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CHILD'S PLAY: A DISTORTING FACTOR IN ARCHAEOLOGICAL DISTRIBUTION

Gawain Hammond and Norman Hammond

Recent discussions of deposit formation and disturbance in archaeology ignore the possible perturbation of artifact distribution by children's play. Experimental data indicate some results of such activity, and suggest that it should be borne in mind when reconstructing behavior patterns based on depositional history.

Wilk and Schiffer (1979:532) attribute substantial vacant-lot activity to children's play, citing especially construction such as tree houses and hearths and disturbance such as clearings, pits, and bicycle tracks. All of these activities imply the introduction to the lots by children of the artifacts used in play, and involve also disturbance of the vacant-lot landscape. There is, however,

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0002-7316/81/030634-03\$0.80/1

another aspect of children's play not remarked upon by Wilk and Schiffer which can result in substantial modification of a preexisting artifact distribution, be it in a vacant lot or at an archaeological site. This is the use as play materials of deposited artifacts, in many cases trash on the margins of campsites, bringing them temporarily from "archaeological" into "systemic" context before returning them to a modified "archaeological" context (Schiffer 1976).

The pattern of campsite, vacant-lot, or other artifact distributions observed by ethnoarchaeologists or archaeologists may thus vary significantly from the original pattern of deposition; if the modifying effect of play is not allowed for in considering the formation processes that have operated on the deposit, erroneous conclusions may result.

This assertion may be illustrated by the following experimental data, derived from fieldwork carried out in Berkeley, California in January 1977 by the senior author, with the junior author serving as recorder.

A vacant area of grassland, with short but uneven sward affected by drought and trampling, was selected, measuring approximately 20×10 m and with a downhill westward slope of 14° . It was crossed by an access path 0.70 m wide running from northwest uphill to the center of the eastern margin of the area. This path crossed, on a plank bridge, a concrete basin $1.5 \times 1.0 \times 0.50$ m deep, sunk into the ground surface and empty.

An artificial trash pile 1.0 m in diameter and a maximum of 0.50 m high was constructed, using only nonbiodegradable domestic trash selected from the available supply. The largest items were 0.5-gallon wine jars (5) with integral handle and loosely attached screw cap, and the other items included quart liquor bottles (2) with loosely attached screw cap, pint beer bottle (1), quart fruit juice cans (2), and 12-oz. Coors aluminum beer cans (12), some partly crushed by the initial consumer of the contents and most with the pull-tab dropped inside.

The pile was constructed by arbitrary sequential deposition of the 21 artifacts, on the grass immediately on the north side of the path and approximately in the center of the 20×10 m area. During the following three days, the senior author, at the time 1.2 years old, engaged in "child-play" activities at and around the trash pile for a total of three 30-minute periods; concentration on the task for more than 30 minutes at one time was difficult, although it was, even in the solitary mode, one with which the experimenter was familiar. All locomotion during the experiment was quadrupedal or tripedal (when one hand was used to move an artifact). The initial trash pile was sketched and photographed by the junior author prior to the first "child-play" episode, and was similarly photographed at intervals throughout the experiment as well as at the end of each 30-minute session.

The initial pattern of behavior observed was a localized dismemberment of the trash pile, with the largest objects, the wine jars, being preferentially removed from it and rolled a short distance downhill. One vessel travelled 3 m downhill and across the path before halting during the first session; it was not disturbed again during the remainder of the experiment, suggesting that concentrated rather than dispersed trash is most susceptible to "child-play" disturbance. After 23 minutes of session 1, four of the wine jars had been removed from the pile to a distance of 0.75-1.0 m downhill (west), and one of these was in the next few minutes rolled to 3 m distance.

At the end of the first session two beer cans, the beer bottle, and one liquor bottle had all been moved up to 1 m north or west of the original pile, while no artifacts had been moved east or west.

During the second session (31-60 minutes) the remaining nucleus of trash was further disturbed. The larger items (wine jar, liquor bottle, fruit juice cans) were moved short distances (up to 0.25 m) and changed in orientation and position relative to other artifacts; this took place with the experimenter in a constant position, and the artifacts were not transported. Three beer cans were tossed into the air in a casual manner, landing 0.5-1.5 m from their original positions. One can was transported by the experimenter 1.5 m down the path before redeposition, while the pull-tab inside was shaken out, transported to the edge of the concrete basin, and thrown in.

During the same session one of the wine jars previously rolled was picked up, the screw cap removed, and various pieces of bark and twig from the path inserted into the jar. The discovery of such unexpected vessel contents in many archaeological contexts would be regarded as the result

of structured "ritual" behavior; the present observation shows that similarly nonlogical circumstances can result from unstructured "child-play."

At the end of the second session the experimenter removed one pull-tab from a beer can and took it with him 10 m to the east into an adjacent building, thus removing this item from the distribution altogether. At the conclusion of the second session the original pile still remained discernable, with a nucleus of one wine jar, one liquor bottle, one juice can, and four beer cans, none in their original position or relationship to the others. Most of the remaining trash was scattered to the west or north, with one item (beer can) a short distance uphill to the east. A clear space about 1 m in diameter just west of the original pile marked the experimenter's position during the nontransporting periods of activity at the pile.

In the third session (61–90 minutes) the original nucleus was further depleted, with all remaining artifacts being moved, most for only short distances to the west. At the end of the experiment the trash formed a rough circle, with density slightly higher on the uphill eastern side close to the original locus of the trash pile. The center of this hollow ring lay about 1 m north by west of the center of the original pile. Apart from the wine jar and two pull-tabs previously noted, all artifacts remained in this circle.

The experiment shows (1) that a recorded dispersed artifact pattern may have resulted from child-play disturbance of an originally compact, concentrated and possibly structured deposit; (2) that child-play may result in incongruous collections of objects for which a "ritual" explanation might be adduced; (3) that larger objects may travel further from their original locus than smaller, further distorting the original pattern, while very small objects may be removed from the pattern altogether; (4) that terrain is influential—the relative smoothness of the path enhanced mobility of cylindrical artifacts, and the westward slope dictated the major vector of movement.

In short, the interposition of "child-play" as a short episode of return to systemic context between two episodes of archaeological context of much greater length may profoundly modify the initial archaeological pattern, the fossilized behavior of the discarding individual or community, and transmute it into an arbitrary pattern with a visible but unrelated structure; the causes of this change must be allowed for in investigations of artifact, and particularly trash, distributions if interpretive error is not to result.

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