IV. Theory of Style

4.1   Despite the long history of stylistic studies extending back to Classical times, it is still very difficult to find any kind of consensus about just what is meant by "style". To many people the concept seems fairly to reek of a sort of mystical, undefinable character which is really not susceptible to "scientific" analysis. In fact, to even ask for a definition of "style" is to receive vague and complex answers of the sort which generally are a symptom of ill-thought-out concepts.

In contrast, typological classification, although there is plenty of argument over methods and meaning, is a relative model of clarity. A type can be considered to be a set of attributes, and these attributes can be defined. This set can be considered to be arbitrary in Ford's sense or can be, as Spaulding does, considered to be to a degree a reflection of some kind of cultural reality. In part, this discussion over the objective reality of the type is probably at cross-purposes. But it does seem likely that the most "useful" typology in terms of a single time level would be that which most closely reflects some kind of indigenous categorization. However, it is precisely at this point that we may ask whether there is not a better way of dealing with this problem than typology. For one thing, there is little guarantee that the concept of "type" can be universally applied to artifacts without seriously compromising any ideals of simplicity and economy of explanation. One very clear example of this problem can be found in the late ceramics of the Northern Great Plains where types, as defined at least, appear to introduce as much confusion as clarity. The

partial reasons for this become apparent in looking at Deetz's
Dynamics (1965).   If a type is a consistent cluster of attributes, then for
this later Arikara pottery the concept of typology appears to be of
limited utility in a situation where such clustering is not clearly present.
It is here that treatment of style becomes even more important.

4.2   The concept of style is not new to American archaeology,
but the use of stylistic analysis has been in few places so commonly
ignored.   The apparent ambiguity of "style", coupled with a trend
toward typological solutions to problems as evident with such approaches
as the Midwestern Taxonomic System for treatment of cultures or in
artifact types (Ford 1962), effectively detoured most North American
studies from considerations of this important problem.   Important,
because "style" is really nothing more or less than the concept of
cultural system applied to art and technology.

                     As has been said, "style" is very like "culture" in its
ramifications and varying usage.   Like "culture", "style" often is used
in a popular sense to mean a kind of desired property as in "he is
cultured", "his clothes are well-styled", "stylish", or "have style".
Although, as in the case of "culture", such usage does refer to
stylistic characteristics in many cases, this cannot be considered an
adequate usage for our purposes.   In more scholarly considerations of
"style", however, we are scarcely better off.   The term "style" is used
so flexibly that there seems little common ground between the style
concept of, say, Croce, Wölfflin, and Kroeber.   Clearly we can no more
expect a clear and good definition to emerge from a collection of these
varied definitions than is the case in "Culture"(see Kroeber and

Kluckhohn 1963).   This does not mean, though, that we can fail to examine these concepts.   Each is of value as one type of approach to a common problem.   Thus at one end of the spectrum, there is the very broad and extended usage of "style".   Often this is such a broad unit that it can be defined only intuitively.   Great "cultural" styles are generally of this nature in that they include material in widely different media, often over great spans of time.   Also in the class are such terms as "baroque" when used to refer to universal evolutionary stages in artistic traditions.

Closer to the other end of the spectrum of "style", there is the use of the term for the characteristics of the work of a single artisan.   In this sense, one can speak, and quite properly so, of the style of Monet.   Yet, there are few, if any, who would use "style" only in this narrow sense.   Indeed, many use "style" without any qualification to refer to the entire range of phenomena discussed here, and strong arguments have been brought to bear in favor of this flexibility.   Nonetheless, the concept of "style" has its maximum utility at a point between these extremes.   In this sense, it is useful to distinguish units on the scale of the "Impressionist style" in the European painting tradition.

4.3   There have been numerous ways of defining such styles, however,   Many of the treatments of style in anthropology have concentrated on matters of form - in the narrower sense of design, design elements, and motifs with a generous admixture of theme.   Yet in general, form analysis alone has not been considered as sufficient as style analysis (for example, Shapiro 1953:289) since structure and

"expression" are equally important.

There are good reasons why analysis of form may be considered insufficient if we are interested in style rather than "dating" materials. Yet, even if the only reason for stylistic analysis were the definition of temporal "fossils" or guidelines, the clear delineation of structural principles would be extremely useful in that it allows yet another set of data with which to work. For example, let us take hypothetical art styles consisting of only two design treatments, an "x" and a "-". In terms of design elements, the following would all be the same style:

i)   x-, xx--, xxx---, . . .

ii)   xx, --, x--x, -xx-, xxx, . . .

iii)   xx, --. x-x-. xx-xx-. x--x--, . . . (after Chomsky 1962:21).
These artifical art styles share exactly the same features in terms of design, yet in terms of structure we can clearly distinguish them:

i)   consists of n occurrences of "x" followed by n occurrences of "-"

ii) consists of a string Z followed by a "mirror image" of Z

iii) consists of a string Z followed by the same string Z.

These "styles", if found in the same society at the same time, might, in fact, be better combined into a single style with three structural alternatives. But what if there are significant social or temporal distinctions in their occurrence? Then we would be obliterating these

"formal features" or just "features". The term "feature" may also be used in a more general sense on occasion, however, with appropriate adjectival modification, or where the meaning is clear.

Formal features may also be "motifs", but the former term has been chosen as the more general. A "motif" is generally considered here to refer to a unit which appears to have some "meaning" of undetermined nature. A motif, too, usually can occur as a unit in several different structural or formal contexts. Thus a motif is usually a fairly complex feature used in what appears to be a symbolic fashion. This concept appears to be of great utility in so-called naturalistic styles. A clear example of a motif which transcends stylistic boundaries is the "bi-lobed arrow" of the Southern Cult (Waring and Holder 1945). This aspect of "motif" is in some respects like a "micro-theme".

"Theme" itself here is considered to be extra-systemic to the concept of style. That is to say that the determination of subject matter, though it may also result from a set of rules in the culture, is not an aspect of the style itself but belongs to another system within the culture. The particular theme chosen in a given case is important, however, since this often governs the rules which are to be applied. In exactly the same way, a linguistic theory does not generally consider why a particular semantic content is chosen, but rather the proper ways of creating an acceptable utterance bearing this particular message.

The same theme may be utilized in more than one style. In the analysis below, for example, a rattlesnake theme is shared by no less than three separate styles. That snap judgments about the nature of a theme need to be avoided, particularly in an archaeological

analysis, may be seen in an illustration in The Artist in Tribal Society (Smith 1961:Plate XV, facing page 118) in which substantial variability in the treatment of a single theme can be seen on the same time level within a five-mile radius.

Finally, we find that in dealing with the analysis it may be of great value to classify certain elements and features according to their function in design and structure. Thus such terms as "filler units" and the like may greatly simplify the style statement. As Shepard (1963:267) suggests, the possibilities of this treatment deserve further investigation. This is in some ways a situation similar to the use of "complex symbols" by Chomsky (1965:82) although I remain uncertain whether this similarity is merely misleading.

4.5 In a sense, there are two different kinds of structure involved in these discussions. These are complementary, and both contribute additional information about the style. Both kinds of structure are "generative" but in two different senses of the word. For the first kind of structure, the primary search is for order of creation. Here we are interested in approaching as nearly as possible to the process of manufacture. This approach is required by our treatment of the object of art, or any other kind of "material culture", as the result of a sequence of behavior. Without the "understanding"(i.e. without a set of reasonable hypotheses, at least) of this "technical structure", many of the characteristics of any work remain unclear. We do not need to go so far as to say that the "idea" of a work of art comes into being only with the execution of the work (see the cogent discussion of this concept in Hauser 1959:233-5).

Nor do we need to follow Boas and others (see the discussion above) in tracing most of the characteristics of style to the technique. The "social" distribution of the style indicates the sharing of criteria of "correctness" which underlie technique. Nonetheless, the technical structure plays an important part in the modifications which are necessary in all levels of structure. The point and method of beginning an object will affect the finishing of the object, since any work is bounded and has limits of field and so on. For example, in the art works analyzed below, the concept of "filler" units is inferred in part from some situations in which variations in spacing seem to result in "errors" which leave too much space for the "normal" design to properly fill. The "filling" of these spaces may be accomplished by certain types of elements and features which can occur in a variety of structural relationships- almost like the joker in a deck of playing cards. In other cases, normally occurring elements may be modified (or transformed) to solve the same problem. Without some idea of technical factors, such patterning is difficult to understand.

The second kind of structure is that which underlies the sequential ordering - that is, the kind of opinions of correctness about the finished form of the work. As can be seen, this is even more difficult to approximate than the technical structure. Our hypotheses about this level of structure will be derived from the conjunction of the technical structure and the finished gorgets per se (as units of themselves).

It is here that we encounter the problem of what makes up this design structure and how to describe it. Not the least of these problems is that of different orders of art. The first really clear

discussion of this question appears to have been by Max Dessoir in 1923 (Munro 1949:193) although precedents for his division into "space arts" and "time arts" are not lacking.   Franz Boas was the first to bring attention to this classification in anthropology (1927:355). "Space arts" are those "of rest and of coexistence", while "time arts" are those "of movement and of succession"(Munro 1949:193).   Langer brought attention to substantially the same distinction under the terms "discursive" and "presentational" forms (1942:Chapter 4).   One of the major distinctions is in the manner of perceiving these two orders of art.   Arts of time such as music can control the order in which their parts are to be perceived while arts of space such as sculpture cannot completely do so.   While it is well to note the perceptual character of this distinction, discussed below, there is a very real question of whether the same kind of analysis can be applied to both sequentially ordered (time) arts and those which are not sequentially ordered (space).   It is perhaps at this point that the present methodology is weakest.

Thus, the real question is the applicability of sequential analysis to non-sequential forms.   In short, can formal and structural analysis of the type proposed here contribute to the study of space arts where more than one dimension of variability is possible? I believe the answer is a qualified yes.   First, as discussed above, all art and behavior are, in fact, products of human action in time. Although the presentational, space art may be perceived as a single unit, this is only the surface structure, the visual form of the work. As we have already seen, technical structures underlies this.   Yet, the

surface structure itself may be further analyzed, a point which will be returned to shortly. In terms of manufacture or creation, then, the work of "space" art does share major similarities with the arts of time, including language. Finally, whatever meaning is carried by art is present not in the formal or structural characteristics as such but in the theme or subject matter which is seen here as extra-systemic. Thus, the problem of generative statements in art is much more concerned with creation than with understanding or perception although semantic content can no more be ignored here than in linguistics. Semantic aspects of art, however, may be taken as given and not as internally related to the structure of a style.

Although the method of analysis may be questioned on these grounds, the general theory is unaffected. What is essentially a one-dimensional analysis has been applied here to the process by which a work of art is created. I feel that this is valid for the reason that this process is, in fact, the result of operations in time. It may, however, prove of value in the future to develop two- or three-dimensional forms of analysis for presentational arts of various kinds. So far such methods do not exist in anything but the most rudimentary forms which are presently ambiguous and analytically unsatisfying.

4.6 There is more to the design structure than merely its visual appearance. As already mentioned in the discussion of Roark (1965), the derivational process forms another level of the structure. This is something like the "deep structure" discussed for linguistics by Chomsky (1965:22-24). To illustrate this, we may take an example from the Citico style of rattlesnake gorgets. As in figure 1, the

surface structure of the body is made up of repetitive elements of various kinds forming a pattern (running from the head around the gorget) of the character ababadabccc . . . or in some cases ababababccc . . . .
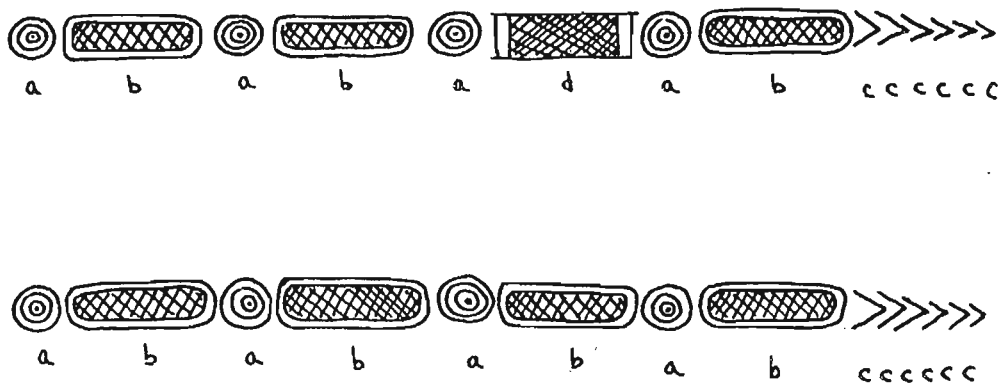

Figure 1.

There are a variety of ways in which this particular surface structure can be analyzed. For example, it might be possible to analyze this in terms of two units, a "body" unit and a "tail" unit. However, even here a number of different analyses would hold.

Figure 2 shows graphically some of the derivations possible. Both figure 2:1 and 2:2 show, in parsing form, analyses from body and tail structural units. Figure 2:3 and 2:4 show some of many different possible derivations from different kinds of structural units.
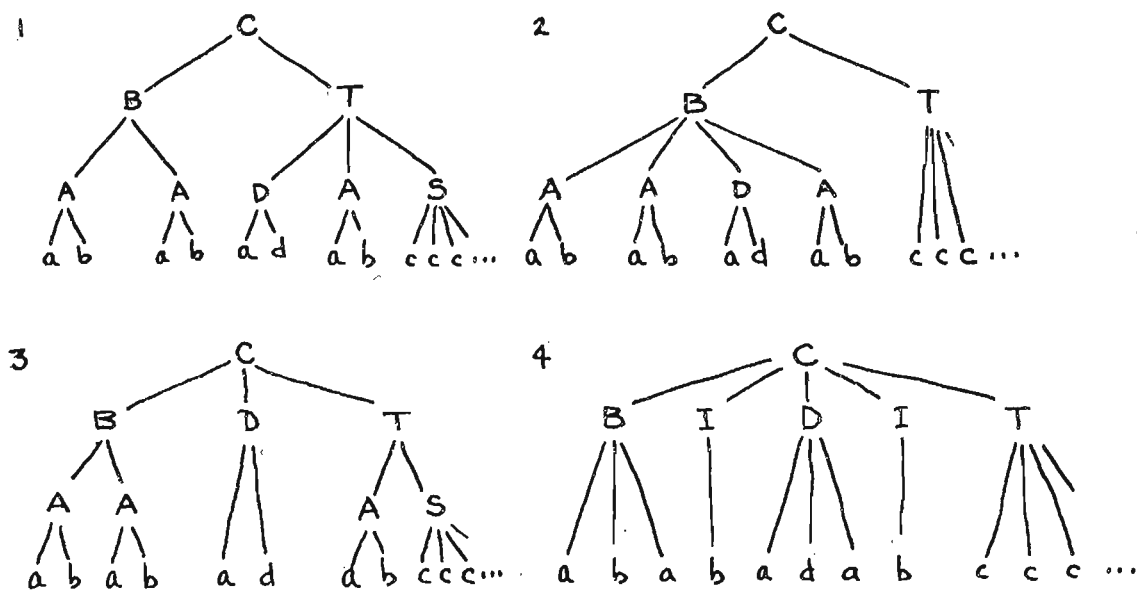
Figure 2.

Graphic presentation of this sort makes differences of the major structural relationships of each "analysis" readily apparent, but is too cumbersome and restrictive for actual presentation. The decision of which of these analyses is most useful and elegant depends on the analysis of the style as a whole, particular formal and structural factors, and sometimes, perhaps, even the history of the style.

The problems of describing the "deep" structure are many. There is a strong temptation, particularly when dealing with linearly arranged elements, to merely choose an arbitrary point of

convenience and to describe the structure with reference to this point.
For example, the body of the Lick Creek style rattlesnake gorget
analyzed below could simply be dealt with as having either the end of
the tail or the neck-body border as an arbitrary "initial" point for
description.   Thus, a particular pattern might be represented, as
follows, starting from the neck (x for cross-hatching, c for chevron,
d for vertical line, and # for terminus):

$$\#x+c-c-c+x+c-c-c+x+d-d'-d+x+c-c-c-c-c\#$$

By taking suitable transformations and rules into account, this
structure could be considered an expression of a basic four-part
structure:

$$\#-C_1-C_2-C_3-C_4\#$$

This same underlying structure is not altered if we consider the tail
end as the initial point; though, of course, the order would be reversed.
But, as we shall see, the actual derivation of the surface structure of the
body was probably accomplished by initial placement of the divider unit
(d-d'-d).   By combining the ordering of technical structure, the
structural analysis could be:

$$
B \longrightarrow C_3 - \begin{bmatrix} C_4\# \\ \\ C_1-C_2-\# \end{bmatrix} - \begin{bmatrix} C_1-C_2-\# \\ \\ C_4\# \end{bmatrix}
$$

This, likewise, is the structure C C C C.   In this description the
brackets refer only to alternative sequence.   That is, the hypothetical
relative sequence of action after the placement of the divider unit is
both indeterminable and non-significant.   The argument for this
treatment is of less significance in this type of linear arrangment than

in the case of non-linear arrangements such as the head design. In such a situation, the use of the technical structure to order the description of the design structure allows presentational, non-sequential, or "space-arts" material to be treated as the sequential human behavior which it is on another level. I am perfectly willing to accept the likelihood that more arbitrarily ordered structural descriptions are necessary for some types of art, particularly where technical structure and ordering of the type developed here is difficult or impossible to discover. Yet, in general, sequential technical ordering appears to simplify certain aspects of the statement of a style.

In a sense, we are faced with the dilemma of choosing in some cases between ordering based in spatial relationships and temporal order. The latter cannot be ignored since it directly affects the former. At the same time, there is every reason to believe that the goal in terms of spatial relationships was never lost sight of. In such a situation the solution is chosen on the basis of simplicity for the style statement as a whole.

4.7 Having dealt with the problems of form and structure in some fashion, the problem arises of the relationship of these to the theory of particular styles and style in general. As already discussed, the most economical way of stating the rules seems to be in the form of a "generative" statement like generative grammars in linguistics. It must be emphasized that the aim of generative statements is not necessarily to duplicate the actual process which took place in the mind of an artisan. Hopefully, with increasing refinement of the statement and increasing sophistication about the psychological and cultural nature

of man, such a goal might be possible in the future. For the present, however, the immediate goal is to create a set of rules which allow the greatest "elegance" of description. Such a set of rules will "generate" a set of possible configurations, some of which may never have occurred before.

The concept of "generation" is borrowed from mathematics where, for example, an ellipse is generated by the formula $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ with the origin at the center and the semi-axes $\underline{a}$ and $\underline{b}$. Now an ellipse could also be described by "typological" means by listing the co-ordinates of each of the infinite number of points on its circumference, but such a definition would be of little interest to a mathematician and would be hopelessly "inelegant". I am suggesting that attempts to treat style as a collection of features are closely analogous to this latter example from mathematics.

Take the hypothetical example of a group of art works with designs made up of three elements - $\underline{a}$, $\underline{b}$, and $\underline{c}$. Suppose that the following combinations occur:

> ab
> abab
> ababab
> abba
> abbaba
> abbaab
> ababcab
> abcab

if a type or style is defined on the basis of the presence of the two elements, $\underline{a}$ and $\underline{b}$, then all of these examples belong to a single type. If the presence of $\underline{c}$ is considered of importance for some reason, then those examples with this element may be considered to be either another type or

perhaps a variety, and so on.   If structural principles are introduced,

the situation may become even more complex.   Yet, any treatment of

this set from the viewpoint of criterial attributes or modes overlooks

what is a more interesting fact, namely that all of these may be

"generated" by the following rules:

1. $Z \rightarrow U(U)(U)$ Z = initial string

2. $U \rightarrow a + b$ U = "unit" of structure

and two transformational rules,

optional for <u>each</u> U T_1. structural description: $U + U$

structural change: $U + U \Rightarrow a+b+c+U$

optional for each U T_2. structural description: $U + U$

structural change: $U + U \Rightarrow U+b+a$

Rule 1 states that a design consists of at least one unit with up to two

more units possible.   Rule 2 states the "terminal string" of the unit.

The first transformation "embeds" an additional element in certain

contexts while the second reverses the order of derivation of the unit in

other contexts.   Attached to the statement above would be a list of the

visual forms which the terminal string takes together with possible rules

affecting a particular form according to context.   For example, if

$a = /$,

$b = \backslash$,   and

$c = |$,   then the visual forms would include

∧   ∧∧   ∧∧∧   ∧∨∧

and so on.

It must be noted in this example that the transformations as written
here are optional for <u>each</u> U meeting the contextual restrictions in
turn. This is, perhaps, a somewhat unusual application in terms of
linguistics but one which I feel is justified in description of styles.
As I have already said, there will be many such differences in
application of the rules because of the particular characteristics of
graphic arts. In general, however, the notation and method are
similar to that employed in transformational grammars (Bach 1964,
Chomsky 1963, 1964, 1965). Special symbols will be explained as
they are introduced.

A set of rules such as those given above define a
system. Although a typology or a typologically defined style might
deal with such material in a simpler fashion, such apparent "elegance"
is achieved only at the expense of adequacy and does not achieve true
elegance.

4.8   The question of levels of adequacy has already been
raised in previous chapters. There are three levels which have been
defined by Chomsky (1964:Chapter 2). The lowest level of concern is
simply to present the observed primary data correctly. This is
called "observational adequacy". A higher level of success is
obtained when the concern is with the "output" of the device, that is,
when significant generalizations about the underlying regularities of
the system are achieved. The final level of success is "explanatory
adequacy". This level is concerned with a general theory of selection
of the descriptively adequate statement of a style or language.

The analysis here faces serious problems with regard

to adequacy. It is essentially an attempt to achieve a descriptively adequate treatment of the styles, but all archaeological analyses falter on the lack of informants against which to check the "generated" forms. In part, this lack can be compensated for by analyzing large samples. Even with a large body of data, however, full descriptive adequacy remains more of an ultimate goal than an easily realizable one. Explanatory adequacy is difficult, if not impossible, at the present stage of knowledge for archaeological analysis; but reasonable hypotheses can be made for this level which may in turn be related to the increasing knowledge of the process by which man handles his culture and society. Thus the goal of achieving explanatory adequacy in archaeology, while more difficult, is not unrelated to research into this problem in other parts of anthropology, although the information which archaeology contributes may be slight, at least at the beginning.

The need for a large sample has been referred to above. This is not a reference to sample size of the type used in "frequency" or "evolutionary" seriation. Instead, the reference is to a body of data varied enough to allow adequate analysis of the variation. However, even in cases where only a few specimens are known, they still may allow analysis on a preliminary basis. In such a case, just as in those in which a more complete idea of variation can be formed, the rules are always open to revision when new specimens are found. Of course, nothing can alter the fact that "novel" output of any system of rules cannot be checked by informants in archaeology. It is important to note that exceptions are therefore all the more important since they immediately call attention to the need for revision in a statement and

direct attention to the weak parts of the statement. At the same time, as in all human behavior, we must realize that errors occur in any series of real actions. There is a fine line here between acceptable but rare possibilities and idiosyncracies produced by an unskilled craftsman. Yet another aspect introducing difficulties is the fact of innovation. Like all human activity, the total picture is complex, and few simple answers are to be expected.

In ethnographic research many of the same problems do not occur. Bunzel (1929:60 ff), for example, did check informant response to "new" work.

4.9   Media present certain problems about the breadth of the concept of style. The most important point is that no a priori judgments can be made about whether two distinct media share a common style even within a single culture. Boas saw this clearly when he wrote "that it is quite possible that in different industries, particularly when carried along by different parts of the population, quite distinctive styles may prevail"(1927:354-5). Furthermore, there is no guarantee that even in a single medium there will be only one style per culture.

Here the definition of style by its complete "generative" statement is significant in making such decisions of stylistic unity, just as it is in judging stylistic similarity in general. Of course, the likelihood of any two different media sharing the same style is directly proportional to the similarity of the media. In general, we can say that the style is one if the representations in one media show the same structure as all or part of the representations of the other and if there are a relatively few basic rules for the conversion of the forms of one

into the forms of the other. In a situation where substantial overlap occurs but each medium has some structural principles which are distinct, probably it is better in many cases to still consider these a single style with media-linked variations.

Examples of different styles in different media in a society are common, and probably the safest working assumption is that any given style is most directly associated with a single medium. This means that initial analysis will begin with material belonging to the same medium and expand from that point. The mere sharing of certain formal elements does not mean unity of style, however, a fact which is of particular importance within a single culture and society. A good example of a style which transcends media boundaries occurs on the Northwest Coast. Holm has worked out the rules for transferring the form of the "'painting' style" into the Chilkat blanket "style" (Holm 1965:Figure 5,A and B). Here, in any case, it is known that painted pattern boards were used in weaving. Another possible example of a single style in two media is that of the style in engraved shell at Etowah Mound C in Georgia and that of certain repoussé copper plates at the same site.

4.10   The social characteristics of style are of great concern to the archaeologist since these factors bear directly on the interpretations which can be made. Indeed, very few "universal laws" about style can be developed. All that is really known is that a group of objects in a certain style are the product of at least one artist. If such objects are found over a relatively broad area or seem to have some kind of time depth, generally a social group using the style can

be inferred. This is the key to the distinction made above between spatial distribution and social distinction. A style is not so much distributed in space as it is distributed over some kind of social unit. The very complexity of real styles generally guarantee that the individuals using the style are in contact with one another in some fashion approximating face-to-face relationships. This, of course, betrays my belief that particular styles are not determined wholly by cultural process, but include historical and social factors. Thus, I do not believe that two similar cultures which are isolated from one another will each develop the same style. I should not be surprised if there were numerous similarities, however. This viewpoint is supported by studies such as Bunzel's Pueblo Potter where similar cultures have different styles and workers in each style reject the structures of the others. This is not to say that the means of transmittal of styles may not be devious and indirect.

Certainly, a belief that social contact is usually necessary for transmittal of styles does not commit one to any particular interpretation of the nature of these contacts or the character of the social groups involved.

It is true as well, that in special cases an understanding of a style may be transmitted by the works of art themselves. This, however, supposes that either the style is relatively simple or that the "learner" has available sufficient examples of the style to be able to isolate both formal and structural principles. The case of Bill Reid, a modern Haida artist, cited by Holm (1965:vii) is an example of this in that his understanding of Haida art

has been achieved by the techniques of artistic and historical analysis.

The general situation, however, seems to be the transmittal of only formal features by such means. Art history is not lacking in examples of this. To name only a few, there are the derivations of the "Viking Gripping Beast" and of early Spanish, Gaulish, and British coinage from copying of Mediterranean forms. The possibility of a similar case may be found in the preliminary analysis here of the Saltville style in western Virginia and North Carolina.

The stability of a style is also related to the social group involved. When the social group producing the art is different from that using it, in whole or in part, another factor is introduced - that of the "critic". This role is by no means absent in non-literate societies as Bohannon has discussed (1961). In more complex situations, the critic may not even belong to the culture, as Bunzel (1929: 58) has pointed out in reference to white influence on Pueblo pottery. Thus, the critic can be a pressure for either stability or change.

Like the influence of the critic, other factors in the stability or change of a style appear also to be partly independent of the internal characteristics of the style. Thus, changes in religion, kinship, and so on can be reflected in styles. Not all changes will necessarily affect styles, however. There is a need to move cautiously here, because it is clear that major social disruptions can occur without leading to stylistic change. For example, there is no clear stylistic break in New England tombstones despite the social disruption of the American Revolution although other social factors may be involved (Dethlefsen and Deetz 1966).

For the same reasons, different styles in the same culture will not necessarily change at the same rate. Furthermore, there is no reason to assume that rates of change in a single style will be constant. Instead, data at hand suggests that there will be periods of rapid change followed by periods of relative stability (Kroeber 1957: 13-14, Wölfflin 1932:230, and many other discussions by art historians, anthropologists, and others).

4.11 I have certainly not tried to minimize the problems faced by anyone in the analysis of a style or in the interpretation based upon such analysis. Very real problems arise at all levels which are difficult to resolve.

The first problem in the method of analysis proposed here is that of describing the technical structure of an art work. The determination of the technique can be based in methods similar to those used in stratigraphy. Thus, if two features are "overlapped" in a two-dimensional engraving, the complete feature is interpreted as the prior feature in manufacture where this is consistent with other structural and formal factors. Thus, in the following design (figure 3) the curved line is considered

Figure 3.

to precede the horizontal lines. Some of the "other structural and formal factors" which can affect this judgment may include consistent structural relationships of other features which cause the simplest solution considering only the two features to lead to greater complexity for the total analysis. This is assuming, of course, that the simplest over-all explanation is the most likely to be correct. Unfortunately, human beings do not always do things in the simplest ways; so the technical structure remains a hypothetical construct where it cannot be tested against the actual process of manufacture. Another factor which can cause complex situations for analysis is the presence of sketching where the layout and manufacture may be quite separate operations. Here, analysis of technical structure may yield a kind of "average" which, though still useful for ordering of the analysis of design structure, may have no true reality (see for example, Shepard's discussion of this whole problem 1963: 264-6).

This leads directly into the next problem, ordering the analysis. This has already been discussed above. My defense has been essentially that, at least for the material analyzed below, the use of technical structure as an ordering hypothesis seems to result in greater power to deal with problems of spacing and structure and thereby to greater "elegance".

On the level of form, the major problem is that of what kind of analysis of the formal characteristics is most useful. For example, Bunzel discussed the breakdown of total design by the Zuni potter which goes no finer than what we have called "features" here and includes many motifs as well (1929:23). On the other hand, the Acoma

potter showed little interest in the question of any type of unit of design

smaller than the entire vessel (Bunzel 1929:35). It is also of interest

to note that Acoma potters sketch their designs before actual execution

while Zuñi potters do not (Bunzel 1929:50-51). This problem of design

analysis demonstrates the difficulty of attempts to define a universally

valid concept of an artistic "phoneme".

For this reason and others, the concept of design

element as a minimal unit is emphasized here. In turn, more complex

combinations of elements are defined largely on their value to

structural analysis. Errors in any one of these formal analyses can

seriously affect the simplicity of the total statement, so caution is again

warranted.

Yet another problem in this analysis is the conventions

used for elements and features. It might be asked whether it might not be

better to use the forms themselves rather than symbols for them.

This, however, would lead to great difficulties in the writing of the

statement, manuscript preparation, and the like, so that arbitrary letter

symbols have been used instead. In general, however, an attempt has

been made to choose these symbols for mnemonic value.

All of these difficulties are primarily a result of the

particular way that this analysis has been done. Many of these are

difficulties, too, that result from the fact that archaeological materials are

being used rather than the products of "living" styles. Nonetheless, these

problems do not seriously compromise the basic objectives of a study of

style. These objectives may in due course be met by better and more

efficient methods, but this does not affect the necessity of meeting them

with the resources at our disposal.