WHEN EXPEDIENCY BROACHES RITUAL INTENTION: THE FLOW OF METAL BETWEEN SYSTEMIC AND BURIED DOMAINS

Stuart Needham

The British Museum

The current interpretation of Bronze Age metalwork deposits relies on an opposition between deposits made ritually and those made with the utilitarian objective of temporary safekeeping. Tied to this distinction were the intentions, respectively, to leave buried in perpetuity, or to retrieve. Contrasts in the character and burial location of hoard deposits are used to support the dichotomous interpretation. The article challenges this bipolar model by showing that hoard characterization often reflects a more complex spectrum and by disputing that the recovery of valuables by depositors would invalidate ritual objectives. Furthermore, in considering the flow of metal through the exchange systems of Bronze Age Europe, it is argued that flexibility of intention at and after deposition would have been an invaluable strategic device, enabling greater control over the local metal stock. To extract the full meaning locked up in these crucial archaeological deposits for the period, their interpretation is better centred on new questions relating to expression, occasion, enactment, and the social conditions triggering recovery.

For much of the twentieth century Bronze Age metalwork was exploited by archaeologists for its capacity to formulate chronologies, understand developments in technology, and chart the spatial extent of certain cultural manifestations. These reflections on the past promoted a conception of Bronze Age societies as economically and technologically driven, in relation to the production of objects, their accumulation or their deposition. The Bronze Age was peopled by entrepreneurs engaged in ‘industry’ and exploiting the trade potential of restricted resources. In short, aspects of modern, capitalist, market systems were transposed onto the prehistoric past.

From the early 1970s onwards, interpretation in this branch of archaeology, as in so many, was opened up to new influences, most especially those from social anthropology. Rowlands’s (1972) enquiry into the relationship of metalworkers and metallurgy to various ethnographic societies can perhaps be identified as one key turning-point. Soon after, models of exchange, gifting, and ritual consumption were drawn from ethnographic study and applied to the European Bronze Age on the basis that here, too, we are dealing with small-scale societies operating in a pre-monetary economic environment.

With the simultaneous realization that archaeological formation processes are complex, there was a growing concern to specify the working system (the systemic record), as distinct from the selected, filtered, and distorted record of


J. Roy. anthrop. Inst. (N.S.) 7, 275-298
it left as archaeological evidence (e.g. Schiffer 1987). But that systemic record can only ever be inferred, and methodologies to work back from archaeological data, and forwards from physical and biological laws, were at first naïve to the point of seeking universal laws that would achieve the desired transformations. In this brave new era of far-probing interpretation, yet underdeveloped middle-range theory, it was perhaps natural to grab at ready-built ethno graphic models that could be held to satisfy the observations made in archaeology and thereby offer systemic interpretations appropriate to pre-state societies.

It is noteworthy that in the field of prehistoric metalwork this has tended to give us a series of diametric oppositions in interpretation, most by now having become well entrenched. Although long-standing interest in the distribution, or ‘trade’ of goods, has resulted in some sophisticated models (e.g. Renfrew 1975; see also Scarre & Healy 1993), at core there is a preoccupation in the prehistoric European context with the contrast between down-the-line exchange and long-distance directed trade. Enquiry into the social context of exchange came to be of equal importance and resulted in the transposition of Gregory’s (1982) discrete spheres of gift exchange and commodity exchange in the western Pacific Trobriand islands to the Bronze Age circumstance (Bradley 1985a; 1985b). This transfer to archaeological theory has not been without its critics (Knapp 1988; Needham 1990; Rowlands 1986), but it has had an enduring effect on the interpretation of metalwork deposits even though it could only really be directly related to processes of circulation, rather than those of deposition, which is what archaeological evidence records.

Of more immediate concern to this article are the developments in archaeological thought on the deliberate deposition of metalwork. Antiquarian concepts developed during the nineteenth century in Britain and France1 saw finds as either casual losses (essentially the objects found singly) or safe-keeping deposits intended for retrieval at some later date. These interpretations long held sway, but in the late 1970s it suddenly became acceptable to regard many deposits of metalwork as the product of flamboyant consumption, with connotations of ritual and forms of competition and sacrifice alien to the modern Western psyche. Terms such as the ‘destruction of wealth’, ‘conspicuous consumption’, and ‘competitive consumption’ have since become rife in interpretation (e.g. Bradley 1982; 1990). Given the paucity of obviously analogous practices in ethnographic societies around the world, archaeologists typically turned for inspiration and justification to the North American potlatch ceremonies (e.g. Mauss 1970) involving spiralling competitive consumption, the archaeological evidence itself always tending to form a second strand to the argument. Insights were thus gained into political competition and belief systems, those elusive aspects of prehistoric behaviour. The metalwork of northern and northwestern Europe ‘spoke’ in particular of the reverence for water deities on account of the finery that was amassed in wet places over the later half of the Bronze Age (notably Bradley 1990; see also Needham & Burgess 1980: 442–9; Torbrügge 1971). Even in the sphere of deliberate deposition, dichotomies have been picked out in the evidence, notably in alternative strategies of ritual deposition expressed through sumptuary grave goods on the one hand, and hoarding on the other.
The utility of the potlatch analogy has only recently been challenged in a work by Vandkilde (1996: 39), which serves as a plea to archaeology to turn back to more empirical study and thereby specify the more particular and local circumstances of deposition. A truly contextual archaeology demands the understanding of these practices within the full ambit of social practice in time and place. We must strive to distil from the particular evidence the finer workings of deliberate ritual deposition and conspicuous consumption (which need not be the same thing).

Before concluding this introduction, mention should also be made of another major conceptual development that bears on metalwork, along with all material culture. Since the publication of *The social life of things* (Appadurai 1986), archaeologists have begun to consider more seriously the idea of objects being imbued with characteristics of “being”. Such considerations affect the range of ways in which objects might be valued, but also impinge on the practical matters of the longevity of use-spans or the treatment of material at the close of its life (factors touched upon below). Objects thus imbued could forge links between people or between places, and would constitute an essential element of the classification of society through objects (and vice versa).

*A limitation of archaeological evidence*

A neglected sphere of circulation in early economies is that between objects in the use domain (including those stowed but easily and legitimately accessible) and those buried in the ground or immersed. While archaeologists recognize theoretically that things can return to the use domain from the buried one, archaeological explanation tends to focus on the reverse process. This is a natural consequence of dealing with the tangible archaeological evidence, which can only record the final passage as use-to-burial, or use-to-abandonment. Evidence for the reverse passages, aside from citations in the early writings, is restricted to circumstantial evidence, such as deposits that contain one or more objects demonstrably older than the immediate context. This leaves us unable to quantify the extent of contemporary retrieval in relation to material left unretrieved by depositors. It is doubtless this intangibility that has led to simplification of the possible effects on patterns of metal circulation: where this relationship has been woven into interpretations, it is always with respect to past communities having used deposition (i.e. permanent deposition) as a way of restricting the stock in circulation, with the object of maintaining value or exclusivity. This article explores more fully the exchange of metals between the systemic and buried domains. It is necessarily hypothetical and inferential and cannot pretend to offer a means of estimating the balance of flow. Instead, its value lies in demonstrating a potentially influential variable in the modelling of regional metal economies. To ignore the variable is to overlook a basic control held by prehistoric communities over local circulation.

*The ritual-utilitarian opposition*

A concept of opposition between *ritual* and *utilitarian* has come to dominate the interpretation of hoard deposition in many parts of Europe. The balance
between ritual and utilitarian modes of deposition is far from universally agreed amongst scholars, indeed there are some regional and national trends in preferred interpretation.² Neither is there total agreement over what characteristics of recovered material should be attributed to which mode. At one end of the spectrum is the belief that all hoards in a given region were ritual and intended to be permanent (see further, below). At the other end, some past writers have assumed that all hoards can be explained in terms of temporary safe-keeping deposits, whatever their character (e.g. Evans 1881; but also early twentieth-century writers).

The ritual-utilitarian distinction has perhaps largely gained its currency from the general assumption that a direct equation could be made with retrieval intention. This is illustrated in Figure 1, where utilitarian and ritual are seen to link respectively with retrieval intended and permanence intended. It has long been recognized that these intentions have to be translated into actuality – what was retrieved, and what was not – if we are to begin to understand the archaeological record. So, some utilitarian deposits would not be retrieved due to accidents of body or memory.³ Conversely, any deposit, ritual ones included, might be susceptible to theft, this depending on the spread of knowledge of the deposition spot, as well as on contemporary social conditions.

Regardless of variable depredations from theft, the accepted model in Figure 1 drives home the point that the surviving archaeological record would be a combination of two sets of evidence that are inversely related to one another in terms of the accomplishment of the original intentions. The net result, being non-compatible evidence representing the two phenomena in the archaeological record, makes it very difficult to understand their relationship to one another, either quantitatively or distributionally. The interpretation of object types and their completeness or fragmentation are seen to be important in the attribution to ritual or utilitarian deposition motive. On the other hand, whilst the evidence of context type – particularly whether it permits, limits, or indeed precludes recovery – is taken to be central to the understanding of retrieval intention (Fig. 1). In reality, of course, it is the finding of patterns of association between these independent variables that gives weight to one or

---

**Figure 1.** The dichotomy between ritual and utilitarian hoards as currently perceived.
other explanation. I shall return to this matter of contexts and retrievability later in the article.

Following this model, there might be a distorted representation of the two categories depending on the incidence of theft, accidents to the depositors, and accidental discoveries. However, this should not in itself blur any material or contextual distinctions that were genuinely a feature of the original deposits. I suggest, though, that intentions themselves may have been more malleable than we allow; that they may have been modified as the immediate circumstances of the depositors changed. There may seem to be something in common here with the concerns expressed by Pauli (1985), but whereas he exposed difficulties in terms of archaeology’s power to discriminate between safe-keeping and ritual deposits, this article examines whether these would always have been two discrete fields in the minds of Bronze Age people. Pauli was primarily concerned with pre-depositional changes in circumstances which might result in the contents of a hoard belying the reason for deposition. More attention now needs to be focused on vacillations in intentions after the act of deposition.

‘Ritual’ hoards

The validity, or at least usefulness, of a ritual-utilitarian opposition depends upon our ability to ascribe finds to one or other category. Some continental researchers have abandoned or played down the distinction (Larsson 1986: 158–9; Vandkilde 1996: 33–9; Willroth 1985: 243), in contrast to the rigid dichotomy projected by, for example, Levy’s (1982) treatise on the late Bronze Age material of Denmark or Bradley’s (1990) comprehensive overview. Larsson (1986) criticizes Levy’s contrast between dry-land utilitarian and wet-place ritual deposits, noting that the respective artefact assemblages are not as markedly different as claimed.6

However, to regard the vast majority of surviving deposits as of a ritual and permanent nature does not help in comprehending the quantity and nature of contemporary deposits that were retrieved. For example, it does not help us to consider whether hoards deposited with the intention of recovery might be of a different character, yet a character left effectively invisible in the archaeological record because of a very high success rate in their retrieval.

‘Utilitarian’ hoards

Hoard from dry-land contexts, such as tool-dominant hoards or so-called ‘founders’ hoards’, have often been taken to be classic utilitarian hoards. Interpretation has been swayed by three factors: the fact that retrieval would not have been difficult if desired; the assumption that tools are basic to everyday activities in contrast perhaps to fine ornaments and weapons; and the notion that the physical act of scrapping bronze indicated an intention to capitalize on the metal’s continuing utility. Some or all of these suppositions must be open to accusations of modern preconception. Moreover, the discrimination of these hoards from others may often be less clear than generally believed, a
case already made for the Danish material as noted above (e.g. Larsson 1986). To take a British example, a matrix for the associations of the Penard metalwork assemblage (c.1275–1140 BC) shows a complex gradation of associations between the three major classes, ornaments, tools, and weapons (Fig. 2). There may be some ‘modes’ (in the statistical sense), but they do not uphold any simple categorization. Ornaments and weapons are very rarely associated and can thus be separated to extremes. But between them there is a chain of linkages (forming a crescent in Fig. 3) in which tools appear as a pivotal category. It is difficult to find any evidence here for discrete utilitarian and ritual hoards, and to set tool-dominant hoards in opposition to the others would seem entirely arbitrary.7

For many researchers, founders’ hoards are the epitome of the practical reasons behind accumulation and deposition. But this utilitarian label has not gone unchallenged. Long ago, Worsaae (1866–71) ventured that foundry debris should not be excluded from votive explanations, as potential offerings from the metalworkers to a deity. This idea has not been forgotten by continental scholars, such as Hundt (1955: 99–100) in synthesizing the Mecklenburg material, or Muller-Karpe (1958: 34) dealing with Bavarian finds. The argument seems sometimes to hang simply on a generalized comparison between the condition of the material with that in graves, or on arguable claims as to the low value of scrapped material. However, occasional contexts leave less room for ambiguity, such as the inaccessible fissure at St Kanzian, Skocjan, Slovenia, into which broken and melted objects were dropped (e.g. Kolling 1968: 112).8 More recently, Verlaeckt (1998) has pointed out that in Danish founders’ hoards casting jets tend not to occur in association with scrapped metalwork.

In contrast, in southern Britain the hoards normally regarded as those of founders are not only characterized by fragmented, crushed, or otherwise defunct objects, but can also contain metal ingot pieces, castings not fully prepared for use, casting waste (mainly jets), and occasional moulds. These have been taken to typify a system of accumulation, recycling, and production in the late Bronze Age as part of an increasingly ‘industrialized’ process (e.g. Burgess 1968). Yet the chronology of these hoards poses a question. They are very largely confined to a narrow time-band within the Ewart Park–Carp’s Tongue horizon, which may be accepted as the final phase of a full bronze-working economy already in transition to ironworking (c.920–800 BC; Needham, Ramsey, Coombs, Cartwright & Pettitt 1997). Whatever the detailed explanation of these particular hoard deposits, and there are several possible scenarios (e.g. Needham 1990: 130ff.), they are clearly the outcome of a rather special situation involving marked changes in attitudes to the metal resource and the ultimate ‘redundancy’ of most bronze. They can hardly be held up as exemplars of a ‘utilitarian’ tradition spanning a longer part of the Bronze Age. The fact that founders’ hoards in some regions have a range of items linking them to the practice of metalworking does not in itself explain why they were deposited in the ground (Needham 1990).

My questioning of the current dominant interpretation of such hoards is not intended to overlook their distinctive character, where this is demonstrated. Distinctiveness in terms of contents, treatment, and context of deposition would certainly call for specific interpretation of the underlying cycles of activity and the motivations behind deposition.9 It may seem odd, then, to
<table>
<thead>
<tr>
<th>Location</th>
<th>Torc</th>
<th>Armring</th>
<th>Ring</th>
<th>Pinasse</th>
<th>Socketed</th>
<th>Taxe</th>
<th>Other Tool</th>
<th>Ferrule</th>
<th>Looped Spearhead</th>
<th>Broken Spearhead</th>
<th>Dirk</th>
<th>Rapiere</th>
<th>Sword</th>
<th>Sheath-</th>
<th>Brooch</th>
<th>Cudgel</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hampton</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walwyn's Castle</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Llanwrthwl</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Towednack</td>
<td>2</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hilton</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mountfield</td>
<td>?</td>
<td>?</td>
<td>?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haxey</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boyton</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1-2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Granta Fen</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monkton Deverill</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Central Wales”</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grunty Fen</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monkton</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aston Rowant</td>
<td>?</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wilmstow</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Downton</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bagshot</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kirtomy Farr</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Craig a Bhodaich</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bolton Percy</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bolsterston</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roundhay</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Witham</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stickford</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carr Moorside</td>
<td>7</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haydon Bridge</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meole Brace</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doncaster</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scotterthorpe</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shelf</td>
<td>8</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kilnhurst</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Downham Fen</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fyynnouau</td>
<td>1</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Denwick</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambleside</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burrimingham</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farnley</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thorpe Hall</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kincardine</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Callander</td>
<td>1</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Penard</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eriswell</td>
<td>?</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barnes</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bottesford</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medomsley</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Netherby Fort</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worth</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walthamstow</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corbridge</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maentwrog</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appleby</td>
<td>2</td>
<td>1</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Kyme</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sandford-on-Th.</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feltwell</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Croxton</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wallington</td>
<td>3</td>
<td>8</td>
<td>7</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 2.** Matrix of associations of Penard metalwork in Britain.
be arguing against a fundamental ritual-utilitarian divide, thereby giving the impression of conflating all metal deposits into one broad category. However, I propose below that this bipolar way of viewing the evidence is too constraining and misses out on much more useful and, indeed, diverse modes of characterization.

The flow of metal

One crucial factor affecting the retrieval intentions of depositors of metalwork is likely to be the availability of the raw material and the prospects for replenishment when required. So, some attention needs to be given to the matter of the flow of metal through the exchange, or outflow, networks. Modelling systemic flow depends on the definition of four critical and interdependent variables. By changing the variables in hypothetical trajectories it can be appreciated how different systems would affect the potential archaeological record in a region (i.e. the record of buried and abandoned objects prior to subsequent cultural phases of activity). The most useful definition of a region for this purpose would reflect coherence in terms of metalworking organization, supply network, and practices of deposition. The flow of metal in a region can be seen to respect a basic ‘equation’ which is universally applicable and, furthermore, allows the construction of a broader picture of interdependence between regions (Needham 1998).

The four variables are shown in Figure 4. In summary, they are (1) supply: not only metal produced within the region, but also all metal brought into the region; (2) stock in circulation: all material not buried in the ground or not immersed in water; (3) average use-span of metal: the full duration of use of a
particular quantum of metal within the given region between its receipt and its loss to the regional system. That duration could involve any number of object use-spans from as little as a fraction of a single use-span to very many. Multiple use-spans within the region automatically indicate the local recycling of that body of metal. (4) Losses to the system: two kinds are emphasized here, the metal passed on to other regions and that permanently consigned to the ground or to water.

The interrelationship between these four parameters needs to be seen on a time-plot (Fig. 4). Supply and loss are represented by linear trajectories; changes in steepness are directly proportional to fluctuations in the rate of supply or loss. The corridor between these two trajectories defines and is defined by the other two parameters, which can be shown as vertical and horizontal bars spanning the corridor. The vertical axis directly represents the stock in circulation at any given time; the horizontal axis gives the average

**Figure 4.** The interrelationship of the critical variables for modelling the flow of metal.
overall use-span of metal entering the system at a particular point of the supply trajectory.

Such a plot thus allows visualization of how changing supply and loss rates might cause adjustments to stock in circulation and overall use-span (and thus by implication number of recycling events, average length of object use-spans, or a combination of both) (Figs. 5, 6). Amongst the losses, a variable proportion will be in the form of permanent deposits in the ground and in water. These obviously become potentially visible archaeologically, as do any accidental losses not rediscovered. Most of the remaining losses would be material passed on to other regions, thus becoming a part of the ‘supply’ to those other regions. From this it can be seen that there would be a web of links between supply, deposition, and exchange outwards between regions.

If we break down some of the four parameters of flow we can see more readily how regional or local strategies of utilization might have been configured (see Table).

| Table. The four parameters of flow and, where relevant, their component parts |
|---------------------------------|---------------------------------|
| supply                          | straightforward                  |
| stock in circulation             | straightforward                  |
| average use-span of metal        | product of:*                    |
|                                 | average use-span of objects     |
|                                 | extent of recycling             |
| losses                           | sum of:                         |
|                                 | proportion buried permanently   |
|                                 | proportion exchanged outwards   |
|                                 | accidental/vaporization etc.    |

*In practice, this equation may be complicated by variations in the size of objects (hence in the volume of metal locked up in them).

Although the individual communities would not have close control over all of these, particularly supply, they would be able to make decisions about the others. This can give rise to considerable variation in the aggregate time-plots; in turn, such variations directly affect the fortunes of other regions in the outflow network.

It should be clear from this outline of the basic principles of supply-and-loss economics that the outflow system will be radically different according to whether communities were striving to better their stock in circulation, or to compete with others in terms of conspicuous consumption or exchange outward. Another critical factor, though, is the mechanism of supply, in particular whether passed down the line or by means of direct long-distance supply. These are two extremes and in many Bronze Age situations we should probably be thinking in terms of the two occurring in parallel, the balance between them varying. Whatever the balance, it has been argued that supply to most individual regions would have been rather unstable over time (Needham 1998). In the case of regions remote from raw-metal producers, supply would generally have been precarious, a point
Notes on Fig. 5
These are entirely hypothetical case-studies at a regional level to illustrate cause-effect relationships between supply, circulation stock, and losses as socio-economic circumstances change through time. Both start at the point of the introduction of metalwork to the regional economy. It is not suggested that these model particular regional histories.

Cast-once-only system
1. Assumed that supply is initially at a modest level, based either on local mineral extraction or importation of ready-cast objects. The uptake of metalwork/metallurgy is only likely to register significantly (in relation to supply rate) after a time-lag approximating to the average use-span of the metal objects in circulation. Since the system precludes their being re-cast locally more than once, all must subsequently enter potential archaeological contexts or be passed on to other regions. For as long as supply and average use-spans remain constant, losses will also remain so.

2) Supply is increased (for whatever reason) creating, again after time-lag, an increase in collective losses.

If the proportion being “exported” remains constant, the increase would be reflected directly in the original deposited record.

3) Internal or external factors (for example) cause a decrease in supply; the community responds by slightly decreasing deliberate deposition and export.

4) However, it attempts to maintain fairly high deposition rates despite continuing supply shortages. This forces a reduction in average use-spans and in the overall stock in circulation, as well as in the proportion being exported.

5) Stocks in circulation reach a critically low level which cannot sustain high rates of deposition or everyday needs and this crisis triggers social change and changing attitudes to deliberate deposition which plummets. Previous average use-spans are restored.

6) Only when supply picks up again does it become a realistic option to increase deposition and “exports”.

7) Not only has supply to the region reached an all-time high, but deposition rates have responded more slowly causing an increase in use-spans. Both factors contribute to a larger stock in circulation than hitherto seen.

Figure 5. A hypothetical time-plot for a region employing a cast-once-only system: (a) changes in stock and object use-spans in relation to cumulative curves for supply and overall losses; (b) the corresponding rate of overall losses to the regional system and (darker tone) suggested ‘deposited losses’.
**Notes on Fig. 6**

These are entirely hypothetical case-studies at a regional level to illustrate cause-effect relationships between supply, circulation stock, and losses as socio-economic circumstances change through time. Both start at the point of the introduction of metalwork to the regional economy. It is not suggested that these model particular regional histories.

A supply trajectory similar to that in Fig. 5 is followed for the greater part of the graph.

1) Again supply begins modestly after inception, but collective losses to the system are even slower to take off, because of some recycling of old objects and the steady augmentation of the circulation stock.

2) A marked upturn in supply allows a noteworthy rise in losses, yet at the same time still permitting the stock in circulation to expand. If average use-spans remain constant, this would mean that objects were being recycled on average more often.

3) Internal social factors cause a marked decline in permanent loss/deposition and further expand the stock in circulation.

4) This creates a remarkably good buffer which is resilient to both a downturn in supply and (5) a sudden interest in permanent deposition, for example as hoards or grave goods.

5) At the point at which deposition peaks (causing a peak in overall losses), the stock has been somewhat reduced, but a reduction in the former to more modest levels (5) sustains a reasonable stock despite no improvement in supply.

6) Because both rates are only moderate (rather than high) the average number of recycings is high, or average use-spans increase to compensate.

7) A marked improvement in supply leads to the greatest amount of metal yet seen in circulation regionally (10) which in turn triggers more profligate consumption (11).

8) This rate of consumption is maintained for some time after a temporary collapse in supply, resulting in a severe contraction of the circulation stock (15).

9) A crisis in availability of metalwork for everyday needs or special projects might lead to an abrupt cessation in permanent deposition and ‘exports’, thus allowing recovery of stocks.

---

**Figure 6.** A hypothetical time-plot for a region employing a pronounced recycling system: (a) changes in stock and object use-spans in relation to cumulative curves for supply and overall losses; (b) the corresponding rate of overall losses to the regional system and (darker tone) suggested ‘deposited losses’.
recognized by previous researchers (notably Bradley 1988; Kristiansen 1984; Larsson 1986).

Relating deposition

Archaeology, of course, aspires to comprehend the full working system, as defined by the parameters set out above, from the distorted evidence of just one of them, the ‘fall-out’ of objects to form the potential archaeologi-
cal record. That fall-out, comprising the combination of permanent deposits and accidental losses (‘proportion buried permanently’), even if undistorted in terms of the material recovered in modern times, will not be directly correlated with either supply rates or stocks in circulation because of the other variables involved. There are, nevertheless, certain things we can infer; for example, when supply to a region is relatively poor, then the sum of permanent deposition and outward exchange must also on average be poor. Increasing recycling merely allows greater flexibility in the timing of losses by boosting the stock in circulation, but this requires other objectives to be sacrificed.

Thus, if maintaining current circulation stocks were viewed as important, one option for a society suffering a downturn in supply would be simply to curtail deposition. In practice the decision might not be so simple. First, we might wonder whether any individual within the region would have a broad enough picture regarding supply fluctuations. Secondly, they might not be able to predict whether downturns were going to be long term or short lived. And thirdly, it may not have been easy to arrest any established patterns of depo-
sition serving particular ideological and political goals. Such practices could have developed their own momentum, as promulgated by Bradley (1985a: 32) with his idea that deposition became a motive force in society.

In time, however, given accumulated collective experience, it would surely have become evident that control over the local metal supply could be effected not just by recycling or adjusting outward exchange, but also by altering the balance between permanent and temporary deposition. In other words, the option to retrieve could have become a strategic device. In a situation where acts of deposition came to be essential to maintaining an established regime, one suspects that there would be little hesitation in subverting any initial intentions of permanent deposition. Thus, changes of policy forced by chang-
ing economic and political circumstances could be of great importance to the matter of retrieval; in difficult times such decisions might not respect differ-
ences in the original purpose of the deposit (see further, below). One might call such an open-ended commitment in relation to the burial environment ‘flexible intention’. Archaeologists have traditionally been uncomfortable about the idea of deposits being simultaneously ritual and impermanent;12 a purist sensibility has prevailed which would see ritual deposits not made in perpetuity as being insincere. Certainly there are documented situations where breaking this asso-
ciation was not regarded as unethical. The Roman world is a case in point. While the Roman cultural circumstance cannot possibly be expected to con-
stitute a direct analogue for the workings of Bronze Age ritual deposition, it
is salutary to discover how impermanent were many votive deposits at temples, and perhaps elsewhere. In reviewing the Roman situation, Johns (1996: 9) has argued that the synonymy often assumed between votive and ‘things abandoned’ is a misapprehension. ‘Votive objects are simply those which have been dedicated to the use of a god. Votum is a vow, and may relate to a thank-offering promised when a favour was sought, or a gift made at the time of requesting a future favour from the deity.’ She goes on to point out that temples were involved in many financial dealings and that the dedicatory function of deposits in no way inhibited their reuse as temple authorities saw fit.

One fundamental difference between Roman votive offerings and Bronze Age deposition lies in the need to support an institution in the former context, comprising upkeep of both buildings and specialist personnel. Furthermore, the sanctity of temples gave relative security for wealth, so that these institutions could even play a part in the overall financial system. No such formalized infrastructure would have existed in Bronze Age times. So while the two periods may both have experienced considerable flexibility in the life cycles of things ritually offered, they would have supported very different systems. Whether the retrieval of ritual deposits was acceptable or not might of course be related closely to the kind of ritual undertaken, such as true ‘votives’ (i.e. dedicated to the gods or ancestors), commemorative and foundation deposits, or conspicuous consumption as part of rivalry between living persons.

By way of summary, it is worth reflecting that short-term deposition, traditionally taken to imply temporary safe keeping, in fact allows many potential benefits. The kudos achieved in the whole process could be considerable, being an aggregate of the various stages: (1) the material had been procured and possessed in the first place; it may also have been associated with memorable events or people (i.e. the objects had acquired ‘biographies’; Appadurai 1986); (2) the act had been made, perhaps with great ceremony; (3) the forfeiture had been suffered for a period; and finally (4) retrieval allowed a further useful act, for example, the return of a debt to a neighbouring chief.

Retrieval

The timing of retrieval, even if intended at the outset, may not have been closely prescribed. Yet duration of burial is another crucial factor for both the potential significance of the deposit and the question of the success rate in retrieval. To take significance first, as time passes it may be that the cachet of the temporary forfeiture grows; perhaps opportunities are taken to remind all concerned (at ceremonies and festivities), and prestige is accrued accordingly. Indeed, this could become a powerful force pushing towards permanence of deposition, again without any definitive expression ever having been made. If there were social pressure to prolong periods of deposition, the likelihood of ultimate non-retrieval might be increased by failing memory: the more time passed, the less likely successful retrieval became.

This line of argument may seem to suggest that by a combination of design and accident the great majority of deposits became permanent. Perhaps so. But this is not actually a legitimate deduction, as can be seen from the corollary:
those deposits that were retrieved (still overlooking accidental discoveries) were most likely to have been retrieved within a short time, within living, indeed faithful, memory. The practice of short-term deposition would likely have had a very long ancestry and have been deeply embedded in the psyche of the first metal-users: from the storage of seed corn or surplus foodstuffs, whose future use might not always be immediately foreseen, to the burial of equipment needed only locally or briefly during the annual round, not to mention the safe keeping of valued things. All these deposits were necessarily short term, and if they were left for more than a year, or a few years, due to happenstance, they were liable to become permanent.

For many buried materials, duration of burial also conditioned their utility on recovery. Even relatively noble bronze corrodes under certain adverse ground conditions and, indeed, many of the objects under consideration were already fragmentary or damaged at the time of deposition (not just in the so-called ‘founders’ hoards’). Such items would have lost their original utilitarian purpose and it may be that any prior ceremonial or prestige value would also have been effaced. In such cases any recovery, whether originally intended or not, would primarily be concerned with the metal itself, unless any further symbolic capital could be gained from the objects in their non-functional state.\textsuperscript{15} This may be precisely why metalwork was so often damaged before deposition, for it would definitively end a particular use-life cycle; that use-life became irretrievable and one could think in terms of the use-life, with its particular connotations, as having been the thing sacrificed to the gods or spirits. The physical transformation could merely have served to emphasize a metaphorical transformation; it did not necessarily prevent retrieval and re-use of the material, but rather circumscribed the kind of reuse.

In the case of complete and still functional objects, of course, a revival of all originally held significances was feasible, if this was desired by the retrievers. The contrast between intact and functionally impaired objects in buried deposits may therefore in some cases be critically important in signalling quite different attitudes to the potential future use of objects.

Occasionally, particular archaeological finds may seem to represent a deposit placed to give the option of retrieval; inevitably, this hinges on circumstantial evidence. Such might be argued, for example, for the Early Bronze Age Lockington hoard, Leicestershire, comprising a copper dagger, two gold armlets, and parts of two pots (a Beaker and a second vessel, possibly also a Beaker). They were buried in a shallow pit on the edge of a funerary enclosure succeeded by a mound (Hughes 2000). Taken individually, these artefacts are familiar as grave goods and in that respect they are in their element on a funerary site; presumably they had funerary connotations. However, the specific combination of objects is at present unique and, while one could easily dismiss it as an exceptional occurrence, it must be wondered whether this was really an exceptional survival, a rare case of non-retrieval when retrieval might have been the norm. The deposition of the hoard on the periphery of the funerary zone may well have been deliberate, placing it in a liminal position that did not absolutely preclude recovery, despite the normal embargo.\textsuperscript{16} We cannot know whether comparable hoards were buried in peripheral settings on other sites, later having been recovered, but this possibility must be considered.
Retrieval potential

Of course, the option to retrieve depends to some extent on the physical environment of deposition, as recognized by many past researchers. This has often been painted in the rather polarized way described earlier: dry land equates with ease of recovery; wetland or open water, with difficulty of recovery. It may be suggested, however, that there is a much more subtle scale of retrieval potential, with important cross-cutting factors, including whether markers were placed and what form they took, whether containers and cord attachments were used (particularly relevant to wetland or watery environments), and what time-scale we are talking about: a month, a year or two, a generation, or longer. Again, it needs to be emphasized that the issue here is retrieval based on specific knowledge of the deposit, not that due to accidental or opportunistic discoveries. That specific knowledge had to be faithfully held within an individual’s mind or faithfully transmitted between individuals.

Figure 7 compares some of the main combinations of context types and location-markings in terms of the prospects for recovery of a specific deposit over time (shown on a logarithmic scale). This is entirely conjectural (it is hard to see how it could be otherwise), but attention needs to focus on the suggested relativities between the various context-marker combinations. While

![Figure 7](image_url)
it is obvious that the curves are quite distinct for the two extreme situations, in between a gradation is postulated. The past view of opposites has stemmed to some extent from a false premise, looking at too long a term. If we look at the ten to one hundred years’ bracket, or even one to ten years, there are rather marked discrepancies in the prospects for recovery across the spectrum. However, I argued above that the actual incidence of retrieval would fall steeply with time, so the critical time-scale may be a year or less, say on return from an expedition or at the same point in the annual cycle the following year. In this case, the risk involved in deposition in marshland (or even open water, depending on typical annual spate currents) may not have been so much greater than that for dry land.

Collective experience would presumably have led Bronze Age people to realize that in the longer term there were different risks involved in different depositional contexts. That may have been of limited relevance to their desire to keep options open on short-term retrieval, except that enhanced risk might have brought greater kudos from the act of deposition, a kind of gambling. We should not forget, however, that another inducement to deposit in wet environments could have been fear of theft, regardless of whether the deposit was for safe keeping or in perpetuity. The greater risk of unsuccessful retrieval might have been traded off against the greater security against theft. 17

The modelling of flow outlined earlier makes it clear that, all other things being equal, any requirement to boost circulation stock would be in direct conflict with that to increase permanent deposition. This could mean that, as the impetus to sacrifice metal grew, there might be a corresponding desire in the given community to build up stocks in circulation, since this would give them the greater capacity to determine their schedule of consumption. Compromises between the conflicting needs might constantly be made, thus keeping profligate consumption in check. Once stocks of metal in circulation in a region had become large, individual object sacrifices would have had a minimal impact on the community’s collective ability to service other projects and obligations. This logic makes it seem likely that deposition intended at the outset to be permanent (in any environment) would only have involved a rather minor proportion of the stock in local circulation. Even so, there would still doubtless be considerable variation in the balance struck in different cultures because of different perceptions and priorities. Temporary deposition, on the other hand, would reduce the stock in active circulation for the duration of burial, but would have little effect on availability in the longer term. In this way a variety of ritual purposes might be served without greatly impeding the other essential workings of society.

**Conclusions**

In suggesting the eradication of the ritual-utilitarian divide, I do not seek to impose uniformity on disparate cultural practices. On the contrary, deliberate deposition had scope for immense variation in its character and purpose, in terms of (a) expression: in terms of the objects selected, their specific meanings in that context (which may not be singular); (b) occasion: the purpose and timing of deposition; (c) enactment: the rites and participants involved in
deposition; we need also to take into account (d) social conditions triggering recovery, since this controls the prospects for the evidence of (a), (b), and (c) surviving for study. These factors are by no means easy to interpret, especially since there will not be any universal translation into the variables we can observe, such as location, material, and treatment (e.g. Hines 1989: 203). Nevertheless, I would argue that they constitute a more relevant goal in our attempts to comprehend deposition practices. In so far as retrieval intention was predetermined, it is likely to have interlinked most closely with occasion, but it has been argued above that no rigid patterns of association should be expected cross-culturally. It is also suggested that short-term and uncontrollable fluctuations in local supply would be one of the prime causes of retrieval, regardless of the motive behind the original deposition.

Beyond interest in the deposition and retrieval events, a further objective of artefact studies is to conjure up the systemic sphere of possession and circulation from the archaeological record. While circulation within the systemic situation is not directly relevant to this article, it is important to try to conceptualize how it is linked by way of formation process. In Figure 8 the archaeological record of metalwork deposits is shown to derive from a record by default. The default record left behind at the close of any given cultural phase is likely to have been correlated to some degree with relative surplus (itself conceptual and variable), since having sufficient stocks of bronze in circulation for current needs would tend in the first place to promote deposition (where the practice of deposition was held to be important) and thereafter to stave off the retrieval of the buried material. Another critical factor would be social organization: who had the power to make the decision to deposit and, equally, that to retrieve (for example, did retrieval require the sanction of a spiritual leader)? This in turn could be strongly linked to the contemporary understanding of who owned or controlled the material in circulation and, again, that in temporary deposits.

Many other social factors and customs could also have had some effect on the record by default, and we should not overlook the possibility that some such factors might be inversely related: the survival of a ritually buried deposit until modern times as a result of the failure of an enterprise, rather than its long-term success. To illustrate this hypothetical point, I take a small group of Middle Bronze Age hoards from southern England (present in both the Taunton and Penard assemblages, c.1400-1140 BC), each of which comprise one, two, or three palstaves with one or more torcs, and sometimes other ornaments as well (e.g. the Quantocks hoard; Fig. 9). A speculative interpretation of these particular hoards might see them having been buried to seal a marriage alliance between two important families (occasion), the axes coming from the male side, the ornaments from the female side (expression). But suppose that it was permitted to recover this joint deposit on the birth of the first heir (social conditions triggering recovery): the examples that survive archaeologically would in this scenario become marks of failure, even though their initial deposition was celebratory or votive. The success stories would be lost to us in this particular manifestation, just as in the case of hoards buried purely and simply for temporary safe keeping.18

Metalwork deposition of any kind is critically related to matters of circulation in two respects. At a fundamental level, it is hard to believe that there
<table>
<thead>
<tr>
<th>CIRCUMSTANCES / DECISIONS</th>
<th>DETERMINED BY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possession / Circulation</td>
<td>Social structure, material availability; expertise to re-cast</td>
</tr>
<tr>
<td>Recycling</td>
<td>Social conditions; the nature of the annual cycle; the role of deposition in maintaining (or subverting) hierarchies or belief structures</td>
</tr>
<tr>
<td>Permanence immutable</td>
<td>Fixed / immutable intentions: prohibition on retrieval or absolute necessity for it</td>
</tr>
<tr>
<td></td>
<td>Modulating socio-economic and associated political circumstances</td>
</tr>
<tr>
<td></td>
<td>Aggregation of many local historical circumstances, including accidents, during the given 'phase'</td>
</tr>
<tr>
<td></td>
<td>Later land-use history &amp; development of antiquarian interest</td>
</tr>
<tr>
<td></td>
<td>Strategy in archaeological exploration</td>
</tr>
</tbody>
</table>

**Figure 8.** Suggested generalized formation process for deliberate metalwork deposits.

would have been no repercussive interaction between deposition and retrieval on the one hand, and on the other fluctuations in supply and circulation stock (without being as deterministic on this relationship as Kristiansen 1979). In addition, the suggested consequence of this interaction, flexible intention with regard to retrieval, gives rise to a more complex sub-sphere of 'circulation' between the systemic and buried worlds. This itself is worthy of our consideration.
Figurae 9. The Quantocks hoard, Spaxton, Somerset (after Harford 1803).

Setting aside those deposits buried in haste during emergencies, I suggest that the great majority of other deposits would have been buried with some care, ceremony, and performance (enactment). If nothing else, there would surely be rites to ensure that the material was 'protected'; this might involve incantations, which are archaeologically invisible, but it might also be important to respect certain ways of depositing material, thus perhaps explaining the frequent observations of neat arrangement in the ground.

In this sense, then, most if not all deliberate deposits were 'ritual' at one level or another, and yet, should circumstances permit and demand, some if not all were also available for recovery. From this viewpoint, it may not be productive to perpetuate the ritual-utilitarian opposition, since ritual and utility are unlikely to have been mutually exclusive categories.

NOTES

I have been grateful for the opportunity to air early syntheses of the ideas put forward here to audiences at the Prehistoric Society (Leicester 1996) and the Birmingham conference on
the supply and circulation of metals in Bronze Age Europe, organized by Chris Pare (1997). Sylvia Sprenger kindly guided me to the literature on central European grave robbery, while Stephen Crumley converted the diagrams into an intelligible form. I also wish to record thanks to Richard Bradley, Jo Brück, Marie-Louise Stig Sørensen, and especially Catherine Johns for valued comments.

1. This contrasts with the situation in Scandinavia, where antiquarians early mooted the idea of ritual deposits in wet places, but nevertheless not with the array of connotations invoked in current interpretations.

2. Some sense of the complex history of ideas in this field can be gained from Bradley (1990) and Taylor (1993: 3-22).

3. Note should be taken of Binford's documentation, rehearsed by Pauli (1985), of the Eskimos' powers of recollection of the places in which they buried objects spread over vast territories.

4. As Bradley (1990: 118) observed: 'It may not be so difficult to distinguish between "ritual" and "non-ritual" hoards, but it is hard to understand how the two were related to one another.'

5. He did this in two respects. First, he noted that historical sequence may take one group of material from one contextual sphere rapidly into another; both 'spheres' may thus be 'represented' by the archaeological find, but which would be recognized by archaeologists? Secondly, he noted that particular objects may hold quite distinct, simultaneous roles – for example, money-function and practical, or money-function combined with ritual connotations – furthermore, that archaeology is thus incapable of deciphering the specific background to deposition on the basis solely of the types present.

6. Subsequently, Verlaeckt (1998) has re-emphasized the fact that context type does not prove a very reliable discriminator of supposed ritual or utilitarian deposits in the Danish late Bronze Age. It should be noted, however, that the situation is different in the Scandinavian late Neolithic and early Bronze Age, where there is a convincing dichotomy in terms of content-context associations. Vandkilde (1996) prefers to interpret the two poles of the dichotomy as relating to discrete forms of deposition, with both being ritually motivated.

7. The full picture should of course take account of single finds, which can also be deliberate special deposits, but they lack the added dimension offered by association pattern.

8. Kolling (1968: 111 ff.) also asked some very pertinent questions regarding the character of 'scrap' hoards which exposed the fallacy of supposing they were simply caches hidden in times of danger.

9. Barrett and Bradley (1980: 260) have made the point that 'the accumulation and deposition of bronzes may take place at a number of points in the history of production and exchange'.

10. Outflow expresses the aggregate movement of materials away from their sources and towards their ultimate resting places spread around wider geographical space. It is not intended to imply any uni-directionality in the process of distribution and movement.

11. Kristiansen (1979) had previously recognized the importance of these interrelationships without modelling them fully.

12. Maringer (1973: 725) recognized that profane reasons for deposition need not be incompatible with thank-offerings. Since initially drafting this article, which has had a long gestation, I have also become aware of the relevant publication by Dickins (1996), which makes a similar case regarding the fallacy of assumptions about the relationship of ritual and retrievability. She draws support from the 'remote analogy' (in her words) of the tjunenga of central Australia, involving the hiding of ritually significant objects, more often in caves and rock-shelters than in buried environments. However, there are other substantial differences between the respective situations in Bronze Age Ireland (her case-study) and Australia, not least very different socio-cultural systems, environments, demographic patterns, and ranges of potential uses for the respective secreted materials. This article perceives the need to free archaeological interpretation from the direct transfer of models drawn from ethnography, because of the inbuilt limitations of the procedure.

13. Specialized constructions emerged in many cultural contexts. In fact, a number of relevant Bronze Age sites have come to light in Britain in recent years in wetland or riverine contexts, in which preserved timber structures appear to be the focus for deposition of metalwork, animal remains, and other artefacts. Published examples include the extensive timber alignment and platform at Flag Fen, Cambridgeshire (Pryor 1992), and river channel structures at Caldicot, Gwent (Nayling & Caseldine 1997). These contexts recall the discoveries at Spandau, Berlin, in the nineteenth century (Schwenzer 1997), as well as the Iron Age sites at La Tène,
Switzerland (Schwab 1974), and at Fiskerton, Lincolnshire (Field 1983). Another important Bronze Age structure, interpreted as a shrine, was excavated at Bargeroosterveld, Holland, although this was not obviously endowed with deposits (Waterbolk & van Zeist 1961).

We have only to recall Samuel Pepys’s experience of persuading his close family to bury the family coinage in the face of the threatened Dutch invasion in AD 1667, to appreciate the great propensity of buried finds to elude later recovery, even after only a short interval (see Bradley 1990: 17–20; further relevant anecdotal evidence on retrieval is in Painter & Künzl 1997).

One can imagine situations in which a cult status was derived from the particular history experienced by the objects, culminating in their ‘killing’.

I refer here to the embargo on recovery that has generally been assumed for British Bronze Age graves. It is salutary to note in passing that there is growing evidence and interpretation in parts of central Europe for the widespread opening of graves to recover grave goods (e.g. Hänsel & Kalicz 1986; Neugebauer 1991; Rittershofer 1987). This is another reason for suggesting that we cannot assume blanket taboos regarding the retrieval of ritually buried goods.

An example of this might be argued for seventeenth-century Denmark, where it is documented that valuables were buried in bogs, the containing bag tied to a tree (Randsborg 1980: 139).

Some evidence relating to enactment can also be adduced from the report that in the Quantocks hoard the two pails were set inside the two torcs; comparable arrangements are known from some of the parallel hoards.

REFERENCES


Quand l'opportunisme vient en travers de l'intention rituelle: le passage du métal à travers les domaines systémiques et les domaines enterrés

Résumé

L'interprétation courante des dépôts d'objets de métal de l'âge du Bronze est fondée sur l'opposition entre les dépôts effectués rituellement et ceux qui relèvent de l'objectif utilitaire de mise en sûreté temporaire. L'intention respective soit de laisser le dépôt enterré à perpétuité, soit de le recouvrir plus tard, est liée à cette distinction. Des contrastes dans le caractère et les lieux d'enterrément de ces dépôts de réserve sont avancés pour appuyer cette interprétation dichotomique. Cet article remet en question ce modèle bipolaire en démontrant que la caractérisation des réserves reflète souvent un ensemble plus complexe; il questionne aussi l'argument selon lequel la récupération des objets de valeur par leurs dépositaires infirmerait leurs objectifs rituels. De plus, si l'on considère le passage du métal à travers les systèmes d'échange de l'Europe à l'âge du Bronze, il est avancé qu'une flexibilité d'intention pendant et après la mise en dépôt d'objets aurait été une ressource stratégique très avantageuse, octroyant davantage de contrôle sur le stock local de métal. Afin d'extraire la signification complète enclose dans ces dépôts archéologiques d'importance cruciale à cette période, il est préférable de centrer l'interprétation sur des questions nouvelles touchant à des notions d'expression, d'occasion, de représentation, ainsi qu'aux conditions sociales déclenchant la récupération.

Department of Prehistory & Early Europe, British Museum, Great Russell Street, London WC1B 3DG.
SNeedham@thebritishmuseum.ac.uk