On a Phylogenetic Classification of Mancala Games, with some Newly Recorded Games from the "Southern Silk Road", Yunnan Province, China / Vernon A. Eagle

Mancala is a family of games of calculation, played widely in Africa and Asia, whose details differ profoundly from one venue to another, but whose distinctive features point persuasively to a common origin. Their antiquity appears to be on the order of several millenia. Their present diversity, we may conclude, is the product of a complex evolution whose reconstruction, interesting in its own right, would also help illuminate the (largely unknown) history of cultural contact and human displacement which has taken place in the Asian and African continents outside the boundaries of the written record.

To reconstruct that history in the absence of historical evidence older than a few centuries would appear at first blush to be hopeless, but in fact it is in the richness of the present material that hope may be found. For the hundreds of mancala games described to date, and the, perhaps, thousands of games in existance are not simply diverse. They are diverse in a certain way: their diversity is the product of their actual evolution, and in the organization of that diversity we may seek the reconstruction of their history.

Mancala games are played on boards, which may be carved of wood or scooped out of the ground, and which consist of a number of holes, usually arranged in rows, most often two or four. The playing pieces are simple counters, commonly pebbles or seeds, which are usually completely undifferentiated. Play consists of distributing and redistributing the counters in the holes, typically by lifting the contents of a hole and, beginning with a neighboring hole, dropping these counters one by one in successive holes along a row, then back down the holes of the neighboring row in the other direction, and so cyclically around the board. This operation is known as "sowing". Depending on where the final counter drops, and the configuration this produces, the player may sow again, or remove counters from the board, or his turn may end.[1]

Why Classify Mancala Games?

Classification arises in human thought in several ways. Often, a classification is imposed upon a set of entities for convenience only. For example, a library may be arranged by the size of its books, for economical use of shelf-space. The same books might be arranged alphabetically by author, or grouped by the languages in which they are written, or by subject-matter. Or, a classification may be proposed, or imposed, to reflect a certain point of view as to what differences are most important to the analyst, or to the task at hand. For example, a field guide to flowering plants might be arranged by the color of the blooms. The task may be mnemonic: thus, the night sky, organized into constellations, becomes easier to keep in mind. Such classifications, while not necessarily arbitrary, are subjective, and cannot be shown to be "right" or "wrong". They are useful, or not; appealing, or not; illuminating or confusing as the case may be.

A special situation arises, however, when the entities to be classified have come into being by a process of evolution from a common stock. Then, the historical task of attempting to describe the actual evolution in question, the sum total of all the "speciation" events by which new entities are generated out of old ones, gives rise to the attempt to construct a hierarchical classification faithfully reflecting that evolution. Such a classification is said to be "phylogenetic," and it has the property that its categories, its "taxa" at every level, consist of all the descendents of a single ancestor.[2] Such taxa are said to be "monophyletic." Begging the question of whether the entities themselves are well-defined, a phylogenetic classification is objective, not subjective. It carries with it the implicit prediction that characters yet to be examined will be found to be distributed in accordance with its groupings. It can be refuted by evidence, and is hence, in principle, scientific.

The paradigm for phylogenetic classification is, of course, the evolution of biological species. Especially in the 1960's and later, rigorous attention to principles of phylogenetic classification has greatly changed, and strengthened, the discipline of biological taxonomy. Human languages, analogous to biological species, present a similar task. We take the view here that board games, and mancala games in particular, also present a case of present diversity resulting from a process of evolution from a common ancestor, and hold out the hope of constructing a phylogenetic taxonomy reflecting the actual course of history. This taxonomy should complement, not mirror, a similar classification of languages. On the one hand, a game can spread by diffusion from one culture to another, crossing a language boundary. On the other, the subjugation of one people by another may extinguish a language, leaving a game to survive.

Mancala Games Have a Common Origin

"The point here is that similar and often quite complicated modes of play exist in far-distant parts of the world ... [which] cannot conceivably be of independent invention and parallel development." (Townshend 1977b).

The hundreds, perhaps thousands, of mancala games played in the African and Asian continents, although differing widely in their rules of play: capture methods, initial configuration, method of relay, have also striking fundamental similarities which argue persuasively for a common origin for the entire group in time and space. That is, it is reasonable to suppose that they are all the descendants of a single ancestral game. First, game equipment consists of *a board of two rows of holes:* this is the generic shape throughout the area of mancala play (other configurations can all be regarded as derivative), and across completely different capture-method types; together with a set of *identical playing pieces.* Secondly, play consists of *sowing,* that is, lifting the contents of a hole and distributing them one at a time, starting with a neighboring hole and proceeding consecutively and cyclically around the board. Moreover, typically sowing is *compound,* that is, a typical move consists of a sequence of sowings, the placing of the final piece of each sowing determining the following one. Moreover, it is typical of all these games (again with exceptional cases) that the player's free choice is exercised only at the start of a move, and consists in choosing from which hole, and perhaps in which direction, to play: the

result is then determined by the rules of sowing and capture of the particular game.

Mancala games are quite singular among board games in that the playing-pieces used by the opponents are *undifferenciated.* Mancala play, excepting relatively recent spread from the Old World to the New, occupies a vast, but essentially contiguous zone on the Afro-Asian land mass. The simplest explanation for the existence of the multiplicity of mancala games all exhibiting the same (actual or derivative) complex nature is a common origin, and in the absence of strong contrary evidence, the simplest explanation is to be preferred.

The Relationship between Mancala and Other Board games

The nature of a board game as an intellectual contest between two opposing players is reflected in the usual condition of the games not of mancala type, that is, that the playing pieces are divided into two camps, one for each player. This is noted by Deledicq and Popova (Deledicq & Popova 1977, p. 21), whose apparantly inelegant term "Anti-Mancala" for the collection consisting of almost all other board games (race-games, war-games, position-games, hunt-games and so forth) is actually quite apt. Mancala games, I suspect, are *absolutely unrelated* to these other "two-camps-of-playing-pieces" games.

It is misleading even to refer to mancala counters as "pieces," in that this suggests they are homologous with, eg, pieces in games like draughts or backgammon or weiqi, which are placed or moved, on game-boards. Mancala counters have a dual role. Consider, for illustration, a board game like "Monopoly." The role of the counters in a mancala game is not only like that of the moving pieces in Monopoly, which the players move around the board. In fact, mancala counters are also like the Monopoly money, which the players compete to obtain. In this sense, mancala games are comparable to card games, in which the equipment, the deck of cards, is neutral, to be used by both, more generally by all, the players. The deck of cards, indeed, is not a priori dedicated to a contest. It may be used for a solitaire, and also, indeed, for divination.

Mancala games may have arisen, not by evolution from earlier games, but from a divinatory method.

Divination generally requires an element of randomness, or unpredictability: which card will be dealt from the shuffled deck? which way will the crack develop in the heated carapace of the turtle? what pattern will the tea leaves form? (cf Townshend 1977c, p. 95). The mancala board and counters provide just such unpredictability when used to perform the act which is the quintessence of mancala play: compound sowing. An extended sowing in a mancala game is reminiscent of a spinning roulette wheel or wheel-of-fortune: "round and round she goes, where she stops nobody knows". Moreover, the result of an extended sowing is not only the identity of the last hole sown in, but also the configuration of the entire board as the pieces have been redistributed in the holes.

I suggest that the closest relatives of the ancestral mancala game were, not other games, but other activities, perhaps divination, performed with the same equipment. My hypothesis is that not only the board, but the activity of compound sowing, existed before the game.

On Phylogenetic Classification of Mancala

Whether or not mancala games are genetically related to any other games and whether or not they arose from divination, if in fact they do have a common origin, then the possibility of a phylogenetic classification arises. Games, unlike living species, have no physical genomes, and are far less complex than living organisms. Too, while hybrids exist in biology, they may be far more common in the evolution of games, so that the resulting branching diagrams illustrating the history of their speciation may be rich in cycles. Recognizing that the analogy between biological species and board games is not perfect, still the core insights of the "cladistic revolution" in biological taxonomy are fully relevent to the task of classifying them, as these insights are based, not on the physical mechanism of evolution, but on the fact (or hypothesis, or assumption) of evolution having actually taken place.

The properties, or attributes, of the entities to be classified used in their classification are known as "characters" – for example, in classifying flowering plants, the position of the ovary, or the number of stamens; or, in languages, the presence or absense of tones; or, in mancala games, the number of rows of holes constituting the board. As evolution takes place, characters change. An ancestral fin becomes a leg, then a wing. When a character changes its state, the earlier condition is called "ancestral", the later condition "derived." A central insight of the cladistic method is to note that in adducing evidence for relative closeness of genetic relationship, one must seek for shared derived character states, and completely disregard shared ancestral character states. But this must be done with care. Birds and bats both have wings, but together they do not constitute a monophyletic group: wings arose more than once in the history of vertebrate anatomy. Moreover, the fin that became a leg became a fin again among the cetacians (whales and their relatives). So the piscine fin is ancestral to the mammalian leg which in turn is ancestral to the cetacian fin. Whether a given character state is ancestral or derived depends upon the context, that is, upon what taxonomic level is being considered.

The model is this: a monophyletic group consists of all the descendents of a putative common ancestor. This ancestor is described by character-states, all, in this context, ancestral. Over time, characters change state: new forms, descended from the ancestor, come into being. Assuming a given derived character-state arose only once in the group, and at the level, under consideration ("uniquely-derived"), then sharing it implies common descent not only from the ancestor of the whole group, but from the earliest of its descendants in which the new character-state is to be found. Sharing an ancestral character-state, on the other hand, is evidence only for descent from the ancestor of the whole group, a tautology.

Character states, then, must be assigned a polarity, an orientation in time, if they are to be useful in classification. The principal method for accomplishing this, in the absence of fossil evidence, is "outgroup comparison". The idea is: to help in deciding, for entities in a given group, which state of a given character is ancestral, consider entities outside the group, but as closely related to it as possible. If these possess the character in a consistent state, then that state is likely to be ancestral for the group under study. (Here

"likely" means more precisely that this explanation is preferred over others because it requires fewer additional hypotheses about unknown ancestors.)

We accept as taxa, then, only monophyletic groups, defined on the basis of shared uniquely-derived characters. Groups unacceptable as taxa, like birds + bats, which are the result of convergent evolution, are called "polyphyletic." This means they are composed of two or more monophyletic groups lumped together. The use of shared ancestral characters in classification generates a second type of unacceptable group, known as "paraphyletic". This, in effect, is a group created by subtracting one monophyletic group from another. For example "the great apes," excluding man, or "monkeys," excluding apes, or even "reptiles," excluding birds, are all to be rejected as paraphyletic. To take the second example, the possession of an external, visible tail is ancestral among primates; its loss among apes, including man, is derived.

We will find that both polyphyletic and paraphyletic groups have been proposed, and must be rejected, in classifying mancala games.

Classifications of Mancala in the Literature

1. Murray (1952) divided mancala games into three groups, distinguished on the number of rows making up the board. Thus, he had Mancala II, Mancala III, and Mancala IV. Next, he sorted the Mancala II games by geographic region, and in one of these regions ("West Africa: Guinea from the Senegal to the Gabon and the Sudan") classified the games into nine groups (including a "none of the above" miscellaneous group), organized by a key (Murray 1952, pp. 178-179). He uses, first, sowing rules, and then, capture methods, for organizing these groups. He didn't really know the Mancala III games. Mancala IV he divided into two types: (a) and (b) (Murray 1952, p. 207). The type-(a) games are characterized by captured counters being taken out of play. The type-(b) games are characterized by captured counters being sown back into the game by the player who has captured them. Murray then further divided the Mancala IV-(a) games into five groups, based on differences in the rules for capture. He organized the IV-(b) games according to the number of "reverse holes" – holes from which a player may reverse the usual sense of play and sow clockwise in order to capture.

2. Deledicq and Popova (1977) divided mancala games into two groups. The first group, "wari," consisting of most 2-row games and all 3-row games, is characterized by the players' sowing in the holes of the entire board (exceptional holes allowed), while the second, "solo," consisting of all 4-row games known at that time and a few exceptional 2-row games, is characterized by the division of the board into two halves, each player sowing in his own, and capturing from his opponent's half. They appear to be unfamiliar with the diversity of solo games, but give a typology for wari, (Deledicq & Popova 1977, pp. 102-105), according to the states of four characters: (s, a, p, m)

i. sowing is simple or compound: s = 0, 1 respectively.
ii. accumulation holes (sinks) are absent entirely, appear during the course of play, or exist a priori from the start of the game: a = 0, 1, 2 respectively.
iii. captures are from the final hole of a sowing, or from another hole or holes deter-

mined by it, or take place during the sowing: p = 1, 2, 3 respectively.

iv. play is in a single round, or in multiple rounds: m = 1, 2 respectively.

There result from this 2 x 3 x 3 x 2 = 36 possibilities, of which 15 are realized by games known to the authors. The authors hazard various hypotheses deduced from the purported nonexistence of the remaining 17.

3. Townshend (1977a, 1977c, 1979, 1986) agrees with Deledicq and Popova in dividing mancala into wari and solo, and follows Murray in dividing solo into two types, inexplicably reversing Murray's nomenclature, so that Townshend's type A is Murray's type (b) and Townshend's B is Murray's (a). As Murray clearly has priority, when letters "a" and "b" are used here, it will be in Murray's sense. Townshend proceeds to provide a far richer and more useful typology than any previous writer. He divides (Townshend 1979) wari games into five types, (designated a, b, c, d, e) distinguished by the method of capture. He divides Solo-(a) games into four groups, again on the basis of capture method only, and describes two "intermediate types" of Solo games with mixed characteristics of (a) and (b) type. He first (1977a) divides solo-(b) games into five types: *sombi, mangola, cisolo, kibuguza,* and Swahili *bao.* Later (Townshend 1986), he describes *bao* as belonging to the *sombi* group.

4. Russ (1984) provides a survey of mancala games, and the organization of his book is not perhaps intended as a formal classification. He retains Murray's categories of two-row, three-row and four-row games. Some of his chapters correspond roughly with Townshend's typology of two-row wari games, and he groups together two-row games lacking compound sowing.

5. Santos Silva (1995) gives keys to typologies for solo-(a), solo-(b), and "wari", (which he calls Mancala IV-B, Mancala IV-A, and Mancala II, respectively). He apparantly is not familiar with the work of Pankhurst or Townshend. He gives a key to 7 types classifying 37 *solo*-(a) games (Santos Silva 1995, pp. 125-131); a second key to 17 types classifying 28 *solo*-(b) games (pp. 145, 150-153), and a third key to 44 types classifying 144 "wari" games (pp. 194-217).

Discussion

Let us now examine some of the categories suggested by the referenced authors.

1. Wari. Unless one is prepared to argue that the original mancala game was a 4-row game played on a double-board, and that 2-row games arose by a simplification of the board, it is clear that all that is meant by "wari" is "mancala which is not solo." In other words, "wari" is a paraphyletic group, and we reject it as a taxon. When we write "wari," we mean "mancala games in which both, or all, players, play on the whole board (exceptional holes allowed). It is a useful word, but not acceptable as a taxon.

2. Mancala III. As we have noted above, Deledicq and Popova reject this grouping on the grounds that it is essencially just a variant of 2-row mancala, and that it is closer to the 2-row than to the 4-row games because it is, like the former, composed of "games of one cycle" in which the players all play over the entire board. But in fact, if we accept the proposition that 4-row games are also derived from 2-row games (by doubling the board), there is no reason a priori to hold that the dichotomy between 4-row games and

all others is any more profound (or more ancient) than that between 3-row games and all others. The real difference in the situation of 3-row as opposed to 4-row games becomes clear when one examines them against Townshend's typology of "wari." For his capture-method analysis applies equally to 4-row games, and it is seen that all 4-row games, of both types-(a) and -(b), employ type-(d) capture, that is from holes opposite the final hole of a sowing. On the other hand, 3-row games can be found employing several capture methods also found in 2-row games. The conclusion is that while this is consistent with the monophyly of 4-row African games played on double-boards (together with the few African 2-row games also played on double-boards, which also employ type-d capture), it implies that Mancala III is polyphyletic.

Thus we accept the category solo defined by Deledicq and Popova, and reject Murray's Mancala III. However, it is clear that there must have been a first 3-row game, and, furthermore, the geographical location of all extant 3-row games in the horn of Africa suggests that all of these games do have a common origin. What complicates the taxonomy is that the likeliest explanation for the multiplicity of capture-method is that some of these games are hybrids. Further analysis may resolve this, perhaps enabling us to construct a monophyletic group of "true 3-row games," as distinct from essentially 2-row games played on a 3-row board. For example, abalala' (Courlander 1943, Pankhurst 1971, p. 163), a type-(d) game (in the sense of Townshend) participates in the the geometry of a 3-row board, in that capture may be from one or from two holes opposite.

3. Townshend's type-(d). These are games in which captures are made from holes on the opponent's side of the board directly opposite the hole receiving the final counter of a sowing. Townshend's type-(d) games as he defined them, that is as a group of two-row and three-row games, is paraphyletic, as it excludes the four-row games which developed from them. But if we put the four-row double-board games in, then the group would seem valid. Solo is then a sub-group. Townshend (1979) also defines type-(d)-ii as the sub-group of games in which the final counter, landing in an empty hole, is captured together with the counters of the hole opposite. This also seems valid. His type-(d)-i, on the other hand, consists of type-(d) games with no other special characteristics, and is paraphyletic.

For convenience, and because the concept is seminal, we will describe capture of this sort, namely from holes opposite the hole on a player's own side receiving a final counter as "Townshendian capture." Games employing such capture as the principal method will be called "Townshendian mancala games." The subgroup of games employing what Townshend designated as "type-(d)-ii captures" as described above will be called "Gogo," after the Mijikenda game *kigogo,* which is in this group, and such captures will be call "gogolian." Then both Solo and Gogo are seen as monophyletic groups of Townshendian mancala games.

4. Solo. Examining the division of *Solo* into types (a) and (b) according to whether captures are removed from the board or sown back in, respectively, out-group comparison with other games shows clearly that (a) is the ancestral condition, and (b) is derived. This is greatly reinforced by looking at capture methods. As noted above,

all *solo* games employ Townshendian capture, so the candidate out-group consists of "wari" games employing this method. In general, Townshendian wari games capture opposite an empty hole on the player's side receiving the final counter of a sowing. This is also generally true for *solo*-type-(a) games, while for *solo*-type-(b) games capture is generally opposite a non-empty hole on the player's side receiving the last counter of a sowing. Thus we conclude that *solo*-(a) (which Townshend designates as *"Cela"* (Townshend 1977a, p. 50) is paraphyletic, and solo-(b) is monophyletic. Borrowing Townshend's terminology while perhaps extending its purview, we will use *Sombi* to mean "Solo games with captures opposite a final, non-empty hole sown back into the board." Thus *Sombi* will include, not exclude, Townshend's *mangola, kibuguza, cisolo,* and *bao.*

5. "Intermediate Types". Townshend (1979, p. 119) reports the existence of games (he calls them "Intermediate Type D") in Western Kenya (Nandi *kecuek* and Kipsigis *ndoto,* both on 4 x 6 boards) in which capture is opposite an empty hole receiving final counter, but where captures are sown back into the board. He does not give complete descriptions, but it seems likely that the immediate ancester of Sombi would have been just such a game, retaining the ancestral state of the Townshendian capture method.[3] It is consistent with this analysis that these "Type D" games have captured counters sown in starting at the postultimate hole of the sowing which captures them. Sowing in captures is strongly reminiscent of compound, or relay sowing. If it is indeed essencially a kind of generalized relay, then its original form might well have been to "relay" the captured counters as if they had actually occupied the empty, final hole opposite them. Townshend's subgroups "Type A-I-(iv), -(v), -(vi) and -(vii)" all employ sowing in of captures forward of the point of capture, which may be the ancestral state. Let us use Kecuek to denote "Solo games with captures sown back into the board."

6. Typology of Solo. Several of Murray's types of solo-(a) games are based on what Townshend calls "bonus captures." That is, a player who captures in the usual way adds to his winnings the contents of one or more holes of his choosing on his opponent's side of the board. As this does not appear outside of Solo, it appears to be possible to use this character to define a monophyletic group. We shall designate by *Nchombwa* the group of *solo* games employing bonus captures. The name is based on a game described from Malawi by Sanderson in 1913.

7. Typology of Sombi. Consider first the "reverse-holes" of Murray's typology. For outgroup comparison, we look at *solo* games outside *Sombi*. Most have strictly counter-clockwise sowing, some sow clockwise, and some allow either sense, but none allow sense-reversal only to capture or only from certain holes. It thus appears that "Sombi games with reverse-holes" may constitute a monophyletic group. We shall designate the group by *Alok,* which is, according to Driberg (1927), the term employed for the procedure by the Acholi of Uganda.

Townshend (1977a) defines the group Mangola to designate Sombi games in which the final counter of a sowing skips over an empty hole, to sleep in the following hole. This is a distinctive property, not found in any other games outside the Sombi group. Townshend reports one Mangola game with reverse-holes: the *Alur* game of Leka. This

game is perhaps a hybrid between *Mangola* and *Alok.*

Townshend defines *Cisolo* to designate *Sombi* games in which compound sowing is performed as in pussa-kanawa games[4], by relay from the hole following the final hole of the previous sowing, and having a distinctive capture method, first described by Driberg for the game *Choro* as played by the Lango in Uganda. If a player, whose turn it is to play, should have an occupied inner-row hole opposite an occupied inner-row hole of his opponent, then he immediately captures the contents of the latter, together with the contents of the opponent's outer-row hole in the same column, if any, and sows them in, starting in his own inner-row hole of this column. If such a capture is possible, it is obligatory. We call such captures "Langolian." The Lango game also has standard *Sombi* captures, as well as reverse-holes. The relay-method of *Cisolo* influences its capture-method, as captures are from holes opposite an occupied inner-row hole following the final counter of a sowing, that is, from the hole from which, if capture is not possible, a relay would begin. If we believe it likely, as Townshend does (1977a, p. 47) that Langolian captures arose once only, then we may define a monophyletic group Langola, for those *Sombi* games in which it occurs. *Cisolo* is then a subgroup. The fact that the Lango game has reverse holes may be explained in several ways: 1. *Cisolo* games have lost reverse-holes which their ancestors posessed; 2. The Lango game *Choro* is a hybrid between Ugandan *Alok* games and an ancestral Langolian game without reverse-holes; 3. *Alok* is polyphyletic, reverse-holes having arisen independently; or 4. Langola is polyphyletic. The second possibility seems to me the most likely, subject to further evidence.

Langolian capture is reminiscent of Swahili *bao,* in that, during the first phase of that game, opposing occupied inner-row holes occasion an immediate capture. Moreover, in Langolian capture and in Swahili *bao,* unusual in *Solo* generally, capture is obligatory.

Townshend defines the group *Kibuguza* to include two games having an unusually generous capture-rule: any final counter landing in the interior row captures from the two opposite holes.

We summarize the discussion above with the following table (facing page).

A Word on Methodology

It should be emphasized that the remarks above are intended only as a rough commentary on the groupings of mancala games which have appeared in the literature. They do not constitute a formal classification. This can only be accomplished "from the bottom up," rather than "from the top down." That is, for each game studied, we pose the question: what is the closest relative? or, failing that: what games described to date are most closely related to the game in question in sharing with it certain uniquely-derived characters. Then, of such a group, we repeat the question. Thus the higher taxa are *constructed* out of the lower, rather than being *defined* by certain properties, like Platonic ideals. Thus, having *proposed* Kekuek, above, or Gogo, as valid taxa does not *make* them such. Many more games will need description, and many more characters will be required, if we are to achieve much confidence in our understanding of the relationships between the mancala games already reported.

Mancala

- **Games with capture of holes** [Townshend type -(a) captures. e.g. "typical" East African Maasai *enkeshui*]
- **Games with capture of n-tuples** [Townshend type-(b) captures. e.g. "typical" West African *wari*]
- **Townshendian games**
  - **Solo** [four-row double-board]
    - **Nchombwa** [bonus captures]
    - **Kecuek** [captures sown back in]
      - **Sombi** [capture opposite occupied hole]
        - **Alok** [reverse holes]
        - **Langola** [Langolian captures]
          - **Cisolo** [relays from postultimate hole]
        - **Mangola** [last counter skips empty hole]
        - **Kubuguza** [final inner-row counter captures all opposite]
        - **others**
      - **others**
    - **others**
  - **Gogo** [final counter captured together with counters opposite]
  - **others**
- **Pussa-kanawa games** [empty, eat. Townshend type (e) captures]
- **others**

Polyphyletic groups:

- Games with only simple sowing (no relays)
- Games with postultimate relays (= Pussa-kanawa + Cisolo)
- Mancala III

Paraphyletic groups:

- Wari (in the sense of Deledicq & Popova 1977)
- Townshend's two-row type-(d)-i
- Mancala-IV Type-(a) (= Type B of Townshend, etc)
- Sombi exclusive of Mangola, etc
- [all the grab-bag groupings indicated above by "others"]

Some Newly Described Games from China

In a continuing effort to advertise the richness of Asian mancala play, I report here four games from South-West Yunnan Province, China. All the venues of play are on the "Southern Silk Road," an early trade route between China and India, across Burma.

1. A game with no sectors from Tengchong County.

   Principal Informants: Zhang Jingyao, male, 16, and his mother Yang Xiuying, 46, both Han nationality.

   Venue: Yunnan Province, Baoshan Prefecture, Tengchong County, Hehua Township, Xiaozhuang Village. This is on the main road from Tengchong to Lianghe.

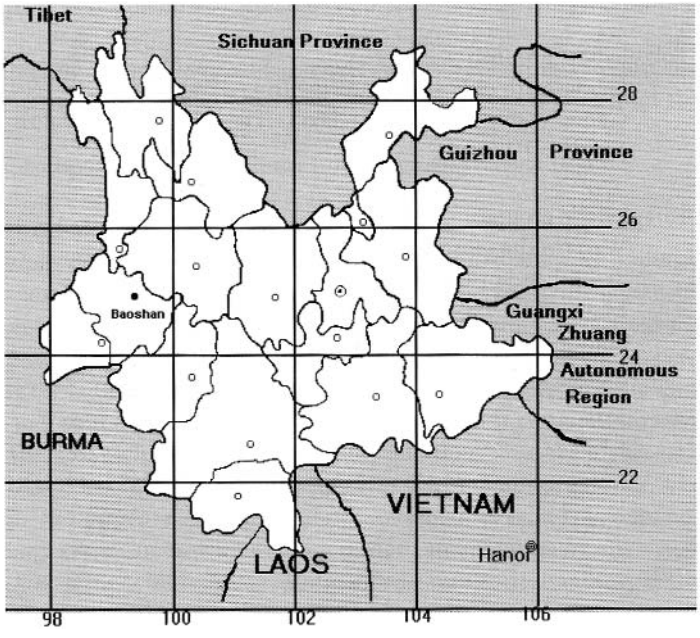
   Date of interviews: April 1996.

   Name of the game: *Laomuzhuqi. Qi* means "board game", as in *xiangqi* (Chinese chess) or *weiqi* (called Go in Japanese). *Laomuzhu* means "the old mother pig", and refers to the large stones used in play.

   Format: 2 x 5. The board is normally drawn on the ground with chalk or charcoal: a rectangle divided down the middle and into five compartments on each side, two compartments at one end marked with big X's to indicate that the two large stones, informally called *laodao,* are placed there at the start of each round. To begin, each player has five small stones in each of his other four compartments.

   Preliminaries: To decide who plays first, the players simultaneously throw out one of three fingers (*huaquan* in Chinese): Thumb, called *taishan* (the mountain); pinkie, called *xiaogongji* (the little cock); or index finger, called *mayi,* the ant. Then, as

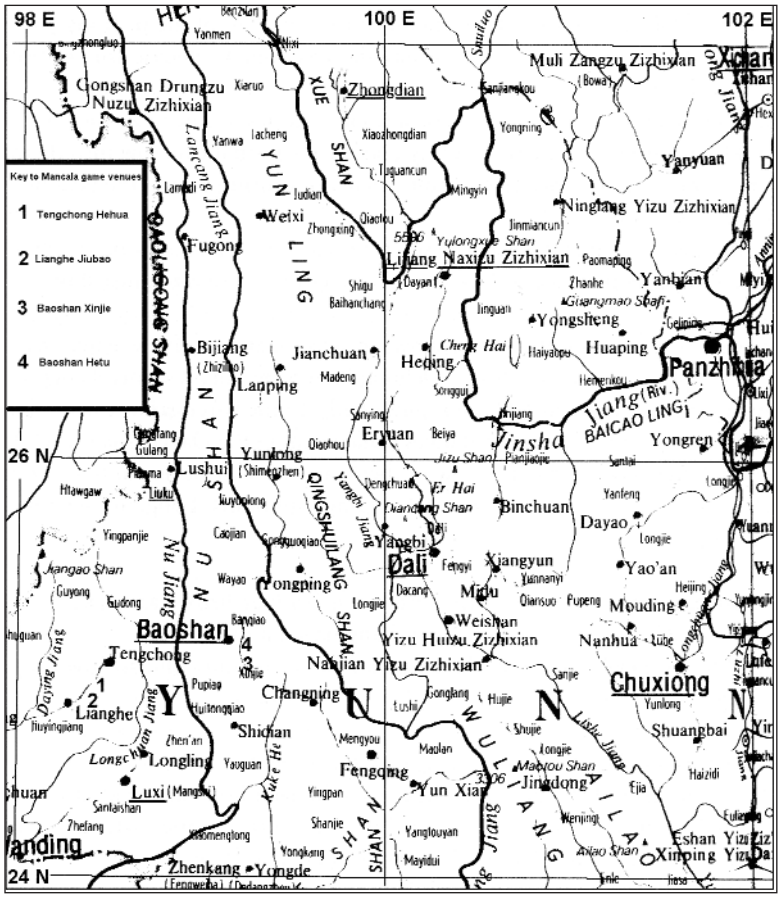
Yunnan Province, China



in "paper, rock, scissors" there is a cyclical order determining the outcome. To wit: The mountain crushes the chicken, the chicken grabs and eats the ant, and the ant knocks down the mountain (in Chinese: *Taishan ya ji; ji ba mayi zhuachi, mayi gongdao taishan*) This is done before each round.

The Play:

1. On his first move in each round, each player must play from a hole on his own side of the board. Subsequently, there are no sectors, *i.e.* both players may play from any regular hole, on either side of the board ("regular" meaning that the hole is not a *"tian"* - see 4. below).
2. Play is in either direction, but the *laodao* must be sown first in any sowing containing it.
3. Relays and captures are standard Pussa-kanawa type. That is, relays are from the hole following the final hole of a sowing. If this is empty, the contents of the next hole



Map of Yunnan Province, Baoshan Prefecture

are captured; if the hole following that is empty too, then the contents of the next hole are also captured, and so on. When a stable situation is reached at the end of a round, the stones are divided evenly between the players. If the number is odd, the remaining one is awarded by throwing fingers, as in the preliminaries.

4. At the end of a round, if one player has both *laodao,* he sells one of them to his opponent for 5 stones. Then both players fill their holes if they can. The filled holes, and a partially filled hole, belong to the player who fills them, but any holes left empty become the property of the opponent. They are his *"tian",* or productive fields.

Subsequent rounds.

5. Normally, the owner of the *tian* keeps a singleton in each, any surplus being removed by him. They are entirely disregarded in reckoning relay and capture. In particular, they are neither played from, captured from nor relayed from, although they may be sown into by either player.
6. When either player, in the course of play, approaches a series of 1 or more *tian,* he has the option either to skip over all of them, or to sow in all of them. If his move circles the board one or more times, he has the freedom to decide this option separately at each circuit.
7. Except that the trailing player, if he has not sufficient stones to sow in all the tian, is obliged to skip over them, while the leading player may in that case sow into them. However, if he does so, his move ends, and he may not capture even if the next hole beyond the *tian* is empty.
8. Under no circumstances may a *laodao* be sown into a *tian.* A *laodao* lying in a hole before a *tian* and being played or relayed in the direction of the *tian* must skip over the *tian.*

Affinities: The game's use of captured holes shows some similarity with the game *makhuhai,* played by people of Dai nationality in Dehong Prefecture, Luxi County, Fengping Township (my own notes, recorded 1995, not published). In the latter game, the trailing player is forbidden to sow into the captured holes (called hem in the Dai language), while the leading player is free to sow or not to sow in them, and to relay or not to relay from them. The lack of sectors appears in *laomuzhu* from Longling county, Longxin Mengmao (Eagle, 1995, p. 56).

2. A game from Lianghe County with a new method of hole capture.

Principal Informant: Zhao Jiakang, male, 25, Achang nationality.

Venue: Dehong Dai-Jingpo Autonomous Prefecture, Lianghe County, Jiubao Township, Henglu Village.

Date of Interviews: April 1996

Name of the game: *Dong Wo* (in Chinese, *dong* is to move, *wo* is a hole)

Format: 2 x 5. At one end of the board, a large stone in each hole; at the start of the game, five small stones in each of the other holes. The large stone is the *laomuzi* ("old mother") or simply *muzi* ("mother" - pig is understood)

Preliminaries: none. the players agree who plays first; on subsequent rounds, they

alternate

The Play: (in the following, "regular hole," or simply "hole," is distinct from "captured hole" as discussed below.)

1. Play is in either direction, with standard Pussa-kanawa relays and captures. A player plays only from his own side, except as in 14. below.
2. It is not allowed to sow one of the *muzi* into a hole containing the other one, but otherwise one is free to sow them in any hole of a sowing. If a *muzi* is singleton, and the neighboring hole contains the other *muzi,* the singleton may not be played in that direction. Such a singleton may, however, in the course of play, be relayed into a neighboring hole containing the other one, even deliberately. In this case, one of the *muzi* is captured by the player who is moving.

   Tianzi:
3. If at the end of a move all a player's regular holes are empty, and his opponent has at least two stones remaining in his holes (*muzi* counting as 5), he must place a singleton in each of his holes. He must do this whether it is he or his opponent who is about to move.
4. The round ends if, at the end of a move:

   i. All holes are empty, or

   ii. One player has a single stone and the other has no stones, or

   iii. Each player is reduced to a single stone, and neither player is in a position to capture the other's stone.

Winning a hole:

5. In cases i. and iii. above, the round is *ping* (even); but in case ii, the player having the last stone in one of his holes is the winner of the round, even though he may have captured fewer stones, and he is awarded a hole on his opponent's side. He chooses the hole, except he cannot take the end-hole containing the *laomuzi.* He puts the surviving singleton in it.
6. At the end of a round, after sale of a *laomuzi* (worth 5) if necessary, the players fill their holes with their winnings (except for holes which have been won (or purchased – see below) by an opponent). If necessary, a player borrows from his opponent's surplus in order to fill his holes.

Buying a Hole:

7. A hole can be bought for 10 stones. In order to buy a hole on his opponent's side, a player must have not only the purchase price of 10 (taking into account any accumulated debt), but at least one stone in addition to put in the bought hole. The purchaser chooses which hole to buy (except the hole at the end where the *laomuzi* are placed). If his opponent owns holes, won or bought, on the player's own side, these must first be bought back before a hole can be purchased on the opponent's side. To buy back a hole, a player must have not only the purchase price of 10, but an additional 5 stones to fill the hole. A player may not refuse to sell, if his opponent has the wherewithal to buy.
8. NB: the restriction on buying holes on his opponent's side while his opponent owns holes on his own side does not extend to winning a hole. That is if a player wins the

round he takes a hole on his opponent's side without regard to the status of holes on his own side.

9. The players may, by mutual agreement, exchange holes they own on one another's side. Moreover, a hole which has just been won may be immediately bought back by the loser of the round, if he has the 15 stones necessary for the transaction. After a hole has been bought, or bought back, the seller may use the proceeds to buy back, or buy on his own account. Thus a series of purchases might take place between rounds.

Captured holes:

10. Holes which are won or bought function exactly the same in play. We shall call them captured holes. Normally, the owner of a captured hole keeps a singleton in it.
11. Whenever a stone is sown into such a hole, by either player, the owner may remove it, and normally does. The owner may forget to take such a second stone. But if a third stone is sown in, the hole-owner's opponent (the player on whose side the hole lies) is entitled to remove two stones, leaving the hole singleton.
12. The owner of the captured hole may, at any time during play, and no matter who is moving, remove the singleton so that the hole is empty, thus causing or preventing a capture or a relay. If the hole becomes empty through capture, relay, or the owner's having removed a singleton, the owner may at any time put a single stone in his hole, thus causing or preventing a capture or relay. But he must do this quickly if the other player is moving, as the opponent is not obliged to wait for his decision to remove, or add, a singleton.
13. The owner of a captured hole may not sow a *muzi* into it, unless it is unavoidable as a relay. But if his opponent should sow a *muzi* in, it is captured. In other words, a player may not directly play a *muzi* into his captured hole, and he must avoid, if possible, relaying a *muzi* into his captured hole. A player may, however, relay a *muzi* into a captured hole if under standard relay procedure it is unavoidable, and thus capture it. For example, if it is singleton, and the next hole is captured, or if it is doubleton and both of the next holes are captured, etc.
14. A captured hole is added to the sector of its owner. That is, he is allowed to play a singleton from it.
15. The singleton in a captured hole, except it be removed by its owner, is captured or relayed normally.

Victory: A player who is reduced to a single regular hole has lost the match.

Affinities: The functioning of the captured holes is something like that in a game from Tengchong County, Wuhe Lianmeng (Eagle, 1995, p. 58), but here the leading player has much more flexiblity in their use. The awarding of a hole as a bonus to the player with the last stone in play has not been reported before.

3. A game from Baoshan municipality.

Principal Informant: Yang Guichang, male, 60, Han nationality.

Venue: Baoshan municipality, Xinjie Township, Shanjiao village, about 10 km south of Baoshan city.

Date of interview: April 1996

Name of the game: *Laomuzhukeng.* Chinese *laomuzhu,* as elsewhere, is "the old sow"; *keng* is a hole

Format: 2 x 5. One large stone in each row, the owner of the row free to place it in any of the holes. Large stones are called *laomuzhu,* small stones called *zhuer* (piglets). The game may also be played with 3 or 4 rows, and by 3 or 4 players, respectively.

Play:

1. Play is in either direction, with usual Pussa-kanawa relays and captures. A player plays only from his own side, except as in 4. below.
2. Any *zhuer* together in a hole with a *laomuzhu* belong to the player on whose side the hole lies, and may be immediately removed. Thus the *laomuzhu* is always singleton. She is played, relayed and captured normally. If two should fall together, just one is captured, again by the player on whose side the hole lies.
3. When both *laomuzhu* have been captured the move capturing the last one ends normally, but then the round ends, each player capturing what remains in his holes. If at the end of a move the only stone still in play is a singleton *laomuzhu,* the round ends and the laomuzhu is taken by the player on whose side she lies.
4. If a player's holes are empty and a *laomuzhu* is still in play, he plays from his opponent's side of the board.

Rounds.

5. *Laomuzhu* are not sold back. If a player has captured both, he keeps them, and puts each of them in one of his holes. Both players fill as many of their holes as they can. The trailing player loses the holes he cannot fill. They become the *shuitian* (paddies) of the leading player. He places a singleton in each. They must be consecutive, if there are more than one, and they must start at an end-hole. The leading player plays first.

Captured Holes:

6. The *shuitian* are sinks, that is, any stone sown in a *shuitian* becomes the property of its owner, and is out of play. They are sown into normally by both players, but neither played from, captured from or relayed from. *Laomuzhu* are sown into them normally by either player. In reckoning capture and relay they are entirely disregarded.

Victory: The game is played until a player has no holes left. If a player is reduced to a single hole, but has a *laomuzhu,* he may battle back.

Terminology. An ordinary hole is a wo. When a *laomuzhu* is moved or relayed it is said to *tiao* (leap). *Zhuer* do not leap, they simply *zou* (walk). For a player to move is *dong.* When capturing pussa-kanawa, one may say: *ou wo chi, ou wo chi,* where *wo* means hole, *chi* means to eat, but the informant isn't clear what character to write for *ou,* which is pronounced with a high level tone. It's meaning is "to scoop out", and when the player says *"ou wo chi"* he performs the motion of scooping out the empty hole with his fingers to show that it is empty. Alternatively, one may say: *"ge wo chi, ge wo chi"* where *wo* and *chi* are as above, and *ge* means "empty," but Mr. Yang has no idea how to write it. Thus both *ou* and *ge* are local dialect.

Affinities. The game is similar to *yucebao,* described from a Bai nationality village in Lijiang County (see Eagle 1995). The principal difference is that in *yucebao* captured holes function like regular holes, while in *laomuzhukeng* they are sinks. Also, ending the round when both *laomuzhu* are gone hasn't been reported before.

4. Piggyback. A game from Baoshan municipality.

Principal Informant: Tao Rusong, male, 68, Han nationality.

Venue: Baoshan municipality, Hetu Township, Xiacun (lower village), several kilometers east of Baoshan city.

Date of interview: April 1996.

Name of the game: *Laomuzhuqi* "Old sow chess," as above.

Format: n x 5, where n is the number of players, and may be 2, 3, 4, or 5. One large stone, the *laomuzhu,* in each row, and five small stones, the zhuer, in the other four holes. Each row belongs to one player, and each is free to put his *laomuzhu* where he likes. Boards are drawn in the ground with a stick, and are rectangular, divided into squares, not a series of holes. (Mr. Tao states that he himself has played with five players and rows, but this is maximal. He is positive that he has not played since the age of eight, when all children in the village played, and that no-one plays anymore.)

Preliminaries: Throw fingers *(huaquan)* to see to see who goes first, in subsequent rounds the trailing player plays first.

Play:

1. Play is in either direction, with standard Pussa-kanawa relays and captures. Each player plays only from his own row.
2. The first player is free to choose the direction of play, and if there are more than two rows, and the first player is on an inner row, he decides which way to turn on reaching the end of the row. But once the direction is established it cannot be changed. Adjacent rows are sown in opposite directions.
3. Any stone sown into a hole with a *laomuzhu,* and any stones in a hole into which a *laomuzhu* is sown, stay together with the *laomuzhu,* and if two *laomuzhu* are sown together, they stay together, are relayed and captured together: the piglets stay with their mother. In effect, the *zhuer* travel piggyback, and whoever captures their mother captures them too.
4. When a player whose turn it is to move has only empty holes, the game ends. The stones remaining in the other players' holes belong to no-one. The captured stones are counted, the *laomuzhu* counting five, and the player with the greater number of stones is the winner.

Affinities: The use of the *laomuzhu* is quite unusual: in no other reported mancala game does a group of stones travel as a group, not "spreading out" as sowing normally implies.

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Notes

1. For descriptions, terminology and bibliography, see Murray 1952, Deledicq & Popova 1977, Townshend 1979, Russ 1984, Santos Silva 1995, Eagle 1995.
2. On the taxonomic terms and concepts discussed here, and for extensive references, see Duncan and Stuessy 1985, Minelli 1993, Wiley 1981.
3. Townshend reports at second-hand, but does not confirm, the contrary possibility: a solo-(a) game with capture from opposite a non-empty hole receiving a final counter. He calls this "Intermediate Type C".
4. This would appear to be a notable example of convergent evolution, as Cisolo is otherwise quite unlike Pussa Kanawa. On Pussa-kanawa games, see Eagle 1995.

Chinese character glossary

Baoshan municipality		保山市
Dong Wo	game name	动窝
Hehua Township		荷花乡
Hetu Township		河图乡
Henglu Village		横路乡
Jiubao Township		九保乡
Laomuzhukeng	game name	老母猪坑
Laomuzhuqi	game name	老母猪其
Lianghe County		梁河县
Shanjiao Village		山脚村
Tao Rusong	informant	陶如松
Tengchong County		腾冲县
Xiacun		下村
Xiaozhuang Village		肖庄村
Xinjie Township		辛街乡
Yang Guichang	informant	杨桂昌
Yang Xiuying	informant	杨秀英
Zhang Jingyao	informant	张景尧
Zhao Jiakang	informant	赵家康