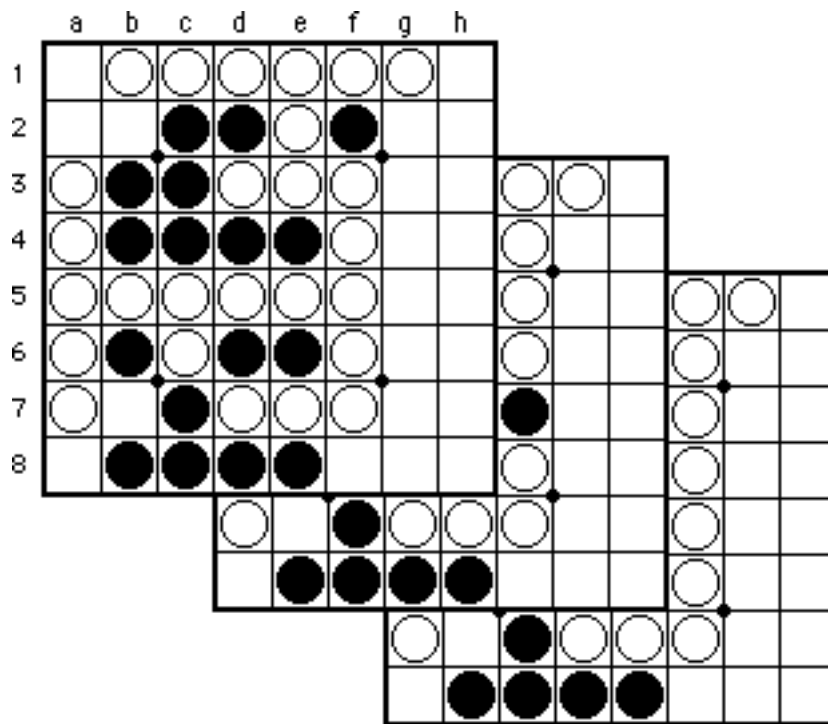


# Othello® : Brief & Basic

An introduction to strategy & tactics  
for the game of Othello

Revised Edition



Ted Landau

Updated Second Printing

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To

Naomi and Brian,  
who stood by me while I stood by the computer.

## PREFACE

The **United States Othello Association (USOA)** was created for the advancement of the game of Othello in the United States. It was begun in 1978 by a group of U.S. Othello players who had gathered to attend the World Othello Championship (held in New York City that year). At the time, the Japanese dominated the World Championships (they still do!) and it was clear to all who attended that the Japanese knew something about Othello that remained largely a mystery to everyone else. Jonathan Cerf, George Sullivan and the rest of the original **USOA** members set out to discover what that was. They were quite successful: Jonathan went on to become the 1980 World Champion, the first non-Japanese player to do so.

Immediately after its inception, the **USOA** began the sponsorship of tournaments, especially the annual U.S. National Championship (the winner of which competes in the World Championship). The **USOA** (largely through the efforts of Jonathan and George) also began publication of **Othello Quarterly (OQ)** as a means of disseminating information about Othello. At the present time, the **USOA** continues to serve the Othello community, maintaining a world wide membership of several hundred players.

I was not one of the original members. However, I had been playing Othello for several years when I first became aware of and joined the **USOA** in 1980. By studying articles in **OQ**, I set about to change what I discovered to be my largely wrong notions about Othello strategy. Eventually, I felt I had learned enough to attempt writing an article myself. It appeared in the Winter 1980/81 issue of **OQ**. Over the next several years, I contributed more than a dozen articles to **OQ**. Along the way, I also became one of the **USOA**'s top-rated tournament players.

In 1984, I assumed the Editorship of **OQ**. That same year, I had the good fortune to win the U.S. National Championship. I went on to the World Championship, where I finished third. With the confidence from my tournament victories and the resources available to me as Editor of **OQ**, I decided that now was an appropriate time to attempt a project of long-standing interest: to write an introductory handbook on Othello strategy and tactics.

It was clearly something that the **USOA** needed. It was becoming increasingly difficult (and unrealistic to expect of new members) to learn the fundamental principles of Othello strategy by sorting through the ever increasing collection of largely unrelated articles appearing in the back issues of **OQ**. A concise, synthesized, easily accessible single resource was the obvious alternative: a Beginner's Handbook, as it came to be called. Another potential value of this project would be to serve as an antidote for all the misinformation about Othello that has been printed in various books over the years. For example, a recent book describing popular "indoor games" had the following to say about Othello: "It is not easy to see ahead accurately more than a move or two..." This is patently false, as the information presented in this book will demonstrate.

With all this in mind, I began to work on the Beginner's Handbook project. The result was the original version of "**Othello: Brief & Basic**," which appeared (starting in Spring of 1985) as a series of three articles published in separate issues of **OQ** over the course of a year. The issues containing these articles were well received and subsequently became recommended reading for all new **USOA** members. There seemed to be sufficient interest to justify revising **Brief & Basic** and combining the three parts into one integrated book. Thus the revised edition of **Othello: Brief & Basic** was born.

For this revised edition, I added a table of contents and an index so as to make it easier to locate particular topics. I also added an appendix containing 11 game transcripts for further study and analysis. On the other hand, I chose to eliminate the footnotes of the original version – most of them references to relevant articles from previous issues of **OQ** – rather than have them interrupt the flow of the text. As an alternative, I have included a separate reference section that contains a listing of almost all of the cited articles.

This is in no way meant to diminish the debt I owe to my fellow authors of **OQ** articles. Thus, I again wish to thank George Sullivan, Jonathan Cerf, Arnold Kling and the others without whose writing and insights this Handbook would have taken much longer to complete (if it ever would have been completed at all). In a more general way, this Handbook has also benefited from the work of still more people. In particular, I want to express my gratitude to Brian Rose, David Shaman and the rest of the **USOA's** top tournament players (together with our Othello colleagues in other countries). It has been their skill and expertise that has "pushed the envelope" of what we know about Othello today. My thanks similarly go to Clarence Hewlett, Dan & Kathe Spracklen, Charlie Heath, Peter Frey and the other computer programmers whose Othello programs have served as a much needed source of analytical information, especially in the area of endgame play. As a result of the efforts of all these individuals, the level of play of tournament Othello in this country (as well as in the rest of the world!) has improved exponentially over the last 10 years.

Finally, some comments and advice to readers who are approaching **Brief & Basic** for the first time. It has been commented that this Handbook is neither as brief nor as basic as the title would imply. As to its brevity, I can only say that it is considerably shorter than the more "complete" Handbook that I first envisioned. To meet the time and space constraints of appearing within the pages of **OQ**, it necessitated that I leave much material out. Rather than committing myself to a major expansion for this revision, I have maintained this approach. At times this places an extra burden on the reader. For example, one diagram often serves to illustrate several techniques, where clearly two or three would have made understanding the techniques easier. Similarly, there are several explanations of one or two sentences where one or two paragraphs might have helped clarify the matter more. I apologize for this. My best advice to compensate for these possible weaknesses is - as stated in the Handbook - to lay out all the diagrammed positions on a board as you read and play out the moves under discussion.

Another consequence of this emphasis on brevity is that many important ideas are only mentioned in passing or omitted altogether. Sometimes I comment that a fuller understanding would require more space than I could give it. In the worst cases, I become quasi-mystical and refer to the necessity of practice and experience as a pre-condition for understanding. If the reader finds these explanations unsatisfactory, I again apologize. However, in a few cases (new to this revision), I discuss some of these additional topics in special sections labelled as "digressions" or "notes."

As to how "basic" the Handbook is: It is certainly basic in the sense that it assumes no prior knowledge of Othello (other than perhaps a vague idea of the rules of the game). Even a novice player should be able to follow and implement all of the advice given in this Handbook. On the other hand, the Handbook does contain a lot of material. The matters discussed range from the novice level to the expert level. This is not a breezy tutorial than can be skimmed in a couple of hours. It's probably best if it's studied a few pages at a time, and always with a board in front of you.

The material in Points #1 - #8 should be considered essential for all novice Othello players to know. Mastering the information in Points #9 - #16 (particularly the concept of tempo) should result in still a second important leap forward in playing ability. The material in the remaining points, while representing the greatest technical challenge, is necessary for anyone hoping to move toward expert level of play.

I have very much enjoyed writing this Handbook. I hope that Othello players, from novice to expert, will enjoy reading it and will benefit from doing so.

Ted Landau  
September 1987

Note added for second printing:

I resigned as Editor of **OQ** in 1986 and shortly thereafter stopped competing in tournaments. I worked on **Brief & Basic** until its publication in late 1987. Since then, I have remained quietly active in the Othello community. I have been gratified with the positive response to **Brief & Basic**. Due to its continued popularity, a second printing has become necessary. I have taken this opportunity to try(!) to correct all the numerous typographical errors that had crept into the previous printing. I have also made minor changes to the text in several places, attempting (yet again!) to improve the clarity of the discussion. Lastly, a few items have been updated to reflect the events and trends of the past few years.

The world of Othello continues to evolve. The best players today are clearly superior to their counterparts of just a few years ago. The Japanese remain the dominant force in international competition, and the U.S. similarly remains near the top. However, the overall level of international competition has improved tremendously – with an increasing number of excellent players emerging from European countries. The game of Othello can only benefit from these trends. I hope they continue. My hope for **Brief & Basic** remains unchanged: that Othello players, wherever they live and from novice to expert, will enjoy reading this Handbook and will benefit from doing so.

Ted Landau  
January 1990

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## INTRODUCTION

**Origins.** The origins of the game of **Othello** remain uncertain, though its similarity to ancient Oriental games such as Go suggests that Othello may have similar roots. Othello's modern form emerged in England, in the late 1800's, when Lewis Waterman and John Mollett each separately claimed to have invented the game of **Reversi**. Though they each denounced the other as a fraud, they both probably derived their ideas from related pre-existing games. Reversi remained popular over the next 20 years and then seemed to fade from view. It resurfaced in Japan, in the early 1970's, when Goro Hasegawa refined the rules of Reversi, making two significant changes (see below), and called the game Othello. Othello became very popular during the 1970's, with an annual World Championship begun in 1977 and National Championships held in many countries, including the United States. The increase in interest in microcomputers in recent years has also contributed to a resurgence of interest in Othello/Reversi. This is because the nature of Othello (few rules, symmetrical board, one type of piece) lends itself to writing computer programs that can "play" the game. Dozens of programs, widely varying in quality, now exist that play Othello. Computer Othello tournaments are held periodically throughout the world.

**Equipment.** Othello is played on a 8 x 8 board of 64 squares, similar to a chess board. The game pieces are sixty-four discs, black on one side and white on the other.

**Object.** The object of Othello is to end the game with the majority of discs on the board having your color facing up. Ties are possible.

**Rules.** A brief summary of the rules follows. The rule most likely to present difficulty for a novice is the one defining a legal move (#4). This rule is much easier to understand from examples (many of which follow) than to verbally explain.

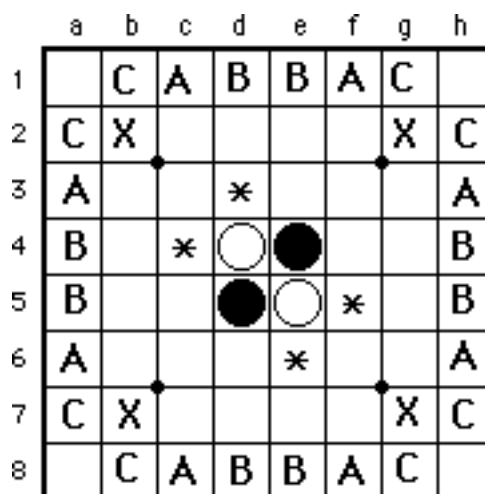


Diagram 1

1. A game always begins with four discs placed as shown in Diagram 1. (This differs from the rules of Reversi, which allows for any position of the four central discs).
2. One player is assigned Black and always places his discs with the Black side up. The other player is White, and conversely places his discs with the White side up.
3. Black always goes first with Black and White alternating turns thereafter.
4. A **legal move** is defined as follows: a new disc is placed on a vacant square. This vacant square must be adjacent to at least one square already occupied by a disc of the opponent's color. This new disc must also be placed so that in at least one direction (vertically, horizontally, or diagonally) the newly-placed disc, together with a disc of the player's color already on the board, brackets (or "**outflanks**") one or more discs of the opponent's color. The bracketed disc(s) are turned over (or "**flipped**") to become the same color as the newly placed disc. If a newly-placed disc outflanks opponent's discs in several directions at once, all such discs are flipped. For example, all possible legal moves for Black's first turn are indicated with asterisks in Diagram 1 -- each choice would result in the flipping of one or the other of the two white disks. For an example of a move that flips more than one disc, turn to Diagram 4 for a moment. Here, a White move to d7 would flip 4 discs: d4, d5, and d6 vertically and e6 diagonally.
5. A player with no legal moves must "**pass**." For every turn in which a player must pass, his opponent continues to take turns, taking discs from the other player's "tray" as necessary. Thus, (unlike Reversi) a player cannot "run out" of discs.
6. A player may not pass if he has a legal move available.

7. If neither player has a legal move, the game ends even if there are still vacant squares on the board. Most often, the game ends when all 64 squares are filled.
8. Once placed on the board, a disc is never moved again, though it may be flipped repeatedly over the course of the game. A disc that currently has its white side facing up is called a white disc and vice versa.

**Notation & Terminology.** In the discussions that follow, the best way to understand the diagrams is to use a board and discs, laying out and examining the positions discussed as you go. Diagram 1 introduces the basics of Othello notation, as used in the diagrams. Squares are typically referred to by the letter and number that corresponds to the square, as indicated along the borders of each diagram. Thus, the second square in the first row is called the b1 square. Some squares have additional names, as shown in Diagram 1. Thus, the b1 square is also referred to as a C-square. In the case of double diagrams (two grids with an arrow between): the upper grid shows (1) the board configuration prior to the move or sequence of moves under discussion (the unnumbered discs) and (2) the move or sequence of moves under discussion (the numbered discs); the lower grid shows the board configuration after the move or sequence of moves under discussion has been made. The numbered discs indicate that you should place discs on the board in the numerical sequence shown, flipping the appropriate discs as you do so.

The game of Othello is divided into three phases. The approximate dividing lines are: **Opening**: first 20 moves; **Midgame**: middle 20 moves; **Endgame**: last 20 moves. Other important terms will be given in **boldface** when first mentioned in the sections to follow.

## STRATEGY & TACTICS: 21 POINTS

Othello is a game of skill. Luck rarely, if ever, affects the outcome of a game. The player who can better apply the principles discussed in this handbook will consistently win against the less well-informed player. Many players remain largely unaware of these principles, perhaps because the correct strategy is often subtle and counter-intuitive and therefore difficult to discover without assistance. These 21 points attempt to provide this assistance.

**The right move.** The irony of Othello (as well as many other abstract strategy games) is that even though the entire board and all the pieces are in full view at all times, the best move is often far from obvious. Deciding upon the "right" move can be analogous to hunting for buried treasure: you need to know (1) what it is you are looking for and (2) how to go about finding it. These themes wind their way through every point in this book. For example, Points #4, #5 & #9 focus on the general characteristics of a **good move** and the importance of trying to visual the future consequences of a move. Specific suggestions as to how to recognize good moves in common midgame positions are made in Point #13 and again in #16. The discussions of openings, endgames, and edge play offer other situation specific recommendations. Point #21 finally deals with the difficult issue of how to find the best move when (as often happens in real games) several of the "rules" discussed here lead to conflicting or unclear advice. This book will not supply you with all the answers. But it will give you a good head start.

### 1. Get More Stable Discs, Not Just More Discs

The object of Othello is to end the game with more discs than your opponent. This ultimate goal is frequently translated, by many beginning players, into an immediate goal throughout the game. That is, on each turn, a player will (with few exceptions) take the move that flips the maximum number of discs. This has been clearly shown to be an inferior strategy. Actually, **disc count is often irrelevant to who is ahead in a game.** This point can not be stated too strongly. In fact, players who consistently flip large numbers of discs early in the game are among the easiest opponents for experts to defeat! An ex-



ample is in Diagram 2. Here, Black has only one disc on the board, with only four moves left in the game. But if you play the game out, you will find that Black gets all the remaining moves and wins the game 40-24. Clearly, simply having a lot of discs, even at such a late point in the game, is not enough to assure victory. Even games between experts may end with this sort of turn-around in the last few moves (though usually not as dramatic as in this example). The reason this can happen is that White's disc majority was fragile, since many of his discs were vulnerable to being flipped by Black. The point therefore is not simply to acquire discs, but acquire discs that cannot be flipped for the rest of the game, no matter how the game develops. Such discs are called **stable** discs. Unfortunately, as we will see, stable discs usually cannot be acquired in any great number until the endgame. Therefore, the strategy for the majority of the game focuses on factors other than the relative disc counts of the two players. These are discussed in the next several points.

## 2. Not All Squares Were Created Equal

A crucial idea that beginning players inevitably realize is the importance of the 4 corner squares on the board. It was not coincidental that the 4 empty squares in Diagram 2 were all **corner squares**. A corner is important because it can never be flipped. That is, it is a **stable** disc. Similarly, possession of discs adjacent to a corner square (once the corner has been occupied) often means that the adjacent discs are stable as well. Thus in Diagram 3, when Black takes the h8 corner, all the discs in the g and h columns and in the seventh and eighth rows, suddenly become stable discs for Black. Black is well on the way to winning the game. In fact, possession of a corner is so critical in the beginning of the game, that getting one almost always assures victory. Similarly, since the corners and the edge squares together add up to 28 squares, it is almost impossible to win without occupying at least some of these squares.

An implied corollary to the above principles is that squares adjacent to corners are extremely risky to occupy, at least until the corner itself has been occupied. This is because these squares can become "stepping stones" for your opponent to take the corner. This is

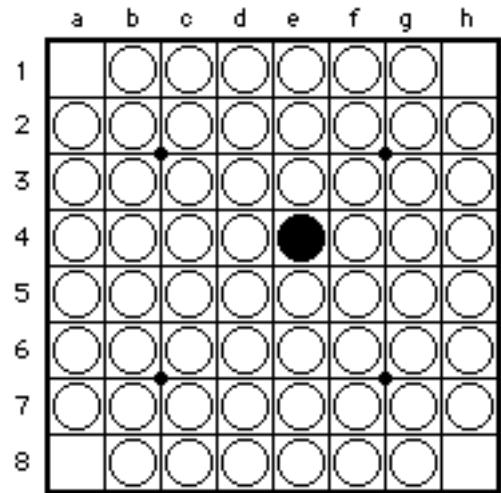


Diagram 2: Black to move

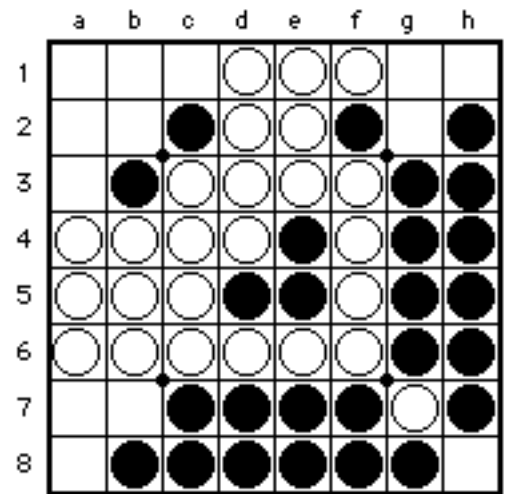


Diagram 3: Black to move

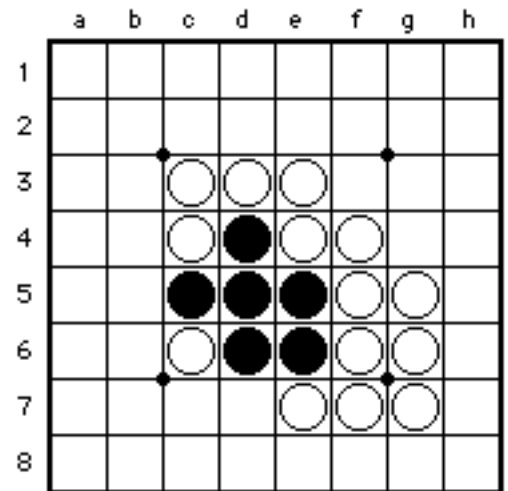


Diagram 4: White to move

especially true of the **X-squares**. Taking an X-square early in the game, usually guarantees that the other player will get the adjacent corner. Such a situation is seen in Diagram 4. It is White's turn, but no matter where White goes, Black will be able to flip the disc on the X-square (g7) and take the h8 corner on his next move. Very simply, White should never have gone to the g7 square at this stage of the game. There are similar problems with C-squares (see Point #6), though they do not guarantee the opponent's access to the corner nearly as often as X-squares do.

An *incorrect*, though commonly assumed, implication of the above discussion is that all squares on the board can be rated as to their absolute value. In this approach the corners are typically rated as the most valuable, the A and B edge squares as valuable (but less so than corners), the non-edge squares (particularly those adjacent to the edge) as still less valuable, and the C- and X-squares as most risky. By this theory, the best move on each turn usually will be the move that occupies the highest rated square to which the player has a legal move. Unfortunately, a player adopting this strategy will almost always be defeated by a player using the winning strategies to be discussed in the next sections.

[**Note:** Corners often diminish in value near the end of the game, and corner sacrifices become quite common among expert players. In such situations, possession of only one corner may be sufficient to win the game. Similarly, occupation of C-squares and even X-squares may be crucial to winning the game. Examples of these situations will be discussed extensively in still later sections.]

In summary, the incorrect strategies place an unwarranted value on flipping large numbers of discs even though they are not stable and on possessing the A and B edge squares. Ironically, the correct strategy typically involves flipping a minimum number of discs and often avoiding the non-corner edge squares, at least until later in the game. These counter-intuitive ideas, though they may be difficult for the beginning Othello player to appreciate, are the key to a winning Othello strategy! Let's look at these ideas in more detail:

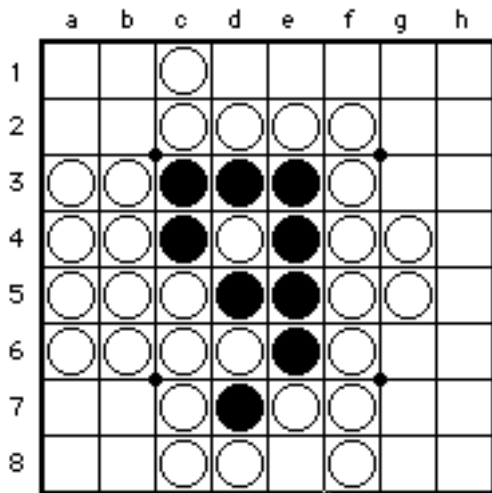


Diagram 5: Black to move

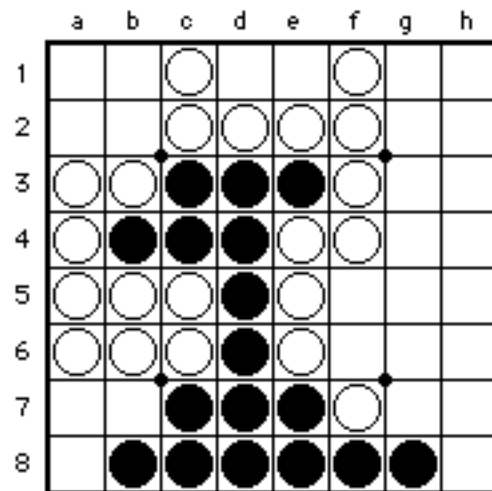


Diagram 6: Black to move

### 3. Control of the Game: Mobility Optimization and Dynamic Square Evaluation

Once understood, the logic of the correct strategy to winning Othello seems quite straightforward. Your hope is to get your opponent to make a poor move that will allow you to win the game (e.g. get early access to a corner etc.). Obviously, your opponent, especially if he is a skilled player, is not likely to make such a move willingly. Your goal, therefore is to force him to make a poor move. How can this be accomplished? Quite simply, if your opponent has only very few (ideally just one or two) legal moves, and they are poor moves, then your opponent will be required (by the rules of

the game) to make a poor move. In the extreme case, where your opponent has only one move, he is said to have a **forced move**. An example is given in Diagram 5. Here, Black wisely chooses to go to e8. The wisdom of Black's move quickly becomes evident: White now has only one move, to b2, which will allow Black to get the a1 corner and inevitably win the game. A slightly more subtle example of the same principle is in Diagram 6. Here, if Black moves to g6(!), White is again forced to the b2 X-square. Note that any other move for Black (e.g. f6, g5) opens up new moves for White, thus eliminating the forced move to b2.

In more general terms, your goal is **move limitation**, or limiting the number of moves (often referred to as **options**) that your opponent has. At the same time you wish to maximize your own options. Overall, this is referred to as **mobility optimization**. This is when you have many options, at least some of them good ones, while your opponent has few options, all of them poor. At this point you have gained **control** of the game. If you can continue to maintain such control, you will almost certainly win. Another example of the power of this approach is demonstrated in Diagrams 7, 8, and 9. In all three diagrams, Black is contemplating a move to f8 (an A-square). In Diagram 7, such a move would be a disaster. It flips the whole f column to Black, and after a White move to a2, Black would be forced to go to either b2 or b7 (X-squares) on his next move, losing either the a1 or a8 corner. In Diagram 8, the move to f8 is moderately successful, but by flipping the discs at f6 and f7, it cuts off access to other squares (particularly g8) which could be important later. A move to g4 would probably have been better. Contrast this to the move to f8 in Diagram 9. Here, the move does not open up any new moves for White, while it retains the g8 option for Black. It is an excellent move in terms of mobility optimization. In fact, after White-a2, Black-g8, it is now White who will lose a corner! The point of all this is that the value of f8 (or any square) is never an absolute. It is always a function of the current overall board position. If this is taken into account properly, then an attempt to rate the relative (and changing) values of squares is possible and useful. This is referred to as **dynamic square evaluation**. Together with mobility optimization, it forms the heart of basic

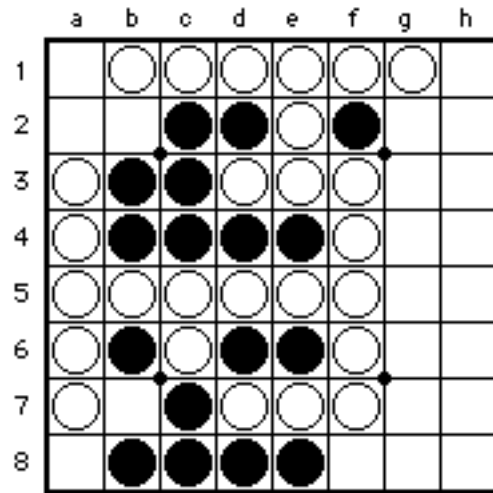


Diagram 7: Black to move

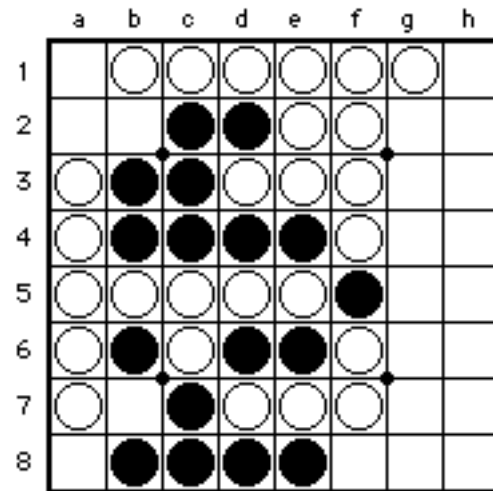


Diagram 8: Black to move

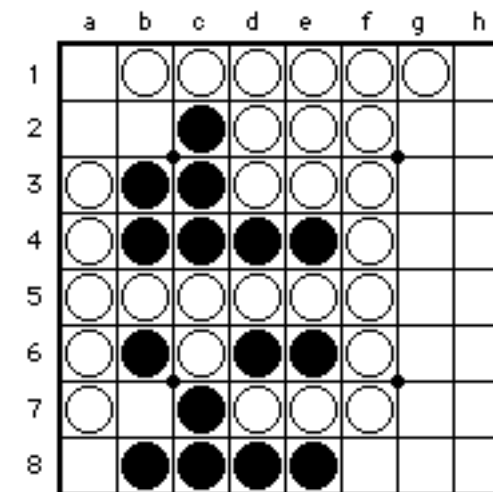


Diagram 9: Black to move

Othello strategy.

#### 4. Good Moves and Bad Moves: Gaining Control

What constitutes a good move in Othello? Without reference to specific positions, a good move can be typically defined in terms of the principles of gaining and maintaining control (with the ultimate aim of acquiring stable discs). That is, a move that increases, maintains or minimally decreases your future mobility while simultaneously limiting your opponent's mobility is a good move. Unfortunately, applying this principle to specific positions is often far from a simple matter. Here are some guidelines:

It is technically possible to have control of the game with more discs on the board than your opponent, with less discs, or with about an equal number of discs. However, most expert players agree that the easiest way to get control of the game is by maintaining fewer discs than your opponent (i.e. maintaining a low disc count). This is referred to as **evaporation strategy**. The rationale for this is that, since your opponent needs to flip at least one of your discs to make a legal move, the less discs you have on the board, the less legal moves he is likely to have (i.e. move limitation). Thus, in Diagrams 7-9, the f8 move in Diagram 7 could be said to be the worst because it flipped the most discs, while the move to f8 in Diagram 9 was the best because it flipped the least discs. The advantages of this approach are so great that if one player makes judicious use of evaporation while the other does not, the evaporation strategist will almost always win.

It may be, particularly in a game between two experts, that neither player can establish a successful evaporation. The game remains roughly even until the endgame. Alternatively, one player may succeed in getting control of the game early and acquiring one or more corners. At these points, evaporation inevitably becomes less important. After all, at some point you have to start flipping lots of discs or you cannot win the game. Thus, the value of each square, in terms of the number of stable discs that will be acquired, becomes more important. For this reason, evaporation strategy tends to have decreased importance for endgame play.

Similarly, the ultimate goal remains mobility optimization, not simply evaporation. A move that flips several discs may at times leave your opponent with less options than a move that just flips one disc. For example, if most of your discs are centrally located, while your opponent's discs are spread out along the periphery, you are said to have **"control of the center."** This is generally desirable. Thus, interior squares are typically better to occupy than peripheral (or **frontier**) discs. This is because (1) flipping interior discs generally does not open up as many new moves for your opponent as flipping frontier discs would, and (2) maintaining a compact center of connected interior discs tends to lead to more mobility for yourself than having your pieces scattered around the

periphery. A move that flips only interior discs may therefore be more desirable than a move that flips mainly frontier discs, even if the latter move flips less discs overall. Note: Black's position in Diagram 5 represents good control of the center.

Also, remember that mobility optimization does not just refer to the number of options available. It takes into consideration both **option quantity** and **option quality**. The more moves you have available, the greater your option quantity. The more desirable those moves are, the greater your option quality. The good player realizes that a smaller number of high quality options may be more desirable than a larger number of low quality options. To take an extreme example, it would most commonly

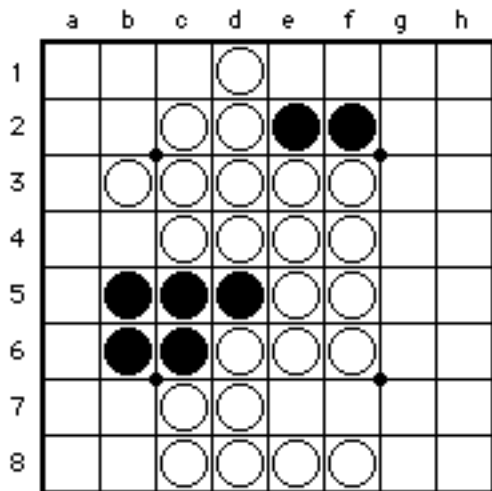


Diagram 10: Black to move

be preferable to have your access limited to 2 corner squares rather than to 4 X-squares.

A special type of frontier disc position is called a **wall**: an area of frontier discs, along one side of the board, that are of all one color. Generally, it is inadvisable to form walls. **If your opponent should form one, it is generally advisable not to break across the wall (e.g. move to the unoccupied squares beyond the wall) unless no other viable moves remain.** The potential problems of forming a wall are illustrated in Diagram 10. Note the relative merits of a Black move to f7 as opposed to e7. The f7 move forms a wall on the east side of the board, severely limiting Black's future options, while opening up many new moves for White. Quite simply, it is a bad move. **The move to e7, while it flips the same number of discs, is a far better move.** The e7 move flips only interior discs, forming a connected, centrally located cluster of discs for Black. The result (control of the center) is increased mobility (e.g. Black now has access to b4), while f7 is the only new move opened for White.

Note that edge squares are a partial exception to these generalizations about walls and evaporation: since a player cannot flip past an edge, a "wall" of edge squares is not a liability in the way that a non-edge wall would be. Thus, in Diagram 6, the wall of Black discs along the south edge did not hurt Black since they provided no moves for White. Still, expert players are often reluctant to take edge squares in the early part of the game. First, taking edges tends to oppose trying to get control of the center (but see Diagram 11 and Point #16). Second, occupied edge squares often become liabilities later in the game for a variety of reasons (see Point #7 for one major example).

## 5. Good Moves and Bad Moves: Planning Ahead

This point cannot be emphasized enough: successful evaporation, mobility optimization or whatever, depends not merely on what is best for the current position, but what is likely to be best based on what the board will be like 2, 3, 4 or even more moves later. It is this ability to see what consequences a move is likely to have on subsequent moves that separates the expert from the average player. The farther you can "see" ahead, the better you will play. A good move in Othello can almost never be determined simply by a static view of the current board position.

One of the unique difficulties of Othello is that, since many pieces may get flipped with each move (particularly in the end-game), it can be extremely difficult to visualize the future board position (though computers have little difficulty with this aspect of Othello). Still, one must do the best one can. An example that clearly shows the benefits of planning ahead is in Diagram 11. Here we see how, with some foresight, Black can take a superficially even position,

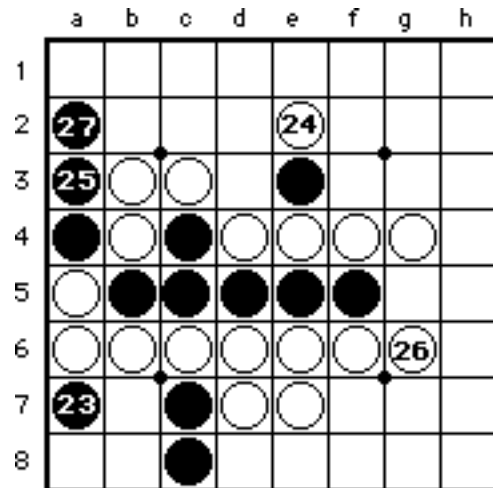


Diagram 11-A: Moves 23-26

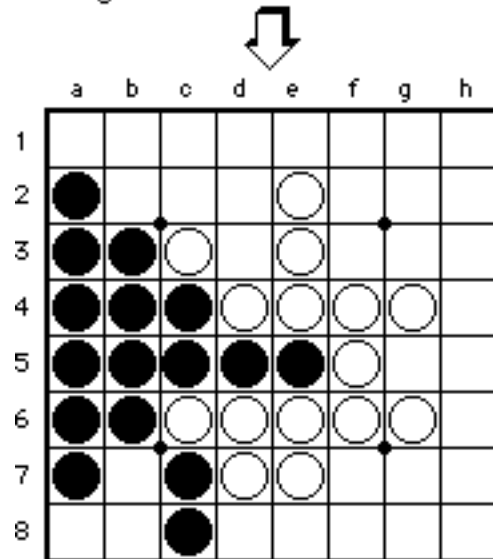


Diagram 11-B: After move 26



and gain complete control of the game. The sequence of moves results in Black forcing White to give up the a8 corner. The a7 move, in particular, took away several of White's options (i.e. d8, g5, and d3). Thus, the advantages of the a7 move become apparent only if Black anticipates the consequences of the next several moves. For example, the sequence of moves would not have "worked" if Black's a3 move had flipped White's disc at b3. This is because it would have prevented Black's subsequent move 27 to a2.

## 6. Isolated C-square Traps

We now begin to shift attention away from strategy (the focus of points #1 - #5) and move towards tactics. Though the dividing line is not always clear, strategy tends to focus on more general discussions of goals and objectives while tactics refer to more specific techniques for implementing these goals. For example, in this section we demonstrate a "trick" or a "trap" that will force your opponent to concede a corner, no matter how many moves he might have available at the time. It requires that your opponent occupy a C-square along an edge that is otherwise empty (or nearly so)(i.e. an **isolated C-square**). Actually, this trap will rarely occur in a game between good players, because they will avoid the positions that would permit it. However, the threat of such traps is

often sufficient to constrain your opponent's moves. In any case, you need to know of these traps, if only to avoid falling into them yourself.

Two examples of this trap are given in Diagrams 12 and 13. In Diagram 12, Black followed White's move to g1 (the isolated C-square) with a move to d1. White is now unable to take any moves along the critical North edge and so might choose to go to g5, (for example). Wherever White goes, Black continues with f1! Now White is forced to give up the h1 corner (i.e. White-e1, Black-h1!). Note how this trap would have failed if White could have moved to the North edge (e.g. to e1) prior to Black's move to f1. In Diagram 13, White responded to Black's g1 (isolated C-square) move with a move to c1. This is a stronger move than the d1 move in Diagram 12 since, even if White moves to the edge, Black is still guaranteed the h1 corner (as long as Black maintains access to the North edge). For example, if White goes to d1, Black continues with f1. The most complex sequences occur if White avoids the edge altogether (e.g. by going to g5). If this occurs, Black continues by going to e1. Now, once again, White is helpless to prevent the loss of the corner (e.g. White-b6, Black-f1). If all these seems a bit hard to follow, remember: take out a board, set up the positions in the Diagrams, and play them out. I guarantee that all will become clear shortly.

In summary: you are in danger of succumbing to these traps only if two preconditions are met: (1) the appropriate isolated C-

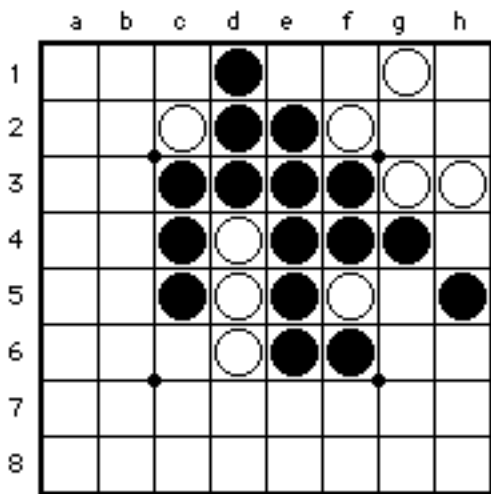


Diagram 12: White to move

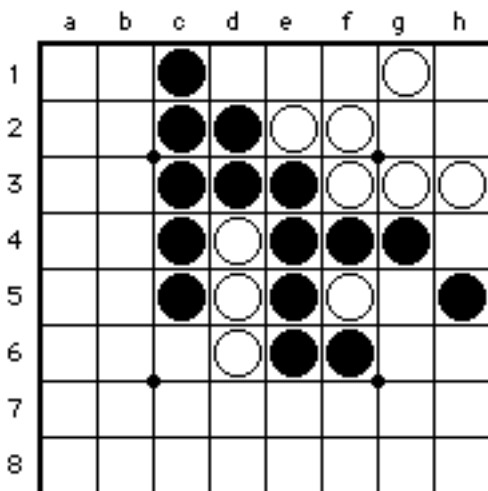


Diagram 13: White to move

square edge position exists, and (2) your opponent has access (i.e. legal moves) to the necessary squares to complete the trap. By avoiding one or both of these preconditions, you can avoid these traps. The best general advice is to avoid going to isolated C-squares altogether. But, as will be seen later, once an edge begins to fill up (e.g. a C-square would no longer be "isolated"), this prohibition will usually no longer apply.

Finally, Diagram 14 shows an unusual C-square trap position. Here, Black can take the h1 corner at will. But if he does so, White can continue with c1, thereby gaining undeniable access to the a1 corner.

## 7. Unbalanced Edges

Earlier, we commented that, despite all the previous advice, in certain circumstances going to an X-square can be a good move, while going to a corner can be a poor one. The ability to recognize these positions is one of the hallmarks of the more advanced Othello player. In this section, we discuss the most basic of these situations: the **unbalanced edge**. An unbalanced edge is defined as an edge occupied by five adjacent discs of the same color immediately adjacent to a vacant corner. An example is given in Diagram 15. The north edge is unbalanced. Note the consequences of this position: If Black takes the X-square at b2, White may indeed follow by taking the a1 corner. But Black can now continue by filling in the **wedge** at b1 (see Diagram 16 for resulting position). Now, no matter where White goes, Black now has undeniable access to the corner at h1. When Black does go to h1, the entire row of discs along the north edge (except for a1) will become stable discs for Black. In addition, Black will then be able to gain further stable discs by going to g2, and continuing to march down to the h8 corner. If White had tried to prevent all this by going to b1 initially (instead of a1), this would cause the b2 disc to be flipped to White, and Black will get *both* the a1 and h1 corners! Thus, the X-square move and the resulting **corner sacrifice** clearly worked to Black's advantage (though if the discs along the east and west edges had been Black, the advantage would have been less). Conversely, though there are numerous exceptions, an unbalanced edge is a liability and should be avoided if possible (unbalanced edges are another ex-

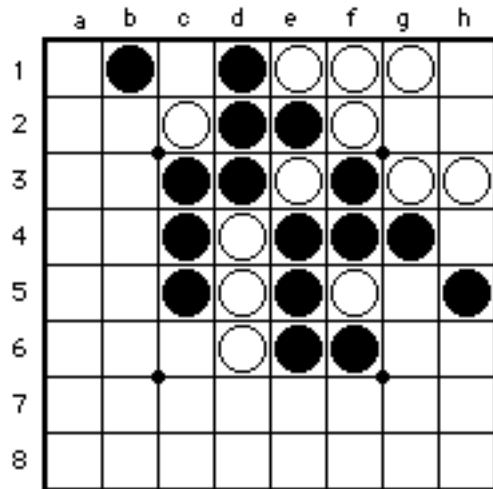


Diagram 14: Black to move

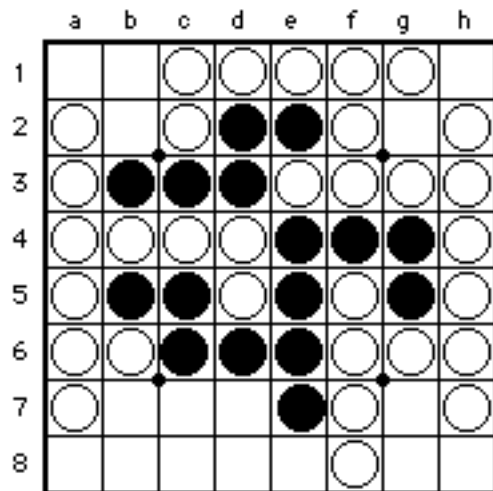


Diagram 15: Black to move

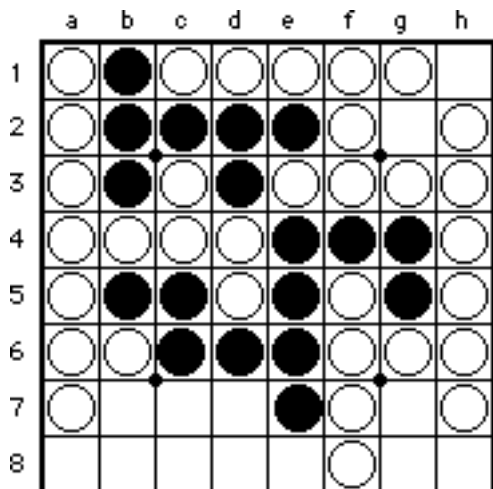


Diagram 16: White to move  
(after b2-a1-b1)

ample that should dispel the myth that edge squares are always good to take). Note that, given the opportunity, it would usually be to White's advantage to **balance** the edge (e.g. go to b1) prior to Black going to b2. Thus, unlike the isolated C-square positions discussed in Point #6, a C-square move would be considered a good move. However, in Diagram 15, White could not balance the edge because (since c2 was White) White did not have access to b1.

But now a note about defense: In situations like the one in Diagram 15, after Black goes to b2, White's best immediate defense is often to do just about anything *except* take the a1 corner. The idea is to wait (and hope) for the board position to change such that taking the a1 corner will no longer be the disastrous move it currently is. For example, White may hope to force Black to go to g2 (sacrificing the h1 corner), before White goes to a1.

Learning the dangers of the unbalanced edge is, however, only the beginning of this topic. Actually, experts "take" unbalanced edges (i.e. make a move that results in the formation of an unbalanced edge) quite often, and not merely when it is the lesser of alternative evils. Taking an unbalanced edge can be a strong, even a game-winning, move. This occurs most often in situations where you can prevent your opponent from

getting the wedge necessary to take advantage of the unbalanced edge. Two examples of this are shown in Diagram 17. First, if Black goes to b2, White can now balance the north edge by going to b1 (before going to a1) without flipping the disc at b2. This will permit White to get both a1 and b1, defeating Black's attack on the edge. A similar type of problem is seen along the east edge of Diagram 17. Here if Black tries to attack the unbalanced edge by going to g7, White continues with h8. However, Black will not have legal access to h7 at this point, giving White the opportunity to go to h7 on his next move, once again defeating the threat of the unbalanced edge. In this situation, Black should delay the g7 move until (if possible) a Black disc is securely located in the seventh row, providing the necessary access to h7.

Sometimes, an unbalanced edge that seems safe from an X-square attack may still be vulnerable to a move along the adjacent edge. This is the case in Diagram 18, where Black's lack of access to b2 prevents the conventional attack of the unbalanced north edge. However, Black can go to the C-square at a2 instead! If White follows by taking the a1 corner, Black can successfully fill in the wedge at b1. If White does not take the a1 corner, Black then has the additional option of going to a7 and eliminating White's opportunity to take the a1 corner at all.

In summary, the potential liabilities of unbalanced edges are both simple and essential for the aspiring Othello expert to understand. However, there are numerous subtle nuances to the unbalanced edge position,

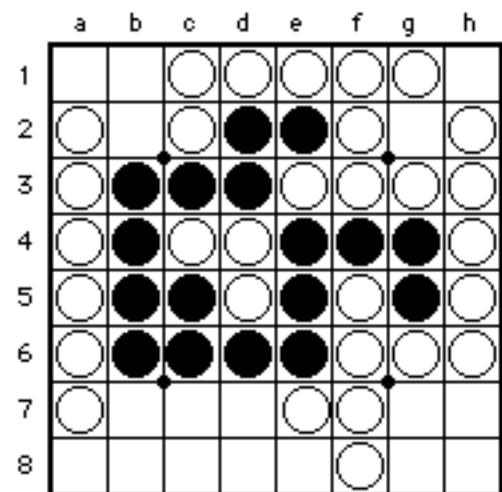


Diagram 17: Black to move

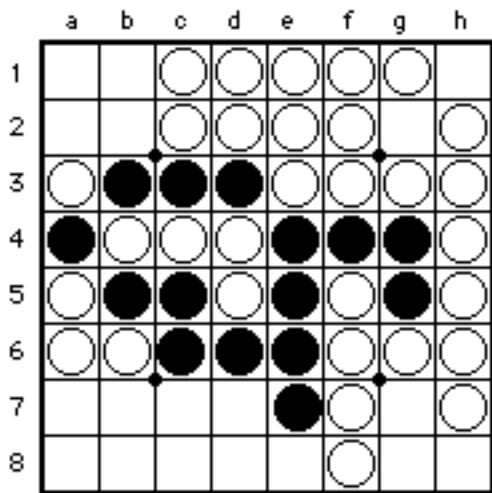


Diagram 18: Black to move



that are anything but simple. Knowing whether or not to take an unbalanced edge, or to attack a currently existing one, are among the more difficult of all decisions in Othello.

## 8. Controlling the Main Diagonal: Stoner Traps and More

The **main** (or **central**) **diagonals** are the two diagonals that run from a1-h8 and from a8-h1. A player is said to have **control** of one of these diagonals when all the pieces along that diagonal are of his color. There are numerous ways to take advantage of this control.

**Stoner Traps.** A Stoner trap (named after John Stoner, the first U.S.O.A. member known to use this trap) is a corner sacrifice/exchange that depends on main diagonal control. For example, in Diagram 19, White can move to b7, gaining control of the a8-h1 main diagonal. As a result, despite White's X-square disc, Black cannot yet take the a8 corner. Typically, Black will try to move to a square that **cuts across** (i.e. flips a disc along) the main diagonal, so as to gain access to a8 (e.g. Black moves to f3). But White's next move is to d8 (called the "attack" square) (see Diagram 20). Now there is no way to stop White from getting the h8 corner (and most of the south edge as well). Black cannot go to b8 or he will flip the disc at b7 and lose both the a8 and h8 corners. If Black takes the corner at a8, White can then take h8 directly or even (in this case) take the wedge at b8 (maintaining access to h8). If Black avoids both a8 and b8, White still can go to h8 at any time (an advantage of this position over a similar unbalanced edge attack). This exchange of corners is usually (but not always) favorable to the attacker since he gets both the edge and a corner, while his opponent gets only a corner.

The drawback of Stoner traps is that they are often difficult to set-up, especially against a knowledgeable opponent. To be successful, at least four preconditions are required: (1) The opponent must have the requisite edge position (the two most common edge positions that are vulnerable to Stoner traps are shown along the north and south edges in Diagram 19). (2) The X-square

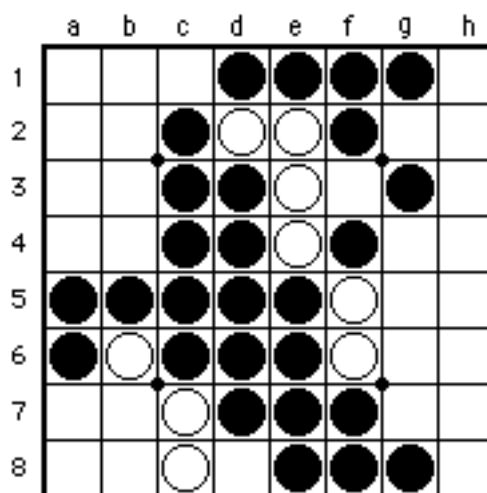


Diagram 19: White to move

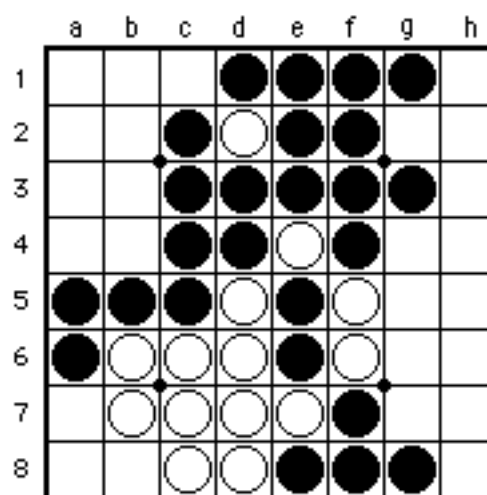


Diagram 20: Black to move

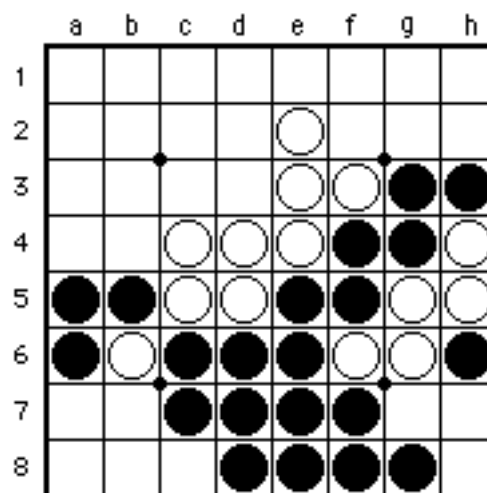


Diagram 21: White to move

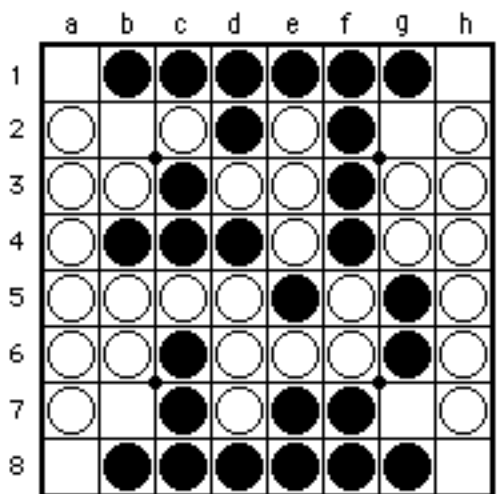


Diagram 22: White to move

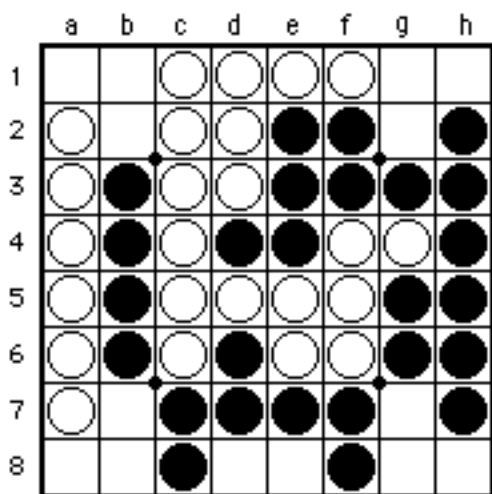


Diagram 23: Black to move

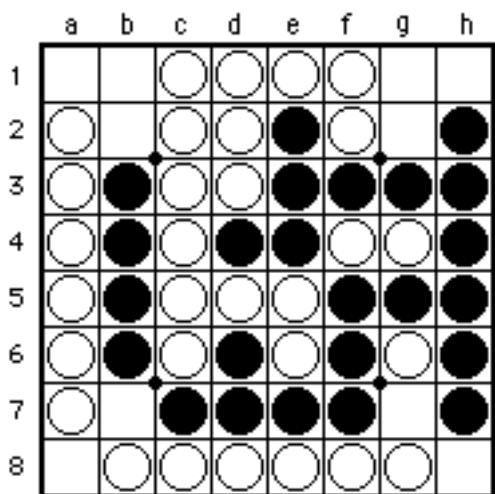


Diagram 24: White to move

move must result in control of the main diagonal. (3) There must be at least one disc of the opponent's color in the column containing the X-square, e.g. the b column in Diagram 20. (Otherwise, Black could have safely balanced the edge). (4) You must maintain access to the edge square required to complete the trap (e.g. d8 in Diagrams 19 and 20). For example, White could have gone to b2 in Diagram 19, attempting a Stoner trap along the north edge. But this fails for at least two reasons: after Black continues with g5, White does not have access to c1. Even if he did, Black could follow the c1 move by safely going to b1. A more subtle example of a failed Stoner trap is in Diagram 21. Here, the trap fails because after White's move to b7, Black goes to c3, gaining access to a8, while blocking White from the critical c8 square.

**Controlling the Diagonal.** If you can maintain control of a main diagonal, you can move to the X-squares without allowing your opponent access to the adjacent corners. In the endgame, this can be a critical advantage (even in non-Stoner trap positions). For example, in Diagram 22, White can go to b2 and assume control of the a1-h8 diagonal. Black cannot move to a1 now nor even move to regain access to a1. He is forced to go to g2 or b7, losing a corner (and the game as well).

Main diagonals can be so powerful, that a good player is constantly on guard for possibilities of gaining or losing control of them, particularly late in the game. Offensively, the player should monitor when he can take control (or set up to take control) of a main diagonal. Defensively, the player needs to be aware of when his opponent may take effective control of a main diagonal, and whether the player then has the ability to cut across it. Some examples of these ideas are presented in Diagram 23. Note the problems caused for Black by the **table** position (occupying the 2 A-squares) at the south end of the board. Novices often see this as a desirable position, but it actually has a major liability: Black has no access to d8 or e8 while White does. Thus, if Black attempts to control the a8-h1 diagonal by going to b7, White can respond with d8 or e8 and cut across the diagonal. Alternatively, White could go to g1, establishing control of the a1-h8 diagonal, safe in the

## Summary & Preview

In the previous sections, we demonstrated the importance of the four corner squares, and how a major part of Othello strategy focuses on how to best obtain corners yourself, while preventing your opponent from doing so. At the same time, we saw several cases (e.g. unbalanced edges, Stoner traps) where deliberately giving up a corner (typically by going to an X-square) was a good (even a game-winning) move. Understanding these positions typically depended on being able to recognize particular board patterns. But more than that, these positions demonstrated an important principle about Othello. Specifically, in a typical game between two expert Othello players, one player is rarely able to acquire all 4 corners. Recognizing this, the critical question becomes not how to prevent your opponent from ever getting a corner, but when is the best time (and how is the best way) to concede a corner. It is almost always better to concede a corner on your terms than to be forced to give up a corner later on your opponent's terms. As comedians are fond of saying: "It's all in the timing!" Indeed, many players, even experts, have lost games essentially because they were too reluctant to give away a corner at an opportune time. On the other hand, players may also lose games by overlooking unusual ways to force an opponent to give up a corner (or other positional advantage), ways that work only because the timing or position is "right." The next few sections expand on these fundamental concepts.

## 9. Gaining and Losing Tempo

A player is said to **gain a tempo** when he achieves an advantage of timing by deriving one more viable move than his opponent from play within a limited area of the board and thereby forcing the opponent to initiate play elsewhere (it is similar to the concept of **sente** – or initiative – in Go). Gaining and maintaining a tempo advantage is a key concept in Othello strategy. Let's look at this idea in more detail.

A **safe move** is loosely defined as a move that is not the proximate cause of giving your opponent a corner. For example, going to an X-square early in the game is definitely not a safe move. This definition does not take into consideration the numerous times that giving up a corner is a good move, but it serves us well for the majority of midgame situations. Typically, as the board fills up with discs, several distinct regions of empty squares develop. It is useful to keep track of the number of safe moves available to you (and to your opponent) in each of these regions. As play expands to the periphery of the board, we can initially conceive of each side of the board as having 10 potentially safe squares (see Diagram 25), though this can change with the board position. The move to the last safe square available to either player in a given area of the board is called the **last move** (making the last move of the game a special case of the "last move"). Taking a "last move" has the generally desirable effect of forcing your opponent to initiate play elsewhere on the board. If your opponent has no other safe moves on the board, you are said to have "**run your opponent out of moves**" (causing your opponent to concede a corner) (see also Point #3). **Gaining a tempo** is often an effective way to accomplish these goals (see also Point #10).

For example, in Diagram 26, it is White to play. Note that Black has only one safe move on the board: g5. If White can eliminate this without opening up any more safe moves, White will gain a corner. White clearly does not want to disturb the North edge

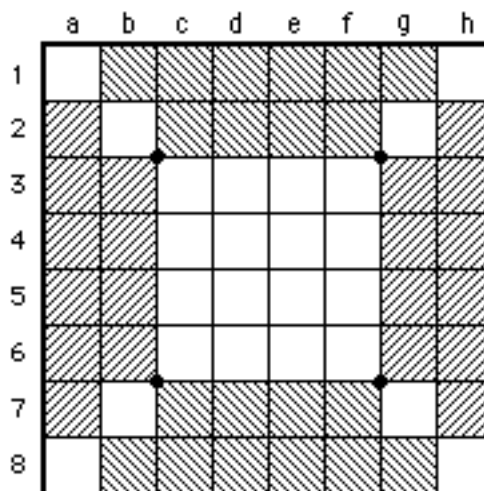


Diagram 25: Shaded areas are "safe move" regions

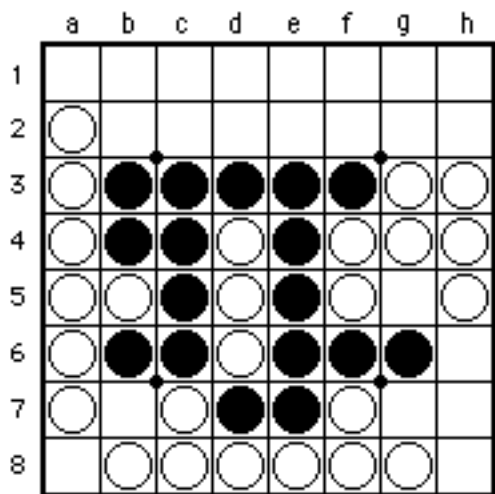


Diagram 26: White to move

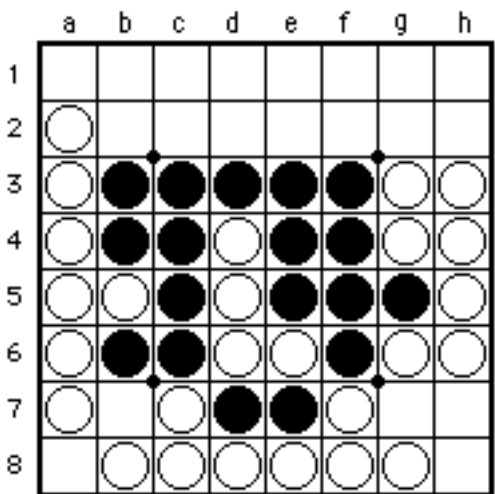


Diagram 27: White to move

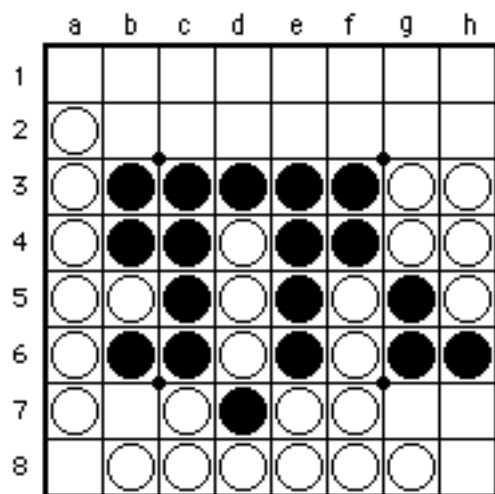


Diagram 28: White to move

(as this opens up good new moves for Black) so he will want to go to either h6 or g5 itself. The h6 move doesn't succeed: Black simply goes to g5 and White is now forced to open up the North edge (see Diagram 27). The g5 move is correct: this opens up a new safe move for Black (h6), but after Black goes there, White can continue with h7(!) (Diagram 28). White has now gotten the last move in that region (via a gain in tempo) and (in this case) Black is forced to give up a corner. Whenever you find yourself with more safe moves than your opponent (and a means of reducing your opponent's safe moves), it is worth considering attempting this. As usual, success depends upon being able to plan ahead: coming up one move short of running your opponent out of moves often spells disaster. Another word of caution: recall that X-squares are not always bad moves, and forcing your opponent to concede a corner may not hurt him. Thus, in Diagram 28, imagine that a7 was vacant. Now after a White move to h7, Black (though forced to give up a corner) goes to the b7 X-square, attacking the unbalanced west edge. In this position, the final outcome of the game is no longer clear. (Note: it is possible to get more than one extra move in a region -- resulting in a double, or even triple, gain in tempo!)

A related type of move associated with tempo is the **free move**. A free move is a play that can be deferred until later in the game and which when taken will not open up any new safe moves for one's opponent. It is really a just a special type of safe move (usually a tempo-gaining last move as well). White has a potential free move at h7 in Diagram 29. Free moves are like money in the bank. Don't use them until you need to or until you can make good use of them. Thus, in Diagram 29, it would be a mistake for White to take this free move now. Black would simply respond with c8 and White is forced to open up the North side of the board for Black (or concede a corner). Instead, White should play to c8 directly, leading to a likely b8 response by Black. Now White goes to h7 and Black is out of safe moves entirely.

Another dramatic example of the power of free moves is in Diagram 30. Here Black has two free moves at a2 and a7. Despite White's possession of three corners, Black is in control of the game, in the sense that White not only has no safe moves, he has no

moves at all! Computers can analyze end-game positions like this in order to determine the "**perfect-play**" sequence of remaining moves: the sequence of moves that occurs if each player makes the best possible available move at each turn. With perfect subsequent play, Black wins 44-20 (h4-h5-a2-h2-h3-g7-h8-h7-a7-pass-g8). Note that neither the a2 nor a7 free move was taken immediately. In fact the a7 move was deferred until the next to last move of the game.

The types of tempo-gaining plays discussed in this section are often referred to as "**squeeze plays**." Gaining a tempo is usually considered advantageous even if it does not immediately lead to the gain of a corner. I cannot overemphasize the importance of this concept for successful Othello play.

## 10. Odd and Even Regions of the Board

In the previous section we mentioned how, as the game develops, the board is frequently subdivided in separate regions of vacant squares. In this section we discuss a particularly noteworthy aspect of these regions (one that becomes most relevant during the endgame): whether there are an odd or even number of vacant squares in the region. Most typically, we are referring to regions of two to five empty squares in the area surrounding a corner. Making the correct play in these important regions depends upon an understanding of last move and tempo (Point #9). For example, let's begin by looking at the last two moves of the game.

In Diagram 31, it is Black to play at move 59. Note Black's dilemma: whichever square he takes (h1 or h2), White gets the remaining one (i.e. the last move), as well as securing either the North or the East edge. This is sufficient to give White the victory. In situations like this, Black would be happy to be able to pass. Then, White would have to go to h2, Black would get the last move at h1, and Black would win the game. The general principle here is that White was at an advantage because Black was forced to move first into an **even-numbered region** (i.e. an area containing an even number of vacant squares), giving White the last move. Actually, in a typical game, White always gets the last move (since Black always goes

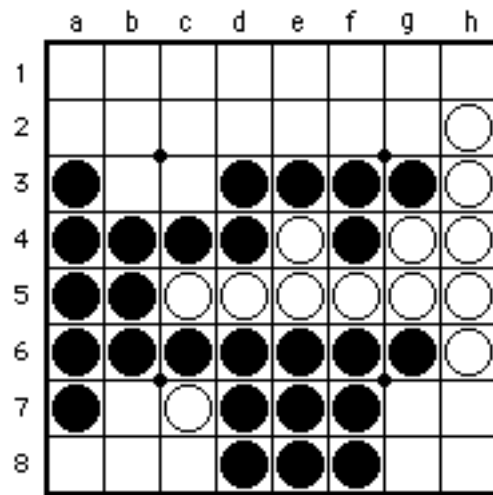


Diagram 29: White to move

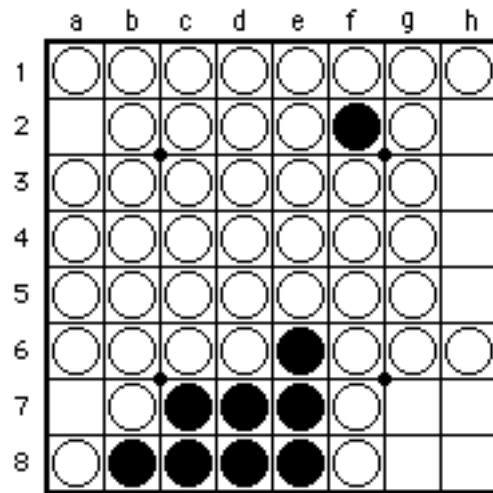


Diagram 30: Black to move

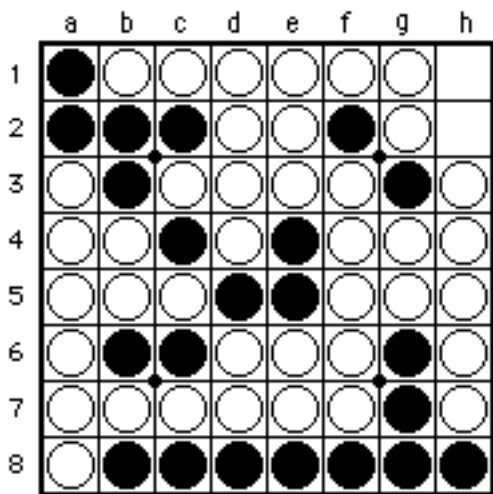


Diagram 31: Black to move

first), giving White an important advantage in the endgame (One major exception to this is, of course, if there has been a passed move. This, in turn, implies that it would be to Black's advantage to create an odd number of passed moves. Also see Point #11). Does all this mean that White has a better overall chance of winning than Black does (all other things equal)? This question is still an unresolved debate among expert Othello players. Most players feel that Black has an advantage in the opening (for reasons to be discussed in subsequent sections), while White has the advantage (just explained) in the endgame. Some feel that Black's initial advantage should give him enough of an edge to compensate for White's endgame advantage. Others disagree. But one thing is certain: we have now strayed too far from our main point. Let's return to it.

The type of situation described above for the last two moves in the game, usually occurs several times earlier in the game as each of the corner regions gets "**filled in.**" In each of these regions, it is typically disadvantageous to move first into an even-numbered region. Conversely, it is usually advantageous to move first into an **odd-numbered region** (for the same reason: this gets you the last move in that region). One of the surprising corollaries of all this is that it is often advantageous to move into an odd-numbered region even if it means giving up a corner to do so. Let's look at some examples.

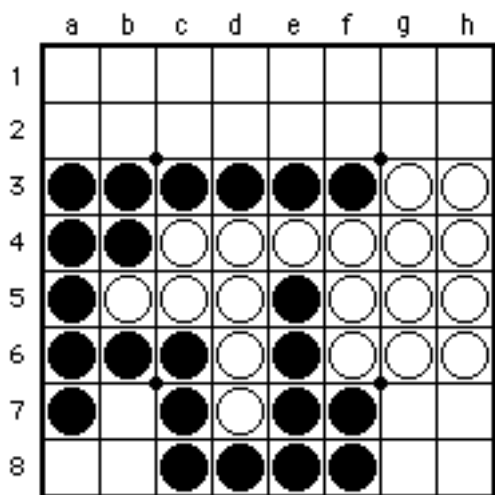


Diagram 32: White to move

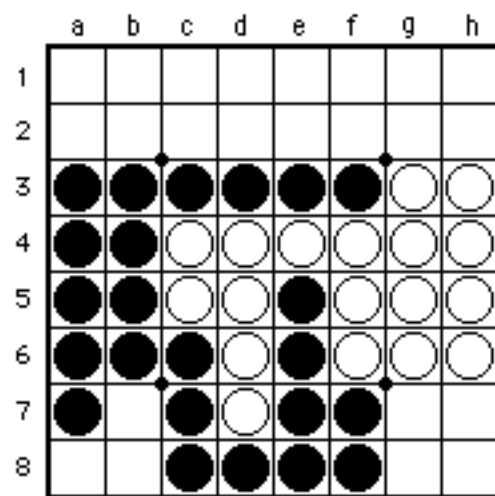


Diagram 33: White to move

In Diagram 32, it is White's move, but Black is in serious trouble. If it were now Black's turn, Black would be forced to choose among g7, h2, or h7 (all of which are disastrous). In order for White to force those choices on Black, he must gain a tempo without opening up any new safe moves for Black. To accomplish this, White needs to move to the southwest corner area, an odd-numbered region. White can take either b7 or b8, allowing Black to take the a8 corner. White then takes the last move in that area (b7 or b8), gaining a tempo and forcing Black to make one of the disastrous moves discussed above. From this position, White is likely to go on to win the game!

Now that you know the main principle, here's the bad news: There are many positions similar to that shown in Diagram 32 that will not work as well. A good player needs to be able to distinguish the phony from the real thing. For example, in Diagram 33, a White move to b7 fails: Black can safely move to a8, since White will be unable to follow with b8. Black then gets the last move in that region (b8) on his next turn. Meanwhile, White is forced to open up the North edge, and his momentum is lost. Fortunately for White, a move to b8, in Diagram 33, will work. But change the disc at c6 (in Diagram 33) to White. Now neither b7 nor b8 will work (try it!). Other variations of this sort exist. The general advice is: For the technique to work, you must have access to the last move in the region. Once again there is no substitute for planning ahead! But the good news is that many times it does work -- as it does in the example

shown in Diagram 34. Here, Black has control of the a1-h8 main diagonal, with no clear way for White to cut across it. But White can take advantage of the odd-numbered region in the northwest corner area by going to b2. This forces Black to respond with a1 (or White will continue with h8). Now White goes to a2, gaining undeniable access to h8!

As mentioned above, it is typically disadvantageous to move into an even-numbered region if you are doing so to gain a tempo (because you and your opponent typically exchange moves, with your opponent getting the last move). But there are numerous exceptions to this too. For example, in Diagram 35, if White moves to b7, Black typically responds by taking the a8 corner. But now, White gets both a7 and b8, getting three (rather than just two) of the four moves in that region, in addition to the last move. In fact, a7 and b8 are now free moves, and may be advantageously deferred until later in the game. In positions like this, the best defense for Black is typically to decline the a8 move as long as possible, hoping for a favorable change in the board position. Finally, bear in mind that, despite these exceptions, they remain exceptions. The rule still "works" most of the time. [Note: the player with the last move advantage in all of these positions is said to have **parity**. Players typically make moves to **maintain parity**.]

## 11. Blocking Techniques: Access and Poisoned Moves

**Blocking techniques** refer to ways to prevent your opponent from taking an otherwise good move. Naturally, you should be alert both to when you can make such blocking moves as well as when your opponent may be able to block your good move.

**Denying Access.** Numerous times in the preceding discussions we have used the term **access**. For example, it was a key concept to understanding control of the main diagonals (Point #8). Now it is time to examine it more formally. Quite simply, you are said to have access to a particular square if you can legally go there. A lack of access to a particular square is a type of block, and often a quite frustrating one. Thus, In Diagram 36, White would easily win the game if he could simply go to b8. But he can't, and so he must go to g2 or g7 instead, losing the game.

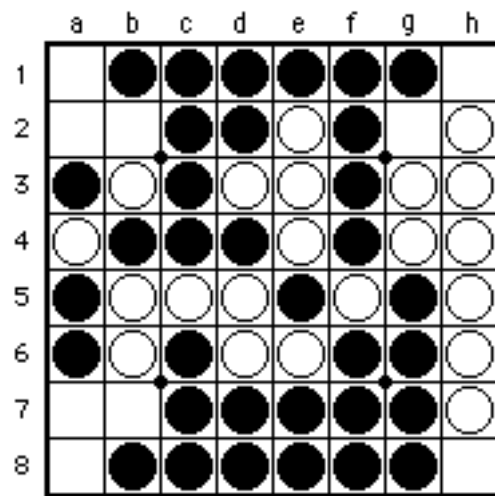


Diagram 34: White to move

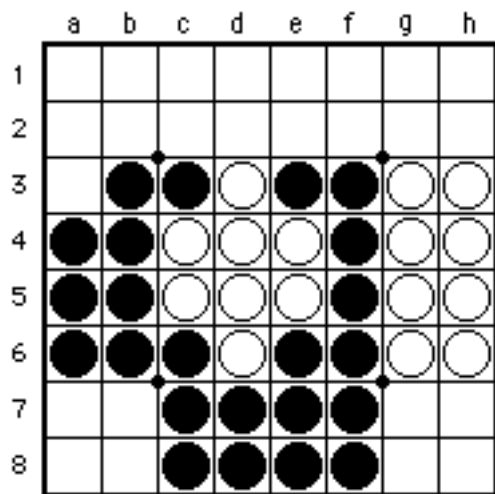


Diagram 35: White to move

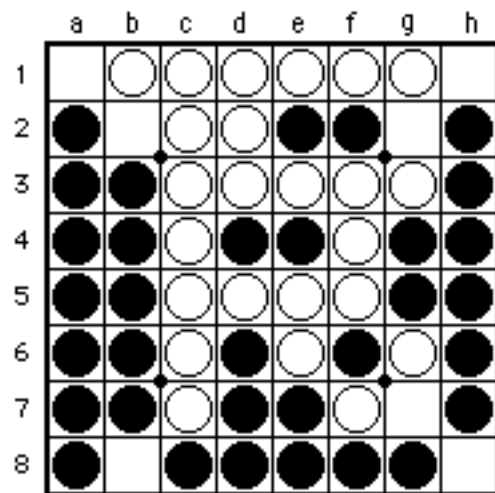


Diagram 36: White to move

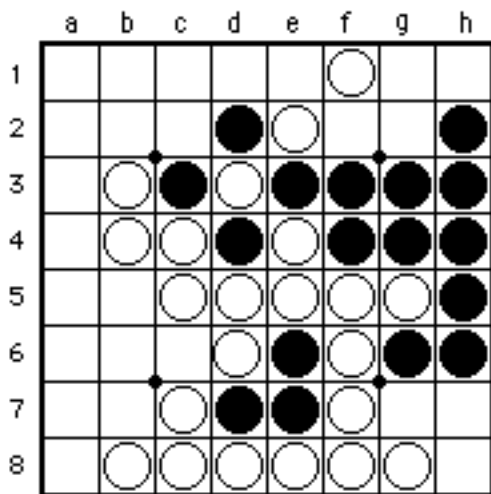


Diagram 37: Black to move

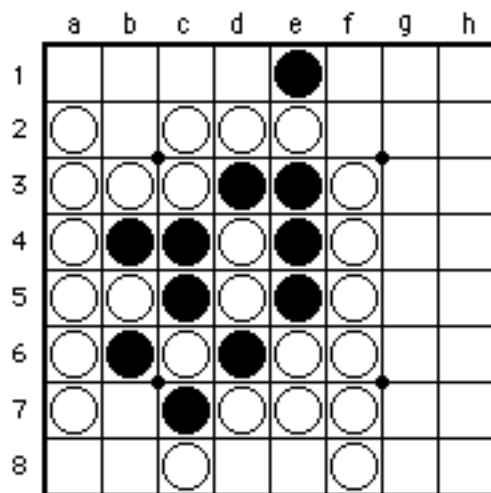


Diagram 38: Black to move

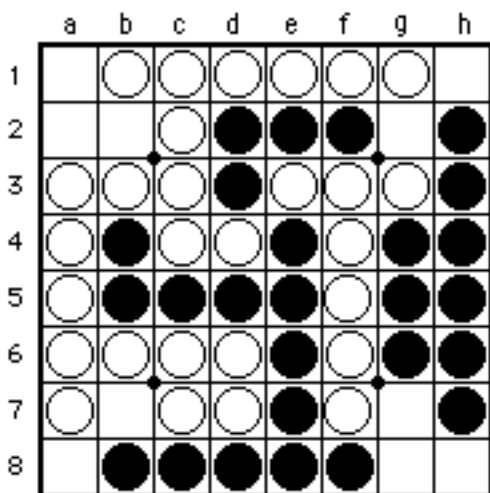


Diagram 39: Black to move

An expert Othello player does more than hope to avoid these situations (or find his opponent in them), he works to accomplish these goals. In particular, he watches the board so as to maintain his own access to critical squares while similarly denying access to his opponent's critical squares. Let's consider some other examples.

In Diagram 37, Black is concerned that White may eventually find it desirable to attack his unbalanced edge by going to g7. Seeking to prevent this, Black goes to b5. The unique advantage of this move over other acceptable moves (e.g. c2 or d1), is that it flips the disc at g5 to Black. Now White no longer has access to g7 and Black's unbalanced edge is relatively safe. Later in the game, a naive White may feel that he was simply "unlucky" not to have access to g7, but it was actually Black's foresight that was responsible. In Diagram 38, Black wants to block White's future access to the a8 corner region. Black can effect this by moving to e8. This pressures White to respond with d8 (otherwise Black would go there on his next turn, and gain a tempo). But White's d8 move flips the Black discs at b6 and c7 to White, **sealing-off** the region to White. The potential weakness of a sealed-off corner area is clearly shown in Diagram 39. Here White is sealed-off from the odd-numbered region surrounding the a1 corner. Black takes advantage of this by going to g8 (i.e. moving into the only other odd-numbered region on the board). This, in effect, shifts the "last move" advantage (discussed in Point #10) from White to Black. Thus, because White cannot go to the a1 corner area (e.g. a2 would have been a game-winning move!), White must now give a corner and lose the game. Indeed, Black (with proper play) can now get the last move in each of the 4 corner regions.

Finally, it is worth noting that denial of access is just another perspective on the major principles of move limitation and "running your opponent out of moves" etc. that have been discussed previously. For example, determine what move you would make as White in Diagram 40. The critical observation is that Black currently has only one safe move: e8. If you can take it away without opening up any new safe moves, Black will be forced to concede a corner. Taking e8 itself doesn't work: Black continues with b8. The move that succeeds is a6! You have



now denied Black access to e8 by flipping the Black disc at c6. Black must now make what is likely to be a game-losing move.

**Poisoned moves.** A poisoned move is another type of blocking move. Actually it is like a "semi-denial" of access: you do not legally prevent the opponent from moving to a square; you simply make it undesirable to do so. Technically, a poisoned move is defined as a move that cannot be made without flipping unwanted discs. As was true for denying access, the good Othello player actively searches for opportunities to make this type of move. Thus, in Diagram 41, White has two apparently good moves, a7 and f2 (e.g. neither move opens up any new safe moves for Black). However, White should avoid the a7 move for the moment, preferring the f2 move. This is because Black currently has a good move at f8. But after White moves to f2, the f8 move becomes poisoned (i.e. it would flip all the White discs in the f column, creating an undesirable wall for Black).

[A slight digression: One reason why occupying edge squares is often thought of as undesirable is that they tend to poison otherwise good moves. Thus in Diagram 42, Black is considering the reasonably good move to g4: it only flips one disc (f5) without any great benefits to White's mobility. However, consider the consequences of the g4 move if Black takes it after first going to the c1 edge square (with a probable a2 White response). Now, because of the new Black edge pieces, the g4 move will flip both e2 and f3 as well as g4. This opens up the f2 move to White. The g4 move no longer looks as desirable. It is said to have been **self-poisoned**. Thus, the timing (i.e. the sequence of moves) is critical: if you wish to take both g4 and c1, you should probably take g4 first. Note that self-poisoning, though frequently resulting from edge square moves, can occur as a result of any type of move. A related concept is "**unpoisoning**": changing a currently undesirable move for an opponent into a desirable one by flipping a disc that was acting to poison the opponent's move. Typically, you wish to avoid unpoisoning opponent's moves. Thus, again in Diagram 42, a Black move to h6 should probably be avoided: it unpoisons the White move to a6 by flipping the poisoning White disc at g6.

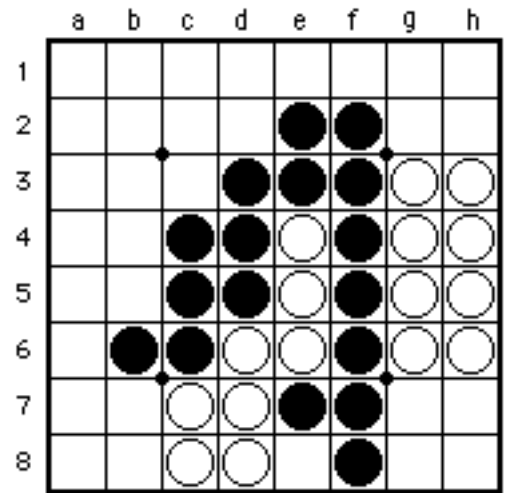


Diagram 40: White to move

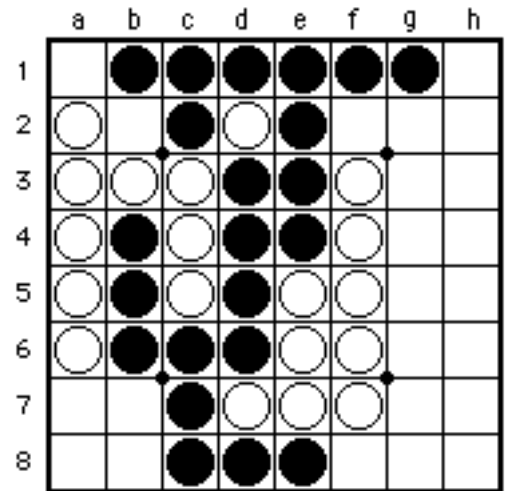


Diagram 41: White to move

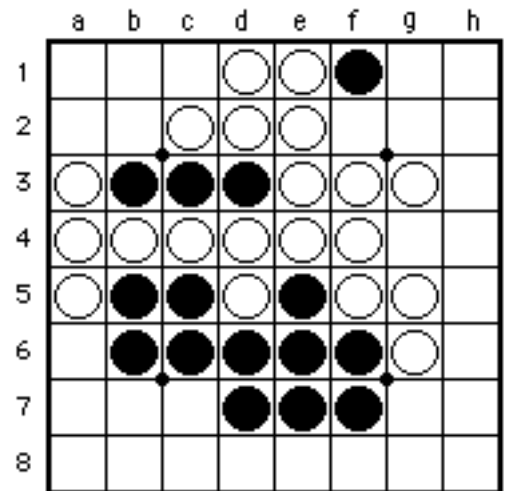


Diagram 42: Black to move

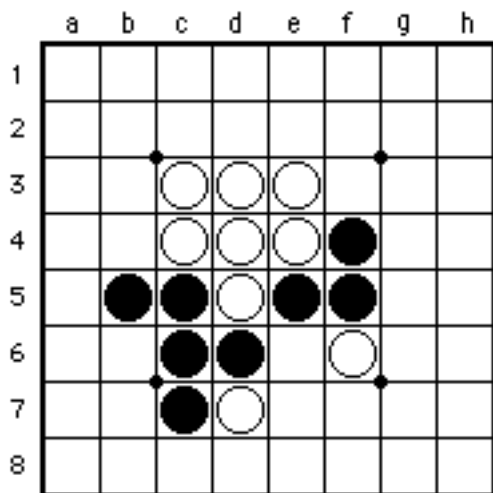


Diagram 43: White to move

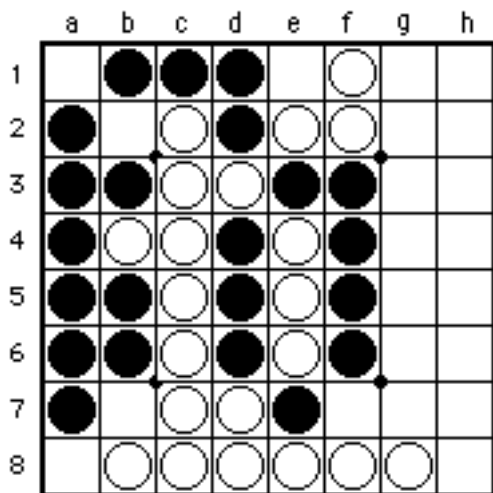


Diagram 44: White to move

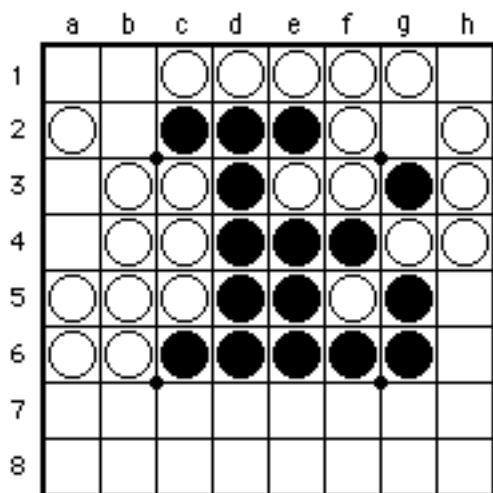


Diagram 45: Black to move

While we're on the subject, note how White's moves along the South edge are poisoned by White's discs along the West edge and East side of the board.]

Still another way to block an opponent from taking a desirable move is to take it yourself. This is obviously a good alternative if such a move would be a good one for you anyway. Yet sometimes, this type of block can be effective despite initial appearances to the contrary. For example, in Diagram 43, about the only way that White can permanently prevent Black's good move to f3 is to take it himself. However, White may be reluctant to do this because it also flips the Black discs at f4 and f5, creating a White wall along the east side. None-the less, the move works out well for White: no matter where Black goes next, White can eventually get the excellent move to e6, and the pressure is now on Black.

In summary, when your opponent has a good move, there are generally three things you can do to prevent it: a) deny access to the move, b) poison the move, or c) take the move yourself. Of course, if you have more than enough good moves yourself, you may simply choose to ignore your opponent's good move altogether. If more than one of these alternatives is possible, the best one can only be determined (surprise!) by examining the overall board position (see also Point #15).

## 12. The Semi-Forcing Move

A **semi-forced move** is a move which is forced not by the rules of the game, but rather by tactical considerations. In practice, the "tactical consideration" is most often that, unless the player takes the semi-forced move, he will lose a corner. The opponent's move that puts a player in this position is called the **semi-forcing move**. Proper use of semi-forcing moves can be a powerful technique, and really we have already seen several examples of it. Thus, the e8 move in Diagram 38 (though it did not directly threaten a corner) semi-forced a d8 response, sealing White off from the southwest corner area. Let's look at a few more examples.

In Diagram 44, White would have a great move to f7, if it was not poisoned by his discs at f1 and f2. White can set this up by first moving to e1, semi-forcing a g1 reply

by Black (and flipping the critical f1 and f2 discs). Now White continues with f7 and Black must sacrifice a corner, and the game!

In Diagram 45, Black would like to block White's access to b1. He can do this by moving to a3. This semi-forces an a4 reply, which in turn flips the c2 disc to White, preventing White from balancing the edge. Having accomplished this, Black has another semi-forcing move available that is probably even better: go to h5 (adjacent to White's **uneven three**). This semi-forces White to respond with h6, flipping the Black discs in the sixth row to White (sharply reducing White's future mobility).

### 13. Mobility Reconsidered

With the perspective of our most recent discussions, let's now re-examine some issues related to the all-important principle of mobility optimization (see Points #3 & 4).

**Regional Mobility.** In some situations, there may be several safe moves that all flip about the same amount of discs. A strict application of evaporation techniques suggest they should be about equally good moves. How do you decide between them?

One idea, previously discussed, is to prefer the move that flips more interior discs. But what if (as is more common) all your choices are about equal in this respect as well? Here you should still be guided by the idea that you want to open up as few new safe moves for your opponent as possible. One general rule is (almost paradoxically) take the move that is in the area where your opponent already has the most amount of potential moves (i.e. the area of greatest regional mobility). The logic is that discs flipped in this region will only minimally increase your opponent's mobility since they will tend to provide access to squares that the opponent already has access to. Another way of stating this same rule is: move to the area where your own mobility is the most limited. The hope is to lure play into this area, getting your opponent to use up all his safe moves there, thereby eliminating his regional advantage.

One example is in Diagram 46, where it is White to move. Let's consider the various possibilities. Clearly, a move like f3 would be undesirable, flipping seven discs (mostly along the frontier), and severely limiting White's future mobility. A move to g3 may seem initially to be a good move as it only flips one black disc. However, Black's mobility in this eastern region is currently zero and any move in this area would have the negative effect of "**opening up**" the area to Black (e.g. after g3, Black could move to f3 and be set up for a further move to h3). Generally better is to move into the area where Black already has some mobility: the western edge of the board in this case. For example, a move to a6 does not open up any new moves for Black! Note that not all moves in this western region are necessarily equal. For example, compare the a6 move to another similar, though less desirable, move to b6. The b6 move, by flipping both the discs at b5 and c5, totally shuts off the region to White, while the a6 move only "**picks off**" (i.e. flips) the b5 disc, leaving the c5 disc for a possible White move to b6 on his next turn.

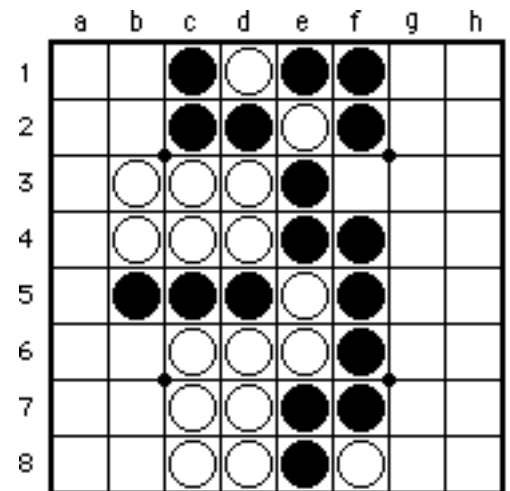


Diagram 46: White to move

Sometimes, if you can see ahead a sufficient number of moves, you may realize that after all the exchanges of moves in an open region, your opponent will get the last move and you will be forced to open up a closed (to your opponent) region anyway (e.g. east region is closed to Black in Diagram 46). In such cases, it may pay to move to the

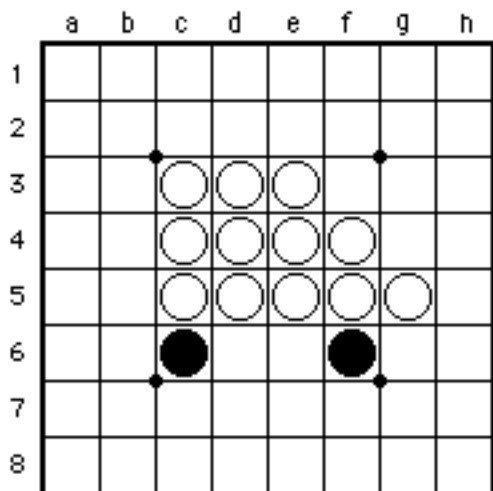
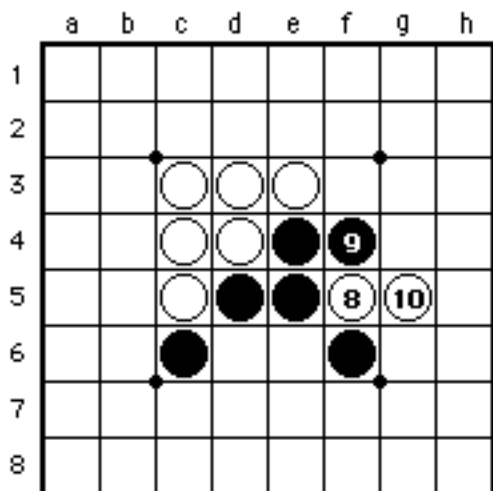


Diagram 47:  
Before and after moves 8-10

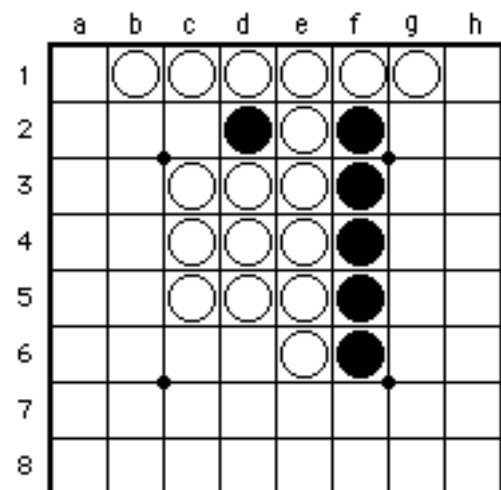


Diagram 48: White to move

closed region immediately rather than first filling up all the remaining safe moves in the open region. In other words, when on the defensive, it is generally better not to simplify the board position (see also Point #16 (double walls) and Point #20).

**Checkerboarding.** Sometimes, particularly in some opening positions, the best way to minimize your opponent's options is with the opposite of evaporation: obtaining a vast majority of discs rather than a minimum. This is especially true if you can leave your opponent's discs scattered along the frontier where they tend to block each other's moves (called **checkerboarding** your opponent). The goal here is to force your opponent to make a bad move before he can regain control of the center and attack your suddenly vulnerable position. One example is in Diagram 47. Here White's surprise moves, at 8 and 10, leave Black with only two discs. But note that except for a move to h4 (which White can counter with h6), all of Black's possible moves flip at least three (mostly frontier) discs. White is really in fairly good shape here. If you find yourself checkerboarded, the general advice is either to wait it out as long as possible (by taking moves like h4), hoping for your opponent to collapse under his own vast disc majority, or to find a move that quickly reestablishes control of the center without creating too many other liabilities (such as possibly f3 in Diagram 47).

A technique, related to checkerboarding, is to keep your opponent's disc count so low that he is threatened with a **wipe-out** (i.e. reducing your opponent's disc count to zero whereby you instantly win the game). Even if the wipe-out attempt fails, the threat of it can sometimes force your opponent into an awkward position. For example in Diagram 48, it may seem like c2 is White's best move, but actually f7 is the winning move. This reduces Black to only one disc (at d2). More importantly, wherever Black now moves (except g2), White will be able to achieve a wipe-out on his next turn. Of course, after Black takes g2, White will follow by taking the h1 corner and is still headed for victory. To protect against this, Black needed to watch for the danger of being left with only one or two pieces that are surrounded by opponent's discs. However, there is a more-or-less permanent way to elimi-

nate the possibility of being wiped out: obtain a relatively secure edge piece. Such a piece is called an "**anchor**." For example, imagine that there is a White disc at b4 in Diagram 48. Now, White's move to f7 fails to work: Black can take the edge anchor at a5, the wipe-out threat is gone, and it is White who is in serious trouble.

Both the checkerboard and the wipe-out attempts are risky maneuvers that should not be attempted often. Unless you are absolutely certain of their success, they are best saved for those desperate defensive situations where all the more conventional alternatives seemed doomed to fail.

Now, we shift our attention to aspects of Othello that are specific to the three different phases of the game. Most of what we have discussed thus far bears primarily on the midgame. The extreme beginning and end of the game are special cases and deserve special consideration. We will focus on them (as well as one additional aspect of midgame strategy) in the next several points. Some of this discussion will be a repetition of material covered in previous points, except now the focus will be on a particular phase of the game.

## 14. The Opening: The Three Basic Variations

There is a feeling, among many Othello players, that generalizations of strategy have such limited applicability in the opening, as to be practically useless. In particular, with so few discs on the board, positions are too volatile and relative advantages too easily shifted to currently visualize a move's ultimate worth. Thus, there are no immediate goals in the opening (according to this viewpoint); one simply avoids major blunders and hopes that an advantageous midgame position (in terms of mobility etc.) will result. In my opinion, this is only partially true. Some ideas about strategy and tactics in the opening can be forcefully made (see Point #15). At the same time, as in games like chess, it will also be useful to develop an "**opening book**" (i.e. a collection of prepared, memorized sequences of opening moves that are followed primarily because previous experience has shown them to work well). All expert players have at least a limited opening book. There is also some general agreement about which are the better openings (with the result that some openings occur quite frequently, while others do not occur at all).

Some players limit their opening books to the first 6-8 moves, relying on their general knowledge about Othello to carry them from that point. Other players have an extensive collection of potential openings (tediously prepared!), often reaching to move 20 and beyond. The success of these longer prepared openings depends upon many things, not the least of which is the ability to anticipate an opponent's likely responses (e.g. there is no point in preparing an opening sequence to counteract a move that no opponent will ever make!). Despite the difficulties in preparing these longer openings, I believe they are worth the effort. First, it allows you to make moves "automatically," saving time on your clock (which is important in tournaments, where you typically have 30 minutes or less to make all your moves). Second, you will frequently gain an opening advantage over a less prepared opponent; this alone may be sufficient to give you the edge needed to win the game!

However, a beginning player is not likely to have the skill necessary to develop openings on his own. Until such skills are acquired, the best course for such a player is to study (and memorize) the openings already used by expert players. There is not sufficient space in this Handbook to detail even close to a majority of these expert openings. However, we can discuss some of the most common sequences in the first 8-10 moves. Transcripts of games from tournaments (as regularly published in **OQ**) are particularly good sources of further ideas about openings. As you gain experience, you will hopefully develop the ability to expand upon and add to these openings.

The first point about openings is that Black's first move is not really a choice at all. That is, all 4 of Black's potential first moves are either a rotation or a mirror image of each other. It is White that makes the first move that affects the course of the game. So, for simplicity, let's assume Black's first move is always to c4. White now has three

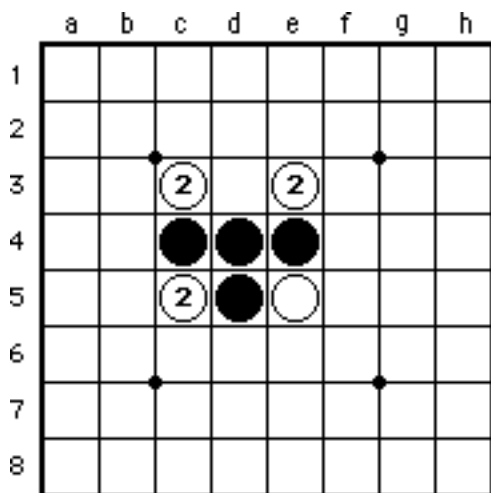


Diagram 49: White's 3 choices at move 2 after Black 1. c4

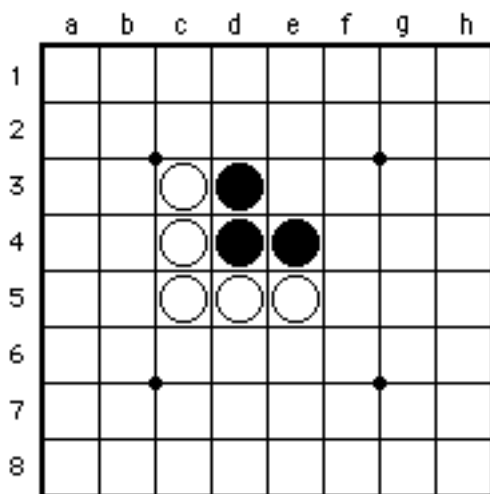


Diagram 50: Black to move

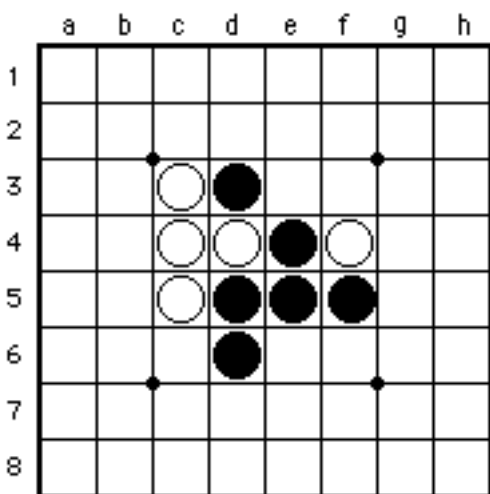


Diagram 51: White to move

choices: c3, e3, or c5. These are called the Diagonal, the Perpendicular, and the Parallel Openings, respectively (see Diagram 49). Let's examine each of these three basic variations in turn.

**The Diagonal Opening.** For most of the 1970's and into the 1980's, the Diagonal Opening was by far the most preferred among experts in the U.S. (as well as in Japan – the country that has won more World Championships than all other countries combined!). The position after the most common sequence for the first four moves (1. c4, 2. c3, 3. d3, 4. c5) is shown in Diagram 50. This is a critical point in this opening, in that Black now has 9 squares from which to choose (In fact, it is this mobility for Black that has led many players to abandon this opening as White). The most common continuation for Black at move 5 is d6, typically followed by 6. f4, 7. f5 (see resulting position in Diagram 51). Common further continuations include 8. e6, 9. c6, 10. d7 (Maruoka Opening); 8. d2, 9. g4, 10. d7 (sometimes called the Tanida Opening). Another variation after 5. d6 is: 6. e3 (called the "chimney" because of the resulting position, seen inverted in Diagram 52), typically followed by 7. f5, 8. c6. Despite's White's overwhelming disc majority after move 6. e3, experience has shown this to be a viable opening. Of the other variations at move 5, the most common are 5. b4 (Heath Opening; see Point #16) and 5. f6 (which typically develops into 6. e3, 7. c6, 8. d6, 9. e6; also see Diagram 47). Recently, 5. b3 has also become popular, typically followed by either 6. f4, 7. b5, 8. b4 or 6. e3, 7. d6.

**The Perpendicular Opening.** This has been the most popular opening in the U.S. in recent years – though the diagonal opening now seems to be gaining favor again. The most common first 6 moves are 1. c4, 2. e3, 3. f4, 4. c5, 5. d6, 6. f3 (see resulting position in Diagram 53). Common continuations are 7. d3, 8. b4 or 8. c2 (Inoue Opening) and 7. e6, 8. c3, 9. d3, 10. e2 (Rose Opening). Other perpendicular variations include taking e6 at move 6 (Mimura Opening; typically followed by 7. d3 or 7. c6) or taking f6 at move 3 (most often followed by 4. e6, 5. f5, 6. c5). Recently 3. f5 is also popular and is typically followed by 4. e6 with 5. f6, 5. f4, or 5. d3 all possible continuations.

**The Parallel Opening.** This opening is rarely seen in tournament play and is considered to be an inferior opening. It is difficult to prove why this opening doesn't work well for White, but experience has shown that it doesn't. A typical continuation would be 3. d6, 4. e3, 5. c6, 6. b4. (Note that Black usually has the option, which he should probably not take, of moving so as to create a Diagonal Opening position -- e.g. 3. d6, 4. c3, 5. d3).

You have only limited control over the direction of the opening because of the uncertainty of what your opponent may do. A good player must be prepared to defend against most of the openings his opponent is likely to use. But beyond this, how do you decide which of the recommended openings to play and which to avoid (if possible)? There is no easy answer to this. Different openings lend themselves to different styles of play; often the best opening for you is the one that "feels" the most comfortable. Alternatively, you may choose to study a particular opening and then use it simply because you know it so well.

Finally, all this doesn't mean that there is no way to understand what makes a good vs. a bad opening move (other than trial-and-error). There is the important principle of the "quiet move," our next point!

## 15. The Opening: Quiet Moves

In the game of billiards, a player sometimes finds himself without a viable shot at getting a ball in a pocket. In such cases, the player often will attempt a shot that disturbs the table as little as possible. The idea is to leave his opponent with the same poor position. This is actually quite similar to the major goal of the opening phase of Othello. Players frequently find themselves in the position that anything they do only make their position worse. Their ideal move would be to pass, but they can't. So they attempt to "disturb" the board as little as possible, typically by trying to flip only one disc, preferably an interior one. These types of moves are called **quiet moves**.

Othello expert Arnold Kling has gone one step further and defined the "**perfectly quiet move**" (PQM): a move that creates only one new frontier (i.e. perimeter) disc – the one used to make the move. An example of a

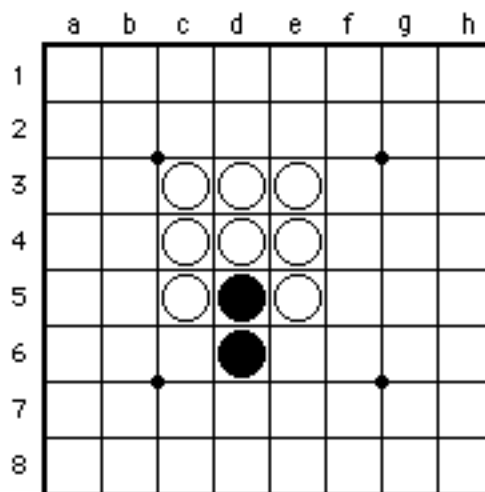


Diagram 52: Black to move (an "inverted" chimney)

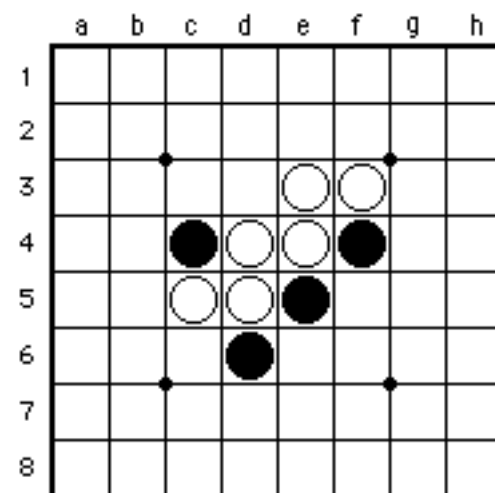


Diagram 53: Black to move

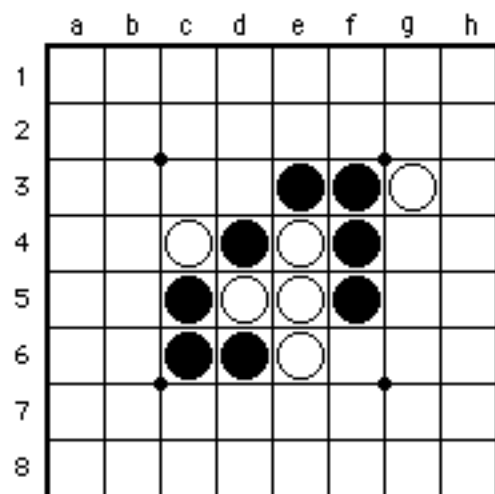


Diagram 54: Black to move

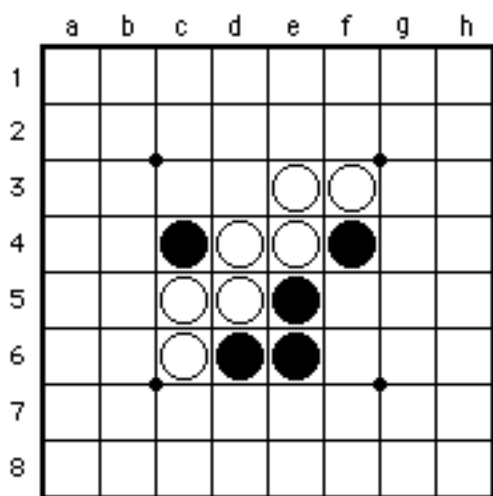


Diagram 55: Black to move

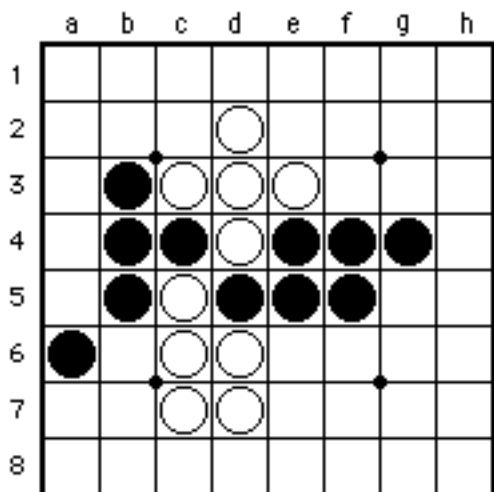


Diagram 56: White to move

PQM is the move to d3 in Diagram 54. It is the only PQM that Black currently has available. PQMs help to keep your frontier disc count low as well as keep your discs compact and centrally located (both desirable goals as the opening progresses). The majority of moves in most openings can be understood in terms of taking a PQM, setting up to take a PQM (**set-up** or **offensive move**), or blocking your opponent from taking a PQM (**block** or **defensive move**).

Examples of both a set-up and a block are in Diagram 55. Here a Black move to d3 sets-up a PQM to f5 on Black's next turn. White may block this by going to c2 (denying Black access to f5). Black is likely to continue with still another set-up to d2, re-establishing access to f5. Another type of set-up is possible in Diagram 54: note that f6 would be a PQM for Black if the White disc at e6 was Black. Black can accomplish this by going to d7, for example, setting up a PQM at f6 for his next turn (which White might try temporarily to block by going to c3!). PQMs are so powerful that moves that would normally not be desirable become good if they can set-up or block a PQM. For example, in Diagram 56, a White move 18 to e6 is preferable to 18. f3, because the f3 move allows Black to continue with 19. e6 (a PQM). Similarly, after 18. e6, Black may continue with 19. d1, a move whose major virtue is that it sets-up a PQM at b6. To block this PQM, White is likely to follow with a4 (poisoning the b6 move). One further implication of all this is that you should almost always avoid moves that create a PQM

for your opponent where one previously did not exist. Otherwise you give your opponent a very easy decision for his next move (i.e. a **reflex move**): he takes the PQM! (Note the similarity of all these principles to the more general discussion of blocking techniques covered in Point #11).

Not all opening moves revolve around PQMs. An opening move may be desirable because it cuts across the center and re-establishes a compact central cluster of discs (perhaps leaving the opponent scattered about the frontier as well). Such moves may be advised even though they typically flip more discs than conventional evaporation strategy would recommend (e.g. **checkerboarding**, as discussed in Point #13). Also moves that just flip one or two frontier discs (typically called **waiting moves**) are occasionally desirable. For example, note moves 8, 9, and 10 of the Tanida Opening (see Diagram 51). These moves can be good because they generally avoid setting-up PQMs for your opponent and may initiate a process of running your opponent out of moves. However, they risk interfering with getting control of the center and may even help your opponent to do so (see also Points #13 and #16 for more on these topics).

Finally, a comment on two commonly held beliefs about openings: 1) Black has the advantage in the opening. This is difficult to prove, but seems to be true. In particular, all other things equal, Black seems to have an easier time maintaining control of the center and a lower disc count than does White. 2) You should not move out of the



"sweet sixteen" (the central sixteen squares) until forced to do so. This is not sound advice. While an attempt to control the center often results in most initial moves staying within the sweet sixteen, there are many cases when an early move towards the edge works very well (e.g. the Heath Opening mentioned in Points #14 & #16 is an example).

## 16. Midgame Strategy: Patterns

We have already discussed a great deal about midgame strategy. Evaporation, unbalanced edges, tempo gains etc. all have their greatest relevance in the midgame. However, in an actual game, it may not always be easy to apply these principles. Once again, we return to the issue of how to determine a "good move." In many cases, a global view of the midgame can assist in your decision making. This can be best achieved by viewing the board position as one of several possible **patterns**. Not all midgames will fit one of these patterns, but many of them will. Some patterns are "even" – others are one-sided. In either case, recognizing the pattern can be a guide as to what move to make next. But be especially careful: these patterns are transient! One or two moves can transform the board from one type of pattern to another. In fact, the major goal of certain moves may be to effect a change to a more favorable pattern.

**The Sandwich.** This describes a pattern where one player's pieces are surrounded on two sides by opponent's pieces (see Diagram 57). This is a one-sided position: the player with the inside position (Black in Diagram 57) is generally considered to be ahead. If he can get White to surround him on more than two sides, he will be firmly in control of the game and on his way to forcing a win. In Diagram 57, Black is likely to take the PQM at b6, maintaining the sandwich. Typically, White's best strategy here is to make waiting type moves, squeezing out every last option for a move, hoping to force Black out of the sandwich before the situation becomes hopeless. In this case, White may go to b3, which leaves Black without an obvious next move. Note that White would be in much worse shape if it was his turn in Diagram 57, since any move only further erodes his position. Of course, against a good player, don't expect to find yourself on the inside of a sandwich too often. The next two patterns will occur far more often.

**The X Pattern.** Here, each player's pieces are located along a diagonal stripe, so that the overall position resembles an X (with each player having one line of the X) (see Diagram 58). This is an even position, so each player will generally attempt to maintain the X, hoping to force the other player into a move that erodes the position. Most "maintenance" moves in this position involve flipping the interior central pieces

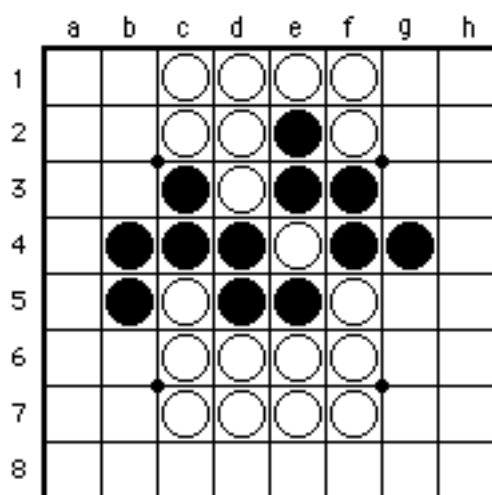


Diagram 57: Black to move

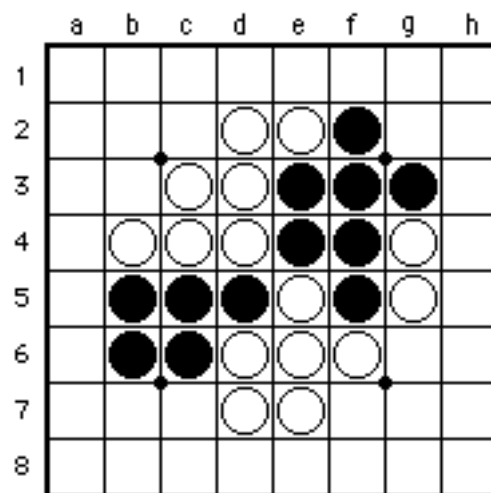


Diagram 58: White to move

back and forth, and only minimally disturbing the periphery. Aside from such moves being good from a general perspective (e.g. avoiding walls, flipping few frontier discs etc.), bisecting your opponent's pieces tends to shift the X position towards a favorable sandwich position. The opponent must do his best to counteract this on his next turn. Thus (in Diagram 58) White is likely to go to g6, while Black is likely to continue with c7. If neither player gets a clear advantage, the outcome will be decided in the endgame, after the edges start to fill up (and the X-pattern typically begins to look more like a cross pattern).

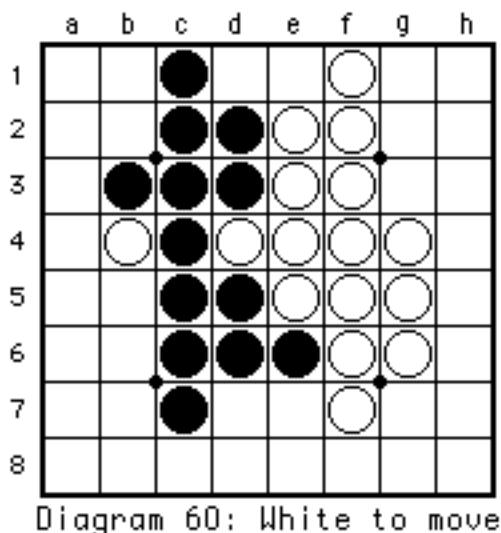
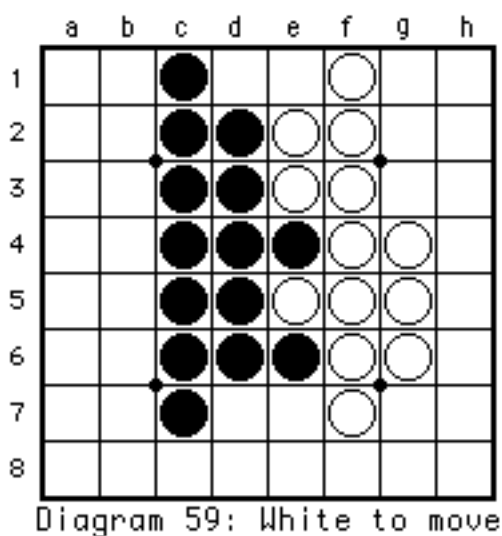
**[A slight digression:** White might possibly choose to go to c7 rather than g6, taking away Black's expected c7 response. This would pressure Black to consider a move to d1, blocking (at least temporarily) White's ability to take g6 on his next move. This rapidly develops into a very different type of game than if White had started with g6.]

**The Double Wall.** Despite the admonition against forming walls, a wall can be desirable if it pressures your opponent to form one as well. This leads to a double wall (Diagram 59). This is generally an even position, at least as long as the double wall is maintained. The goal, of course, is to get your opponent to break across and erode your wall before you must do so to his wall. This typically requires making waiting type moves (using up as few options as possible with each move), creating an ever more extensive

wall as you do so. Thus, White may go to e7, with Black continuing to e8 (not f8, which allows a d8 response by White), each player moving so as to extend his own wall.

The risk here is that, if you fail in your goal, you may quickly find yourself in a hopeless position. So sometimes, if you can perceive that you will lose the double wall battle, it pays to cut across your opponent's wall immediately. Typically, you would try to cut through the wall in a way that minimizes your opponent's gain in options, while attempting to shift towards a favorable sandwich position. Thus, after White e7, a Black move to g3 has considerable merit: the only new safe move it gives White is h4.

In contrast, an isolated piece behind your opponent's side of a double wall, more typically will create trouble for you. It tends to poison otherwise good moves, and may provide your opponent with an important option, when all others have disappeared. Therefore, good players typically avoid flipping such isolated discs unless no other viable moves remain (or unless doing so forces your opponent into making a even poorer move). For example, imagine White moved to b4 in Diagram 59, to which Black followed with b3 (resulting position in Diagram 60). This was not a desirable way for White to break across Black's wall. The isolated White disc at b4 now poisons White's potential e7 move (c5 and d6 would get flipped), as well as providing Black with a guaranteed safe move whenever he needs it. Finally, Black's potential g3 response seems even stronger here, shifting the pattern more to-



wards a sandwich pattern.

**The Edge Double Wall.** This is a special pattern that seems to contradict much of the conventional wisdom of Othello. In particular, one player (called the initiating player) typically gives up control of the center, going to the edge early and often. The result is frequently a sort of double wall, except one player (the initiator of the pattern) typically has his wall along two edges, while the opponent's pieces are all in the interior of the board (see Diagram 61). In such a position, the player with the edge pieces is said to try to "**creep along the edge**" (i.e. take a series of contiguous edge moves while keeping his opponent off the edges; also see Diagram 11). If successful, the initiating player soon runs the opponent out of safe moves (i.e. options are being limited by the fact that you can't flip past an edge), and the opponent will be forced to concede a corner. Thus, in Diagram 61, Black goes to h7, leaving White with only one safe move at c7. Black then continues with c8, and White is forced to concede a corner (and probably the game).

However, this "creeping" strategy carries extreme risks: if the opponent can hold on, without running out of options, until the midgame (or even later), the initiating player's long edge walls and lack of central discs will collapse on him as his opponent's more conventional advantages finally turn the tide. Thus, in Diagram 62, Black failed in his edge double wall attempt. He must now start making moves across White's wall, giving White new safe moves, and greatly deteriorating Black's position. As alluded to in Points #14 and #15, the **Heath opening** (because of its early exit from the sweet sixteen) is noted for Black initiating an edge double wall.

**Checkerboards.** Though checkerboarding patterns (see Point #13) are most frequently seen in the opening, they may occasionally persist to the midgame. Here, the initiating player is usually the one who attempts to keep the opponent scattered around the periphery (checkerboarded). Ironically, in the midgame, it is typically the initiator who will go on to lose the game. This is because it is usually too difficult to force the checkerboarded player into a game-losing move before the initiator's position hopelessly deteriorates. Thus, the midgame checkerboard is usually reserved for desperate positions, where all other options seem even worse.

In summary, while all these patterns hold true to many of the basic concepts of Othello strategy discussed previously, the exact subgoals can vary dramatically from pattern to pattern. In addition, within a pattern, the correct subgoal may vary depending upon whether you are on the offensive (e.g. initiator) or defensive side of the pattern. Knowing how to handle each type of pattern is critical to successful midgame play.

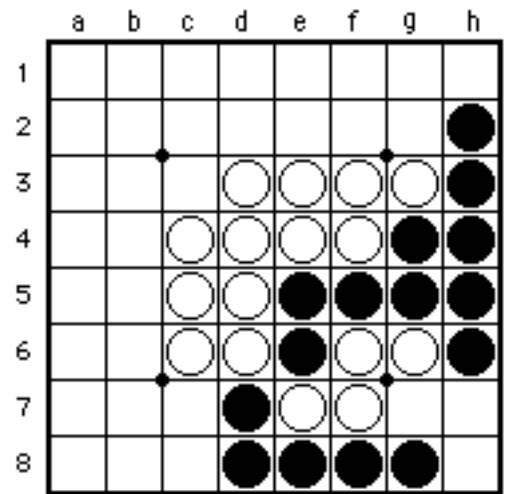


Diagram 61: Black to move

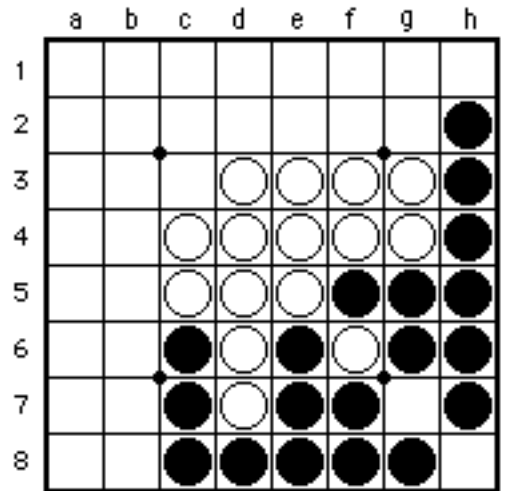


Diagram 62: Black to move

## Summary & Preview

The previous sections covered material ranging from the most basic principles of control, mobility, and corner sacrifices – to discussions of tempo and access -- to finally an examination of strategy specific to the opening and midgame. The next sections now tackle some of the most difficult topics in all of Othello: endgame and edge play. These areas, while building upon the general principles we have already developed, require an understanding of some new concepts that are specific to these particular phases of the game. Unavoidably, the material to follow tends to be more technical than in most of the previous sections. While the level of explanation hopefully remains basic, the principles discussed are more advanced. The importance of setting up the diagrams on a board is, if possible, even greater here than in previous parts.

### 17. The Endgame: The Final Count

Previous sections have emphasized the principle of evaporation: how the best move of the game is often the one that flips the least amount of discs (see Points #1-#5 for review). But clearly, this has to come to an end at some point - after all the objective of

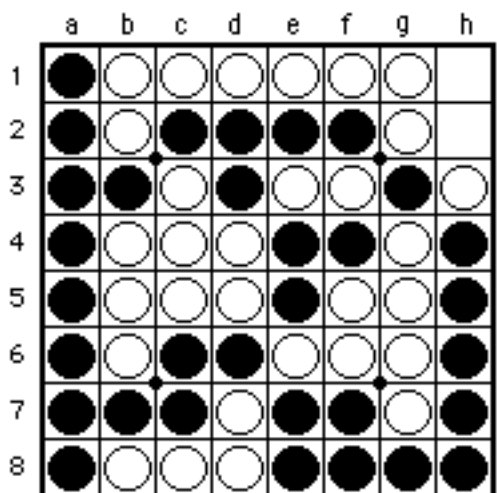


Diagram 63: Black to move

h1, flipping only 1 disc, and Black wins 34-30. Clearly what is needed is an ability to **count the position**: determine the net gain or loss of discs for all the remaining possible sequence of moves.

There are many possible ways to count discs, and even the experts disagree as to the best way. Here, I will present one method of counting that could have guided you to the best move in Diagram 63. Consider first the h1 move: Black flips eight discs (+8) and in addition places down 1 new disc (+1) for a gain of +9 (i.e. 8 +1). White continues by flipping 10 black discs back to white for a loss (for Black) of -10. The result is (+9) + (-10) = -1, or a net loss of 1 disc for Black. Compare this to the result if Black takes h2 first: Now Black flips 2 discs plus adds a new disc to the board (+3), while White flips only 1 black disc when he goes to h1 (-1) for a net result of (+3) + (-1) = +2. Since +2 is a better final result than -1, then h2 is a better move for Black than h1.

Clearly, with more moves remaining (and with more choices at each move and discs possibly getting flipped back and forth several times before the game is over), determining the best move by counting can be extremely difficult, if not impossible. This is what makes the endgame such a humbling experience for human Othello players. Computers are typically capable of taking a position anywhere from up to 16 moves from the end

of the game, analyzing all possible permutations in a relatively brief amount of time, determining all final disc counts, and picking the move that guarantees the highest possible disc count against best possible play (i.e. **the perfect play sequence**). Essentially, the computer is no longer using any of the heuristic strategies it must employ earlier in the game. It simply uses the final disc count to determine its best move. If humans could do this as well (in the time constraints of a tournament and without being permitted to write down anything!) then this would be the recommended strategy for human players. But humans can rarely count out a game with more than 5 moves left, and even then the count is usually incomplete, limited only to those sequences the player thinks are most likely to occur. So, we humans have to rely on strategic generalizations to help us through most of the endgame (see also Point #18). But, whenever feasible, counting should be attempted.

For example, in Diagram 64, though there are just three moves left, only careful counting is likely to reveal the best move. The current score is Black(35)–White(26). White can choose from any of the three remaining squares for his next move. Taking the h1 corner immediately may initially seem attractive. Indeed, if Black follows with h2, White goes to g1 and wins 34–30 (e.g.  $+3-3+8 = +8$ ). But h2 is not Black's best response and White should not count on Black going there. If Black goes to g1 instead, White finishes with h2 and loses 31–33 ( $+3-5+7 = +5$ ). If White chooses h2 initially, Black must pass. White's best continuation turns out to be g1(!), but after Black finishes with h1, it still only nets White a tie ( $+6+7-7 = +6$ ). Only an initial move to g1 guarantees a win for White. Black's best response is h1, leaving h2 for White and a 33–31 win ( $+7-7+7 = +7$ ). In this case, where strategic generalizations offered little help, correct counting was critical: it meant the difference between victory and defeat.

Of course, in many endgame positions, especially by the time you get to the last 3 moves, your best move (or at least a sure winning move) will be self-evident. Counting is not absolutely necessary in these cases. Similarly, some possible sequences are so obviously foolish that we usually need not consider (or count) them. Still, in close games when the best move is not obvious, or anytime when you need to be certain of the final result, there is no substitute for an accurate count.

Sometimes, even an approximate count can indicate the correct choice of moves. For example, in Diagram 65, Black's two choices seen approximately equal at first glance. In both cases, Black flips just one disc (b2) and White's final move flips 5 edge discs. Therefore, determining the better move will depend entirely on the number of interior discs White flips. If Black takes b1, then White-a2 flips only 3 interior discs (b2, b3, and c2). If Black instead takes a2, White-b1 flips more than 3 interior discs (6 discs to be precise: b2, b3, c2, d3, e4, and f5). Thus, even without an exact count, it becomes

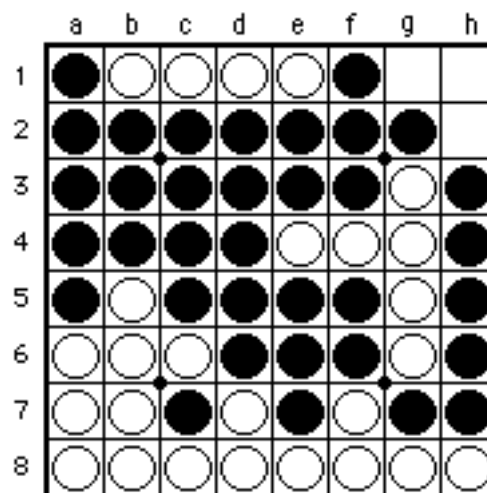


Diagram 64: White to move

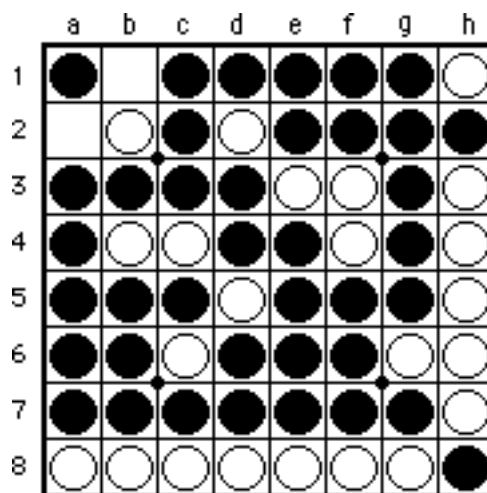
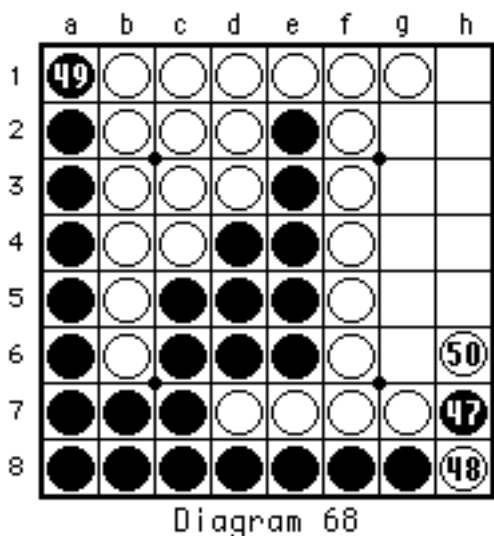
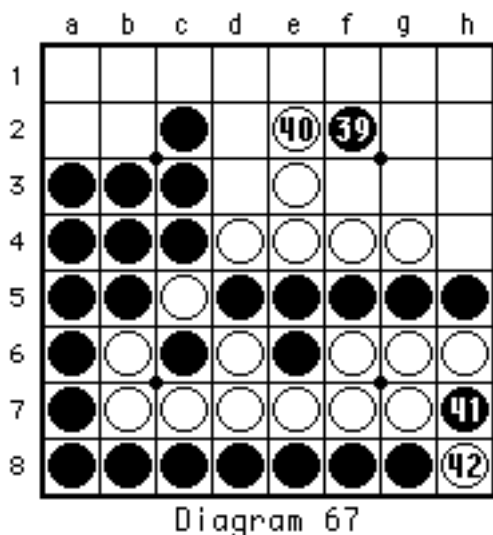
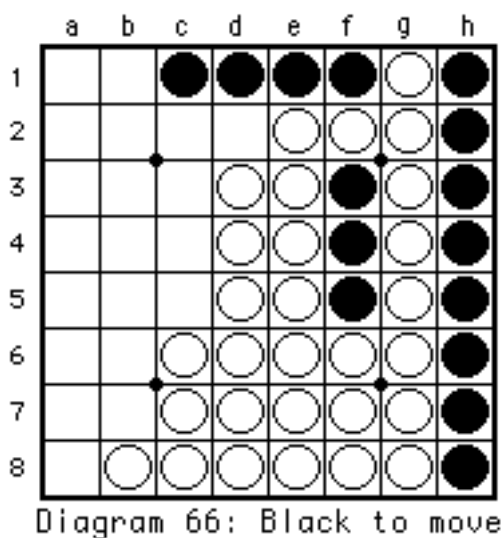


Diagram 65: Black to move



clear that b1 is Black's better move. In fact, after b1, Black wins 33-31, while after a2, Black loses 30-34.

**Interior Sweeps.** Another endgame technique, closely related to counting, often occurs after one player has already clearly won the game. It is now mostly a case of how to **maximize the final disc count**. If there are too many moves remaining for a thorough count, players may still take advantage of opportunities for "**interior sweeps**." While complete coverage of the details of this technique are beyond the scope of this Handbook, we will show three (hopefully instructive) examples of the basic principle. In Diagram 66, with correct play, Black can systematically sweep White off the board and achieve a 64-0 victory. Black's goals are twofold: develop solid "masses" of stable discs while continuing to minimize White's options. Black's initial move should be to d2; White is then forced to respond with b1, and play continues with: a1, pass; c2, c3; b3, b2; a2, a3; c4, b4; a4, pass; c5, b5; a5, pass; b6, pass; b7, a6; a7, pass; a8. Play out this sequence yourself, and note especially how the exact sequence of the first few moves is critical to accomplish the necessary move limitation. For example, playing a8, instead of d2, for the first move will result in later moves flipping unwanted discs, opening up new choices for White and preventing the "wipe-out."

Not all interior sweeps lead to "wipe-out" victories. In some cases, an effective interior sweep can even be accomplished by sacrificing a corner (and perhaps an adjacent edge as well). In fact, in these next two examples, Black sacrifices a corner in preference to taking it! These sequences reveal a elegance in strategy that contrasts to the often effective but "**brute force**" approach of taking the corner. Thus, in Diagram 67, note how Black's moves 39 and 41 cleared White almost entirely out of the western half of the board, creating a mass of stable discs in that area that virtually assured victory, despite the sacrifice of the h8 corner. Finally, in Diagram 68, we see an elegant example of an interior sweep that begins with Black passing up the opportunity to take the h8 corner and instead conceding it to White at move 47. By move 50, we can begin to see the beauty of this move, as Black sweeps from west to east across the board. The final sequence of this

game was: g6, g5; h5, h4; g4, g3; h3, h2; h1, pass; g2. White gets the entire East edge from h2 to h8, but still loses 51-13. Though these interior sweeps are not typically accompanied by complete counting of the position, limited counting is required to see when a sacrifice of a corner is to be preferred and/or how best to approach the disc maximization attempt.

## 18. The Endgame: Counting on More than Just Counting

For most of the endgame (which technically includes the last 20 or so moves of the game) counting alone will not be feasible (at least not for humans). At these times, the major strategies and tactics developed for other parts of the game can often be applied here as well. For example, the previously developed ideas of going to odd-numbered regions of the board, delaying the taking of free moves, and taking advantage of an opponent's lack of access to a square (see Points #9-#11), are all evident in Diagram 69. Thus, to a novice player, it may seem like b1 is Black's best move, setting up to take the h1 corner. In actuality, it is a losing move if White follows with g2. Black's best move is g2 (going into the odd-numbered region, even though it sacrifices the h1 corner to White). Black can afford to delay going to b1 because White has no access to it. The result is that Black will now (with proper play) get the last move in each remaining unfilled regions and win the game.

There are also some tactics to be considered that are relatively specific to the endgame. Probably the most important of these is **"feeding your opponent."** The idea is illustrated in Diagram 70. Here, White would like to get the last move in the a8 corner region. Going to f8 doesn't work since Black is then left with no moves and must pass. White must then initiate an unfavorable exchange of moves in the even-numbered a8 region. Going directly into the a8 region and saving the f8 move for last doesn't really change the result. The correct sequence is for White to begin with a7. Now, whatever Black's response, White continues with f8. Black now is forced to take a move in the a8 region, giving White a great final move there. The idea was to "feed" Black a self-destructive move in the a8 region prior to taking f8. A similar idea is seen in Diagram

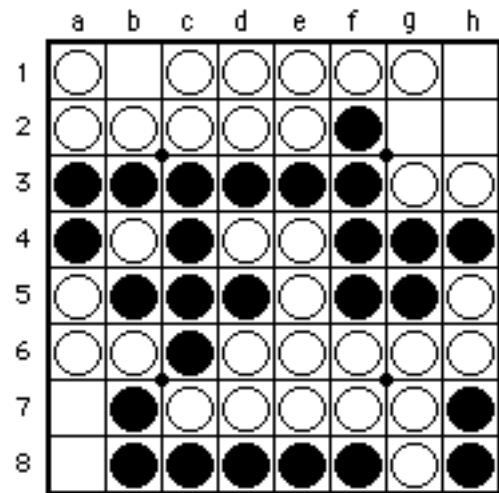


Diagram 69: Black to move

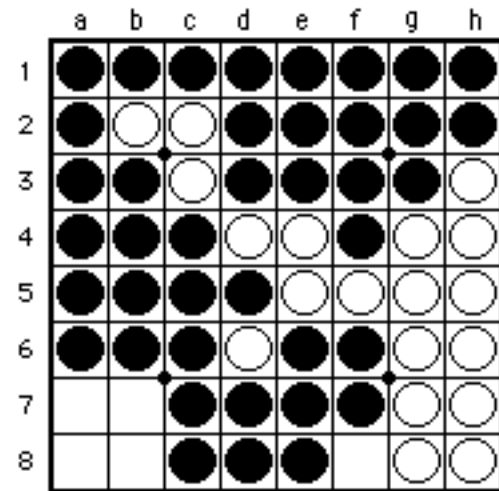


Diagram 70: White to move

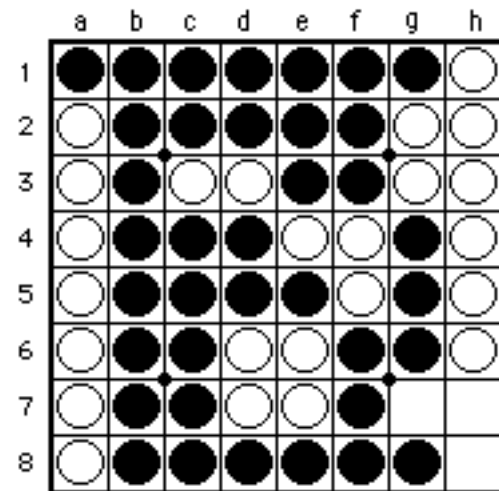


Diagram 71: White to move

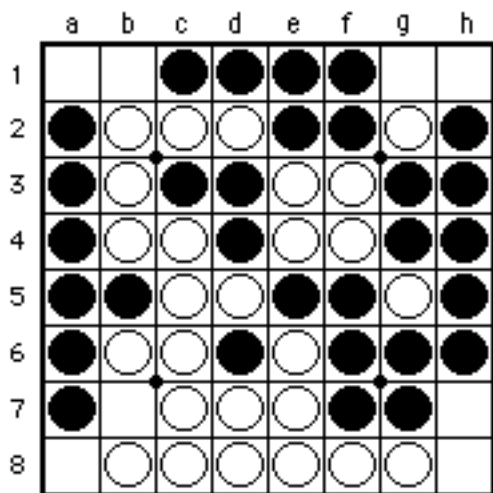


Diagram 72: Black to move

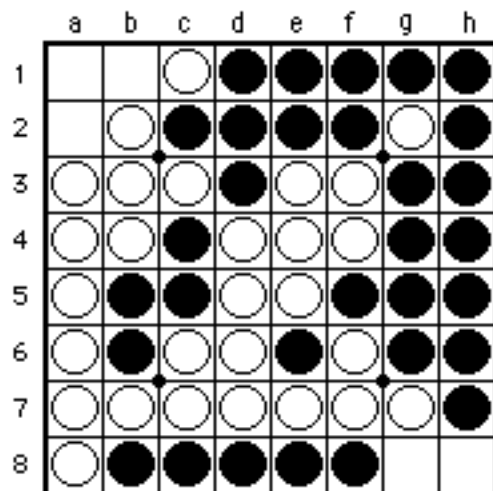


Diagram 73: White to move

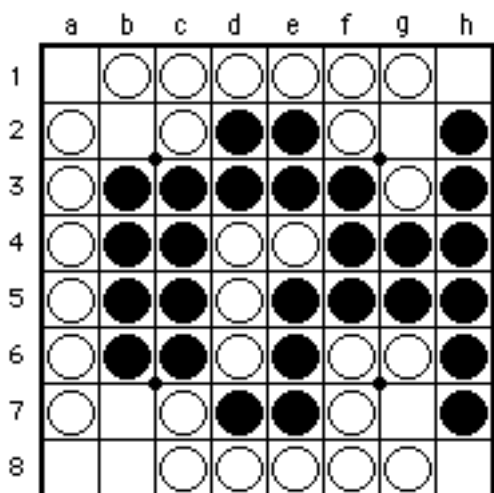


Diagram 74: Black to move

71, even though the remaining region is an odd-numbered one. Here it would be a mistake to take h8 initially, since Black is left with no moves, forcing White to go again and giving Black the crucial last move. Far better is to go to h7 initially, feeding Black the g7 move. Now White finishes the game with h8 and wins!

Probably the best overall advice for end-game play is "expect the unexpected." Even experts are frequently frustrated as they watch "sure winning positions" disappear due to some unforeseen lack of access or similar problem. Players need to be on guard for the hidden dangers and/or opportunities that may exist in a given position. For now, I offer five representative examples (by no means comprehensive) of what may await an unsuspecting Othello player. See if you can find the best move or sequence of moves in each case before reading further.

The first two Diagrams both involve unusual aspects of the main diagonal (see also Point #8). In Diagram 72, a1 would be a mistake since it allows White to continue with b1, thereby gaining undeniable access to the h8 corner. The best move is b1(!), extending Black's control of the main diagonal. White's position now crumbles as he is forced to choose between g1 or h7. In Diagram 73, White's control of the a1-h8 main diagonal unexpectedly winds up costing him the game. White wants to get 2 of the 3 remaining moves in the a1 corner region and so begins by going to b1. Black continues with a1, but since Black has no discs on the main diagonal, b2 does not get flipped. This prevents White from gaining access to a2, forcing White to go to g8. Black now gets both a2 and h8 and wins the game. (Note: even if White had begun with g8, he still would have lost.)

Sometimes, the best move is so counter-intuitive, or so seems to violate established principles, that it is very difficult to find it. Thus, in Diagram 74, Black wants to get 2 of the three moves in the a8 corner region and would even be willing to give up the a8 corner to do so. The move to b8 fails, since after White takes a8, Black does not have access to b7. Similarly, the move to b7 fails, since White can now balance the South edge by taking b8 without giving Black access to a8. Black's best move turns out to be the seemingly suicidal move to b2, conceding White the North and West edges. But after



White continues with the semi-forced move to a1, Black can *now* go to b7 without allowing White to balance the South edge. The perfect play final sequence is g2-h1-b8-a8-pass-h8-pass-g7 resulting in a 40-24 win for Black! (Note the general idea of how a move in one area of the board — the a1 area — had a critical effect on another, seemingly unrelated area of the board - the a8 area.)

In the most extreme cases, conceptual analysis appears to be essentially useless, while only a computer would seem to be able find the correct path by counting. Thus, in Diagram 75, Black made the reasonable move to a8. Unfortunately, it is also a losing move (assuming subsequent perfect play). The winning move was h7(!), even though this sacrifices the a1 corner, as well as the West and North edges. In trying to make some sense of this difficult position, note that a disadvantage of a Black move to a8 is that White can then get the last move in that region by taking the likely stable wedge at b8. [Note: With perfect play, Black wins 36-27 after h7 (h7-a1-b2-f8-h2-b8-a8-c1-g8; neither player gets h1!) but loses 31-33 after a8 (a8-b8-h7-g8-f8-c1-h1-h2-b2-a1).]

Fortunately, not all positions are that extreme. Even if the correct move is initially counter-intuitive, some careful analysis along with some counting (if possible) will often uncover the best attack. Thus in Diagram 76, it may seem like a8 is White's best move, going into the odd-numbered remaining region in preference to the even-numbered h8 region. However, it turns out the a8 is a losing move. The only winning move is g8(!) leading to a 33-31 win for White after the following perfect play sequence: h7-a8-b8-a7. The major problem is that if White takes a8 initially, Black goes to b8. Now White cannot safely continue with a7 or the entire 7th row will become White, giving Black both h7 and g8 and the game. So White must continue with g8 instead, Black follows with h7, with White finally going to a7. But, despite the similarity of this sequence to the winning one, it results in a 33-31 *loss* for White. An attempt to count out the net gain after each of these two most likely sequences would reveal the advantage of g8 over a8.

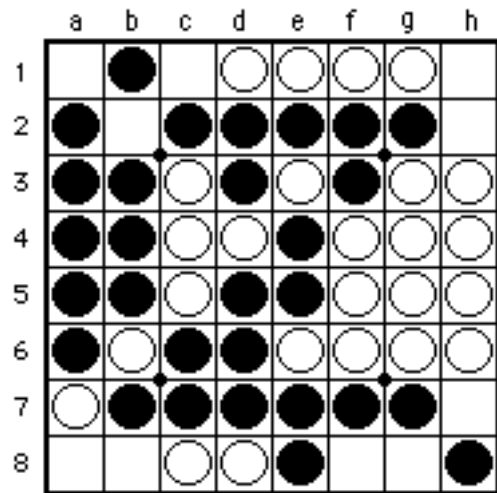


Diagram 75: Black to move

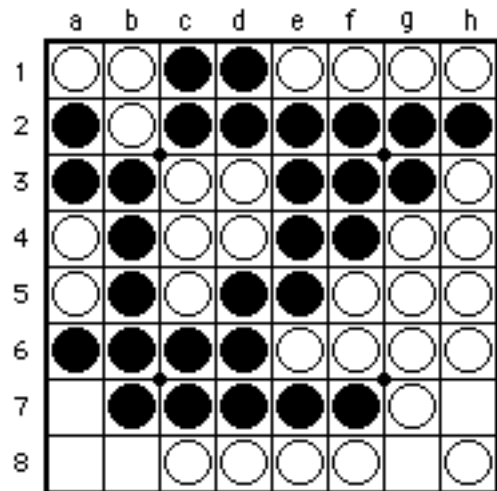


Diagram 76: White to play

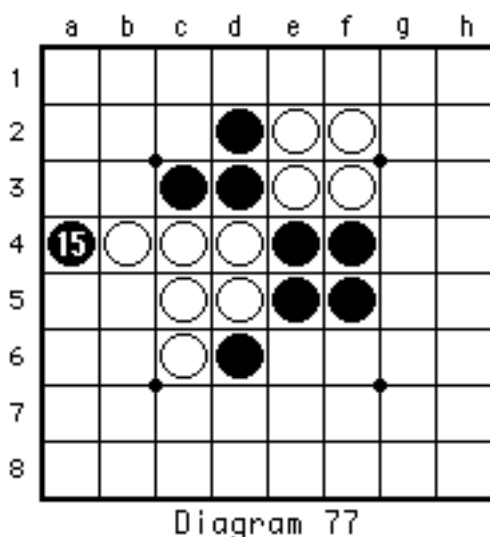
## 19. Edge Play: General Concepts & Initiating Edges

**General Concepts.** As the end of the opening phase of Othello approaches, the players are inevitably presented with the decision as to whether or not to occupy an edge square. This raises one of the more complex issues in all of Othello. These next two sections present some useful general guidelines for dealing with this issue.

As discussed earlier (see Points #1 - #5), players unaware of move limitation strategy often feel its best to take edge squares as soon and as often as possible. While it's true that ultimate possession of at least some edge squares is usually necessary to win, this "**rush to the edge**" concept has been clearly discredited. In fact, some expert players

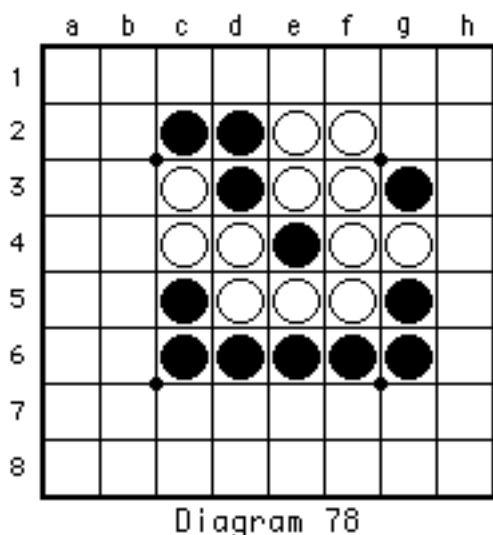
believe it is best to avoid taking edge squares for as long as it is feasible. By this view, edge square moves tend to become liabilities later in the game (by poisoning otherwise good moves etc.). Personally, I would advise against either extreme. Indeed, edge square moves do have at least one distinct advantage: there are less ways to flip an edge piece than a interior piece. Thus, the proper and judicious use of edge moves may help promote move limitation. Also, once your opponent has gone to an edge, a move to that edge often becomes much more desirable for you. Finally, recall that we have previously discussed a special tempo-gaining edge technique: "creeping along the edge" (see Points #5 & #16).

For simplicity, our discussions will usually focus only on one edge at a time, in relative isolation from the rest of the board. But be aware that, in a real game, edge moves must be evaluated using general principles and in the context of the entire board - the interior area as well as the other three edges. For example, in Diagram 77, Black decides to take the edge move to a4. The major rationale for this decision was not any special attribute of the west edge, but the fact that, by flipping c4, it set up a Perfectly Quiet Move (see Point #15) to e6. An edge move to a3 or a5, or almost any other non-edge move would not have accomplished this. In other cases, edge move choices may be primarily dictated by the number of non-edge discs flipped (e.g. Diagram 77 as well as Diagrams 7, 8 & 9 in Point #3).



There are two major goals, beyond the general ones of move limitation strategy, to bear in mind when deciding to go to an edge (prior to corners being occupied):

1. Try to be the last player able to take a safe move along the edge (e.g. gain a tempo along the edge). Similarly, try to get more of the moves along an edge than your opponent.
2. Try to obtain a desirable final edge position or force your opponent to take an undesirable one (e.g. an unbalanced edge). These two points will be the focus of much of the subsequent discussion. Often these two concepts, **tempo vs. position**, will be in conflict (e.g. a move that gains a tempo will sacrifice the positional advantage). A major decision will be how best to resolve this conflict.



**Initiating an Edge.** The player who first moves to an edge is said to initiate the edge. In this section, we will focus on some of the edge-specific factors (as opposed to the more general considerations) that help to determine when to occupy an edge square. As a general rule, it is a poor choice to initiate an edge by going to a C-square (see Point #6). But assuming a choice, how does a player decide when an edge move is advisable, and which edge square move (among the available A and B squares) is the best? Here, the decision must involve looking at least a little beyond the edge. For example, in Diagram 78, White considers a move to the c1 A-square. This is probably a poor choice since it flips both c2 and d2, totally shutting White off from any subsequent moves to the North edge. Contrast this with

the move to the h6 A-square. Here, the move flips g5 but not g6 (because the sixth row is all Black). White still retains access to h7 (which could be critical in avoiding an unbalanced edge later) as well as continued access to h3 or h4. Finally, if White felt it was important to move to the North edge, d1 (a B-square) would probably be preferable to c1 (since d1 flips only the d2 non-edge disc). Which is the best choice? Sorry, but there's no clear answer here (especially given this limited analysis). In fact, it isn't even clear that an edge move is called for here: many experts might choose b5 as the best move. This is because, since Black does not have access to b6, White's move to b5 does not open up any obviously good moves for Black. The pressure is now on Black. It's because even experts disagree about the best move in positions like this that each Othello game turns out differently.

Another example (Diagram 79) presents a less ambiguous set of choices. It is White to play. Note the relative advantages of a move to a6 vs. h6. The a6 move allows an easy a4 response for Black. White has gained nothing: neither a tempo nor a positional advantage. In contrast, the h6 move looks much better: Black cannot respond with h4. If Black responds with h5, White continues with h4 (gaining a tempo at very little cost positionally). In either case, Black is now forced to move to the North edge, leading to a weakening of his position.

[A slight digression: One guide in choosing from among alternative edge moves (as always!) is anticipating your opponent's best response and your subsequent response to it (i.e. planning ahead!). Thus, returning to Diagram 77 for the moment, we note a previously unmentioned advantage of Black's move to a4: it maintains a tempo advantage along the West edge for Black. That is, White's only possible West edge responses to a4 are to the adjacent squares of a3 or a5 (in this case, White doesn't even have access to a5). In either case, Black could flip the White disc on his next turn (e.g. White - a3; Black - a2), leaving White with no more moves along the edge. However, Black's a4 move also has its problems: by flipping three interior discs (b4, c4 and d4) it reduces Black's future mobility and may open up new good moves for White. Also, if White continues with 16. a3, Black has to choose between giving up the tempo or taking a weak C-square move (a2) early in the game.

Black's move to a4 at move 15 is referred to as taking the edge "**head-on**." Contrast this to the situation if Black had gone to a5 instead (taking the edge "**diagonally**" or "**slanted**"). Now White can respond with a3 and Black will no longer gain a tempo. Actually, White might choose a4 in preference to a3. While this allows Black the tempo-gaining continuation to a3, Black is unlikely to be in a hurry to take a3. The move has the undesirable effect of flipping the discs at b4 and c5 as well as leading Black towards a possible over-abundance of edge discs that may poison moves and be a mobility-reducing liability later in the game. But if Black does not take a3, White can continue with a6!

White's a3 (tempo) response to 15. a5 is sometimes referred to as the "**American**" style of edge play while the a4 (positional) response is labelled the "**European**" style. One cannot assume that either style is always to be preferred. Similarly, taking the edge head-on (15. a4) seems preferable to the a5 choice for Black in this position (Diagram 77), though there are other positions when taking the edge diagonally would be preferred.]

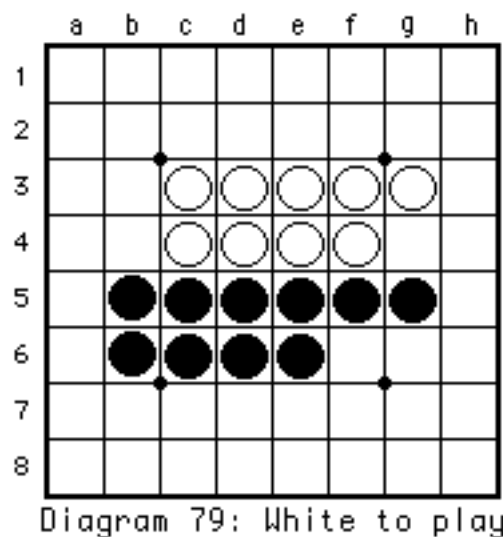
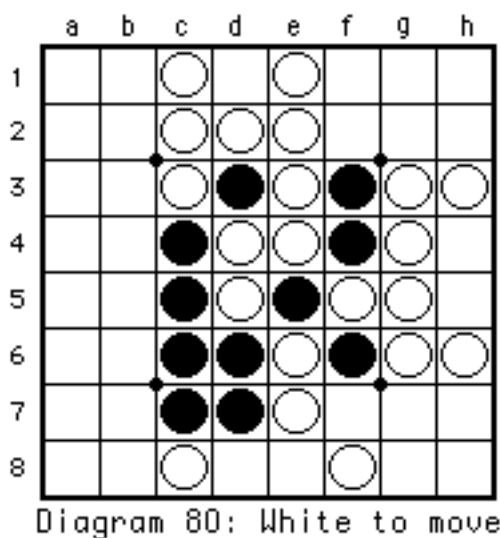


Diagram 79: White to play

So, what is more critical: gaining a tempo or avoiding a weak edge position? Taking an edge or an interior square? Taking an edge head-on or slanted? Taking too many edge squares or too little? Taking an edge square adjacent to an opponent's disc or away from the opponent? We have seen that the answer to these questions is an unsatisfactory one: It depends. This section detailed the issues relevant to making these decisions. After this, experience will be the best teacher.

## 20. Edge play: Developing & Resolving Edges

**Developing an Edge.** Moves subsequent to the initial move to the edge are moves that develop the edge. For most of this discussion, we will focus on what happens after an initial White move to an A-square. Similar principles could be applied to an initial move to a B-square. The discussion will also focus primarily on the decisions of the player who initiated the edge (White in this case). At this point, Black will have three basic choices (assuming access to the relevant squares): avoid the edge altogether, go to a square adjacent to White's disc, or go to square non-adjacent to White's disc. By discussing the merits of White's responses to each of these type of moves, we will also develop a feeling for the merits of Black's initial choice.



remaining vacant B-square). However, this table is also disadvantageous in that it is a **closed edge** to White: White has no access to any of the remaining vacant squares along the edge (unless Black moves there first). In contrast, the table along the South edge is not closed to White: since c7 and d7 are Black, White maintains considerable safe access to the edge (i.e. it remains an **open edge** for White). The vacant square at f7 should also be considered among the possible moves in this region: White can probably gain a tempo by going there, but will lose all access to the h8 corner region by doing so. Finally, note that White's North edge position has created a type of weakness referred to as a **hole** (d1). White has no access to this square but Black can **wedge** in there with a free move at any time he wishes. Though experts sometimes find it useful to create these holes (typically to gain a necessary tempo), they should be avoided as a general rule.

The next three diagrams show some selected positions after Black has gone to an edge initialized by White. In these diagrams, the edge decisions are simplified by the fact that the 4 squares immediately interior to the A and B edge squares are all occupied. Obviously, in actual games, this will not always be the case. In Diagram 81, there are two edges where Black followed White's A-square moves by going to the adjacent B-square. Along the North edge, White should probably not move to the edge at all. Black currently has no access to e1, f1 or g1. Any move that White would make would

unfavorably change this (e.g. a move to e1 closes the whole edge to White). White needn't worry about Black's potential move to b1: it forms a dangerously weak "uneven three" that White could exploit in various ways later in the game (possibly setting up a Stoner trap or making a semi-forcing move to e1, etc.). Along the East edge, rather than leaving the edge alone, a move to h4 for White seems attractive: since it doesn't flip g4, White still retains access to h3. This pressures Black to prevent the h3 move by going to either h3 or h2. Once again, the desirability of a type of move varies with the overall board position!

Diagram 82 shows three situations after Black has followed White's initial A-square moves by going to the non-adjacent B-square. It is typically a poor move for White to continue by going to the remaining A-square (e.g. f1 along the North edge), as this allows Black to wedge in at d1 and safely gain the last move along the edge. An initial White move to d1 would be better: it doesn't flip e2 and thus leaves Black's mobility restricted along the edge. On the East edge, an h6 move shares similar problems with f1, but h4 works out less well than does d1. Along the South edge, there is a surprise: If White goes to f8, Black will not have access to the d8 square: Black will be forced to choose between going to g8 (taking a relatively weak C-square edge position) or letting White take d8 on White's next turn (thereby allowing White to gain a tempo, though White will be closing off the edge if he does)! It is usually a difficult no-win type of decision for Black. White's move to f8 followed by Black's "unexpected" lack of edge square access (to d8 in this case) is referred to as an **"edge trap"**. It is one of several possible types of edge traps (two more examples are discussed in Diagram 84). These traps can often have a critical influence on the outcome of the game (e.g. see Point #21).

Black's remaining major option, after White's initial A-square move, is to go to the opposite A-square. White then has to decide whether to continue to develop the edge. In Diagram 83, we see three of the more common **edge patterns** that can develop (they may also develop from other initial positions). The North and East edges both show a 3-disc edge pattern called a **Boscov**. Though this position may remain unaltered

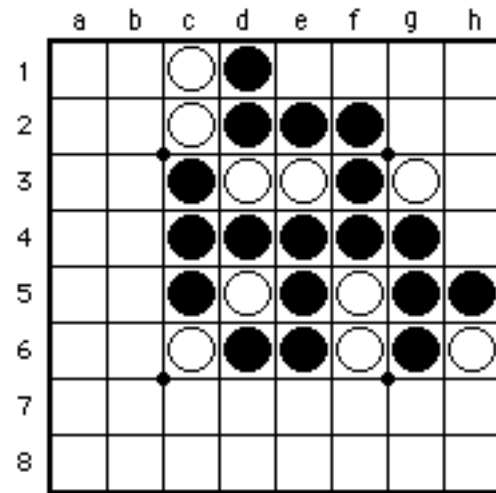


Diagram 81

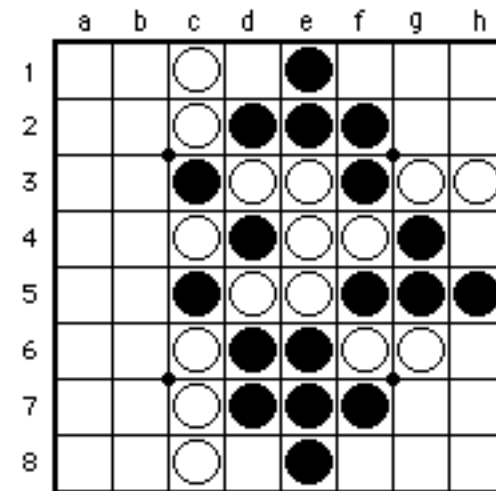


Diagram 82

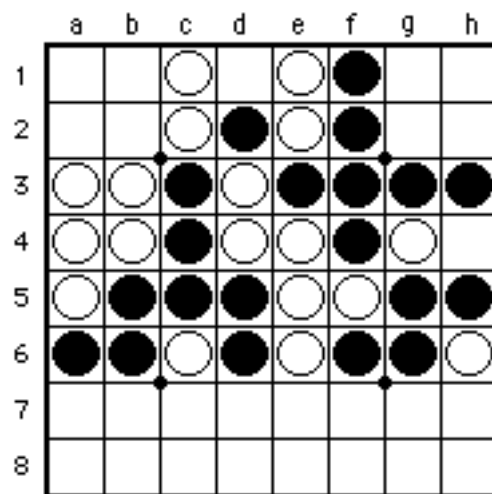


Diagram 83

for many turns, eventually one player or the other typically goes to the remaining vacant B-square (i.e. d1 or h4), challenging the opponent to take a C-square along that edge (or lose a tempo). Note how, in this case, a Black move to d1 works out better than the comparable move to h4. This is because if White continues to g1 along the North edge, White is left with an unbalanced edge (White has no access to b1), while an h2 continuation along the East could be followed by White balancing the edge at h7 (see Point #7 for more on unbalanced edges). An initial move to h4 also works out less well than d1 for White: it would flip the disc at g3 to White, permitting Black to follow with h7, threatening to balance the edge by going to h2 on his next turn (but see the discussion of Diagram 86). Given all this, I would probably recommend the player whose turn it is in Diagram 83 to take d1 (before his opponent does)!

**[Another slight digression:** A variation on the basic Boscov pattern would be if the Black disc at h5, in Diagram 83, was at h4 instead. A full discussion of the advantages vs. disadvantages of these two variations is beyond the scope of this Handbook, though they usually focus on issues such as which variation offers the better chance of getting (or preventing the opponent from getting) a balanced edge (e.g. in the position shown in the Diagram, a White move to h4 would flip g3 and f2, while in the variation position, a White move to h5 results in a nearly identical East edge pattern but does not flip the g3 and f2 discs)]

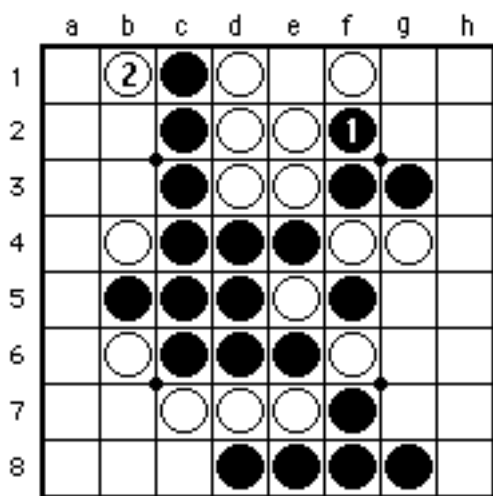


Diagram 84-A

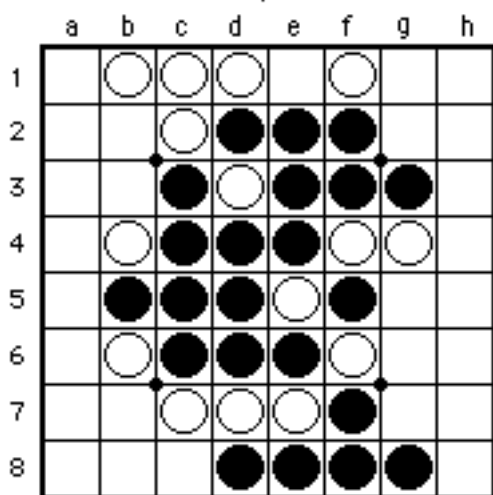


Diagram 84-B

Boscov decisions (e.g. whether to fill in the vacant B-square or let your opponent do it) are another example of the tempo vs. position decisions that an Othello player commonly faces along the edges. After the B-square is filled in, the players are typically left with still another of these dilemmas. Thus, along the West edge of Diagram 83, White must decide whether to go to a7, gaining a tempo at the expense of an unbalanced edge, or leave the edge alone with the risk that Black might decide to gain a tempo by going to a2. These decisions are made more difficult by the need to simultaneously consider the relative merits of moves along all 4 edges (as well as any viable non-edge moves). (Hey, nobody said becoming an Othello expert would be easy!)

Next, in Diagram 84, we see two particularly dramatic examples of **edge traps**. First, note how after Black makes the seemingly innocent move to f2, White can continue with b1. This would normally be suicidal if Black has access to the hole at e1. But in this case, White can get a triple gain in tempo, getting both e1 and g1 on subsequent turns. This typically destroys the position of the unsuspecting Black player. Second, note that Black actually has a much better move than f2: he can spring an edge trap of his own by going to b8! Because White does not have access to c8, Black will get *both* remaining moves along the South edge.

**Resolving an Edge.** A resolved edge is one where neither player can make any more safe moves. Diagram 85 shows four of the

more common resolved edges: the **unbalanced edge** (East), the **balanced edge** (South), the **dual-unbalanced edge** (West), while the North edge is typically referred to as an "**even-four**." Note that the North edge would still be considered resolved even if the disc(s) at d1 and/or e1 were Black (i.e. **wedged in**). The dual-unbalanced edge is a particularly interesting pattern and may lead to each player attacking the other's position via corner sacrifices (e.g. b2 for Black vs. b7 for White), with a3 becoming a tempo-gaining move for whoever can profitably take it first. Some of these resolved edges may not stay permanently resolved. Thus, the even-four in Diagram 85 is a resolved edge only because White cannot get access to b1 or g1. Similarly the East edge is resolved because Black does not have access to h2. Safe access to these squares may be reestablished later in the game.

Is it a good idea to resolve an edge as soon as you can, or should you leave it unresolved for a while, or even let your opponent resolve it? As so often is the case, it depends. Resolving an edge tends to simplify the overall board position and (almost by definition) reduces the number of safe moves in the region of the board in question. Whether this is good or bad depends on the particular board position, though most typically it is the player who already has the lead that gains the most immediate benefit from resolving an edge quickly (see also Point #13).

Sometimes a player will need to take "desperate" action to prevent an edge from being resolved by an opponent. Thus, in Diagram 86, Black could go to h7, balancing the East edge. But White would continue by going to b1, balancing the North edge. This leaves Black in a losing position. So instead, Black should go to b2 immediately, preventing White from safely balancing the North edge. Now it is Black that will win the game. [A digression: Moves like Black's b2 move can sometimes block opponent's from A-squares as well as C-squares, as would be the case if c1 were vacant in Diagram 86.] This example serves as a convenient introduction to our next and last point.

## 21. Decisive Moves and Prioritizing of Moves.

The previous 20 points have described a collection of rules, principles, generalizations, and guidelines for making intelligent decisions about what is the best move in any particular Othello position. However, making such decisions in actual games requires combining these ideas into an integrated overview. For example, in a given position, there may be an unbalanced edge waiting to be balanced, an opponent's move waiting to be poisoned, a potential tempo-gain by the opponent to try to prevent, and a safe move to take before the opponent blocks it. Which of these valid concerns should take precedence? What if attaining one goal actually interferes with another? This section discusses two concepts that I believe are useful in solving these inevitable dilemmas.

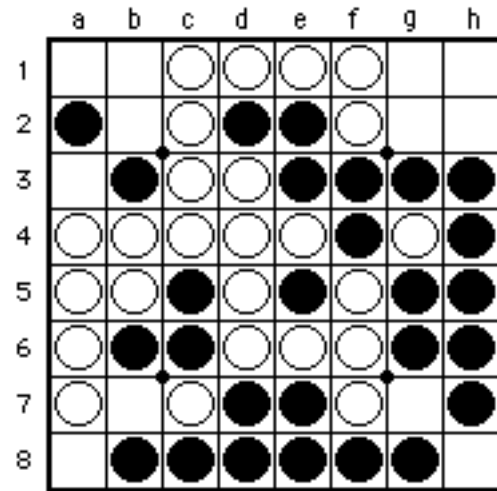


Diagram 85

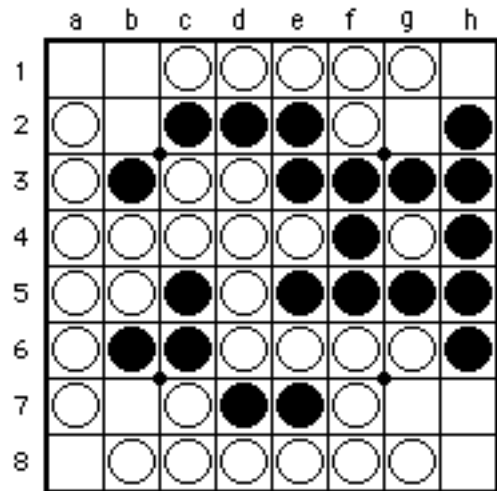
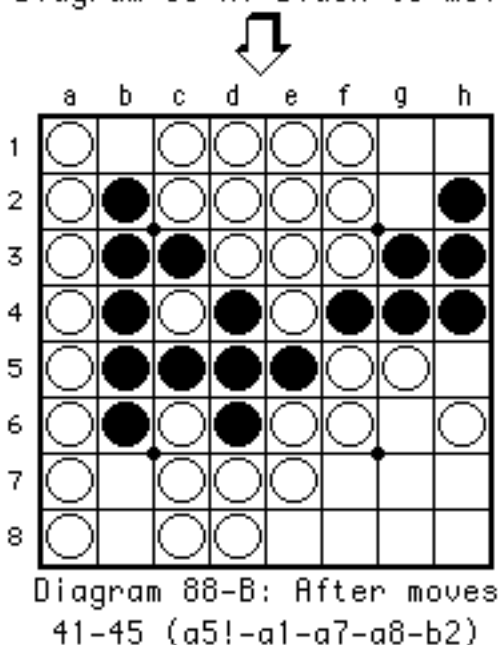
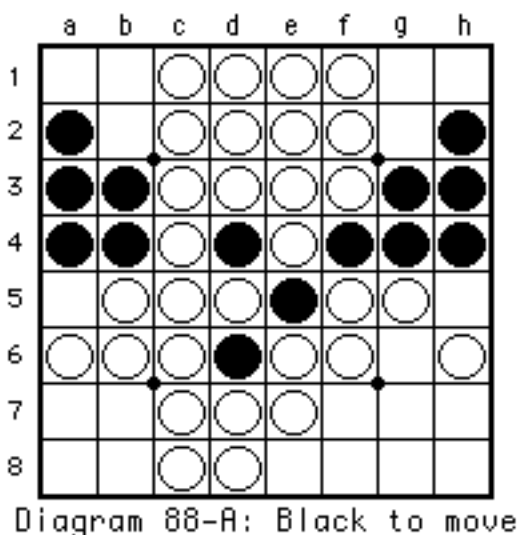
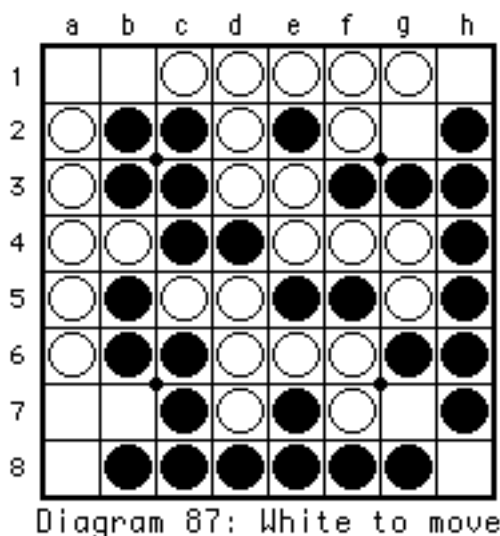


Diagram 86: Black to play



**Decisive Moves.** It often happens, especially between two players of about equal skill, that the endgame arrives with neither player having a clear path to victory. It may be that a computer could show that one or the other player has an undeniable win with perfect play, but since neither player is likely to play perfectly for the last 20 moves, this may not be very relevant (though it often provides a very instructive after-the-game analysis). Yet, at some point, a move is made after which, barring any major blunders, the outcome seems decided. This move is called the **decisive move** (though occasionally the critical nature of such a move will not be apparent until looked at in retrospect one or two moves later). I realize this is a subjective definition, since recognition of a decisive move will depend upon a player's overall Othello ability. But I still believe it is an instructive concept.

An example of this concept is in Diagram 87. White has an opportunity to make a decisive move. Before reading further, see if you can find it. Ready? Okay. White should go to a1! Though this is a fairly obvious choice to Othello experts, less skilled players (who have learned about the danger of unbalanced edges) may be surprised. After all, this move allows Black to follow by taking the wedge at b1, gaining undeniable access to h1 securing both the north and east edges. Despite all this, after a1-b1-a7-h1-g2, White gets the remaining 2 corners and more than enough discs to win the game. In contrast, if White takes the seemingly desirable quiet move to a7 (rather than a1 initially), it quickly leads to disaster. Black follows with g7, gaining control of the a1-h8 main diagonal. Now White can no longer go to a1. He has missed his chance at a decisive move, and is now set up to lose all four corners and the game. In essence, Black's g7 (rather than White's potential a1) became the decisive move of the game. [Note: A similar situation existed in Diagram 86: Black needed to recognize and take the decisive move to b2 rather than the seemingly safer (but losing) move to h7.] Note also how a seemingly minor change in just one disc can alter the position dramatically: thus, if the disc at d4 in Diagram 87 were White, a Black move to g7 would no longer give Black control of the main diagonal. White could now safely go to a7 (in preference to the previously recommended a1)!



The point of all this is: Always be watching for decisive moves and when you find one, take it immediately. Don't let the critical moment pass. Make sacrifices if necessary. Look especially for bold unexpected moves that may seal a victory rather than more conservative "safe" moves that leave the outcome still in doubt. Avoid the temptation to wait for a more favorable position or you may discover that your winning opportunity will disappear altogether.

My personal favorite for a decisive move is from a "postal Othello" game I played. The critical position is shown in Diagram 88-A. I was Black and none of my possible choices at move 41 seemed to lead to the clear-cut path to victory that I was seeking. Finally, I discovered a truly wonderful (and decisive) move: a5! Even though it sacrificed the a1 corner, I knew I had the game won. After White predictably went to a1, I continued by going to a7, allowing White to take a second corner at a8(!). I then went to b2 at move 45, leaving the position as shown in Diagram 88-B. The game was now "over": White would be forced to concede the h1 corner and I had b1, b7, and b8 as free moves whenever I wanted them!

Though "provable" decisive moves are limited to the endgame, moves that appear to be decisive (i.e. that seem to be a pivotal turning point in the game) can occur much earlier, even in the opening phase. For example, Diagram 89 is taken from a game I played in the 1982 U.S. Nationals. I went to c1 at move 18 which set up an edge trap of the sort described in Diagram 82 (i.e. Black has no access to e1). In this case, Black has even worse problems: if he chooses to go to b1 (to avoid the loss of tempo), White could continue with g2, setting up a Stoner trap (see Point #8). Black therefore went to h3, leaving White to take e1 at move 20. This was the beginning of a deterioration that led to Black decisively losing the game.

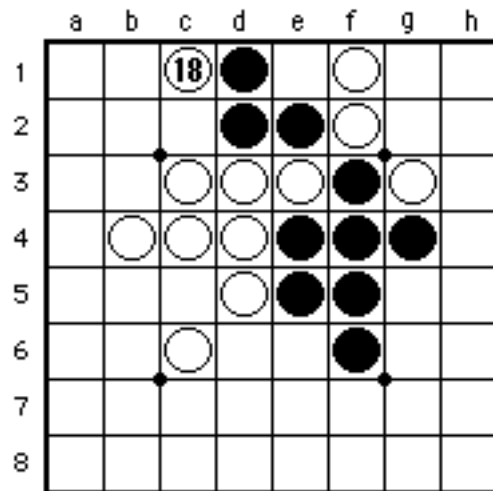
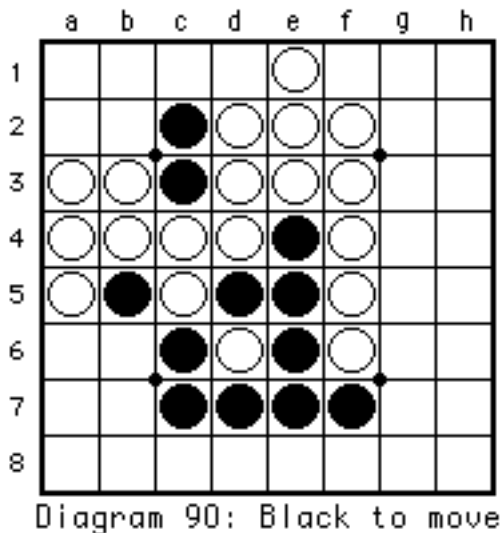


Diagram 89

**Prioritizing of Moves.** Decisive moves are really a special case of a still more general concept: how to **"read the position"** and **prioritize** the possible moves. That is, how to determine what aspect of any position is most critical -- what opportunity needs to be taken immediately or what pitfall needs to be avoided at all costs. This, in turn, determines which move to take. For example, it may be that if you do not immediately block your opponent's good move, your opponent will gain a clear advantage (or, in the worst case, a decisive winning position). Clearly, you must prevent this if you can. Thus, White's decision in Diagram 87 to make the a1 move, as opposed to a7 (or any other move), can be viewed as based on the recognition that preventing Black from gaining control of the a1-h8 main diagonal was the most critical, highest priority concern at that moment. All other considerations were secondary. It wouldn't matter whether White knew that a1 was a winning move or not. It would be sufficient for White to know that unless he stopped Black from getting control of the main diagonal, it would lead to a sure loss.

Diagram 90 presents another example on this topic. It is Black to move. The question is: What is the highest priority issue for Black in this position and what move will best address this issue? First let's take an overview look at the board: Black has numerous choices but few good ones. Black is walled off from the south edge, while White is walled off from the north and east edges except for the black disc at c2. But Black is under pressure because it is now his move. He has to make a move that breaks across one of White's two walls. The situation is made worse by the fact that, no matter where Black goes, White has an excellent response with a6. This will force Black to make a second undesirable move across White's walls - unless Black can follow White's a6



with b6. But Black currently does not have access to b6. Which means that White is threatening to take both a6 and b6 on subsequent moves - forcing Black to make a series of wall-breaking moves that will seriously (if not hopelessly) deteriorate his position. The priorities are now clear: it is imperative that Black establish access to b6 immediately, in as quiet a manner as possible. The best choice is d1! By flipping the disc at d4, it establishes undeniable access to b6. As a bonus, it opens up no new moves for White - White already has access to c1. No other Black move has all these benefits. It still may not be certain that Black will win the game after the d1 move, but he has clearly recognized the highest priority issue and made the move that best deals with it. A

player that consistently make moves like this is sure to be a tough opponent.

This Handbook, of necessity, provides only the most general of guidelines on how to prioritize moves. Specific rules are hard to make when so much can vary with different positions. The usual caveats apply here: In actual games, the highest priority issue may not be as clear-cut as in the above examples. There may even be several concerns that seem equally important. Or it may be that there is apparently no move that clearly solves the highest priority problem. That's when you will need all your Othello skills and experience to come up with what you hope will be the best choice. The ability to read positions quickly and accurately is certainly one of the hallmarks of what separates average-to-good Othello players from true experts.

## PUTTING IT ALL TOGETHER: THE COMPLETE GAME

In this section, we finally put together all the pieces from the previous 21 points and, for the first time, examine transcripts of complete games between expert players. But first, let's review some advice particularly relevant to game transcript analyses:

1. Look for the pivotal points in the game (e.g. What opening was chosen and how did it develop? Who seems to have the lead and who is playing defensively in each phase of the game? When did the decisive move occur?) Note that the timing or sequencing of moves is often critical: a move that wins the game if taken immediately, may be a game-losing blunder by the player's next turn. Similarly, the placement or flipping of even a single disc can be critical to the outcome of a game.

2. Try to read the position as the players might have: what was each player's highest priority concern at each move and why? How did the players resolve decisions involving multiple considerations and/or apparently equally attractive moves (e.g. trying to decide which of two quiet moves to take first)?

3. In many of the previous diagrams, the positions were chosen (or even contrived) to show a particular point as clearly as possible. In a real game, issues are often not that clear. Real players (even experts) don't always resolve these issues correctly, so don't assume that these transcripts are free of player errors. Try to discover any critical mistakes.

4. Study the transcripts for examples of how the strategies and tactics discussed in this Handbook are actually used (e.g. how was control obtained and maintained? How, if at all, did the player avoid the "tightening noose" of move limitation? Was there an attempt at "edge-creeping" and was it successful? Did there appear to be any unusual preplanned openings, good counter-intuitive moves, or unexpected traps etc.?). In summary, try to develop a feel for the "flow" of a game - see each move in the context of an overall plan rather than as an isolated decision.

**Transcripts.** The two transcripts shown here do not necessarily reflect state-of-the-art Othello (the first dates back to 1980, while the other is from 1982). But they both represent well-played games between some of the best players in the world. The first transcript is the game in which the U.S.'s Jonathan Cerf won the World Championship against Japan's Takuya Mimura. The first 14 moves are a textbook example of the Maruoka diagonal opening (see Point #14). After Mimura's unexpected move 15, Cerf countered with excellent defensive responses at move 16 and 18. Thus, Cerf's move 18 to d2 effectively blocked Mimura from the PQM (see Point #15) at f4, and as an added bonus established access to f4 for himself! Another good defensive move is Cerf's move 26 to f1, robbing Black of access to f7. The sequence from move 37 to 44 wound up leaving Mimura in an essentially hopeless position.

The second transcript is a game from the 1982 U.S. Nationals between two of this country's perennial top players, David Shaman and Brian Rose. Shaman chose the perpendicular opening. The game is marked by the efforts of both players to contain the mobility of the other within different regions of the board (see also Point #13). For example, note how Shaman's move 18 to e8 played into the South area (i.e. the area where Black already had his greatest mobility), while Rose's move 19 response (h6) adhered to the same principle along the East edge. Rose's move 31 (f2) was regarded as a mistake (it allows White to effectively respond with b4): Black probably should have gone to b4 himself. Finally, the transcript is noteworthy for the position that occurs prior to move 45. Rose made the reasonable move of a7, but after Shaman's correct continuation of 46. h2, the result is a losing position for Rose. Rose's correct (and winning) move was 45. h5 (leading to a likely subsequent sequence of H7-a5-A7-b7, and giving Rose complete control of the game).

These mini-analyses only touch the surface of what could be said about these games. Playing the game out yourself will hopefully provide still more insights.

## FINAL CONSIDERATIONS & CONCLUSIONS

If someone were to ask me what I consider to be the single most important lesson a novice player could learn from reading this Handbook, it would be this: A realization, contrary to some popular opinions, that Othello is not a game of luck nor a game in which planning ahead is a futile exercise. It is instead a game with well-defined strategical and tactical concepts (ones that are often different from what the novice player initially supposes), and in which long-term planning is all but essential. It is my hope that this realization serves to increase your enjoyment and understanding of this fascinating game. I hope it stimulates your interest to learn still more about the game. To the extent that this Handbook has accomplished these goals, it has been successful.

	a	b	c	d	e	f	g	h
1	46	48	27	28	49	26	57	58
2	47	45	29	18	19	52	55	56
3	42	33	21	7	6	23	30	38
4	39	11	8			22	25	34
5	41	10	5			1	12	37
6	40	20	9	4	3	2	15	44
7	54	50	16	13	14	36	51	60
8	53	35	32	31	24	17	43	59

Diagram 91

Mimura(B-21) - Cerf(W-43)

	a	b	c	d	e	f	g	h
1	53	52	35	34	30	25	59	47
2	44	55	28	11	10	31	60	46
3	43	29	27	7	5	8	13	22
4	36	32	26			4	9	21
5	54	14	3			1	20	48
6	33	40	6	2	16	15	12	19
7	45	58	39	38	37	17	51	49
8	56	57	42	41	18	23	24	50

Diagram 92

Rose(B-28) - Shaman(W-36)

In addition, I would hope that the reader gains some insight into the elegant "simplicity" of Othello. This can be best understood by considering how the better computer Othello programs decide on their best move (prior to their endgame counting). Their programmers have not provided them with even a small fraction of all the information presented in this Handbook. Generally, they rely mostly on just a few of the more fundamental ideas: e.g. move limitation and mobility, evaporation, value of stable discs. From these few and simple algorithms, the computer has to "self-generate" the ability to successfully deal with unbalanced edges, gain control of the main diagonal, spring edge-traps etc. It seems remarkable to me how well some computers can play, given these limitations. It serves as a useful lesson to humans trying to develop a broad overview of what is important in learning to play Othello well: the critical ideas are relatively few but extensive in their implications!

And of course, I would hope that this Handbook would enable you to become a better player, help you to start on the road to joining the ranks of the experts. At the very least, I hope this book would enable you to observe a game between experts with a much greater sophistication and a much diminished sense of mystery. There's certainly a wealth of information in here to assist the aspiring Othello player. But be aware that there is also much to master that was never even mentioned: more techniques for maintaining mobility that go beyond evaporation, more on timing of moves and setting up long sequences of moves, more unusual edge plays and endgame ploys, more on creative and counter-intuitive moves, much more on preplanned openings, deeper analyses of complete games, how to play well under tournament time pressure, and more on aspects of Othello that I haven't even discovered yet. And still more. In fact, the single biggest problem I had in writing this Handbook was deciding what to leave out. There was always one more point I wanted to make or one more diagram I wanted to include.

Finally, one of the things that any experts reading this Handbook would know is: everything I've written here is wrong! — at least some of the time. Or to put it in its more usual terminology: an exception exists for virtually every principle we have covered. But I suppose that's what helps Othello to be the fantastic game that it is. As they say: A minute to learn, but a lifetime to master!

## APPENDIX: SELECTED GAME TRANSCRIPTS

This appendix includes a selection of transcripts of games from major tournaments played during 1984-1986. Their purpose here is to give the reader the opportunity for further study of "real game" situations involving current experts. I hope the reader does not object that four of the transcripts are of games in which I was one of the players. I include them because they are among the more memorable of the games I have played, even (perhaps especially) those that I did not win.

The brief comments are no substitute for detailed game analyses, but they do highlight some critical points in each game. Note particularly how often unforced X-square moves and corner sacrifices figure prominently in determining the outcomes. Finally, answers to the questions posed in the discussions below can be found at the end of this appendix.

**Game 1. T. Landau (B)-35 vs. D. Shaman (W)-29.** In 1984, I won the U.S. National Championship with a 5-1 record in the final rounds. This game against David Shaman was one of the highlights of the day for me. Note particularly move 43. b5. Though b4 seemed like a better move in many ways, I decided that the highest priority issue was to prevent Shaman from wiping me off the a1-h8 central diagonal: b4 would allow Shaman to continue with a4, gaining control of the diagonal; b5 prevented this. After Shaman accepted the corner sacrifice at move 48, I was confident I had won.

	a	b	c	d	e	f	g	h
1	48	31	11	13	49	26	56	55
2	50	47	30	10	12	28	53	54
3	29	8	27	7	2	9	23	32
4	45	44	1			3	22	33
5	52	43	4			15	14	19
6	60	37	42	5	6	17	16	21
7	59	46	18	41	20	24	40	34
8	51	39	38	35	36	25	58	57

1. B: Landau - 35  
W: Shaman - 29

**Game 2. R. Taniguchi (B)-37 vs. T. Landau (W)-27.** From the U.S. Nationals, I advanced to the semi-finals of the 1984 World Championship. This game was the first of a best two-out-of-three match against Japanese Champion, Ryoichi Taniguchi. After narrowly avoiding being run out of moves in the late midgame, I reached the position prior to move 44. I had a elegant opportunity for a decisive winning move here. I came close to finding it - but close was not good enough. See if you can find the better alternative.

	a	b	c	d	e	f	g	h
1	52	44	29	41	26	30	57	58
2	54	51	16	13	15	17	60	43
3	31	22	14	12	3	6	21	48
4	25	18	7			2	10	40
5	32	19	5			9	28	27
6	24	35	23	4	1	8	53	42
7	33	50	11	20	34	46	56	49
8	55	39	36	38	37	45	47	59

2. B: Taniguchi - 37  
W: Landau - 27

**Game 3. T. Landau (B)-43 vs. R. Taniguchi (W)-21.** I recovered from the previous loss and went on to win this second game of the match. It is one of the very few times a U.S. player has defeated a Japanese player in a World Championship game. Note the

	a	b	c	d	e	f	g	h
1	53	55	36	21	43	33	57	56
2	46	44	23	8	22	35	51	49
3	37	15	2	3	16	18	34	48
4	20	13	1			6	9	47
5	38	14	4			7	28	45
6	17	39	11	5	19	29	32	54
7	58	42	12	10	25	24	52	50
8	59	31	30	27	40	26	41	60

3. B: Landau - 43

W: Taniguchi - 21

	a	b	c	d	e	f	g	h
1	54	55	58	32	56	35	40	39
2	52	53	49	57	31	28	36	30
3	47	46	51	23	3	6	22	27
4	44	50	7			2	29	25
5	45	43	5			9	19	26
6	48	33	8	4	1	17	10	24
7	37	34	16	11	12	21	59	41
8	42	38	14	15	18	13	20	

4. B: Taniguchi - 15

W: Ralle - 48

	a	b	c	d	e	f	g	h
1	53	60	37	54	39	51	49	50
2	59	38	34	40	26	52	48	47
3	27	29	33	22	2	9	32	24
4	28	20	1			3	17	45
5	21	10	4			13	16	46
6	30	19	7	5	6	12	14	35
7	31	57	8	18	15	11	36	44
8	58	25	56	55	23	42	43	41

5. B: Shaman - 34

W: Leader - 30

quiet sequence from 27-29, and especially the decisive move 37. a3. White is on the ropes now: whether he goes to a2 or a5, Black follows with 39. b6. If White takes b6 at 38, Black follows with a5. In any case, White is shortly run out of safe moves. Unfortunately for me, I lost the deciding third game and Taniguchi went on to meet Paul Ralle of France in the finals.

**Game 4. R. Taniguchi (B)-15 vs. P. Ralle (W)-48.** Paul Ralle won the 1984 World Championship (joining the U.S.'s Jonathan Cerf as the only non-Japanese players to do so) with this dramatic game. The critical position is at move 34. Ralle chose the X-square at b7 and when Taniguchi continued with 35. f1, Ralle countered with 36. g2! The endgame was still several moves away, yet Ralle had already taken two X-squares and two unbalanced edges. Despite all this, Taniguchi was helpless -- Ralle had a clear unassailable win.

**Game 5. D. Shaman (B)-34 vs. I. Leader (W)-30.** David Shaman and Imre Leader both finished with 4-2 records at the 1985 U.S. National Championship finals. This necessitated a play-off game to determine the champion. It was one of the best games of the tournament. Note particularly the sequence of moves from 25-27 where Shaman took some questionable edge positions in exchange for a gain in tempo. The trade worked and Shaman went on to win. It's also worth mentioning that, despite some unusual appearing moves in the endgame, Shaman had a winning position throughout the sequence that he never relinquished.

**Game 6. T. Landau (B)-26 vs. D. Shaman (W)-38.** This game comes from the 1986 U.S. National Championship. Starting with an uncommon move 5, I eventually established a midgame advantage by exploiting Shaman's weak north edge. Some comments: 23. b3 would have probably been preferable to the actual 23. h2. Next, note how effectively 33. a3 blocks White's potential move to f6 (if White tries to reestablish access to f6 with 34. b4, it

sets up a Stoner trap with 35. g2!). Finally, like fisherman, Othello players seem to remember best the "one that got away." Here again, as in Game 2, I let my hard won advantage evaporate in the endgame. The critical position is at move 45. See if you can come up with the decisive winning move that I missed.

**Game 7. D. Shaman (B)-28 vs. B. Rose (W)-36.** This was the second of three games that Brian Rose and David Shaman played against each other in the 1986 U.S. Nationals finals. Here, Shaman declines the opportunity to take an unbalanced edge by refusing to go to a2 at move 17. Rose responds by grabbing the unbalanced edge himself (with a7 at move 18). Despite sacrificing nearly two entire edges, Rose gains control of the game by move 40 and goes on to win.

**Game 8. D. Shaman (B)-36 vs. B. Rose (W)-28.** Shaman and Rose were tied at 5-1 at the end of the 1986 U.S. Nationals, necessitating this play-off game (the second for Shaman in as many years). Moves 1-16 were identical to their previous game (see Game 7 above). This time Shaman *took* the unbalanced edge at move 17 (moving to a2). Note how this decision led to a distinctly different game, despite the identical opening. Rose's move 34 was likely a mistake since it allowed the effective 35. g2 (34. b7 would have been better). The cliff-hanging endgame, though exciting, was not perfectly played. Shaman's move 47. c8 was a game-losing mistake -- b8 was the winning move! However, Rose's game-losing move 52. a7 returned the game to Shaman. See if you can spot the move Rose should have made instead.

**Game 9. M. Takizawa (B)-35 vs. H. Tamenori (W)-29.** These final 3 transcripts represent state-of-the-art Othello as played by the world's best: the Japanese. If the rationale behind some of the moves seems elusive, don't despair. They sometimes stymie most of the rest of us as well. This first game is between Masaki Takizawa and Hideshi Tamenori (the 1985 and 1986 World Champions respectively), taken from the final rounds of the All-Japan Student Championship in 1986. Tamenori won the tournament -- this was his only final round loss. Note move 28: White avoids the PQM to b5 to gain a tempo along the north

	a	b	c	d	e	f	g	h
1	48	20	17	13	14	56	55	58
2	49	47	9	12	8	18	57	23
3	33	26	6	7	2	21	15	24
4	38	39	1			3	10	22
5	36	29	4			11	30	25
6	37	27	28	16	5	46	32	31
7	54	52	43	19	35	34	51	45
8	53	50	41	40	44	42	53	60

6. B: Landau - 26

W: Shaman - 38

	a	b	c	d	e	f	g	h
1	34	36	31	33	40	41	45	47
2	35	29	30	32	31	42	43	44
3	14	10	20	28	2	46	60	55
4	12	11	1			5	48	59
5	16	9	6			3	49	52
6	13	15	8	7	4	50	53	58
7	18	38	27	19	17	54	51	57
8	37	26	25	24	23	22	39	56

7. B: Shaman - 28

W: Rose - 36

	a	b	c	d	e	f	g	h
1	58	59	60	26	25	24	55	40
2	17	57	22	23	21	27	35	43
3	14	10	18	19	2	20	34	42
4	12	11	1			5	32	39
5	16	9	6			3	30	41
6	13	15	8	7	4	37	28	44
7	52	56	38	33	31	29	45	48
8	53	54	47	36	51	50	49	46

8. B: Shaman - 36

W: Rose - 28

	a	b	c	d	e	f	g	h
1	47	50	28	26	17	24	55	56
2	51	37	25	9	10	16	57	41
3	46	19	8	4	7	13	42	40
4	58	27	3			6	11	23
5	59	31	5			1	20	22
6	48	34	12	2	14	15	18	21
7	39	43	29	30	35	38	49	54
8	44	60	32	33	36	45	53	52

9. B: Takizawa - 35

W: Tamenori - 29

	a	b	c	d	e	f	g	h
1	60	48	26	43	39	44	46	52
2	41	59	24	25	33	45	53	49
3	38	37	36	23	6	35	42	51
4	40	19	21			13	14	22
5	29	28	10			1	12	15
6	47	34	9	4	3	2	27	20
7	56	50	17	7	8	5	57	32
8	55	18	16	54	11	30	31	58

10. B: Takizawa - 26

W: Tamenori - 38

	a	b	c	d	e	f	g	h
1	55	54	42	53	52	32	49	47
2	46	45	41	34	33	31	30	48
3	44	38	40	36	35	27	28	29
4	43	39	37			4	25	17
5	24	26	16			1	5	9
6	56	23	22	19	3	2	8	10
7	57	59	21	15	6	7	51	11
8	58	60	18	14	13	12	20	50

11. B: Tamenori - 41

W: Katayama - 23

edge. Tamenori made a mistake at move 46. A different move (with subsequent perfect play) would have resulted in a 32-32 tie. Can you find the loss-saving move? It won't be easy.

**Game 10. M. Takizawa (B)-26 vs. H. Tamenori (W)-38.** This rematch of Takizawa and Tamenori came from another 1986 Japanese tournament. This time Tamenori won. Note Tamenori's early C-square move at 18, necessary to avoid being run out of moves. By move 40, White seems to be in control despite his spread out edges -- and proceeds to victory.

**Game 11. H. Tamenori (B)-41 vs. Y. Katayama (W)-23.** This was the final game for the 1986 Japanese National Championship - Tamenori defeating Yuji Katayama. Note particularly moves 45-47: Black sacrifices the a1 corner with 45. b2, but White cannot afford to take it (or Black will have free moves at a2 and b1). So White hands the corner back to Black with 46. a2! Black declines the a1 corner for the moment, taking the h1 corner instead -- exchanging the unbalanced east edge for a gain in tempo. In case you're wondering, White had a losing position after Black's 45. b2; White's 46. a2 was not a game-losing mistake.

## Answers to Questions

**Game 2.** If White goes to b2 at move 44, Black will lose. If Black continues with 45. g1, White makes the semi-forcing move: 46. a2. With any other Black move 45, White can win with 46. b1. Unfortunately, I choose b1 at move 44, which blocked my later access to b2. When I finally realized this, it was too late: the mistake had cost me the game.

**Game 6.** Black 45. f1 wins easily (a fact that I didn't take note of until move 47, much to my chagrin!). After 45. f1, if White takes



back at g1, Black continues with 47. b7, gaining secure control of the main diagonal. If White goes anyplace else at move 46, White takes the a1 corner at move 47. Despite the ill-considered move 45 to h7, Black still had a chance for victory at move 47. The opportunity to go to f1 was gone, yet the unlikely move of 47. g7 leads to a 36-28 win (assuming subsequent perfect play: g7-A7-b2-H8-g8-A1-a2-H1-a8-B8-f1-G1-b7-PASS-g2). Black chose g2 instead and went on to lose.

**Game 8.** White should have gone to b8 rather than a7. The perfect play sequence is as follows: B8-g1-PASS-b7-A8-b1-C1-b2-A1-a7 (White wins 34-30).

**Game 9.** White should have gone to a6 rather than a3. The perfect play sequence is as follows: A6-a5-A4-a3-A1-g8-H8-b8-A2-g2-H1-g1-H7-g7-PASS-b1.

## REFERENCES

In writing **Brief & Basic**, the most significant source of background material were articles that originally appeared in **Othello Quarterly (OQ)**. Below is a partial list of the more influential articles that I used:

- Cerf, J., **Limiting Your Opponent's Options**, **OQ**, Summer 1979
- Cerf, J., **Unbalancing Yourself**, **OQ**, Winter 1981/82
- Cerf, J., **Introduction to Othello Strategy**, **OQ**, Spring 1982
- Cerf, J., **Introduction to Endgames**, **OQ**, Fall, 1982
- Hall, R., **Lose the Corner, Win the Game (Part 1)**, **OQ**, Spring 1983
- Hall, R., **Lose the Corner, Win the Game (Part 2)**, **OQ**, Summer 1983
- Jacobs, C. & Jacobs, E., **Unbalancing Your Opponent**, **OQ**, Spring 1979
- Kling, A., **Opening Strategy, Tactics, and Analysis**, **OQ**, Summer 1983
- Landau, T., **Black and Blue: The Hazards of Playing Black**, **OQ**, Spring 1981
- Landau, T., **Midgame Strategy: Patterns**, **OQ**, Spring 1982
- Landau, T., **A Catalog of Openings**, **OQ**, Spring 1983
- Landau, T., **Gaining Control**, **OQ**, Summer 1983
- Landau, T., **From the Jaws of Defeat: The Semi-Forcing Move**, **OQ**, Fall 1983
- Osborne, M., **Denying Access**, **OQ**, Summer 1983
- Stringham, G., **Fundamental Othello Misconceptions**, **OQ**, Fall 1980
- Sullivan, G., **Dangers of the Isolated C-Square**, **OQ**, Winter 1979/80
- Sullivan, G., **Controlling the Central Diagonal**, **OQ**, Fall 1981

In addition to the above articles, the interested reader is strongly encouraged to seek out the numerous game analyses and transcripts from tournaments that regularly appear in **OQ**. These provide invaluable insights into "real game" situations. A partial listing of some of the more instructive game analyses includes:

- Cerf, J., **Cerf vs. Mimura**, **OQ**, Winter 1980/81
- Rose, B., **Shaman vs. Rose 1986**, **OQ**, Winter 1986/87
- Shaman, D., **Tamenori vs. Takizawa**, **OQ**, Spring 1987
- Sullivan, G., **Playing Defensively: Game Analysis**, **OQ**, Spring 1981
- Sullivan, G., **Rose vs. Shaman**, **OQ**, Summer 1983

Finally, **OQ** frequently publishes puzzles of various sorts that provide an opportunity for you to test your own skills. Perhaps the best of these has been the "**It's Your Move**" series of articles by Arnold Kling that have been appearing in **OQ** since the Summer 1984 issue. For example, "**It's Your Move**" in the Spring 1987 **OQ** was devoted to the issue of "decisive moves", as discussed in Point #21 of **Brief & Basic**.

**OQ** continues to publish useful tutorial articles. Check out the more recent issues (1988-present) for relevant articles not included in this reference section.

## OTHER BOOKS ON OTHELLO

Books on Othello, are a relative rarity (especially if you want one written in English). Here is a listing of those of which I am aware (together with some brief commentary):

Ball, J.A. & Parker, J.R., **The Key to Othello**, 1981 (English)

A small pamphlet (akin to **Brief & Basic**) that comes from England. Most ideas are in the right direction, but not enough solid information. Overstates the importance of certain principles of play.

Hasegawa, Goro, **How to Win at Othello**, 1977 (English translation of Japanese by Maxine Brady)

The worst possible book. Avoid it at all costs. It can do serious harm to your Othello ability. Ironically, it was written by the Japanese "inventor" of Othello (who apparently understood little of what his game is about). Unfortunately, this is the only book on Othello to ever get wide distribution in the United States. Thankfully, it is no longer in print. The only lingering contribution of this text is the terminology for A,B,C, and X squares.

Inoue, H., **A Discovery of Reversals**, 1977 (Japanese)

Though written in Japanese, it is an excellent text just for the diagrams, especially on openings and endgame positions. The author is one of Japan's first crop of great Othello players and a former World Champion.

Japan Othello Game Association, **How to Othello**, 1983 (Japanese)

A more up-to-date treatment of Othello from the Japanese. Again useful for the diagrams. Overall, does not seem as elegant a text as Inoue's classic.

Pingaud, Francois, **Othello/Reversi**, 1983 (French)

A good introductory text. The author was aware of **OQ** and even borrowed some ideas and terminology from it. If you understand French even minimally, you would probably get some benefit from this text.

I am also aware of a Japanese text (published in 1986) on computer Othello (exact title untranslated). And speaking of...

## COMPUTER OTHELLO

If you are seeking a computer opponent to play against, be aware that most of the Othello programs out there play a terrible game and use little or none of the principles discussed in **Brief & Basic**. The better programs available are a frequent topic of discussion in **OQ**, and I refer you there for the latest information. Systems are also available for generating perfect-play endgame sequences. Clarence Hewlett (the current Editor of **OQ**) has done extensive work in this area, having developed a state-of-the-art system that can search as far back as 26 moves from the end of the game!

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## U.S. National Othello Champions

<u>Year</u>	<u>Name</u>
1977	Carol Jacobs
1978	Carol Jacobs
1979	Jonathan Cerf
1980	Jonathan Cerf
1981	Brian Rose
1982	David Shaman
1983	Brian Rose
1984	Ted Landau
1985	David Shaman
1986	David Shaman
1987	Brian Rose
1988	Brian Rose
1989	David Shaman

## World Othello Champions

<u>Year</u>	<u>Name</u>
1977	Hiroshi Inoue (Japan)
1978	Hidenori Maruoka (Japan)
1979	Hiroshi Inoue (Japan)
1980	Jonathan Cerf (U.S.A.)
1981	Hidenori Maruoka (Japan)
1982	Kunihiko Tanida (Japan)
1983	Kenichi Ishii (Japan)
1984	Paul Ralle (France)
1985	Masaki Takizawa (Japan)
1986	Hideshi Tamenori (Japan)
1987	Individual: Kenichi Ishii (Japan) Team: U.S.A.
1988	Individual: Takeshi Murakami (Japan) Team: England
1989	Individual: Hideshi Tamenori (Japan) Team: England

**About the author:** Ted Landau was the 1984 U.S. National Othello Champion, finishing third in the World Championship that year. He was editor of **Othello Quarterly** from 1984-1986 and has written more than a dozen articles on the game of Othello.

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