

# Recuay Gaming Boards: A Preliminary Study

Las curiosas tablas de madera aquí tratadas, fueron interpretadas de los más diferentes modos, como ser: planos, mapas, ábacos o tableros de juego. Lo más probable, sin embargo, es que hayan formado parte de algún juego. El presente intento de reconstrucción de este juego consiste en la variación y estandarización de la disposición de los diversos elementos de los tableros. Las diferentes combinaciones que acaso hubiesen podido formar la base del juego en cuestión, son sometidas a un examen detenido y, finalmente, se exponen en detalle las posibles reglas, respectivamente el desarrollo del mismo.

The purpose of this study is to establish the function of a class of artifacts that has been an enigma to archaeologists for more than one hundred years. This will be done by reviewing and evaluating the literature directly and indirectly related to these objects in regard to new information. The excavation of one of these artifacts during the summer of 1971 from the site of Pashash, Ancash, Peru has for the first time established a cultural context and definite chronological position. The cultural association, established by ceramic analysis is late Recuay. The chronological position is the latter half of the Early Intermediate Period as established by the following radiocarbon date:

Tx-1329

1400 ± 60

A. D. 550.

Although these artifacts have been variously described as models or maps, computers or abacuses, and gaming boards, the extensive review of the related literature and other evidence strongly indicates these boards functioned as gaming boards.



Although the exact conformation of these terraced and compartmentalized objects of stone and wood varies, the following description supplied by Bennett will suffice for their immediate identification:

"...one common type has a total of 21 hollows or boxes. The board itself is roughly square, and has 7 small boxes of about the same size lining 2 of the diametrically opposed corners. The inner flat space between these corners contains 2 somewhat larger boxes and 1 extensive central one. The remaining 2 corners have 2 boxes each, raised 2 tiers above the lower surface of the board." (Bennett 1946:614 f. ).

In the second section of this paper, which will deal with the formal aspects of these gaming boards, the immense variety of the arrangement of the above listed crucial elements is discussed.

The first reported find of these puzzling objects was in 1870 (Heuzey). A board of wood, exquisitely finished with carved designs, and covered with a thin sheet of silver foil attached with minute nails was recovered from a tomb at Patecte in the province of Cuenca, Ecuador. The board which measured 33 centimeters by 27 centimeters was only part of a rich grave offering which included many finely made objects of beaten gold. Descriptions of this board can be found in Heuzey (1870), Bastian (1878-1889, 1: 121), González Suárez (1878:25-26, and Pl. V; 1892:67-75, and Pls. III and IV), Verneau and Rivet (1912-1922:244-250, and Pl. XV, 3, 5 and 6), Baudin (1928:124-126), and Means (1931:327-329, and Fig. 158).

The controversy over the exact function of this artifact began almost immediately. Bastian (1878-1889, 1:121) considered, with reservations, the object to represent a model or plan of the structure of an Inca estate or fortress. Bastian cites as support for this thesis the writings of Cavello Balboa. Cavello (1840:223) wrote that the Inca general Tito-Atauchi, who was in charge of the armies campaigning in that region, sent to Huscar "une description du pays et de la situation du fort ou pucara." However, nowhere in the text does Balboa state that a drawn or modeled map of the region or plan of the fortress was sent.

González Suárez (1878:26-27; 1892:68-71) said that the board constituted not only a model or plan but also a map. He saw the terraced and compartmentalized surface as representing the sacred burial grounds of Chordeleg, near the discovery site of Patecte. The different squares were the tombs of the kings and high priests of the Cañari nation whose faces were engraved upon the sides of the board (Fig. 1). The open center space corresponded to the enclosed ceremonial area of the fortress. The four crocodiles symbolized that Chordeleg was completely surrounded by rivers and that the orientation of each crocodile indicated the direction of the current of each river. González Suárez continued to state that the crocodiles and the rosettes on the bottom of the board indicated direct Mesoamerica contact and supported this statement by providing linguistic data that he felt provided evidence of a connection be-

tween the Mayan language of the Quiché and the ancient place names of the region around Chordeleg. González Suárez also cited the Spanish chroniclers Castellanos and the Inca Garcilaso as further support for his theory. Castellanos (1852:446) stated that Benalcázar received from a cacique, named Chapparra, a map of the kingdom of Quito. Castellanos, however, went on to add that the map of Quito was drawn on cloth. Nowhere does he mention maps or plans made or modeled of wood or stone. Garcilaso (1609, Pt. I, Bk. II, Ch. XXVI:259) referred to the common practice of the Incas of drawing or making models of their estates or fortresses. He described a model of a fortress at Cuzco which was so detailed that the exact location of roads, walls, and rivers were represented along with the terrain of the region. This model was made of soil which in relief represented the surrounding countryside, pebbles were employed to represent the roads and structures. Betanzos (1880:108) also mentions a clay model or plan of Cuzco. The maps that Garcilaso referred to were an attempt to create a basic cartographic record of the region. Models of individual structures have been found which were manufactured of stone or ceramic but none correspond in any way to the class of artifacts under discussion. Urteaga pointed out that:

"... hasta hoy, ninguno de los monumentos militares hallados en el Ecuador y en el Norte del Perú reproducen ni aproximadamente semejante plano de construcción. Las fortalezas de Atun Cañar, en el Ecuador, Chulucanas en Piura, Paramonga en Ancash, y Pucalá en Lambayeque, nada tienen de semejanza con el plano de Monseñor González Suárez, ..." (Urteaga 1928:100).

In 1880 Charles Wiener (1880:776-778) recorded the occurrence of three similar objects in the Callejón de Huaylas, an interandine valley in the north highlands of Peru. Wiener stated that the objects were "compteurs" that functioned as a counter or abacus. The following quote from Wiener illustrates how the objects functioned:

"Ces compteurs étaient disposés en plusieurs étages; dans l'étage inférieur on remarquait des champs de différentes grandeurs. La comptabilité s'y faisait avec des fèves ou avec des cailloux de toutes couleurs. Le caillou marquant une unité dans le plus petit champ doublait de valeur dans un champ plus grand, triplait dans le champ central, sextuplait dans le premier étage et avait douze fois sa valeur sur la plate-forme supérieure." (Wiener 1880:777).

Unfortunately, Wiener did not give the source for his information and no other informant has been located either in Peru or Ecuador to support his statement. It is extremely likely, however, that Wiener's information was based upon confused data.

Verneau and Rivet (1912-1922:250), because of the distribution and variety of configuration of the artifacts, rejected outright the model or plan theories of Bastian and González Suárez but added the possibility of the boards functioning as mnemonic devices by citing Velasco and Acosta.

Juan de Velasco (1841-1844, I:208-209) reported on a highland tribe in southern Ecuador, near Chordeleg, which used a unique mnemonic device. The tribe had taken their name from a legendary chief, Caras, who had led them at some time in the remote past by sea from the south through a safe landing on the Ecuadorian coast and into the Cordillera where he had subdued the highland tribes. The Caras lived just to the north of the Inca empire and reportedly had Quito as their capital. Unlike the Inca, they did not possess the elaborate messenger system or knotted string recording devices. They did, however, have a method for counting and keeping their records:

"Se reducía a ciertos archivos o depósitos hechos de madera, de piedra o de barro, con diversas separaciones en las cuales colocaban piedrecillas de distintos tamaños, colores y figuras angulares, porque eran excelentes lapidarios. Con las diversas combinaciones de ellas, perpetuaban sus hechos, y formaban sus cuentas de todo." (Velasco 1881-1884, II:7).

The object described by Velasco was also mentioned by Cevallos (1886-1889, I:28). As tempting as it is to assign this identity to the boards further investigation yields no more corroborating evidence and the following points oppose such an identification: 1) spacial distribution; only one board has been recovered from Ecuador, all the others were found in the Recuay heartland or contiguous coastal locations (Pachacamac and Chan Chan); 2) temporal distribution; the examples from Pashash probably date from c. 500 A.D. until the period of Tiahuancaoid expansion (there is absolutely no evidence of these boards as a culture element lasting into the period of Incaic expansion and conquest); 3) the region that Velasco and Cevallos stated possessed such a device does indeed possess a class of artifacts similar to the game boards. In my opinion the objects described by these Ecuadorian chroniclers are not the same as those that are the subject of this paper. Arriaga (1922) and Holm (1958) have dealt with a class of artifacts that are spatially limited to the region around Chordeleg. Interestingly enough the same controversy surrounds the Ecuadorian boards, as Arriaga (1922) labeled them computers while Holm (1958) considered them game boards. Arriaga acknowledged the differences between "El contador Cañar" and the boards under discussion here, which he described as follows: "...este contador de Chordeleg fue de otro tipo, fue un contador rico, y de un sistema ya conocido en el Perú, ..." (Arriaga 1922:83).

Verneau and Rivet (1912-1922:250) also referred to Acosta who stated that:

"Fuera de estos quipos de hilo tienen otros de pedrezuelas, por donde puntualmente aprenden las palabras que quieren tomar de memoria." (Acosta 1894, II:108).

Acosta, like the other chroniclers that recorded the conquest of the Incas, did not mention the employment of a board or any board-like object that functioned as a memory aid. The use of stones as a mnemonic device is more accurately expressed by the following citations than by the previous one:

"It is really marvelous to see old men learning the paternoster with one circle of little stones, and with another the Ave Maria, and with still another the Credo, and knowing what every stone means: . . ." (Acosta 1894, II, Bk. VI, Ch. VIII).

"It is a pleasant thing to see them correct themselves when they do err; for all their correction consists only in the beholding of their small stones." (Acosta 1894, II:108).

Thus the Incaic practice of committing information to memory with the aid of pebbles, beans, or grains of maize, in addition to the quipu, was firmly established by the early chroniclers; but no evidence was presented which would allow this practice to be connected to the compartmentalized boards.

However, several chroniclers made statements concerning the Inca practice of employing pebbles, beans, or grains of maize in counting and mathematic computations. These statements, when considered in view of Wiener's identification of the boards as computers, Guamán Poma's description and drawing of an abacus employed by the Incas, and Locke's and Wassén's work concerning the functions and limitation of the quipu, create a body of interrelated information that deserves investigation despite the fact that the board has yet to be recovered in Incaic context.

The question here is not if the Incas possessed and used an abacus but if the abacus they used was (or evolved from) the compartmentalized boards under discussion.

Guamán Poma de Ayala (1936:360) sketched, sometime between 1583 and 1613, an Inca holding a quipu which illustrated in the lower left hand corner (Fig. 2) a compartmentalized board upon which calculations were performed. Wassén describes the object as follows:

"el ábaco consistía en 4 x 5 cuadrados con 5, 3, 2 y 1 agujeros, respectivamente. Para contar se usaban piedrecitas, granos y semillas, o cosas por el estilo." (Wassén 1940:13).

Other chroniclers that confirmed the Inca practice of using pebbles, beans, or grains of maize in mathematical computations are as follows:

"Contar por piedrecitas". (Bertonio 1879, 1:139).

"De la Geometría supieron mucho, porque les fue necesario para medir sus tierras, para las ajustar y partir entre ellos: mas esto fue materialmente no por altura de grados, ni por otra cuenta especulativa, sino por sus cordelles y piedrecitas, por las cuales hazen sus cuentas y particiones, que por no atreuerme a darne a entender, dexare de dezir lo que supe dellas. . . .

"De la Aritmetica supieron mucho, y por admirable manera, que por nudos dados en vnos hilos de diuersas colores dauan cuenta de todo lo que en el reyno

del Inca auia de tributos, y contribuciones por cargo y descargo, sumauan restauan, y multiplicauan por aqiellos nudos, y para saber lo que cabia a cada pueblo hazian las particiones con granos de Mayz, y piedrezuelas, demanera que les salia cierta su cuenta." (Garcilaso de la Vega 1609, Libro II, Cap. XXVI).

"También hacían sus cuentas por piedras y por nudos, como está dicho; en cuerdas de colores, luengas, contaban uno, diez, ciento, un mil, diez cientos, diez mil, diez cientos de mil." (Martín de Morúa 1922-1925:177).

Leland Locke, Nordenskiöld, and Wassén are all in agreement that the quipu was used primarily for recording not calculating. Nordenskiöld (1925a:21) acknowledged the mathematical nature of the quipu but stressed possible calendrical functions that disallowed the strict necessity for an auxiliary calculator. Leland Locke (1923:32) not only stated that the "quipu was not adapted to calculation" and was used primarily for recording but also identified the boards in question as examples of an abacus.

"For this purpose small pebbles and grains of maize were used. These facts are known both from numerous statements to this effort and also from the archaeological specimens of the pebbles and tables of stone separated into compartments for the purpose of calculation." (Locke 1923:32).

In later articles Locke (1927:4; 1932:39) reiterated the point that "the quipu was not adapted to calculations" because "... a superficial study of the quipu will show that it is necessary to carry the count to the completion of the highest order before beginning to tie the knots." It should be pointed out that none of Locke's articles after 1923 identified the boards referred to as calculators by Wiener as examples of an abacus; although he continued to stress the need for an auxiliary calculator. Wassén (1940:26) made the most cogent statement concerning Wiener's statement of their function, Guamán Poma's illustration of an abacus, and the general concensus of opinion that calculations had to be completed before they could be recorded on the quipus. Wassén rejected the idea that the compartmentalized boards were computers and added the following thought in regard to Guamán Poma's drawing:

"No hay que imaginar que un ábaco peruano tuviese que ser invariablemente un material más o menos sólido como piedra, madera, etc. Es muy probable que a veces consistiese, nada más que de la figura de un ábaco delineada rápidamente sobre la arena, o sobre un pedazo de tela, etc. y el resultado final anudado en el quipu." (Wassén 1940:26).

Bennett was of the same opinion when he wrote:

"The Inca may have had other forms of abacuses, but so far this is the only one that has been specifically and clearly identified. Obviously, it would not be necessary to have special boards for the calculations. The simple pattern of squares and holes could be quickly drawn on a clay floor and serve the purpose equally well." (Bennett 1946:616).

In regard to the possible relationship between the compartmentalized boards and the Inca abacus, Bennett had this to say:

"It is not by any means clear how any of the boards could have been used in calculating, and the identification as gaming boards is probably correct. However, it is entirely logical that a true abacus might have developed from a game of this nature, or vice versa." (Bennett 1946:615).

The following are negative points that have to be considered in dealing with a possible continuum between the compartmentalized boards from the Recuay heartland and the Inca abacus:

1) As stated above, none of the chroniclers mention a board as a necessity for any of the various counting techniques employed by the Incas.

2) Locke, Wassén, and Bennett have all pointed out that a standardized stone or wooden board was not needed to perform mathematical computations in connection with the quipu. All three point out that the computations could be easily performed on a temporary pattern scratched on the ground.

3) Disregarding the differences in conformation between the boards and the object in the lower left corner of Guamán Poma's drawing, the fact remains that if a standardized board complemented the quipu it should have basically the same distribution through time and space as the quipu. No evidence to support this supposition is available. The boards cluster in the Callejón de Huaylas and no similar artifact has been recovered in Incaic context. I have been unable to establish any correspondence between the Inca quipu and the compartmentalized boards after a survey of Inca period artifacts. John Rowe was unable to locate any such similar artifacts as shown by the following:

"No gaming boards have yet been identified in the archeological collections from the Cuzco region." (Rowe 1946, 2:289).

#### 4) Temporal and spacial distribution

As stated above the dating of the board recovered from Pashash, established by radiocarbon testing and ceramic analysis places the boards prior to the period of Tiahuanaco expansion. The northern and coastal location of the only three examples made of wood support the idea that the Tiahuanaco incursion into the Callejón de Huaylas pushed the Recuay or remnants of Recuay influence northward ahead of the Tiahuanaco advance. It is most probably during this period that the compartmentalized boards ceased to exist as a cultural trait. It is upon the above listed points, but especially due to the lack of correlation through time and space, that a continuity between these boards and the Inca abacus is rejected.

Up to this point various theories labeling the boards as models or plans, maps, and computers or abacuses have been reviewed, evaluated, and elimi-

nated. The following section deals with theories that have identified the boards as game boards.

Nordenskiöld (1918:167-168) voiced the opinion that the boards were once used to play a game that still survives in the Chaco called Tsuka.

Philip A. Means (1931:328-329) was of the opinion that the boards were used to play the game of "Chuncara". Bernabé Cobo described the game, also mentioned by Garcilaso de la Vega (1609, II:40), as follows:

"Chuncara era otro juego de cinco hoyos pequeños cavados en alguna piedra llana ó en tabla: Jugábanlo con frísoles de varios colores, echando el dado, y como caía la suerte, los mudaban por sus casas hasta llegar al término: la primera casa valía diez, y las otras iban creciendo un denario hasta la quinta, que valía cincuenta." (Cobo 1893, IV:228).

Means noted the discrepancy between Cobo's description and the composition of the compartmentalized boards but considered the boards to have been parts of an unusually elaborate version of Chuncara.

Horacio Urteaga considered the boards to be part of the game "Paytalla" which was described by Martín de Morúa (1922-1925:95) as follows:

"Hay entre los indios un juego llamado por ellos paytalla; es un género de fríjoles redondos de diversos géneros y nombres e hizo (!) en el suelo con la cabecera alta de donde sueltan los tales fríjoles, y el que de ellos pasa adelante y hace ruido, más gana a los otros; está con sus rayas y arco a manera de surcos y tienen sus nombres particulares, el juego como son apaitalla y otros, así los anquies, que son Infantes, dotados de los hijos de los Ingas, jugaban así a este juego como acto que es muy ordinario, estos indios llaman lapisca con su tabla y agujeros ó señal donde iban pasando los tantos." (Urteaga 1928: 101).

The lack of evidence needed to establish a continuity between the compartmentalized boards and the Andean cultures of the 16th century is only compounded and further confused by the vagueness of the chroniclers, who often recorded no more than the name of a game (Romero 1941:45-53).

Efforts to identify the compartmentalized boards by means of more recent ethno-historical evidence has turned out just as fruitless as consultation of the earlier chroniclers. I have at this point been unable to locate a game the description of which would allow it to be played upon the compartmentalized boards. Nor has a limited examination of the linguistic evidence turned up any viable connections. Tsuka, the game Nordenskiöld (1918:167-168) reports from the Chaco, could indeed be adapted to be played upon the compartmentalized boards. The rules for the playing of "tsuka" were given by Cooper (1949, 5:520-521). In addition, the name "tsuka" is a variant form of the Quechua word "chunka" meaning "ten". Chunkara, the game Means (1931:328-329) connected with the



boards, is from the same root word. But this relationship can only be carried back to the Incaic period and no evidence exists to link the boards with the Incas.

I am of the opinion that the boards functioned as a part of a game, but a game that has yet to, and indeed might never, be identified. In the following section, after a brief presentation of the formal aspects of the limited number of boards available for this study, an attempt will be made to reconstruct in general the type of game once played upon these boards. The reconstruction will be based upon the variation and standardization of the arrangement of the component elements that constitute the board. In addition to this, inferences made possible by an iconographical study of the boards from Patecte and Pashash will be included.

Thus far the boards are the only part of the game identified. No counters or die have been recovered in association with any of the boards. This survey examines an even dozen boards (Figs. 3, A-J). Nine were manufactured from a sandstone-like material and were recovered in the Callejón de Huaylas. Three were carved from wood and were recovered from Patecte, Pachacamac, and near Chan Chan. By far the most important board, referred to here as the "Schaedel Stone", was photographed by Dr. Richard P. Schaedel around 1950 in the small highland community of Cabana. The "Schaedel Stone" probably originally came from the ruins of the site of Pashash located less than a mile to the south of Cabana. The "Schaedel Stone" serves as the Rosetta-Stone for the reconstruction of the game. It is the only board that unites the variations in conformation of elements of the other eleven boards.

The most obvious aspect that all these boards share is symmetry. This symmetrical arrangement of the constituent elements overrides any variation in their assemblage. Indeed the probable reason for this symmetry is suggested by the "Schaedel Stone" which exhibits two diametrically opposed jaguar heads, sharing a common fang represented by the center compartment and their heads and eyes represented by the corner squares. This creates a strong feeling of duality which is also evidenced by the other boards. The following elements are always present, although appearing in a variety of arrangements: 1) two separate sets of seven small compartments, boxes, or squares; 2) two separate sets of "home" compartments which consist of two separate units ("home" is what Bennett describes as the corner two-tiered boxes - as can be seen in Fig. 3; they are often neither in the corners nor tiered); 3) a central compartment or box that evidences a strong connection to the two sets of seven small compartments; 4) two out-sized compartments that are related to the central compartment with one aligned to each set of seven small compartments. The components of the board when considered separately, as in the manner shown in the diagram (Fig. 3 K), bring to mind a race game of the nature of Pachisi or the Aztec Patolli. Indeed Culin was of the general opinion that all American Indian games operated on just such a level:

"The games of the American Indians may be divided into two general classes - games of chance and games of dexterity. Games of pure calculation, such as chess, are entirely absent. The games of chance fall into one of two categories: First, games in which implements, like dice, are thrown at random to determine a number or numbers, the sum of the counts being kept with sticks, pebbles, etc., or upon an abacus or counting board or circuit, ..." (Culin 1903: 58).

The game was undoubtedly played with counters (markers) of some sort and a strong possibility exists that some method of interjecting random chance into the game was employed. Chance was most probably introduced into the game through the use of dice or objects which served the same purpose. The pre-Columbian use of dice (or sticks serving the same purpose) was established archaeologically for the central and northern Andean region by Karsten (1930: 26; 1931: 3-4), Rivet (1927: 24) and Nordenskiöld (1930: 212). The general pre-Hispanic existence of dice and game boards, their distribution and available rules was documented by Culin (1903: 58-64; 1907: 31-32).

As can be seen the information available allows few inferences to be made as to the specifics of the game. The assumed field of play consists only of the game board with each player beginning with possession of his "home" and at least nominal control over the four squares that as part of the seven small compartments are adjacent to his "home". The zone of conflict includes the shared central compartment and the two sets of seven small compartments. The two out-sized compartments that are located on each side of the shared central compartment are neutral and are not considered as a part of the playing field. As to counters, based upon the figures present upon the boards from Patecte and Pashash it would appear that a total of ten were used, five for each contestant or team. Four, corresponding to the four heads engraved on the board from Ecuador, are considered as "soldiers". The fifth piece occupies a more important position corresponding as it does to the jaguar deity motifs carved on the corners of both boards and represented by the compartmentalized surface of the "Schaedel Stone". Other iconographic evidence consists of the representations of three beans that surround the jaguar or crocodile on the board from Patecte which might well be related to the three crosses that adorn the body of the double-headed jaguar on the piece recovered from Pashash.

Obviously an infinite number of games can be reconstructed from the above listed information. The general concepts employed in the following reconstruction can be found in Avedon and Sutton-Smith (1971), Murray (1952), and Bell (1960). The specific elements of the game are reconstructed according to the procedures presented in Avedon's "The Structural Elements of Games" (1971: 419-426). Therefore, taking into consideration the various combinations possible the basics of the game are as follows:

1) Purpose of the game: aim or goal, intent, the raison d'être.

Example: Checkmate one's opponent or the equivalent by removal or capture of pieces (soldiers and/or jaguar). Surrounding or incapacitating the jaguar by moving the soldiers.

- 2) Procedure for action: specific operations, required courses of action, method of play.  
With dice: Roll dice, move counter the number of spaces indicated by dice. Act in manner indicated by last space (compartment) on which counter lands, i.e., capture or bump-back opponent's piece occupying space.  
Without dice: Alternate moves with specific mobility and power assigned each class of counters, to capture, kill or trap opponent's counters.
  
- 3) Rules governing action: fixed principles that determine conduct and standards for behavior.  
This area consists, hopefully, of educated guesses based upon the formal analysis, iconographic study, comparisons with other games in regard to possible variations and limitations.  
The game could begin with the pieces on the board or they could be introduced when an assigned value was thrown on the dice. The counters could be assembled in the "home" area, the seven small compartments, or a combination of both. The jaquar could be assigned more power than the soldiers or relegated to a position of relative helplessness which demands protection. In reacting to the throw of the dice, the soldiers may bump-back to their original position enemy soldiers, cause them to be removed from the contest with or without the possibility of re-entry, cancel each other, or bump-back the enemy soldier to another designated space, i.e., first available space, "home" space, first available space behind or protected by a fellow soldier, etc.
  
- 4) Number of required participants: stated minimum or maximum number of persons needed for action to take place.  
Minimum of two required players or teams. There is little question about this point in view of the unyielding symmetry of the boards.
  
- 5) Roles of participants: indicated functions and status.  
The role and power functions of each player (here taken as two opposing players) are the same. To direct and control the movement of his own pieces to his best advantage and to the disadvantage and ultimate defeat of his opponent.
  
- 6) Result or pay-off: values assigned to the outcome of the action.  
Unknown.
  
- 7) Abilities and skills required for action: in this case the cognitive domain requires figural, symbolic, semantic, and behavioral informational content; and operational processes, such as cognition, memory, divergent and convergent production, and evaluation.  
Basic concepts of the game including the experience needed to respond to opponent's moves to the best advantage. Choice of pieces to move, direction, effect of sacrifice or capture of one's own counters or opponent's pieces.

- 8) Interaction patterns: probably of inter-individual nature but could be action of an inter-group nature. Individual or group competition acted out on a one-to-one ratio as to acceptance of results.
- 9) Physical setting and environmental requirements: Physical setting requires no special man-made facility but probably connected with ceremonial center activities rather than employed to pass-the-time in the fields. No special environmental requirements are obligatory.
- 10) Required equipment: man-made or natural artifacts employed in the course of action.  
The game board, counters, the actual number and power associated with each one unknown but supposed here to be a total of five with one assigned a different level of power or operation. The counters could be natural artifacts such as beans, pebbles, or grains of maize. The presence of dice or nature of their construction cannot be established except as a general trait in New World games. The specific rules listed below take this fact into consideration.

The game outlined below was designed to be played on the "Schaedel Stone" by moving one of five counters (one jaguar and four soldiers) according to the numerical value obtained by activating a system that randomly selects values of 0, 1, 2, 3.

The game begins by each of two players positioning his counters with the jaguar in the inner-most raised level of his "home", the soldiers enter the field individually through the first square of their respective back line and move counter-clockwise according to the value of the throw. The jaguars remain stationary being confined to their original position as in Siang k'i, or Chinese chess described by Bell (1960:66-68). Any, but only one, soldier may be moved the allotted spaces as directed by the value obtained by tossing the dice. Each piece has the power to bump-back to its original position (off the board causing re-entry as in the beginning of the game) any enemy piece which after completion of the move occupies the same space. The shared central compartment offers an open route from the adjacent squares of the seven small compartments into the opponent's "home" provided the entry space is open or the value of the throw allows one soldier to pass through a space occupied by a fellow soldier. A player's piece may not move into and occupy a space already occupied by one of his own soldiers nor may it move through a space occupied by an enemy soldier, but it can move through a space occupied by its own men. A piece can only move forward in its own territory (seven small compartments and the shared central compartment) but it can advance or retreat when in enemy territory (seven small compartments only).

The game is over when one participant surrounds his opponent's jaguar by positioning three of his men on the lower level of his opponent's "home" with the fourth man occupying the shared central compartment. The moves are made in accordance to alternating throws of the dice which offer 0, 1, 2, or 3

as values to be transposed into moves. As long as a piece is not blocked the moves must continue. Thus with three pieces already positioned on the opponent's lower level the last man must continue to move (both territories available for positioning) until it lands directly on the shared central compartment. A player's piece which occupies during the course of the game the shared central compartment when the value of zero is thrown is removed from the board and must re-enter the field in accordance with the rules for beginning the game. When three soldiers occupy the lower level and the fourth is positioned in the shared central compartment the game is completed. The player effecting this final position is the victor.

Granted that the reconstruction of this game is open to different interpretations and even blatant criticism but if you think tenuous ground is covered in this version - try the following.

This alternative reconstruction is based upon the same inferences employed in the first but also includes subjective feelings and emotions of an undocumented nature based upon my ideas and concepts of the religio-social-political structure that characterized the Recuay culture just prior to the Tiahuanaco Expansion. In the following version the role of the jaguar is reserved (from defensive to offensive) and no dice or system of selecting random values is included. The rules are as follows:

Equipment: One board; 10 pieces total - 2 sets of 4 soldiers and 1 jaguar.

Opening Positions: Jaguars in innermost raised compartment of "home". Soldiers on lower level of "home" aligned to adjacent squares.

Moves: Jaguar moves two spaces, or at right angles, or combination in any direction. He cannot re-enter original position after moving out. Soldiers move one space in any direction. (Note: Neither jaguar nor soldiers can ever move on a diagonal). Jaguar can move through or occupy space already occupied by own men. Soldiers cannot occupy same square.

Power: The jaguars are the only pieces with the power to kill. An enemy's piece is "killed" and, therefore, removed from the field when an opponent's jaguar moves into the same space it occupies.

The soldiers have the power to repel only. When a soldier is moved into a square occupied by an enemy soldier, the enemy soldier is bumped-back one space as directed by the advancing man. If a soldier moves into a square occupied by the enemy jaguar, the enemy jaguar is forced to move three spaces of his (the attacked jaguar) choosing. Thus the jaguar has offensive or "killing" potential even when forced out of a space. The jaguar may move through or eventually occupy a space already occupied by his own soldiers but cannot move through a space or spaces occupied by an enemy piece. If the jaguar, without passing through spaces occupied by an enemy piece, moves into a space occupied by an enemy piece, the enemy piece is "killed" and removed from the board. Once a soldier moves into a space occupied by the enemy jaguar, the space the soldier vacated is considered open and the jaguar, unless blocked by another piece, may move into the vacated space in the process of moving his three spaces. Thus, the jaguar is not, as a rule, forced to retreat but can take any route of three spaces open or occupied by his own men.

Exception: The jaguar when moving into a space occupied by one of his own soldiers may combine or carry one and only one soldier with him. The jaguar retains the ability to move two spaces and can therefore increase the mobility of the soldier that has come under his protection. This combination cannot choose to move only one space, but at any time either piece may be moved without moving the other. Thus, the jaguar may deposit the soldier by leaving the piece in the space it vacates and vice versa. The jaguar can afford this protection to only one soldier at a time but can pick-up and deposit its own soldiers at will by moving into a space occupied by such a piece. If the jaguar, while combined with one of his soldiers, is attacked by the enemy jaguar, the soldier is "killed" and removed and the jaguar under attack moves three spaces of its choice. If the same situation exists but the attack is by an enemy soldier the jaguar and attached soldier is forced to move only two spaces.

The contest is over when one jaguar is "killed" by the other or when one jaguar is trapped.

A soldier cannot be bumped-back into a space occupied by another of his own men nor into a space occupied by his own jaguar when his jaguar is combined with a soldier. In this case a local deadlock exists and other pieces must be moved, if no pieces can be moved by either side, the contest is deemed a draw. Thus two soldiers can effectively blockade certain areas.

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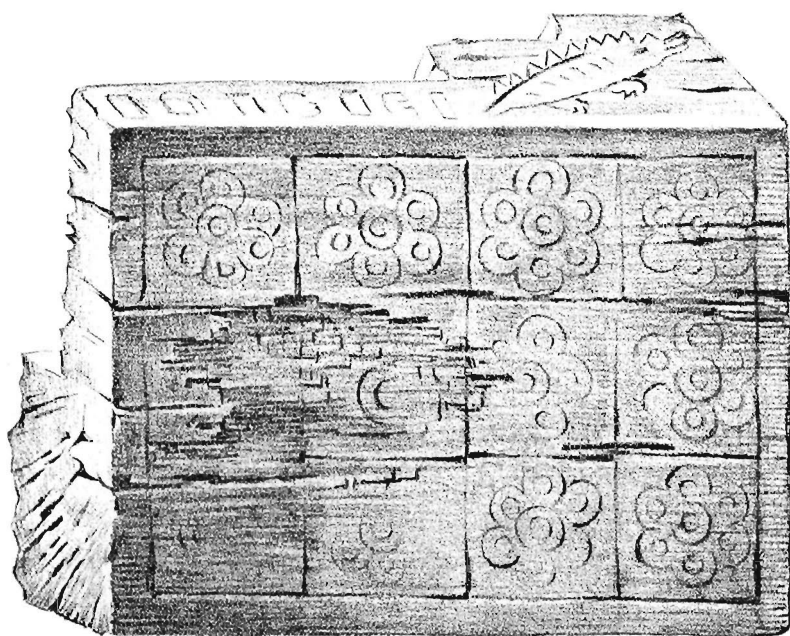
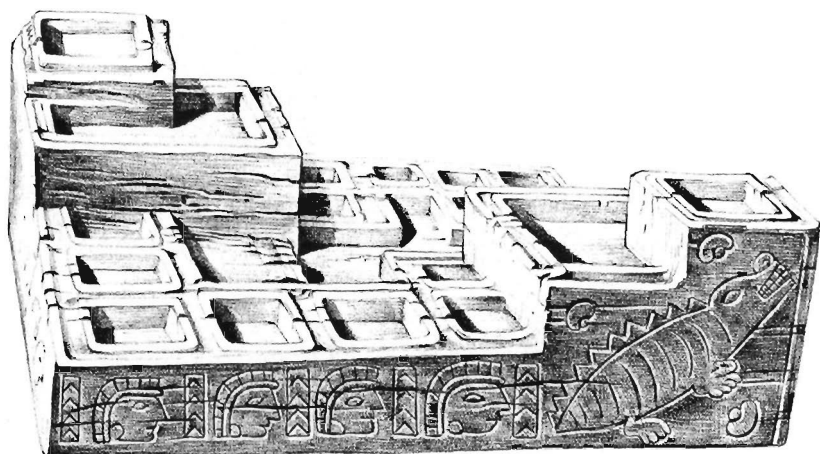
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## FIGURES

- Fig. 1 A: Patecte, Prov. of Cuenca, Ecuador. Wooden gaming board. After González Suárez 1892 Pl. III.
- B: Patecte, Prov. of Cuenca, Ecuador. Wooden gaming board (seen from below). After González Suárez 1892 Pl. IV, 1.
- Fig. 2: Inca holding a quipu. In the left hand corner a compartmentalized board. After Guamán Poma 1936:360.
- Fig. 3 A: Gaming board. Caraz.
- B: Gaming board. Pachacamac.
- C: Gaming board. Huaraz Museo.
- D: Gaming board. Huaraz Museo.
- E: Gaming board. Patecte and Chan Chan.
- F: Gaming board. Unknown.
- G: Gaming board. Pashash and Caraz.
- H: Gaming board. Huaraz Museo.
- I: Gaming board. Urcon.
- J: Gaming board. "Schaedel Stone". Cabana near Pashash, Ancash.
- K: Diagram of the field of play.
- Fig. 4 A: Position of pieces. "Schaedel Stone".
- B: Position of pieces. "Schaedel Stone".
- Fig. 5: The "Schaedel Stone", photographed in Cabana near Pashash.
- Fig. 6 A: Gaming board from Pashash, Ancash excavated during summer of 1971. Associated with 540 A.D. (plus or minus 80) carbon date.
- B: Motif from Pashash gaming board. The design is repeated on the opposite side.



Figs. 1 A-B

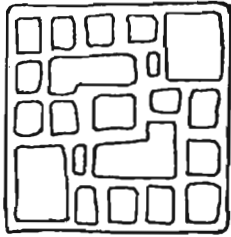
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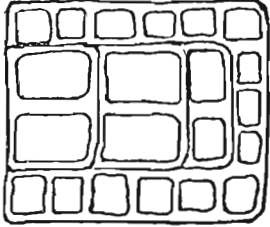
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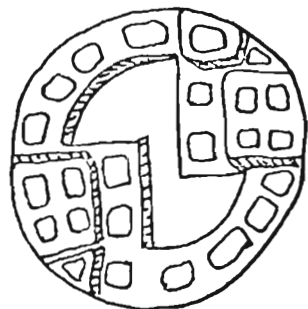
Fig.2



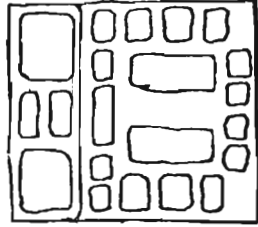
A



C



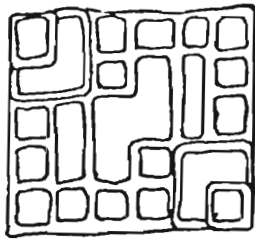
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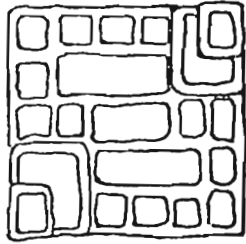
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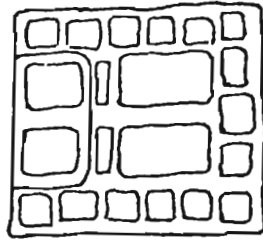
Figs. 3 A-D



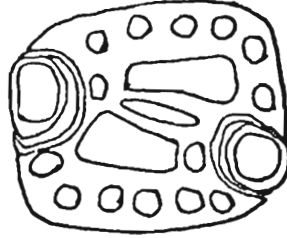
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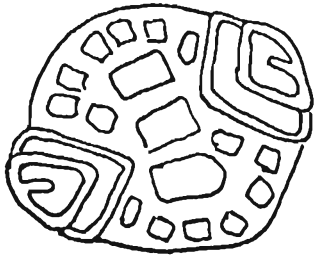
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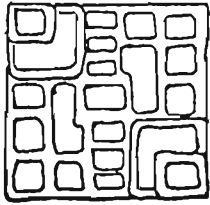
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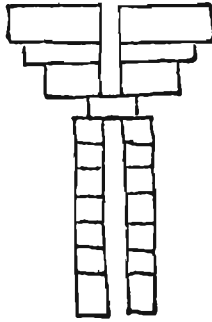
Figs. 3E-H



I

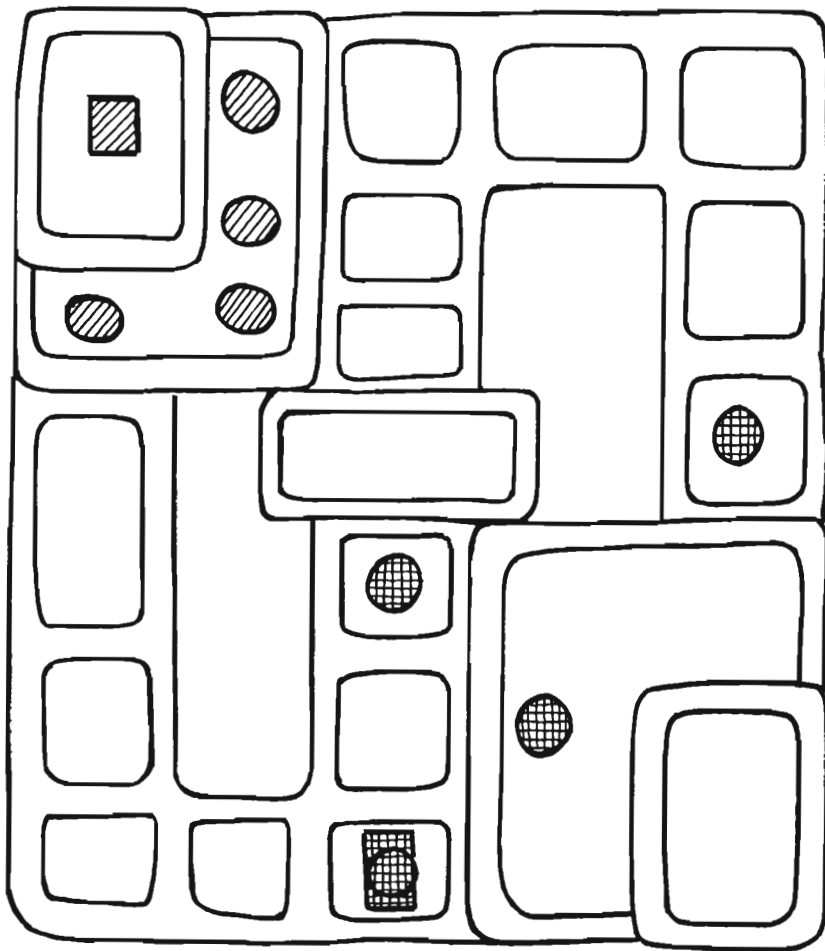


J



K

Figs. 3 I-K

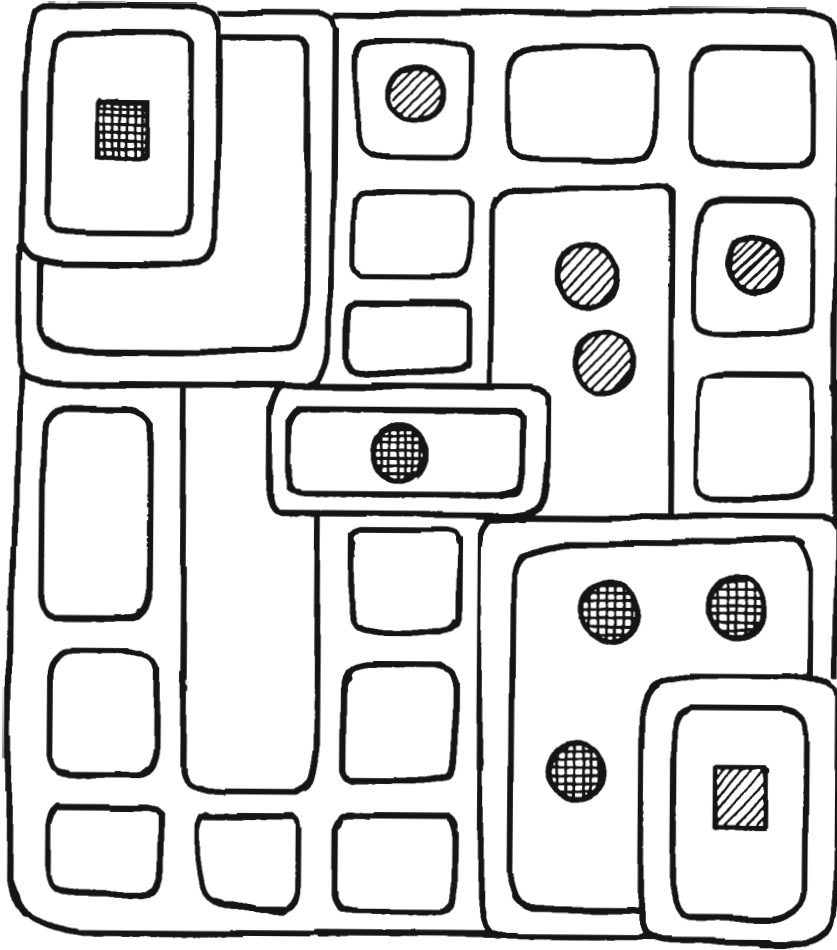



● Without dice - After four moves jaguar protecting soldier.

● Without dice - Starting position.

Fig.4 A





 With dice - Final (victorious) position.


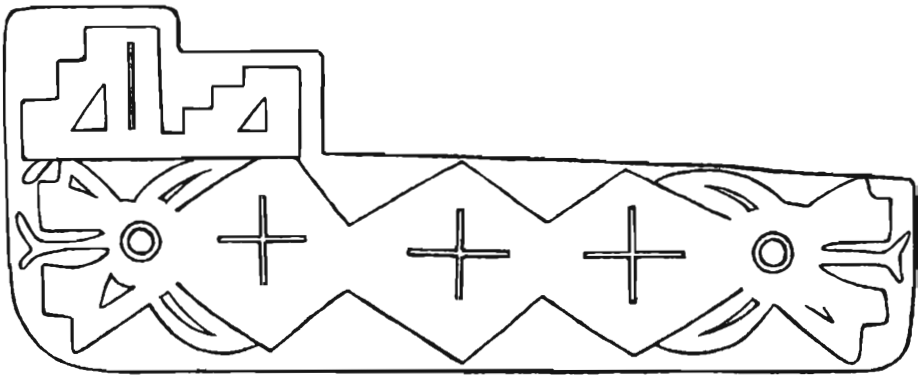
 With dice - Starting position and after three throws (3-2-2).

Fig. 4 B



Fig. 5



Figs. 6 A-B

