7 EASTERN TERRITORIAL GAME

Summary
In the Eastern Territorial game players occupy an unstructured site, trying to gain as large a territory as possible, yet being obliged to build, while doing so, a common structure of access. While pursuing a private goal the context encourages negotiation and cooperation among peers. To increase the value of their holdings players can, following the rules, gate clusters of territory pieces in larger territories, building in this way complex hierarchical organizations on the site. There is, however, no hierarchy of roles among players.

1. Game Rules
1. Technical Universe:
   Selection: This game has three kinds of pieces. Their names are Territory, Access, and Gate. A territory piece is a colored plastic rectangular slab. We used the colors red, orange, yellow, green, and blue. An access piece is the same size and shape as a territory piece but it is marked by a white stripe across its middle. By marking one side of a colored rectangle with a white stripe, we used the same piece for territory and access. A gate is a small metal washer. Figure 1 shows these pieces.

   ![Territory, Access, Gate](image)

   Territory
   Access
   Gate
   Figure 1

   The only limits to the number of pieces that may be played are those limits imposed by the size of the site, the number of moves allotted to each player by rolling the dice, and the rules of assembly described below under "distribution".
Distribution: Territory pieces may go anywhere in the site. (Placing territories adjacent to access pieces of another player is allowed only with that player's permission; see Moves.) In addition, all territory pieces must be placed so as to maintain a clear path to the special marker located along one edge of the site (For a definition of "clear path" see section 2."Site").

Access pieces may never be placed directly in the site. Rather, an access piece is created by converting an already-placed territory piece. Thus an access piece can be deployed (in two moves) by first placing a territory piece and then converting it to access.

Territory and access pieces can be assembled with a gate to form a compound. The simplest compound contains five territory pieces and one access piece. It must be 'gated' by means of a washer placed at its point of access. The five territory pieces must be placed adjacent the access piece. ("Adjacent" means at one edge of the territory piece must be parallel to and touching one edge of the access piece. Corner-to-corner relationships are not considered adjacent, and pieces may not be placed one atop the other. The exact amount of overlap required can be negotiated among players.) The gate, marking the entrance to the compound, is placed on an outside edge of the access piece. When, as in this example, the gated edge of the access piece is exposed to the "public" open space, then the length of this exposure must be equal to or greater than the width of an access piece. Figure 2 shows this simplest of compounds.

Figure 2 shows the smallest legal compound. Notice that no new territories can be added around the access piece, nor can any of the five territories surrounding the access piece be converted to access, for then the configuration would no longer satisfy the minimum requirements for a compound. Therefore this compound is considered "closed".

Larger and more complicated compounds can also be made. For example, figure 3 shows a compound with seven territories and one access piece. Seven is the maximum number of territory pieces that can fit around an access piece, given the technical system we worked with. This compound is considered "open", because it can be expanded by converting one.
of the territories to access and adding new territories around the new access piece.

A compound may contain more than one access piece. Figure 4 shows a compound with two access pieces and eight territory pieces. This compound was made by expanding the open compound of Figure 3, converting one of the territories to access, and adding two new territories.

![Figure 4](image1)
![Figure 5](image2)
![Figure 6](image3)

Compounds can also be nested. That is, after adding territories around the new access piece in Figure 4, we can eventually form another compound, with its own gate. Figure 5 illustrates this configuration with the new compound outlined. We say that the second compound is inside the first compound. The gate into the inner compound is placed between the access pieces of the inner and outer compounds. When counting the number of territories in the outer compound, the entire inner compound counts as one territory. In this configuration, the outer compound contains five territories and one compound; thus the outer compound is still open. A compound may combine pieces belonging to more than one player. Both players profit from the gate. Figure 6 illustrates this.

**Expansion of compounds:** A compound may be expanded by converting one of the territories to access, thereby allowing room for more territories. Expansion cannot take place unless the minimum requirements for a compound are met. Thus, a compound containing five territories, one access and one gate is closed to expansion if there is no free space along the access piece to add another territory, since in converting one of the five territories to access, the configuration would no longer meet the minimum requirements for compounds.

Once a configuration has been gated, designated a compound, no player other than those who created it may add to it except by permission. All players owning pieces in the configuration at the time it was gated may continue to expand the compound.
2. Site
The site is determined by the players. Typically a rectangular site is used, with length and width from 8 to 12 times the length and width of the territory pieces. For the technical universe we used, a standard 8.5"x11" sheet of paper makes a good size site. A white slab is located somewhere along the edge of the site (see the figures in section 2: examples of play). This white slab represents the gate to the entire site.

3. Program
A clear path must lead from every territory in the site to the white slab. This path may lead through built access, that is, through access pieces placed by players, and/or through unoccupied space in the site. The path through un-built ("public") space must be at least as wide as the short dimension of an access piece. Thus players may not isolate portions of the site by surrounding them with their pieces. Figure 7 shows the path to each territory on the board in the final state of the example of play (see section 2). Figure 8 illustrates an illegal move, in which one player blocks the access to another player's territories.

![Figure 7](image)

![Figure 8](image)

4. Roles.
All players play equal roles in this game. Each player plays territory and access pieces of one color; players may not place another player's pieces.

5. Moves.
Moves are of three kinds, corresponding to the three pieces in the technical system: deploying a territory, converting a territory to access, and placing a gate on a configuration of pieces thereby making the configuration into a compound.
For example, to make the minimum compound in one turn, starting from scratch, the player must roll at least an "8". This works as follows (see figure 9):

move 1: deploy a territory T0
move 2: convert T0 to Access (A)
move 3-7: deploy territories T1 - T5
move 8: gate the compound.

Figure 9

Players may save moves and use them on subsequent turns. Players may also trade moves in return for certain concessions, such as the right to use another player's access piece for access to a territory, or the right to place a gate on another player's access piece (see "protocol").

A player can only place a territory piece adjacent to another player's access piece with that player's permission. Gating an access that leads to another player's piece also requires that players agreement.

6. Goals
Individual players try to claim and control as much space as possible, maximizing the number of territories deployed and the point value assigned to each territory. Each player tries to score as many points as possible. The player with the highest number of points at the end of the game wins. Some moves may benefit more than one player (such as the gating of a configuration containing pieces belonging to two or more players). In such cases the player considering the move will want to weigh the relative benefits to all concerned parties.
7. Protocol
The sequence of play is determined by the players, or by rolling a die to see who plays first. Play proceeds in turns around the board. In each turn each player rolls two dice (for a maximum of 12) to determine how many moves to make. Once pieces are played they may not be moved or altered. The only exception is the conversion of territory pieces to access pieces.

The game is over when the board is full and no player can make a move.

Negotiation can play an important part in this game. As noted above, players may not place territories adjacent to another player's access pieces without gaining the permission of the player owning the access piece. Permission may be granted in return for compensation, or it may be unconditionally denied. Compensation may consist of a number of moves, or a reciprocal agreement regarding another part of the board. For example, Blue may say to Red, "yes you may place your territories adjacent to my access piece here, but then you must let me place my territories adjacent to your access piece over there." Or Blue may agree to let Red place territories but reserve the right to determine where the combined configuration shall be gated. Gating an access that leads to another player's pieces also requires that player's agreement. Normally that player will agree to gate because gating will increase the point value of territories inside the gate. However players may disagree (and hence negotiate) about the location of the gate.

8. Scoring
Each player's score is determined by adding the point values for his/her territories and dividing by the number of moves. The point value of a territory depends on how many gates it is within. Thus the score is a measure of efficiency in generating nested territories.

The deeper a territory is nested in compounds, the more valuable it is. Territories not in any compound are worth one point each. Territories in one compound (inside one gate) are worth two points each. Territories nested within two compounds (inside two gates) are worth three points. Figure 10 shows the point values of the territories in the final stage of our example of play.

Figure 10
Where the point value of a piece is ambiguous the player may use the higher point value. Figure 11 illustrates two pieces (marked "*" ) with ambiguous point values. These pieces are adjacent to two different access pieces belonging to different compounds. Both compounds satisfy the minimum requirements and therefore do not need the "*" pieces. The pieces marked "*" may be counted in either compound, at the player's discretion. For purposes of scoring, at the end of the game, the player will want to count the "*" territories inside the inner compound, but during play, the player may prefer to count them as belonging to the outer compound in order to expand the outer compound.
2. Example of Play

There are four players: Red, Blue, Green and Orange.

Round 1

Red rolls 9, makes 1 large cluster and gates it to form a compound.

Blue rolls 10, makes 1 large cluster but does not gate it; instead Blue deploys a second access piece to build in potential for expansion and layering of compounds in subsequent rounds.

Green rolls 6, decides to spread territory pieces around to see what happens. Green builds no access pieces, therefore every Green territory piece on the board scores one point.

Orange rolls 4. Given so few moves, Orange decides to add to Blue's cluster (this is allowed because Blue hasn't yet gated the cluster). Orange must negotiate for the right to use Blue's access. Blue demands only 1 turn in compensation, because Orange agrees to gate a part of its new cluster, including 2 Blue pieces in the compound, thus increasing Blue's score. Blue and Orange agree that in the next round Blue will gain a turn; Orange will forfeit one.
Round 2

Red rolls 3. Red expands the existing Red compound by converting one territory to access and adding two more territories.

Blue rolls 4. Because of the agreement with Orange from Round 1, Blue takes one extra turn. In five moves, Blue adds one access and three territories, then gates the portion of the cluster outside Orange's gate. The four outer territories combined with Orange's compound satisfy the minimum requirements for another compound.

Green rolls 6. Green creates another small cluster of 3 territories and adds one territory to each of its existing three clusters.

Orange rolls 6 and makes 5 moves, having forfeited one move to Blue in the Round 1. Orange converts one of its territories to access, adds 3 new territories to form an 'inner' compound. The integrity of the other inner compound is maintained--there are still four blue pieces in addition to the new gate. Blue cannot play into this compound, because the cluster contained no blue pieces when the gate was added.
Round 3

Red rolls 11. Red expands its existing compound, adding two territories, immediately converting them to access, adding 6 more territories and then a gate, to create an inner compound.

Blue rolls 12. Blue continues to expand the blue/orange cluster. Blue adds three territories and converts them all to access, then adds six more territories, all within an existing inner compound.

Green rolls 9. Green converts one existing territory to access and adds one more access, 5 territories and a gate, creating a compound.

Orange rolls 7. Orange adds one territory to the inner blue compound and converts it to access. Then Orange adds 4 more territories and then another gate to form an inner compound within the cluster. Blue does not object because these additions do not prevent future expansion. But Blue and Orange negotiate a position for the gate that is both legal (maintaining properly defined compounds throughout the overall cluster) and mutually beneficial to both players.
Round 4

Red rolls 4, and continues to expand the existing Red compound. Red expands the inner compound, converting one of its territories to access, adds two more territories and then divides the existing compound in two by adding another gate, thereby increasing the value of territories in the innermost compound to four points each.

Blue rolls 1 and adds another gate within the innermost Orange/Blue compound, taking care in placing the gate to meet the minimum requirements for each resulting smaller compound.

Green rolls 4. Green joins the existing green compound to a nearby green cluster by adding a territory and converting it to access, then adding another territory, then adding another gate to form an outer compound around the existing one.

Orange rolls 1. There is no place to add a territory to the Blue/Orange configuration without first converting a territory to access. As this would cost Orange the one move it has, and diminish its score at the same time, and as the game appears to be nearing a finish, Orange uses its move to place a single territory piece in the remaining unoccupied (public) space.
Conclusion

Orange has scored the highest, followed by Blue, Red and Green respectively.

Red  \[
\frac{4(2) + 5(3) + 5(4)}{14T + 5A + 3G} = \frac{8 + 15 + 20}{14(1) + 5(2) + 3(1)} = 1.6
\]

Blue  \[
\frac{4(2) + 3(3) + 4(4) + 3(5)}{14T + 6A + 2G} = \frac{8 + 9 + 16 + 15}{14(1) + 6(2) + 2(1)} = 1.7
\]

Green  \[
\frac{8(1) + 4(2) + 5(3)}{17T + 3A + 2G} = \frac{8 + 8 + 15}{17(1) + 3(2) + 2(1)} = 1.2
\]

Orange  \[
\frac{1(1) + 5(4) + 4(5)}{10T + 2A + 3G} = \frac{1 + 20 + 20}{10(1) + 2(2) + 3(1)} = 2.4
\]

3. Game Variants

New games can be readily developed from the basic rules presented here by altering various conditions of the site, technical system, and protocol. Variations can be used to highlight some particular factor or trend identified through the playing of the initial game variant.

Technical Universe Variations

In our technical universe the territory piece and the access piece were identical in size and shape. In earlier variants of the game this was not the case. The size ratio between the two types of pieces is important, for it determines the capacity of an access piece to support territories. The ratio of the piece size to board size is also significant, affecting the duration of play and the intricacy of patterns that can emerge.

The rules of configuration could also be changed. The minimum number of territories in a compound could be changed from 5 to 4, or even 3. This would alter the form of configurations that players would make.
Site Variations
Manipulation of the site context can significantly alter the nature of territorial configurations and playing strategies. For example, if the Eastern Territorial game is played with a larger site and a correspondingly greater number of potential moves per turn (for example, each player can roll up to 24 moves instead of only 12) it becomes possible to construct more complex configurations. The nature of "public access" might also be thought of differently. For example, instead of designating a public gate to which each territory must have a clear path, one player might begin the game by drawing a line across the site, representing a fixed public element that players must leave open. This will focus the direction and configuration of pieces differently from the game variant described here.

The site need not be rectangular. It might also contain "features" such as unbeatable areas, or areas where the orientation of pieces is restricted.

Program Variations
Public space could be developed as a positive resource in this game instead of merely being left over from constructing territories and compounds. Players might be required at the outset of the game to design a large open space ("public square") that they must then leave open. This might involve making a separate diagram or actually recording these design decisions on the site.

Move Variations
The number of moves required to gate or to convert a territory to access might be changed from one to two or to zero.

Goal Variations
Playing the Eastern Territorial game several times, it might be possible to identify different roles with different goals. For example, one or more player might be required to disperse their territories as much as possible, minimizing the amount of privately controlled access. Conversely, another player might be required to accumulate territories, maximizing the size of each configuration.
4. Comments and Reflections

Individual players, each with an equal role, the participants in this game will try to maximize their control over the space of the site. To achieve this control each player will build as extensively as possible, maximizing the number of compounds along a common access route. It is therefore a good idea, within the limitations of each turn (or over the course of several turns, if the player has been able to bank enough moves) to plan configurations in advance so as to maximize their spatial efficiency. Spatially efficient configurations and compounds are those that pack the most territories around the fewest access pieces while allowing room for future expansion. More efficient configurations can be divided into a greater number of compounds. Since each gate within a configuration represents another layer of territorial depth, the innermost territories along the path of access are also the most valuable.

Two players may decide to work as a team in building configurations on the site. The 'team' strategy enables certain players to build up more extensive areas of control faster and more efficiently, provided they plan their moves in advance.

It may be useful for all players to make some general agreements regarding the configuration of public space that serves as a path to the gate at the edge of the site. The game will be less competitive if the players plan the shape of the public space and coordinate their moves accordingly; it will be more competitive if the public space takes shape as an undesigned byproduct of the basic requirement of "a clear path to each territory".