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Case Study : Materials and Disfiguration of Ethnographic Objects

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Case Study: Materials and Disfiguration of Ethnographic Objects

TSUNEYUKI MORITA
National Museum of Ethnology

ABSTRACT: The materials check system used at the National Museum of Ethnology and the results of a statistical analysis of the data contained in it are presented. One of the most typical elements of ethnographic artifacts is their complexity, when an object is composed of more than two materials. Another important element is the ethnographic value of "marks of usage". These correspond to the aesthetic value of works of art. Some such marks seem to be caused by either dirt or from handling, and thus have importance as explicit evidence of ways in which an artifact was used. A principal aim of ethnographic conservation should be that of conserving the function or method of using an artifact. This is just as important as the conservation of the aesthetic value of its appearance.

[**KEY WORDS:** COLLECTION SURVEY, STATISTICAL ANALYSIS OF DISFIGURATION, NATIONAL MUSEUM OF ETHNOLOGY]

1. INTRODUCTION

The Museum was established in 1974 and opened in 1977. By early-November, 1985, some 141,000 artifacts had been collected by the Museum. Of these about 100,000 had acquired in the past decade. The balance has been transferred from other institutions. Examples of all kinds of damage and problems are to be found in this collection.

During the first three years of the new institution concentrated acquisition was conducted, and most pieces were put into storage after gas fumigation and inventory registration. Only simple checks were made, since precise inspection and recording could not keep up with the increasing rate of acquisition. Only significant damage was recorded, and a limited number of items were treated. Just four or five years ago, when the rate of collection stabilized, did time become available to reinspect the collection. By then more than 100,000 items were awaiting examination. In addition, there is an average of some 7,000 acquisitions every year. This is simply too much work for one or two conservators. The situation is exacerbated by the shortage of trained ethnographic conservation specialists in Japan.

A twofold solution was devised to overcome this problem. First, a simple and clear check list system was established, with an easy to understand handbook. Second, such part-time workers as post-graduate students or persons at the equivalent level and having interest in conservation work were utilized. During the short training period of such workers typical cases of damage (or disfiguration) of each material type, as well as the parts of artifacts that require careful checking, are emphasized. This quick inspection by amateur conservators rapidly produces a minimum general survey at the possible expense of some imperfections.

However, it is understood as being just preparatory work. The data derived are stored in a computer and await a systematic consultation after statistical analysis. Needless to say, complicated, fragile or severe cases of damage or disfiguration are transferred to the conservation laboratory for more thorough examination.

2. CHECK LIST

2.1 "Complexity"

Many ethnographic artifacts are composed of more than two kinds of different materials, such as an iron knife with a wooden handle, or a bamboo frame supporting wire mesh. Artifacts composed of a single material are denoted as "single" and plural materials as "complex"; and generically as "Complexity". Damage and disfiguration is often found on a joint or at connected parts of more than two kinds of materials. "Complexity" is therefore an important factor of this check system.

2.2 "Material and Technique"

Major materials used to make ethnographic artifacts are coded. The system includes some technical classification, by artifacts or typical forms, such as basket or rope, and this is recorded as the "Material and Technique" code. This combination is mainly for convenience in restoration work as well as being a scientific support for studies in ethno-technology. There are many kinds of wooden objects, although because of the varied processing techniques independent crafts, such as a furniture carpenter, cooper, sculptor, and the like, have developed. Since restoration of ethnographic artifacts often requires the assistance of such specialized craftsmen, attention must be given in a code system to the form, fabrication techniques and function of artifacts, as well as to the materials from which they were made.

Changes in "Material and Technique" codes were sometimes required to enable untrained workers to achieve a sufficient level of efficiency. Most such changes were the division with sub-categories, or, inversely, combination of items into a simple code. (Some provisional blank codes had been prepared for such an occurrence.) Most modifications to already recorded data were processed automatically by computer. Use of the code "miscellaneous" was also convenient since all manner of problem items could be encoded prior to detailed re-checking by a specialist. Sixty-four items are coded as standards, two comprise a supplement for replicas and exceptional artistic works, and thirty-four are left blank for possible future use.

2.3 "Type of Disfiguration"

This is a sub-code of the "Material and Technique" code. Twenty-two types of disfiguration are encoded. A combination of the "Type of Disfiguration" with the "Material and Technique" code is given, for example, by "Iron (11)+Decomposition (30)=Iron rust or Iron corrosion (1130)" and "Wood (40)+Decomposition (30)=Deteriorated wood (4030)".

2.4 Other Items

The need for more precise examination, for restoration or other treatment, such as fumigation, the date of the next check, and other information is noted as additional data. However, part-time workers do not work on these data. Details of "Material and Technique" and "Type of Disfiguration" codes are shown in Appendix 1 and the check list form is in Appendix 2.

2.5 Marking Method

Checked items are marked by encircling a code number on the check list. The combination of the code for "Material and Technique" and "Type of Disfiguration", is given by joining related items with a line. A set of blank forms of two and four figures is prepared to confirm and to transcribe the code numbers. Finally, more detailed information is written or drawn in the right hand blank space of the form.

2.6 Routine Inspection Work

The main aim of this check is not to record the actual state of an artifact but to sort artifacts by their relative condition. The work is done using the naked eye assisted by only simple equipment such as a small flashlight or small magnifier. A small group of 2 or 3 persons works with only a limited type of material. They list disfigured items and sketch the disfigurement simply. Marking is done to distinguish "complex" from "single", to mark (or grade) disfigured and/or damaged items, to correlate materials and damage, to encode the damage into a four figure decimal code, reserve doubtful items for checking by a specialist, and finally to input the encoded data into a computer.

3. STATISTICAL ANALYSIS OF INSPECTION DATA

I have attempted to make a statistical analysis of artifacts and disfigurations of modern ethnographic materials. The inspection data describe above have been used to determine macroscopic problems of ethnographic conservation.

3.1 Difference between Factors

Referring to the above inspection data, the author examined the existence of difference in distribution among the following factors, using Analysis of Variances.

The factors are;

1) Factor C: "Complexity" of used materials ………………………… 2 levels
("single" and "complex")
2) Factor D: Disfiguration or damage ……………………………… 812 levels
(combination of "Material and Technique"
and "Type of Disfiguration" code)
3) Factor A: Geographical area or location of use ………………… 16 levels
(This factor is used as a reference)

3.2 Disfigurations

Lists of classified disfigurations with every "Complexity" are shown in Tables 1, 2 and 3. Table 1 shows the distribution of "single" materials, Table 2 that of "complex", and Table 3 the "total" *i.e.*, the sum of single and complex categories.

3.3 Co-relation of Factors and Their Interactions

An ANOVA (Analysis of Variances) test was used to analyze statistical interactions among the factors of Location (A), Disfiguration or damage (D) and Complexity (C).

The equations used are:

$$\begin{aligned}
\mathrm{K} &= \Sigma\Sigma\Sigma C_h \cdot D_i \cdot A_j \\
\chi_{\mathrm{C}}^2 &= \mathrm{K}^{-1} \cdot l \cdot (\Sigma C_h^2) - \mathrm{K} \\
\chi_{\mathrm{D}}^2 &= \mathrm{K}^{-1} \cdot m \cdot (\Sigma D_i^2) - \mathrm{K} \\
\chi_{\mathrm{A}}^2 &= \mathrm{K}^{-1} \cdot n \cdot (\Sigma A_j^2) - \mathrm{K} \\
\chi_{\mathrm{CD}}^2 &= \mathrm{K}^{-1} \cdot l \cdot m \cdot \{\Sigma\Sigma(C_h D_i)^2 - \mathrm{K}\} - \chi_{\mathrm{C}}^2 - \chi_{\mathrm{D}}^2 \\
\chi_{\mathrm{DA}}^2 &= \mathrm{K}^{-1} \cdot m \cdot n \cdot \{\Sigma\Sigma(A_j D_i)^2 - \mathrm{K}\} - \chi_{\mathrm{A}}^2 - \chi_{\mathrm{D}}^2 \\
\chi_{\mathrm{AC}}^2 &= \mathrm{K}^{-1} \cdot l \cdot n \cdot \{\Sigma\Sigma(A_j C_i)^2 - \mathrm{K}\} - \chi_{\mathrm{A}}^2 - \chi_{\mathrm{C}}^2 \\
\chi_e^2 &= \mathrm{K}^{-1} \cdot l \cdot m \cdot n \cdot \{\Sigma\Sigma\Sigma(C_h D_i A_j)^2 - \mathrm{K}\} - \chi_{\mathrm{C}}^2 - \chi_{\mathrm{D}}^2 - \chi_{\mathrm{A}}^2 - \chi_{\mathrm{CD}}^2 - \chi_{\mathrm{DA}}^2 - \chi_{\mathrm{AC}}^2 \\
\nu_{\mathrm{C}} &= l - 1 \\
\nu_{\mathrm{D}} &= m - 1 \\
\nu_{\mathrm{A}} &= n - 1 \\
\nu_{\mathrm{CD}} &= \nu_{\mathrm{C}} \cdot \nu_{\mathrm{D}} \\
\nu_{\mathrm{DA}} &= \nu_{\mathrm{D}} \cdot \nu_{\mathrm{A}} \\
\nu_{\mathrm{AC}} &= \nu_{\mathrm{A}} \cdot \nu_{\mathrm{C}} \\
\nu_e &= (h \cdot i \cdot j - 1) - \nu_{\mathrm{C}} - \nu_{\mathrm{D}} - \nu_{\mathrm{A}} - \nu_{\mathrm{CD}} - \nu_{\mathrm{DA}} - \nu_{\mathrm{AC}} \\
V_x &= \chi_x^2 / \nu_x^2 \\
F_x &= V_x / \nu_e ;
\end{aligned}$$

where h, i, and j correspond to the hth level data of Factor C, the ith level of Factor D and the jth of Factor A, respectively;
l, m and n correspond to the level numbers of Factors C, D and A, respectively.

The significance of the hypotheses is demonstrated when the F_x value is larger than the statistically prefixed figures.

The ANOVA (Analysis of Variances) table is given in Table 4.

					D	I	S	F	I	G	U	R	A	T	I	O	N				
		10	11	12	13	14	15	20	30	31	32	33	40	41	42	43	50	51	60	61	70
	10	1	6	5	0	2	4	48	3	0	0	4	0	27	12	3	1	0	0	2	7
	11	14	16	30	1	2	8	1051	1	1	0	29	0	108	58	8	3	0	0	4	40
	12	11	14	14	0	3	10	270	0	1	0	16	1	137	105	15	2	0	0	0	83
	13	0	0	0	0	0	1	9	0	0	0	0	0	1	9	1	0	0	0	0	1
	17	0	0	1	0	0	1	3	0	0	0	1	0	1	1	0	0	0	0	0	0
	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	20	4	6	27	0	1	0	0	0	1	0	4	0	441	28	9	0	0	0	1	11
	21	0	6	8	0	0	0	0	0	0	0	1	0	13	28	2	0	0	0	0	12
	22	75	41	212	2	3	0	1	1	1	0	21	1	231	74	9	0	0	0	3	84
M	23	34	51	98	0	13	0	0	0	0	0	6	2	135	42	7	0	0	0	2	71
	24	2	10	9	0	5	0	0	0	0	0	0	0	38	3	1	1	0	0	0	3
	29	2	0	6	0	1	0	1	0	0	0	1	0	4	4	1	0	0	0	0	1
	30	4	21	1	2	0	1	0	21	16	4	9	4	21	10	2	2	2	1	0	16
	31	0	55	14	41	0	3	0	7	25	3	18	1	9	48	69	65	57	0	1	74
	32	0	3	0	0	0	1	0	0	2	0	1	0	0	2	0	0	0	0	0	6
A	33	0	21	10	25	0	5	0	9	20	4	11	1	3	38	45	24	2	0	0	81
	34	0	5	1	8	0	0	0	1	0	0	0	1	1	1	0	0	0	0	0	2
	35	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
	36	0	1	0	0	0	0	0	1	0	0	2	0	16	3	0	0	0	0	0	12
	37	6	7	5	0	0	0	0	2	10	6	3	0	29	12	1	0	0	0	1	9
	38	98	118	52	13	0	4	0	69	91	15	68	17	192	124	34	16	1	0	1	169
T	39	1	35	7	1	0	9	0	11	8	3	28	0	23	54	7	15	0	0	1	143
	40	728	130	196	22	12	15	2	108	491	159	197	6	911	337	258	73	0	1	4	639
	41	1	7	0	0	0	1	0	1	2	2	4	1	2	6	0	2	0	0	0	7
	42	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0
	46	2	3	22	1	0	0	0	1	10	2	2	3	2	2	0	1	0	0	0	7
	47	0	1	1	0	0	0	0	0	0	1	1	0	4	3	0	2	0	0	0	8
E	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	49	2	0	1	0	0	0	0	0	0	1	0	0	1	2	0	3	0	0	0	1
	50	0	0	0	0	0	0	0	0	0	1	1	1	2	2	0	0	0	0	0	1
	51	0	2	0	1	0	0	0	0	0	1	0	2	1	2	0	1	7	0	0	1
	52	0	21	4	10	0	0	0	0	8	0	2	8	2	18	9	14	27	0	2	19
	53	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
R	54	0	54	6	3	0	0	0	2	8	1	2	136	20	98	7	1	9	4	1	4
	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	56	0	2	0	0	0	0	0	0	0	0	0	2	0	4	0	1	0	0	0	1
	57	0	1	0	0	0	0	0	0	0	0	1	5	0	0	0	0	2	0	0	0
	58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	59	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0
I	60	1	0	2	1	55	0	1	0	0	1	0	5	5	3	0	0	0	0	0	1
	61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	62	0	1	1	0	4	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	65	0	74	15	6	2	7	0	1	46	8	1	77	101	84	9	0	0	0	1	6
	66	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0
A	69	4	4	2	1	0	0	0	0	0	0	1	0	3	0	0	0	0	0	0	2
	70	0	1	0	0	0	1	0	0	1	3	0	0	0	0	0	0	0	0	0	1
	71	0	0	0	3	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0
	72	0	5	1	2	0	2	0	2	5	2	4	0	6	1	0	1	0	18	0	6
	73	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
	75	4	3	6	0	0	0	0	0	23	4	3	0	38	6	0	0	0	0	0	6
L	76	11	5	17	1	0	0	0	0	3	3	2	0	83	6	0	0	0	0	0	7
	77	0	2	9	0	0	0	0	0	1	0	3	0	60	11	0	0	0	0	0	6
	78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	80	0	1	2	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
	81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	83	0	1	1	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
	84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	90	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	91	2	4	33	0	0	0	0	0	3	0	0	2	10	4	1	1	1	0	0	13
	92	0	0	0	0	0	2	2	0	1	1	1	1	0	8	3	1	0	0	0	66

Table 1. Distribution of disfiguration ("single").

					D	I	S	F	I	G	U	R	A	T	I	O	N			
		10	11	12	13	14	15	20	30	31	32	33	40	41	42	43	50	51	60	61	70
	10	2	21	16	1	4	1	68	0	0	0	2	0	33	12	2	6	2	0	0	3
	11	21	36	113	5	3	8	3160	1	2	1	49	1	66	101	4	44	1	0	7	32
	12	6	17	46	1	0	15	511	0	1	0	12	0	49	54	12	16	0	0	2	34
	13	0	1	2	2	2	0	17	1	0	0	0	0	0	9	2	0	0	0	0	2
	17	0	19	12	0	0	3	139	0	0	0	3	0	4	5	0	3	1	0	0	0
	18	0	2	3	0	21	0	3	0	0	0	1	0	1	2	4	0	0	0	0	3
	19	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	20	1	2	12	0	1	0	0	0	0	0	3	0	47	5	0	2	0	1	0	4
	21	2	18	35	0	1	0	0	0	0	0	4	0	12	17	0	0	0	0	0	23
	22	74	44	131	0	4	0	0	2	0	1	9	1	202	52	7	1	0	0	0	64
M	23	10	7	13	0	1	0	1	0	1	0	2	1	14	8	0	0	0	0	0	10
	24	18	36	61	1	5	0	0	0	0	0	1	1	82	23	3	6	0	0	0	10
	29	3	9	59	0	0	0	9	1	1	1	3	0	71	33	0	1	20	0	0	3
	30	8	122	82	21	1	3	3	19	77	21	20	8	85	35	8	11	17	0	0	63
	31	0	88	32	71	0	3	0	7	49	8	16	5	11	39	35	44	47	0	0	40
	32	3	17	2	0	1	0	0	0	2	0	24	0	29	9	0	1	2	1	0	18
A	33	0	41	12	18	0	6	0	7	21	8	6	3	8	37	38	5	6	0	1	91
	34	1	6	11	11	0	2	0	1	4	1	1	0	0	2	0	0	0	0	0	3
	35	0	2	2	0	0	0	0	1	3	5	0	0	1	2	0	0	0	0	0	1
	36	4	1	0	0	0	0	0	0	0	0	1	0	6	1	0	0	0	0	0	7
	37	14	5	6	0	0	0	0	4	12	6	7	0	17	19	1	0	0	0	1	13
	38	272	283	171	33	7	9	1	134	306	66	120	8	265	274	25	72	26	1	9	208
T	39	2	67	35	15	0	22	1	17	22	4	73	3	30	82	8	16	3	0	1	287
	40	1336	435	550	91	35	60	4	129	941	290	385	17	1484	561	199	268	15	1	30	893
	41	21	42	14	13	11	9	1	4	21	10	10	0	55	17	3	8	1	0	1	23
	42	0	11	8	3	0	1	0	1	5	2	2	0	3	1	1	9	2	0	0	1
	46	3	30	7	11	5	0	0	2	21	5	2	5	9	3	1	1	0	0	0	3
	47	1	17	4	1	0	5	0	1	1	3	5	1	41	21	1	15	0	0	1	117
E	48	0	1	0	0	0	1	0	0	0	0	0	0	4	1	0	0	0	0	0	1
	49	3	11	14	2	0	3	0	18	19	2	36	0	21	31	3	56	0	0	2	67
	50	0	22	7	4	0	0	0	0	5	2	3	2	6	8	1	7	11	0	0	0
	51	0	95	44	32	0	0	0	0	6	4	4	63	9	73	5	6	96	1	2	7
	52	0	188	60	64	0	2	2	1	19	7	19	41	21	62	19	50	144	8	4	38
	53	0	1	1	1	0	0	0	1	2	2	0	9	0	0	0	0	2	0	0	0
R	54	1	256	70	96	12	2	0	4	56	63	23	254	67	210	45	10	35	8	14	52
	55	0	2	5	4	1	0	0	0	5	1	0	1	2	4	2	1	0	0	0	2
	56	0	4	1	0	0	0	0	0	0	0	0	2	0	3	0	0	0	1	0	1
	57	0	8	2	0	0	0	0	0	0	0	0	2	2	1	0	0	0	0	0	0
	58	0	1	0	3	0	0	0	0	0	0	0	2	1	0	0	1	0	1	0	0
	59	0	10	14	0	0	0	16	0	1	0	0	0	2	0	0	0	6	0	0	0
I	60	27	7	21	0	1033	0	1	5	2	4	11	18	335	60	2	0	0	0	0	70
	61	3	0	1	0	92	0	0	1	2	0	0	1	13	7	0	1	0	0	0	4
	62	4	3	1	1	214	0	0	0	1	0	0	20	7	6	0	0	0	0	0	8
	63	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	65	11	306	124	112	44	4	1	26	90	66	18	119	241	91	5	14	1	1	2	65
	66	1	105	86	9	1	0	0	9	13	5	4	2	255	12	0	0	0	0	0	11
A	69	30	81	34	1	9	42	0	7	4	5	2	4	99	51	0	2	0	0	0	105
	70	2	3	2	2	2	0	0	0	9	1	3	0	7	3	0	0	0	3	0	0
	71	2	10	14	74	1	3	0	0	15	11	23	0	4	4	5	0	0	40	1	1
	72	11	156	58	24	11	19	0	22	73	29	31	6	155	91	34	9	20	416	5	44
	73	0	30	144	148	5	0	1	0	31	19	1	0	6	4	2	4	4	0	0	2
	75	6	7	14	1	0	0	0	0	29	19	4	0	29	2	0	2	0	0	0	2
L	76	16	16	24	0	0	3	0	0	17	0	4	0	76	21	0	4	1	1	0	6
	77	1	10	26	0	0	0	0	0	7	1	1	0	23	5	0	0	3	0	0	8
	78	0	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	80	3	8	10	0	7	4	0	0	0	0	0	0	11	16	1	1	3	5	1	11
	81	2	2	3	4	68	0	0	0	0	1	0	0	2	1	1	0	0	0	0	0
	83	2	7	4	10	0	1	0	0	0	0	0	0	8	3	1	0	0	14	0	2
	84	1	3	3	0	2	0	0	0	0	0	0	0	2	3	0	0	0	0	0	1
	89	0	3	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0
	90	0	2	8	0	2	0	0	0	0	0	1	0	3	4	2	2	0	1	1	1
	91	13	39	322	2	9	1	0	1	6	4	0	0	32	54	13	246	9	1	2	184
	92	0	23	2	8	0	7	1	7	6	6	40	4	1	141	15	11	0	0	0	809

Table 2. Distribution of disfiguration ("complex").

					D	I	S	F	I	G	U	R	A	T	I	O	N				
		10	11	12	13	14	15	20	30	31	32	33	40	41	42	43	50	51	60	61	70
	10	3	27	21	1	6	5	116	3	0	0	6	0	60	24	5	7	2	0	2	10
	11	35	52	143	6	5	16	4211	2	3	1	78	1	174	159	12	47	1	0	11	72
	12	17	31	60	1	3	25	781	0	2	0	28	1	186	159	27	18	0	0	2	117
	13	0	1	2	2	2	1	26	1	0	0	0	0	1	18	3	0	0	0	0	3
	17	0	19	13	0	0	4	142	0	0	0	4	0	5	6	0	3	1	0	0	0
	18	0	2	3	0	21	0	3	0	0	0	1	0	1	2	4	0	0	0	0	3
	19	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	20	5	8	39	0	2	0	0	0	1	0	7	0	488	33	9	2	0	1	1	15
	21	2	24	43	0	1	0	0	0	0	0	5	0	25	45	2	0	0	0	0	35
	22	149	85	343	2	7	0	1	3	1	1	30	2	433	126	16	1	0	0	3	148
M	23	44	58	111	0	14	0	1	0	1	0	8	3	149	50	7	0	0	0	2	81
	24	20	46	70	1	10	0	0	0	0	0	1	1	120	26	4	7	0	0	0	13
	29	5	9	65	0	1	0	10	1	1	1	4	0	75	37	1	1	20	0	0	4
	30	12	143	83	23	1	4	3	40	93	25	29	12	106	45	10	13	19	1	0	79
	31	0	143	46	112	0	6	0	14	74	11	34	6	20	87	104	109	104	0	1	114
	32	3	20	2	0	1	1	0	0	4	0	25	0	29	11	0	1	2	1	0	24
A	33	0	62	22	43	0	11	0	16	41	12	17	4	11	75	83	29	8	0	1	172
	34	1	11	12	19	0	2	0	2	4	1	1	1	1	3	0	0	0	0	0	5
	35	0	3	2	0	0	0	0	1	3	5	0	0	2	2	1	0	0	0	0	2
	36	4	2	0	0	0	0	0	1	0	0	3	0	22	4	0	0	0	0	0	19
	37	20	12	11	0	0	0	0	6	22	12	10	0	46	31	2	0	0	0	2	22
	38	370	401	223	46	7	13	1	203	397	81	188	25	457	398	59	88	27	1	10	377
T	39	3	102	42	16	0	31	1	28	30	7	101	3	53	136	15	31	3	0	2	430
	40	2064	565	746	113	47	75	6	237	1432	449	582	23	2395	898	457	341	15	2	34	1532
	41	22	49	14	13	11	10	1	5	23	12	14	1	57	23	3	10	1	0	1	30
	42	0	11	8	3	0	1	0	1	5	2	2	0	3	2	1	9	4	0	0	1
	46	5	33	29	12	5	0	0	3	31	7	4	8	11	5	1	2	0	0	0	10
	47	1	18	5	1	0	5	0	1	1	4	6	1	45	24	1	17	0	0	1	125
E	48	0	1	0	0	0	1	0	0	0	0	0	0	4	1	0	0	0	0	0	1
	49	5	11	15	2	0	3	0	18	19	3	36	0	22	33	3	59	0	0	2	68
	50	0	22	7	4	0	0	0	0	5	3	4	3	8	10	1	7	11	0	0	1
	51	0	97	44	33	0	0	0	0	6	5	4	65	10	75	5	7	103	1	2	8
	52	0	209	64	74	0	2	2	1	27	7	21	49	23	80	28	64	171	8	6	57
	53	0	1	1	1	0	0	0	1	2	2	0	10	0	0	0	0	2	0	0	0
R	54	1	310	76	99	12	2	0	6	64	64	25	390	87	308	52	11	44	12	15	56
	55	0	2	5	4	1	0	0	0	5	1	0	1	2	4	2	1	0	0	0	2
	56	0	6	1	0	0	0	0	0	0	0	0	4	0	7	0	1	0	1	0	2
	57	0	9	2	0	0	0	0	0	0	0	1	7	2	1	0	0	2	0	0	0
	58	0	1	0	3	0	0	0	0	0	0	0	2	1	0	0	1	0	1	0	0
	59	0	10	14	0	0	0	16	0	1	0	0	0	5	1	0	0	6	0	0	0
I	60	28	7	23	1	1088	0	2	5	2	5	11	23	340	63	2	0	0	0	0	71
	61	3	0	1	0	92	0	0	1	2	0	0	1	13	7	0	1	0	0	0	4
	62	4	4	2	1	218	0	0	0	1	0	0	20	8	6	0	0	0	0	0	8
	63	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	65	11	380	139	118	46	11	1	27	136	74	19	196	342	175	14	14	1	1	3	71
	66	1	105	86	9	1	0	0	10	15	5	4	2	255	12	0	0	0	0	0	11
A	69	34	85	36	2	9	42	0	7	4	5	3	4	102	51	0	2	0	0	0	107
	70	2	4	2	2	2	1	0	0	10	4	3	0	7	3	0	0	0	3	0	1
	71	2	10	14	77	1	3	0	0	15	13	23	0	4	4	5	0	0	41	1	1
	72	11	161	59	26	11	21	0	24	78	31	35	6	161	92	34	10	20	434	5	50
	73	0	30	144	149	5	0	1	0	31	20	1	0	6	4	2	4	4	0	0	2
	75	10	10	20	1	0	0	0	0	52	23	7	0	67	8	0	2	0	0	0	8
L	76	27	24	41	1	0	3	0	0	20	3	6	0	159	27	0	4	1	1	0	13
	77	1	12	35	0	0	0	0	0	8	1	4	0	83	16	0	0	3	0	0	14
	78	0	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	80	3	9	12	0	7	4	0	0	0	0	0	0	12	17	1	1	3	5	1	12
	81	2	2	3	4	68	0	0	0	0	1	0	0	2	1	1	0	0	0	0	0
	83	2	8	5	11	0	1	0	0	0	0	0	0	8	3	3	0	0	14	0	2
	84	1	3	3	0	2	0	0	0	0	0	0	0	2	3	0	0	0	0	0	1
	89	0	3	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0
	90	0	2	10	0	2	0	0	0	0	0	1	0	4	4	2	2	0	1	1	1
	91	15	43	355	2	9	1	0	1	9	4	0	2	42	58	14	247	10	1	2	197
	92	0	23	2	8	0	9	3	7	7	7	41	5	1	149	18	12	0	0	0	875

Table 3. Distribution of disfiguration ("total").

Table 4. ANOVA table of 3 factors and their interactions.

	χ^2	v	V_x	F_x	F
C	7706.00	1	7706.000	125.50	254.00
D	731993.00	811	902.581	14.54	1.10*
A	146378.00	15	9758.531	158.92	2.08*
CD	158219.00	811	195.091	3.14	1.10*
DA	3402971.00	12165	279.735	4.51	1.20*
AC	36812.00	15	2454.133	39.97	2.08*
e	746990.00	12165	61.405		

χ^2: sum of squares
v : degree of freedom (DF)
V_x: mean square
F_x: F value
F : F (or Sunedecor) distribution value with DF (*standard value)
e : error
* : the asterisk denotes a 95% level of significance

As the table demonstrates, the hypothesis on an inner co-relation of elements of each level in factor C (Complexity) is negative. All other factors are significant. This means that:

(1) For the difference in the distribution of "Complexity", it is difficult to decide whether there is a larger number of complex or single objects in the National Museum of Ethnology or in daily life;

(2) The numbers of disfigured objects vary with the type of disfiguration, *i.e.*, some disfigurations occur easily whereas others are difficult to find;

(3) Factor A (Area) should be disregarde0d owing to lack of random sampling of artifacts. (*Location of artifacts in storage is fixed in order of acquisition and not by geographic area, however, acquisitions from the same place and at the same time are put into one group. Thus this may reflect in the inspected samples as a distortion of area distribution.) Factor A can therefore be used only as minor reference material for the other interactions;

(4) Co-relation between "Complexity" and type of disfigurations is evident, *i.e.*, types of disfiguration associated with the complexity should be different; and

(5) The existence of interactions between "Complexity" and geographic area, and that between type of disfigurations and geographic area are conceivable. However, because of the same reason as in case (3) above, some possibilities should be reduced from the results of calculations with high estimated values.

3.4 Confirmation of Interaction between "Disfiguration" and "Complexity"

Significant difference of the interaction of complexity and type of disfiguration is an attractive problem in the field of conservation. Therefore I re-tested the effect by using the "Likelihood Ratio" test. The factors and the levels are the same as above.

The calculation equations and the results are:

$$
\begin{array}{llcr}
+ & \Sigma\Sigma\, x_{ij} \cdot \log_e x_{ij} & = & 101132.38 \\
+ & G \cdot \log_e G & = & 205185.38 \\
- & \Sigma\; T_i \cdot \log_e T_i & = & 193614.13 \\
-) & \Sigma\; T_j \cdot \log_e T_j & = & 110663.38 \\
\hline
 & \chi^2 & = & 2040.25
\end{array}
$$

$$2\chi^2 = 4080.50; \quad \chi^2_{811}(\mathrm{p}:\ 0.005) = 917.7$$

$$\therefore \quad 2\chi^2 > \chi^2_{811}(\mathrm{p}:\ 0.005) > \chi^2_{811}(\mathrm{p}:\ 0.05);$$

where i is from 1 to numbers of levels of Factor C;
j is from 1 to numbers of levels of Factor D;
$T_i = x_{i1} + x_{i2} + \cdots\cdots\cdots + x_{in}$;
$T_j = x_{1j} + x_{2j}$; and
$G = x_{11} + x_{12} + \cdots\cdots + x_{1n} + x_{21} + x_{22} + \cdots\cdots + x_{2n}$.

The test is also significant even when the level of significance is fixed at 99.5%. Then the interaction between two factors is reconfirmed. That is, more disfigurations are likely to occur on the single object and less on the complex object, or the inverse, according to the material.

Disfigurations which occur frequently are shown in Table 3. Among them following items are exceptional:

(1) All enamel works are counted as complex; and
(2) All oil and wax paper and similar impermeable papers are counted as complex.

As Table 5 demonstrates, for each "single", "complex" and "total" case, there are three major disfigurations. In order of frequency these are, corrosion of iron (or iron rust), stickers on wood, and cracks in wood. However, it is doubtful if a old sticker *per se* is a kind of disfiguration, although it may leave marks after being removed, since a sticker provides evidence of the history of an artifact. Also the following disfigurations are evident in more "single" cases than "complex": sticker(s) on stone, sticker(s) on bamboo/cane and discoloration of textile; and in more "complex" cases than "single": peeling or flaking of paint layer(s), heavy dust over an artifact, missing or absence of wooden parts, breakage of wooden artifacts, hardening of leather, torn paper and insect attack inside bamboo/cane objects.

The list shows many "stickers", particularly in the "complex" column. These include tightly stuck paper or adhesive tape, such as price labels, old collection numbers, some index numbering tags, old scotch tape used for temporary restoration, and the like. Sometimes they may be a source of further disfiguration, by stretching fibers, yellowing or shrinking of adhesives, and by their poor appearance. The presence of labels seems to bear some relationship to the acquisition of artifacts and to the "geographical area" where it was purchased, whereas most

Table 5. Major disfiguration of material (in order of frequency).

	"Simple"	"Complex"	Total
1	Corrosion of iron	Corrosion of iron	Corrosion of iron
2	Sticker on wood	Sticker on wood	Sticker on wood
3	Crack on wood	Crack on wood	Attack on wood
4	Dust on wood	Peeling from paintings	Dust on wood
5	Insect attack on wood	Insect attack on wood	Insect attack on wood
6	Sticker on stone	Dust on wood	Peeling from paintings
7	Soiled wood	Dust on the whole	Soiled wood
8	Corrosion of copper	Soiled wood	Dust on the whole
9	Used marks on wood	Missing: wood	Corrosion of copper
10	Sticker on terra-cotta	Corrosion of copper	Missing: wood
11	Missing: terra-cotta	Broken wood	Cobwebs on wood
12	Cobwebs on wood	Hardened leather	Broken wood
13	Missing: wood	Cobwebs on wood	Sticker on stone
14	Sticker on bamboo etc.	Sticker on paintings	Sticker on bamboo etc.
15	Dust on bamboo etc.	Missing: unknown	Used marks on wood
16	Wood broken by insect	Insect attack on bamboo	Wood broken by insect
17	Dust on baskets	Broken paper	Hardened leather
18	Sticker on copper	Wood broken by insect	Sticker on terra cotta
19	Discolored cloth	Dust on baskets	Dust on baskets
20	Sticker on ceramics	Broken bamboo etc.	Broken bamboo etc.
21	Broken wood	Soiled bamboo etc.	Soiled bamboo etc.
22	Soiled bamboo etc.	Crack on bamboo etc.	Insect attack on bamboo
23	Broken bamboo etc.	Loose wood joint	Discolored cloth
24	Sticker on iron	Sticker on bamboo etc.	Broken paper
25	Mould on wood	Broken cloth	Dust on bamboo and cane

other stickers are of relatively minor importance.

4. OCCURRENCE RATIO OF DISFIGURATIONS IN "COMPLEXITY"

Using Tables 1, 2 and 3, I attempted to estimate the occurrence ratio of each disfiguration by the "single", "complex", and "total" levels. The occurrence ratio is the possibility of the occurrence of a particular event under a fixed confidence coefficient, when x times of the events in N times of experiences were observed. The equations are:

$$F_1 = F_{\{2(N-x)\}}^{\{2(x+1)\}}(P_0)$$

$$F_2 = F_{(2x)}^{\{2(N-x+1)\}}(P_0)$$

$$P_U = \{2F_1 \cdot (x+1)\} / \{2F_1 \cdot (x+1) + 2(N-x)\}$$

$$P_D = 2x / \{2F_2 \cdot (N-x+1) + 2x\}$$

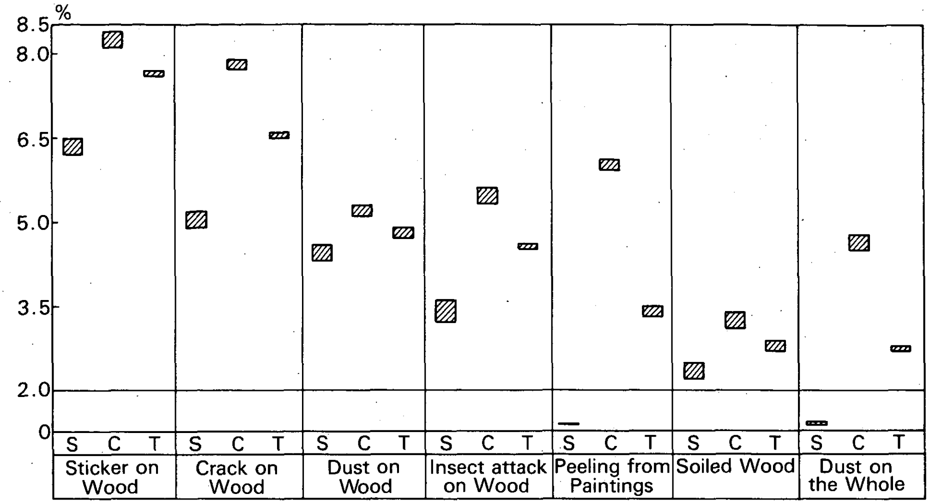


Fig. 1. Confidence interval of occurence ratio (1).

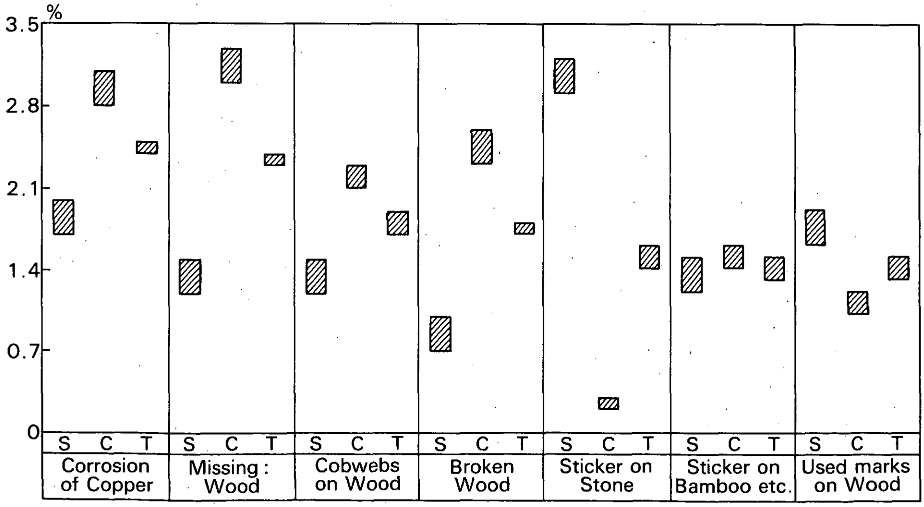
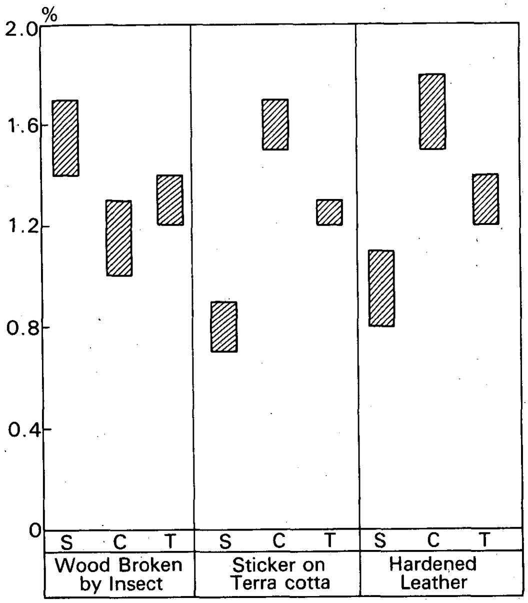


Fig. 2. Confidence interval of occurence ratio (2).



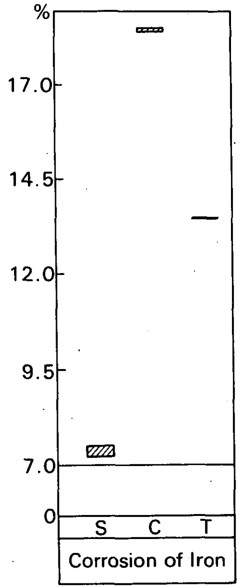


Fig. 3. Confidence interval of occurence ratio (3) (left).
Fig. 4. Confidence interval of occurence ratio (4) (right).

where F_a^a: F (or Sunedecor) distribution value with DF (degree of freedon) *a* and *b*,

P_U: upper limit of confidential interval,
P_D: lower limit of confidential interval,
P_0 : confidence coefficient,
$N=$ 14,160 for "single", 17,003 for "complex" and 31,163 for "total".

For example, when 4,211 cases of "iron corrosion" were observed in 31,163 items of checked artifacts, a confidence interval of the occurrence ratio with $P_0=0.9$ (or 90%) is between 0.135 and 0.130 (or 13.5% and 13.0%). That is, more than 13% of our collection shows "iron corrosion". The estimate is applicable to future acquisitions. Other principal results are shown in Figs. 1, 2, 3 and 4.

Figs. 1–4 provide important information on the disfiguration of objects. As shown in Fig. 5, when the lower level of the interval of event A is more than the upper level of event B, each of the two events, A and B, should belong to its own independent population.

Figs. 1–4, also show many items with blank intervals between each "single" and "complex" rectangle. Most, except for the extremely low values of the upper limit of the "single", draw the "complex" rectangle at a higher position than that of "single", and, moreover, some are also higher than those for "total". This demonstrates that more disfigurations occur in "complex" objects, and agrees well

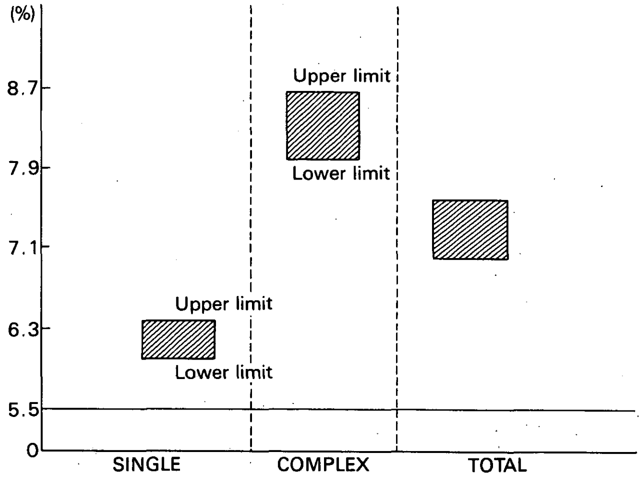


Fig. 5. Confidence interval of occurence ratio: sticker on wood.

with the result of the analysis of variance. This demonstrates that with some exceptions, the "complex" artifact is generally more sensitive to disfiguration. Marks of usage and insect attack on wooden artifacts are examples of the exceptional case.

Some reasons for this are obvious. For example, the joining of hard materials with soft ones exerts tension on the latter; or oxidation of metals is accelerated by contact with R.H.-sensitive material, such as raw wood. Another reason may be that the composition of some "complex" objects is so complicated that it is impossible to carry out a detailed yet short and frequent check in detail.

5. OCCURRENCE RATIO OF DISFIGURATIONS FOR EACH MATERIAL

The confidence interval of the occurrence ratio of disfigurations for each material is calculated. The main aim of this check is to discern a tendency of disfiguration for each material. The equations are the same as described above, basic data are the same as in Tables 1, 2 and 3, and N is the sum of objects with each different material. Since, for example, a steel saw with wooden handle is counted as one item in each of both "iron" and "wood", the sum of the materials exceeds the total number of artifacts. Only significant results with more than 10% of estimated occurrence are shown in Figs. 6, 7, and 8. General tendencies are that:

(1) Stickers are found on many materials, such as iron, stone and minerals, earthenware, ceramics, unbaked clay, palm leaf products, coconut, calabash, wood, oil-paper and related materials, papier-maché, nail or horn, shell, feather and hairs, of which, in particular, iron, stone and minerals, earthenware and shell are greater as "single" objects;

(2) Heavy dust is found on palm leaf products, papier-maché, baskets, wooden products, boxes, and tubs and casks. All these objects have uneven surfaces

					D	I	S	F	I	G	U	R	A	T	I	O	N				
		10	11	12	13	14	15	20	30	31	32	33	40	41	42	43	50	51	60	61	70
	10							*													
	11							****													
	12							**						*	*						*
	13							*							*						
	17																				
	18																				
	19																				
	20													**							
	21														*						
	22			**										**							*
M	23			*										*							
	24													**							
	29																				
	30																				
	31																				
	32																				
A	33																				
	34				*																
	35																				
	36													**							*
	37													**	*						
	38													*	*						*
T	39																				*
	40	*								*				*							*
	41																				
	42																				
	46			*																	
	47																				
E	48																				
	49																				
	50																				
	51																				
	52																				
	53																				
R	54												*		*						
	55																				
	56																				
	57																				
	58																				
	59																				
I	60					*															
	61																				
	62																				
	63																				
	65																				
	66																				
A	69																				
	70																				
	71				*																
	72																		**		
	73																				
	75									*				**							
L	76													**							
	77													**							
	78																				
	80																				
	81																				
	83																				
	84																				
	89																				
	90																				
	91			*																	
	92																				***

*** : MORE THAN 70% OF OCCURENCE RATIO
**** : MORE THAN 50% OF OCCURENCE RATIO
** : MORE THAN 30% OF OCCURENCE RATIO
* : MORE THAN 10% OF OCCURENCE RATIO

Fig. 6. Lower limit of confidence interval for each material ("single").

MATERIAL	DISFIGURATION																			
	10	11	12	13	14	15	20	30	31	32	33	40	41	42	43	50	51	60	61	70
10																				
11							****													
12							**													
13							*													
17																				
18					**															
19																				
20													*							
21																				
22			*										*							
23													*							
24			*										*							
29																				
30																				
31																				
32											*		*							*
33																				
34																				
35																				
36																				
37													*	*						
38																				
39																				*
40	*								*				*							*
41																				
42																				
46																				
47																				*
48																				
49																*				*
50																				
51																				
52																				
53																				
54																				
55																				
56																				
57																				
58																				
59																				
60					*															
61					**															
62					**															
63					*															
65		*																		
66		*	*										**							
69		*											*							*
70																				
71				**														*		
72																		*		
73			*	*																
75									*				*							
76													*							
77																				
78																				
80																				
81					*															
83																				
84																				
89																				
90																				
91			*													*				*
92														*						****

*** : MORE THAN 70% OF OCCURENCE RATIO
**** : MORE THAN 50% OF OCCURENCE RATIO
** : MORE THAN 30% OF OCCURENCE RATIO
* : MORE THAN 10% OF OCCURENCE RATIO

Fig. 7. Lower limit of confidence interval for each material ("complex").

					D	I	S	F	I	G	U	R	A	T	I	O	N				
		10	11	12	13	14	15	20	30	31	32	33	40	41	42	43	50	51	60	61	70
	10																				
	11							****													
	12							**													
	13							*							*						
	17																				
	18					**															
	19																				
	20													*							
	21																				
	22			*										*							
M	23			*										*							
	24			*										*							
	29																				
	30																				
	31																				
	32											*		*							*
A	33																				
	34																				
	35																				
	36													*							*
	37									*				*	*						*
	38																				
T	39																				*
	40	*								*				*							*
	41																				
	42																				
	46																				
	47																				*
E	48																				
	49																*				*
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	51																				
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	53																				
R	54												*								
	55																				
	56																				
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	58																				
	59																				
I	60					*															
	61					**															
	62					**															
	63					*															
	65		*																		
	66		*	*										**							
A	69		*											*							*
	70																				
	71				**														*		
	72																		*		
	73			*	*																
	75									*				*							
L	76													*							
	77													*							
	78																				
	80																				
	81					*															
	83																				
	84																				
	89																				
	90																				
	91			*													*				*
	92														*						****

*** : MORE THAN 70% OF OCCURENCE RATIO
**** : MORE THAN 50% OF OCCURENCE RATIO

** : MORE THAN 30% OF OCCURENCE RATIO
* : MORE THAN 10% OF OCCURENCE RATIO

Fig. 8. Lower limit of confidence interval for each material ("total").

so that dust can easily be entrapped and is difficult to remove. This phenomenon is quite natural; and

(3) Typical damages on each material are:
   - a) The high percentage of corrosion of iron objects;
   - b) Flaking of surface layers from enamels;
   - c) Broken and lost parts of earthenware and ceramics;
   - d) Dirt stains with soil etc. on calabash products; (probably caused by the fragility of the old materials which have not often been washed);
   - e) Cleavage and insect attack (inner tunnel) to wooden objects;
   - f) Decomposition due to the loosening of hoops on tubs and casks;
   - g) Discoloration of textiles;
   - h) Peeling or flaking of paint layers from lacquerware, granular painting, and other painted objects in general, and also loose or missing metal leaves from decorated paintings;
   - i) Breaks and tears in paper products, including papier-maché and oil-papers;
   - j) General degradation, including missing hairs (perhaps old insect attack) and hardening of furs;
   - k) Hardening of leather;
   - l) Missing portions and general degradation of fur and feather products;
   - m) Insect attack on nail, horn and similar products; and
   - n) Peeling of old adhesive layers.

Although Figs. 6, 7 and 8 show no marks with an indication of more than a 10% occurrence ratio, marks of usage occur in Tables 1, 2 and 3. Some remarkable marks of usage may change to serious damage, and others may be covered with other forms of damage.

A very high estimated interval of iron corrosion is observed. The lower limit of the interval is 75.6% ("total"). An estimated occurrence ratio in iron objects is 17.8% and the difference is less than ±0.04%. Although this is only an estimate, more than 13.4% of the artifacts used in everyday life show iron corrosion. The maximum estimation is 13.6%.

6. WHAT IS THE SUBJECT OF ETHNOGRAPHIC CONSERVATION ?

Each combination of disfigurations on materials is not unusual. Rather it is an extremely common occurrence. However, this "ordinary" occurrence is not always ordinary as a problem in ethnographic conservation. That is, in many cases "complex" objects show more than two types of disfiguration at the points of contact between more than two materials. This is a problem.

For example, as we know, whereas a lower R.H. is more suitable for metal tools it is not desirable for the wooden handle of the tool. On the other hand the ideal climate for wooden objects is in a dangerous corrosive area for metals. That is, co-existence of the ideal condition for the both materials is impossible in practice. This means that it is difficult to adhere to a severe standard for a general museum climate. Ethnographic objects require more flexible standards.

What is the main subject of conservation of ethnographic artifacts? Conservation of artistic works requires serious attention to the originality of the artist, and that of historic works to historical actualities or total respect to the original form. Then, what should be done for ethnographic artifacts? One aspect should be the ethnographic identity of the objects, but this is mainly a problem of the time of acquisition. An important subject in studies of material culture is the function of an artifact, and how it is/was used. This information is required to understand the daily lives of members of other cultures. Although, in the case of historic objects without complete form, conservation of the function is rather difficult, it is less difficult for ethnographic artifacts, because they are usually accompanied by a full set of information, and most of the objects have a complete form.

An important problem relates to marks of usage. Some contain salts, fats and other harmful sources of chemical or biological disfiguration, and other marks show an aspect of premature mechanical decomposition. Marks of usage are noted as a kind of disfiguration or degradation. Nevertheless they are good documentation of the function or method of use of an artifact. This perspective is clearly in opposition to that of removing harmful elements to satisfy the aesthetic display. Should they be left as they are? If so, how can the original materials be protected?

The Japanese are sensitive to the appearance of metal corrosion, and sometimes appreciate it as a kind of beauty or as a symbol of the history of an artifact. Many Japanese ethnographic curators have a dislike of removing rust from the surface of iron tools, since it is a mark of usage. This might also be an expression of an ethnic aesthetic. Of course, iron chloride and other active rusts should not be left on surfaces, nevertheless there exists a psychological resistance to their removal. This is one reason why Masuzawa's paper in this volume does not speak of removal (or electrolysis) of rust, but only of desalination. Recent experience demonstrates that more careful electrolysis of rust can reveal many other marks of usage under the rust layers, thus this treatment receives little resistance. Thus deciding on the type and form of treatment must be based on mutual cooperation of curators and conservators.

In general, many existing methods of conservation pay more attention to the exterior aspect, such as texture, form, and sometimes, color of the original material. But the conservation of ethnographic artifacts requires taking function in the broad sense into conservation.

Problems of "Complexity", marks of usage, and other familiar matters are only a part of the identity of ethnographic artifacts. As the aesthetic value of artifacts has become less important to ethnographic museums, new problems have arisen. The most case answers are still not available.

ACKNOWLEDGEMENTS

I wish to express my sincere thanks to the following persons of the National Museum of Ethnology who helped me prepare this paper: F.Uno (chief), M. Ujitani, and other technical staff of the storage service, who made all arrangements and preparation for establishing the check systems. In particular I wish to thank Mrs. N. Nishimura, who assisted me in almost all of the trials during the establishment of the check system and in the key operations of the computer tasks. I also thank T. Nakagawa, who made useful suggestions on computer processing.

APPENDIX 1

Check List Code

"Complexity"

10	"Simple" artifact made of one material
20	"Complex" artifact made of more than two materials

Material and Technique

10	Metal in general
11	Iron
12	Copper and its alloys
13	Aluminum
17	Metal wire and mesh
18	Enamel
19	Machine

20	Stone and minerals (in general)
21	Glass
22	Terra-cotta
23	Ceramics and earthenwares
24	Clay and its products
29	Jewels and precious stones

30	Vegetable products
31	Straw and its products (in general)
32	Palm and palm leaves
33	Vegetable mats
34	Raw leaves
35	Nuts
36	Coconut
37	Calabash
38	Bamboo, cane, vine
39	Basket objects

40	Wooden objects
41	Bark
42	Bark rope
46	Wood shavings
47	Boxes
48	Plywood
49	Tub and cask

50	Fibers
51	Yarn, thread, twine etc.
52	Rope, net, etc.
53	Lace
54	Cloth and textiles

55 Non-woven cloth and felt
56 Knitted works
57 Embroidery
58 Rubber sheet
59 Accessories of cloth

60 Paint and painting (in general)
61 Lacquerware
62 Granular pigment
63 Metal leaf
65 Paper and paper works
66 Paper with waterproof coating
69 Papier-mache

70 Animal products (in general)
71 Fur
72 Leather
73 Feather, wool and hair
75 Nail, horn, tortoise shell etc.
76 Ivory, tooth, bone etc.
77 Shell
78 Marquetry

80 Synthetic resins
81 Natural resins
83 Rubber products (except sheet)
84 Oil, fats and waxes
89 Processed foods

90 Miscellaneous
91 Unknown materials
92 General or whole (only use for "heavily covered with dirt" or "seriously damaged")

Type of Disfiguration

10 Heavy crack
11 Breakage
12 Missing
13 Deterioration
14 Separation
15 Deformation

20 Decomposition (or corrosion)

30 Mould attack
31 Insect attack
32 Missing by insect attack
33 Cobwebs

40 Discoloration
41 Sticker attached
42 Spot marks or Soiled
43 Used mark or mark of usage

50 Loose joint
51 Broken thread

60 Serious hardening
61 Oil spot

70 Thick dust
71 Dummy

00 Good condition

Inv. No. Name of Obj. Location in Storage Inspector Date

Mat. Code Complexity Disfiguration Note

Material & Technique

Results

Storage	Restoration	Fumigation	Application Control	Next Inspection	Inspection Term	Note for Next Check
					Y	
Unknown	Neces.	Neces.	No			
General	No	No	Not Ext. Loan			
Large Obj.	Inscription	Cleaning	Not Exhibit			
Arms			Only in Storage			
Lacquer	Exist	Neces.	Not for Public			
Textile	No	No				

Inspection record sheet (National Museum of Ethnology, Osaka)

APPENDIX 2

標本番号	標本名	収蔵場所 —　—　—	点検責任者	点検日

材質

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点検結果

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＜材質＞

10 単体　20 複合体

……（材質分類）……………………

10 金属　11 鉄　12 銅　13 アルミ

＊17 金網・針金　18 ホーロー　＊19 機械

20 石　21 ガラス　22 土器　23 施釉器

24 粘土　＊29 宝石類

30 植物一般　31 ワラ　32 ヤシ葉　＊33 ゴザ

34 草葉原形　35 木の実　36 ヤシ殻　37 瓢簞

38 竹・籐・葦　＊39 籠類

40 木　41 樹皮　42 樹皮テープ　46 極薄木片

＊47 箱類　＊48 合板　＊49 樋・たる・曲物

50 繊維糸　51 撚糸　＊52 縄・網・組物・その他の紐類

53 レース　54 布　55 不織布　＊56 編物

＊57 刺繡　58 衣ゴム　＊59 服飾小物

60 塗　61 漆塗　62 粉状塗　63 箔

65 紙　66 油・渋紙　＊69 張り子

70 動物一般　71 毛皮　72 鞣皮　73 羽・毛

75 爪・甲・角　76 骨・牙・歯　77 貝　＊78 象嵌・螺鈿

80 人工樹脂　81 生樹脂・接着剤　83 ゴム　84 油脂・蠟

89 加工食品

90 付属品　91 不明　92 全体　93 その他

（補助コード）

01 レプリカ　02 美術品・文書

＜点検結果＞

00 異状なし

10 亀裂

11 破損

12 欠損

13 劣化

14 剝離・接着不良

15 わん曲・変形

20 腐食・腐敗

30 カビ

31 虫害

32 虫害の破・欠・劣

33 クモの巣類

40 変色退色

41 貼紙・テープ

42 よごれ

43 使用痕

50 部材間ゆるみ

51 糸切れゆるみ

60 硬化

61 油じみ

70 ほこり

71 くもり

80 その他

＜内容＞

収蔵区分

□□

00 不明

10 一般

20 大形

30 銃剣

40 漆器

50 衣類

補修要

□

1 有

0 無

メモ有

□

1 有

0 無

くん蒸要

□

1 有

0 無

クリーニング要

□

1 有

0 無

利用規制

□□

00 規制なし

10 館外貸出不適

11 展示貸出不適

20 出庫不適

30 閲覧不適

次回点検月

月

月

月

月

点検周期

年

＊次回点検

年　月

＜次回点検注意点＞

国立民族学博物館

点検情報基本カード