanged. Therefore, ceramics were likely dispersed across the landscape through social interaction, meaning, alternative movement patterns must be considered. Given the four groupings that we established, we think there are three possible scenarios that should be studied further:

1. Groups are communities with related women. They represent the movement of women through marriage between communities. Most ethnohistoric accounts point toward a matrilineal descent with patrilineal residence (Rogers 1993). Thus, women would still retain connections with their female kin, and learn pottery making from them but live with their husband's families.
2. Households were fissioning and taking ceramic styles to newly formed locations. The similarity in ceramic attributes would have resulted from the close relationships between these houses. The fact that they are not spatially proximate is not problematic in this scenario. It may have been beneficial for new households to move some distance away to ensure enough hunting area and land for farming.
3. The groups represent village movement over the 300-400 year period. Each grouping contains an even number of sites. Redtail was likely occupied for 150 years, and Porter for 200. If they represent a usual occupation time, perhaps the sites with similar ceramic attributes are the same community before and after a move.

Finally, the similarity of Redtail 2 to 31Wk26 (and the similarity of the combined Redtail and Redtail 2 to 31Wk26) has implications for recent research findings. Jones and colleagues have argued that 31Wk26 was a gateway for bringing rhyolite into the valley. Redtail was in their lithic distribution network, so perhaps the relationship between economic and social interaction is more complex than was first concluded. Given the new information on ceramic similarity, social interactions--and by extension intermarriage or fissioned households--may have been more related to the acquisition and distribution of rhyolite. However, there was a community between them in the same lithic network with little ceramic similarity to Redtail or 31Wk26, so the distribution of rhyolite may have largely been a down-the-line system based on geographic proximity but also influenced by social relations.

## Conclusions

We are promoting an attribute-based, as opposed to type-based, approach for PVT pottery. Given the problematic nature of typologies, we think this is a viable option for examining larger scale patterns in ceramic production and the interactions associated with them. The inter-observer differences in classification occurred because of a disagreement between what qualified as net-impressed versus fabric impressed surface treatment. Interestingly, though, we got extremely similar results. As long as researchers consistently classify sherds, it should be productive to compare different results between researchers as long as their methodology and identifications of attributes are clearly described. This is also further support for an attribute based approach.

## Acknowledgments

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