

Projectile point variation at the Briar site (35CO35)

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Introduction

- The Briar site (35CO35) lies in the Wapato Valley, on the floodplain of the Columbia River, near the town of Scappoose, Oregon. AMS dating of the site establishes occupation between AD 1420 and 1600.
- It is in relative proximity to two better known sites—the Meier Site (35CO35) is within 400 m and Cathlapote is approximately 4 km northeast.
- Briar Site was the focus of a 1986 joint Portland Community College/Portland State University field school, but the assemblage has never been systematically analyzed.
- This presentation is a component of a joint effort by Portland State University and WillametteCRA to complete the analysis of this long neglected site.

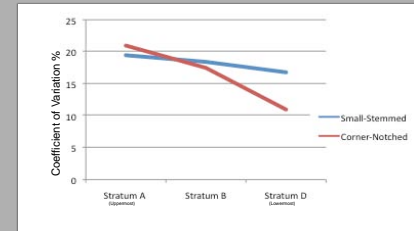
Project Goals & Assumptions

- Archaeologists have studied variation in artifact assemblages to provide information of systemic behavior and to better understand the archaeological record.
- Cultural and natural factors such as the number of flintknappers at a site, errors due to motor skills and memory, and the workability of the material all contribute to the level of variability within an assemblage.
- By using the Weber-fraction coefficient of variation (1.7 percent) to represent the highest degree of standardization and uniform-random coefficient of variation (57.7 percent) to represent high variation or random variation, this project aims to scale the variability on an assemblage of projectile points from site 35CO35.
- I assume that measurements related to the haft will vary less than other parts of the projectile point because haft morphology is more likely constrained by function. The life of a projectile point may include resharpening or repairing a break to the blade without altering the haft.
- Although it exceeds the scope of this project, some insights related to cultural transmission are possible.



Results & Discussion

- CCS is the most represented raw material (97%), followed by obsidian (2%), and basalt (1%).
- Over half of the projectile points are complete (54%). Of the broken points, 45% were sufficiently intact to allow for metric analysis.
- The calculated coefficient of variation of the hafting elements reflected little variability in general (Tables 1.1 and 1.2).
- Small-stemmed and corner-notched points revealed almost identical coefficient of variation calculations.
- Small-stemmed projectile points had slightly more variation in base width (CV=26%) than corner-notched (CV=23.17%). Comparative data from the Meier site calculated the coefficient of variation of base width for small-stemmed projectile points at 31% (Davis 2010).
- For the entire assemblage, base width varied the most (36.23%), haft length displayed the second most variability (28.36%), and neck width varied the least (18.86%).
- Basal width and neck width measured for small-stemmed and corner-notched points displayed more variation in the upper (younger) stratum (Stratum A) than the lower (older) stratum (Stratum D).



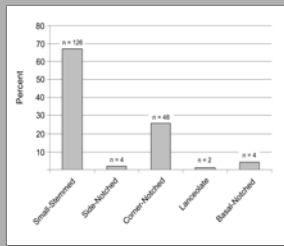
Conclusion

- The results confirm my expectations that this site produced projectile points with little variability, specifically within the hafting elements.
- I suspect that the small-stemmed projectile points were perceived as highly successful, thus resulting in the high frequency at this site, as well as Meier.
- Neck width varied the least and was probably the most functionally driven.
- While preliminary, the limited variability between the two sites is suggestive of the indirect bias mode of cultural transmission.
- Potential growths in population may have contributed to increasing variability over time due to a growing workforce that varied in skill and knowledge.
- This project hopes that this data can encourage more research on the Briar site to better understand systemic behavior with more comparative analysis between the Meier and Briar sites.

Acknowledgements

- Dr. Virginia Butler, Dr. Kenneth Ames, Danny Gilmour, Paul Solimano, David Ellis, Katie Wojcik, Matt Goodwin, Todd Ogle, Angie Kozlik, WillametteCRA, and Portland State University's Anthropology Department.
- Davis, Sara J. (2010) Projectile Point Variation At The Meier (35CO35) And Cathlapote (45CL1) Archaeological Sites. Thesis. Portland State University.

Type	Description	Illustration
Small-Stemmed	Triangular or sub-triangular base Commingling haft shape Length of maximum blade shape Base-to-shoulder slope of 90° or more Shoulder width is larger than base width Shoulder width is 2x maximum width	
Corner-Notched	Triangular or sub-triangular base shape Commingling haft shape Transverse haft shape Blade width is smaller than base width	
Basal-Notched	Triangular or sub-triangular base shape Commingling haft shape Blade width is larger than base width Blade width is 2x maximum width	
Lanceolate	Notched or notched base shape Commingling haft shape Commingling haft shape	
Basal	The absence of any distinct shoulder due to broken base prevents the determination of the maximum width Transverse or side haft shape Transverse or side haft shape Transverse or side haft shape Transverse or side haft shape	
Small-Stemmed	Triangular or sub-triangular base Commingling haft shape Length of maximum blade shape Base-to-shoulder slope of 90° or more Shoulder width is larger than base width Shoulder width is 2x maximum width	



Methods and Materials

- All projectile points from the assemblage were analyzed (n=188). Based on techniques from Thomas (1981:14), Andrefsky (2005:186), and Pettigrew (1995:24-25).
- Point typology consisted of five modes based on Davis (2010): Small-Stemmed, Corner-Notched, Side-Notched, Basal-Notched, and Lanceolate.
- Developed a paradigmatic classification that considered both quantitative and qualitative attributes.
 - Eight quantitative dimensions: max length, max width, max thickness, basal width, neck width, shoulder width, haft length and weight (grams). All dimensions measured in millimeters.
 - Four qualitative dimensions: raw material (cryptocrystalline silicates, obsidian, and basalt), point type, condition (broken or complete), and break location (tip, middle, base).
- Hafting elements of the projectile point, such as basal width, neck width, and hafting length were the major focus of variation.
- Compared measurements between strata. The AMS dates from the site are in proper stratigraphic sequence, with the oldest date deepest and the youngest date shallowest.

Table 1.1 Variability within small-stemmed projectile points from the Briar site.

	Valid	Base Width (mm)	Neck Width (mm)	Haft Length (mm)
N	108	115	106	106
	Missing	17	10	19
Mean		4.47	5.67	4.24
Median		4.38	5.56	4.37
Std. Deviation		1.17	1.03	1.22
Variance		1.37	1.07	1.5
Range		8.82	5.32	6.09
CV		26.19%	18.21%	28.82%

Table 1.2 Variability within corner-notched projectile points from the Briar site.

	Valid	Base Width (mm)	Neck Width (mm)	Haft Length (mm)
N	38	41	38	38
	Missing	10	7	10
Mean		4.89	5.7	4.32
Median		4.78	5.88	4.15
Std. Deviation		1.13	1.04	1.21
Variance		1.29	1.09	1.47
Range		6.18	4.48	6.07
CV		23.17%	18.31%	28.06%