


COMMENT

On Sherds, Vessels, and Pragmatics: Reaction to Feathers

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Abstract

Feathers addresses the dual challenges of inferring original vessel counts from sherds and inference to use life from reconstructed vessels. His solution assumes the validity of sherd assemblages as units of observation that considerable research invalidates and overlooks methods that estimate original vessels from sherds. Feathers also doubts that use life can be inferred for reconstructed vessels. Although not a focus of my article, the larger study from which it derived addresses this matter in detail that strongly warrants vessel size as use-life measure. Of course we must be pragmatic in quantifying pottery assemblages, but first we must identify valid units of observation, and only then attend to pragmatics.

Resumen

Feathers se dirige a los desafíos de la cuantificación de vasijas desde tiestos y la inferencia a vida útil desde vasijas reconstruidas. Su solución asume la validez de conjuntos de tiestos como unidades observacionales que investigaciones previas invalidan, y descuida métodos para estimar vasijas originales desde tiestos. También Feathers duda que se puede inferir la vida útil de vasijas. A pesar de que tantas inferencias no sirvieron como enfoque del artículo a que él respondió, el estudio largo de que se derivaron el artículo trataron del problema en detalle que soporte fuertemente el tamaño de vasijas como medida válida de la vida útil. Por supuesto, tenemos que ser pragmáticos en la cuantificación de conjuntos cerámicos, pero primero tenemos que identificar las unidades de observación válidas, y solamente después nos dirigimos a las pragmáticas.

Keywords: pottery quantification; use life; ethnoarchaeology; sherds vs. vessels

Palabras clave: alfarería; vidaútil; etnoarqueología; tiestos c. vasijas

James K. Feathers (2023) offers thoughtful comments and constructive criticism, not polemic, that more archaeologists might emulate. He raises important questions that deserve reflection and seeks to “make the problem of use life more tractable.” Nevertheless, Feathers’s argument is not persuasive.

The larger study (Shott 2018) from which my article derived (1) argued the importance of use life (“L” for reasons given there) in generating ceramic assemblages, (2) acquired longitudinal Michoacán ethnoarchaeological data that replaced informant estimates with computed L values, (3) identified robust correlations between vessel size and L in Michoacán and a substantial cross-cultural longitudinal dataset, and (4) conducted survivorship analysis that identified different failure causes (chiefly chance versus attrition) by vessel type and size that affect inferences from assemblages—failure by chance occurring at more regular rates. Secondarily, the study advocated vessels, not sherds, as valid units of observation, following Orton’s (1993) theoretical arguments. The comparative merits of units of observation seem to be Feathers’s chief concern.

Feathers highlights an issue noted in my article but explored at length in the larger study (Shott 2018:118–137): distributions of values of L. His comment is a salutary clarification that distributions, observable in ethnoarchaeological data, are practically impossible to compile in archaeological context. Yet properties of ethnoarchaeological distributions can be gauged (e.g., in Weibull failure analysis)

across cross-cultural datasets, those properties then projected to comparable archaeological types. Nevertheless, the important issue of L distributions is tangential to Feathers's concern.

Units of Observation

Feathers proposes three units of observation: sherds, original vessels, and assemblages. He agrees that fragmentation rate—which affects sherd count dramatically, vessel count not at all—is highly variable, therefore an uncontrolled source of variation. More equivocally, he assumes that vessel-type weights vary little between assemblages. In Michoacán (Shott 2018:45–48) and cross-cultural datasets (Shott 2018: Table 7.3), they vary considerably within and between assemblages, casting doubt on Feathers's assumption.

Advocating assemblages as observation units, practically Feathers means assemblages of sherds. Yet he evidently agrees that sherd count is invalid and that vessel counts are valid. Feathers then argues, somehow, that sherd-count *assemblages* are valid. The argument puzzles, engaging the severe deficiencies of sherd counts in quantification (Orton 1993): uncontrolled variation in fragmentation rates, size, and L among originating vessels. Variation in vessel size alone overrepresents larger vessels in ways that sherd counts cannot control. Vessels are fundamental units of original use (ignoring, obviously, occasional use of sherds as tools), whereas sherds are merely a convenient unit. Assemblages are contexts of accumulation, not observation units. However defined, they are sets of sherds or original vessels (the latter as wholes or, usually, parts) derived, differently, from those observation units.

Feathers questions vessels as units of quantification only on the pragmatics of (1) converting fragmentary sherds to original vessels and (2) inference to L. Sherd-to-vessel conversion is challenging, not insurmountable. Refitting is not always unfeasible. As Feathers notes, intact vessels are rare in the record and, potentially, unrepresentative. But quantification options from Orton's (1993) units to rim diameter supply valid units. Estimated vessel equivalents (EVEs), for instance, express quantity in proportion to measures of vessel size such as volume, weight, and surface area (Shott 2018:164; Waagen 2022:531) and features such as rims and orifice diameters.

Feathers notes correctly that vessel L is a product of size and durability, supply, function, and replacement cost. Michoacán data were analyzed by functional class, thereby controlling function, and tested for but revealed no supply effects (Shott 2018:105–109). Vessel size correlated significantly with L in Michoacán and in several cross-cultural datasets (Shott 2018:147–149). A robust connection emerges between vessel size and L, but of course further research is needed on its conceivable complication by durability and replacement effects. Until then, size emerges as a key variable controlling for L's effect on archaeological assemblages, further validating vessels as observation units.

On Seriation

Feathers agrees that better seriation candidates are short-lived vessels that fail by chance, not attrition. In Michoacán, small cooking vessels best fit this description. Short L minimizes the risk that vessel life exceeds occupation span; chance failure minimizes variation in discard rate (Shott 2018:17–21, 173), both thereby reducing extraneous variation. Pottery not experiencing isotopic decay, vessel "half-life" is perhaps a misnomer.

Acknowledging sherd-count problems, in application Feathers finesses them. He summarizes Orton's discussion of life versus death assemblages (see also Shott 2018:163–165), which pertains only to vessels; there are no life assemblages of sherds. In Feathers's hypothetical example, assemblage composition is "affected by . . . sample size"; actually, joint size-composition is explained not by span alone but also L and vessel—not sherd—systemic number (Shott 2010). To Feathers, L "is similar for vessels of similar kind." If by "kind" Feathers means function, the assumption is refuted in Michoacán (Shott 2018:111–118) and elsewhere by considerable variation in L across size classes of similar function. As above, the key property that captures L variation is vessel *size*, variation that Feathers and I agree biases the sherd counts that he considers valid to quantify seriation assemblages. Treating sherds as some natural counting unit, to justify assemblages as observation units, ignores the problems, enumerated above, that invalidate sherds for that purpose. Feathers also does not explain how seriations "identify differential use life"—a property of vessels, not sherds. "Differential use life" is a problem baked into sherd counts, which cannot control for it.

Some Pragmatics of Ceramic Analysis

Feathers and I both value pragmatics. He argues that the refitting and calculation of Orton's units are time consuming and expensive. But all research shares those qualities, including collection of large sherd assemblages of taphonomically ravaged original vessels (which vary widely in Orton's "brokenness" or fragmentation rate and his "completeness" or inclusion of only some sherds from vessels) from secondary or tertiary contexts that are integral to the approach he advocates.

Yes, it is easier to count and weigh sherds than to estimate EVEs. But narrow focus on cost confines options to the cheapest and easiest, a sort of neoliberal approach better suited to making T-shirts than to analyzing ceramics. First, we should identify *valid* units of observation and quantification—only then the legitimate pragmatics of their acquisition.

An irony of Feathers's preference for sherds over vessels is his suggestion that sherd thickness and curvature correlate with original-vessel size (see also Zvietcovich et al. 2016). If testing bears it out, this is another pragmatic inference to original-vessel size, making the need for sherd counts in the first place even more moot. (Admittedly, it does not address the completeness problem.) The matter is for ceramic analysts to address, which Feathers probably joins me in encouraging.

Conclusion

Feathers and I agree that not all inferences from ceramic assemblages require knowing number of original vessels or L by type (for example, sourcing paste or temper, technical studies of fracture resistance; e.g., Shott 2018:5). Yet L affects inferences—from dating to estimating population and occupation span, even to studies of pots as the tools they were (Braun 1983)—that he believes can be drawn while ignoring it. There is no doubting the difficulties that Feathers emphasizes. But, confronting them, the Michoacán and earlier studies already offer partial, provisional solutions that deserve serious consideration, against Feathers's sherd counts to form assemblages somehow considered immune to the severe deficiencies of sherds as counting units.

L's inference is a "problem," not an insurmountable obstacle. Unless we are content that uncontrolled sources of variation complicate, in unmeasurable directions and degrees, inferences drawn from ceramic assemblages, the only choice is to confront the challenge. Refitting, for instance, is time consuming, but it usefully corrected Hill's Broken K Pueblo conclusions (Shott 2018:163) because "patterning . . . attributed to social processes . . . resulted from redundant entries of the same vessel" (Skibo et al. 1989:395)—a completeness effect that original emphasis on vessels, not sherds, would have revealed. Similarly, the Michoacán study was an effort to improve methods, focused more on inference to L than to numbers of original vessels. Throwing up our hands instead is a counsel of despair that Feathers probably agrees is unworthy of serious regard. Such responses, as Waagen ruefully noted, value economy of effort over validity and "make weighting [*sic*] and counting the batches of sherds . . . the modus operandi" (2022:532). This is tantamount to conceding that valid quantification is difficult, so instead do what is easy and then hope for the best. This is uncritical economizing, not pragmatism, and a poor foundation for valid inference from ceramic assemblages.

Respectfully, Feathers's argument endorses the status quo's deeply flawed modus operandi: count and weigh sherds in the blithe faith that those measures somehow suffice. No good reasons support this belief, and several—as the Michoacán and other studies identified—cast grave doubt on it.

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