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THE SILENT INVENTOR: THE CREATION OF A SIGN LANGUAGE BY THE ONLY DEAF-MUTE ON A POLYNESIAN ISLAND.

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1.0 Introduction. The subject of this paper is a sign language developed by the only deaf-mute on Rennell, a tiny Polynesian outlier in the British Solomon Islands. According to Rennellese tradition which goes back 24 generations, no person on Rennell has ever before been deaf-mute or just unable to speak, and consequently no sign language has ever before existed on the island.

Instead of speculating and formulating possibly farfetched theories as to how a deaf-mute, suddenly placed among people communicating verbally and possessing no knowledge of any deaf sign language, might interact and communicate with his surroundings (cf. Stokoe, 1960; Trager, 1958) we now have the opportunity to study this rather unique situation in real life, in, as it were, a normal, everyday setting.

A quick run through the literature on deaf persons and their sign language clearly shows few descriptions, and fewer analyses which deal with isolated deaf or deaf-mute individuals who have grown up among audio-vocal communicators. Most likely few cases of this nature exist. It is more surprising that despite much research on deafness and increasing research on sign languages, only very little primary material exists on these matters in so-called primitive cultures. One can only make a guess as to why the extent to which linguists, anthropologists, psychologists and sociologists have taken an interest in these subjects is such a limited one.

It should hardly be necessary to point to the light one might profitably be shed on not only different sign languages with their immanent grammatical structures but also the principles according to which the coding and decoding of a given content actually function. Neither should

it be necessary to stress the important results which might emerge from such investigations when undertaken on an interdisciplinary basis in order at least partially to demolish the barriers presently immuring almost every 'distinct' field in its own one-way pursuits. One may ask, which contents in a specific culture out of the possible number of contents are transmittable and/or actually transmitted by means of a given sign language? Are there communicative limitations connected with the entire process of sign language communication? If so, what are they? Are there, e.g., social and/or religious problems inherent in the process of coding and decoding? Analyses of this nature would, and in a far more convincing way than has hitherto been the case with many investigations within the fields of cognitive anthropology and cognitive psychology, contribute valuable material for an increased understanding of human cognitive processes. Through the study of deaf persons in non-industrial societies one would furthermore have the opportunity for a close scrutiny of minorities and their possibly problematic positions in so-called primitive cultures.

Before I began my investigations of the sole deaf-mute on Rennell and the conditions in which he had to function, I naively believed that the matter could be undertaken as a sort of week-end study. It quickly appeared, however, that the task would be far more time-consuming and complicated. Time-consuming because, among other things, it involved a 45-mile hike through dense bush and forest areas with a full pack.

Further complications lay in the fact that quite a number of the signs developed by the Rennellese deaf-mute are distinctly culturally determined, which necessitated lengthy discussions before an insight into the meaning of the signs could be gained. This investigation required a thorough knowledge not only of the Rennellese language but also of the culture under study, of Rennellese social values, religion and ritual, of farming and fishing techniques, and every other aspect of the life this deaf individual shares.

2.0 Rennell, its geographical position and its contact with the outside world. Rennell is a small elevated coral atoll, approximately 55 miles long

and 10 miles across. It belongs to the British Solomon Islands. Rennell and its neighbouring island Bellona, which is much smaller than Rennell, form a Polynesian subculture in the Solomon Islands elsewhere largely Melanesian. Rennell is inhabitated by Polynesians who, according to their old tradition, reached the island 24 generations ago.

Due to their geographical position and their insignificant size these two islands have been almost totally isolated. Up until 1856 when Bishop Selwyn from the Melanesian Mission visited the island for a few hours, no white man had ever set foot on Rennell. And as late as in 1910, when the Melanesian Mission set three Melanesian missionaries ashore, outside contact had been very sporadic. The missionaries were not very successful; they were killed two days after their arrival on the island. These killings somewhat cooled the Mission's interest in the island and it was spared any missionary activities over the next 25 years. Apart from a few visits during that period, Rennell remained more or less isolated till 1938 when Christianity was formally and inevitably introduced and established. Subsequently came the cultural disintegration which all too often follows in the wake of concerted Christian attempts to dissuade and convert, mainly because the widespread lack of understanding and respect among missionaries for ancient cultures and traditions and because of their unshakable ethnocentric attitudes toward what is right and wrong. Because of World War II the Rennellese enjoyed a 10-year period in which they were left alone by the attempts of the Seven Day Adventists and the Melanesian Mission. Not until the 1950's was there a more frequent, if still sporadic contact with the outside world.

3.0 Kangobai, the deaf-mute. Before the arrival of the missionaries on Rennell and Bellona there had been no written language. On the other hand there existed a highly developed and surprisingly detailed oral tradition extending 24 generations back. According to their oral tradition there had never before existed a deaf-mute on the island, with the exception, according to that tradition, of a few cases of impaired hearing and occasional speech impediments. But Kangobai, born on Rennell (1915

± 5 years) was the first deaf-mute to take his place in formal Rennellese tradition. Likewise there was no tradition of the existence of a sign language such as the one which Kangobai uses today.

It is worth noting that in the Rennellese, considered one of the most copious Polynesian languages, there is no word for either *deaf-mute* or sign language. The Rennellese word *'aaunga,* in pre-Christian times designating arm gestures in dances, is now sometimes used to describe the hand and body motions of a deaf-mute. The expression used to describe Kangobai's manual gestures in the process of communication is *gea i te gima,* lit. 'talking with hands'. Two terms, *tugi* and *tugimokemoke,* mean 'hard of hearing' and 'very hard of hearing'. No word for 'a mute person' exists. The term *tumegi,* given to me during my inquiries for a Rennellese equivalent to the English 'dumb/mute', according to a few informants meant 'dumb' or 'mute'. However, *tumegi* has nothing to do with the state of muteness, but refers to being speechless with embarrassment.

Though I can present no medical evidence I am fully convinced that Kangobai is in fact deaf as well as mute. Several times, while walking behind him, I tested him by calling out his name from a distance of 8 to 10 feet without getting the least reaction from him.

As for his vocal capacities, opinions on Rennell diverge. Some say that he is absolutely unable to speak, whereas others maintain that he is able to utter the following words: *polo* (coconut), *trapi* (the tilapia fish), *e songo* (it/that is bad) and *tapu* (taboo). I have tried listening to Kangobai's pronounciation of these words, but have found it completely impossible to determine whether the sounds he made had any connection whatsoever with the words mentioned above. Possibly the expectation that Kangobai would indeed be able to pronounce these words might lead a listener to believe that he actually could and did.

Kangobai can write nothing but his own name. I do not know whether he is able to read, but some claim that he can read a few words.

4.0 The causes of Kangobai's deaf-muteness. Kangobai is considered to have been born a deaf-mute. Two versions explaining the causes of his condition exist on Rennell. One is 'proper', i.e. it can be told in all social

situations; the other is less so and is only told among people who know each other well. The first, 'proper' version, told me on several occasions, gives the following story as the cause of his affliction:

> While pregnant Kangobai's mother one day strolled on the island. She found a ripe coconut and picked it up. When she shook it it made a clucking sound which enraptured her, and she cried: "This coconut makes a lovely sound. I would dearly like for my son to be able to speak in the same manner." When the mother later gave birth to her son it was found, as he grew up that he could neither speak nor hear.

The point of this story is this: Kangobai's mother, in picking up the coconut and making her wish, broke a taboo restriction. Her transgression is one which can be easily appreciated by Easterners and Westerners alike; it is the faintly hubrislike desire for something not allotted to man, something beyond ordinary human powers.

The second, not so 'proper' version related on Rennell also involves taboos and sanctions by the ancient gods:

> The brother of Kangobai's grandfather had taken a bunch of bananas to his dwelling to perform a burial ceremony. At an unguarded moment Kangobai's father seized the chance to steal a handful of the bananas. The brother of Kangobai's grandfather who did not know who the blasphemous culprit was performed the ceremony in spite of the theft. When later Kangobai was born and it became clear that he could neither speak nor hear, everybody knew that this must have been meant as a punishment of Kangobai's father for the theft of bananas intended for the performance of a sacred ritual.

That story is told much less frequently and the Rennellese actually prefer not to mention it because they consider theft a highly disgraceful act.

5.0 Kangobai's social position in the Rennellese society. His handicap notwithstanding Kangobai is physically and, insofar I have been able to determine, mentally well developed. He is physically quite strong and is diligent and hard-working. He often plants large gardens and frequently

gives away food according to the Polynesian custom. He is also a skilled fisherman, who often returns with considerable quantities of fish, far more than he himself can eat. On the entire island he is known as being diligent, hard-working, and skilled at what he undertakes—and this within areas, such as fishing and gardening, which in this particular culture bring their performer social status.

Mentally, it seems to me, he is in no way retarded. The few times I have had the opportunity to work with him he has appeared quick and perceptive. This appraisal is solely based on personal evaluation since no psychological tests have been performed with him. His own countrymen, however, also consider him intelligent: *'igo 'igo*.

His interaction with the others in his village seem the best possible. He appears well liked by adults as well as children. Several times I have seen him at play with the children, as adults in the Rennellese culture usually do; and the children have in no way appeared afraid of him or uneasy in his company. When the adults sit and talk and Kangobai joins them, there is always someone who acts as his interpreter.

However, his handicap makes total integration on an equal basis in the Rennellese society impossible. He is thus not married, something which on Rennell and Bellona is rather atypical. Not to be married at some time or other after maturity has been reached is so peculiar that both my colleague, Professor Elbert, with whom I visited the island, and myself repeatedly had to answer the question of why neither of us had married. For as the Rennellese and the Bellonese often pointed out, there just had to be children who could take over our worldly possessions and perpetuate the lineage. But the general consensus on the island is that Kangobai, if given the opportunity, would like to marry. Unfortunately he has not been too successful in his attempts to rectify this social handicap, though, as is jocularly mentioned, he has had two trial marriages. If asked personally if he would like to marry, he flatly answers, "no", however.

Despite his exceptional handicap (as viewed with Rennellese eyes) Kangobai must be considered as generally accepted and relatively well integrated in the Rennellese society. Still, comments were made in which some of the Rennellese expressed their surprise or inability to appreciate

the phenomenon. A young man of 15 or 16 once said to me: "Kangobai does not speak. Everybody on the island speaks. He is the only one who doesn't". If handicapped, you are an outsider, even on Rennell, regardless of how well you are able to adjust and how well you perform your work. For, no matter how you look at it, "Kangobai does behave like a monkey!" as one of the older men once remarked to me.

6.0 Kangobai's contact with his surroundings. Kangobai had not been outside his native island until the approximate age of 42, and as a result had never been in contact with other deaf or deaf-mute persons. But in 1957, urged by his elder brother, he went to Russell Islands which are also located in the Solomon group. Here he worked for eight months on a sugar plantation, keeping the fields clean of weeds and cutting cane. Because of his untiring performance he was highly valued and he even enjoyed certain privileges not accorded his fellow workers; e.g. if he was late for work in the morning, his tobacco ration was not cut as was the case with the other workers on the plantation. According to a Bellonese informant who had worked on the same plantation in the same period, there were no other deaf-mutes either in or outside the area. Whether Kangobai during his stay on Russell Island has been in contact with others similarly afflicted is not possible to ascertain. According to the Rennellese the only difference in his sign language before he left for Russell Island and after he returned was that he had added certain signs to his regular sign-vocabulary, such as signs for money, paying taxes, aircraft, and engine.

All in all it can thus far be said that we are here dealing with a deaf sign language developed within roughly the last 50 years with neither Melanesian nor Western influence. This sign language has primarily been developed by the only deaf-mute on the island, in an attempt to communicate with the other islanders. Without their cooperation and their wish to bridge the communication gap, and on at least on a communicative basis integrate his functions with theirs, the level on which the sign language exists today would not have been attainable.

The fact that Kangobai descends from a high-status family on the island, and his own creativity and imagination, has been instrumental in

the rather high level of his integration with the rest of the Rennellese society in spite of his physical handicap. That he is a male rather than a female is likely of consequence, since females traditionally have lower status on the island; this, and the fact that he is the only person on the island thus handicapped and therefore presents no serious threat to the Rennellese society.

7. Data collection. A recurrent question concerning the field worker's preparation of his material is how to ask questions which are culturally relevant and how to avoid the worst pitfalls of ethnocentrism during the collection of data. Making culturally irrelevant inquiries will, as Samarin (1969: 9) has pointed out, ". . . have the effect of slowing down the elicitation and perhaps of undermining the informant's confidence in the researcher."

As far as the recording of sign language(s) is concerned nothing remotely similar to the linguists' *Lexicostatistical Word List* prepared by Swadesh exists (Samarin 1969: app. A). This list consists of 200 of the most common conversational words. For Kangobai's language I was thus forced to compile my own list. Such a list can hardly avoid becoming ethnocentric and therefore also culturally irrelevant, which was also the case here. For it quickly turned out that one could not simply ask about the sign for 'carry'. The term 'carry' does not exist as a general, all-inclusive term but only functions in relation to *how a given thing is carried*: on your shoulders, back, hip, or elsewhere. Linguistically this can be described in 14 different ways. The same goes for the term 'to break something'; again 17 different words exist in Rennellese. Neither can you merely inquire the sign for 'defecate' since whether the action is performed by a man or a woman determines which of two signs applies.

The collecting of data proceeded in two tempi, first during a brief stay on Rennell in March of 1972 and later during another visit to the island in July that same year. Compiling the signs used by the deaf-mute followed this procedure. Using my word list, and speaking Rennellese, I asked a man who was from the same village and who had also mastered his sign language, "What is Kangobai's sign for X?" This man

then translated my question to Kangobai. Then Kangobai, insofar he had a sign for the term in question, made the sign after his own fashion. Following this I took two photographs of him performing each single sign. The next day I went through the same word list, which was rapidly turning into a dictionary of Rennellese words/Rennellese deaf-mute signs, in the manner just described but with the additions and emendations made during the previous session. This time, however, the whole session was filmed on 8 mm super film. Partly this method was employed to gather motion picture material for analysis of the communicative use that Kangobai made of the space around him, and partly to make a more detailed analysis of the variable deviation of each sign when repeated.

Originally it was also my intention to record continuous narratives as well as connected speech and conversation, both to understand the consecutive order of some of the signs in a conversational situation and to gather data for a study of the syntax of this sign language. Time and weather conditions unfortunately did not permit me to complete this part of the investigation. Hence only fractions of narratives have been recorded.

The "rituals" of my investigation attracted quite a few curious villagers who gathered around us in large groups throughout the day. The deaf-mute and the interpreter, however, seemed largely unaffected by all this, and work proceeded in a very relaxed atmosphere. On one occasion only did we work alone and that was when we dealt with less socially acceptable terms such as those for copulation, masturbation, the peeing activities of men and women. Here I made use of the time around noon, the Rennellese siesta period, when the heat made it almost impossible to go out. The investigation of these signs took place in my hut to avoid making the deaf-mute and the interpreter the objects of derision. Poor lighting conditions inside the hut limited the taking of regular photos. This part of the investigation was also made an indoor activity for other reasons: to make sure that no sisters or brothers-in-law were around. It would have been a serious breach of Rennellese etiquette to ask for such signs to be performed in their presence. Any such violation of propriety would have resulted in the deep embarrassment of all involved and any further work might well have been jeopardized.

8.0 Results. In all, approximately 250 different signs, chosen more or less at random, were recorded.

A classification of these signs could be made in a host of different ways (there are probably as many systems of and proposals for classification as there are scientists within the field). One could for instance, following Kroeber (1958), "sample groups of signs containing a common element" such as "gestures beginning with index extended horizontally". Or one could group signs in "one-hand and two-hand gestures," or, as seems to be in vogue at present, one could divide signs into groups corresponding with (more or less) identical groups in the spoken language. In these classifications you focus on either the execution of the sign or its grammatical or linguistic character.

The classification that I am going to present, and which I found the most useful, concentrates neither on the execution of the signs nor on their linguistic character, but rather on the degrees of their immediate decipherability (i.e. interpretability/comprehensibility). With this in mind I devised the following three groups:

(1) *Gestures immediately decipherable by members of other cultures*
(2) *Gestures immediately decipherable only by members of Kangobai's own culture*
(3) *Gestures of sui-generic character and immediately decipherable only by a few selected members of Kangobai's own culture*

The central point in this grouping method, then, is the degree of a sign's immediate intelligibility in the communication process. As will be evident, I do not attach weight to presence of the signs in other cultures, i.e. whether some of them have any universal use and significance. The first two classes here, moreover, do not exactly correspond to "pan-cultural emblems" and "culture-specific emblems" distinguished by Ekman and Friesen—"Emblems are those nonverbal acts which have a direct verbal translation. . . (1969: 63); for they are concerned most with the action. I am concerned instead with the various degrees of decipherability in the process of communication.

The idea for this method of classification came to me when I had made the compilation of data and had once more returned to Bellona, the

neighbouring island. On the evening of my return my hut was crowded by Bellonese who wanted to hear news and gossip from Rennell and who were interested in my work with Kangobai. I imitated some of the signs that I could recall, and it struck me how many of the signs which I had had difficulty in comprehending were immediately comprehensible to them. I should add that none of those present had ever met Kangobai, though some of them had heard of him. As the evening session wore on—the Bellonese were insatiable in their eagerness to see still more of Kangobai's signs—it became clear that a number of signs were immediately comprehensible to them, but that a number they could not comprehend at all. When, in the case of the latter category, I gave them the solution, their reaction was a mere shrug; the correspondence between sign and meaning, content, did not elicit associations of any kind whatsoever for them.

But let me elaborate on my method of classification and give some examples:

8.1 Gestures immediately decipherable by members of other cultures. The signs in this group, i.e. their meaning, are immediately transparent and obvious to members of different cultures who are without any preknowledge of the sign or the culture in which it originates. These inter-culturally immediately decipherable signs differ from 'universal signs' in that there is no demand for sign identity for the same content. There might easily exist two identical signs with different contents depending on the cultural context from which they derive, as well as different signs with an identical content.

As examples of the group I have called *gestures immediately decipherable by members of other cultures*, can be mentioned signs from our own culture such as the sign for 'stop' in which the hand is held before the body with the palm held vertically towards the receiver. Think also of the many gestures used in the art of mime, e.g. by Marcel Marceau, and in encounters between members of different cultures having no lingua franca for asking directions and other vital information.

The following are examples of interculturally decipherable signs from Rennell:

(1) *te hahine* 'woman'–the right hand takes hold of the right breast and twists downward.
(2) *binu* 'to drink'–the right hand is shaped into a funnel (trumpet), is set to the lips and the head is bent backward. See Fig. 1
(3) *ei* 'copulation'–the tips of the left-hand index and thumb are made to touch, forming a circle, and the right-hand index is inserted into the circle in a forward-backward motion.

8.2 Gestures immediately decipherable only by members of Kangobai's own culture. The signs in this group are strongly determined by the culture in which they originate. They incorporate and (in part) reflect conditions commonly known to or immediately decipherable only by people belonging to the culture of the sign inventor. The meanings behind these signs are also immediately transparent to the Bellonese (who belong to the same culture as the Rennellese), though they have never seen them before. The signs in question are not immediately transparent to anyone who does not belong to the same culture or who has no intimate knowledge of that culture. Their instant applicability as information-bearing elements in the communicative process is thus much more limited than the signs in group 1.

Examples:

(4) *te ogo* 'a hill'–the left arm is held, bent angularly, slightly in front of the body at chest height and with the forearm held horizontally. The right hand performs a sliding semi-circular motion across the left forearm. (The right hand represents a person easily negotiating a hill, the left forearm. This sign for hill is sharply in contrast with that for the edge of a coral cliff (see below) where mounting *and* descending are impossible. See Fig. 2.

(5) *te tiha* 'the outer edge of a coral cliff'–the left forearm is held out before the body in a vertical position somewhat at chest height, with palm towards the communicator and fingers extended. Index of right hand begins upward motion on the inside of left forearm. When right index reaches the finger tips of left hand it performs a cautious

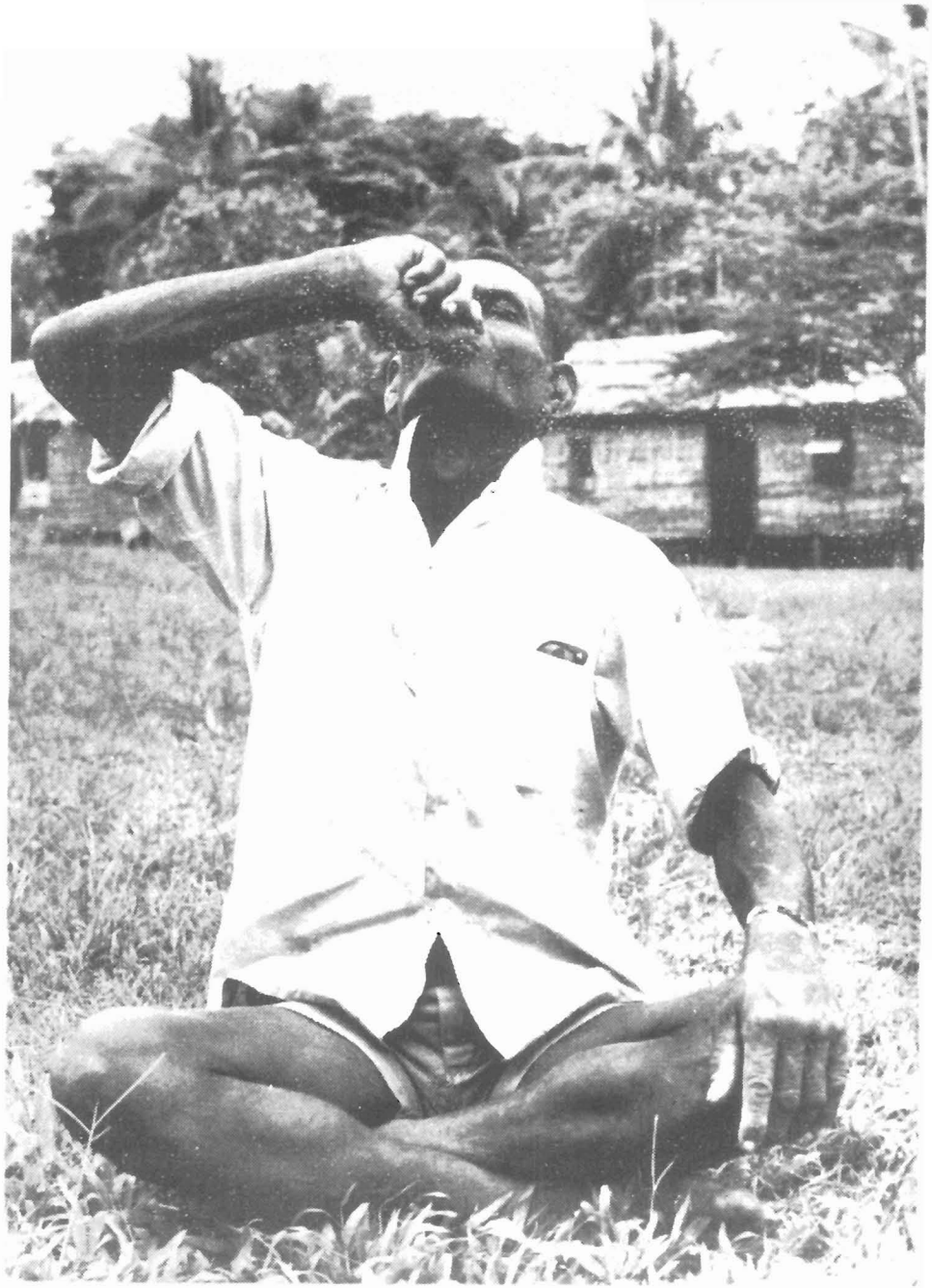

Figure 1. Binu 'to drink'.

Figure 2. Te ogo 'a hill'.

motion with its outer joint covering briefly the nail of the left index. The outer joint right index is withdrawn and repeats the motion with the second finger and then with the ring finger, whereupon the right hand index quickly makes its descent down the inside edge of the left forearm. (The right index symbolizes a person's attempt to climb to the top of the cliff and to find a path leading down the outer side. Unsuccessful in his attempt, he becomes afraid and hurries down again).

(6) *te hokai* 'monitor lizard' (gen: *Varanus*)—the left hand, made into a fist with palm downwards, but with index finger extended, makes slow zig-zag motions along the ground. Especially the index makes oscillating motions. [This would probably be interpreted as 'snake' in many parts of the U.S.--Editor].

(7) *tau tuhahine* 'brother/sister relationship' and/or 'in-laws'—the index fingers of both left and right hands are vertically extended and wrists crossed so that index fingers are held back to back (nail to nail) at a distance of 3-4 inches. (This pictures the Bellonese-Rennellese avoidance behaviour after sexual maturity has been reached in brother/sister relationship—see below.) See Fig. 3.

8.3 Gestures of sui-generic character immediately decipherable only by a few selected members of Kangobai's own culture. The signs in this category are of such nature that in the communicative process their meaning will not emerge even to members of Kangobai's culture generally. The meaning of the signs is not accessible until a previous explanation or learning process has taken place. Their idiosyncratic character has to do with the fact that the feature of a given subject that is transformed into the actual sign is more meaningful to him who codes than to him who decodes the sign.

Examples:

(8) *te tamana* 'father'—the left-hand index and thumb perform a backward, semi-circular motion on the outside of the left hip,

beginning at the thigh immediately below the hip and tracing the above described motion towards the hip. The motion is then concluded in free air as the hand is let fall back to its natural pendulous position. (This sign specifically indicated a tattoo on the hip of Kangobai's father, but has been adopted by those Rennellese acquainted with his sign language to mean any father. See also (10) below.)

(9) *i gaa 'aso* 'a long time ago' (but usually refering to the period before the conversion of the Rennellese to Christianity, i.e. before 1938)–the right hand, palm turned down, performs a diving curve beginning at the shoulder and ending with arm extended before the body, fingers stretched and torso slightly bent forward. Following this the edge of the right hand deals the right side of the neck a series of rabbit punches. (The forward movement denotes *in those times.* Blows against side of neck: *when one killed people.* Warfare was endemic before 1938.)

(10) *ta'okete* 'elder brother'–the motion of 'pulling out a tooth' is performed with left hand. (Originally Kangobai's elder brother, who had once had a tooth pulled out; later adopted to signify any elder brother. See also (8) above.)

(11) *te tongahiti 'ugi* 'dark-skinned people' (as Melanesians):–the right hand performs a series of writing motions. (The darker Melanesians came to Rennell to function as teachers, and still do.)

This three-fold division of the signs of Kangobai is far from ideal. On the contrary it is much too static. Then why devise such a classification at all? Foremost because this classification, notwithstanding its flaws and deficiencies, can point to a new and exciting research area with which I shall deal in the following.

9.0 Possible determinants instrumental in increasing the immediate decipherability of deaf signs. The nature of the problem in all its simplicity would lend itself to the following formulation: What determinants make

some of Kangobai's sign language immediately comprehensible to other people, regardless of their cultural origin, while some of it can be decoded only by members of his own culture? And what determinants lie behind the fact that an entire group of signs is decipherable only by a very narrow group of people, Kangobai's intimates?

If we view Kangobai's sign language as a whole, it become obvious that many signs directly reflect characteristic features or high points in specific, everyday situations observed by him. Kangobai, in the spontaneous development of his sign language, has mainly focused his attention on the visual cues of a given situation, more often than not leaving the olfactory and haptic cues out of the picture. How, the reproduction of a given situation–i.e., the selection of whatever part of the situation which is to form the nucleus of the sign in question–can manifest itself in quite a number of different ways. Therefore the mute creator of this language had to make a choice, more or less consciously, and depend on his sensitivity toward whatever it is he perceived before translating it into sign language. Naturally, if the situation translated into sign language by Kangobai contains elements immediately intelligible to others than himself, and he codes just these elements into his sign, then the sign itself will necessarily possess a higher degree of comprehensibility than if he had chosen not to code the most perceptible elements into his sign. If on the other hand the subject or situation itself contains a number of elements none of which are especially significant, and if Kangobai codes some of these elements into his sign, rather than reinterpreting for maximum accessibility, then the decoding potential will have been accordingly reduced at the receiving end.

The following signs contain a number of elements with an optimal information potential, and Kangobai has chosen to code just those elements into the physical manifestation of his sign:

Examples:

(7) *tau tuhahine* and/or *tau ma'aa* 'brother/sister relationship' and/or 'in-laws'–this sign, mentioned earlier, reflects something crucial in the kinship constellations. It is iconic of the avoidance attitude. In

the Rennellese pre-Christian culture brother and sister, once they had reached sexual maturity (and had begun to wear loincloths), and in accordance with a set of specific norms, should avoid each other insofar as possible. On no occasion were they permitted to be alone together indoors or out. If they happened to encounter one another on a path, the sister always left the path, walked into the forest and stood with her back turned to the path until her brother had passed along. Siblings of opposite sex were not permitted to use their common names but had to use other names. Even though it would be considered normative behaviour for the sister to bring her brother food at times, she could not do it in person but was forced to delegate some third party to perform the actual task of giving the brother his food. Brothers-in-law were to maintain what might be called a 'formal courteousness'; they were not to criticize one another, or use 'improper' words in each other's presence. All these avoidance attitudes clearly manifest themselves in Kangobai's sign: left and right index fingers stretched, wrists crossed and both fingers held 'back to back'.

(12) *tunihenua* 'the chief ritual leader'—Kangobai's gesture for this makes use of a prop, a stick or cane placed in upright position in front of the body. Both hands rest on the top of the stick, the left on the right, and Kangobai's chin on the back of the left. Both arms are held at shoulder height. The stick or cane symbolizes the *tunihenua's* holy staff which only he was permitted to bear, and then only in those periods when his office made it necessary for him to perform the mandatory rituals. Any man seen walking with the holy staff was immediately recognized as the chief ritual leader. Here too Kangobai has concentrated, in my opinion, on one of the maximally laden elements when it comes to imparting the optimal necessary information, i.e. the staff of the *tunihenua*. See Fig. 4.

(13) *te hatune gaoi* 'a nice/proper woman'—the sign consists of three successive gestures: (a) the right hand performs an elliptical motion in front of the body at knee height, with the palm turned up, indicating the task of cutting grass and shrubbery. (b) Then with the

Figure 3. Tau tuhahine
'brother-sister relationship'.

Figure 4. Tunihenua 'chief ritual leader'.

right hand the coder rubs his left arm and the left side of the torso, thus indicating the act of washing oneself. (c) Both hands are put together palm-to-palm and laid to the right side of the head, indicating the act of sleeping. These three successive gestures mean: a nice/proper woman, possessing the virtues appreciated most on Rennell, namely that she was hard-working, cleanly, and kept herself (quietly) where she belonged, at home, not playing footsie in the bush with other men.

10.0 Two tentative hypotheses. One might tentatively pose the hypothesis that for a sign language to be immediately decipherable in a communication process, then (a) the *phenomenon* (Rasmussen 1969) must exist in the inventory of the decoder, (b) the physical representation (the gesture) of the phenomenon must use manifestations which contain optimal information potential.

As a second tentative hypothesis, explaining why some signs are only immediately decipherable on an *intra*cultural basis, while others are immediately decipherable *inter*culturally, one might state that *for a sign language to be immediately, interculturally decipherable, phenomenon and sign must fulfill their functions in such a way that:*

> (a) *the phenomenon (1) must be found in all cultures, (2) must be accepted as being (an equivalent) phenomenon in and by all cultures, (3) must, in its local uses, not overstep that function-threshold beyond which there is no adequate correlation of signal and perception between the coding from one culture to the decoding in another culture—*

and

> (b) *the physical representation of the phenomenon will focus on, and, for maximum information value, reflect just that or those of the phenomenon's forms of manifestations which (like the phenomenon itself) possess the interculturally optimal information potential: so that the gesture can be experienced as interculturally uniform by both coder and decoder.*

From the above it should be clear that unless both (a) and (b) obtain, there will be no immediate process of communication, much less comprehension, on an intercultural basis. One will instead be dealing with

signs which in this paper have been designated sui-generic or ego-specific signs.

Quite a lot of research will be needed, however, to clarify some of the more obscure points in this working hypothesis. And only research combined with actual testing can prove whether it is tenable or should be discarded. I firmly believe that future research will be rendered more useful if efforts can be focussed more on the phenomena of signalling and perceiving in the process of communication, rather than on the "universality" of gestural signs (cf. Mallery 1881) or on "pan-cultural emblems" (Ekman & Friesen 1969).

An understanding of those cognitive processes which facilitate the decipherability of signs in non-vocal processes of communication might for one thing make possible the creation of a sign language not based on artificially developed principles but on 'live' field data and on principles of perception. Such a system could be of immeasurable help in the creation and development of a quickly mastered sign language system, to be used for the interaction now so lacking between deaf and non-deaf persons in everyday situations.

11.0 The relation of sign language to everyday nonverbal behavioural patterns. In the works of some authors, e.g., Trager 1958, Stokoe 1960, one can find a "hypothetical discussion of the origin and development of the gesture language of the congenitally deaf individual in any society. . ." (Stokoe, 1960), where it is pointed out that the original deaf-mutes, who helped create the first sign language in their respective cultures, may have focused on the nonverbal gestures accompanying the spoken language. Stokoe writes thus:

> To take a hypothetical example, a shoulder shrug, which for most speakers accompanied a certain vocal utterance, might be a movement so slight as to be outside the awareness of most speakers, but to the deaf person, the shrug is unaccompanied by anything perceptible except a predictable set of circumstances and responses; in short, it has a definite 'meaning'. That shrug would certainly become more pronounced, even exaggerated, in the behavior of the deaf-mute and perhaps also in that of his hearing peers in communication (1960: 7).

Stokoe was probably right to hypothesize that those who cannot hear focus more on the nonverbal manifestations of speakers than the speakers do themselves. One might take one step further and say that in so doing they will not only experience their surroundings differently from speakers but will also categorize their experience differently. If this is true one might consider whether it is indeed reasonable that in many countries (non-deaf) speakers and not the deaf assume authority over the sign language. Questions of structure and lexicon are thus based on the cultural perceptions and classifications of the speaker rather than those of the deaf-mute. It is as if there exists a "we-alone-know" kind of attitude behind it all. For instance, one might well wonder why in a sign language it should be so vital as some hearing authorities assume to be able to express in sign the definite and indefinite articles. One would think that the subject or situation would make such phenomenon redundant. I shouldn't be surprised if somewhere someone has not devised sign language which indicates whether or not certain words are to be capitalized.

If we look at the sign language developed by Kangobai, certain characteristic features appear which speakers, were they to have created the system for him, would not, I believe, have concentrated on. Characteristic of many of Kangobai's signs is that they appear to derive from entire situations and often in a highly realistic way. The imitations are often based on observations of common, everyday patterns of behaviour in humans and animals alike. Kangobai thus has a group of differentiated signs for animals, especially fishes. His description of their motions in the water turn his gestures into an almost cinematic rendition. I should add here that on Rennell (and Bellona) animals are described and classified principally by their motions and forms rather, than by their colors and appearance as is the case in our culture. It is furthermore interesting to note that Kangobai's sign language contains no gestures for colors. I doubt that this should imply that he might be color-blind; it is more likely due to the fact that the concepts of and names for colors play no important role in Rennellese everyday life or, for that matter, in their ancient religious rituals. For further details about color experiences and classifications on the two islands see Kuschel and Monberg (in press).

An interesting phenomenon in the sign language developed by Kangobai is its strong sign-differentiation in some of the areas where similarly the spoken language contains a strong lexical differentiation. E.g., in the Rennellese language one rarely says that he wants to go fishing. This idea—unless it is an ignorant anthropologist who is being addressed—is almost always expressed by means of a detailed description of the implements and tackle one will use in a specific kind of fishing. Through this mode of information everybody on Rennell knows exactly what fish the speaker intends to go after. In a similar manner Kangobai has developed a sign vocabulary which details what tackle or implements one intends to use and thereby also what kind of fish one intends to catch. Only a few examples of this are listed below:

1) *bego te kaui* (catch a fish with a spear))
2) *gasi i te poo* (go fishing with lantern and spear)
3) *gasi i te 'ao* (to go spear-fishing in daylight)
4) *hai kaui i te uka* (fishing with a line)
5) *hai kaui i te bugho* (fishing with a large net)
6) *hai kaui i te nganga* (fishing with a small (?) net)
7) *ngugama* (to net flying fish by torch light)
8) *a'ango* (catching shark with a hook)
9) *punu* (to stupify fish with poisonous *luba* vine)
10) *hai unga i te kupenga* (to fish for small fish with a small net in one hand, and a stick in the other)

In other areas, however, where a pronounced differentiation is present in the spoken language. Kangobai has no specially pronounced differentiation in his language. This is for instance the case with the kinship terms, possessive pronouns (of which there are 127 in the Rennellese language). Which factors determine a sign development of a more delineated potential in one area and not in others is impossible to say on basis of the present material. In order to do this, a more exhaustive and precise sign-vocabulary material is needed.

Kangobai's sign language is in no way limited to manual signals, i.e. it is as yet uninfluenced by the size of movie camera viewfinder or the television screen. Not infrequently he uses his body and face as means of expression, though mainly as an accentuation for what is being expressed with the hands. Thereby Kangobai, to some extent, relies on a primary means of communication, his hands, which in their function are aided by

the *accentuative* functions of face, torso, legs, etc. This appears to be analogous with case that all groups of (non-deaf) speakers use nonverbal activities as accent-carriers for the spoken word. Kangobai's facial expressions are mainly to be found in the manifestations of emotional conditions such as contempt (*baaisaaisa*), anger (*hakatagi*), mourning/sorrow/sadness (*magepe/agoha'anga*).*a*), etc.

A great number of Kangobai's gestures are iconic in that they attempt to reflect exactly part or all of the phenomenon or situation they present. As a whole his language is quite vivid and quite varied. You do not have to have spent much time in his company before your eyes are made to perceive all or part of his body, unfocusing their attention on merely his hands. Sometimes it is not only possible but relatively easy to follow his conversation from the corner of your eye.

The hypothesis quoted above that sign language developed from imitation and magnification of the nonverbal gesticulation of speakers assumes a culture which has a copious gesticulatory tradition. On Rennell this is not the case. Here even facial miming is moderate. For example the manner in which emotional heightening is added to the narration of ancient and newer tales uses verbal combinations and expressions and different intonation. Both Rennell and Bellona possess a markedly oral culture which is expressed also in their religion where, again, the words play the significant part.

Thus, in the process of creation Kangobai has mainly been left to his own imaginative and creative devices. For, even though you are able to watch how the monitor lizard appears to move, it still takes quite a potential to be able to "translate" a motion peculiar to the monitor lizard so that others may comprehend it as well. Kangobai has often managed to stress characteristic and quite essential elements in a situation, and to do so in such a remarkable and to-the-point fashion that it can make sociologists, social anthropologists, and other scientists of foreign cultures quite jealous of his skill.

In working with Kangobai and the sign language developed by him, one senses how total has been the unbending need to transcend his isolation. Though in a sense a "case", not even endemic but merely

peculiar to a distant foreign and diminutive culture of little concern to us, we might try to perceive a faint analogy with our own cultures where the Kangobais may well be able to communicate among themselves, but not as effortlessly with those not similarly afflicted. And that should be one of the primary objects in this and related fields: not the artful making of footnotes and theories in the scientist's academic discussion with himself, but the more relevant endeavor of bridging the gap between silence and sound, between indifference and communication.

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