

# Secondary Disposal of the Dead: Cross-Cultural Codes

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## 1. INTRODUCTION

Death is inevitable. When an individual dies, the survivors must cope with the emotional and social loss of that person, and it is imperative that they find some means of disposing of the body. Many anthropologists have explored issues related to death and disposal (Bloch and Parry 1982; Brown 1971; Chapman, et al. 1981; Humphreys and King 1981; Metcalf and Huntington 1991; Rosenblatt et al. 1976). However, the problem of secondary disposal, or intentional manipulation and reburial of human osseous remains, generally has not been given the widespread attention that other dimensions of the archaeology of death have received. Much of the recent archaeological research on secondary disposal has focused on single sites or individual case examples (e.g., Byrd and Monahan 1995; Chesson 1999; Kuijt 1996). This paper will review some past approaches to secondary burial, place these approaches in the wider context of mortuary analysis, provide codes on secondary disposal for the Standard Cross-Cultural Sample, and present the results of a holocultural analysis of two hypothesized correlates of this form of mortuary treatment.

## 2. HISTORICAL OVERVIEW

Early approaches to the archaeology of death involved a great deal of conjecture as to the origin and nature of the "lost race" responsible for the construction of highly visible, monumental burial structures. Such speculative works often were descriptive, composed of lengthy trait lists, and generally assumed that variability in mortuary practices could be causally linked with religious or cultural variability.

The "New Archaeology" of the 1960s and 70s led to many developments in the areas of interpretation and theory in archaeology. Saxe (1970) and Binford (1971) focused attention on the social dimensions of mortuary practices, arguing that the mortuary record reflected the social organization of the society. Both distinguished two components of any social circumstance that are symbolically recognized in mortuary situations. First is the overall status of the deceased when living, and second is the size of the social unit that recognizes certain duties and responsibilities to the deceased. From this, four basic dimensions of the social persona of the deceased are recognized: "(1) age, (2) sex, (3) relative rank and the

distinctiveness of the social position occupied by the deceased within the social unit, and (4) the affiliation of the deceased with respect to membership segments of the broader social unit, or in the case of intersocietal symbolism, the form appropriate to the society itself" (Binford 1971:17). Advocating a multi-dimensional approach, Goldstein expanded these variables (Goldstein 1981:59):

1. Treatment of the body itself
  - a. degree of articulation or disarticulation
  - b. disposition of the burial
  - c. number of individuals per burial
  - d. mutilations and anatomical modifications
2. Preparation of the disposal facility
  - a. form of the facility (e.g., grave, tomb)
  - b. orientation of the facility and the body within the facility
  - c. location of the facility in relation to the community (e.g., within village, adjacent to village, in spatially differentiated location)
  - d. location of the facility within the disposal area itself
  - e. form of the disposal area (e.g., cemetery, mound, house floor)
3. Burial content within grave
  - a. arrangement within grave of specific bones with relation to grave furniture and grave facility
  - b. form of furniture
  - c. quantity of goods
4. Population profile
  - a. age
  - b. sex
  - c. disease states and/or circumstances of death
  - d. genetic relationships

Until 1981, Saxes' dissertation (1970) and a volume edited by Brown, *Approaches to the Social Dimensions of Mortuary Practices* (1971), were the definitive works on mortuary analysis. In 1981, *The Archaeology of Death*, edited by Chapman et al., provided an update on developments in mortuary archaeology since 1971. In the introduction to this volume, the editors discussed some of the shortcomings characteristic of the 10 years of mortuary analyses that followed the 1971 publication of *Approaches to the Social Dimensions of Mortuary Practices*. These include "insufficiently explicit attention given to the formation and transformation of the archaeological record, the inadequate treatment of symbolism, the relative neglect of spatial patterning in the location of disposal areas and the absence of a regional perspective in the analysis of mortuary practices. The paucity of formal testing of hypotheses derived from ethnographic contexts is also visible" (Chapman et al. 1981:23). The challenge to the contributors to *The Archaeology of Death* was to deal with these shortcomings and push mortuary archaeology into new areas of theoretical development.

During the ensuing past two decades, a considerable amount of archaeological research on mortuary behavior has continued to follow the general approach advocated by Saxe (1970) and Binford (1971) and these studies have focused on variables thought to correlate with social differentiation in past societies. Many scholars have built upon successful research that sought to identify “badges of office” or symbols of authority and power, estimate energy expenditures, or explore the confounding effects of formation processes on the mortuary record (e.g., O’Shea 1984; Peebles and Kus 1977; Tainter 1978). A number of scholars have pursued regional studies of mortuary sites (see contributors to Beck 1995). The past two decades have also witnessed contentious debates and critiques against the more conventional approaches to mortuary analysis. Post-processualists have argued that mortuary behavior is highly dynamic and manipulated by the living who may seek to alter traditional ideologies, transform existing imbalances of power, or change the identities of the living and the dead (Cannon 1989; Hodder 1984; Parker Pearson 1982). Therefore, they would argue, it is not appropriate to infer social organization from these remains. Efforts should, instead, be directed toward understanding the symbolic dimension of mortuary behavior (Carr 1995). Despite these criticisms, most archaeologists still find the processual approach useful (Byrd and Monahan 1995), and many blend the processual method of recording variables such as those outlined by Goldstein (1981, listed above) with analytic perspectives that explore symbolic meaning and identity (Chesson 1999; Kuijt 1996).

### **3. SECONDARY DISPOSAL**

The problem examined in this paper relates to a specific kind of mortuary ritual, the intentional reburial of human remains. In such secondary burials, the body is disposed of in some manner shortly after death, but at a later, culturally determined time, the remains are retrieved and disposed of again. Rosenblatt et al. (1976) analyzed the emotional reasons behind a secondary mourning ritual. In the sixty-one society sample they used, 75% (forty-six) of the societies had secondary, or final, mourning ceremonies. In a sample of thirty-two of these societies with second mourning rites, 28% were characterized by final disposal of the human remains in conjunction with the final ceremony in of the societies (Rosenblatt et al. 1976:92-93). “[W]here final ceremonies were present, prolonged grief was less likely to be present or frequent; where final ceremonies were absent, prolonged grief was more likely to be present and frequent” (Rosenblatt et al. 1976:93). In other words, final funeral ceremonies serve as a cultural limitation on the mourning period – they are a public marker of a return to normal behavior patterns for the relatives of the deceased as well as the larger social unit affected by that individual’s demise. Rosenblatt et al. do not explicitly deal with the issue of why, in some societies, reburial of human osseous remains occurs; their concerns are more sociological in nature.

One of the earliest papers on the issue of secondary disposal is Hertz’s “The Collective Representation of Death” (1960, originally published in 1907). Hertz’s framework for a sociological-symbolic theory was rooted in Durkheimian thought. “Death has a specific meaning for the social consciousness; it is the object of a collective representation” (Hertz

1960:28). The death of an individual provides a shock to the collective consciousness of a society and marks the beginning of a period of transition for both the living and the dead. It is a rite of passage for the deceased who enters a liminal state at the time of death. Among the living, this stage is paralleled by the delay between death and the initial disposal of the corpse on the one hand and secondary disposal on the other. Hertz argued that it is not until the body has decayed that it can pass out of the liminal state; for the living this is a "painful process of disintegration and [eventual] synthesis" (Hertz 1960:86). Once the corporeal body has decayed to a greater or lesser extent, the final ceremony occurs. This final ceremony marks the admittance of the soul of the deceased into the land of the dead and is symbolically represented by the transfer of the bones from the location of initial storage to the place of secondary and final disposal. "It is only when this process is completed that the society, its peace recovered, can triumph over death" (Hertz 1960:86). Hertz contended that the corpse is used to symbolically represent the beliefs and values of a society.

The paradigm proposed by Hertz is assumed to have worldwide application, and one study did find cross-cultural support for the belief that the state of the corpse mirrors the state of the soul (Carr 1995). But not all scholars have been willing to accept Hertz's explanation. Much of the theory relating to secondary disposal has been developed through the use of single case examples (Hertz 1960; Metcalf 1981; Miles 1965). A frequent problem in the use of ethnographic analogy is that single case studies are easily offered as supporting evidence for theoretical models, which are then applied universally. Additionally, the same case studies that were used to generate the theoretical paradigm often are used to support the arguments.

Many anthropologists have criticized Hertz's approach, especially those advocating an economic/materialistic explanation for secondary disposal. Probably the earliest utilization of a materialist argument is provided in an article (Wilken 1884-5) that pre-dates Hertz's 1907 publication. Metcalf (1981:574-575) noted, "Wilken argued that the lapse of time which occurs between a death and secondary burial is simply a function of the necessity to accumulate necessary wealth" to perform burial rites. This argument, which forms the basic theoretical premise of some recent studies of secondary disposal (e.g., Metcalf 1981; Miles 1965), implies that secondary disposal exists because in certain societies funerals are elaborate and expensive rituals requiring that money be saved for some time before the ritual can be conducted. Since death often is sudden and unexpected, and people do not plan ahead for their funerals as they might do for weddings, the preparation for a funeral usually commences with a death. This materialistic explanation is more applicable to the interim period, and variation in the length of time between initial and secondary disposal, than it is to why secondary disposal occurs in the first place, and why there is so much variability in the behavior.

In "Meaning and Materialism: The Ritual Economy of Death," Metcalf examined the effects of culture change, especially in the arena of economics, on the scale and pattern of secondary disposal among the Berewan. Initially he adopted an economic theory along the lines discussed by Wilken and Miles, but in the end he found this approach to be unsatisfactory. "What most distinguishes *nulang* and similar rites is that they involve manipulation of the

remains of the deceased, including moving them from a place of temporary storage to some final resting place. There is nothing in the economics of the rites that explains this feature." (1981:576). Metcalf then turned to Hertz to find an explanation for the variation in the form of secondary burials. Hertz argued that the corpse and human osseous remains manipulated in reburials are symbolic of the cultural system that practices such rituals. Goodale (1985) extended this theme with her discussion of how concepts of person, self, and social identity among the Kaulong of Papua New Guinea are symbolized by the bones of the dead (for archaeological studies see Chesson 1999; Kuijt 1996).

Archaeologists, in particular, have sometimes turned to another pragmatic explanation for secondary disposal. Some archaeologists have suggested or assumed that the incidence of secondary disposal among hunter-gatherers is directly correlated with the degree of settlement mobility and subsistence stress (Byrd and Monahan 1995; Hofman 1985; Walthall 1999). In some cases, the implication is that secondary disposal will be low or absent among sedentary groups (Hofman 1985). Mortuary behavior of mobile hunter-gatherers is poorly documented in the ethnographic literature when compared to more complexly organized societies (Woodburn 1982), but a number of scholars have noted some patterns in disposal methods that is correlated with the nature of settlement mobility (Hofman 1985; Walthall 1999).

Binford (1980) argued that hunter-gatherer societies are characterized by a continuum of variability in organizational patterns that ranges from residentially mobile collectors to logistically mobile foragers. Residentially mobile groups make daily opportunistic foraging ventures out from their camp, then move the locations of their base camps as local resources become depleted (Binford 1980:5). Members of such societies would be likely to practice fairly expedient methods of disposal, leaving or burying the corpse close to the place of death (Hofman 1985; Walthall 1999). Primary mortuary rituals would be held, but secondary treatment of the dead would be absent. In contrast, logistically mobile foragers range over a more restricted territory and have base camps to which they return each year that are located near places with seasonally abundant and predictable resources. Such foraging groups may establish formal cemeteries for the disposal of their dead. Mortuary rituals would assert corporate group rights to the crucial resources (Goldstein 1980; Saxe 1970) and the cemetery might serve as a highly visible territorial marker (Charles and Buikstra 1983). Members of these societies then will become more concerned about returning the bodies of those who died away from the base camp during periods of seasonal dispersion (Hofman 1985; Walthall 1999). Individuals who died early during the period of seasonal dispersion, or who died at a great distance from the base camp, would most likely be defleshed or cremated to facilitate transport back to the base camp at a later time.

#### **4. METHODS**

The sample chosen for this study is the "Standard Cross-Cultural Sample" (Murdock and White 1969; hereafter SCCS) The 186 societies in the sample are well described, have been "pinpointed" to a specific time and place, and are not linguistically or culturally similar to one

another. Murdock and White also indicated the most reliable ethnographer for each society. In addition, the SCCS has been used in many cross-cultural studies and data on many traits have been coded and are readily available for use by other researchers. Most of the societies in the SCCS are included in the Human Relations Area Files (HRAF). For each SCCS society with a HRAF file, all the information in categories 764 (funeral), 765 (mourning), and 766 (deviant mortuary practices) from the focus ethnographer was collected. The focus ethnographies of SCCS not in the HRAF also were reviewed. Societies where the focus ethnography was not available in an English translation were eliminated from the study, as were societies where the ethnographic authority did not record information on the methods of disposing human remains.

Ideally in a cross-cultural study at least two individuals other than the principal investigator will read the relevant ethnographic passages and code the information. This is necessary to control for coder bias and to highlight cases that might contain ambiguous information or be problematic for other reasons. It also serves as a system of checks and balances—one coder might pick up information the other overlooks. Unfortunately, time limitations precluded this procedure in the present study. Therefore, in common with all codes produced by a single coder, the codes presented below should be taken as preliminary until replicated by another investigator.

For the purposes of this study, secondary burial is defined as a socially sanctioned *and* prescribed treatment of the deceased. A mortuary program involving secondary disposal of the deceased can be divided into two sequences:

1. The initial sequence of the treatment commences with the death or imminent death of an individual and terminates with the initial disposal.
2. The second sequence is initiated by some event independent of the death of the deceased and involves the removal of the deceased from the location of initial disposal followed by:
  - a. replacement in the initial disposal facility, or
  - b. removal to a place of secondary disposal

Sequences 1 and 2 may be included in the mortuary program for all members of the society upon death, a majority of individuals, only a minority of individuals within the society, or individuals who are not members of the society. Both sequences 1 and 2 themselves may be multi-stage, but of primary concern here was whether or not secondary disposal formed a part of the mortuary program of any society, and if so, to what extent.

One problem with secondary disposal is that, archaeologically at least, some disposal patterns may appear to be the result of a secondary disposal event when, in actuality, they are the result of a primary disposal disarticulated through natural forces. To deal with this problem, each society was coded on two separate scales. The first, secondary body/bone treatment, is a

socially sanctioned and prescribed treatment of the deceased. It involves actual physical contact between the living and the remains of the deceased, or, in a few rare instances, the curation of the remains of the deceased in a coffin and final disposal of the coffin at some later date. Secondary body/bone treatment (hereafter, secondary treatment) was originally coded as follows:

- 0 = no data.
- 1 = secondary contact with the body or bones of the deceased does not occur.
- 2 = secondary contact with the body or bones of the deceased is accorded only to individuals who are not members of the society.
- 3 = secondary contact with the body or bones of the deceased is accorded only to individuals who are members of the society, but are not resident with their group of orientation at the time of death (e.g., an adult member has married and resides with their spouse at some distance from the group of orientation; or death occurs while the individual is on a trip away from the group of orientation). The body must be returned to the group of orientation for proper burial. Incidental to the returning process, the body decomposes and secondary disposal results.
- 4 = secondary contact with the body or bones is practiced, with circumstances of death (e.g., struck by lightning, time of year) being the only determinant of whether or not it is accorded to an individual.
- 5 = secondary contact with the body or bones is the preferred means of disposal for a proportion of the population, with status, age-grade, kin, or sodality associations determining if it is accorded to an individual.
- 6 = secondary contact with the body or bones is the preferred means of disposal for all or nearly all adult members of the society.
- 7 = other form of secondary disposal.

The second coding scale is used for disarticulation. Disarticulation of human osseous remains may be due to natural forces. However, what is of interest here is disarticulation that occurs prior to final disposal and yields bones or fragments of bones not representative of all the bones in the human body potentially recoverable in the archaeological record. Disarticulation does not have to result from a secondary disposal burial event (e.g., a coffin containing the osseous remains of the deceased is disposed of in a final interment; while the osseous remains may be jumbled around, all bones would still be recoverable, given good preservation conditions). Disarticulation may also result in cases of abandonment, but it is expected that these could be separated from intentional disposal of disarticulated remains by reference to carnivore teeth marks upon the bones, marks of weathering, and dispersion patterns of the remains. Disarticulation was coded in the following manner.

- 0 = no data.
- 1 = disarticulation does not occur or is not recoverable archaeologically.
- 2 = disarticulation of human osseous remains occurs prior to final disposal, but only in the case of individuals who are not members of the society.
- 3 = disarticulation of human osseous remains occurs prior to final disposal in the case of individuals who are members of the society, but are not resident with their group of orientation at the time of death. The body must be returned to the group of orientation for proper burial. Incidental to the returning process, the body decomposes and the result is a mass of disarticulated bones, which must be disposed of.
- 4 = disarticulation of human osseous remains occurs prior to final disposal only in situations where circumstances of death dictate that the body be curated until a time that is propitious for final disposal.
- 5 = disarticulation of human osseous remains occurs prior to final disposal in a proportion of instances, with status, age-grade, kin, or sodality associations being the determining factor.
- 6 = disarticulation of human osseous remains occurs prior to final disposal in all or nearly all instances of adult deaths.
- 7 = disarticulation results from scavenger activity.

The small sizes within all the categories, except absences of secondary treatment and disarticulation, led me to collapse the original seven-point scales into two three-point scales. The latter were further manipulated to produce four dichotomies as listed below.

## 5. CODES FOR SECONDARY TREATMENT AND DISARTICULATION

### 1850. Secondary bone/body treatment: Original Scale

N	CODE	DESCRIPTION
24	.	Missing data
101	1	secondary contact with the body or bones of the deceased does not occur.
0	2	secondary contact with the body or bones of the deceased is accorded only to individuals who are not members of the society.
5	3	secondary contact with the body or bones of the deceased is accorded only to individuals who are members of the society, but are not resident with their group of orientation at the time of death (e.g., an adult member has married and resides with their spouse at some distance from the group of orientation; or death occurs while the individual is on a trip away from the group of orientation). The body must be returned to the group of orientation for proper burial. Incidental to the returning process, the body decomposes and secondary disposal results.
3	4	secondary contact with the body or bones is practiced, with circumstances of death (e.g., struck by lightning, time of year) being the only determinant of whether or not it is accorded to an individual.
13	5	secondary contact with the body or bones is the preferred means of disposal for a proportion of the population, with status, age-grade, kin, or sodality associations determining if it is accorded to an individual.
38	6	secondary contact with the body or bones is the preferred means of disposal for all or nearly all adult members of the society.
2	7	other form of secondary disposal.

**1851. Disarticulation: Scale One**

N	CODE	DESCRIPTION
24	.	Missing data
92	1	disarticulation does not occur or is not recoverable archaeologically.
0	2	disarticulation of human osseous remains occurs prior to final disposal, but only in the case of individuals who are not members of the society.
6	3	disarticulation of human osseous remains occurs prior to final disposal in the case of individuals who are members of the society, but are not resident with their group of orientation at the time of death. The body must be returned to the group of orientation for proper burial. Incidental to the returning process, the body decomposes and the result is a mass of disarticulated bones, which must be disposed of.
1	4	disarticulation of human osseous remains occurs prior to final disposal only in situations where circumstances of death dictate that the body be curated until a time that is propitious for final disposal.
17	5	disarticulation of human osseous remains occurs prior to final disposal in a proportion of instances, with status, age-grade, kin, or sodality associations being the determining factor.
33	6	disarticulation of human osseous remains occurs prior to final disposal in all or nearly all instances of adult deaths.
13	7	disarticulation results from scavenger activity.

**1852. Secondary bone/body treatment: Scale Two**

N	CODE	DESCRIPTION
24	.	Missing data
101	1	Absent
23	2	Present in a minority of cases
38	3	Present in nearly all/all cases

**1853. Disarticulation: Scale Two**

N	CODE	DESCRIPTION
24	.	Missing data
92	1	Absent
35	2	Present in a minority of cases
35	3	Present in nearly all/all cases

**1854. Secondary bone/body treatment: Scale Three**

N	CODE	DESCRIPTION
24	.	Missing data
101	1	Absent
61	2	Present

**1855. Disarticulation: Scale Three**

N	CODE	DESCRIPTION
24	.	Missing data
92	1	Absent
70	2	Present

**1856. Secondary bone/body treatment: Scale Four**

N	CODE	DESCRIPTION
24	.	Missing data
124	1	Absent or in minority of cases only
38	2	Present in nearly all/all cases

**1857. Disarticulation: Scale Four**

N	CODE	DESCRIPTION
24	.	Missing data
127	1	Absent or in minority of cases only
35	2	Present in nearly all/all cases

**6. SOME PRELIMINARY RESULTS**

Table 1 presents the data on the regional distribution of secondary treatment and disarticulation based on Scale Three. Secondary treatment is slightly less frequent in Africa and the Middle East/Northern Africa regions than in the other four regions, but the difference is not statistically significant.

**Table 1. Regional Distribution of Burial Practices**

Region	Secondary Treatment		Disarticulation	
	Absent	Present	Absent	Present
Africa	19 (73.1%)	7 (26.9%)	17 (65.4%)	9 (34.6%)
Asia	13 (61.9%)	8 (38.1%)	11 (52.4%)	10 (47.6%)
Europe	2 (66.7%)	1 (33.3%)	1 (33.3%)	2 (66.7%)
Middle East and North Africa	13 (86.7%)	2 (13.3%)	12 (80.0%)	3 (20.0%)
Russia (N. Asia)	2 (33.3%)	4 (66.7%)	2 (33.3%)	4 (66.7%)
Oceania	14 (53.85%)	12 (46.15%)	12 (46.15%)	14 (53.85%)
North America	22 (64.7%)	12 (35.3%)	17 (50.0%)	16 (50.0%)
South America	16 (51.6%)	15 (48.4%)	20 (64.5%)	11 (35.5%)

As a preliminary test of the suggestion that the incidence of secondary disposal is low in sedentary societies I cross-tabulated presence/absence of secondary treatment with Murdock and Wilson's (1972) code on the fixity of residence (*World Cultures* var. 61). The distribution in Table 2 indicates that this suggestion receives no support. In fact, if we collapse the table to compare migratory/nomadic bands against other settlement types, we find that migratory/nomadic bands are significantly *less* likely to exhibit secondary treatment than more sedentary societies (Fisher's exact test, two-tail = 0.046). This finding relates, in part, to the expedient disposal methods characteristic of the most highly mobile hunter-gatherer societies.

**Table 2. Secondary Treatment and Fixity of Residence**

Fixity of Settlement Code	Secondary Treatment	
	Absent	Present
1. Migratory/nomadic bands	21 (80.8%)	5 (19.2%)
2. Seminomadic communities	11 (52.4%)	10 (47.6%)
3. Rotating settlements	3 (50.0%)	3 (50.0%)
4. Semisedentary settlements	6 (54.6%)	5 (45.4%)
5. Impermanent settlements	9 (64.3%)	5 (35.7%)
6. Permanent settlements	51 (60.7%)	33 (39.3%)

I also tested the suggestion that secondary disposal occurs more frequently among logistically mobile hunter-gatherers than among residentially mobile hunter-gatherers (Hofman 1985, Walthall 1999). Using Murdock and Morrow's (1970) codes on the relative contribution of different subsistence practices to a society's food supply, I selected a subsample of foragers from the SCCS. I first eliminated all societies where agriculture contributed more than 10% of the food supply. From the remaining societies I removed societies where fishing contributed more than 50% of the food supply, leaving twenty-three societies with data on secondary treatment and fixity of residence. Societies coded as migratory/nomadic bands were scored as exhibiting residential mobility, while those coded as seminomadic were scored as exhibiting logistic mobility. Although logistically mobile societies are more likely to exhibit secondary

treatment than residentially mobile ones, the difference is not statistically significant (Table 3; Fisher's exact test, one-tail = 0.071).

**Table 3. Settlement Fixity and Secondary Treatment among Foragers**

Settlement Fixity	Secondary Treatment	
	Absent	Present
Residential Mobility	10	2
Logistical Mobility	5	6

Finally, I examined the possibility that secondary disposal was related to food shortages by tabulating my six codes with Dirks' (1993) codes on starvation or famine among the societies in the SCCS. There were no significant relationships between secondary treatment or disarticulation and any of Dirks' variables. The lack of association held in subsamples of foraging societies only and of societies with subsistence regimes other than foraging.

## 7. CONCLUSIONS

The analysis presented in this paper is only a small step toward a better understanding of secondary disposal. A data set has been established, but considerably more work must be done to determine the key traits connected with secondary treatment of the dead on a cross-cultural basis.

The worldwide variation in secondary disposal is considerable. What appears to be the same trait from culture to culture is, in actuality, not the same. Continued treatment of secondary disposal as a unitary behavior will constrain our understanding of the cultural processes in operation in those societies that practice reburial. Perhaps the most profitable next step would be to examine the variation on a regional basis. Intensive analyses of mortuary behaviors within a region should be conducted, concentrating on cataloguing the full range of variation for each region. Patterns emerging on this level might then be compared cross-culturally to see if any future directions for a broadly applicable theoretical approach can be discerned.

Other variables that should be taken into consideration in future cross-cultural studies are inheritance or descent practices, and key resource fixity. Frechione and Scaglione (1981), following Meggitt's (1965) suggestions, have demonstrated that among tropical horticultural societies, an increase in the intensity of use of arable land resources is associated with increased discreteness of the kin groups associated with this use. Earlier, Saxe tested the hypothesis that "to the degree that corporate group rights to use and/or control crucial but restricted resources are attained and/or legitimized by means of lineal descent from the dead (i.e., lineal ties to the ancestors), such groups will maintain formal disposal areas for the exclusive disposal of their dead and conversely" (Saxe 1970:119). Goldstein (1980, 1981) retested Saxe's hypothesis and found that "not all corporate groups that control crucial and restricted resources through lineal descent will maintain formal, bounded disposal areas" (1981:61). Rather, "the evidence supporting the hypothesis suggests that if there is a formal

bounded disposal area, used *exclusively* for the dead, then the culture is probably one which has a corporate group structure in the form of a lineal descent system. The more organized and formal the disposal area is, the more conclusive the interpretation" (Goldstein 1981:61).

Clearly, there is a relationship between crucial (and most probably fixed) resources and lineal descent groups. When this relationship is legitimated by lineal ties to ancestors, it may be reinforced by the maintenance of formal disposal areas exclusively used for disposal of the dead. So there is also a relationship between crucial resource fixity, lineal descent groups, and disposal patterns. The next step is to examine cross-culturally the relationship between crucial resource fixity, lineal descent groups, and secondary disposal. However, the factors of crucial resource fixity and lineal descent group do present some problems in cross-cultural comparison. Different researchers use both terms to refer to widely different situations, demanding careful operational definitions of the terms before cross-cultural analyses can proceed.

An area of ritual variability in secondary disposal that ought to be examined cross-culturally is the symbolism of the bones themselves. Societies that practice secondary bone treatment demonstrate by this activity a greater cognitive concern with the bones. This may be communicated in the rich vocabulary used to describe the bones and/or decaying body; or it might form a key portion of the myths of the culture. Goodale (1985) has discussed how the body or bones of humans can symbolize concepts of person, self, and social identity. Among the Kaulong of New Guinea, human skulls and other bones are sometimes used as artifacts of exchange. The skull and bones come to embody the social identity of the person. This provocative suggestion is well worth studying cross-culturally. Examination of how the bones or bodies of deceased persons are manipulated and handled, and focus on what the osseous remains and corpses symbolize could shed light on such areas as political and social hierarchies, cultural constitution (i.e., "we" as distinct from the "other"), and the definition of human-ness (see also Chesson 1999).

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The CD with this issue of *World Cultures* contains the following files in the home directory:

ST85.DAT	STDS85.COD	ST85.SAV:	Secondary disposal codes
ST86.DAT	STDS86.COD	ST86.SAV:	Language and region codes
ST87.DAT	STDS87.COD	ST87.SAV:	Highest number counted codes
STDS01.COD			Corrected code file
STDS03.COD			Corrected code file
FILECDBK			Updated MAPTAB codebook
STAMPL			Updated MAPTAB codebook
WC12#1.DOC			Issue in Word 2000 format

*There are two subdirectories with files for 12(1):*

### **\inuit**

This subdirectory contains the Inuit mortuary practice files

### **\culture**

This subdirectory contains the data files for Khaltourina and Korotayev's article.

*There are five other subdirectories with files containing:*

### **\Ethnographic Atlas Revised by World Cultures**

This includes the codebook and SPSS data file for 105 variables and 1267 societies.

### **\Std Cross-Cultural Sample Manuals**

This includes codebooks and bibliography for the Standard Sample

### **\Western North American Indians Data Set**

This contains codebook and SPSS data files for the 441 variables and 172 N. A. Indian societies.

### **\World Cultures Volumes 1 to 11**

This contains subdirectories of all files of the first eleven volumes of World Cultures.

*William Divale*