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The Chinese Trigrams in Micronesia

SOME CIRCUMSTANTIAL EVIDENCE, said Henry David Thoreau, "is very strong, as when you find a trout in the milk." That is the theme of this essay. In Micronesia, especially the Caroline Islands, there is an outstanding method of divination called *bwe*, which makes use of knotted palm leaflets. It is so similar in its methodology and permutations to the ancient Chinese *i pu*, using the random selection of the so-called diagrams, as to merit attention as one of the few known examples of the movement of specific cultural traits from China into the South Seas.¹

Chinese *i pu* is of great antiquity and forms the basis of the *I Ching* or Book of Changes, the foremost of the Five Classics and indubitably one of the greatest books in the literature of the world. While the canonical text of the *I Ching* cannot actually be traced back any further than the third century B.C., it is older than that, although surely not as ancient as the almost thirty-two centuries attributed to it by some Sinologists. It is known to have undergone considerable modification in the course of its history. What was originally a straightforward auguristic text based on combinations of solid and broken lines became greatly expanded into a comprehensive system of philosophy through numerous explanatory appendixes, probably formulated by followers of Confucius but sometimes attributed to the sage himself. The various commentaries added to the book maintain that the entire universe is in a process of constant change, and if a man is to achieve success in life he must understand the changes, know the direction in which the universe is moving at a given time, and take appropriate action.

Apart from its metaphysics, the system of divination described in the *I Ching* seems to have had its origins in an earlier (ca. 1030–221 B.C.) Chou dynasty yes-or-no method of drawing lots by means of the dried stems of the Siberian milfoil (*Achillea sibirica*), a species of yarrow about a foot or two high and gray-green in color, with highly aromatic leaves and flowers. Possibly, long stalks (yes) and short stalks (no) were drawn, and these became the basis of the later arrangement of whole and divided lines constituting the trigrams and hexagrams of the

¹ A recently published example is that of the apparent diffusion of tapa, and even its very name, from ancient China to Polynesia. See Shun-sheng Ling, "Bark Cloth Culture and the Invention of Paper-making," *Bulletin of the Institute of Ethnology, Academia Sinica*, No. 11 (1961), 1–49.

I Ching, although another theory speculates that the source of the lines is to be found in the counting sticks of the ancient Chinese. At any rate, milfoil stalks have continued to be employed up to the present time in the more complex form of the oracle.

The broken and unbroken lines are the building blocks from which the trigrams and hexagrams are formed. A divided line, — — , is the symbol of the female or negative principle, known as yin. An unbroken line, — , is the symbol of the male or positive principle, known as yang. It does not appear that this symbolization entered into the simple, early use of long and short milfoil stalks, but it became all-pervasive in the ultimate form it assumed in the *I Ching*. The metaphysical, cosmological, and moral meaning of the yin and yang symbols is found in a concept of duality expressed in two principles or modes of energy constituting everything in life. These interacting principles are present in the trigrams and hexagrams as well. The diagrams—as they are called—that are used in divining are thus expressive and symbolic of the steps in the process of change.

As the word implies, a trigram is a group of three lines, each of which is broken or unbroken, yin or yang. Through the combining of these two kinds of lines, eight permutations are possible ($2 \times 2 \times 2$). Each is named, as follows: ☰ Chien; ☷ K'un; ☱ Chen; ☴ K'an; ☶ Ken; ☳ Sun; ☲ Li; ☵ Tui.

Most likely no specific meanings were attached at first to the trigrams; probably only later were certain ideas, such as considering the objects symbolized by the trigrams the basic constituents of the universe, attributed to them. In the original or canonical text the *I Ching* dealt only with the trigrams, which are said traditionally to have been drawn by the mythological emperor Fu Hsi. The hexagrams are a later although still ancient development, but some scholars maintain the reverse, saying that the trigrams are derived from the hexagrams.

A hexagram is simply a pair of any two trigrams, one superimposed on the other, and thus is constituted of six lines. Permutation results in sixty-four possible hexagrams (8 trigrams \times 8 trigrams), each having its own name. Thus, to give an example, the Huan hexagram ☵☴, consists of the K'an trigram ☴ below and the Sun trigram ☳ on top of it. It should be noted in passing that two additional trigrams may be perceived within it. One of these consists of the second, third, and fourth lines from the bottom; the other of the third, fourth, and fifth lines from the bottom. All this is further evidence of the complex nature of the symbols.

Having a fixed number of trigrams and hexagrams, and therefore a limited number of prognostications, the milfoil system was an easier method of divining than the earlier oracle bone method known as scapulimancy, with its indefinite combinations of cracks in bones or turtle shells produced through scorching. Eventually, even though both methods existed side by side for a long time and were the chief forms of divination employed by the state, the simpler, standardized milfoil method supplanted the scapula method, whose beginnings go back at least to the Shang dynasty (ca. 1520–1030 B.C.) and probably earlier.

It is apparent that the diagrams are capable of being given complex symbolization and interpretations; indeed, they are so cryptic and formidable that the *I Ching* has baffled some of the greatest intellects of both China and the Western

world. But analysis of this complex area does not have diagnostic value in comparing the Chinese and Micronesian forms of divination. More useful for making comparisons is the methodology by which a hexagram is arrived at. The mechanics have been outlined in one of the ancient appendixes of the *I Ching*² but are more precisely described by some recent writers.³ The procedure is complicated and wearisome; yet it must be understood in order to compare it with its Micronesian counterpart.

Fifty milfoil stalks are used, but one of these is detached from the pile or set and never enters into the determining of the hexagram. The heap of forty-nine stalks that remains is randomly divided into two piles or subsets, and the first of the three manipulations needed to decide the first line of the hexagram begins. A single stalk is taken from the right-hand pile and placed between the little finger and ring finger of the left hand. Then the left-hand pile is grasped in the left hand, and from it the right hand detaches series of four stalks at a time, until four stalks or less remain. The remainder is then placed between the ring finger and middle finger of the left hand. The right-hand pile now has its turn to be counted off by series of fours, and the four stalks or less that remain are placed between the middle finger and forefinger of the left hand. The first manipulation is now completed.

The total number of stalks being held between the fingers of the left hand will always come to five or nine, the reason for this being that after the first stalk has been placed between the little and ring fingers, there will remain forty-eight stalks, divisible by four, in both the heaps together. The various possibilities then are: $1 + 1 + 3$, $1 + 3 + 1$, $1 + 2 + 2$, and $1 + 4 + 4$. A total of five elements will of course result more frequently than a total of nine. In this first manipulation, any total of five elements is assigned the value three; any total of nine elements is assigned the value two. The reasoning behind this is that there is a supernumerary stalk (the first) in each total, so that the stalks are really four or eight in all, with the former having the three value and the latter the two value, even when they occur without the supernumeraries, as we shall soon see. All the stalks that formed remainders as the result of this first manipulation are now put aside for future use.

The second manipulation is now made with the stalks left over from the first manipulation and does not include the previous remainders of five or nine. The procedure is the same as before and begins with the dividing of the recombined milfoils into two random piles or subsets. A single stalk is again taken from the right-hand pile and placed between the little and ring fingers of the left hand. The residue is counted off by fours, first from one pile, then from the next. The sum of the stalks now being held in the interstices of the fingers will be either four or eight (instead of five or nine), with the chances of obtaining a four equal to the chances of obtaining an eight. The possible permutations are $1 + 1 + 2$,

² James Legge, trans., *The Yi King*, in *Sacred Books of the East*, ed. Max Müller, 2nd ed., vol. 16 (Oxford, 1899), 365-368.

³ Richard Wilhelm, trans., *The I Ching or Book of Changes*, translated from the German by Cary F. Baynes, vol. 1 (London, 1951), 333-334, 392-395; Hellmut Wilhelm, *Change: Eight Lectures on the I Ching* (London, 1960), 99-100. A new edition of Legge's translation, edited by Ch'u Chai and Winberg Chai (New Hyde Park, N.Y., 1964) is more readily available than the original and preserves the pagination of the 1899 edition.

$1 + 2 + 1$, $1 + 3 + 4$, and $1 + 4 + 3$. The sum four is reckoned as three, the sum eight is reckoned as two. Unlike the reckoning in the first manipulation, the first stalk is not considered supernumerary. The stalks held by the fingers are again put aside, as were those in the first manipulation.

What is left over in the main pile after these two complete manipulations is then used for the third manipulation, in which the heap is divided into two piles and counted off as before. The results again will necessarily be a total of four or eight, with values of three and two, respectively.

With the completion of the third manipulation, the character of the first (or bottom) line may now be ascertained. The character of the line is determined by finding the sum of the numerical values given to each of the three composite remainders. The total has four possibilities, namely, six, seven, eight, or nine, each of which is not only a yin or a yang, but also "young" or "old." Whether a yin or a yang is young or old depends on whether it "changes" or "rests." Those lines that rest are depicted in the conventional way, whereas those that change are modified by the addition of an "x" in the middle of the yin line and an "o" in the middle of the yang line. (The ideas behind these concepts are complex and for our purposes need not be clarified.)

After the first line of the hexagram has been determined, the character of the remaining five must be ascertained. Each of these is arrived at in the manner described above, so that in the end there will have been eighteen manipulations, three for each of the six lines. There is a simplified and less laborious way of accomplishing all the above through the repeated tossing of three coins, but this shortened method does not resemble the mechanics of *bwe* and need not be described here.

The prognosticatory meanings of the sixty-four hexagrams are standardized. They can be looked up in the *I Ching*, where every hexagram is depicted, numbered, and named, with appropriate judgments for the inquirer. The interpretations, however, are not at all simple.

Turning now to the Micronesian method of divination, called *bwe* on Ulithi atoll (Truk *bue*, Puluwat *bwä*, Yap *bei*), we can note some truly striking parallels with the Chinese milfoil method. Although within Micronesia there is some variation in methodology, nomenclature, and mythology, the generalized presentation below is useful as a basic account. It omits many details, although these are available together with drawings and photographs in a previous article I have written on the subject.⁴

It is impossible to say how long *bwe* has been practiced in Micronesia, but the fact that it does show diversity and is known in both the Carolines and Marshalls would seem to testify to some degree of age. The Micronesians have no system of writing, so it is necessary to depend on European accounts. These, because of the long isolation of this area, come late in time: Kotzebue⁵ establishes the existence of *bwe* in 1821 on Woleai atoll, and another explorer, Freycinet,⁶ reports it a

⁴ William A. Lessa, "Divining by Knots in the Carolines," *Journal of the Polynesian Society*, 68 (1959), 188-204.

⁵ Otto von Kotzebue, *A Voyage of Discovery into the South Sea and Bering Straits*, vol. 3 (London, 1821), 294.

⁶ Louis C. D. de Freycinet, *Voyage autour du monde . . . Historique*, vol. 1, pt 2. (Paris, 1825-1839), 113-114.

little later on Guam, where some Carolinians used it before setting sail homeward.

The material used in *bwe* consists of the pinnate leaflets of the coconut palm frond. The frond must be a young one growing at the tip of the tree and not yet opened up. The natives refer to such a leaf as *ubwoth*, or some dialectal variant of that term. It is believed to have intrinsic power and is used not only in magical rites but in all sorts of ceremonial occasions as well. In the Caroline Islands, leaves of this sort are also employed in a kind of legal institution that we know of by the word "distrain." Here the leaves are affixed to land, canoes, or other property belonging to a culprit who has offended a community or person by theft, trespassing, or some other delinquency. The attitude of reverence or awe in which the *ubwoth* is held is reminiscent of the aura surrounding the milfoil, which is found growing in Chinese cemeteries, especially around the tomb of Confucius in the district of Chüfu in Shantung. It is apparently referred to with this attitude in one of the ancient appendixes of the *I Ching*, where it is asserted that the milfoil and the tortoise are "spirit-like things" produced by Heaven.⁷ Having no writing, the Micronesians have not recorded their feelings toward the young palm frond in a similar manner, but they do give expression to their sentiments in song and action.

The palm leaf diviner, who is held in utmost esteem by his society and leads an ascetic existence beset with numerous taboos on his person and behavior, begins his ritual by apostrophizing a selected tree with a song. This may be compared with the Chinese practice of burning incense and reciting prayers prior to the shuffling of the milfoil stalks. The diviner then climbs the tree and removes the young frond at the top. Since the pinnated leaflets are still somewhat fused to one another, he cuts them apart with his thumbnail. He then pulls down the two lowest leaflets of the frond. These are regarded as an offering to a certain chief who is said to have been the first man to divine with palm leaves. They are left unused and play no further part in the oracle, reminding us of the discarding of a milfoil stalk in the Chinese system. The leaflets remaining on the stalk of the palm frond are detached one by one in a fixed order: first the lowest one on the right, then its opposite on the left; then the next one above on the right, followed by its opposite on the left, and so on upwards. Actually, whole leaflets are not employed; instead, each one is stripped of its central rib, leaving two long, narrow leaf strips, to be used separately.

A series of random half knots is now tied along the length of each leaf strip, with the knots alternating to the right or left, according to the way in which they are tied. The tying is done in some places by the client, in others by the practitioner. As it proceeds, the client softly relates the problem that has caused him to seek assistance from the leaves. Usually, several strips are knotted and thrown into a heap, out of which only four are selected. The rest are discarded. However, sometimes only four strips, the minimum, are knotted.

Now we come to a step in the procedure strikingly reminiscent of *i pu*. The first knotted strip taken from the pile is placed between the thumb and forefinger of the left hand; the second strip is placed between the forefinger and middle finger; the third strip between the middle finger and ring finger; and the fourth strip between the ring finger and little finger. The Chinese, to be sure, necessarily

⁷ Legge, 374.

employ only three interstices instead of four, but the similarity in method is obvious. Moreover, even though they use a reverse order in Micronesia, the difference is only temporary, as we shall see.

The knots in each leaf strip, familiarly enough, are counted off in fours, so that there will be a remainder of one, two, three, or four. The other knots, composed of series of fours, are pulled down to the palm side of the hand and have no further place in the reckoning. The only knots that count are those protruding up through the fingers over the back of the hand.

The counting off of the knots follows a fixed sequence, with the leaf strip drawn last from the pile being counted first, and so on in reverse order of selection. After the knots on each strip have been counted, they are removed from the left hand and placed in the interstices of the fingers of the right hand. But the one that had been placed last, between the little finger and ring finger, now goes between the thumb and index finger of the right hand; the one that had been placed between the ring finger and middle finger of the left hand is transferred to the index finger and middle finger of the right hand, and so on. Most likely this reversal of sequence is made to promote the random nature of the oracular response by thwarting any deliberate attempt to manipulate the results during the strip-selecting stage.

While the leaf strips remain grasped between the fingers of the right hand, the diviner observes the number of the remainder knots. There is a fixed order for doing so. Note is first made of the knots held between the thumb and forefinger, then of those between the forefinger and middle finger, and so on. The knots of the first two leaf strips form a simple permutation, such as $3 + 4$ or $1 + 2$; the knots of the last two strips form another permutation, such as $1 + 1$ or $3 + 2$. The number of possible permutations for any given pair of leaflets is sixteen in all (4×4), as follows: $4 + 1$, $4 + 2$, $4 + 3$, $4 + 4$, $3 + 1$, $3 + 2$, $3 + 3$, $3 + 4$, $2 + 1$, $2 + 2$, $2 + 3$, $2 + 4$, $1 + 1$, $1 + 2$, $1 + 3$, $1 + 4$. These simple permutations are comparable to the eight trigrams, except of course that they are based on the permutation of fours (knots) instead of twos (yin and yang).

A permutation consisting of a pair of numbers, such as $1 + 4$, does not in itself yield an oracular decision. It must be combined with another pair, such as $2 + 1$. Since sixteen simple permutations are possible in one manipulation and sixteen in the other, the compound permutations resulting when two pairs are permuted are 256 (16×16). This process is comparable to that which produces the hexagrams from the trigrams. The Chinese system, to be sure, produces only sixty-four permutations, but the addition of a single line to each trigram, creating tetragrams, would also result in 256 permutations.

The sixteen simple permutations are given names in the islands of Micronesia. Various myths, showing expectable variations but following a consistent pattern, treat the permutations as personified destinies. These destinies or spirits descend to earth from heaven in the Canoe of Destiny and have various experiences as they go about teaching men the art of *bwe*. They sit on different parts of their canoe in a definite order. For instance, according to a narrative from the atoll of Namoluk, $4 + 1$ is Lifar, and he sits on one endpiece of the hull, while Lipul, who is $1 + 3$, sits at the opposite end; Tilifeke, $1 + 1$, sits on the outrigger platform, while the rest of the spirits sit on the several thwarts of the canoe and its weather platform.

Although the Chinese trigrams are not personified in this manner, they are nevertheless designated by more than a simple system of nomenclature, for each is thought of as an active force of the permutation that it represents. Not only does each trigram have a name but certain reified attributes as well. Indeed, the name of the trigram is that of its attribute: Chien is the Creative, K'un is the Receptive, Chen is the Arousing, K'an is the Abysmal, Ken is Keeping Still, Sun is the Gentle, Li is the Clinging, Tui is the Joyous.

When the nomenclature for the 256 Micronesian compound permutations is compared with that for the sixty-four Chinese hexagrams, it is seen that both depart from the relative simplicity of the above. The Micronesian spirit names are replaced by key phrases giving some symbolic hint of their oracular significance. Thus in Namoluk *eurou* means "roof beams joined together and tight," signifying no rain falls; *likine kaijap*, "to huddle together on the outside," refers to an incident in which some sailors who had fled into a house to escape a storm huddled so closely that one of them was squeezed to death; *fan no faraua*, "to bring the bath sponge for children," signifies that this permutation is favorable to pregnant women and refreshes sailors and sick people who suck on it.⁸

The Chinese hexagrams are named by considering the effect of one of its two constituent trigrams on the other trigram. To give a single example, Ko, or Revolution, is constituted of the Li trigram (the Clinging, Fire) below and the Tui trigram (the Joyous, Lake) above. The Chinese character for this hexagram originally meant an animal's pelt, which changes yearly by molting. By extension, the word comes to refer to "moltings" in political life, that is to say, the great revolutions connected with changes in government.⁹ Analogy, then, constitutes the main point of resemblance between the two systems of nomenclature.

An alien but intriguing sex principle, suggestive of the yin-yang dichotomy, is made explicit in some of the Micronesian accounts. On Ngulu, of the sixteen spirits who man the canoe of destiny, eight are male and eight female.¹⁰ This is comparable to the equal division of the Chinese trigrams into males and females. The island of Yap contributes even more fascinating information. Those six permutations in which the first number is less than the second ($1 + 2$, $1 + 3$, $1 + 4$, $2 + 3$, $2 + 4$, $3 + 4$) are males, while those six in which the first is greater ($4 + 1$, $4 + 2$, $4 + 3$, $3 + 2$, $3 + 1$, $2 + 1$) are females. The males are said to be married to the females in a pattern: $1 + 4$ to $4 + 1$, $3 + 4$ to $4 + 3$, $2 + 4$ to $4 + 2$, and so on. The rule, then, is that the descending numerical permutations are women, and they are married to their ascending reverse permutations. It will be observed that there remain four permutations in which the numbers are equal ($3 + 3$, $4 + 4$, $1 + 1$, $2 + 2$). They are a man, his wife, and two sons.¹¹ In the Chinese trigrams, it should be noted, there are a father, a mother, three sons, and three daughters. A dichotomous male-female principle does not seem otherwise to enter explicitly into the "philosophic" speculations of the Micronesians.

⁸ Max Girschner, "Die Karolineninsel Namoluk und ihre Bewohner," *Baessler Archiv*, 2 (1912) 201-208.

⁹ R. Wilhelm, *The I Ching*, 201.

¹⁰ Wilhelm Müller, *Yap*, Halbband 2, Georg Thilenius, ed., *Ergebnisse der Südsee Expedition 1908-1910*, II. Ethnographie, B. Mikronesien, vol. 2, pt. 2 (Hamburg, 1918), 375.

¹¹ W. H. Furness, III, *The Island of Stone Money* (Philadelphia, 1910), 135-136.

In conclusion, then, there are many close resemblances between Chinese *i pu* and Micronesian *bwe*. Especially outstanding are the use of the interstices of the fingers to hold oracular materials, and the subtracting of series of fours from a set to produce remainders of 1, 2, 3, or 4. My first suspicion of an affinity between *bwe* and something Chinese was aroused as a result of my recognition that *bwe* diviners made subtractions of sets of fours in a way resembling the four coins subtracted in the gambling game of *fan tan* as I had played it as a young man in Macao. In this game, four coins at a time are subtracted from a random heap, and one bets as to whether the outcome of the remainder will be one, two, three, or four coins. But it was not until I learned that *i pu* involved the holding of milfoil remainders between the fingers in a manner almost the same as the use of the interstices for the leaf strips that I was convinced that the resemblance between the Micronesian and Chinese systems was not due to chance.

Other important resemblances are the combining of remainders to form simple basic permutations (8 versus 16); the compounding of these basic permutations with others to form final compound permutations (64 versus 256); the concern with sequence; and the discarding of one or more of the potential elements of the set (one milfoil stalk, two leaflets). Less specific and therefore less diagnostic, but meaningful when joined with the above, are the use of myth to provide a charter for each of the two oracular systems; the personification or reification of the permutations and the use of a system of nomenclature by analogy; the assignment of a principle of sex, marriage, and offspring to the permutations; the effort to preserve randomness and objectivity without dependence on the skill or charisma of the diviner; and the use of plant materials believed to be endowed with magical efficacy and the objects of ritual manipulation.

The points of divergence between the two systems are relatively minor and should not be unexpected in view both of the lapse of time since the borrowing took place and differences in cultural milieu. The Asians use milfoil, the islanders use the coconut palm leaf, a difference dictated by ecological considerations. The milfoil stockpile used by the Chinese diviner contains exactly fifty elements; the leaflet stockpile and its knots on the other hand are random and indefinite.¹² The Chinese have sixty-four compound permutations, the Micronesians have 256. The former use eighteen manipulations to achieve a result, the latter need but four. The Chinese assign arbitrary number values to the totals for each manipulation, the latter use unmodified digits. The origin stories of *i pu* have strongly historical overtones, the origin myths of the *bwe* oracle are steeped in supernaturalism. Finally, the hexagrams are accompanied by astoundingly complex philosophical and moral exegeses, but the knots remain plainly oracular.

Although most of the differences between the two systems are probably attributable to factors of time and space, they may also be due in part to the fact that we have been comparing *bwe* with the classic kind of milfoil divination described in the *I Ching*, which reached its basic form in the Chou dynasty. But the oracle book has undergone considerable change through the ensuing centuries, and there have

¹² It may or may not be significant that in learning the groups of numbers and their names in Truk, about fifty shells are placed on a mat in sixteen different groups. See Augustin Krämer, *Truk*, Georg Thilenius, ed. *Ergebnisse der Südsee Expedition 1908-1910*, II. Ethnographie, B. Mikronesien, vol. 5 (Hamburg, 1932), 337.

been unorthodox deviations.¹³ About the time of Christ a young writer named Yang Hsiung used tetragrams instead of trigrams or hexagrams, although to be sure he at the same time introduced a doubly broken line in addition to the usual solid and broken lines ($3^4 = 81$ permutations). There were many other interpretations and departures, especially in the Sung dynasty. It is not unreasonable, then, to speculate that the Micronesians borrowed from an unorthodox system rather than the standard one.

It is provocative that there also exist in the islands some simple forms of knot divination reminiscent of an ancient Chinese yes-or-no method called *shih*, which used merely short and long milfoil stalks and is considered by most scholars to have been the prototype of the *i pu* method we have been dealing with. In 1721 Father Antonio Cantova interviewed some islanders from the Carolines who had been stranded on Guam and wrote that they used knots in palm leaves, counted as odd or even, in divining the outcome of an enterprise.¹⁴

Assuming that Cantova was right and did not report inaccurately what was in fact the complex *bwe* method, this would be evidence that at least two methods of using leaflets have existed side by side for some time in Micronesia. In the present century there have been many reports of a yes-or-no leaflet method called *tib* (*trip*, *tsif*, *djid*) on Yap, Ngulu, Truk, and Fais,¹⁵ and most likely the system was once prevalent throughout the whole Carolinian archipelago but simply has not been recorded adequately in the literature. This, however, is not what Father Cantova saw, for whereas he reported the tying of knots in leaf strips, the *tib* method consists of folding the leaflets back and forth in pleats. It is not the pleats that are significant; it is the length of the part of the tip of the leaflet that remains unpleated. There are many methods for interpreting these lengths, but the answers come out yes-or-no or good-or-bad. Although Father Cantova did not observe *tib*, we know there is a method of using knots that may be the same as the one he reported. It is found on Puluwat Atoll. One takes a knotted strip and counts off the knots by sets of fives. If the last knot is an odd number, this is a bad sign, and if it is an even number, it is a favorable sign.¹⁶ What the *tib* method, as well as Cantova's method, signifies historically is not clear. It is too simple and generalized to say that it came from China or that, like the simple milfoil or the *shih*, it developed locally into a complex permutation method.

It is remarkable to find as complex a system as *bwe* in a cultural milieu where the inhabitants practice simple horticulture, have no full time specialists, live in villages and scattered neighborhoods, and know nothing of writing. For the most part the people are literal-minded, with a concrete, object-centered approach to

¹³ See H. Wilhelm, *Change*, 79–91.

¹⁴ J. A. Cantova, "Lettre du P. Jean Cantova . . . Mar. 20, 1772," in *Lettres édifiantes et curieuses, écrites des missions étrangères, par quelques missionnaires de la Compagnie de Jesus*, vol. 18 (Paris, 1728), 233–234.

¹⁵ Sixtus Walliser, "Religiöse Anschauungen und Gebräuche der Bewohner von Jap," *Anthropos*, 8 (1913), 1067; Müller, *Yap*, 374; L. Bollig, *Die Bewohner der Truk-Inseln* (Münster, 1927), 203–204; A. Krämer, *Zentralkarolinen*, Halbband 1, *Lamotrek-Gruppe, Oleai, Fais*, Georg Thilenius, ed., *Ergebnisse der Südsee-Expedition 1908–1910*, vol. 10, pt. 1 (Hamburg, 1937), 376; Micronesian Seminar (Woodstock College), trans., "Some Remarks about the Religious Views of Our Islanders," by an anonymous missionary (1915), 10.

¹⁶ See Hans Damm and others, *Inseln um Truk*, Georg Thilenius, ed., *Ergebnisse der Südsee-Expedition 1908–1910*, vol. 6, pt. 2 (Hamburg 1935), 213.

life.¹⁷ They do not live far above the subsistence level and have little time for speculation and the elaborate philosophic, cosmologic, and moralistic proliferations present in as high a civilization as that of the Chinese. Consequently, we are forced to assume that in this instance of borrowing, the islanders were the recipients, the Chinese the donors. In the process, the cultural trait in question underwent considerable simplification without, however, losing its complex methodology and some of its rationales.

It should not tax one's credulity to acknowledge that a simple, preliterate culture can borrow a complex trait. The anthropological literature supplies instances of such happenings. Conspicuous examples that come to mind are Mesopotamian hepatoscopy and Etruscan haruspicy among remote Borneo and Philippine tribes, Chinese scapulimancy among the Athabaskan and Algonkian Indians, and the Indian (Asian) backstrap horizontal loom among the Micronesians. The possible spread of tapa making from China to Polynesia has been mentioned earlier. When traits of this sort are borrowed, unless they have been reinterpreted or simplified beyond recognition, they seem to have a certain quality of aberrance about them. Micronesianists will surely recognize that *bwe* stands out as a thing apart in the Caroline and Marshall islands.¹⁸

The trout in the milk, then, is a highly sophisticated system of divination in an unsophisticated preliterate culture. The evidence for intrusion seems indisputable.¹⁹

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¹⁷ Projective tests and field observations confirm this. See William A. Lessa and Marvin Spiegelman, *Uliithian Personality As Seen through Ethnological Materials and Thematic Test Analysis*, University of California Publications in Culture and Society, vol. 2, no. 5 (Berkeley and Los Angeles, 1954). Furthermore, it has been observed that "Inventiveness or originality . . . are not Trukese characteristics." See T. Gladwin and S. B. Sarason, *Truk: Man in Paradise*, Viking Fund Publications in Anthropology, no. 20 (New York, 1953), 226. These authors also speak of "concreteness and rigidity of thinking" (225-226), "the literal view of life" (269), and so on.

¹⁸ A complex system of divination resembling *bwe* has been described for West Africa by William Bascom in a series of publications, including "The Relationship of Yoruba Folklore to Divining," *JOURNAL OF AMERICAN FOLKLORE*, 56 (1943), 127-131, and in greater detail, *Ifa Divination: Communication between Gods and Men in West Africa* (Bloomington, Ind., 1969). The system involves 16 "basic" and 256 "derivative" figures obtained either by the manipulation of 16 palm nuts or by the toss of a chain of 8 half seed shells. Ifa divination is a major cultural complex for millions of Africans. Bascom himself has noted the resemblance of Ifa to *bwe* as well as to Chinese *i pu*. A wide comparative study of all these forms, including the geomancy of the Arabic world, deserves to be made.

¹⁹ I am greatly indebted to Paul Hinckley and Julian St. John for a reading of the manuscript.