

Recycling

Tony Baker

2/12/07

Figure 1 depicts a late archaic side notch projectile that was recycled from a Folsom preform. I use the term “recycled” instead of “curated” because there was no intent by the Folsom knapper to save this preform for the Archaic knapper or anyone else. It was of no value to the Folsom knapper and he had tossed it. This is different from curated where there is intent to save an artifact for future use by oneself or other members of one’s group. In this paper I define recycling as the convenient return of an abandoned artifact to service.¹

In the archaeological record, recycling and curating are very difficult to separate. For example, if one abandons an artifact on one day and chooses to recycle it the next, how is the archaeologist going to recognize the difference? Only when a vast amount of time elapses between the abandonment and recycling events is it possible to state with certainty that recycling has occurred. One way to know that considerable time has passed is diagnostically, or being able to identify the technological efforts of two different groups that are hundreds of years apart in time. This is the method employed with Figure 1. Folsom and Late Archaic are thousands of years apart. Unfortunately, diagnostically identified recycling is extremely rare. In the Baker Collection this type of recycling represents about 1 out of every 650, or 0.15% of the cataloged artifacts.²

The presence of visually different flake surfaces is another way to identify recycling. Figure 2 depicts an archaeological biface fragment with two different surfaces; the more recent marked with the red line. They are easy to see without the aid of expensive equipment. In addition, different surfaces can occur on all artifacts, diagnostic and non-diagnostic, so this type of recycling is more frequent in the archaeological record. Recycling identified by different surfaces is the focus of this paper.



Figure 1

Note 1—I considered using intentional and unintentional recycling instead of curate and recycle because of the vague and various definitions associated with curate. However, to ease readability I chose the second. In this paper curate means use—save—use. Recycle means use--discard--use.

Note 2--Cataloged artifacts have an artifact number and are in a database. They represent all artifacts that are more than flakes. A flake with use-wear or retouch is an artifact.



Figure 2

It Takes Time

Cortex is the unmodified outer surface of a rock, similar to the rind on an orange. Break a rock and compare the cortex to the newly created inner surface. The two surfaces are visually different. See Figure 3. Break the rock a second time and compare the surface of the second break to the surface of the first break. Are they different? Of course they're not. So, why is the outer surface different from the two, newly created inner surfaces? The answer is the outer surface has experienced chemical alteration and/or mechanical abrasion. So, why are the two inner surfaces not different from each other? Again, the obvious answer is there was not enough time between the creation of the first and the second inner surfaces for the agents of chemical and mechanical to affect a visual change in the two. The basic assumption of this paper is that it takes time for the chemical and/or mechanical agents to affect changes to the surfaces of the rock. In this case, time is not measured in days or years, but in hundreds of years and more likely thousands of years. I suspect the time difference between the cortex surface and the new surfaces in Figure 2 is millions of years.

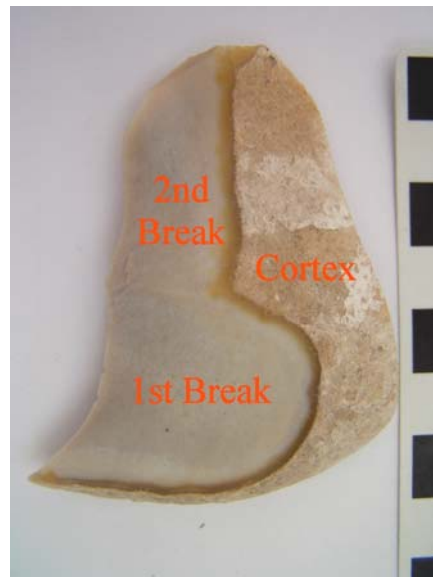


Figure 3

Returning to artifacts from the archaeological record, if a modern chip is removed from an old artifact, there is often a visual difference between the new and old surfaces. Figure 4 is a base of a Belen projectile (maybe 10,000 BP) made of opaque obsidian. After it was collected, it was inadvertently dropped and suffered damage from impact. The red lines mark the newly created surfaces that occurred as a result of being dropped. If the projectile had been made by a modern knapper, then there would be no difference in surfaces. The differences in Figure 4 are the result of 10,000 years of chemical and mechanical alteration.



Figure 4

Modern knappers are aware of this “old look” that is visible in Figure 4. A few, who want to pass their creations off as authentic, will purposely tumble them in an abrasive environment to create the “old look.” This method reduces the time required to create an older looking surface from thousands of years to hours or days. But even this takes time. Again, the basic assumption of this paper is that it takes time for chemical and/or mechanical agents to visually alter a newly created surface.

Figure 5 is another archaeological specimen. Again, there are two distinctively different surfaces on this biface. These are represented by the light and dark colored scars. The darker scars, at the top in the figure, cut into the lighter ones and, therefore, are the more recent. However, it is impossible to know how much “more recent” they might be. Based on my personal experience, I believe the time difference between the two is at a minimum, greater than a human’s lifetime. Hence I will argue this is evidence of recycling. Most likely, the two surfaces are separated by a hundred, a thousand, or even ten thousand years.



Figure 5

More Examples

On the remainder of this page and the next are six more archaeological examples of recycling as identified by different surfaces. These are offered to give the reader a better feel for how these different surfaces are manifested in the archaeological record.



Figure 6



Figure 7

Figure 6 is an old chip that was later recycled into a graver. Figure 7 is a long narrow uniface that was later recycled into a graver.



Figure 8



Figure 9



Figure 10

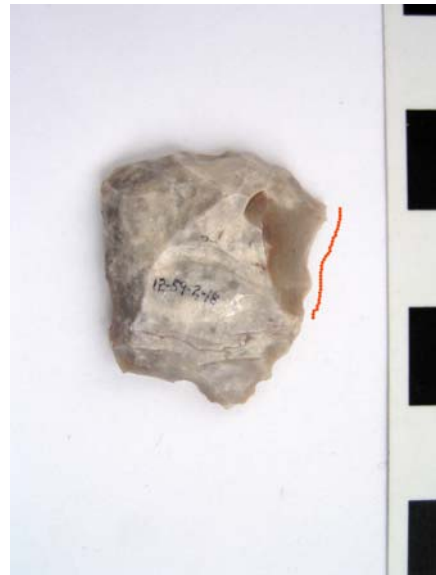


Figure 11

Figure 8 is an old side scraper that was recycled on both ends. The upper end became a highly utilized end scraper, while less usage occurred on the lower end. Figure 9 is the reverse of Figure 8 in that it is a old end scraper recycled into a side scraper. The left edge was intensively used. Figure 10 was a thin biface, most likely a projectile that was recycled into a corner notch projectile. Note the islands of old patination from the original biface on the surface. Figure 11 is an end scraper, from which a few flakes were removed from the right edge in a recycling event. Most likely these scars are the result of flakes being popped off during further use as a scraper.

Recycling in Lithic-Rich and Lithic-Poor Regions

All the artifacts in Figures 1-11 are from the Baker Collection. All are archaeological except Figure 3, which was created by Bob Patten in 2003. With these numerous examples, it is possible that I have created the impression that different-surfaced artifacts are abundant in the archaeological record. They are not. The Baker Collection contains only 110 of them, which represent only 0.75% of all the artifacts. Of more interest is how the frequency of these different-surfaced artifacts varies between lithic-poor and lithic-rich regions. In the Baker collection, different-surfaced artifacts are almost exactly twice as abundant in lithic-rich regions as compared to lithic-poor regions. And, this difference is statistically significant. See Table 1.

Table 1

	Total Artifacts	Diff.-Surfaced Artifacts	Percentage
Lithic-Poor	14,182	102	0.72%
Lithic-Rich	559	8	1.43%
Total	14,741	110	0.75%

If the reader is familiar with some of my other writings, such as “Contrasting the Lithic Technologies of Mesa and Folsom” (Baker and Kunz 2003), then he/she is most likely questioning the results in Table 1. In these other writings I have argued that curating, rework, reuse, or whatever name we use, is much greater in lithic-poor regions. Here, in Table 1, I state that recycling as determined by different surfaces is greater in lithic-rich regions. So why the apparent contradiction?

There is no contradiction. It is a comparison of apples and oranges. As stated earlier, short-term curating and recycling looks identical in the archaeological record and are usually classified as only curation. They are performed over the period of a lifetime or less, and they are definitely greater in lithic-poor regions. See Figure 12, which depicts two qualitative circular diagrams.

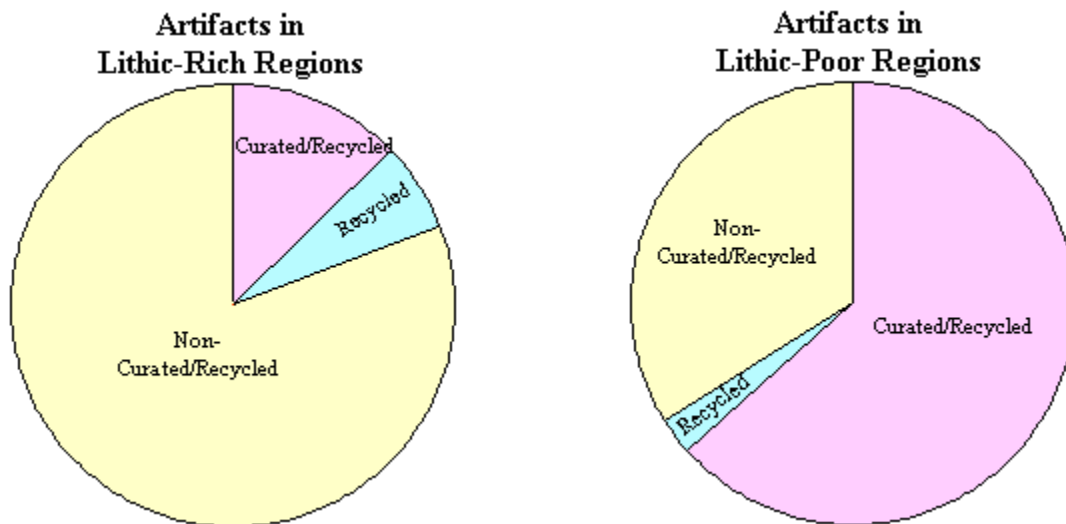


Figure 12

