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PERCUSSION AND TRANSITION

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'La faculté de sentir est la première faculté de l'âme' (Laromiguière 1826, I, 86).

This article indicates a problem which seems to relate to matters of fundamental importance in social anthropology. The present observations are tentative, and I am not in a position to construct a formal argument. Moreover, I have deliberately cited as few authorities as possible, partly for the reason that the relevant literature is so immense that I can neither list it all nor pretend to know what is best in it, and partly because the intended force of this article is that I think everybody will recognise at once what phenomena and institutions it is about and will not need any direction to pertinent facts. What I hope for especially in publishing these uncertain remarks is that colleagues will help to frame the appropriate conceptual terms for coming to grips with the large and universal matters that are at issue. Alternatively, perhaps it can be shown that there is no problem after all, or that there is a problem but that it has been badly defined. It may even be that this has all been worked out before, but I suspect that in such a case I am not the only one to be ignorant of the fact.

The problem initially presented itself in this form: why is noise that is produced by striking or shaking so widely used in order to communicate with the other world?

This formulation changed as my reflections on the question shaped themselves, and the scope of the enquiry became far wider, but let me begin with the particular puzzle which first caught my attention and which others may also find as intriguing. The starting point is the common report, encountered again and again in the ethnographical literature, that a shaman beats a drum in order to establish contact with the spirits. It is so well described, and has been so thoroughly recognised as a characteristic feature of a shaman's activities, that the question seems not to have been asked (so far, at least, as I can discover) just why he beats a drum, and why this banging noise is essential if he is to communicate with spiritual powers.

My own first recourse was to turn to Wilken's famous study of shamanism in Indonesia, and to see whether he had anything to say about the matter. He does not, it turns out, isolate this specific problem, but he does help to place the question in a wider context. He points out, namely, that a drum is beaten, not only at a shamanic séance, but also on other occasions in order to call the spirits (Wilken 1887: 479 n. 156), i.e., that drum-beating, though indeed characteristic of the shaman, is not peculiar to his office but is a widely recognised means of making contact with the spiritual world. The obvious comment, however, is that a shaman does not always beat a drum, and that neither do other people always do so when they want to communicate with the other world. But, as Eliade says in discussing shamanic ritual, 'there is always some instrument that, in one way or another, is able to

establish contact with the "world of the spirits" (1964: 179), and this in itself is surely a very curious fact.

What are these instruments? Here is a list: drum, gong, bell, cymbal, tambourine, xylophone, metallophone, rattle, rasp, stamping tube, sticks (struck against each other), sticks on stretched mats, resounding rocks, clashing anklets. No doubt this catalogue is very incomplete, but it is already impressively extensive and varied. I am not saying, of course, that these instruments are used only in order to contact the spirits, or that no other instruments are used for this purpose; but they are all, to even a casual recollection, employed in order to communicate with the other world—and they are all percussive. With this defining term, yet other means can be isolated, which strictly speaking are non-instrumental, of doing the same thing, for example, clapping, striking the palm against various surfaces of the body, or simply stamping the feet or drumming with the heels. All over the world it is found that percussion, by any means whatever that will produce it, permits or accompanies communication with the other world.

But is 'percussion' really the defining feature? It is not the most general, for the first characteristic of these instruments and procedures is simply that they generate noise. This is an interesting fact, for it is certainly not necessary that noise of any kind shall attract or greet spirits; smoke, gestures, dances, or objects such as masks or images can all do as much, and they are of course actually employed together with noise. This definition will not serve, however, for there are innumerable methods of producing noise in addition to those which we are considering. The second most general feature is that the methods in question make rhythmic noise; rhythm has already attracted sociological attention (Bücher 1899), and it is certainly a cultural phenomenon of great importance, but it is clearly not specific enough to answer to our purpose. Melody, on the other hand, is far too specific and is obviously inappropriate as a criterion; some of our noise-makers produce distinct notes and are capable of elaborating melodies or of generating other tonal effects, but others (e.g., rattles, sticks, clapping) cannot do so. This brief survey of types of noise-production is very elementary, and a long way from being exhaustive, but it is enough to confirm the first indication that the defining feature is indeed percussion.

How, next, is one to make sense of this association between percussion and the spiritual world? This is a difficult question to approach in the first place because this range of noise-makers does not (so far as I know) correspond to a standard musicological category; percussion instruments are of course commonly distinguished, but not the total range of percussive devices and procedures under consideration, since not all of these are instruments. In the second place, even familiar percussion instruments may not be grouped together in description or analysis, but they may be divided up according to material of manufacture, construction, quality of sound, origin, and so forth. For example, to take an old but eminently useful authority, the *Encyclopaedia of religion and ethics* devotes one article to 'Drums and cymbals' (Crawley 1912), another to 'Gongs and bells' (Wheeler 1913), and appends to the latter a semi-independent article on 'American bells' (Chamberlain 1913). These are in fact most interesting and valuable surveys, well worth recommending today, but together they cover only four of the fourteen types of noise-maker in my provisional classification, and the fragmentary treatment of them introduces a gratuitous source of difficulty in grappling with the

percussive instruments employed to communicate with the other world

percussion

rhythmic noise

association spiritual world?

percussion divided instruments in different groups

NEEDHAM, RODNEY
Percussion and Transition

no problem?

it is? initial problem, changed

not the only way

problem. The real difficulty, however, is presented by the problem itself, in that if the relationship in question has not been isolated before (or even if it is not commonly recognised) one then lacks the support and the stimulation, in the form of analytical terms and ideas, which the discipline otherwise normally provides. I readily admit that I do not know (although I have tried hard enough to find out) what previous work may have been done in this connexion, but I feel fairly sure that the relationship between percussion and communication with the other world is not an everyday preoccupation among social anthropologists.

There is, however, one work which is of special interest, namely the paper 'The origin of bell and drum' by Maria Dworakowska (1938). It touches on part of my present problem, and it is methodologically instructive too. Dworakowska begins with the blunt declaration: 'The bell is usually considered to be exclusively a musical or signalling instrument although this is quite erroneous' (1938: 1). (This sentence has a promising ring which reminds one that it is really Hocart or the late Lord Raglan who might best have dealt with the present problem.) She states that the bell plays a role similar to that of the drum among many peoples, and contends that there is a 'genetic union' between the two instruments. To this assimilation she adds the gong, 'a form which is as closely allied to the bell as to the drum'. Her first intention is to construct an evolutionary series, the first member of which would be the drum and the last the bell of western Europe. This is a conventional kind of ethnological aim, and intrinsically a most interesting one; but where Dworakowska engages the special attention of the social anthropologist is in her explicit rejection of museum criteria in favour of a sociological concentration on 'a striking similarity between the bell and the drum as regards the role which they play in everyday life, in magic and in religion' (1938: 9). I need not recapitulate the details in her exposition of the facts, nor her consideration of other approaches to the instruments, but will take up directly the hypothesis which she advances. Her argument is that the drum is a 'continuation of the coffin-log' (22-3), which may or may not be historically sound, but what is more immediately relevant is that Dworakowska argues centrally that 'there is a close connexion between the drum and the dead' (20-2), so that the genetic series of drum, gong, bell and cognate instruments are all characteristically part of the cult of the dead.

I have outlined this argument not only because it may not be well known, but also because of the value in Dworakowska's procedure. She deliberately ignores the materials, methods of manufacture, forms and mechanisms of the instruments in order to concentrate on their social meaning; she examines these particular instruments because of their recognised prominence in cultures all around the world; and she makes a connexion, even if not a wholly satisfactory one, between certain types of percussion instruments and the dead. Her argument is also negatively instructive, in that it does not deal with, and cannot explain, the use of so many other means of producing percussive sound; it neglects, by its essentially developmental cast, the constant factors which may be operative throughout any historical changes; and it is framed in terms which are unduly circumstantial (a certain original instrument, a certain initial religious institution) and are insufficiently general or abstract.

Dworakowska's paper, then, is an encouraging and useful example, but it is not fundamental enough. A far more promising approach, in this respect, is that of

Crawley, who writes: 'The music of the drum is more closely connected with the foundations of aurally generated emotion than that of any other instrument. It is complete enough in itself to cover the whole range of human feeling' (1912: 91). This is the right approach, I think, because it is psychological. Now it has been well enough shown, of course, that 'en aucun cas la sociologie ne saurait emprunter purement et simplement à la psychologie telle ou telle de ses propositions, pour l'appliquer telle quelle aux faits sociaux' (Durkheim [1901] 1967: xix), but the more nearly a cultural phenomenon approaches the universal the more necessary it becomes to seek the grounds of it in the general psychic characters of mankind. In the present case, the remarkably wide distribution of percussive noise-makers, employed in communication with the other world, indicates that an historical or sociological interpretation would be quite inappropriate. It is this circumstance that makes the problem especially difficult for the social anthropologist, for whereas the discipline provides notions and techniques which serve relatively well in explaining social institutions or the structure of collective representations, it provides as yet no way of understanding the elementary forms of experience. Psychology, on the other hand, has on the whole turned away from such concerns, and for obvious scientific reasons has concentrated increasingly on more limited and manipulable phenomena. Psycho-analytical work is likely in principle to be more enlightening, and that of Jung in particular is highly suggestive, but studies in this field have so far not expanded their compass to match the worldwide evidence which the anthropologist takes for granted and which must be addressed if an integral understanding of humanity is ever to be achieved.

But if Crawley's psychological (and even neurological) orientation is right, his specific proposition about the drum is not so satisfactory. We all know something of the effects of the drum because we have felt them, but is it possible, to begin with, to put the proposition to empirical test? There is no readily apparent means, at any rate, of doing so with the proposition as it stands, and to a rigidly positivistic view this would not be of any decisive value. It might then be maintained that Crawley's assertions, whatever their immediate appeal, are merely subjective and metaphorical. This criticism raises a general issue of epistemological or heuristic principle; it calls into question not only Crawley's proposition but also others of the kind which might be equally plausible and seem on other grounds to be appropriate to the type of problem. My own response to this form of objection would be that by rigidly confining oneself to empirically testable propositions one will never get very far in understanding man and his works. There are methodological justifications of this position, not to speak of other considerations of a philosophical kind, but since the issue is basically one of intellectual temper rather than resolvable argument there is little point in offering a defence here. For the present, it will suffice to concede that the position is defensible, and that Crawley's (and similar) views need not be rejected simply because it may not be possible to test them objectively.

A related criticism is that the very terms of the proposition are difficult to define: closeness of connexion, in this regard, is an extremely obscure idea; 'aurally generated emotion' is not a precise description, and it is not at all clear how the music of the drum might be 'complete', and in such a way that it might cover 'the whole range', whatever this may comprise, of human feeling. But as Kant himself writes,

music of drum and feelings:
right approach:

necessary relation to psychology

(psychology: concentrated on manipulable phenomena)

not satisfactory

may not be -

-11-75
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role of bell
to relate bell and drum

44

instrument of the cult of the dead

compares only this role

if we could not undertake anything with a concept until we had defined it, all philosophising would be in a bad way' (1787: 759n). Let me emphasise again, also, that the issue is not the suitability of the particular words that Crawley chooses to employ, nor the degree of his expository skill, nor the exactness of his observation. The difficulties of expression and interpretation encountered in his proposition about the drum are typical, it seems to me, of the generality of attempts to describe elemental feelings, and one cannot expect to begin with clear definitions of the problem. It is not so much the particular terms that cause the trouble, but the inherent difficulty in translating the phenomena into any terms at all.

But how, in this case, is one to make sense of the bangs, thumps, taps, rattles, and other reverberations which indisputably have such a wide social importance, and the individual effects of which are known. One expedient is to adopt the premise that everybody knows the subject, and that there is therefore no need to strive for a precise formulation—just as one does not bother, after all, to demonstrate the importance of sex, or to define erotic sensations. This, of course, is a position which should be adopted only when others are obviously unnecessary or have appeared unfeasible, which cannot yet be claimed in this case; but there seem nevertheless to be some grounds for adopting it. One might even suggest, indeed, that it is an unavoidable position, at some stage of the enquiry, and one that is peculiarly appropriate to the phenomena themselves. In the matter of dealing with the universal psychic appeal of a certain kind of noise, presumably the question of exact discrimination by the distinctive categories of any single culture should not be decisive. This is not the sphere of rational discourse and inference, even, but that of feeling. Admittedly, society itself defines and organises feelings, and conditions its members to respond to certain sounds rather than to others—in one society the effect will be produced by the drum, in another by the gong, and in another by clapping—but practically everywhere it is found that percussion is resorted to in order to communicate with the other world, and it is the non-cultural affective appeal of percussion which I have to try to relate to the concept of spiritual existence.

Essentially, Crawley seems to be right: drums do have the kind of effect which he attempts impressionistically to describe, and so do other percussion instruments. Gongs also have such an effect, especially perhaps the deeper ones, and similarly with bells. The effect in question is not so patent in the case of some other items in the list above, such as rattles and sticks, but all these noise-makers tend to produce a comparable affective impact. This impact is produced, let me repeat, not simply by rhythm or melody or a certain note or period of resonance, but by percussion. There is no need to go intensively into the literature on the neurological grounds of this kind of effect: apart from the common experience of percussive musical instruments, the internal quaking produced by thunder, and the similar effects of gunfire or other explosive noises which vibrate the environment are well-known. (The word 'percussion' comes from the Latin *quater*, to strike, shake.) There is no doubt that sound-waves have neural and organic effects on human beings, irrespective of the cultural formation of the latter. The reverberations produced by musical instruments thus have not only aesthetic but also bodily effects. These effects may be more or less consciously undergone, but they are in any case unavoidable. The sounds mark off points on a scale of intensity the effects of which range

from an agonising disruption of the organism down to subliminal thrills or other bodily responses which contribute to the conscious affective appreciation of the sounds. Prominent among such sounds are those produced by percussion, which may well be said to involve 'the foundations of aurally generated emotion'.

From the point of view of culture history, also, it may be important that percussive sounds are the easiest to make, and the most obviously possible; they do not depend upon special materials, techniques, or ideas, but can readily be made with the human body alone or by its abrupt contact with any hard or resonant part of the environment. In two senses, therefore, it may be concluded that percussion is a primary and elemental phenomenon.

So far, then, I have generalised one term ('noise produced by striking or shaking') in the matter under investigation, and I have placed the shaman's drum in a far wider context of percussive phenomena and their physiological effects. But this leaves a corresponding term ('communication with the other world') which then seems much too explicit and ideational to account for so general a relation.

How am I to generalise this second term? Wilken (1887) has pointed out that drums are used not only to establish contact with spirits, but also to rattle them, but this is still a form of communication with the other world. What other situations and institutionalised forms of behaviour are marked by percussion? Once the question is put in this way, it is seen that percussive devices are used in a very large number of situations other than that of contacting spirits. Dworakowska has indeed indicated the importance of bells and drums in the normal course of social life, in healing, prophylaxis, hunting, warfare, funerals, etc. (1931: 9-12); and one has only to review ethnographical literature to appreciate that percussion is typical of a remarkably wide range of other situations such as birth, initiation, marriage, accession to office, sacrifice, lunar rites, calendrical feasts, declaration of war, the return of head-hunters, the reception of strangers, the inauguration of a house or a communal building, market days, sowing, harvest, fishing expeditions, epidemics, eclipses, and so on. Often the instruments are identified with the events, and are themselves the material symbols of them; their players may be not just normal participants but indispensable officiants at the rites and ceremonies which are distinguished by the sounds.

What is it that these events have in common? Obviously that they are rites de passage. In other words, the class of noise-makers is associated with the formal passage from one status or condition to another. Once again, though, I am not saying that such rites cannot be accomplished without percussive noise-makers, or that only such devices are used to mark them, but simply that there is a constant and immediately recognisable association between the type of sound and the type of rite. What I am proposing, namely, is that there is a significant connexion between percussion and transition.

This, I suggest, is the definitive relation, and the nature of the connexion is the real problem. There is certainly no intrinsic relationship between the phenomena, yet the association is too firm for the answer to be sought in the contingent particulars of cultural tradition. An obvious and conventional resort is to look at other usual means of marking the transition from one category to another. One such expedient is the use of a special vocabulary (van Gennep 1909: 241; [1960: 169]; cf. 1908), which might even be thought formally comparable, to some slight

but these are two different problems!
- relation with other world
- psychological effects

history:
percussive sounds series
- they don't?

the problem of relations with other world

"troume"
what other situations?
(bells: all!)

34-

all are rites the passage

connexion between percussion and transition
- mix
- wit

...that, in that it involves the production of distinctive sounds. Another means is the assumption of special clothes, ornaments, or masks—or alternatively the divestiture of all such external distinctions; and yet another is to change location, so that the passage from one social or mystical status to another is symbolised, as van Gennep shows, by a territorial passage. But these comparisons are not helpful, for a number of reasons; firstly, these institutions are individually less general and more variable than the feature of percussion; secondly, they themselves are severally and typically accompanied by percussive sounds; and, thirdly, they are simply alternative means of marking transition, so that they merely pose the same fundamental problem but in more complex forms. Moreover, they actually lead away from the specific question, in that they demand an analysis of transition rites as such. But the necessary feature of transition will equally inescapably be marked in some way or other (i.e., not only by a tripartite ritual), and the question posed here is why precisely percussion should be so prominently and so very widely employed as a specially suitable kind of marker. The answer is not going to be arrived at, I suspect, by this kind of comparison, for the things compared in this case belong to different orders. On the one hand the institutions (beating of drums, etc.) have been defined reductionally by physical criteria (sound-waves, neural responses) which have no social content, whereas on the other hand institutions (sacrifice, etc.) which are equally social have merely been classed together sociologically in a way which retains their social and contingent nature. These considerations give all the more reason to revert to 'transition' as the second term in the relation.

This offers a formally satisfactory definition of the problem, but in the end it only shows all the more clearly how profound and seemingly intractable a problem it is. What I am dealing with is the conjunction of two primal, elementary, and fundamental features: 1) the affective impact of percussion, 2) the logical structure of category-change. According to common notions, these components pertain to two quite disparate modes of apprehension: emotion and reason. Yet empirically there seems to be a significant connexion between them. This connexion cannot be derived exclusively from one or the other mode, i.e., either affectively or else logically, since by definition neither contains or implies the distinctive and irreducible features of the other. Nor is there, it would appear, anything in the social context of transition which might account externally for the connexion between these conventionally disjointed features. It would be easy enough to say that we should ignore common notions, or even a philosophically established opposition between feeling and thought, and instead consider directly the association that is postulated; but to do so would still leave an evident contrast between percussion and transition, and it is this ineluctable disparity, however defined, which frames the problem.

It seems, therefore, that one is committed to an anthropological kind of 'depth analysis', in a synoptic attempt to transcend conventional academic distinctions and to account for human phenomena, psychic and social, in their integrity. Turner (1966) and more especially Beidelman (1964; 1966a; 1966b) have provided valuable exploratory examples of this sort of investigation, and much of my own work on classification (e.g., Needham in press) has been directed by the same concern. So far, I think it will be agreed, this kind of research has served, at a theoretical level (as distinct from ethnographical interpretation) only to delineate the problems

involved, not to solve them. This at least is the position in which I find myself at this point in the face of this new problem. But I do not find such a conclusion especially dismaying, for whereas social anthropology (like psychoanalysis) has had considerable success in discerning and formulating problems, it is very much a matter of opinion whether it can be said ever to have solved any of them. In the present instance I shall be gratified if it is only thought that these problematological comments have contributed in any way to a clearer conception of the primary features of human experience, and particularly of the basic importance of feeling in dealing to terms with phenomenal reality.

Whether or not it is agreed that there is a real problem here, or that my own rather baffled observations are at all original, at least there is a methodological principle which it may prove useful for the ethnographer and the theoretical social anthropologist to keep in mind, namely to pay special attention to percussion. For the rest, I conclude simply and monotonically by restating the problem in the form of the unduly forthright and apparently unlikely hypothesis.

There is a connexion between percussion and transition.

There is a connexion between percussion and transition.

NOTES

This paper was originally given, in its present form, as a lecture at the University of Oxford in April 1967. Certain minor facts have since come to my notice which should be noted here.

1. The question why a shaman beats a drum has in fact been answered by van der Leeuw. Without posing this specific question, or considering the issue in any detail, he has briefly noted that drumming and dancing mark a state of ecstasy in the shaman (1955: 110-11).

This possibility has been gone into more fully by Francis Huxley, in a fascinating paper which was published while the present article was in press. Writing about voodoo in Haiti, he reports that 'it is the drummers who largely provoke dissociation; they are skilled in beating the signs, and by quickening, stirring, or breaking their rhythm they can usually force the trance on those [dancers] who are ready for it' (1967: 186). Sometimes the dancer collapses before he has been possessed by the commanding presence of the god; he is put on his feet by the audience, who send him out on to the dance floor again 'till the buffers of sound have their full effect' (1967).

The effect in question is said to be produced through distortions of the inner ear, an organ which modulates postural attitude, muscle tone, breathing rhythm, heartbeat, blood pressure, feelings of nausea and certain eye reflexes. Huxley convincingly proposes that 'the apparatus of drumming, dancing, and singing' can not only affect the inner ear, but is actually 'aimed at it in an effort to dislocate the waking consciousness from its organization in the body' (1967).

From what I have shown above, however, it is unfortunately plain that even a radical explanation of this kind, though very apt in Crowley would have agreed, in the case of certain institutions, does not answer to the range of phenomena and related considerations to which the shaman's drum is merely an introduction. It may be remarked incidentally that the vocational mark of a voodoo priest or priestess is a rattle (1967: 186).

2. Professor Maurice Freedman has independently furnished a splendid complement to the argument of the present article, both supporting the hypothesis and extending the range of relevant phenomena, in his observations on Chinese marriage ritual.

When the bride leaves her home and is separated from her family she is in a phase of 'transition' from which she will emerge only as her bridal chamber at the end of her journey. During this phase she may be 'possessed', according to one authority (Joann Frick), by the God of Happiness (Freedman 1967: 164). 'The special character of the transition is marked by another feature: as the procession moves off, as it arrives, and spontaneously along the route, fireworks are let off' (1967).

Freedman comments upon the little intellectual curiosity which has been raised by fireworks, and he then proposes his own provisional interpretation. Crackers are part of a series of noise-producing which stretches from salt in the fire at one end to the cannon at the other. 'Noise is used as a medium. It penetrates approaches to and separates from spirits and certain formal approaches to and separates from humans' (1967). In these instances neither the fear of evil spirits nor the expression of joy—which are motives expressed by Chinese themselves—is relevant. 'The marker (i.e., noise) is ... neutral'.

a Chinese marriage ritual

firecrackers

the noise is neutral

(a) changing of place

another question - important

we have

...on to consider further connexions of noise with syn- such as fire, light, and sound, and to suggest certain ideological components of setting off firecrackers; but it is his relational discernment of a connexion between explosions and transition which makes such a remarkable contribution to the line of enquiry taken up here. I did indeed make a reference above to the effects of gunfire 'and other explosive noises', but I had missed the fact that such sounds (percussive in the extreme) are also symbolically relevant. Yet in our own culture, after all, solemn entrances and exits are most prominently marked by explosions: a head of state is greeted with a twenty-one gun salute, and rifle volleys are fired at the graveside of a dead soldier. Marriage rites are relevant, too, for at a European wedding there is a traditional parallel to the Chinese firecrackers: pans—more recently replaced by tin cans—are tied behind the wedding carriage, where they bang, resound and clash like mad.

Now this last is a crucial fact which shows a more fundamental correspondence with firecrackers, and with cordite salutations, namely that in these cases there is no rhythm. The jangling cacophony of the pans is quite random, and the furious rattle of Chinese fireworks (numbers of which are set off at once, moreover, so that they produce bursts of overlapping reports) is equally non-rhythmical. The same is true of European transition-marking by means of firearms, for in both of the ceremonies instanced the interval between the shots is too long to compose any rhythm. What counts, therefore (and I am grateful to Freedman for having led me to see this new proof), is not rhythm, and certainly not melody, but nothing other than percussion.

The arresting convergence and mutual implications of the papers by Crawley, Dworakowska, Huxley and Freedman (on topics as initially disparate as drums and cymbals, bell and drum, voodoo, and Chinese marriage rites), together with my own tentative conspectus, seem to show at least that there really is something in the hypothesis. But this in turn only shows again that there is a real problem.

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FEMALE INFANTICIDE ON THE ARCTIC COAST

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For many years anthropologists and explorers travelling across northern North America have observed that the custom of infanticide exists in many Eskimo groups. More particularly, Stefánsson writing on the inhabitants of northern Alaska, Jenness on the Copper Eskimos, Rasmussen on the Netsilingmiut, Boas on the east Baffin Islanders and Turner on the Labrador Eskimos have vividly described this practice. Most of the observers agree on the prevalence of discrimination against female children, who are more frequently killed than male infants.

Weyer (1932: 134) has assembled demographic data on children from several Eskimo groups which show a marked preponderance of boys over girls. It is reproduced in part here:

Location of tribe	No. of girls	No. of boys	rat. per 100 boys
Cape Smyth, Alaska, 1902	14	27	12
Netsilik Eskimos, 1902	66	138	28
Quernermiut (Barren Grounds), 1929	11	24	20
Aivilingmiut (northwest coast of Hudson Bay), 1902	15	27	20

Only a high rate of female infanticide can explain this imbalanced sex ratio. The scattered observations on infanticide made by travellers are thus corroborated by statistics. Field ethnographers, impressed by the 'callousness' of Eskimo parents, have repeatedly sought explanations for these acts. Many different specific reasons have been propounded, combining statements from informants and the ethnographer's own views on the matter. Two authors have attempted more general interpretations: Weyer in his general work on the Eskimos (1932: 131-49) and Hoebel (1961: 74-9). Hoebel relates infanticide, invalidicide, senilicide and suicide and considers them to be privileged acts: approved homicide. A basic postulate, 'life is hard', and its corollary, 'the insupportability of unproductive members of society', govern these acts. 'Life is hard' is a very general statement lacking specific content. Weyer's approach is even broader. Female infanticide, which he holds to be an artificial check against population increase, he considers to be a reaction to a population problem and part of the 'population policy' of the Eskimos (1932: 131). He admits that scarcity of food sets a low maximum on the density of population in the Eskimo region (1932: 141). Unchecked, population will increase beyond the optimum. Infanticide and senilicide are essential in establishing an optimal balance between resources and society, a balance that can be expressed in quantitative terms. Weyer perceives the importance for the subject of infanticide, 'for it involves a fundamental question in racial survival which is governed by laws closely analogous to those of organic evolution' (1932: 146).