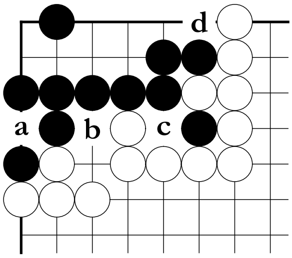
WHAT IS A POINT?

I

1.1 *How to judge positions and moves in the endgame*

The topic of this book is the endgame. Most of our analysis focuses on the last stage of the game, but we are not limited to it: 'big endgame moves' often get played in the earlier parts of the game, and by studying the endgame we also learn to value these moves correctly. What we are actually dealing with is the counting of finished and unfinished territories and the judging of territorial values of moves.



DIA. 1

DIA. 1 shows a position that could occur towards the end of the game. In this book, we will analyse positions similar to this, and we will deal with the following kinds of questions:

- Which of the moves 'a', 'b', 'c', and 'd' is the most valuable?
- What is the territorial value of each of 'a', 'b', 'c', and 'd'?
- How much territory should Black expect in the upper-left corner?
- How should this position be played out if it was Black's turn?

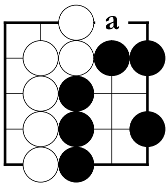
In order to answer all of the questions above, we need to establish a method for counting unfinished territories. Next, we need to apply this method to calculate the change in territory that a single move causes; and finally, we need to apply this calculation to every available move.

Although this process may sound tedious and slow, after finishing the book the reader may find that the above questions are not difficult at all. Furthermore, after the reader has learned how to make precise calculations, they get the additional benefit of being able to have confidence in their own judgement.

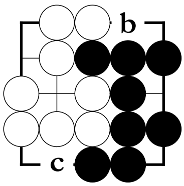
1.2 *Defining the value of a move*

When counting the value of a move, there are a few different approaches that one might take. We apply what is sometimes called 'absolute counting': we start by counting the expected territory of a position, and then count the difference that one move – black or white – makes. This difference is the value of the move.

If possible, one would like to have a method of counting that is directly tied to the final score of the game. Unfortunately, such a method would become inconsistent with itself. Consider the following example.



DIA. 2



DIA. 3

In DIA. 2, there is one move left at 'a'. If Black next plays at 'a', both players have six points and the game is a tie. On the other hand, if it were White's turn and he played at 'a', White would have six points to Black's five, and White would win the game by one point. The last move at 'a' makes a one-point difference in the final result.

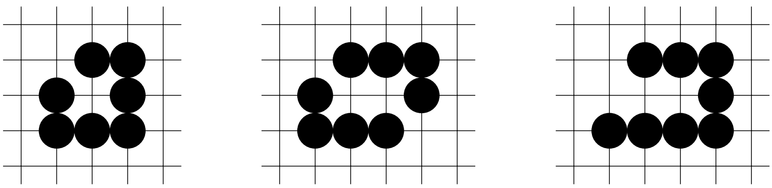
In DIA. 3, the moves at 'b' and 'c' are identical to 'a' in DIA. 2. Counting the effect they have on the final score, however, we get a different result.

If Black plays at 'b', White plays at 'c'. White has four points to Black's three points, and he wins the game by one point. On the other hand, if it were White's turn and he played at 'b', Black would play at 'c', and again White would win the game by one point. A move at 'b' makes no difference to the result, so one would have to mark it down as a zero-point move – but this would contradict DIA. 2.

Rather than have differing values for 'a' and 'b', it is more useful to use a counting system where the same move always has the same value. During a game, too, it is enough for a player to be able to play the moves in the right order from big to small without worrying about the result.

1.3 *Counting territories*

In order to compare the values of different moves, we first need to establish the unit of our calculations: what does 'one point' mean?



DIA. 4 DIA. 5 DIA. 6

In DIA. 4, seven black stones join to surround one point of territory – this is clear to everybody who knows the rules of the game. In the centre of the board, seven stones is the minimum required to fully secure a one-point territory.

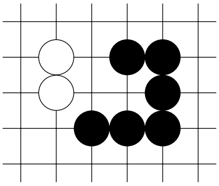
In DIA. 5, eight black stones join to surround two points. This, too, is the minimum required.

Counting finished territories is simple as long as one has a little patience. All we need to do is to jot down empty intersections inside our heads: 'One, two, three . . .' or 'two, four, six . . .'

What stumps most players is DIA. 6. Black clearly expects some territory here, but how much exactly? One point? Two points? Maybe one and a half?

1.4 Estimating unfinished territories

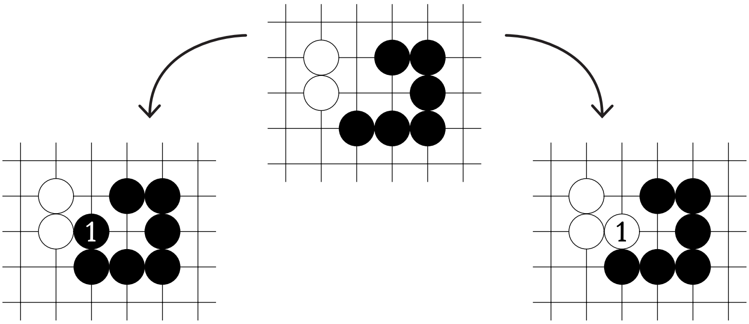
For the larger part of a game, territories on the board are not completely finished. It is important, then, that we learn to estimate and judge unfinished territories.



DIA. 7

Consider DIA. 7. Black is about to surround a single point of territory, but needs one more move. Similarly, with one move White would be able to prevent Black from surrounding her territory. How many points should Black expect in a position such as this?

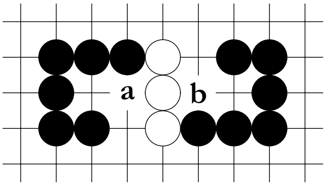
We cannot know whether Black will finally end up with one point or zero points unless we know whose turn it is. What we want to do now, however, is not to speculate about the move turn, but to stop time and try to estimate the territorial value of the current black shape. How we do this is by imagining the 'possible futures' of the position.



DIA. 8

We can judge the position in DIA. 7 as the average of its two possible futures, shown in DIA. 8. In the left-hand future Black gets one point, and in the right-hand future Black gets zero points. In the original state, Black should expect their average, half a point.

This method of imagining the possible futures of a position and taking their average is one of the key tools of endgame analysis. We can back up its results with a second tool: shape duplication.



DIA. 9

DIA. 9 contains two copies of the black shape in DIA. 7. Logically, Black's expected territory in DIA. 9 must be double that in DIA. 7.

If Black plays 'a', White plays 'b'. Both players have played an equal number of moves and Black has one point of territory. If instead Black plays 'b', White plays 'a'.

If White plays 'a' first, Black plays 'b' and still gets one point. If instead White plays 'b', Black plays 'a'.

In DIA. 9, Black always gets exactly one point of territory. In DIA. 7, Black has half of what she has in DIA. 9, in other words, half a point.

The shape-duplication analysis is a solid way of confirming the results of the possible-futures analysis, but usually it is too cumbersome to perform during an actual game.

From here on, we will use the definition:

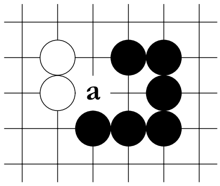
The expected territory in a position is the average of the future positions where Black or White has played a move.

1.5 *Counting values of moves*

Now that we know how to count finished and unfinished territories we are able to determine values of moves. Let us make the definition:

The value of a move is the change it makes in the score.

The 'score' is the sum of territories and captured stones.



DIA. 10

Consider DIA. 10. What is the value of a move at 'a'?

By now we know that Black's expected territory is half a point. If Black plays at 'a', Black's territory increases to one point. As the difference before and after Black's move is 1 − ½ = ½ point, the value of black 'a' is half a point.

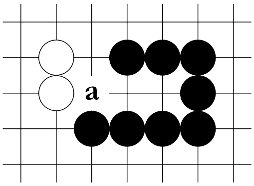
If White plays at 'a', Black's territory decreases to zero points. The difference before and after White's move is ½ − 0 = ½ point, and the value of white 'a' is thus also half a point.

It is not by chance that black and white 'a' are worth the same. Previously we defined the expected territory in a position is the average of its possible futures. The average of any two numbers is right in the middle of the two, and so its distance to either end is the same.

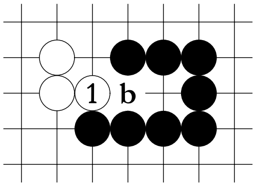
From now on we can assume that the same endgame move is worth the same for both players. The reader should note, however, that the 'same endgame move' is not always on the exactly same intersection for both players. Chapter 2 also introduces an important subset of endgame positions where this rule cannot be used.

1.6 The corridor: counting values of moves with follow-up moves

In DIA. 11 we have a ‘corridor’, a classic endgame shape. How much territory does Black expect, and what is the value of a move at ‘a’?



DIA. 11



DIA. 12

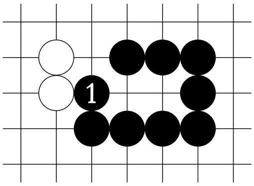
The corridor provides a basic example of *moves with a follow-up move*.

If Black plays at ‘a’, she secures two points of territory and the position is finished.

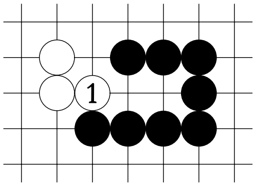
If White plays at ‘a’, however, we move to DIA. 12: there remains the question of who will eventually play ‘b’.

The expected score of a position is the average of the future positions where Black or White has played a move.

What, then, is the average black territory of DIA. 13 and DIA. 14?



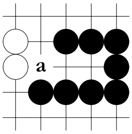
DIA. 13



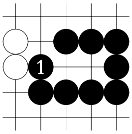
DIA. 14

In DIA. 13 Black has secured two points of territory, and in DIA. 14 Black expects half a point. The average of these – in other words Black’s expected territory in DIA. 11 – is 1¼ points.

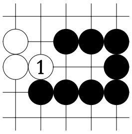
We now have Black’s expected territory, but have yet to determine the move value.



DIA. 11 (P 17)



DIA. 13 (P 17)



DIA. 14 (P 17)

The value of a move is the change it makes in the score.

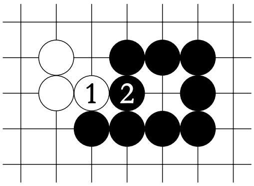
Black expects 1¼ points in DIA. 11. After Black plays ❶ in DIA. 13, she has secured two points. In other words, the value of ❶ in DIA. 13 is 2 − 1¼ = ¾ point.

Similarly, ① in DIA. 14 is also worth ¾ point: after ①, Black's expected territory is ½ point. The difference between Black's original expected territory and the new expected territory is 1¼ − ½ = ¾ point, so the black and white moves are worth the same.

1.7 *To respond or not to respond?*

Many endgame problems revolve around the question of whether one should respond to the opponent's move locally or not. The first lesson that we learn from the corridor is:

Don't respond to the opponent's move without thinking!



DIA. 15

① is a ¾-point move.
❷ is a ½-point move.

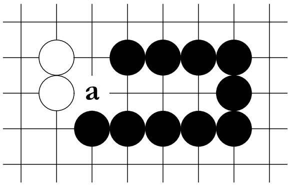
Consider the trade of ①❷ in DIA. 15. Originally Black expected 1¼ points as in DIA. 11 – but, after ❷, White has reduced the black territory to one point while retaining his move turn. ❷ takes a loss of ¼ point!

Generally in go, when a local position is 'stable' – not prone to big swings in the score, for example, because of a group suddenly dying – the values of moves decrease the more stones there are in the position. ①❷ in DIA. 15 are an example of this, with ❷ being worth ¼ point less than the preceding ①.

Instead of ❷, Black should look for a ¾-point move elsewhere.

1.8 *What if the corridor gets longer?*

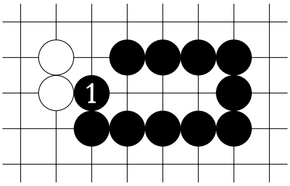
In DIA. 16 we have a longer corridor. Our task is the same as before: to calculate Black's expected territory and the value of a move at 'a'.



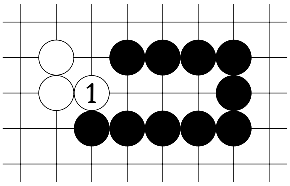
DIA. 16

At the risk of repetition:

- The expected score in a position is the average of its future positions.
- The value of a move is the change it makes in the score.



DIA. 17

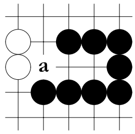


DIA. 18

In DIA. 17 Black secures three points of territory. In DIA. 18 we have a still uncertain position which has to be counted separately; but luckily we have made the necessary calculation already in DIA. 11.

The average of three points and 1¼ points is 2⅛ points, which is Black's expected territory in DIA. 16.

After we know Black's expected territory, the move-value calculation is easy. Black 'a' and white 'a' in DIA. 16 are worth the same, so we only need to count one of them; and after black 'a' we have an outcome which is easy to count. The value of a move at 'a' equals 3 – 2⅛ = ⅞ point.



DIA. 11 (P 17)

Black's expected territory in DIA. 11 is 1¼ points.

Intriguingly, the value of a move in a corridor follows the formula:

$$\text{value} = \frac{2^x - 1}{2^x},$$

where x stands for the length of the corridor.

The longer the corridor, the more the value of a move in it nears one.

1.9 *Only work the numbers when time allows.*

By this point the reader has learned elementary techniques for calculating expected territories and values of moves. However, during a game one has limited time to think; should one save one's time to be able to perform precise calculations in the endgame?

For most players it makes little difference to correctly play the endgame move that is worth ¼ point more than the next biggest move. Four calculations like this would add up to a one-point gain, but what use is it if one's 20-stone group accidentally died back in the middle game? Practically speaking, only top-level professionals with thinking times of eight hours apiece can afford to fine-tune their endgame.

What good, then, is it to learn to count territories and move values if one will not have time to use the techniques during an actual game?

When a top-level professional optimises their endgame, they are actually not spending that much time counting the numeral values of moves. They are already familiar with most of the shapes that occur in the endgame, and can intuitively sort available endgame moves in order by move value. Most of their time is spent on reading ahead into the future to make sure that they will not have to make unfavourable exchanges later – such as having to play a ½-point move in response to the opponent's ¾-point move.

Precise counting techniques are best used not during a game, but between games: one can analyse one's games for systematic endgame mistakes, and then gradually learn to play endgame moves in the correct order. In the end, one will not even need to think about move values to play the endgame correctly.

Knowing what to count and when is an important part of one's endgame skills. When there is limited time and the next move looks obvious, go ahead and play it – and when there is ample time and the score is dead even, then it is time for a careful analysis.