

The Blackjack Zone

Lessons in Winning at Blackjack and Life

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And finally, if I have forgotten to mention you, it is my slight and I take full responsibility. Thank you to all those I forgot but cherish.

The world of blackjack is as rich as any academic discipline, with subtleties beyond belief permeating every nuance of the game. It is an exciting game, bursting with the adrenaline rushes of wins and losses, and the glitz and glamour of the casino lifestyle. It is a highly competent world, with savants who have devoted lifetimes to understanding and beating the game in all its variations. But, sadly, it is also a very political world, with factions, stalkers, miscreants, and social deviants. Those who look after the good of the game are battling those who do not want to touch the games for fear of bringing attention to an ever dwindling spectrum of opportunities for advantage play.

One of the MIT blackjack team members expressed this conflict perfectly, though in his typically MIT way, saying to me that the “Noise to signal ratio in the blackjack is quite high.”

There is only one word that I wish for our tight little advantage player community, and I also wish it for our troubled planet.

Peace.

1. The MIT team is one of the most successful and profitable blackjack teams in history. For the complete story, see the book *Bringing Down the House: The Inside Story of Six M.I.T. Students Who Took Vegas for Millions* by Ben Mezrich.

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Estragon: Nothing to be done.

Vladimir: I'm beginning to come round to that
opinion.

-- from *Waiting for Godot* by Samuel Beckett



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Lessons in Winning at Blackjack and Life





Part 1

The Art of Basic Strategy





Chapter 1

Who are you?

You've just come home from another night at the local casino. It was so frustrating, that guy at third base hitting his 12 against the dealer's 6. If only he knew how to play; he ruined the table when the shoe was good. He busted. The dealer turned over a face card and then drew to a 21. It cost a bit too; you had \$50 out on that bet. The dealer would have busted, except for that lousy play. And then everything went bad. It was like the table had turned upside down, the cards were out of order, and what had started out as a good night ended up a disaster. If only other people knew how to play the game right, you would win more consistently.

If you have ever had the experience described in the previous paragraph, this book is perfect for you. You have had a lot of experience at the tables, have a good sense about the variations in rules that occur in the game, and are quick to make decisions about your hands and bets.

In short, you're a regular. You play several times a year in Las Vegas or Atlantic City. You go out to your local Indian or riverboat casino. You enjoy the game and often come home a winner, sometimes a big winner. But there's also a nagging feeling that you are really a loser, even though you haven't been keeping close track of your money. You may have heard people talk about all sorts of systems. Card counting, progressions, shuffle tracking. You know this game can be beat; you may have thumbed through *Beat the Dealer*.¹ But you're not beating the dealer, and you want to know why and what you can do about it.

You've decided to take the next step. You are willing to cast in to doubt all you believe about how the game should be

1. *Beat the Dealer: A Winning Strategy for the Game of Twenty-One* by Edward O. Thorp. Random House Trade Paperbacks; (May 1966). This was the original treatise on the vulnerability of blackjack to counting methods. It is one of the best selling books of all time.



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played and start over from scratch. You acknowledge that you have bad habits at the tables that are losing you money, though you are not quite sure what those habits are. You want someone to explain to you why the things you think you know about blackjack and gambling are not going to succeed over the long run. You are ready to devote yourself to learning something about blackjack: to study, to practice, and to work hard at the game. If this describes you, then you are the right person to read this book.

Or, you may want to read this book to challenge the assertions of the author as measured against your own experience at the tables. After all, you have played a few tens of thousands of hands in your life, and based on that extensive experience, you know a thing or two. There are exceptions to the rules. There are times to bet big and times to hold back. There are hot shoes and cold shoes. There are good players and bad players. You know this because you have seen the same patterns play out hour after hour, day after day at the table. You have seen the real consequences to everyone of one person's bad play. You know that when someone takes a hit holding 12 against a 6, that will take the dealer's bust card. You know how to play this game. I humbly accept your bemusement at my expense.

If you are an expert, a card counter with years of experience, someone who has walked the lonely streets of Las Vegas searching out thin advantages, then please put this book down and don't waste your time. Get back to the tables!

Chapter 2

Vertically Challenged Blackjack

As you read this book, you will be asked to challenge your assumptions about blackjack and casinos. As you gradually let go of your old way of looking at what happens at the table, you will come to realize that gambling is a life-long enterprise that can be played for fun and long-term profit. You will get a sense for the amount of work and dedication that must be applied to make the game pay off, as well as a feeling for the wild financial roller-coaster ride the game brings.

You will be exposed to the basic strategy every player must master to be able to hold his¹ own. Basic strategy simply consists of knowing the correct play in each of the 550 possible combinations of hands that can arise at the table, and making that correct play each and every time. In practice, this reduces the house edge over the player to under 1%, and if the player is lucky enough to be playing in a casino with the right rules, basic strategy may even give the player a small advantage.

We will present the major elements of common blackjack mythology and argue against every aspect of it. Your field of blackjack wisdom may be overgrown with weeds. Among the biggest myths we will debunk are the notions of the "session", "stop loss", and "progression betting systems." Perfectly reasonable people have written books about these ways of playing blackjack. It is time these monolithic fallacies were uprooted and placed in the proper compost heap. If you have any such books, please burn them. They are a menace.

One thing this book does not do is to rehash material that already appears in other excellent books on counting systems or other ways of beating casinos. We will give sources

1. We should say "his or hers" (or better yet, "hers or his", or "one") at this point, but we will stick with the masculine form of the pronoun for ease of expression.



for pursuing expert play, and a little bit on playing using the High-Low system, but this book will not take you all the way to Mecca. This book is not about card counting or other ways of beating the house; it is about getting there one patient step at a time.

We finish with a series of essays (including one by the author's spouse) and an interview with a professional card counter, that should give deep insights into the mind of the advantage player without the burden of the details.

When I started out pursuing mathematics in college, a teacher told me that mathematics starts out being vertical, and then it becomes horizontal. What he meant is that everyone takes the same courses: arithmetic, algebra, geometry, trigonometry, then calculus and differential equations. This is the vertical part. But at some point, the student gains enough mastery so that mathematics becomes a language rather than a sequence of ideas. Once he has mastered the language, new ideas can be expressed. At this point, mathematics has become horizontal for him.

It is the same with gaming. So many books on blackjack and card counting assume their readers understand the language and have the experience to cope with the flood of new ideas being presented. So many excellent books have been written, but so few readers ever become competent card counters or advantage players. Why? The writers are writing horizontally to an audience that is still grasping to read vertically.

Blackjack books sell themselves based on the ease and power of their winning systems, with flashy titles and covers, giving tables, equations, and numbers that few readers understand. Very few blackjack books understand the true nature of their audience. With that in mind, this book is written for the vertical gambler. We are assuming you know arithmetic (the rules of the game of blackjack) and will teach you algebra (basic strategy, a little bit on card counting, and a lot on related ideas).

Vertically Challenged Blackjack



After reading this book, you will go from a lifetime loser to a lifetime winner. You will understand the long-term effect of your strategic choices, expressed by the concept of the "blackjack zone." But, more importantly, you will be ready to read the advanced texts, and to fully integrate that material in order to realize your ambition to become a skilled advantage player. You will be ready to tackle the ideas instead of being caught up in learning the language. You will be horizontal.

Chapter 3

Blame it on My Mother

I can blame it all on my mother (and so should you). When I was 13 years old our family went on a vacation to Lake Tahoe. On one particularly bright northern Nevada day, we entered a casino in Reno. I told my mother to put a nickel in a machine for me, which she did, and we lost. But I had really won: before the day was out my mother decided what to buy me for Christmas. Under the tree a few months later were a toy slot machine, a roulette wheel, and a blackjack felt.

In a few days I had set up a makeshift casino in our garage in the San Fernando Valley. Soon all the kids in the neighborhood were coming over with their allowances and Christmas money, playing the games. And I must have understood something, even at that early age, because of the sign I nailed on the wall of the garage (which stayed there for another twenty years until my mother sold the house). It announced the payoffs I was offering: 10-1 for hitting a number in Roulette. Within a month every kid in the neighborhood had lost his allowance, and my casino shut down.

Skip forward 25 years. It's 7 PM on a Tuesday night; I'm playing the shoe game at a local casino, and things are not going particularly well. One of the players leaves the table. The guy next to me, let's call him "Fred",¹ says: "Is anyone going to play an extra hand? If not I guess I'll be forced to do it." I explore the logic of his statement. First of all, Fred is saying that somehow it is crucially important that the same number of people who started the shoe continue to play the shoe throughout. Second, Fred's implication is that this is common knowledge about blackjack.

1. Get used to "Fred;" he is one of the main characters in this book. If you're wondering about the name, Fred was a student in my Computer Science class, and he agreed to allow me to use his name for a variable in a computer program. Now he is ubiquitous in my teaching, public speaking, and writing, and quite used to it.



Fred starts to play two hands. When he is dealt a hard 15 to the dealer's 7 he says: "I'm going to take my chances. You're going to bust!" The dealer busts. Later he doesn't double his A-7 against the dealer's 5, which is good because the dealer makes 21, but he does double his A-3 against the dealer's 2, which again works out perfectly. He doesn't split 9's, because it is silly to ruin a perfectly good 18, nor does he hit his A-7 against the dealer's Face or Ace - again, any 18 is worth keeping. A few shoes progress with this type of play and Fred is making a bundle; he is smiling. He starts putting out \$5 tips, and raising his bets. The game is "hot" and it's time to cash in. Fred has a blackjack and the dealer shows an ace. Fred takes "even money," yet another sure winner for Fred. Fred is making mostly solid plays, but occasionally he'll toss in something like splitting 2's against a 9. After 30 minutes, Fred is up several hundred dollars, and he says: "Always leave when you're ahead, timing is everything." Fred is happy, the dealer is happy, and believe it or not, the casino is very happy about Fred.

And who could tell Fred that he was clueless about blackjack? That he is a big time loser? Fred is typical of the players that frequent casinos across this country. Fred is the lifeblood of the casino: he is one of the masses who knows most of the basic plays, but varies from them either because the play seems too risky (like hitting 15 against a 7), or he doesn't know what to do (like hitting A-7 against T).² These are people who believe in any number of myths and are reassured by other players that these beliefs are an accurate picture of how to beat the game.

It is the bottom of the ninth inning; the manager is trying to make a decision about which player to put in to bat for the pitcher. He can put in Babe Ruth, who has a good chance of hitting a home run, or he can put in Eliot Jacobson, who has never played the game, and has almost no chance of get-

2. We collectively refer to any of the cards T, J, Q, or K as "T", since they all have the same effect on the hand being dealt, namely to count as 10 points.



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ting the needed hit. The manager goes with Eliot Jacobson because he has a hunch it's the thing to do. Eliot Jacobson gets a hit and wins the game! (As long as I'm fantasizing, let's say I hit a grand slam). The next time the situation comes up in another game, he puts in Babe Ruth who strikes out and they lose! (Damn Yankees!). The manager concludes that Eliot Jacobson should always be put in to bat in these situations, and Babe Ruth should sit on the bench. The fans yell for Eliot Jacobson to enter the game, and boo the manager when he even considers Babe Ruth.

This is how most players play blackjack - they react to the pain of their losses rather than to the statistics that dictate the correct play in every situation. Because we all know Babe Ruth is a great baseball player, we can suggest (or yell, which is more likely for baseball players than blackjack players) that the manager put in Babe Ruth every time and that Eliot Jacobson should never be put in. This is "basic strategy" as it applies to baseball.

It is the same story in blackjack. You have 15, the dealer has 7. Babe Ruth is "taking the hit," and allowing me to bat is "staying and hoping the dealer busts." There is simply no debate. Anyone who knows the statistics about these two plays understands that you must hit your 15 against the dealer's 7 every single time, with no exceptions for instinct, hunches or intuition. And that's what basic strategy is all about. It's the set of rules that dictate the correct play in every situation that arises over the table. Correct basic strategy makes the game as close to even as can be found in any casino game.

Fred was lucky. His plays got home runs all night long, but that is not going to be the case in the long run. The long run is more than a season, as it is in baseball: it is your entire life as a gambler, from the first time you ever lay down money at the table until the last wager of the last session. It is just one big game. And the long run is all we really have to go on as gamblers. Fred may win tonight, lose tomorrow, go on a



winning streak and win seventeen sessions in a row, and so on. But none of that matters. What matters is the final result, measured over Fred's entire lifetime. Fred is destined to be a big loser.

Here is a little test to see if you are "Fred." Answer each of the questions yes or no.

1. Do you change the way you play in certain situations at the blackjack table in a given evening?
2. Do you think you know how to play, but have never studied an actual basic strategy table?
3. Do you question why it is appropriate to make certain plays even though you know they are correct?
4. Do you think about how to play a hand?
5. Do you tip the dealer more when you are winning?
6. Do you leave when you've won a certain amount in an evening?
7. Do you get upset at the play of other players?
8. Do you raise your bets when things are going good?
9. Do you take even money, but never take insurance?
10. Do you believe players entering or leaving mid-shoe will ruin the shoe?

If you said "yes" to any one of these ten questions, then you are "Fred," and as much as it hurts me to tell you this, you are a loser at blackjack. (OK, I like telling you this because it means you might continue reading this book). You haven't really kept track, but you have had a few big days when you've made a lot of money playing blackjack, and you think those days probably offset your big losses. But they don't and you know they don't.

You are reading this book because you don't want to lose any more. You want to be a winner, and I congratulate you on this choice. The first thing to understand is that blackjack is a game of skill, not a game of luck. There is absolutely no doubt that a skilled blackjack player will make money in the long run. To develop any skill takes discipline and practice.



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I am asking you to commit to the task of developing your blackjack skills. If you do, you will be a sure winner.

If you can make a commitment to the first sentence below, then read the remaining sentences. If you can't make this commitment, then you are just wasting your time reading this book (or perhaps you are skimming the pages for the obligatory sexy stuff).

1. I promise to not play blackjack again until I have mastered the correct basic strategy for the game I will be playing.
2. I understand that in the long run, if I just play basic strategy and develop no other blackjack skills, I will be a loser.
3. I understand that there are methods that allow a skilled blackjack player to gain a long-term advantage over the casino.

Chapter 4

Is Basic Strategy Basic?

Let's start with an easy quiz. What would you do in each of the following situations? The answer to each is either Stand, Hit, Double, or Split. The answers are at the bottom of the next page.¹

1. You have T-T, the dealer shows a 7.
2. You have 9-4, the dealer shows a T.
3. You have 9-6, the dealer shows a 4.
4. You have 8-8, the dealer shows a 7.
5. You have 6-4, the dealer shows a 5.
6. You have A-A, the dealer shows a 6.
7. You have 8-3, the dealer shows a 6.
8. You have T-7, the dealer shows a 4.
9. You have 8-5, the dealer shows a 3.
10. You have A-5, the dealer shows a T.

These were really easy for you, weren't they? I bet you got them all right. Now try this set of questions. Assume you are playing in a game where you can double on any two cards.

1. You have 9-3, the dealer shows a 3.
2. You have A-7, the dealer shows a 3.
3. You have A-3, the dealer shows a 3.
4. You have 7-7, the dealer shows a 7.
5. You have 9-9, the dealer shows a 8.
6. You have A-7, the dealer shows a 9.
7. You have A-3, the dealer shows a 6.
8. You have 5-4, the dealer shows a 3.
9. You have 6-6, the dealer shows a 7.
10. You have 9-9, the dealer shows a 7.



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The answers are at the bottom of the page.² How did you do this time? Not so well?

Every one of these hands comes up over and over again at the blackjack table and there is absolutely a right way to play each one of them, as right as standing on T-T against a 7. With the first set of questions, you knew the answer immediately and you got every question right. With the second set of questions, given the appropriate time and place you would make a different decision each time the hand came your way. You don't recall the last time the hand came up or how you played it.

Basic strategy simply consists of the correct way to play each of the 550 possible situations that can arise at the table. Why 550? With each hand at the blackjack table, the dealer will show one of 10 different cards, A, 2, 3, 4, 5, 6, 7, 8, 9, T, and you will have one of the following 55 hands:

A-A, A-2, A-3, A-4, A-5, A-6, A-7, A-8, A-9, A-T

2-2, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8, 2-9, 2-T

3-3, 3-4, 3-5, 3-6, 3-7, 3-8, 3-9, 3-T

4-4, 4-5, 4-6, 4-7, 4-8, 4-9, 4-T

5-5, 5-6, 5-7, 5-8, 5-9, 5-T

6-6, 6-7, 6-8, 6-9, 6-T

7-7, 7-8, 7-9, 7-T

8-8, 8-9, 8-T

9-9, 9-T

T-T

So that's it, that's the entire game of blackjack. Memorize the 550 possibilities and play them right every single time they come up.

We need a quick definition. A hand is called "soft" if it contains one or more aces, and one of the aces is counted

1. Stand, Hit, Stand, Split, Double, Split, Double, Stand, Stand, Hit

2. Hit, Double, Hit, Split, Split, Hit, Double, Double, Hit, Stand



with the value of 11. For example, the hands A-6 and A-4-2 are both "soft 17". The hand A-A-A-3-5 is "soft 21".

A hand is called "hard" if it is anything other than a soft hand. For example, the hands T-7, 8-7-2, T-A-6 and T-A-4-2 are each "hard 17". The hands T-4-7 and T-A-A-A-3-5 are both "hard 21".

Blackjack has a lot of variations. In some games you can double on any two cards, others you can only double on 10 and 11. In some games you can re-split your aces. Some times the dealer must hit soft 17, other times the dealer must stand on soft 17. Some games allow you to double after a split, others do not. Some games are played with 1 deck, some with 2, 4, 6, or 8 decks. Here are the most common rule variations. We will use these abbreviations throughout the text.

DOA: Player can double on any two first cards.

D10: Player can only double on 10 or 11.

D9: Player can only double on 9, 10, or 11.

DAS: Player can double after splitting.

H17: Dealer must take a hit on soft 17.

S17: Dealer must stand on soft 17.

RSA: Player can re-split aces.

LSR:³ Late surrender

P21: 21 pushes dealer 10-up blackjack

6:5: Blackjack pays 6-to-5 (customary is 3:2)

Every combination of rules generates a separate basic strategy that must be learned for that specific game. The correct thing to do is to pick a game, learn it, and stick to it. If you like downtown Las Vegas single deck, then learn its basic strategy. If you like shoe games on the Strip, then learn the basic strategy for one of those games.

3. After the dealer checks under his Ace to see if he has blackjack, you can throw in your hand and receive half your bet back. This is an excellent play in certain situations.



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Basic strategy was developed beginning with the landmark research article, *The Optimum Strategy in Blackjack* by Roger Baldwin, Wilbert Cantey, Herbert Maisel, and James McDermott. This article was published in the Journal of the American Statistical Association, Vol. 51, 1956. This paper changed the game of blackjack forever. They determined that there is an absolutely correct way to play each and every hand, and that it could be determined by the statisticians. In addition to proving that the concept of a basic strategy exists, they also determined the amazing fact that the game is incredibly close to even. The edge the house has over the player is razor thin, closer to even than any other casino game.

For example, a player who plays a single deck game in downtown Las Vegas with perfect basic strategy, and bets \$10 per hand, and plays 100 hands (about 1 hour of play), has a mathematical expectation of losing about \$1.80 during the hour. Contrast this with a slot machine player, playing a slot machine that advertises a 94% payoff, who is playing \$10 per spin and pulls the handle 100 times (which in reality takes about 15 minutes). This player can expect to lose about \$60.

Very simply, casinos do not make their money off of people who play basic strategy. They make it off of the rest of the crowd. Suppose you are at a full table with six people all playing perfect basic strategy. You have an average dealer who deals out about 50 rounds in an hour to the table. If everyone at the table bets \$10 per hand, the casino's long-term expectation is to earn about \$5 per hour from the table.

Now, if the exact same table is full of average players who don't know basic strategy and make moves like doubling their 5-3 against the dealer's 3, or not splitting 9-9 against the dealer's 9, then the casino can expect to up their take to about \$60 per hour. This makes it clear that the profitability of blackjack for casinos rests on the shoulders of the average player. Blackjack survives only because of the players who do not take the time to learn basic strategy.



I was playing at the tables and this very polite elderly man split his 7-7 against the dealer's face card. The dealer gave him a funny look, and I must have as well, because the man said: "What are you looking at me like that for? It's basic strategy." He then proceeded to pull out a little plastic card that had a "basic strategy" table printed on it, and he showed us that according to his table, this was the correct play. "I got it at a casino gift shop in Atlantic City." This man had taken the time to learn this ridiculously incorrect system perfectly.

Beware, many casinos will intentionally sell (or give away) flawed basic strategy tables in their on-site shops. One casino manager I knew asked if I would like a job teaching basic strategy to their guests, and he smiled as he insisted I teach it wrong. I didn't take the offer.

On another occasion, a player had 3-3 against the dealer's 5 and did not know what to do, hit or split. She asked the dealer his opinion, and he didn't know either. The dealer called over his shoulder to the pit boss, and the boss told her to hit. Wrong!

Never take advice given at the casino, whether from an apparently knowledgeable player, a dealer, a pit boss, or a bystander. Never ask for advice about how to play while in a casino (except as camouflage if you are card counting). The only person you can completely trust is yourself, at the tables and in life, so do yourself a favor and get it right.

Table 1 lists basic strategy for one of the most common games in Las Vegas. The game is 6 decks, DOA, DAS, RSA, and S17. Throughout the text we will refer to this as the "standard game." Basic strategy tables for other rule variations are available all over the Internet and in other books, so they will not be included here.⁴

4. As of this writing, there are two excellent sources for basic strategy tables on the Internet. These are www.bjmath.com/bjmath/basic/basic.htm and www.blackjackinfo.com



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Note that this table only tells you what to do on your first two cards. For example, if you are dealt an A-3 against the dealer's 3, the table tells you to hit. But what if your next card is a 4? You are then in the situation A-3-4 against the dealer's 3. Clearly you can't double, since you have already taken a card. Table 2 tells you the basic strategy for subsequent plays. In this case you would consult soft 18 against 3 in Table 2. This table is much smaller. The only decision is whether to hit or stand, and the only variation is whether the hand is soft or hard.

As you look over this table you should take special note of those plays you either don't know or think you know but have been playing incorrectly. You may also feel a bit overwhelmed by the scope of the task ahead: memorizing this table. What if I told you I would pay you \$80,000 to memorize this table? Does that make it a bit easier? Over your lifetime of play (50 years, 10,000 hands per year), that's about what this table is worth.

Do not memorize this particular table. First, you must determine the game that you will be playing most often and locate the correct basic strategy table for that game. Later in this part we will offer specific study tips as you progress through the various parts of the table you choose.

We finish this chapter with a review of your commitments:

1. I promise to not play blackjack again until I have mastered the correct basic strategy for the game I will be playing.
2. I understand that in the long run, if I just play basic strategy and develop no other blackjack skills, I will be a loser.
3. I understand that there are methods that allow a skilled blackjack player to gain a long-term advantage over the casino.

Is Basic Strategy Basic?



Hand	2	3	4	5	6	7	8	9	T	A
5-8	H	H	H	H	H	H	H	H	H	H
9	H	D	D	D	D	H	H	H	H	H
10	D	D	D	D	D	D	D	D	H	H
11	D	D	D	D	D	D	D	D	D	H
12	H	H	S	S	S	H	H	H	H	H
13	S	S	S	S	S	H	H	H	H	H
14	S	S	S	S	S	H	H	H	H	H
15	S	S	S	S	S	H	H	H	H	H
16	S	S	S	S	S	H	H	H	H	H
17+	S	S	S	S	S	S	S	S	S	S
A,2	H	H	H	D	D	H	H	H	H	H
A,3	H	H	H	D	D	H	H	H	H	H
A,4	H	H	D	D	D	H	H	H	H	H
A,5	H	H	D	D	D	H	H	H	H	H
A,6	H	D	D	D	D	H	H	H	H	H
A,7	S	D	D	D	D	S	S	H	H	H
A,8	S	S	S	S	S	S	S	S	S	S
A,9	S	S	S	S	S	S	S	S	S	S
A,T	S	S	S	S	S	S	S	S	S	S
A,A	P	P	P	P	P	P	P	P	P	P
2,2	P	P	P	P	P	P	H	H	H	H
3,3	P	P	P	P	P	P	H	H	H	H
4,4	H	H	H	P	P	H	H	H	H	H
5,5	D	D	D	D	D	D	D	D	H	H
6,6	P	P	P	P	P	H	H	H	H	H
7,7	P	P	P	P	P	P	H	H	H	H
8,8	P	P	P	P	P	P	P	P	P	P
9,9	P	P	P	P	P	S	P	P	S	S
T,T	S	S	S	S	S	S	S	S	S	S

Table 1. Basic Strategy for first two cards in the standard game, 6D, DAS, DOA, RSA, S17.
H = Hit, S = Stand, D = Double, P = Split.



The Blackjack Zone

Hand	2	3	4	5	6	7	8	9	T	A
5-11	H	H	H	H	H	H	H	H	H	H
12	H	H	S	S	S	H	H	H	H	H
13-16	S	S	S	S	S	H	H	H	H	H
17+	S	S	S	S	S	S	S	S	S	S
Soft 14	H	H	H	H	H	H	H	H	H	H
Soft 15	H	H	H	H	H	H	H	H	H	H
Soft 16	H	H	H	H	H	H	H	H	H	H
Soft 17	H	H	H	H	H	H	H	H	H	H
Soft 18	S	S	S	S	S	S	S	H	H	H
Soft 19	S	S	S	S	S	S	S	S	S	S
Soft 20	S	S	S	S	S	S	S	S	S	S
Soft 21	S	S	S	S	S	S	S	S	S	S

Table 2. Basic strategy decisions for subsequent cards. 6D, DAS, DOA, RSA, S17. The decisions are divided into hard and soft totals. H = hit, S = stand.

Chapter 5

You Have Now Entered the Blackjack Zone

Imagine you learn basic strategy perfectly for the standard game (6D, DAS, DOA, RSA, S17), and you are at the table with a \$10 bet out and you are dealt 7-7 against the dealer's 6. The dealer misunderstands your hand signal and before you know it, you stand on your hard 14 when you want to split. You watch how the cards play out, and suddenly you realize that if you had split you would have lost both hands, and instead you won. Fabulous! Everyone at the table compliments you on your strange but wise ways, and you are feeling like tonight is your lucky night. Only this particular night doesn't end for a year, for you have entered the "blackjack zone."

Suddenly you get cloned into an evil twin who exists in a parallel universe. You and your evil twin are each dealt the same exact hand at the exact same game, that is, 7-7 against a dealer 6, 10,000 times in a row (about one year of blackjack for the average recreational blackjack player). Each and every time you and your evil twin bet \$10. However, you are the smart twin and you split each time, whereas your evil twin stands on every hand. At the end of the year the universes collide and you and your twin compare results. You have won \$19,300. Your evil twin has lost \$15,700. That is, the decision to split instead of stand is worth $\$19,300 + \$15,700 = \$35,000$ over 10,000 hands, or about \$3.50 per hand.

This example gets to the heart of what the blackjack zone is all about. Each decision you make has a long-term expectation. The long-term is all that matters. You can be a long-term winner or a long-term loser. Standing on 7-7 against a 6 will make you a long-term loser. Splitting will make you a long-term winner (for that hand, at least).



The Blackjack Zone

As we progress the "blackjack zone" will always refer to 10,000 identical hands of blackjack, each with a \$10 bet, each played in exactly the same way. Unless otherwise stated, it will be assumed the standard game is the one being played: 6D, DAS, DOA, RSA, S17.

The blackjack zone will help us get a handle on the long-term effect of the choices we make when we play. Whether we know it or not, we are all playing in the blackjack zone. The long run is our one true friend at the tables.

Here is another example from actual play. Fred complained about being dealt 8-8 when the dealer was showing a T. "I'm just going to lose twice as much when I split!" He did split, and he did lose twice as much. What was wrong with his thinking? As he argued, splitting 8-8 against a dealer face card is stupid; if he hadn't split he would have only lost one bet instead of two. He said that any reasonable person can see that most of the time you will just lose twice as much, since your going to lose anyway. The key is Fred's "most of the time" clause. Because sometimes when you split your 8-8 against the dealer T the dealer will turn over a 6 and bust, and you will win twice as much. And sometimes you will draw one of the split hands to a 17 and the other to a 20, and the dealer will turn over a 9 and you will get a strange sort of push.

Let's go into the blackjack zone with Fred. Suppose Fred has both an evil twin and a good twin (I guess Fred is a triplet). In this case, Fred, his evil twin, and his good twin were each dealt 10,000 consecutive 8-8 vs. T, and each bet \$10. Fred always split, his evil twin always hit, and his good twin always stood. At the end of 10,000 hands the universes collided and they all compared results.

Fred lost \$48,300. That's bad news, and shows just why Fred hates this situation. Fred lost a lot of money by splitting! But his evil twin fared even worse, losing \$53,500. The decision to split instead of hit is worth about \$5,200 over 10,000 hands, or about 52 cents per hand. The two then

You Have Now Entered The Blackjack Zone



turned to the good twin with hope. Sadly, the good twin fared worst of all, losing \$53,700.

There are three reasons to play basic strategy.

1. Turn a winning hand into a hand that wins even more. An example of this is doubling your 6-4 against the dealer's 6 instead of taking a hit. In the blackjack zone, you will make \$59,000 in a year; your evil twin will only earn \$29,500.
2. Turn a losing hand into a winning hand. An example of this is splitting your 7-7 against the dealer's 6 instead of standing. In the blackjack zone, you will earn \$19,300; your evil twin will lose \$15,700.
3. Turn a losing hand into a hand that loses less. This is what happens when you split your 8-8 against the dealer's T instead of hitting. In the blackjack zone, you will lose \$48,300 but your evil twin will lose \$53,500.

Each deviation from basic strategy comes with a cost. Unless your play is incredibly poor, that cost may not show up in the course of one or two hands or an entire evening. I can't count the number of times I have seen people play poorly all night long and come out big winners. I look for justice, but punishment at the tables is not swift. It is a long-term phenomenon. Eventually the costs of incorrectly playing hands will catch up with the player. No one stays lucky forever.

For example, one of the most common errors I see at the table (maybe THE most common error) is a player standing on A-7 against the dealer's T instead of hitting. It is the single play I look for to determine if a player knows basic strategy. The actual cost of this misplay is small, about 37 cents on a \$10 bet. The player who always stands on A-7 against the dealer's T will lose \$18,000 in the blackjack zone, whereas the player who always hits A-7 against the dealer's T will lose \$14,300 (this is reason 3 above).



The Blackjack Zone

You simply must learn basic strategy; there is no other road to blackjack competence. It is the first step. All other techniques to beat the game (except for outright stealing) assume that you know basic strategy. You must be able to make the right play in every situation. You must be able to make these plays with speed and confidence. You must always keep in mind that you are playing for the long run, and that you want to be a winner in the long run. Your focus is correct play on every hand. At the end of your playing career you want all of the times you split your 7-7 against the dealer's 6, taken together, to add up to a win for you instead of a loss.

Unfortunately, if you only play basic strategy and do nothing else to enhance your skills at the table, at the end of your playing career all of the times you played each specific hand will add up to a big loss. The house does not have much of an edge, only .40% in the standard game, but this is more than enough to hurt you.

For example, if in your long gambling life of 50 years you play 10,000 hands per year betting \$10 per hand, playing perfect basic strategy as described in the previous section at the standard game, you can expect to lose about \$20,000. Those are the raw numbers, and their truth is what you are up against the moment you sit down at the table as an expert at basic strategy. On the other hand, if you play your current game, with all its flaws and inconsistencies, you are likely to lose about \$100,000 over your lifetime. This means that memorizing basic strategy has a lifelong value of about \$80,000. Of course, if you bet more than \$10, play more than 10,000 hands per year, and are a worse player than I have estimated you to be, your losses will be significantly higher. If this is the case, and you don't want to do anything about it, please just send me the money you intend to lose. I'm a really nice guy!

The only blackjack games where I routinely meet players who use correct basic strategy are the single deck games in

You Have Now Entered The Blackjack Zone



downtown Las Vegas. Everywhere else, on the strip, in Laughlin, Reno, Lake Tahoe, riverboat casinos, Indian casinos, almost no one plays correctly at any game. In fact, it is extremely rare to see a player get everything right. In my playing experience I have gone for weeks without picking out one player who is playing correctly in every situation. Day after day I shake my head at the plays I see. Almost no one will hit their 8-4 against the dealer's 3. Almost no one will split 9-9 against a dealer 8. These little testing hands add up to big money: big losses for you and big wins for the casinos.

Most players don't realize they are always playing in the blackjack zone. The casinos, on the other hand, recognize the blackjack zone as their home turf. To really understand the power of the blackjack zone, witness one of the most beautiful landmarks on the planet: the Las Vegas strip. By learning the lessons the blackjack zone has to teach, we will make it work for us.

However, those people who have taken the time to master basic strategy also know one truth from the blackjack zone: basic strategy alone is a losing game. Because of this, when I see someone playing correct basic strategy I immediately assume they are doing something else to enhance their expectation. Happily, the path from basic strategy to profitability is very short.

Chapter 6

Zen and the Art of Blackjack

You have mastered basic strategy for the game you will be playing, and you sit down at the table for the first time absolutely knowing the correct play in every situation. You place your bet on the table, and two cards are dealt to you. Just as the dealer must always play the same way in the same circumstance, so too you will be playing the same way every time the same situation comes up. All choice is gone; there is no more decision-making, no debating.

You look at the two cards in front of you. You make exactly the right play according to basic strategy. Another hand is dealt; once again you make exactly the right play. You are no longer making choices about how you want to play a hand. You are not taking any risks or being daring or cautious or good. You are just playing correctly, over and over again. Whatever happens as a result of your correct play is beyond your control. You can't change how the cards were shuffled. You can't change their order or the way other people play, or the noise in the casino, or the cheering crowd at the next table. Your single focus is on correct play. Correct play is play without choice. And because there are no choices, there are no tyrants. You are not there to beat the casino. The casino is neither good nor bad. You are just there to play blackjack correctly.

The bet is made, the cards are dealt, and the correct play is made. And you realize that this cycle will repeat itself 10,000 times per year, year after year. You bathe yourself in this world without choice; take solace in its peace and simplicity. There are no battles. There are no decisions. There is no risk. There are no deadlines, no goals, no unfulfilled dreams, no lost love. There is simply another hand to be played correctly.

Zen and the Art of Blackjack



It is this calming, almost meditative effect that lures you to blackjack. You like the atmosphere inside the casino, the lights and noises, the people you meet at the tables, the excitement in the air. But you sense that something important is happening, and it is. It is you witnessing the present moment and seeing the ease with which you meet its demands. It is the dance of numbers and time performing for an audience of one.

Chapter 7

I've Got Your Number

Each rule at the table comes with a cost. The sum total of all these costs is the final expectation of the game. This final expectation is usually measured as a percent. So, for example, the standard game we have presented in this book (6D, DAS, DOA, RSA, S17) is -0.40%. Another way of saying this is that for every \$100 dollars you wager at the table, your expected return playing perfect basic strategy is \$99.60. Still another way to look at it is in the blackjack zone, 10,000 hands each with a \$10 wager, expect to come out losing \$400. Of course, this is a long-term number. Your result in any evening (or month) may bear little resemblance to the outcome predicted by this number.

Here is your opportunity. Play 100 hands at \$10 each and then argue with me when you have done something other than lose exactly \$4. Tell me how wrong I am. Then use the same argument with the manager of your favorite baseball team the next time a .300 batter goes 1-for-4 (.250) or 2-for-4 (.500) in a single evening at the ballpark (and don't forget to ask him to put me in the game).

In Table 3 on the next page we list the most common games found today, with their expected cost playing perfect basic strategy. Each set of rules in the table is the same as those available at many Las Vegas casinos.

Once in a while there is quite an uncommon game, a game that with perfect basic strategy favors the player. For example, at the time of this writing, there is a single deck game at the Lakeside Inn in South Tahoe that is +.01%. Its rules are: DOA, H17, DAS, RSA, 2x on 777.



Rules	Expectation	Blackjack zone
1 Deck, DOA, H17	-0.18%	-\$180
1 Deck, D9, H17	-0.29%	-\$290
1 Deck, D10, H17	-0.43%	-\$430
1 Deck, Superfun 21	-0.94%	-\$940
1 Deck, DOA, H17, 6:5	-1.45%	-\$1450
2 Decks, DOA, S17, DAS, LSR	-0.13%	-\$130
2 Decks, DOA, S17, DAS	-0.18%	-\$180
2 Decks, DOA, H17, DAS, RSA	-0.38%	-\$380
2 Decks, DOA, H17	-0.52%	-\$520
6 Decks, DOA, S17, DAS, LSR	-0.33%	-\$330
6 Decks, DOA, S17, DAS, RSA	-0.40%	-\$400
6 Decks, DOA, H17, DAS, RSA, LSR	-0.51%	-\$510
6 Decks, DOA, H17, DAS	-0.61%	-\$610
6 Decks, DOA, H17	-0.76%	-\$760

Table 3. The most common blackjack games in Las Vegas

What should you do with all these numbers? You should definitely use them to understand that there are games to avoid. The top three rules to shop around for are DOA, DAS and S17. You should never play a single deck game with D10 (common in Laughlin, for example). Never play a game that offers only a 6:5 (or less) payout for a blackjack. In case you forget, use this easy to remember mnemonic to avoid 6:5 blackjack: "Superstring Theory has not solved the problem of the dual wave-particle nature of the electron, and Blackjack pays 3:2."

Likewise, you should never play a multiple deck game that does not have DAS. Never play "Superfun 21." It is super-not-fun, with a house edge close to 1%.

There is absolutely no reason to play a game with poor rules. It is a buyer's market, so you should make sure you get a good game.

There are some rules that are there simply to make it appear that the game offers you something significant. For



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example, RSA and LSR in single deck games each add only +0.02% to your expectation, and the rule "2x on 777" (any 777 pays 2-to-1) adds only +0.03%. You may also find rules giving special benefits for suited 6-7-8, or a blackjack with the A-J of spades. For the most part these are so rare as to be practically worthless. For example, suited 6-7-8 in a single deck game comes up on average once every 5525 hands, and the suited A-J of spades happens on average once every 1326 hands. However, if you ever find a game offering 2:1 blackjack, stake out a claim and don't leave until the rule is changed.

As for the number of decks, many players prefer a shoe game because a number of hands are dealt in a row without the interruption of a shuffle. Some players take a break while the shoe is shuffled, then settle in for another long sequence of hands. Other players will only play a single deck hand-dealt game, no matter what the rules, with the belief that no other game is beatable. However, many multiple deck games can be beaten, and many single deck games have very disadvantageous rules.

You may run into a game that has a combination of rules not listed in Table 1. There is an easy way to compute the approximate expectation for the game. We start with a baseline game, which used to be the standard game offered in downtown Las Vegas: 1 Deck, DOA, S17. This game has the expectation +0.02%. Then consult Table 4 to make the appropriate additions or subtractions.

For example, if you happen to sit down at a (relatively common) four deck game that is H17, D10, DAS, RSA then your expectation is:

+0.02%	baseline
-0.50%	four decks
-0.19%	H17, multiple deck
-0.26%	D10
+0.18%	DAS, multiple deck
+0.08%	<u>RSA, multiple deck</u>
-0.67%	final expectation = bad game



Variation	Payoff
2 Decks	-0.35%
4 Decks	-0.50%
6 Decks	-0.60%
H17, single deck	-0.16%
H17, multiple deck	-0.19%
LSR, single deck	+0.02%
LSR, multiple deck	+0.07%
DAS, single deck	+0.13%
DAS, multiple deck	+0.18%
D10	-0.26%
D9	-0.13%
No doubles allowed	-1.59%
RSA, single deck	+0.02%
RSA, multiple deck	+0.08%
2:1 blackjack payoff	+2.32%
6:5 blackjack payoff	-1.27%
Drawing to split aces	+0.14%
Can't re-split pairs	-0.05%
Can't split	-0.46%
P21, 21 pushes dealer 10 up blackjack	+0.15%
2:1 payoff on 777, single deck	+0.03%
Lose all on doubles and splits to dealer 10 up blackjack	-0.11%
Six card automatic win	+0.11%

Table 4. Expectations associated with common rule variations.

You can now walk into your favorite casino armed with a number. But let me tell you, if you think this expectation comes with a guarantee, you are in for a big surprise. Say you are playing our standard game, which is -0.40%. You decide to flat bet \$10 per hand, knowing that you should get to play for a year and have it cost only \$400. To your surprise you lose over \$500 in one evening's play. The next day you lose another \$500. You start telling all the other players how rotten playing basic strategy is, and start guessing. A stranger passes a sure-win system to you in a dark corner of the casino, and suddenly you start winning. Pretty soon you are standing on 12 against a dealer 3 and you stop splitting your 4-4 against the dealer 6, and you are winning big time.



The Blackjack Zone

In the short run anything can (and will) happen, and the long run is very long. Believe in the long run; it is the only source of truth in gambling. The proof that the long run approach works is in the glittering palaces lining the Las Vegas Strip. Casinos don't plan new additions based on the results they hope for from one gambler on one night. Likewise, you should not hope to come away a winner in a session, week, month, or year. Patiently the casinos win and lose, but they win just a little more often than they lose, and that's all it takes. Take a lesson from the casinos; believe in the soundness of your methods and wait.

Here are a few other numbers that you may find interesting.

- In a single deck game you will get a blackjack on average once every 20.71 hands.
- In a six deck shoe game you will get a blackjack on average once every 21.05 hands. Therefore, you will get blackjacks slightly less often in a multiple deck game.
- The most common hand to be dealt is a 20, which in the long run, in a single deck game, is dealt once every 11.05 hands.
- The second most common hand to be dealt is a 12. In a single deck game, it occurs on average once every 11.23 hands (this number counts the splitting hand 6-6 as a 12).
- In a single deck game, a hard total between 12 and 16 is dealt to the player on average once every 2.58 hands (38.8% of the time).
- In a single deck game, a hard total between 17 and 20 is dealt to the player on average once every 3.97 hands (25.2% of the time).
- The dealer will bust in a single deck game on average once every 3.53 hands.
- The most common situation is your hard 15 or 16 against the dealer's T. Each occurs, on average, once every 28.3 hands.



- In a single deck game, you will win 43.2% of the hands, lose 47.9% of the hands, and push the other 8.9%.

And finally, here is a fact that really drives home the point of just how long you have to play to have "everything" happen. The greatest number of cards the dealer can take in one hand is 13. This happens in a six deck game with H17 if the dealer gets the following sequence of cards: A, A, A, A, A, A, A, 5, A, A, A, A, x. (x = A, 2, 3, 4, or 5). On average, this will happen once every 81,285,664,200,000 hands, (that's once every 81.3 trillion hands) making it the rarest phenomenon in six deck blackjack. To get an idea about what this number means, if every person on the planet dealt 15,000 hands of blackjack to himself using six decks, this event should happen about one time to one person. With only four decks, this sequence becomes even more rare, once every 1,667,288,014,000,000 hands, (occurring once to one person if every person on the planet played 300,000 hands). I have seen the dealer turn over the cards A, A, A, A, A, beginning this sequence, but then (of course) he drew a 6 making his 21.

Chapter 8

To Err is Human, But That's No Excuse

Recently I witnessed the incredible: a player stood with his A-3 against the dealer's 4, saying to the dealer, "I can value the aces as 1 or 11, and I'm choosing 11." I can say with confidence that in the short run (notice, I am using the short run here), this will cost him a lot of money. In the blackjack zone standing loses \$20,500, hitting earns \$8,200, and doubling makes \$6,700.

A few weeks ago a gaggle of college kids came in on two consecutive nights. I saw the same college kid doubling down on his hard 12 all night long, both nights. It didn't matter what the dealer was showing, he was going to double his 12. "I'm here to gamble!" was his defense to all vain efforts to guide him. In the blackjack zone, doubling a 12 against a dealer T loses \$79,600, whereas hitting loses \$38,500. Another sure loser.

Once a pit boss told me about a time he was playing blackjack and was "tracking cards" (whatever that means) and determined that he had to hit his T-8 against the dealer's T. He hit it and busted with a 5. But, as he explained to me, he saved the table when the dealer turned over a 6. The dealer then dealt himself a T and busted. The world needs more martyrs, to be sure. In the blackjack zone, hitting the T-8 loses \$64,400, whereas standing loses \$17,500.

What is the single most costly single mistake in blackjack? How about doubling your T-T against a dealer 6? In the blackjack zone, standing wins \$70,300, and doubling loses \$170,500. That means that choosing to double rather than stand will cost you \$24.80 for every \$10 you bet.

These stories are at the extreme end of what one sees at the tables. Most of the time people play a decent but noticeably imperfect game yielding the casino about a 2% edge. This 2% is a net increase in the house edge by about 1.6%



over the basic strategy player. I have no scientific evidence to back up the following survey of bad play, but the following list highlights the most frequent errors I see day in and day out, together with their cost to the player.

Most Frequent Errors in Blackjack

Hard hands

This most common error in blackjack is standing on 12 against a dealer 2 or 3. This particular move is part of the general rule that one should never hit on a dealer bust card. However, the net effect of this mistake is very small. For example in the blackjack zone, the player who always stands on 7-5 vs. dealer 3 will lose \$24,600 and the player who always hits 7-5 vs. dealer 3 will lose \$23,200. Notice how close these two numbers are, but it is the difference, which amounts to 14 cents per hand, that gradually pulls the player down.

The other night a woman sitting two seats to my left got angry with me for making the play (I pulled a T and busted - the dealer's bust card, as she argued), even though the dealer busted with a 9. It is this fierce persistence in believing false information that really pays off for the casino. The public relations coup that yielded this false god is one of the great money makers of all time.

If you never stand on a total of 12-16 but instead mimic the dealer and take hits until you reach a total of 17 or more (or bust), then you are giving the house 3.2%. This makes it clear that proper standing on hard totals of 12 to 16 forms a huge part of the game.

Soft hands

These hands are the most difficult part of the basic strategy to commit to memory. In addition, the rules for playing these hands change quite a bit between the various basic strategies for the different games.

Foremost among this class of errors is failing to take a hit with A-7 against a dealer 9 or T. In the blackjack zone, the



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player who always stands on A-7 vs. dealer 9 will lose \$18,300 and the player who always takes a hit will lose \$9,800. It is a losing situation no matter what, but minimizing losses is part of winning. Similarly, standing on A-7 vs. dealer T will lose \$18,000 whereas hitting will lose \$14,300. If you never hit (or double) your soft 17 or soft 18, the net result is that you are giving 0.30% in overall expectation to the house. Another common error is to stand on A-6 against a dealer 7, hoping for a push or a dealer bust. In the blackjack zone, standing loses \$10,400 and hitting wins \$5,500, making this a very costly mistake.

Doubling

Doubling is a major component of basic strategy. You are putting more money on the table when you have the advantage over the dealer. Doubling errors alone can easily amount to giving back 1% (or more) to the casino.

It is not uncommon to see people double a 6-4 (or some other ten valued total) against a T. You probably don't make that play, but do you make every double you should? If you never double, you are giving a gift of 1.73% to the casino, for which the casino would say: "Thank you very much, care to play some more?" If you simply fail to make the correct soft doubles (do you double A-2 against a 5 and 6 like you should?) but make all other doubles correctly, then you are giving back only .14%. By these numbers, soft doubles are a fairly insignificant feature of play, but all the numbers add up to your final expectation, hence none should be neglected. Failing to make any soft doubles is about the same as changing the rule from S17 to H17. So, for example, in the blackjack zone, hitting A-2 vs. the dealer 6 will earn you \$16,900 but doubling the same will earn you \$23,000.

The common doubling errors with hard totals are doubling 9 against a dealer 7, 9 against a 2 (this is correct in some games), 8 against a dealer 2-6 (doubling 8 against a 5 or 6 is correct in some single deck games), and doubling 11 against



a dealer A (again, this is correct in some games). This last one (11 against A) is the most common doubling error, and it is interesting to examine one case of it, 6-5 vs. A, in the black-jack zone. In our standard game hitting wins \$14,800 and doubling wins \$13,000. In the downtown single deck game (DOA, H17, no DAS), hitting wins \$14,100 and doubling wins \$23,300. These numbers should make it clear that not knowing the correct basic strategy for the particular game you are playing will ultimately be very costly.

There are many other strange doubles I have seen (and more I can imagine). Among the remarkable doubles passing me by at the tables are doubling A-3 against T, doubling 4-3 against T and doubling 4-2 against 6. A quick estimate of such Rambo style double downs yields a house advantage of about 1.5%.

On the other end many people double reluctantly and for less. They will only double powerful hands like 7-4 against 6, and then with their \$50 bet out, they nuzzle \$20 next to it and announce "for less". You should always double for the full value of the bet, and double whenever you have the opportunity.

If for some anti-social reason you decide you want to double every hard total 12-16 and never double any other totals, you can say goodbye to over 6%.

Pair-splitting

Most players know that they should always split A's and 8's. This is not a rule of convenience, rather it is a rule based on maximizing your expectation. All of the reasons for making various plays in basic strategy are needed to understand splitting. For example, we have already seen that the reason for splitting 8-8 against the dealer T is to lose less. On the other hand, splitting A-A against a dealer 5 is with the intention of winning more, and splitting 8-8 against a dealer 7 is there to turn a losing situation in to a winning one.

The most common errors in splitting come with 9-9 against dealer 2 through 9. Players are extremely reluctant to



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split up a hard total of 18, but it must be done (except in the case 9-9 vs. 7). For example, in the blackjack zone, standing 9-9 vs. 8 wins \$9,900, but splitting wins \$19,300.

The basic strategy rules for splitting vary quite a bit from game to game when you have 2-2, 3-3, or 4-4. For example, in single deck you should double 4-4 against the dealer 6, but when DAS is allowed you should always split 4-4 against 6. On the other hand, the splitting rules stay consistent between the various games for 6-6, 7-7, 8-8, and 9-9.

In our standard game, you should always split 4-4 against 5 or 6. It is interesting to see what happens in the blackjack zone with the three possibilities (hitting, doubling, splitting) in the case 4-4 vs. 5. Hitting wins \$8,400, doubling wins \$2,800, and splitting wins \$10,700. Doubling is a horrible move in the multi-deck game. Now let's consider the same situation, 4-4 against 5, in downtown Las Vegas at one of the single deck games (DOA, H17, no DAS). In this case hitting wins \$15,300, doubling wins \$16,100, and splitting wins \$9,600. In downtown, splitting is the poorest choice, and doubling is the right move.

You must make sure you know the right splits for the game you play. If you decide splitting is only for earthquake faults and high-school romances, and you are never going to split at the blackjack tables, say goodbye to 0.46%.

Chapter 9

The Psychology of Poor Play

In this section we will explore the reasons why people choose to lose. Before we proceed, it is worth noting that losing has many negative consequences, the least significant of which is having less money. Here are some of the more damaging side-effects of losing at gambling.

- **Second guessing and guilt.** If you had only quit when you were ahead. If you had only put down more money on that hand. Why did you play those stupid machines? You need more discipline.
- **Denial.** You don't admit the full extent of your losses. You hide the truth from your friends and loved ones. You lie to yourself. You don't keep careful records. You avoid the subject.
- **Anger and shame.** You get depressed. You deny yourself basic pleasures in life to make up for your losses. You are quick tempered and unfriendly. You drink or take drugs.
- **Addiction.** You want to gamble again. You want to lose again. You create a cycle that feeds itself. Losing has become your identity and gambling is how you express your self image. You are a loser because you gamble and you gamble to become a loser. If you believe you might be addicted to gambling, please contact Gamblers Anonymous (213-386-8789).

Why would anyone conduct themselves in a casino in a way that leads to such negative results? The answer lies in the psychological premise behind many losing plays. Let's consider the play of the hand by a loser.

The most commonly misplayed hands in blackjack are stiff totals against high cards. Why does a losing player stand on 15 vs. 7? The reason is to avoid the immediate experience



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of losing, even though it increases the overall losing expectation. This experience is not unique to the tables. It is part of the human experience to delay pain, even if by doing so the total pain is greater. We avoid going to the dentist. We don't want to deliver bad news to a friend. We stay in a relationship because it is too hard to break up.

LIFE LESSON: Face the bad news and take the strongest possible action to support yourself.

Let's look at another misplay by a loser and its life lesson. The loser will always take even money on blackjack. We will discuss the specifics of this play later. For now, this play is made for immediate gratification, money in the hand, a reward of lesser value but a guaranteed reward. The goal is to make money, and one consequence of that goal is to take money whenever it is offered, even if the amount is less than we really deserve.

LIFE LESSON: There are times in life when you must cautiously avoid the traps that immediate gratification sets; your goal is to be a winner.

There are a large number of misplays in blackjack that can only be attributed to lack of education. The most common errors of this type are the splitting situations. The player would split if he knew it was appropriate. He would not argue, but would immediately take the correct action, if only he knew.

LIFE LESSON: Take the time to learn your craft and don't be afraid to ask questions.

A final misplay with a lesson is A-7 vs. T. In this case the loser will stand. What is the problem? The loser thinks his present situation is good enough and shouldn't be touched. He is satisfied that the hand he is dealt is as good as he can hope for, and any action is just likely to make things worse. The player avoids the risk that things could get worse although the likelihood is that they will get better.



LIFE LESSON: Always reach for the greatest reward life can offer, even when there are difficult choices that may make things tougher in the short run.

Advantage gaming gives us important life lessons: deal with the hard situations directly and immediately. Always take the strongest action even if it is most likely to give an immediately negative result. Always know where you want to go in life: know your goals and know your path to reach those goals. Take reasonable risks to improve your situation. Get a good education. Ask questions.

When we encourage our friends to avoid losing games, we are encouraging them to live better lives. When we encourage our friends to be skilled blackjack players, we are helping them see a new view of the world in which they control their own destiny, respect themselves and others, and take full responsibility for all consequences of their actions.

Chapter 10

The \$80,000 Chapter

What's the quickest way to get into Carnegie Hall? It is the same with blackjack; you simply must practice what you know. If you are a golfer, you go to the driving range. If you are a baseball player, you take batting and fielding practice before every game. If you are a football player, you get Monday off and then hit the field to prepare for next week. Why should blackjack be any different? As a game of skill it demands your constant vigilance. You must double check that no errors have crept into your play, and you must continually be looking for small improvements. Practicing does not guarantee you will be a winner, but not practicing certainly guarantees you will be a loser.

In sports, you may be self-motivated and have a work ethic like Tiger Woods or Michael Jordan, or you may rely on your coach to tell you what to do, when to do it, and for how long. In blackjack you will not have a coach. You are the only person you can rely on to motivate yourself, and therefore you have to assume all of the responsibility for your failure (naturally, I'll take most of the glory if you win). I want you to win. I want you to do the work that leads to your success. I want you to be proud that you placed a difficult task in front of yourself and succeeded.

The first thing you have to do is to determine the game you want to play. To do this, you should place a phone call to the casino you intend to spend the most time at (many casinos also have web sites that list their blackjack rules) and ask to speak to the blackjack pit. You can then ask a pit boss for their blackjack rules. Such phone calls can be entertaining by themselves. I'll admit to asking a female pit boss over the phone: "how's the penetration¹ in your pit?"

1. "Penetration" refers to the number of rounds dealt per shuffle, or how deeply into the deck the cards are dealt before the deck or shoe is reshuffled. Deep penetration is the most important single element that the card counter searches for before playing blackjack at a casino.



If you determine that the rules are extremely poor (you may have never noticed before), then you will need to find a new favorite place to gamble. If you like to play at several places, determine their various rules and try to locate a common game that you can play at each. If all of this seems like too much research, then you can consult the Internet. There are several web sites that maintain lists of casinos and their rule variations. My favorite such site as of this writing is www.bj21.com, where you can order a copy of CBJN² ("Current Blackjack News"). Since the information changes frequently, such publications are very valuable resources.

The next thing to do is to locate the correct basic strategy for the game you will be playing (see Chapter 4 or the references in Appendix A). And now you're ready for the toughest hurdle on your road to becoming a skilled blackjack player: memorizing the basic strategy table. I'll take you through how I learned basic strategy, and then give you a few ideas for other ways to learn.

I began by making a set of flash cards. On one side I would place the situation (for example, A-7 vs. 9) and on the other side the correct action (hit). There were some very easy cards, like A-T or hard 18, which I did not put in the pile. But roughly, there are 30 rows in the table that need to be studied. Each day I added the cards corresponding to a row to my pile, and I went through the cards until I could recite the correct play effortlessly and accurately.

In addition to the flash cards, I would also deal hands from a deck of cards, so I could get the feeling of making the decisions in real time. Gradually this method transformed into a much more efficient scheme: I would simply hold a deck of cards and look at the top three. I assumed the top card was the dealer's and the next two were my cards, and I would make the call. Then I would place the top card in a

2. CBJN is a monthly newsletter available by email or postal mail. It lists the current rules and table conditions for most blackjack games offered in the USA, and many more around the world. The current cost is \$15 per issue



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separate pile and do the same thing to the top three cards (using two of the three cards I just had plus a new one).

Thus, if the deck looked something like T, 6, 7, 4, 9, 2, A, T, T... , and so on, I would silently recite the basic strategy calls for 6-7 vs. T, then 7-4 vs. 6, then 4-9 vs. 7, then 9-2 vs. 4, then 2-A vs. 9, then A-T vs. 2, then T-T vs. A, and so on. I would do this whenever I had an extra minute or two, and eventually I could thumb through the entire deck in less than 20 seconds.

I also explored many early versions of blackjack computer software. There were a few programs that could be put into practice mode; the computer would make an irritating buzz whenever my play violated basic strategy. I noticed in these early versions, the basic strategy was not adjustable to the particular game being played, and so they were annoying to use. Today there are many excellent blackjack programs that will help you learn all aspects of the game. My personal favorite is "Casino Verite" by QFIT Software (www.qfit.com). There are also training programs available at web sites on the Internet, for example at www.hitorstand.net.

Using the flash cards and deck methods, at the end of one month I was an expert at basic strategy for single deck, DOA, H17, the game played in downtown Las Vegas. That's one month. Not one day, or in-flight on the way to Las Vegas. Would you put in month's work for a payoff of \$80,000? Remember, that's what basic strategy is worth over a lifetime in the Standard Game. Study it the way you study the writing on the box of cereal on your table each morning, only this time eat cereal for breakfast, lunch, and dinner.

Here are a few other tips to learn basic strategy.

First, basic strategy can be reduced to a few simple rules, with a few exceptional cases. If you like, you can memorize these rules rather than the table. I have found this to be a slow and cumbersome process, because at the table you must then think about the particular situation, which rule fits, and



how that rule applies. But, if that is the road you want to follow, here are the "rules" for the standard game:

1. Always hit hard totals of 8 or less.
2. Always stand on hard totals of 17 or more.
3. Always hit hard totals of 12-16 if the dealer is showing a 7, 8, 9, T, or A.
4. Always stand on hard totals of 12-16 against a dealer 2,3,4,5, or 6, with two exceptions: hit on 12 against the dealer's 2 and 3.
5. Always split A's and 8's.
6. Split 2-2, 3-3, and 7-7 if the dealer is showing 2,3,4,5,6, or 7, otherwise hit.
7. Split 4-4 against if the dealer is showing 5 or 6, otherwise hit.
8. Split 6-6 against the dealer's 2, 3, 4, 5, or 6, otherwise hit.
9. Split 9-9 against the dealer's 2, 3, 4, 5, 6, 8, or 9, otherwise stand.
10. Always double hard 9 against the dealer's 3, 4, 5 or 6, otherwise hit.
11. Always double hard 10 against everything except the T and A, otherwise hit.
12. Double hard 11 against everything except the A, otherwise hit.
13. Double A-2 and A-3 against the dealer's 5 or 6, otherwise hit.
14. Double A-4 and A-5 against the dealer's 4,5, or 6, otherwise hit.
15. Double A-6 against the dealer's 3,4,5, or 6, otherwise hit.
16. Double A-7 against the dealer's 3,4,5, or 6, stand against 2, 7, or 8, and hit against 9, T or A.
17. Always stand on A-8, A-9, and A-T.
18. Never take insurance.



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If the complexity of these rules doesn't appeal to you, you can find condensed versions of them, with some intentional (but not too costly) simplifying errors, in many other blackjack books. Or, just hold the basic strategy sheet in front of you day and night until it sinks in (this may take a few weeks).

Another approach is to give yourself a test, and to see which you know and which you don't and just study your weak spots. But beware; you must be honest with yourself about your weak spots. If you happen to guess right on A-7 vs. T on the self test, that doesn't mean you know it in a practical sense. You have to absolutely know the answer, the same way you know to stand on T-T vs. 7, in order to not add that entry to your "to learn" list. Then simply make flash cards for your shortened list. The self-test appears in Table 5. Fill in the table and then compare it with the correct basic strategy you have at hand. Count a hesitation as a wrong answer.

Still another way that some authors have published is to have a list of practice hands, together with their answers. You may see a book that has several pages, each having several columns, each column having entries like: A-7 vs. T, 6-3 vs. 5, 4-4 vs. 7, and so on. You're supposed to read each column and quickly recite the answer to the situation to yourself. I find several flaws with these tables. First, they don't cover every situation repeatedly to reinforce the information. Second, they are difficult to use as you have to cross reference hands with answer sheets. Third, the sequence of hands never changes; after you have used the tables a few times you begin to memorize the answer sequence. Finally, there are simply not enough practice hands in these charts to complete the job of mastering basic strategy. Still, if that is your way to basic strategy bliss, then you should use them. I have provided two pages full of practice hands in Table 6. You can refer to the basic strategy sheet you have at hand to check your answers.



There is an additional benefit to all this work. After you have mastered basic strategy, you have a cure for insomnia at hand, as you should be able to put yourself to sleep by gradually reciting all of the entries in each row. At the very least, after you have completed this section's workload you have then fulfilled the commitment you made in Chapter 3, and are ready to return to the tables.

Basic Strategy Examination Form

Hand	2	3	4	5	6	7	8	9	T	A
5-8										
9										
10										
11										
12										
13										
14										
15										
16										
17+										
A,2										
A,3										
A,4										
A,5										
A,6										
A,7										
A,8										
A,9										
A,T										
A,A										
2,2										
3,3										
4,4										
5,5										
6,6										
7,7										
8,8										
9,9										
T,T										

Table 5. Self-test for basic strategy.



Practice Hands for Basic Strategy

9-9 vs 4	6-2 vs 8	A-T vs 3	7-T vs 8	5-A vs 6	4-T vs 4	8-7 vs 7	9-6 vs 2
8-5 vs 2	6-3 vs 7	5-6 vs 5	3-2 vs 8	5-4 vs 2	7-9 vs 9	6-4 vs 8	7-6 vs 4
3-5 vs 4	A-5 vs 4	3-9 vs 3	8-8 vs 6	T-4 vs 2	5-A vs T	9-8 vs T	7-7 vs A
9-7 vs 5	3-7 vs 6	2-5 vs 4	3-4 vs 7	A-T vs 2	2-7 vs 2	A-6 vs T	5-6 vs 4
5-T vs 9	2-3 vs 2	5-8 vs 3	6-7 vs 4	7-5 vs 2	9-4 vs 5	4-A vs 9	A-A vs T
7-3 vs 7	8-4 vs A	2-T vs 7	6-6 vs 3	A-A vs 3	6-A vs A	T-5 vs 6	6-6 vs 6
5-2 vs 7	8-4 vs 8	T-8 vs 4	T-6 vs 7	4-2 vs 4	8-T vs 8	4-9 vs 7	2-7 vs 7
7-9 vs 9	7-4 vs 8	2-8 vs 3	9-2 vs 4	3-5 vs 9	6-4 vs T	2-7 vs 6	9-4 vs 6
5-T vs 4	2-2 vs 7	6-7 vs 4	A-A vs T	T-A vs 8	9-6 vs 8	3-5 vs 2	3-3 vs 5
5-6 vs 8	7-9 vs 6	7-7 vs 3	2-9 vs 4	2-4 vs 3	7-2 vs 5	9-5 vs T	5-2 vs T
6-6 vs 5	A-3 vs 6	T-3 vs A	A-6 vs 9	2-T vs 2	3-A vs 7	2-A vs 2	8-T vs A
7-4 vs 9	4-2 vs 2	T-7 vs 5	T-3 vs 8	9-3 vs 6	A-T vs 6	T-2 vs 9	3-4 vs 6
T-3 vs 5	3-T vs 4	8-3 vs 2	6-5 vs T	A-T vs T	5-3 vs 5	A-T vs 6	3-6 vs 7
4-T vs 9	8-T vs 8	5-8 vs A	3-T vs T	T-4 vs 7	3-T vs 4	T-7 vs 8	2-2 vs A
4-6 vs T	A-8 vs 5	5-4 vs 3	T-7 vs 4	8-6 vs 4	5-3 vs 3	6-3 vs 5	A-6 vs 7
9-6 vs 9	A-7 vs 6	7-4 vs 2	2-9 vs T	8-2 vs A	5-A vs 4	9-9 vs 5	6-6 vs 3
9-T vs 6	3-9 vs 5	9-3 vs 5	2-5 vs T	2-3 vs 4	9-9 vs 4	8-3 vs 6	T-6 vs 6
6-9 vs 4	8-9 vs 3	9-6 vs 5	A-2 vs 6	2-2 vs 9	5-8 vs 6	T-6 vs A	8-T vs 8
T-T vs 2	8-8 vs T	7-8 vs 6	2-8 vs T	6-6 vs 7	4-7 vs A	9-A vs T	9-3 vs T
T-7 vs 9	2-2 vs 7	9-8 vs 8	A-T vs 7	7-6 vs 2	7-4 vs T	2-3 vs 7	8-7 vs 3
A-5 vs 4	T-T vs 3	3-8 vs 9	3-3 vs 3	6-T vs 7	5-A vs 6	T-6 vs 4	2-5 vs T
A-2 vs 5	6-5 vs A	T-2 vs 4	2-T vs A	5-8 vs 4	8-9 vs A	6-A vs T	7-7 vs 8
3-4 vs 8	3-7 vs 3	T-5 vs 3	5-6 vs 9	5-8 vs 7	3-5 vs 7	3-6 vs 9	3-A vs 2
T-8 vs 5	5-6 vs 8	6-A vs 9	6-A vs 2	T-8 vs 8	A-8 vs 8	7-4 vs 4	8-8 vs 6
2-6 vs 7	8-2 vs 2	A-7 vs T	6-8 vs 9	4-2 vs 7	5-9 vs 3	8-5 vs 7	6-6 vs 3
7-6 vs 6	3-9 vs 6	8-3 vs A	8-3 vs 3	4-9 vs 6	A-9 vs 7	3-3 vs 5	8-6 vs T
5-4 vs T	6-6 vs 8	2-4 vs 8	2-8 vs 8	3-5 vs 2	8-4 vs 8	8-4 vs 2	9-T vs 9
7-3 vs A	3-9 vs 6	3-7 vs T	5-7 vs T	4-8 vs A	9-9 vs 8	6-3 vs A	4-4 vs 2
2-3 vs 5	6-7 vs 9	2-3 vs 2	T-T vs 3	T-9 vs 4	8-2 vs 5	2-5 vs 8	6-4 vs 2
2-5 vs 5	4-6 vs T	3-2 vs T	2-4 vs 5	9-2 vs 7	4-5 vs A	6-7 vs 9	A-3 vs 4
5-8 vs 4	4-4 vs 7	5-2 vs 2	4-5 vs 9	8-9 vs 9	2-2 vs T	T-9 vs 6	3-5 vs T
A-5 vs 5	T-A vs T	T-A vs 2	5-3 vs 8	2-9 vs 3	9-4 vs T	T-T vs 3	T-8 vs A
T-4 vs 6	8-T vs 6	9-4 vs 9	3-8 vs 4	9-8 vs 9	2-5 vs T	6-4 vs 9	A-T vs 3
4-T vs T	6-T vs 5	5-5 vs 4	2-T vs 8	8-3 vs 6	T-A vs A	2-4 vs 5	3-2 vs 3
9-2 vs 9	5-7 vs 2	5-5 vs 6	8-A vs 9	7-7 vs 2	2-6 vs 3	8-A vs T	9-9 vs T
9-8 vs A	9-7 vs T	A-2 vs 6	8-3 vs 7	6-6 vs 3	2-8 vs A	9-7 vs 4	2-A vs 2
A-A vs 7	9-T vs T	T-8 vs 2	5-8 vs A	9-3 vs 7	3-2 vs 6	4-5 vs A	5-T vs 3
7-5 vs A	8-8 vs 5	2-7 vs T	8-4 vs A	7-5 vs 9	4-4 vs 9	6-T vs 5	9-A vs 6
4-A vs 3	9-8 vs 8	7-9 vs 8	3-T vs 6	2-A vs 8	7-9 vs 9	3-3 vs 3	A-A vs 7
9-9 vs A	7-4 vs 5	4-2 vs 8	7-3 vs 5	7-9 vs 4	4-3 vs A	3-5 vs 8	2-6 vs 4

Continued on the next page



2-9 vs 9	9-5 vs 7	A-4 vs 8	3-T vs 7	T-7 vs 6	T-4 vs 5	T-6 vs 9	7-T vs 4
8-8 vs 8	5-A vs 9	3-9 vs 2	4-A vs A	7-6 vs 4	5-6 vs 6	3-T vs 3	5-A vs 8
7-7 vs 3	T-6 vs 7	4-6 vs 9	7-4 vs A	8-2 vs A	2-5 vs 6	6-7 vs 9	T-2 vs 5
7-T vs 5	7-7 vs 3	4-5 vs T	2-7 vs 5	7-A vs 4	6-2 vs 3	3-A vs 2	2-8 vs A
A-4 vs 8	5-6 vs 8	A-T vs 4	9-3 vs 8	7-3 vs 6	7-8 vs 5	9-9 vs 4	9-9 vs 2
6-7 vs T	7-A vs 7	5-T vs 9	6-3 vs 9	6-2 vs 2	4-6 vs T	5-3 vs A	2-9 vs 2
7-5 vs 7	3-A vs A	6-6 vs 6	A-8 vs 9	2-6 vs 9	7-A vs 3	T-A vs 2	9-8 vs 9
6-4 vs 4	8-A vs 9	8-4 vs 3	3-7 vs A	9-5 vs 4	4-8 vs T	3-5 vs 7	8-2 vs 8
5-A vs T	8-4 vs 7	2-7 vs 2	2-A vs A	8-6 vs 4	A-T vs 3	2-6 vs 2	T-A vs 2
4-8 vs 4	3-T vs 5	9-5 vs 6	T-6 vs 2	T-A vs 5	2-9 vs 3	6-4 vs 7	2-7 vs 4
4-8 vs 3	8-7 vs 8	A-8 vs 3	5-A vs 3	8-T vs 3	3-5 vs 6	2-4 vs 7	8-3 vs A
7-3 vs A	7-4 vs 7	T-7 vs 6	6-T vs T	2-4 vs 5	5-9 vs 8	7-7 vs 7	9-6 vs A
2-A vs A	7-A vs 7	2-8 vs T	T-5 vs 8	7-A vs 6	3-2 vs 4	6-A vs 7	2-4 vs A
6-7 vs 7	A-9 vs A	4-4 vs 4	A-5 vs 7	T-A vs 5	5-2 vs 3	4-A vs 7	6-2 vs 6
T-6 vs 7	7-7 vs 2	A-6 vs A	T-8 vs 2	5-8 vs 3	2-7 vs 6	8-6 vs 4	3-6 vs 6
A-6 vs T	2-A vs 4	8-6 vs 3	2-T vs 3	3-6 vs T	A-2 vs 2	7-A vs 5	4-4 vs 7
T-T vs 6	3-9 vs 6	9-7 vs 6	2-5 vs 5	T-7 vs 7	5-9 vs A	9-A vs A	T-2 vs 4
2-A vs 8	8-8 vs 5	4-A vs A	2-7 vs 2	4-6 vs 3	5-3 vs 9	4-8 vs A	T-7 vs 4
6-8 vs 4	A-9 vs 4	2-7 vs 3	4-T vs A	4-A vs 6	7-7 vs 5	T-2 vs A	T-5 vs 6
2-6 vs A	3-T vs 4	5-3 vs T	6-8 vs 6	8-8 vs 9	8-3 vs A	8-2 vs 4	7-A vs 8
3-T vs 4	5-8 vs 7	2-5 vs 7	6-3 vs 6	5-3 vs 9	A-2 vs 9	5-9 vs A	3-A vs 9
8-4 vs 3	8-3 vs 5	7-4 vs 9	2-A vs 8	6-T vs 4	4-A vs 9	A-8 vs A	A-7 vs A
2-2 vs 6	3-6 vs 2	2-6 vs 5	6-6 vs 7	6-4 vs A	9-7 vs T	3-3 vs 8	2-9 vs T
6-7 vs 4	6-6 vs 3	T-6 vs 7	9-2 vs 4	A-A vs T	2-9 vs 4	A-6 vs 9	T-3 vs 8
6-5 vs T	3-T vs T	T-7 vs 4	2-9 vs T	2-5 vs T	2-3 vs 4	2-2 vs 9	6-6 vs 7
7-6 vs 2	6-T vs 7	5-8 vs 4	T-8 vs 8	4-2 vs 7	4-9 vs 6	3-5 vs 2	4-8 vs A
T-9 vs 4	9-2 vs 7	8-9 vs 9	2-9 vs 3	9-8 vs 9	8-3 vs 6	7-7 vs 2	6-6 vs 3
9-3 vs 7	7-5 vs 9	2-A vs 8	5-8 vs 3	2-T vs 7	T-8 vs 4	2-8 vs 3	7-7 vs 3
8-3 vs 2	5-8 vs A	5-4 vs 3	7-4 vs 2	9-3 vs 5	T-2 vs 4	6-A vs 9	T-5 vs 3
8-2 vs T	3-6 vs 2	T-2 vs 3	T-3 vs 2	8-7 vs 5	6-7 vs 8	5-4 vs 7	2-T vs 2
A-2 vs 2	A-2 vs 3	A-2 vs 4	A-2 vs 5	A-2 vs 6	A-3 vs 2	A-3 vs 3	A-3 vs 4
A-3 vs 5	A-3 vs 6	A-4 vs 2	A-4 vs 3	A-4 vs 4	A-4 vs 5	A-4 vs 6	A-5 vs 2
A-5 vs 3	A-5 vs 4	A-5 vs 5	A-5 vs 6	A-6 vs 2	A-6 vs 3	A-6 vs 4	A-6 vs 5
A-6 vs 6	A-7 vs 2	A-7 vs 3	A-7 vs 4	A-7 vs 5	A-7 vs 6	A-7 vs 7	A-7 vs 8
A-7 vs 9	A-7 vs T	A-7 vs A	A-8 vs 2	A-8 vs 3	A-8 vs 4	A-8 vs 5	A-8 vs 6
2-2 vs 2	2-2 vs 3	2-2 vs 4	2-2 vs 5	2-2 vs 6	2-2 vs 7	2-2 vs T	2-2 vs A
3-3 vs 2	3-3 vs 3	3-3 vs 4	3-3 vs 5	3-3 vs 6	3-3 vs 7	3-3 vs T	3-3 vs A
4-4 vs 2	4-4 vs 3	4-4 vs 4	4-4 vs 5	4-4 vs 6	4-4 vs 7	4-4 vs T	4-4 vs A
5-5 vs 2	5-5 vs 3	5-5 vs 4	5-5 vs 5	5-5 vs 6	5-5 vs 7	5-5 vs T	5-5 vs A
6-6 vs 2	6-6 vs 3	6-6 vs 4	6-6 vs 5	6-6 vs 6	6-6 vs 7	6-6 vs T	6-6 vs A

Table 6. Practice hands for basic strategy.

Chapter 11

Dear Diary ... Losing Sucks

Some of the journals I kept from my earliest days show just what I was up against. On one page would be an entry like: "Stratosphere, 2 hours, +\$270," and then on another page I would write: "Binion's, watch out for Stephanie, lost big." I had no idea why I was writing down the information, but I had an instinct that I was supposed to be keeping track. It turned out that those notes were essentially worthless and I never transferred them to a more permanent record. When I finally decided the time had come to determine the worth of what I was doing for the long run I went for the basics: simplicity and accuracy.

Now when I go to a casino, I track the conditions for the particular game I played, the date, the total number of hours I played, how much I tipped, and my result for that session. I also keep running totals of cumulative hours played, winnings (or losses) and my over-all result expressed as an hourly wage.

Our hero Fred is learning to be a good gambler: Table 7 is an excerpt from his journal. In general, if you are not a card counter and intend to play for a long time at the same local casino, you will quickly get to know the dealers and pit managers. If you are more inclined to take weekend trips to various casinos, you may also want to include a column for comments. If you also vary your bets, you might decide to include a column for your bet spread, putting in values like \$5-\$60 or \$25-\$100, whatever the case may be.

The bottom line is the cumulative \$/hour. In this case, Fred played a total of 34 hours and won \$417, for an hourly wage of \$12.26 during this period. Fred also knows that he tips at a rate of \$4 per hour, so that he actually made $\$4 \times 34$ hours = \$136 more than he logged into his journal, but that money was given away as tips.



You need to be absolutely diligent about making entries in your journal. Write them down as soon as you get home, even if it is 2 AM. Include everything. No matter how much you want to pretend the previous night's losses didn't happen, enter them correctly. You must know the truth about where you stand with the game, and the only path to this truth is your log. Remember to only show the log to your husband or wife when you are ahead at the moment, and keep it to yourself the rest of the time.¹

One thing your journal should not be is a pile of trip reports. Many books recommend this approach and include forms that you can copy and fill out at the end of each trip. The problem is that all these reports end up getting stuffed in a shoebox, or they get destroyed or lost, and very rarely will you sit down and figure out what all the reports mean for you (it is like doing your taxes only nobody cares). I recommend a streamlined version of a journal, in which you make an entry on a single line for each session. It is best to either buy a cheap accounting journal or design a spreadsheet, but do not mix and match. Stick to one format and be absolutely diligent and accurate in your record keeping.

#	Date	Game	Casino	Hrs	Result	\$/Hour	Total
1	8/03/04	6D, DOA, DAS, S17	MGM	4	(\$265)	(\$66.25)	(\$265)
2	8/04/04	1D, DOA, H17	LV Club	4	\$670	\$167.50	\$405
3	8/04/04	1D, DOA, H17	4 Queens	5	(\$110)	(\$22.00)	\$295
4	8/05/04	6D, DOA, DAS, H17	NYNY	5	(\$11)	(\$2.20)	\$284
5	8/05/04	6D, DOA, DAS, H17	Mirage	5	(\$175)	(\$35.00)	\$109
6	8/06/04	2D, DOA, DAS, H17	Caesars	4	\$101	\$25.25	\$210
7	8/07/04	2D, DOA, DAS, H17	Caesars	3	\$154	\$51.33	\$364
8	8/07/04	6D, DOA, DAS, S17	MGM	4	\$53	\$13.25	\$417
			Totals:	34		\$12.26	\$417

Table 7. Excerpt from Fred's journal detailing his last trip to Las Vegas

1. I feel compelled to say: "just kidding," but there is content to this suggestion in some domestic situations.



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The milepost at which you can start considering your results as representing some sort of long-term description of the level of your play begins when you have completed 1,000 hours of play. If you are playing perfect basic strategy, you will see wild fluctuations in your running totals, but after 1,000 hours, which is about 100,000 hands, or 10 years in the blackjack zone, the results begin to become predictive. After about 10 years, you should see that you are losing at a rate of about \$400 per year if you are flat betting \$10 per hand and not tipping. If there is a small defect in your play, it may not show up after only 10,000 hands, but there is a good chance you will see it after 100,000.

You are now ready to begin playing for the long run, to permanently enter the blackjack zone. You know basic strategy for the game you are playing, and you are committed to maintaining your game at a high level. You will be impeccably honest in your record keeping, and will not be discouraged by short-term fluctuations. All the pieces are in place, and you are ready to go into a casino and lose money (very gradually, I hope).

This chapter leaves you playing the same way every time you sit at the tables, while you carefully keep track of the outcome; a world without choice that soothes and nurtures you. In theory, you have everything you need to live a long and happy life playing blackjack as a hobby. But the truth is that there is much more to it than basic strategy and journal keeping. So now we move on, and the choices will flood your life once again.



Part 2

The Art of Playing in a Casino





Chapter 12

Choosing the Game

You have the ability to choose. That is the first and most powerful rule at your disposal in life and at blackjack. But in blackjack, you will never choose how to play a hand, because you know basic strategy and are committed to it. Rather, you will choose the game, the casino, the dealer, your seat, your bet size, your tips, to ask for comps, to play side bets, to indulge in drugs or alcohol, to get enough sleep, to talk to other players or casino personnel, and finally, you will choose when to leave the game. This chapter is about making these choices, and about their real impact on your bottom line. We begin our discussion by exploring the choice of the game in more detail.

In practice, what does it feel like to play the six deck shoe game at the Horseshoe (-0.76%, DOA, H17) versus the six deck shoe at the Mirage (-0.31%, DOA, DAS, S17, RSA, LSR)? In a single night of play, if you are flat betting \$10 for 4 hours, at 100 hands per hour, this difference will cost you about \$4.50. That's not much, and you might thoroughly enjoy the ambiance of the Horseshoe over that of the Mirage (I used to until Harrah's took over managing the Horseshoe and ruined a perfectly grand casino). You make the choice to play the six deck game at the Horseshoe, and that's just how it is going to be. A lifetime of playing at the Horseshoe instead of the Mirage will cost you about \$22,500 (if you flat bet \$10 per hand and play 10,000 hands per year for 50 years). That's more than I want to pay, but you have made your choice.

At the Horseshoe you will have more days that are losers, and fewer days that are winners. The game itself will definitely feel more like a losing game than an even game. The rule H17 at the Horseshoe will help the dealer make big hands starting with A-6, so you will be losing more when this



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situation comes up. Not being able to DAS will take away your opportunities for hands with large payoffs, so the results will be flatter, and more consistently down. The omission of DAS helps the Horseshoe avoid losing days and generates more consistent profits from their tables. Not being able to re-split your aces will also tend to flatten your results. The game will not generate much excitement, and most of the players will be quick and accurate.

At the other end of town, the game at the Mirage will have more players who don't know basic strategy and are spending time contemplating their moves, so the game will be considerably slower. There will be more decisions to make (for example, to surrender or not, more doubles, more splits), and more errors. Because of the type of player at the Mirage, you will see huge swings happening all around you, but your flat \$10 bets will also undergo larger swings. You will have fewer nights when you have a loss, and more nights when you have a win. Your winning nights and your losing nights will each be for larger amounts. You are likely to run into tables that have cheering crowds and huge winners and losers (which is exactly the sort of thing the Mirage wants).

Why can the Mirage afford this game, when it clearly has enormous expenses compared to the Horseshoe? It is simple; less experienced players give all the advantage back by not knowing correct basic strategy. The Mirage pulls in about 2% on its blackjack tables, the Horseshoe about 1%. The Horseshoe needs every bit of its advantage to make a decent profit off of the solid basic strategy players it attracts.

There are some Strip casinos that offer very bad rules. They want it both ways - both income from the tables and additional income from the mistakes of their clientele. The worst game on the Strip as of this writing is at New York, New York with their double deck game (-.72%, D10, H17, LSR). It must be the billion dollar price tag on the hotel that has pushed them to offer this atrocity. The tables are full of people playing \$25 minimums and having a good time. I



hope you aren't one of them. I don't count either Superfun 21 or 6:5 as variants of the game to be considered, since you will never play these games.

At one casino where I play quite frequently, management told me they had decided to change from D10 to DOA. After the change they noticed an increase in the casino's blackjack profits, even though the change has a negative expectation for the casino of -0.26%. Where there is more freedom for the player, there is more opportunity for error. More players used this rule to make incorrect doubles than used it to make correct doubles. Such errors would not be the norm in downtown Las Vegas, but they certainly are everywhere else.

If you are playing basic strategy, then you know it is a losing game. So you must be playing just to have some inexpensive fun. A huge part of the fun are those big wins, when you, just temporarily, start believing that fate has somehow chosen you of all people to receive her charms. It is also a thrill to lose big, and you had better get used to it because it is going to happen all the time. Big swings like this are collectively termed "variance" and are what keep people coming back to casinos. If not for the double downs, splits, and blackjacks, the game would be a flat and dull losing proposition.

When you find the game you like, notice whether it includes rules like DOA and DAS, which yield a larger variance, or if is more like the game at New York, New York or Horseshoe, which is a slow and steady winner for the casino. The rules you choose say something about who you are as a person. You can get to the same destination in many ways, but it is the way you get there that defines you.

As the Zen proverb states: "The journey is the destination."

Chapter 13

Choosing the Casino

You have to know what you are looking for before you can find it. What is your ideal game of blackjack? Let me tell you mine.

I appreciate a very fast and accurate dealer. I love to play heads-up, with no one else at the table. The game can be any number of decks, but I want great rules (better than -0.40%) and at least 70% of each deck (or shoe) dealt out between shuffling. I want dealers who are friendly, don't talk too much, and are happy to get a \$1 tip at the end of their rotation with me. I don't want any questions about my play or unsolicited advice. I want a smoke-free environment with plenty of light and good air conditioning. I want free meals and drinks from the casino, and hopefully a free room too, if I need it. I want pit bosses who don't watch me play. I want a casino that does good work in the community, one that gives to charities, and sponsors programs for youth and the disadvantaged. I want a casino that has integrity throughout its management, does not offer rip-off games (like 6:5 blackjack, or Superfun 21), and is content with a solid profit rather than intent on exploiting its clientele.

Given all of these things, it really doesn't matter to me if I win or lose. I am having the experience I want in the environment I want to have it. Without a vision of my ideal scene, I would not be able to recognize when I have what I want.

As of this writing, the casino that meets most of the criteria of my ideal scene in Nevada is the Las Vegas Club, in downtown. The one that meets the fewest of my criteria is the Horseshoe, in downtown.

What is your ideal scene for playing blackjack? When you figure it out, only then will you be in a position to recognize it when you see it. Take the time to write out everything

Choosing the Casino



you want from a casino. You may be surprised how much you can ask for, and the question itself may open your eyes to some interesting possibilities.

LIFE LESSON: What do you really want? Knowing what you want is 51% of getting it.

Chapter 14

Choosing the Dealer

We think of the dealer as an automaton, the casino's assembly line worker creating expectation from probability. But the innocuous dealer has a great deal of power over the outcome of the game. This clout can manifest as both good and evil.

For the good part, you may be sitting across from a dealer who is sloppy, exposes cards, occasionally pays you for pushes and gives you a push when you should bust. You may be able to see under the hole-card as the dealer takes his peek, or double when you are not allowed (in a game that does not have DOA). This may be worth a little bit for a single session, and identifying a sloppy dealer can be worth a lot more over several sessions, but it is certainly nothing you can bank on in the long run.

There is some debate among players whether it is ethical to accept incorrect payouts from sloppy dealers. It is certainly legal. As an advantage player, I recognize these payouts are part of my long-term profit. I encourage each individual to consider this question; it deserves an individual answer. One thing you should never do is to correct a dealer payout error to another person seated at the table. Let each person be responsible for his own ethical decisions, especially if those decisions have no direct consequence to your life.

There are many professional players who specialize in locating dealers who are prone to errors and exploiting the defects in their procedures in a wide variety of games. The names of these dealers are passed around on private web sites and in certain underground publications. Pay attention to the dealer; you might find he is nicer than you expect.

It is too bad the reverse isn't true at casinos. You have to protect yourself from dealer errors that hurt you, so pay attention and double-check the dealer on every hand. You



also have to identify dealers who are purposely cheating you, and that's the evil part.

Let's get into the head of a cheating dealer. Suppose you are a magician specializing in card manipulation (that is, a "mechanic"). You have been performing at kiddie birthday parties for too many years and are tired of the brats. You are looking for a sure fire way to make a lot of money with your expertise at card sleight-of-hand. So you move to Las Vegas and you train to be a blackjack dealer. Then you begin cheating.

There are dealers who steal directly from the casinos, and there are dealers who steal from players on behalf of the casinos. Either way, it is going to hurt your bottom line. In fact, dealer cheating is the single largest source of stealing, on a cash basis, that casinos battle. There are many blackjack professionals who are convinced that cheating is rampant among dealers in Las Vegas and in hand-held games everywhere. A dealer named Dustin Marks wrote several books about his successes as a cheating blackjack dealer.¹

I am not aware of any specific instance when I was intentionally cheated (dealer errors are common, though), but deception is part of the cheater's intention. A little knowledge about how dealers cheat can go a long way towards helping you to protect yourself.

The safest game you can play is a shoe game that uses a cut card and a mirrored device to check for blackjacks, although even this is not foolproof. If, however, you prefer a handheld game, either single deck or double deck, then you had better learn to check out each dealer as he begins dealing to you, and then watch the dealer carefully for the duration of his stay.

The first way dealers cheat is by playing with a friend or partner who is posing as an anonymous gambler at the table. The dealer then deals seconds to the player (if necessary) to

1. Dustin Marks was a "professional" cheating blackjack dealer in the late 1980s who beat the casinos using the techniques described in his books. Marks was never caught. He has appeared on Real TV, the Discovery Channel, the History Channel, the Learning Channel, and Hard Copy discussing his exploits.



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guarantee that he will win more than his share of hands. This arrangement would seem to not affect you, but it does. The dealer knows that if the tables he is working routinely lose money, he will come under suspicion. Therefore, he deals seconds to assure that other players lose more than their fair share of hands, so that the bottom line for the table is kept in check.

This may come as a shock, but did you know that some casinos are still controlled by the mob? If a casino is in the business of laundering money, then they may desire that a specific player win his illegitimate mob payoff. I was once at a casino and accidentally overheard a pit boss say to a dealer, a card sharp draped in gold jewelry: "You see that guy over there in the hat? Table 3, seat 2. I want you to take care of him." I left the casino immediately and did not stay around to see the payoff take place.

How do you detect cheating? A quick lesson on how to deal "seconds" is in order. To begin with, you must use the "Mechanic's grip." The dealer holds the deck face down in his left hand. His left thumb is on top at a 45° angle, pointing towards the right front corner. This thumb is then used to press back the top card so the dealer can peek at its value before dealing it. The index finger is in front at the right front corner of the deck. The base of the thumb is in contact with the opposite left lower corner. The cards are gripped between these two corners and are held by the index finger applying pressure across the diagonal to the base of the thumb. The third, fourth, and fifth fingers help keep the deck in place on the right side. The deck is not resting, but is slightly above the dealer's palm.

If the dealer wants to deal the second card to a player, he uses his thumb to push back the top card about half an inch, then the thumb of his right hand slides across the card underneath the top, which is now partially exposed. This pulls out the second card enough to be grabbed by the dealer's remaining fingers and dealt to the player. You might try dealing a



few seconds, so you can get a feeling for how it is done, but you will most likely be clumsy and several cards will fly out of the deck. These dealers, however, are professional magicians who can deal seconds so well that they can't see it themselves.

If you spot your dealer using the mechanic's grip you should immediately be on guard. The next phase, however, is the most difficult: detecting the cheating. You simply will not see it take place, so you have to rely on a different sense, your sense of hearing. When a non-cheating dealer deals a card, it is slid off the top of the deck and makes almost no sound at all. A second, however, makes a very distinct sound - if you want to hear the sound, simply place a piece of paper between two others and then remove it very quickly. You will hear the hissing of paper rubbing against paper. That's the sound you have to get to know, and that's the sound that gives away the dirty deed. If you hear this sound and spot the Mechanic's grip, thank the dealer very much for his kindness, and find another table. Better yet, find another casino.

Besides profit, there is another reason dealers cheat - simply because they can. They are bored and enjoy having the power to cheat you. Cheating can be caused by vanity as easily as greed. If you are the least bit suspicious that there is cheating going on, find another dealer or casino. It is simply not worth it to take the chance.

Dealers can cheat you without using card manipulation. There are at least two sources of this to be aware of. The first way is called preferential shuffling. Some dealers know how to count cards, so they know when the remainder of the deck is in your advantage and when it is in the casino's advantage. In the long run, these variations in advantage will be evenly divided. But the cheating dealer, aware that the deck is in your advantage, can decide at his whim to shuffle the deck. This leaves you with more bad decks than good, and creates a huge edge for the casino.

The only way to protect yourself against preferential shuffling in a hand-held game is to learn card counting, and



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pay attention to the dealer's decision to shuffle. Many dealers use a preferential shuffle to encourage extra tips from players they believe to be card counters, dealing an extra round only if a dollar tip is given. Frequent tipping will quickly bankrupt the counter, so the experienced counter will immediately find another game. The non-counter, on the other hand, will just get hammered by bad hands.

The next way to cheat the player is to give incorrect payoffs or to purposely miscount the values of the hands. The dealer only needs to identify a single player per shift who is not very quick about counting his own hand. Make sure you are not that player. Always double check the dealer's counting and payoffs, and don't hesitate to call the cards back if you think the dealer has miscounted. It is your money out there, so take the time to defend it!

At most casinos dealers do not have pockets and can't hide a chip that they might decide to palm. If you notice that the dealers at the casino have pockets, be especially careful: the dealers may be palming chips right off the table. Is that stack of eight green chips you bet now only seven high when it is being paid off? Amazing acts of magic can and do happen, so beware!

The subject of cheating by players and dealers is vast, and its complexities are beyond the scope of this book. This introduction is meant to bring to your attention the real possibility that sooner or later a cheating dealer is going to target you.

Because dealers are capable of both good and evil, I recommend playing at the same casino and getting to know the dealers. Every time you sit across from a new dealer you have a big assignment, and that extra work can detract from your enjoyment of the game. The dealer is the automaton interfacing between you and your expectation. Do your best to insure that the dealer is having no influence, good or bad, over that expectation.

Chapter 15

Choosing your Seat

Many players think that seats can be hot or cold, come with varying responsibilities, and that the player's expected return will vary based on the seat he chooses. This is absolutely false. For the basic strategy player, all seats are equal. If you play 1,000,000 hands in each seat, you will get almost identical results, and you will be losing at the expected rate. The long-term expected value is exactly the same, no matter which seat you choose.

Being a card counter, I ideally want to sit at third base. I want to see as many cards as possible before I make my decision. I may then vary my strategy, hitting 7-5 against the dealer's 6, or standing on T-6 against the dealer T, if the numbers dictate that play. There is no other seat that yields the advantages of third base for the counter. But there is a definite social cost for playing third base. Players often become angry at me for "taking the dealer's bust card" or "ruining the order of the cards." They assume that I hold the responsibility for the outcome of the hand, and I suppose I do, but so does every other player sitting at the table.

Many players believe it is a team game, that all the players have to make the right moves or else the dealer will get better hands and make hands that he shouldn't. This is nonsense. We discuss this mythology later in the book, but for now the thing to be aware of is that, even playing basic strategy, each seat comes with a price tag that may affect your enjoyment of the game.

When you play perfect strategy, you will be doing things like hitting A-7 against T, or 7-5 against 3. Either of these correct plays is likely to anger some players, especially if you are at third base. When Fred, sitting to your right, complains that you took the dealer's bust card after you hit 7-5 against the dealer's 3 and bust, you can smile and tell him you just



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play the way the wind blows (or else swear at him and run!). Attempts to explain your position are pointless, because Fred knows how to play. He's been playing since before you could even pick the cards up, and you're not about to teach him something he doesn't know.

Yesterday I called over the pit boss to break up a fight between Fred and someone who made a correct basic strategy play. I felt like splitting T-T against 5, just to prove the point that each player is free to make whatever play he chooses. But, I am most concerned with being a good citizen at the tables, so such ego driven revenge is routinely suppressed.

A different Fred was sitting to my right earlier today, and complained bitterly when I hit T-2 against the dealer's 6. My tactic was to ignore Fred and instead engage the dealer (one of two dealers I know who are well versed in card counting) in a high-level discussion about the various probabilities associated with different outcomes. I used all the numbers that were fresh in my mind (as I am engaged in writing this book). It was an impressive show. I got nominated for a Nobel Prize and two Oscars somewhere along the line. Fred then chimed in that he was an accountant and assured the dealer, "I know counters, and he isn't counting."

The closer you are to first base, the less other players will connect your play with the outcome of the round. Therefore first base is the most anonymous and most socially enjoyable seat. Also, at either third or first base, you may get the opportunity to see the dealer's hole-card. At one casino, I used to lay my head down on the table as the dealer was giving herself her hole-card. Yes, this got me kicked out of the casino. It looks funny, too, when you hit your T-8 against the dealer's 9 (knowing her hole-card is T).

Playing one-on-one, I try to determine which seat is physically easiest for the dealer's motion and sit there. Sometimes I ask the dealer where he would like me to sit. Many dealers suffer from physical injuries, sore backs, shoulders, and wrists, and will greatly appreciate your kindness.

Chapter 16

Choosing your Bet

You're off to Las Vegas to play blackjack. You're going to spend a weekend there and expect to play the standard game, with mostly full tables, averaging about 50 hands per hour. You figure you will play for about 20 hours spread over 3 days, making an even 1,000 hands. You plan to play perfect basic strategy and flat bet \$10 on each hand. What will your trip look like?

I wrote a computer program to simulate such a trip and to keep track of the final result, together with the high and low peaks of the trip, and the hand at which these peaks occurred. I then ran the program for 25 simulated trips. The results appear in Table 8. From this table it appears that a bankroll of \$1,000 will handle the swings you are likely to see. And that's a pretty general rule. You should bring along 100 times your maximum bet for a 1,000 hand trip. If you plan on betting \$50, you had better bring \$5,000 or else your trip may be cut short.

You've been betting too large for your bankroll, haven't you? And you've had the experience more than once of running out of cash and going to the bank or the ATM to replenish your wallet. You end up like so many others who vacation in Las Vegas, spending far more than you planned, because you didn't want to cut your trip short. The natural swings the game brings are much larger than most people realize, and form the basis for the game's excitement, as well as the real danger it poses to the unwary. Now you can be prepared and not let these fluctuations surprise you again. Reduce your bets and enjoy your stay.

Note that the final result, losing \$1,135 total over 25 trips, is almost exactly the predicted amount to lose for 25,000 hands, since the game is theoretically -0.40%. (Math moment: in our simulation we played 25,000 hands, and bet



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\$10 per hand, so we bet a total of \$250,000. We lost \$1,135. So, our losing percentage is $-1,135/250,000 = -0.0045 = -0.45\%$. However, getting there is made up of winning and losing trips, seeming almost random in their outcomes, with thirteen losing trips and twelve winning trips.

The average "high" for a trip is winning \$265 occurring on average at hand 547. The average "low" for a trip is a loss of \$348 occurring on average at hand 583. You will lose a bit more on a losing trip than you will win on a winning trip, and you will have a few more losing trips than winning trips.

Playing the standard game for 2 ½ years, using perfect basic strategy and flat betting \$10, you are going to play about 25,000 hands, and you expect to lose about \$1,000 in total. Strange, each trip you need to bring \$1,000 just to feel safe, and that's the same as the total amount you expect to lose for 2 ½ years. What if trip 16 was your first trip and you lost \$765. Would you then curse basic strategy and swear that I was a maniac dressed up in academic credentials and funny numbers?

Have faith in the blackjack zone; it is the only truth there is in gambling and life. Just as the way you live your life on a daily basis adds up to your happiness in life and old age, likewise, every trip you take to the tables is one small step in the one big game you are playing.

Those people who believe that you can always walk away a winner if you time your getaway should notice three trips with a high of \$15 or less, each high occurring before the 5th hand was played. Would you be able to recognize a losing trip at hand 4, when you are up \$15, and abandon your planned Las Vegas vacation?

Study this table and try to get a feeling for the natural variance of the game. Reduce your bets, be ready for big swings, and be confident that you have enough in your wallet to see you through the turbulent waves you've chosen to ride.

Choosing Your Bet



Trip	Result	High	at Hand	Low	at Hand
1	\$ 205	\$ 255	935	\$ (220)	678
2	\$ (345)	\$ 15	3	\$ (660)	540
3	\$ 125	\$ 200	969	\$ (255)	190
4	\$ (345)	\$ 115	202	\$ (375)	990
5	\$ 395	\$ 415	997	\$ (315)	421
6	\$ (165)	\$ 370	753	\$ (210)	980
7	\$ (20)	\$ 255	812	\$ (200)	275
8	\$ (210)	\$ 190	261	\$ (355)	895
9	\$ 390	\$ 455	898	\$ (175)	341
10	\$ 290	\$ 360	976	\$ (465)	51
11	\$ 245	\$ 335	986	\$ (330)	510
12	\$ (230)	\$ 165	480	\$ (270)	992
13	\$ 45	\$ 390	852	\$ (100)	73
14	\$ 365	\$ 540	894	\$ (170)	164
15	\$ 170	\$ 450	517	\$ (150)	61
16	\$ (765)	\$ 15	4	\$ (805)	984
17	\$ (245)	\$ 100	113	\$ (345)	288
18	\$ 340	\$ 470	610	\$ (220)	258
19	\$ (330)	\$ 185	253	\$ (400)	977
20	\$ (390)	\$ 120	164	\$ (460)	951
21	\$ (695)	\$ 85	138	\$ (695)	994
22	\$ (480)	\$ 10	2	\$ (800)	684
23	\$ (145)	\$ 160	100	\$ (400)	804
24	\$ 670	\$ 760	975	\$ (150)	81
25	\$ (10)	\$ 200	770	\$ (185)	932
Final:	\$ (1,135)	-0.45%			

Table 8. 25 trips, flat betting \$10 for 1,000 hands at the standard game

Chapter 17

Size Really Does Matter

The flip side of choosing your bet is determining your bankroll. Today, a professional-looking woman sitting two seats to my right (I was at third base) was wagering \$15 to \$60, almost at random, and playing blackjack the way most weak players do, giving the house about a 2% edge. She was down \$300 in about 15 minutes. I engaged her in a conversation. She told me she was an assistant to the Vice Chancellor for the California State University system. I relaxed. Her bankroll was adequate for her play. Eventually she walked away with a huge smile on her face, winning about \$500.

A rugged-looking man sitting to my right was winning hand after hand, betting \$50 or more. He was a maintenance worker for a local school district, and if I was to guess, he has a nice family with two beautiful kids. I really wanted to explain a few things to him, but rescuing other players is a quick road to trouble at the tables. Instead I just cheered for him as he collected his big bets.

Most people who play the game are not patient. They want to see something happen to change their lives that day, and it often does. The wins and losses the average player experiences are way out of proportion to his bankroll.

What do you do when you win big? Do you put your winnings into an envelope (or bank account) to help finance future trips? Or do you splurge and take your family out to a fine dinner or buy them presents? Be disciplined when you win; don't spend your winnings as if it is the casino's money and not your money. It is your money, and you will need every dollar of it at the tables.

What do you do when you lose big? Do you chase your losses with larger and larger bets hoping to get even in a cou-



ple of bets? Your family trusts you to be responsible. Take your losses with dignity and don't over-bet.

To determine your bankroll, begin by considering the amount of money you could live without today, money that you don't need to survive, that no one in your family is depending on. This amount can come from any financial resources you have: mortgages, retirement accounts, stocks and bonds, bank accounts. These are losses that even if you were to incur them, you would still be able to maintain your current level of comfort in life. It is not extra cash, but it is also not cash that you are relying on to pay the bills and feed your family. Now, write a check to me in that amount and never play blackjack. Seriously, you are essentially writing a check to the casinos in this amount, payable over the lifetime of your play. However you come up with the number, make sure you do so. That's your bankroll.

If you are planning on being a regular player using basic strategy and nothing more for the rest of your life, a total of 50 years at the tables, 500,000 hands in all, playing the standard game, then you can determine your maximum bet by dividing your bankroll by 2,000. For example, you need a \$10,000 bankroll to sustain a lifetime of flat bets of \$5.

There is a simple formula that will give your maximum bet:

$$\text{Maximum bet} = \text{bankroll} / (\text{expectation} \times \text{lifetime hands})$$

In the above example, the value \$5 was arrived at through the computation:

$$\text{Maximum bet} = \$10,000 / (.0040 \times 500,000) = \$5.$$

If you are playing a single deck game, downtown (1 Deck, DOA, H17, -0.18%), and you think you are only good for 100,000 hands, and your bankroll is \$50,000 then you can bet a lot more than you could in the above example:

$$\text{Maximum bet} = \$50,000 / (.0018 \times 100,000) = \$278.$$



The Blackjack Zone

If you are backed by \$5,000, and want to be a regular, playing 50,000 hands per year for 20 years (1,000,000 lifetime hands), and you happen to enjoy a not-so-good game (6 Decks, DOA, DAS, H17, -0.61%), then you might as well stay home, because:

$$\text{Maximum bet} = \$5,000 / (.0061 \times 1,000,000) = 81 \text{ cents.}$$

I ran a simulated lifetime playing the standard game, perfect basic strategy, for a total of 500,000 hands, flat betting \$10 per hand. The result at the end of the simulation was a net loss \$20,575. The high point of +\$570 was reached at hand 37,318, which would be sometime during the 3rd year of play. This is why you can play so long without feeling as though blackjack is really a losing game. The long run is really long. The low point was a loss of \$22,520 (at hand 488,412), towards the end of your 49th year. You are wisely playing \$10 flat bets because it is the correct bet size for your bankroll of \$20,000 at a game that is -0.40% for a lifetime total of 500,000 hands. Everything pretty much works out as planned.

Where does this leave the average player who is placing bets that are way too large for his bankroll as he plays imperfect basic strategy? It leaves him broke.

Chapter 18

Basic Tipping Strategy

At most casinos the dealers are taxed on their tips based on an IRS audit that determines their hourly tip rate. At one casino, this rate was determined to be \$12/hour. It doesn't matter how much they are actually tipped (which is significantly more than \$12/hour, according to one dealer I talked to), they pay taxes on the \$12/hour figure. This allowed me to determine the correct "IRS" tip rate. A dealer typically plays a shift of 30 minutes at a table, a typical table has 6 players. If each player at the table gave the dealer \$1 per 30 minute shift, then she would earn his IRS audited \$12/hour. Of course, this is not what happens. Instead, players who are winning give abundant tips, and losing players hoard their dwindling piles.

Recently a dealer told me that tipping has a seasonal quality. According to him, June is the worst month for tipping, while November and December are the best months. I backed up his claim by asking a pit boss to confirm his statement. He did, saying that this June has been especially dreadful. They had just had a meeting to discuss the fact that many of the dealers are struggling to meet their basic living costs. Dealers are often paid minimum wage, and earn the bulk of their salary from tips. Tips are an assumed part of their salary, so be sure to do your part.

At many casinos, dealers must share their tips with all the other dealers. Tips are placed into a metal container kept at the table, and later they are collected and divided evenly among all the dealers. Even though you think you are giving your favorite dealer a big present, you are really giving each dealer a very small gift. This hurts you a lot more than it helps them.

I encourage you to take the long run with respect to tipping. Each dealer is doing exactly the same job for you, fol-



The Blackjack Zone

lowing the same rules, and is in no way responsible for the outcome of the cards or the number of chips sitting in front of you. Treat each dealer the same and give them a tip for their service¹.

How should you tip? If you play the bet for the dealer, then the dealer will be winning at the same rate you are, which is 99.60% at the standard game. Therefore your \$5 tip will net them \$4.98; the casino coffers will get the other two cents. In the long run these pennies add up. To be most generous to the dealer, you should not play his bet. Rather, you should personally hand it to him.

I like to give the tip at the very end of the dealer's rotation, and say "thank you." This insures that the dealer will remember my tip, and perhaps me as well, helping to establish a good long-term relationship. Every non-advantage player owes every dealer a tip, every rotation (except for unusually short rotations). Of course, if a dealer is the least bit rude or you suspect the dealer of cheating, there is no obligation.

This low and consistent rate of tipping amounts to big bucks. In a year, playing 100 hours (10,000 hands) you will give \$200 in tips. In your lifetime of 50 years, you will pay out \$10,000 in tips at this rate. That's very generous and certainly will have a profound effect on your bottom line.

There are many players whose tips are way out of proportion to their winnings. I see players who, after having a few large winning hands, will bet \$5 for the dealer several hands in a row, or just throw \$5 to the dealer. That's very nice, but also very costly. One pit boss acknowledged that most players are completely unaware of the long-term effect of their tipping rate. If you are playing the standard game, flat betting \$10, 100 hands per hour, then basic strategy dictates a loss rate of about \$4 per hour. If you tip \$5 just one

1. If you become an advantage player, then tipping becomes a strategic element of play and the rules for tipping change. Strategic tipping is discussed masterfully in *Burning the Tables in Las Vegas* by Ian Andersen, Huntington Press, 1999

Basic Tipping Strategy



time per hour then you are more than doubling your loss rate. I'll come visit you in the poor house.

I want to stress that the advice in this section on tipping (like my previous advice on correcting dealer errors) is for the non-advantage player. For the purpose of keeping my books, I assume a tip rate of \$4 per hour. That's \$2 to the dealers and \$2 to the waitresses. As a card counter, this figure is a huge bite out of my long run profit. In truth, I tip whenever there is some strategic advantage to be gained by the tip, or when the dealer compliments me on my Clint Eastwood-like appearance.

Chapter 19

May I Have More, Please?

I was playing in a face-up double deck game on a river boat casino in Saint Louis. I was counting and knew that I had a tremendous edge over the casino as the dealer neared the end of the deck. I put out a bet of \$120, and was dealt 6-4 against the dealer's 2. I put down another \$120 and the dealer gave me a 5, for a stiff 15. But now I was absolutely certain that all of the remaining cards in the deck were T valued. I watched as players took hits and the dealer dealt out the T's around the table. I joyfully anticipated the \$240 payday, when, suddenly, the dealer announced that she had run out of cards. The pit boss was called over and said that they would shuffle the deck that was in the hold, and then allow the dealer to complete the hand. I complained loudly that "the flow" of the round was being disrupted. The pit boss allowed me, and any other player who wanted, to take back our bets, which of course I did, since the dealer suddenly had a very good chance of making the hand.

After the hand I left the table and went over to the pit boss. I explained (in typical counter double-talk) that I had just lost a lot of money because of the casino's error. The "flow" was in my favor and I should have won \$240; instead I "pushed." The sympathetic pit boss bought me dinner at the best restaurant in the casino. I enjoyed a steak and lobster feast in an exquisite setting, overlooking the mighty Mississippi.

This is probably not your view of comps. Instead, you are used to free drinks, a free buffet, and promotional literature arriving twice weekly announcing blackjack tournaments, cheap rooms, and a few free chips when you arrive. Such comps can easily make playing basic strategy an even game. The \$4 per hour you are losing at the table is compensated by the fact that you have no meal expenses. There are a few basic guidelines to follow to get the comps you are due.



First of all, you must sign up for comps. If the pit boss doesn't ask if you want to be rated, make sure you request it. The casino may request to see some identification, like a driver's license, in order to issue the card, or they may simply ask you to fill out a form, volunteering whatever information you choose. If you give the casino correct information, you are guaranteed a lifetime supply of exciting promotional mail, and an occasional offer that has real value.

You will then be issued a rating card that has your name on it. Every time you begin play, place your card on the table so the pit boss can pick the card up and record your session. Call his attention to it if he doesn't immediately spot it. The pit boss will make a note of the amount you buy in for, together with his estimate of the average size of your bets. When the pit boss is looking at you, place as large a wager as you are comfortable with. Often I will call the bosses attention to my larger bets. I want to make sure I am rated as highly as possible to get the maximum comps.

Next, be well known and well liked by the casino staff. Friendly chat with the boss and the dealers can lead to better ratings, and hence larger comps. You should introduce yourself directly to the bosses and learn their names. You might ask them about the various amounts of play that are necessary to receive a meal or a room. Use all of your social graces to let them know that your intention is to be a good citizen of their casino, that you like playing there, and that you have some loyalty towards them. Don't fake it. As a basic strategy player, you are playing at a casino you genuinely appreciate, so let them know how you feel. Consistent tips for the dealers and waitresses and kind words to the pit bosses are the best way to show your continuing appreciation.

Finally, ask for comps. Often simple items like cigarettes (or cigars), and items from the gift store (t-shirts, key chains, coffee mugs, and so on) are given as comps. There is no limit to what you can ask for, so you might as well try. The boss will let you know what you are good for, but only if you ask.



The Blackjack Zone

He may also tell you how much more you have to play to earn the particular comp you want.

In my experience, there is no strict rule for how much you have to play to earn any particular comp. When I was in Tunica, Mississippi, sitting at a \$25 minimum table in the Grand Casino, I was given the royal treatment. Merely placing a \$25 bet entitled me to a private game in the high roller's room, a free room in the hotel, and a meal at the best restaurant in the casino. At the Mirage in Las Vegas, \$25 is the smallest wager you can make at a blackjack table to get rated (to get a card, and hence be eligible for room and show comps).

It is always up to the pit boss or the casino host to make the final decision. The key steps are to make sure you are noticed, that you are liked, and that you ask for what you want.

Chapter 20

Don't Bet On It!

There are a number of side bets that casinos have experimented with in blackjack to add an extra opportunity for the player to part with his cash. For the basic strategy player, none of these wagers has better than a 97.5% payback (-2.5%) and all should be avoided. You may think otherwise, but casinos do not necessarily make a killing on these games either. First of all, they slow down the play at the tables, fewer hands equals less casino profit. Next, many of these games are licensed to the casinos, so a portion of the profits must be returned to the licensing companies. Finally, some of the side bets can be beaten by certain counting systems designed especially to target the particular side bet. But, until you become an expert, you should be following the

Basic Strategy for Side Bets: Never play side bets.

Here are the details of some of the most popular side bets currently available. Although basic strategy states to never make these wagers, they serve as easy illustrations of the vulnerability of games to the astute observer who is seeking an advantage over the house.

Royal Match

The Royal Match bet pays off when the first two cards dealt are suited, and the player receives a higher valued payoff when they are a suited king and queen (a royal match). The player places a side bet up to the size of his wager. There are two pay schedules that are common:

1. The player is paid 5:2 if the cards are the same suit and 25:1 for a royal match. In the blackjack zone, the player can expect to lose \$6,700 on 10,000 side bets of \$10 each (that is, the house edge is 6.7%). If you happen to play this version in a single deck game, expect to lose a lot more: the house advantage skyrockets to 10.8%.



The Blackjack Zone

2. The player is paid 3:1 if the cards are the same suit and 10:1 for a royal match. In the blackjack zone, the player will win \$1,100 on 10,000 side bets of \$10 each (the player has a 1.1% advantage in this game!). For this reason, you will not find this version in games with four or more decks. However, in a single deck game, the house maintains a 3.7% edge with this version.

There are ways to beat this side bet using counting systems, or by simply observing the cards the first round after they are shuffled. Most notably, if one suit or two suits appear in abundance early in the shoe, and no K or Q of the other two suits appear, then the odds of a match or a royal match increase dramatically in the other suits, putting this bet in your favor. To see the extremes to which this game can swing, suppose first that you are playing with three other players and in the first hand of a single deck game all of the spades are played out (dealer draws A-9, you get T-2-5, player 2 gets J-3-Q, player 3 gets K-7, and player 4 gets 4-6-8). This leaves 39 cards in the remaining 3 suits. In this situation, playing the 3:1, 10:1 royal match game, you will win \$2496 for every \$1,482 you bet, for an edge of 68.4% over the house! But what if in the first hand, every K and Q in the deck was dealt out, leaving a deck with 44 cards devoid of royalty? In this case you will win \$1,320 for every \$1,892 bet, for a house edge of 30.2%.

Super Sevens

The player places a side bet up to the size of his wager, and is paid according to the following schedule:

- First card is a seven pays 3:1.
- First two cards are unsuited sevens pays 50:1.
- First two cards are suited sevens pays 100:1.
- First three cards are unsuited sevens pays 500:1.
- First three cards are suited sevens pays 5000:1.



These payoffs are not cumulative, for example a 7-7 does not pay both "first card is 7" and "first two cards are seven." This game is very profitable for the house. In the blackjack zone, 10,000 side bets of \$10 each will lose \$10,800 (the house edge is 10.8%).

However, this is also a side bet that can be beat. Consider the following scenario. You are playing the standard game at a table that offer Super Sevens, and you watch as 52 cards (1 deck) is dealt out without a single seven having appeared. You then wonder if you should take your chances with the bet. The answer is yes. You now have a 16% edge playing Super Sevens! The break even point is 23 non-7's, that is, if the first 23 cards that are dealt are each not a seven, then playing Super Sevens is an even game at that point.

Over/Under

Over/Under consists of placing one of two side bets. You are betting on whether the first two cards that are dealt to you will sum to more or less than 13 (a total of 13 always loses) with aces counting 1.

To get a feeling for the odds this bet creates, when the first two cards are dealt in the standard game, there are a total of 97,032 distinct hands that can be dealt to the player. Of these hands, the number of hands whose total is 14 or more is 45,336. When you play the "Over" side bet you will win 45,336 times for every 51,696 times you lose. This is equivalent to a house edge of 6.55%. Similarly, the number of hands whose total is 12 or less is 43,632. When you play the "Under" side bet you will win 43,632 times for every 53,400 times you lose, for a house edge of 10.07%.

These numbers show that playing Over/Under is incredibly profitable for the casino if the player is using no other means of keeping track of the cards. But, like the Royal Match, this wager can be made profitable by carefully tracking the cards. For example, if you are playing a single deck game heads up with the dealer, and in the first hand the cards



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that are dealt are A-A-A-A-2-2 to the dealer, and 2-2-3-3-3-3-4 to you, then wager every chip you have on "Over". On the next hand you will receive one of 1,892 possible pairs, out of these, 1,568 pairs will have a total of 14 or more. Thus, a bet on "Over" will win 1,568 times for every 324 times it loses, for a net edge of 65.8% over the casino! Because the "Over/Under" bet can be so badly beaten by the experts, it has become extremely rare.

Table 9 gives a quick overview of some other common side bets you will find at the tables, together with the house edge they generate. There are many other side bets you may find at the tables. With some careful thought, the experts have developed ways to gain an advantage over some of these wagers, in some cases forcing casinos to cancel these bets within hours of their being offered at the tables. But you are not (yet) an expert, so you should follow basic strategy and never play side bets.

Name	Rules	House Edge
Pair Square	The player wins a payoff between 10:1 and 25:1 if the first two cards are the same rank	5.80% to 10.68%
Sweet Sixteen	Pays based on player's first two cards. For example, a total of 16-21 pays 1:1, one ace pays 1:1, two aces pays 2:1, and a pair of 2's - 7's is a push.	2.52% to 3.62%
Lucky Ladies	Any initial player 20 point hand wins. The payoffs for particular 20 point hands vary from 4:1 to 1000:1.	11.10% to 17.22%

Table 9. Some popular side bets

Chapter 21

Lucy in the Sky Playing Blackjack

When I was a teenager I had a friend named Brian who liked to take LSD (I grew up in the 1970's in California, what do you expect?). He claimed that while on LSD he could tell me the values of the cards before they were dealt. He explained that the deck was invisible and he could see right through to the other side of each card. A CIA conspiracy was the only thing keeping a generation of x-ray seeing super card players from taking over the world.

If you could walk into a typical casino with x-ray vision, being able to see through to the other side of any card, you would still face tough decisions. What if you had 17 and you could see the dealer also had 17, and that the next card to be dealt was an Ace. Would you choose to win the present hand or to have an Ace dealt to you as the first card for the next hand, with the prospect of a blackjack to follow? What if you were God, and you always knew exactly how each deck was arranged, start to finish. Would you choose to hit your T-T against the dealer's 6 knowing that would set you up for a few extra wins two or three hands later? Even absolute knowledge requires its own basic strategy.

It is very common to hear players claim they have x-ray vision. Surely you have heard a player say, after busting his 12 against the dealer's T, "I knew it was a T, but I had to take it." Or, after getting a blackjack, he will say "I knew I should have bet more." Or, "I knew I was going to lose that hand." I don't know what kind of knowledge these players claim to have, but their actions are not consistent with it. One key feature of real knowledge is that it correctly guides decision making before the event takes place. If you know you are going to win, bet every last penny you have. If you know you are going to lose, why bother placing the bet?



The Blackjack Zone

Let's put Brian into a real casino setting. Soon he is hitting his hard 17's against the dealers T, (knowing the next card is a 4), doubling down on 13's against the Dealers A (using his x-ray powers, he determines that the next card is an 8). I can't even begin to estimate the edge Brian is giving the house with these types of deviations from basic strategy. But Brian knows his play is right, he wins \$80,000 in a matter of hours, and he doesn't listen to his friends who try and stop him from spending his college fund.

One night at Fitzgerald's in Las Vegas, I witnessed a man who was betting \$2,000 on 3 spots each hand. He had a pile of black chips in front of him about the size of the Great Pyramid; floor estimates put his winnings at about \$180,000. His friends explained that they had arrived in Las Vegas earlier that day; this man had brought \$300 with which to gamble. He had been drinking and winning all day, an incredible run of cards. Never mind his winning streak, he was now betting way out of proportion to his bankroll. The casino had him, and within an hour he had given back most of what he had won. Around 2 AM, after 14 straight hours of play, his friends stepped in and physically removed him from the table. He started yelling and flailing his arms. That a man would be so reckless with his money proved the great seductive power of casinos.

There is no such thing as luck. On every hand both Brian and this man were due the same expectation as everyone else who sits across from the dealer. Incorrect play and betting may serve them for a night (or a year), but in the end the cost of such play is very high. A coin can land heads 100 times in a row, but that doesn't change the odds for the next flip of the coin. No amount of drugs or alcohol will change the bottom line: blackjack is a long run game that requires correct play and disciplined betting. You don't win more by being drunk or stoned when you play - if you did, alcohol would not be given away on the casino floor.

For the basic strategy player with very little to actually think about at the table, moderate drinking is certainly rea-



sonable. My experience with players using illegal drugs, for example marijuana and cocaine, has absolutely convinced me that these have an immediate negative effect on the player's ability to carry on correct basic strategy. Therefore, I give these drugs two thumbs down. If at any time your judgment becomes impaired and you begin betting more on hunches or disregarding basic strategy, take a lesson from the experience and don't use whatever you are using the next time you come to the table. The blackjack zone has a large sign posted when you enter: "correct play required at all times." Learn about yourself and be honest about what you can handle.

As a solo card counter, I never play under the influence of any intoxicant. The precision with which I must continually recalculate my play and wagers does not allow a condition other than sobriety. However, I do allow myself an abundant dose of three common and legal drugs: caffeine, sugar, and adrenaline. The concentration required to play correctly is reminiscent of chess or bridge. There is simply no room for altered states.

Chapter 22

Do As I Say, Not As I Do

On gambling junkets during my younger days, I would work an entire day, drive five hours to Las Vegas, start playing blackjack at midnight and quit the next morning at 9 AM. Over the weekend, I ignored daylight and only slept or ate when I could no longer ignore their absolute physical necessity. In three days, I played blackjack for forty hours or more. Then I drove back, arriving just before the new work week began.

I once drove from Cincinnati, Ohio to Tunica, Mississippi, a thirteen hour drive, and then played blackjack for ten hours straight without food or a break. On a trip to the St. Louis riverboat casinos, I only slept one hour over a period of four days. The longest consecutive span I have spent at the tables is thirty-three hours.

In the last section we discussed the possible effects of drugs and alcohol. The most addictive and powerful drug on the planet is adrenaline. A single teaspoonful is enough for a human lifetime. It is so addictive that people jump out of airplanes, climb barren cliffs, and throw themselves off of bridges with rubber bands tied to their ankles just to get a dose. In my humble opinion, none of these thrills compares to the rush of winning or losing thousands of dollars in a matter of minutes. A little gambling induced adrenaline and you don't need sleep or food, sex or friends, exercise or sunshine.

The result of using blackjack to induce an adrenaline high is that adrenaline impairs judgment. If your play starts varying from what you absolutely know to be correct, use this guidepost as a signal for a quick exit. Don't let the adrenaline rush of a winning streak lure you into betting more or varying from basic strategy. If you are not experiencing the



adrenaline you are due when you play, then blackjack is not the right game for you. Go jump off a bridge.

The Zen approach. (Please assume a quiet meditative pose before reading. Light a candle.)

I will win or I will lose, but I am here for the experience not the result, the journey not the destination. I understand that my particular road will have its own scenery, that the view of the local statistical surroundings are the very reason I enjoy blackjack, but these surroundings are not a picture of the long run, and in the long run I know what my game will produce. I enjoy the scenery as the essence of the experience of life. Blackjack is part of my life, and I am living as a whole person. I understand that I have other needs, which include taking care of my physical body in a responsible manner.

Now, back to the tables!

Chapter 23

Misanthropic Blackjack

No matter how many other people you play with, your expectation playing basic strategy remains unchanged. Players can be hitting their 16's against the dealer 5 all night long and you still have an expectation of -0.40%. Fred to your left can double down on T-T against the dealer's A, while Fred to your right splits his 5-5, and your bottom line is the same. Indeed, if you are at a full table, you will be playing fewer hands per hour, about 40-60, so your actual loss rate will decrease. If you enjoy the company of your fellow gamblers, then finding a full table can greatly increase the bet size your bankroll justifies. On the other hand, as a card counter, your hourly income is directly proportional to the number of hands per hour you are playing. A rate of less than 100 hands per hour is simply not acceptable to most counters. Therefore we seek solitude.

I never give advice or comment on the play of another person at the table. It is easy, knowing basic strategy or card counting, to feel as though you are in a position of authority. The problem is that people may take your good advice, and then when something bad happens, they will blame you for the result. Giving advice to others has a very small upside and a very big downside.

I am very polite when other players give me friendly advice, telling me that I shouldn't have hit my 13 against the dealer's 3. They want to help me do better and are just being nice. I may want to explain that I am counting cards, that the count is very negative, which means that the number for this particular strategy variation has been exceeded, making it the correct play. But there is already enough arrogance in the world; I don't have to add mine to the pot.

Ultimately, I always want to play alone. No other game has the potential for profitability to the counter that a heads-



up game provides. I am sometimes incredibly rude: a new player sits at a table in which I have a head-on game. Immediately after he puts out his first bet and says "hi" to me, I pick up my chips and move to the adjacent empty table. This type of move effectively puts a neon sign over my head announcing "card counter playing here," but sometimes I do it anyway.

Basic Strategy for Long-term Happiness at the Tables:

- Be polite at all times.
- Never criticize the play of others.
- If you are criticized, take it without engaging in a conversation.
- Be gracious in listening to well-intentioned advice.
- Remain calm when other players get angry at your playing decisions.
- Don't give advice to another player under any circumstances.
- Avoid all conversations about correct play.
- Avoid all conversations about incorrect play.
- Do not rush other players if they are slow.
- If a player is absent minded or engaged in a conversation, ask the dealer to take the appropriate action to remind the player it is his turn.
- If a player is using profanity, inform the pit and let them take the appropriate action. Profanity is a warning signal that a player may become aggressive to others.
- Be nice to everyone.

If you follow these simple rules, you will avoid most conflicts. There will still be a few from which there is no easy escape. I was playing two spots at the table when a man sat down to my right and placed two bets, one of which was in one of the spots I was using. I allowed him to play the hand, and then asked for my spot back. His response: "go take a fly-



The Blackjack Zone

ing f**k" followed by "let's go settle this in the parking lot." I immediately asked the pit to intervene but not to get my betting spot back. It is essential that management be informed when there is an aggressive or abusive player present who may potentially cause physical harm to others. I then switched tables.

Your commitment is to correct play, not to appeasing the irrational anger of others you meet at the table. If a conflict seems to be escalating, immediately change to another table or leave the casino. It is also correct to inform the pit boss that there is a player whose actions are aggressive or intimidating. If you witness a conflict between two players, it is also correct to inform the pit. The bosses will then take the appropriate actions, if necessary, and you are free to return to the pleasures the game brings.

Chapter 24

Be Like the Wind

You've just had a great night and are up \$1,000 flat betting \$10 per hand in the standard game. Your friend starts kicking you, arguing forcefully that you should leave when you are ahead. You consider your options and, decide for one reason only that you want to keep playing. That reason: you are having fun.

One of three things will now happen. You will make more money, you will lose money back to the casino, or you will stay even. The chances of these three outcomes are absolutely not dependent on what has come before. The cards do not remember that you are a big winner. They will not conspire to get you back. The same laws that applied at the beginning of your session also apply at the end, and at every hand in between. Trust the laws and your decisions will always be wise ones.

Here are the top ten valid reasons to stop playing.

1. Planned time of departure.
2. Insufficient cash on hand to continue playing.
3. Exhaustion.
4. Hunger.
5. Intoxication is clouding your judgment.
6. Health emergency.
7. Cheating dealer/casino.
8. Rude players/dealers/bosses.
9. Senility has finally set in.
10. Your daughter is getting married and you have the rings in your pocket.

Here are the top ten bogus reasons to stop playing.

1. The game has turned cold.
2. You have hit your stop loss limit.



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3. You want to leave while you are ahead.
4. The flow of the cards is bad.
5. Lousy players are ruining the game.
6. Your session always ends when the dealer gets three blackjacks in a row.
7. Players jumping in and out are ruining the game.
8. You won enough to pay for your airfare home.
9. You can't afford to lose any more.
10. Your friend wants you to quit while you're ahead.

If you're going to end your session, do it on your own terms, for reasons having a sound foundation in logic and common sense. There is no magic going on, nothing mystical. There is simply the playground of probability and you are a child riding its swings. Enjoy yourself for as long as you like, and don't let those know-nothing grown-ups spoil your fun.



Part 3

The Art of (Debunking) Blackjack Mythology





Chapter 25

The Creation of a New Myth

Sitting at the tables day after day one hears the same thing from players: "you took the dealer's bust card," "a face always follows a face," "leave when you're ahead," "you ruined the flow," and so on. None of these blackjack myths are based on science or fact. And they are not harmless: mythology acts as a barrier keeping you from real knowledge, the knowledge that will change your odds for the long run.

We remember the times we are hurt much more readily than the times we experience pleasure. Dr. Joyce Brothers suggests that in a marriage there should be at least five compliments for each criticism. Even then, a single criticism can last years. However in blackjack, the two are almost equally divided. In fact, there is slightly more bad than good. That's why we recall the times the player hit his 7-5 against the dealer's 3, making the dealer's hand, but we don't recall the times it went the other way. If we observe one of each, then the one that hurt dominates our memory.

For most of us, our perception of blackjack is not an accurate depiction of what is happening before us. This is a hard idea to grasp. We are watching it happen, but we are inventing patterns and reasons where none exist. No amount of experience at the tables is going to make up for the natural overabundance of pain the game brings. It is this pain that inspires us to look for easy answers in the form of blackjack myths.

One of the biggest myths is the belief that luck, fortune, destiny, fate, timing, intuition, hunches, feelings, or even intimidation can alter the outcome of the game. The advertising campaign the casino industry uses to promote this particular type of mythology is one of the most successful in history. Their primary model is the (very unlucky) Marlboro



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Man.¹ From this icon, they created the macho cowboy gambler, rustling the laws of chance into his corral, and then galloping into the sunset at the precise moment he has won his maximum. Think Kenny Rogers. There are many other personalities based on this mythological theme, but they are all losers.

The gaming industry promotes and peddles all sorts of cheap fixes and flimflam, passing it off as gambling wisdom. But the laws of chance cannot be changed by the powerful arms of a cowboy, the hoots of a drunken college kid, or the graceful figure of a beauty queen. It is the desire to be a winner that brings most of us to the tables. The act of becoming a winner in blackjack requires the same effort as any other human endeavor that inspires excellence: it takes hard work, education, and practice.

LIFE LESSON: Mythology is created by pain avoidance. We create stories to explain the reasons bad things happen in life and ways to avoid having them happen again. Mythological thinking is a barrier that keeps us from seeking the truth.

1. Wayne McLaren, who posed for promotional photographs on behalf of Marlboro in 1976, died of lung cancer at age 51 on July 22, 1992. David McLean, who was the Marlboro Man starting in the early 1960s, also died of cancer at age 73, on October 12, 1995.

Chapter 26

The Power of Anecdotes

One of the most dangerous things we can do is to listen to other people tell their personal stories. The power of persuasion some have mastered causes us to buy things we don't want, vote for causes we don't believe in, use medical treatments that don't work, and worst of all, use gambling systems that lose.

There is always a winner and that winner has a personal story. If one person wins the lottery by playing "birth dates of famous people" that does not suddenly make the lottery a winning game or that strategy a winning strategy. If a player hits a jackpot in slots by always playing a machine that someone else has just left, that does not mean they have a winning system. It is just their story.

Similarly, if someone wins using a misguided system at the blackjack tables, then writes a book about it, this does not mean it is a winning strategy. Many may win using these misguided systems, but that's what we expect given the wide variance the game allows. A few might even go an entire lifetime winning using losing systems. That's exactly what's needed to sell this snake oil.

The flawed system gets a following; people who have used the system and won will shout to the world that it "works for them." When asked for proof they cite their own results. When asked for the details of computer simulations, they say that simulations can't model the real world. When asked for an argument that supports their system, they again point to the myriad of people who have won using the system. More people play, there are more winners, and suddenly there is a movement of support for the "system."

The error in thinking by those people who follow flawed systems and win is almost impossible to eliminate. The thousands who have tried the system and lost quietly wonder what



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they did wrong, what they don't understand about this "winning system." The minority of players who have won scream their admiration of their "system" to the world.

The way you can recognize a winning system is, paradoxically, by the silence of the winners. If people are winning consistently, they don't want to antagonize the casinos by broadcasting their results. Instead, they will quietly go on winning, using tested and proven methods. Card counting, shuffle-tracking, and hole-card play are proven methods. If you don't hear people shouting their results to the world, it is because they are too busy winning.

Run, don't walk, from authors that promote methods like progressions, streaks, money-management, card clumping and dubious variations in basic strategy. The list of authors that publish losing systems is too long to fit in this book.

Chapter 27

Bad Players

Do bad players have any effect on your bottom line? Recently, a player said to me: "The game is always in the house's favor, but even more so when there are bad players sitting at the table with me." What's the truth?

Suppose all around you people vary from basic strategy, employing mysterious methods involving splitting 5's and doubling hard 16's. Does your expected value change? The answer is no, not at all. What other players do has no long-term effect on your expectation, although such play certainly affects their expectation.

A dealer once chastised a player sitting to my right for hitting her 12 against the dealer's 6. Sure enough the player busted with a T and the dealer then pulled a 4, beating everyone at the table. After the dealer had finished his admonition, I asked him a simple question: "If I held those same two cards in my hands, that T and that 4, and shuffled them, which card would be more likely to come out on top?" His correct answer: fifty-fifty. He then understood my unasked question (why was he being so rude?), and angrily returned to dealing.

The cards are in completely random order. The negative drain on your bankroll caused by the bad play of others is nothing more than your over-remembering bad experiences at the cost of the good ones. The ride you have been on at the cost of the bad play of others will come out exactly even in the long run.

The myth of the bad player has only one real consequence, and that is the anger and rudeness it creates at the tables. So be nice. No one but you can change your expectation.

Chapter 28

Taking the Dealer's Bust Card

Hindsight is 20-20, and in blackjack it is even better. The dealer is showing a 6 and Fred hits his 7-5, busting with a T. The dealer turns over a T, then draws a 5, making his hand. Everyone at the table looks at Fred, who has no idea why he is so unpopular. The hand played out exactly the way it always does when someone doesn't know how to play correctly. Right and left, the more experienced players leave, they can't stand players who take the dealer's bust card.

Back it up a moment. We are in the situation where Fred has a 7-5 and the dealer is showing a 6. People at the table somehow "know" that the next card is a T, and that the card after that is a spot. So, what are the chances that what people believe to be the case is actually the case?

Out of 312 cards, we have seen three of them, the 5, 6, and 7. That leaves 309 cards. First of all, people "know" that the card in the hole is a face card. The chances of that are actually being the case are $96/309 = 31.1\%$. Next, the players know that the top card is the dealer's bust card. There are now 308 cards remaining, and 95 face cards. So the chances of this top card being T valued are $95/308 = 30.8\%$. Finally, the players all know that the card under the T is either an A, 2, 3, 4, or 5 (a card that will make the dealer's hand). The chances of this being the case are $119/307 = 38.8\%$ (there are 24 each of A, 2, 3, and 4, but only 23 5's remain).

Taken together, the probability that the scenario actually plays out according to the table's absolute knowledge is:

$$(96/309) \times (95/308) \times (119/307) = 3.71\%.$$

That is, 96.29% of the time, something else will happen and the table will be wrong. This computation shows the profound power of the negative experience to influence our collective long-term memories and help create mythology.

Taking the Dealer's Bust Card



The next card has no higher chance of being a T than any other card chosen at random from the remainder of the deck. The cards are in not in a special order designed to give bust cards at prescribed moments to the dealer. There is no such thing as taking the dealer's bust card, but there most certainly is such a thing as being rude based on ignorant and false assumptions.

Chapter 29

Even Money on Blackjack

"It is the only sure thing the casino offers." At least that's what the dealer and bosses tell us when our blackjack faces the dealer's Ace-up. Although you absolutely never take insurance, you gladly take even money. Guess what, the casino just ripped you off. Even money is insurance, nothing more, nothing less, and it is a big winner for the casino.

To demonstrate the equivalence of even money with insurance, consider the following. For even money, if you bet \$10 and get a blackjack while the dealer shows an Ace, you win \$10 on the spot. But what if instead you take insurance for \$5? One of two cases occurs. First, if the dealer has blackjack, you win \$10 for your \$5 insurance bet, and push your blackjack, a net win of \$10. If the dealer doesn't have blackjack, then you lose your insurance bet of \$5 but you win \$15 for your blackjack, again a net win of \$10. In either case, insurance has netted a profit of \$10.

When you have a blackjack against the dealer's Ace-up, taking insurance is identical in every way to taking "even money."

Let's take a time out for a little math in our standard six deck game. You have a blackjack and the dealer shows a Ace. There are 309 cards left in the shoe, 95 of which are face cards. If you don't take even money, then an average of $95/309$ times you push against the dealer, but the other $214/309$, when the dealer doesn't have blackjack, you will win \$15 for your \$10 bet. It follows that on average, if you never take even money, you will win

$$(95/309) \times \$0 + (214/309) \times \$15 = \$10.39.$$

Consequently, taking even money costs you 39 cents per \$10 bet. If you take even money 10,000 times (in the blackjack zone) then you have given the casino \$3,900. For a sin-

Even Money on Blackjack



gle deck game, even money will cost you even more, 41 cents a pop, \$4,100 in the blackjack zone. And you thought the casino was just trying to help you win.

In Chapter 9 we discussed the psychological premise behind the desire to take even money. It is worth restating here. The goal is to make money, and one consequence of that goal is to take money whenever it is offered, even if the amount is less than you really deserve. You must avoid the traps that immediate gratification sets; your goal is to be a winner.

Chapter 30

The Deuce is the Dealer's Ace

Just last week I heard this myth again, espoused by a loud young player sitting two seats to my right: "Hey dude, the deuce is the dealer's ace!" All around me, players, the dealer, and the bosses were nodding approvingly at the young man's wise words.

Was he saying that the particular decision for his hard total of 8-5 against the deuce was tough? Or was he saying that all basic strategy decisions when the dealer shows a deuce should be in doubt (for example, doubling on a hard 10 or 11)? Did he mean that dealers tend to get the same final totals with either of the two up-cards, deuce or Ace, at about the same frequency? At any rate, the phrase clearly was intoned to justify a deviation from basic strategy. This myth is surely at least as costly to the player as even money on blackjack.

Statistics to the rescue!

Table 10 lists the percentages for each final hand given the dealer up-card of either a deuce or an ace. Note the frequency that the dealer busts with a deuce up versus an ace up. That's the point.

After examining the table, you will be convinced that the deuce is the dealer's, uh, deuce.

Dealer's up-card:	Deuce	Ace
17	14%	13%
18	13%	13%
19	13%	13%
20	13%	13%
21	12%	5%
blackjack	0%	31%
bust	35%	12%

Table 10s. Likelihood of outcomes with dealer showing deuce vs. dealer showing ace.

Chapter 31

A Face Card Usually Follows a Face Card

You have a 6-5 against the dealer's A and you are wondering whether to double. Fred just hit his T-6, busting with a face card. You reason that since a face always follows a face, you should double, in violation of basic strategy.

You have a 3-2 against the dealer's T. You take a hit and are dealt a Ten. You then pass your T-3-2 against the dealer's T, in violation of basic strategy, because you know that a face card always follows a face card.

What's the truth? In a single deck game, if a face card is dealt then of the remaining 51 cards, there are 15 face cards. Therefore, $15/51 = 29.4\%$ of the time a face card will follow a face card. In a six deck game, a face will follow a face 30.5% of the time.

Perform your own experiment. Take a deck of cards and deal yourself a face card. Shuffle the remainder and then deal yourself the top card. Repeat. How often did you get another face? If you perform this experiment enough times, you will get the second face exactly 29.4% of the time.

Chapter 32

Fancy Math

There are a lot of interesting and curious parts of life that are easily modeled using relatively new areas of mathematics, most notably Chaos Theory and Fractals. I often get email that asks if these fancy theories can be applied to blackjack. I am going to say, unequivocally, they can't be used in any way to change your expectation when you play blackjack. There is no result, and there is no simulation, using any results or ideas from any of these theories that offers hope for a new paradigm (another "fancy" word) for playing the game. Casinos love it when people think along the lines of using fancy math to beat their games. Las Vegas was built from people who believe in hunches, luck, intuition, and false theories; don't let them get your money!

Usually, when someone mentions fancy math, it is in support of timing or progression applications. Timing means knowing when to get in and when to get out. If you are not counting, then your entrances and departures to and from the game will have no effect whatsoever on your long-term disadvantage. You may get lucky 10 times in a row and feel like you timed it just right, but there is absolutely nothing to this. If you are losing at a table and you leave, there is no way of knowing if you saved yourself further losses or if the cards were going to turn. The only way to know is to keep playing. Keep playing if you are getting games with a positive expected value by counting, or if you are happy losing at the normal rate playing basic strategy. Leave if you want to leave. But don't fool yourself into thinking you know something you don't.

Chaos, Fractals, Fibonacci Numbers, Philosophy and Quantum Mechanics are not the tools that will beat the game.

Probability Theory, Statistics, Combinatorial Analysis, Risk Analysis, and Computer Simulation are the right tools, and they work.



The next time someone argues that fancy math offers a paradigm for a new way to play the game don't even engage in the conversation. The truth is beautiful enough.

Chapter 33

Hot and Cold

You're about to take a seat at a table and a player says: "Don't bother playing here; the dealer is hot." You're in the middle of a shoe and everybody at the table has won a few hands in a row. "The shoe is hot." A dealer stands alone at an empty table while all around the other tables are overflowing. "The table is cold."

Bob Dylan said, "You don't need a weatherman to know which way the wind blows." But there is no wind in blackjack, and unless you are counting cards or shuffle tracking (or using some other advantage technique), there is no such thing as hot or cold. Every hand offers the same expectation.

A calculation from baseball applies here. A perfect game is thrown by a pitcher when exactly 27 batters come to bat and none of them reach first base. I assume (a ball park figure) that the average player has about a 30% chance of reaching first base (a .300 on-base percentage) on any given at-bat (either getting a hit, walking, getting on by an error, or getting hit by the pitch). Thus, the batter has a 70% chance of not getting on base. The probability that 27 consecutive batters not get to first is then $.70^{27} = .000066$. Or, to put it another way, a perfect game should occur completely at random roughly once every 15,000 baseball games. An average season over the last century had a total of about 2,100 games played by all the teams put together (this has varied over time because of the changing number of teams in the leagues). That means, on average, a perfect game should occur by chance about once every $15,000/2,100 = 7.14$ years. Over the last 100 years, then, there should have been about 14 perfect games. Guess what? Between 1905 and 2004 (the last 100 years) there were exactly 14 perfect games (we have Randy Johnson to thank for making this statistic work out, eh, perfectly).



Do perfect games in baseball demonstrate pitching excellence or merely prove the inevitability of statistical predictions? Given the names of some of the great pitchers who haven't made this list, one surely wonders.

We can think of the last one hundred years of baseball as "the baseball zone." This zone behaved just like the blackjack zone, things worked out exactly as predicted. There is no way we can predict a given day, week, or year that a perfect game of baseball will be thrown. We can only predict what will happen over the long-term.

Streaks and perfect games also occur in blackjack. In single deck, the chance that a dealer will win any given hand is 48%. The dealer will win 10 hands in a row about once every 1,540 hands. At a typical casino table with 100 hands being dealt per hour, you should expect to go on a losing streak of 10 hands in a row about once every 15 hours of play. Expect to go on a losing streak of 15 hands about once every 60,000 hands (every 6 years). And about once in your lifetime playing 500,000 hands, expect to lose 18 hands in a row.

What are the chances the dealer has a "perfect shoe?" Let's assume the dealer is playing head on in a game against one player, and that the shoe consists of exactly 27 hands (just like a baseball game). A perfect shoe occurs with a probability of $.48^{27} = .000000002$. To put it another way, one out of 500,000,000 shoes will be perfect for the dealer.

These numbers have nothing to do with "hot" or "cold;" they are simply the realization of the inevitability of statistical predictions. But the bottom line is that your expectation is exactly the same each time you play a hand, no matter which table you sit at, which dealer you are playing with, or how many hands in a row you have won or lost. And that's the way the wind blows.

Chapter 34

Leaving When You're Ahead

For the basic strategy player, you will lose money in the long run. There is no way to avoid this mathematical certainty. Your friends, however, try to tell you about money management. They want you to leave when you are ahead and to enforce strict stop-loss rules.

Here is a simple true/false test for you.

1. If you win \$1,000 in an evening, you are likely to lose it back if you keep playing that evening.
2. If you leave when you are up \$1,000, then the next time you play you less likely to lose the \$1,000 back than if you keep playing tonight.
3. If you win \$1,000 and then lose \$100 back, you should leave before you lose any more.
4. If you win \$1,000 and then leave, you have increased your long-term expectation.
5. If you win \$1,000 then the chances are better/worse that you will win another \$1,000 that same evening.

The correct answer to each question is false. The cards have no memory. The odds are always the same, every hand, every bet, every session. Time and timing are irrelevant. There are two ways to prove this point. First of all, casinos are not concerned that you leave when you are ahead - it does not change their bottom line at all. The games still pay off for them at a fixed rate: $(\text{house edge}) \times (\text{number of hands played}) \times (\text{average bet size per hand})$. Your coming or going is of no relevance to this equation. If the casinos don't win or lose money based on the timing of your departure, neither can you.

Here is the second way to prove the point. On the next page are 10 sessions I played. Try and predict the final result

Leaving When You're Ahead



of each session as winning or losing. Go ahead! Show me your psychic powers, and then look at the footnote for the final results.¹

1. Ahead \$120 after 4 hours.
2. Ahead \$315 after 4 hours
3. Behind \$220 after 3 hours.
4. Behind \$675 after 1 hour.
5. Ahead \$975 after 4 hours.
6. Ahead \$15 after 3 hours
7. Behind \$540 after 3 hours.
8. Behind \$10 after 2 hours.
9. Ahead \$720 after 2 hours.
10. Behind \$440 after 6 hours.

1. Each session listed above ended up a winning session

Chapter 35

Progression Systems are Bad

A "progression system" is a method of attempting to gain the advantage by varying bet size in a predetermined fashion, according to the result of the hand just played. For example, a well known progression system is the martingale, in which you start out betting the table minimum. After each loss, you double your bet until you finally win, then start over again at the table minimum. With a push, keep the same size bet. This seems to be a sure thing. For example, if the sequence is lose, lose, win then you will bet \$5, \$10, \$20. You lost the \$5 and \$10 bets for a net loss of \$15, but you then won \$20 for an overall gain of \$5. For a longer sequence, consider

LPLWPWLLWWLLLLLLLLLLW

You can figure out your profit very simply: it is your minimum bet times the total number of wins in the sequence, in this case $\$5 \times 5 \text{ wins} = \25 .

How can there be anything wrong with this logic? Just leave on a win and you walk away with profit in your pocket every time.

However, for many reasons, you can't always leave on a win. For example, in the previous sequence, the hand before the final win you were actually down \$5,095. Very few people can sustain this type of loss and keep on playing. The wager you placed on your final hand was \$5,120. Did you bring \$10,215 along on the trip, just in case you needed to make such a bet? What if the last hand required two splits and a double down? What if you lost it all? The situation of losing 10 hands in a row is not rare; it occurs about once every 1,540 hands, or 15 hours of play. A series of 10 consecutive losses is almost a certainty on any prolonged trip to Las Vegas.

Based on that last hand, either you leave winning \$25, or you leave losing \$10,215 (you're ruined). Why would you risk



\$10,215 (or more) on a return of \$25? A decent mutual fund will return about \$1,000 per year on the same investment with much less risk.

The net result, using a martingale (or any betting sequence) averaged over all possible sequences of hands that can occur, is that they have no effect whatsoever on your long-term expectation, but they do create a much larger variance in terms of their effect on your bankroll.

However, progression systems do change certain odds. They increase the odds you will have a winning session, since most of the time you will not have a long sequence of losses and will be able to leave on a win. This can give the appearance that they are winning systems. You may find that suddenly you are winning nine out of ten sessions. The flip side is that your losing sessions will be much larger than your winning sessions. Sometimes the losses these systems produce can be catastrophically large.

Here is a plea from one such progression system player (reproduced here with the anonymous author's permission).

“Since the beginning of the year I've been going to the casino 5 days a week. I keep a log of my losses/winnings and number of times I played. So here are the numbers: I played 100 times, I've won 72 and lost 28, and I am down \$290,000. My average bet is \$1,000 and the largest one day winning was \$22,000, and my largest one day loss was \$69,000. I can also tell you that out of the 100 times I played, at some point I was up about 99 times. The last money that I have is \$70,000, and I am willing to put the time and effort to get my money back even if it takes a year. I am not a card counter, and I need some help on a betting system or other way of risking \$10,000 per trip to win \$2,000 to \$3,000. I've read many books about money management. My mistake is that I lost about \$200,000 in four trips.”



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When Einstein came up with his famous $E = mc^2$ he did not suddenly invent a new law that didn't exist previously. He used mathematics to rigorously derive the equation, and left it to a future generation to realize its potential applications. Mathematics helps us model reality, and can be used to make reliable predictions about the effects of certain actions we take.

Other not so famous mathematicians long ago arrived at their own theorems in statistics and probability theory, which bear directly on money management and betting schemes. Here are the basic results:

- A betting scheme can't change the house edge.
- All betting systems lead to the same result: the house will win at a long-term rate of $(\text{house edge}) \times (\text{total dollars wagered})$.
- Betting systems have enormous variances, leading to higher probabilities of ruin.

To put this to the test, I wrote a computer program to model a very simple game. In it, a coin is tossed repeatedly. If the coin comes up heads you win, tails you lose. Begin by betting \$1, and double your bet until you win. After a win, begin over again by betting \$1. Thus, if the sequence is tails, tails, tails, heads, you will have bet \$1, \$2, \$4, and \$8. You won your final \$8 bet, but you lost the previous $\$1 + \$2 + \$4 = \7 . You are ahead \$1.

What happens if we toss the coin exactly 20 times? I'll call that a "session." Here are the results of a typical session:

How many tosses: 20
High point: \$7 at toss 20
Low point : -\$250 at toss 16
Final total: \$7

I then ran this program for one hundred million sessions, consisting of 20 tosses each, and accumulated the statistics. Here they are.

Average high point during session: \$10.00
Average low point during session: \$-83.68



Maximum high point for all sessions: \$20.00
Maximum low point for all sessions: \$-2,097,151
Number of winning sessions: 86,188,733
Number of losing sessions: 13,811,267
Average win at a winning session: \$7.39
Average loss at a losing session: \$46.12

From these numbers we see that this particular progression allows one to win more often, but when one loses, the losses are much larger. Moreover, the maximum high point was \$20 (winning each toss), but the maximum low point was over two million dollars! Who would seriously risk a two million dollar loss to try to win \$20? That is the danger that lurks.

Then there is the most common question of all from Fred: "What are the odds of losing x hands in a row?" Let's examine this question more closely.

Fred decides that he will be okay as long as he doesn't lose too many hands in a row. In that case he can always leave on a win, so that a progression system is sure to work. He thinks he is going to carry out some clever computation that will satisfy his instinct that he can survive the bad times ahead.

Progression systems are all based on the theory that unlikely events will never happen. But they do, all the time. And when they do, that's when Fred loses the farm. Or maybe this particular Fred never loses his farm; maybe one hundred Freds never lose their farms, they each win using a progression system. But the most unlikely event will happen, and the particular Fred it happens to will be hurt so badly by his use of a progression system that his life savings, his inheritance, his 401k, his home equity line of credit, and more, is suddenly lost in that most terrible run of luck the gods have ever bestowed upon his sacred human form.

Do you want to take the chance that you are that Fred? Lightning does strike somewhere, and you are putting your-



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self on a golf range, in the middle of a storm, with a one iron raised high in your hand when you play a progression system. The losses can be astronomical and hit you suddenly and unexpectedly. You are wiped out, not just for the session, but for life, everything, all gone, all at once.

Why would anyone play a system that has exactly the same expectation as basic strategy, but also an incredible danger associated with it? The answer is simple; it "appears" to be logical, it "appears" to win most of the time, and it "appears" to be supported by experts. However, the experts are only experts because simplicity and easy fixes sell. It is snake oil. Run, don't walk, as fast as you can from these systems. This is not advice for the advantage player, the shuffle tracker, or the card counter; this is advice for everyone who ever thought to himself: "I have an idea how I can beat the casino, what if I just double my bet each time..."

Basic Strategy for Progression Systems: Never play a progression-betting system. Never suggest such a system to another fellow human walking the face of this good earth.

Chapter 36

Playing Third Base

Some players feel as though the person sitting at third base can control the outcome of individual hands through his play. Because third base is last to draw, it is easiest to evaluate the effect of third base on the final total the dealer reaches. However, each person at the table has an equal effect in depleting the deck so that the dealer is ultimately dealt the cards he gets. But none of this matters. Your expected value does not depend on the play of others, whether at third base, first base, or somewhere in between.

No one can make the cards out-of-order, ruin the flow, take the dealer's bust card, or make decisions that hurt you. Third base is not a position of importance and control. Blackjack is not a team game.

If my expectation depended on others playing correct basic strategy, in any position at the table, then I would certainly be a big loser. Outside of downtown Las Vegas, it is very rare to meet a player who doesn't make frequent mistakes. Night after night, sitting at tables full of such players, I should be homeless and destitute by now. But I am a big winner. Their play is their business, not mine.

Likewise, jumping in and out, playing one hand then three then one again, new players arriving mid-shoe; all of these things do change the final outcomes of individual hands for both better and worse (but we usually only recall the bad times). Do not be concerned. In the blackjack zone, the total effect other players have on you is exactly \$0.00.

Chapter 37

The Session

A session is defined as a single period of continuous play. Many players feel that blackjack occurs as a sequence of sessions, some winning and some losing. Their goal is simply to have winning sessions. This means leaving when they are ahead or after having reached some preset profit goal. The assumption is that the cards are overdue to go bad: the longer the period of winning, the more likely the retribution.

Cards have no memory. They don't recognize you when you sit down, saying, "Hi Fred, you won \$350 in the last hour; it is time to get you back!" Nor do they say: "Hi, Fred, haven't seen you in two days. I guess I can be nice to you again."

The fact that two seconds, two days, or two years have passed between consecutive hands of blackjack does not alter the odds you are experiencing. They are identical (for the basic strategy player) every time you place a bet. Your expectation is always the same. The time between hands you play has nothing to do with the equation.

The truth is that you do play a session, one session: the session of your life. It begins with the first hand you played as a spunky neophyte, and ends with your last wager in the golden sunset of your gambling years. I truly hope your session is fun.



Part 4

The Art of Advantage Play





Chapter 38

The Road to Advantage Play

You are no longer satisfied to lose money slowly and consistently for the rest of your life, and you have heard rumors that blackjack can be beaten. All the rumors are true. Not only can the game be beaten, there are individuals, teams, and corporations that make millions off of the game each year.

However, the game is not being beaten by those who only know basic strategy, who think their hunches can outwit the cards, who believe in the flow or the team approach, or those who believe that various betting schemes will, by themselves, change the odds. These are the mystics, and Las Vegas was built on their misguided understanding of the game.

Who is beating blackjack? Those who understand that blackjack is not a game of pure chance, those who study and practice, those who lay careful plans, those who understand the difference between science and mysticism, and those who understand that the game is always played in the blackjack zone.

Blackjack can be beaten because it has defects. Fortunately for us, the list is not short. The most easily exploitable defects are the following:

- As cards are being dealt, the composition of the remaining cards to be dealt changes the various probabilities of the outcomes of the hands, either increasing or decreasing the house edge, and, in many cases, giving the player the edge.
- Shuffles are not truly random. Most shuffles, if studied closely enough, can be followed, at least partially. For example, if by following the shuffle you believe there is an above average chance you will get an ace on the next round, your advantage skyrockets.
- Individual dealers may have minor defects that allow you to spot cards as they deal. If you are lucky enough to be



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able to spot the dealer's hole-card, you are playing with more than a 10% edge over the casino.

- Sometimes cards get marked or bent in ways that allow them to be determined later on in the game. Knowing even one card in advance gives you the edge.

Here is where you must make a major shift in attitude. The polite approach that is designed to earn comps and keep your experience positive simply fails once you decide to be a winner. If you walk into a casino knowing how to beat the game of blackjack (or any casino game), the casino is no longer your friend - they are watching you. You have every right to be paranoid, because they are out to get you. From the eye in the sky to the pit boss to the dealers to unknown players sitting at the table beside you, your play is being evaluated constantly to see if you are "too strong" for their game. As an advantage player, everything you do must be directed towards two goals:

GOAL 1. Make as much money as possible with as little risk to your bankroll as possible.

GOAL 2. Don't get caught.

To achieve GOAL 1, you must become an expert at the particular technique you are considering, and you must understand the precise advantage your technique yields. Also, you must understand correct wagering based on your advantage. It is no good having a 1% edge over the house if you wager your entire bankroll on one bet and lose. Likewise, if your bets are too small, you will grow old long before you make any money at the game. A .300 batter in baseball can go 0 for 4 on any given day, but you would still rather have him up to bat than a .250 batter.

The philosophy behind long-term advantages is to invest your money wisely, to be aware of your risks, and to decide on the level of risk you can tolerate in working toward your particular monetary ambition. Play enough, be disciplined



enough, and you will almost surely attain your financial goals. If this sounds a bit like a stockbroker trying to sell a growth fund, it should. Many of the principles of risk management apply equally well in both situations. You are investing for the long run.

GOAL 1 is academic, it can be taught and it can be learned. That doesn't mean mastering the skill set is easy. It may require a few months of practice before you are proficient enough to venture into a casino with the advantage in hand. However, if you are already an expert in basic strategy and your goal is to become a proficient card counter, most of the workload is behind you; the remaining path is a very short one.

GOAL 2 requires that you use all your wits, dramatic skills, understanding of human behavior, and common sense. This goal is not achieved by reading books; it is the result of years of experience. Some seem to be born with these skills, but most enter the game naïve to the dangers. Fred proudly walks into a casino, head full of information about how to beat the game, and boasts to the pit boss: "I'm a counter, watch me win!" What happens next? Fred gets a tap on the shoulder from the casino security: "Sir, your game is too strong for us. You are welcome to play any other game we offer except you can no longer play blackjack." This is called a "back-off." If Fred persists, arguing over his rights, he will be read the trespass act, which informs him that if he steps foot in the particular casino again he will be arrested.

The first time this happened to me, I was staggered, and I was incredibly naïve. I thought casinos would be reasonable organizations, happy you had mastered one of their games, and would proudly show you off to their other patrons. "See, the game can be beaten!" Icons are useful to casinos; winners bring in losers. It simply did not occur to me that a casino would not allow its patrons to play one of its games by its own rules. This shock turned to anger, and this anger created a desire to make things right. I have become an advocate



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for player's rights. I strongly believe that everyone should play by the same rules. The flip side of this is that the games would most certainly deteriorate if casinos no longer had the right to prohibit advantage players from playing. This fine line will be discussed at length in the chapters that follow.

So how do you not get caught? To begin with, you will have to do everything you can to convince the casino that you are not a threat. Not only do you need the personality of a weak player, but even more importantly, you have to make the pit and surveillance crew believe you are playing the game like a weak player.

You will have to make misleading bets, incorrect plays, and give bad advice at the table. You will have to dress appropriately for the particular casino you are playing, learn how other gamblers there talk about the game, and learn the limits of behavior the pit and eye will tolerate before they start watching you. In short, you need a believable act.

Playing with an advantage is more art than science. The amount of material you need to learn to shift the game into your advantage is minute. Consider this fact. If you are playing the standard game and the first three cards dealt are three 5's, you already have the edge over the casino. In the blackjack zone, if you could convince the pit boss to burn three 5's out of the shoe, then 10,000 hands bet at \$10 each would earn you about \$100 (about a .10% edge). Not much, but it is an advantage. With careful study and by making simple observations about the cards that have already been dealt, you will be able to generate edges of 1.5% to 2% over the casino.

Chapter 39

Your Homework Assignment

The most common way of beating blackjack is the technique called "card counting." It is not as difficult as the name implies. Card counters do not count (or memorize) every card that has been played. Card counting does not require tedious and tough mental calculations. With study and practice, almost anyone can learn to count cards.

Card counting is based on the principle that there are certain cards in the deck that favor the player and certain cards that favor the casino. Clearly the player loves 9's, T's and A's. Why? For the player there will be more blackjacks, the double downs will get higher cards, and the dealer will bust stiff hands (hard 12 - 16) more often. Conversely, the favorite card for the casino is a 5 (although, all of the low cards 2 - 7 favor the casino). Note that the 5 will make any stiff hand for the dealer. Moreover, if there is an excess of these lower cards, there will be fewer blackjacks, and the double downs are more likely to get lousy cards. The only card that is truly neutral is the 8. It plays equally for both sides.

When the game begins, the advantage is exactly as advertised by basic strategy. However, what happens next is unique to blackjack. Some cards are dealt out, played, and then placed in a discard tray. Some of these cards are good for the casino, some good for the player. The card counter scans the table, and takes note of how many player-favorable cards have come out and how many casino-favorable cards have come out. If substantially more low cards have come out than high cards, then the advantage shifts to the player. And how does the counter make this work for him? The answer is easy: bet more when the advantage is in the player's favor and less when the advantage is in the casino's favor.

It is not the purpose of this book to give a careful explanation of card counting. Too many excellent books have



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already been written on the subject by some of the greats of the game. Following are my top ten book recommendations for blackjack. The one common theme is that all these books have sexy titles (remember my promise for something sexy?). My personal favorite title is *The World's Greatest Blackjack Book*. Maybe the author was looking at the "World's Greatest Dad" T-shirt he got for Father's day when the title came to him. We'll never know. Book 9 is the most recent addition to this list; published in 2004, it is an instant classic.

1. *Professional Blackjack*, by Stanford Wong, Pi Yee Press, 1994.
This book gives a complete presentation of the High-Low card counting system. Next to "Beat the Dealer," this is the most widely read blackjack book of all time.
2. *Million Dollar Blackjack*, by Ken Uston, Carol Publishing Corporation, 1992.
The story of one of the games greatest players, detailing Uston's team play in the late 1970's. It also presents two card counting systems and discusses hole-card play.
3. *The World's Greatest Blackjack Book*, by Lance Humble and Carl Cooper, Doubleday, 1980.
The definitive treatment of the easy to learn Hi-Opt I card counting system. This system is not as powerful as High-Low; however, it is easier to use and can easily be extended by side-counting Aces to a much more powerful system.
4. *Knock-Out Blackjack*, by Olaf Vancura, Ph.D. and Ken Fuchs, Huntington Press, 1998.
This book presents the card counting system that has the greatest power when compared to the amount of effort required to learn and implement the system. The count is called KO, hence the title of the book.



5. *The Theory of Blackjack*, by Peter Griffin, Huntington Press, 1999.
This book presents the detailed mathematical theory of the game. It assumes the reader is intimately familiar with statistics, combinatorics, and probability theory.
6. *Blackbelt in Blackjack*, by Arnold Snyder, RGE Publications, 1998.
A true giant of the game explains just about everything you need to excel. Among other things, Snyder discusses basic strategy, the Red 7, High-Low, and Zen card counting systems, shuffle tracking and team play.
7. *Burning the Tables in Las Vegas*, by Ian Andersen, Huntington Press, 2003.
Tools and tips for surviving as a high-stakes card-counter, including the now famous "Ultimate Gambit."
8. *Blackjack Attack*, by Donald Schlesinger, RGE Publications, 2004.
The foremost researcher in the history of blackjack, Schlesinger dissects the subtleties of the game like no other. Among his many extraordinary feats, he accurately compares the power of card counting systems in a number of different situations and he determines the true effects of rule variations.
9. *Blackjack Ace Prediction*, by David McDowell, Spur of the Moment Publishing, 2004.
Predicting when an ace will come out of the deck can allow the player to gain a huge edge over the house, as much as 50%. This incredible book will teach you how to identify and exploit the highly profitable ace.
10. *Blackjack Wisdom*, by Arnold Snyder, RGE Publications, 1997.
A compilation of more than ten years of writings that appeared in the quarterly magazine *Blackjack Forum*.



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Topics covered include camouflage, team play, system selection, legal decisions, shuffle analyses, fluctuations, rules, and casino countermeasures.

HOMEWORK: Your homework assignment is to read pages 15-79 from *Professional Blackjack* by Stanford Wong (book 1 in the list). Then skip directly to chapter 41.

OPTIONAL HOMEWORK: Don't do the previous homework assignment; instead read Chapter 40 of this book (the \$115,400 chapter). Allow this important and valuable material time to settle.

Chapter 40

The \$115,400 Chapter

The most commonly used counting system is called "High-Low."¹ In this system, each of the low cards 2, 3, 4, 5, and 6 are assigned the value +1. Each of the high cards T, J, Q, K, and A are assigned the value -1. Finally, the neutral cards are 7, 8, and 9. Each of these is given the value 0. Note that the suit of the card does not matter. As usual, we collectively refer to any of the cards T, J, Q, or K by the letter "T". Table 11 gives a summary of the High-Low card counting system.

Card:	A	2	3	4	5	6	7	8	9	T
Value:	-1	1	1	1	1	1	0	0	0	-1

Table 11. The High-Low card counting system.

To "count cards" you start with a running count of 0 with a newly shuffled deck. As each card in the deck is dealt or exposed, you take its value, 0, +1, or -1, and add that to the running total you are keeping. This gives the current running count (RC).

For example, assume that the cards that are dealt out are:

2, 7, 9, T, T, A, 3, 5, 8, T

The value each of these cards has according to the High-Low system is:

+1, 0, 0, -1, -1, -1, +1, +1, 0, -1

The RC, which always starts at the value 0 with a newly shuffled deck, takes on these values as the cards above are dealt:

+1, +1, +1, 0, -1, -2, -1, 0, 0, -1

1. High-Low is the primary card counting method presented in *Professional Blackjack* by Stanford Wong. Wong also presents a counting system called "Halves." We will not be discussing Halves in this book.



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We obtain the true count (TC) by dividing the RC by the number of decks (ND) remaining to be dealt. Thus,

$$TC = RC / ND$$

If we are playing the standard game, and two decks have been dealt out to the players, and the running count is $RC = +12$, then the number of decks remaining to be dealt is $ND = 4$. In this case,

$$TC = 12 / 4 = 3.$$

If the fraction doesn't come out even, the convention is to round down to the lower number, and never to round up. Thus, if $RC = 11$ and $ND = 2$ then

$$TC = 11 / 2 = 5.$$

If you happen to have a negative RC, then again the convention is to round down to the lower number. Thus, if $RC = -11$ and $ND = 2$ then

$$TC = -11 / 2 = -6.$$

Blackjack is very easy to beat. Any time the TC is larger than 1, you have the edge over the casino. Simply bet more the larger this value gets. Here is a simple way of figuring out how much to bet on a hand. Decide on your unit, call it U, (the smallest amount you are willing to bet on a single hand; it could be the table minimum). Then, any time the TC is smaller than 1, simply bet your unit U. But, when the TC is greater than or equal to 1, use this formula (for the six deck standard game):

$$\text{Bet size} = 2 \times U \times TC.$$

Use this formula until you reach the largest amount you want to bet, and then stay at that amount as long as the TC justifies it. When using High-Low, it is customary (but not absolutely necessary) that the largest bet be wagered at a TC of +5, and after that the bet stays the same.

For example, if your unit U is \$10 and the TC is +3, then your wager should be $2 \times \$10 \times 3 = \60 . If the TC is -2, your



bet is \$10. If the TC is +17 then your wager should be \$100 (the same wager as TC = +5). This modification of bet size with the TC is referred to as the "betting ramp," see Table 12 below.

TC:	< +1	+1	+2	+3	+4	> +4
Bet:	\$10	\$20	\$40	\$60	\$80	\$100

Table 12. Betting ramp for standard game with unit size of \$10, using the High-Low count.

I should note that there is a theory behind the betting ramp. It is called "The Kelly criterion" for betting. Essentially, the greater your edge, the more you are willing to risk from your bankroll. The formula I gave above is not a perfect match to the Kelly criterion, but it is reasonably close to optimal wagering for the six deck game. It will certainly give you a substantial edge over the house if you use it when you play.

I ran a simulation of 50 million hands of the standard game, using a unit size $U = \$10$ and the High-Low counting system, and the betting system outlined above with a maximum bet of \$100 at TC = +5. I assumed that each shoe was dealt until 52 cards (1 deck) remained². The result was that on average you could expect to win \$13.72 per 100 hands of play (per hour). This number (\$13.72 per hour) is called your expected value, or EV, and is the basis for evaluating the strength of the game and counting system you are using. We will often refer to the EV in the pages that follow. What does this mean for you?

Remember, you are playing for the long run, and for us that means a lifetime of 50 years at the tables, playing 100 hours per year, at a rate of 100 hands per hour and a unit of \$10. If you didn't learn basic strategy and played by the old mythology, you were destined to lose about \$100,000 over your lifetime, losing at the rate of 2%. By learning perfect

2. The "penetration" was 5|6.



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basic strategy, you cut that loss to only \$20,000 over your lifetime. You were still losing, though at a reduced rate of .40%. But, by using the very easy counting system given above, you can now expect to win \$68,600 in your lifetime. That is, the material presented so far in this chapter is worth about \$88,600. The material presented in this book to this point is worth about \$168,600. But we're not done yet.

Though not quite at the level of changing your bets with the count, you can earn a little bit more by changing how you play particular hands with the count. As the TC changes it reflects a change in the composition of the remaining cards in the shoe, and this directly affects certain playing decisions. You need to modify basic strategy with the count. This is called the "playing strategy."

For example, if you are using the High-Low system, then it is appropriate to stand on a hard 16 versus the dealer's up-card of T if the TC is 1 or more. We say that the play 16 vs. T has index 1. This is rule number 16 in the list below.

Here are 18 indices that you should use to change basic strategy to make it more efficient. Many more such indices are available, for example see the tables in Appendix A of Wong's book. The 18 indices presented here will get you over 80% of the power of learning all the indices in Wong's book, and are completely sufficient for most professionals.³

1. Take insurance whenever $TC \geq 3$.
2. Double 9 vs. 2 whenever $TC \geq 1$, otherwise hit.
3. Double 9 vs. 7 whenever $TC \geq 4$, otherwise hit.
4. Double 10 vs. A whenever $TC \geq 4$, otherwise hit.
5. Double 10 vs. T whenever $TC \geq 4$, otherwise hit.
6. Double 11 vs. A whenever $TC \geq 2$, otherwise hit.
7. Stand on 12 vs. 2 whenever $TC \geq 4$, otherwise hit.
8. Stand on 12 vs. 3 whenever $TC \geq 2$, otherwise hit.

3. The importance of these particular indices was determined by the groundbreaking work of Donald Schlesinger, who named them the "Illustrious 18" or simply the "I-18".



9. Stand on 12 vs. 4 whenever $TC \geq 0$, otherwise hit.
10. Stand on 12 vs. 5 whenever $TC \geq -1$, otherwise hit.
11. Stand on 12 vs. 6 whenever $TC \geq -1$, otherwise hit.
12. Stand on 13 vs. 2 whenever $TC \geq 0$, otherwise hit.
13. Stand on 13 vs. 3 whenever $TC \geq -2$, otherwise hit.
14. Stand on 15 vs. T whenever $TC \geq 5$, otherwise hit.
15. Stand on 16 vs. 9 whenever $TC \geq 5$, otherwise hit.
16. Stand on 16 vs. T whenever $TC \geq 1$, otherwise hit.
17. Split T-T vs. 5 whenever $TC \geq 5$, otherwise stand.
18. Split T-T vs. 6 whenever $TC \geq 5$, otherwise stand.

I ran another simulation of 50 million hands of the standard game adding the 18 rules for modifying basic strategy outlined above. Instead of having an EV of \$13.72 per 100 hands of play (per hour), as you did by only modifying your betting scheme, you now have an EV of \$19.08 per 100 hands of play (per hour) using both the betting and playing system.

Again, let's consider the long run, 50 years at the tables, playing 100 hours per year, at a rate of 100 hands per hour and a Unit of \$10. Recall that the betting system alone would win \$68,600 for you in your lifetime of play. The 18 rules listed above are worth about \$26,800 to you for your lifetime of play. If you use the betting and playing system, your lifetime winnings will net you \$95,400.

When you started reading this chapter, you were playing basic strategy and expected to lose \$20,000 over your lifetime. Now you will be winning \$95,400. That makes the total value of this chapter about \$115,400.

When you started reading this book, we determined that you would lose about \$100,000 over your lifetime of play. Now you will be winning almost \$100,000. That makes the information in this book to this point worth almost \$200,000 to you! And that's if your unit is only \$10. Move up to a larger unit size, play more hours, and play better games, and you quickly begin to see that you can provide a nice life for yourself as a card counter.



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There are many other subtleties that can be introduced in to this discussion: the importance of the particular rules to the counter, varying basic strategy based on the true count, and correct Kelly betting for various games. All of these concepts are extremely important, but none are absolutely necessary to your success. However, there are two other concepts that are fundamental. These are "variance" and "risk-of-ruin" (ROR).

The concept of variance has to do with how wild the ride is, not the direction it is heading. For example, if you had a day job that paid \$19.08 per hour, you could guarantee that at the end of one hour you have made exactly \$19.08, nothing more, nothing less. Your variance is \$0.00.

In blackjack, we also talk about the variance. When you play blackjack as above, you should expect that about two-thirds of the time in one hour you will fall somewhere between winning \$373.91 and losing \$335.75 (think bell curve here). Note that if you average these two numbers together, you get back your hourly wage of \$19.08:

$$\$19.08 = (\$373.91 - 335.75) / 2$$

Knowing the variance helps us understand the nature of the "long run" in blackjack. Crazy things happen, but if you play enough it all evens out.

The other important concept is risk-of-ruin (ROR). This is simply a measure of how likely you are to lose all your money, even though you have the advantage. It is a sad truth that even though you have the edge, things can go very wrong. You know that in the long run you will win at your expected rate, but in the short run you may not have brought enough cash with you to last the session or the trip or the year. That's called ruin. Knowing the risk you are willing to take with your bankroll will help you decide your unit size (U) when you plug it into the formula above for bet size.

The best book available to further explain the concepts of variance and ROR (as well as the Illustrious-18) is *Blackjack*



Attack: Playing the Pros' Way, 3rd edition - The Ultimate Weapon! by Donald Schlesinger, RGE Publishing, 2004 (book 8 in the list given in Chapter 39). These mathematical concepts may be subtle and difficult to grasp at first, but they have a profound impact on your experience as an advantage player.

Our goal is to win money, and we certainly will in the long run. However, having a big enough bankroll to support the short-term swings, and knowing the risk we are taking with that bankroll as we go through the swings, are fundamental to being a successful advantage player.

As we discussed early in this book, the journey through a new subject starts out vertically; it becomes horizontal at the point where new ideas can be expressed. With these words, you are ready to enter the world of ideas of the advantage player, you have become horizontal.

Congratulations!

Chapter 41

Ten Ways to Beat Blackjack

I am going to tell you the top ten legal ways I use to beat blackjack. Use these methods at your own risk.

1. Card Counting.

The truth is that you have to work very hard to get your 1% - 2% edge over the house as a card counter. You are easily identified by your betting patterns and play variations, and you have to play a lot. Team play or great games are really the only way to survive on card counting alone for the long run. But card counting is just the porthole to the wonders of advantage play beyond. And what lies beyond? Consider...

2. Shuffle Tracking.

This is a great way to gain an edge, sometimes as much as 3%-5% over the house. However, there are many problems associated with beating the house using shuffle tracking. First, if you are a little bit off, you can lose a lot of money. Therefore the skill level must be very high. Next, it is difficult to locate trackable shuffles; not many will share the information they have. There is no CBJN for shuffle trackers. You may exhaust yourself before you ever find a single pass R&R,¹ but they are out there. Be prepared to travel. Finally, there is not much literature on shuffle tracking, so you must be willing to do a lot of research on your own. I am not a very good shuffle tracker. I only use this method on very easy shuffles, but I am always aware of its presence, just in case.

3. Ace location techniques.

This is an offshoot of Shuffle Tracking (which can sometimes be used to track ace slugs). One way to do this is to

1. R&R means "Riffle and Restack." A riffle is when two equally sized groups of cards are interlaced with each other. This is what is commonly referred to as a "shuffle". "Restacking" means to place the riffled cards into a pile. A single pass R&R shuffle means to divide the shoe into two equal piles, grab portions from the top of each pile, riffle them, and restack them into a new pile. This is repeated until all the cards have been riffled and restacked



memorize a key card right before an ace, and, based on the type of shuffle used, you may be able to guess within a card (or three) when the ace will come out. Knowing you will be dealt an ace as your first card gives you over a 50% edge, so trying to steer a known ace can be a very powerful tool. The opportunities to use this kind of skill are rare; they depend on an easy shuffle, having the round end between the key card and the ace, and then controlling the table enough so that you (or a team mate) gets the ace. Learn how to do it for a few easy shuffles (stepladder, 1 or 2 pass R&R), and if you get the chance, pounce!

4. Front loading.

This means sitting at a location (usually third base) where you can see the dealer's hole-card as he slides it under the face-up card. Finding such a dealer is a rare but golden opportunity. Make sure you check out every dealer at every pitch game, every time you enter a casino. Stand by third base and see what you can see, then walk on. Learn basic hole-card play and get an 8%+ edge over the house. In the last three years I have found five such dealers, and I am not a full time player. I know there are a lot more out there to be found. Always look. Learn how to play this kind of game. If you find it, don't burn it out. Nurture it so that it will be there for yourself and others at a later time. Such dealers are God's gift to advantage players; we must love them and encourage them.

5. Side bets.

Know which side bets are beatable (we discussed a few in Chapter 20), and learn strategies to beat these bets. The basic strategy for side bets says never to play such bets. But playing at a game with a beatable side bet can be one of the most lucrative experiences you will ever have. Know them, study them, and beat them. Because this is one of the most common ways I beat blackjack, I won't say anything more.

6. Watch for marked cards.

This is especially strong in single deck, and slightly less so in double deck. A couple of years ago I played single deck



at a casino where the deck in play was so old, I requested a new deck: I got tired of touching other peoples slime on the cards. The pit boss refused, telling me they changed cards once each shift - that's three times per day. I was younger then. Now I would rejoice at finding such a situation. Hint. This is more likely to be the case at neighborhood casinos, and those casinos that are obviously not glamorous. However, even at a good casino some cards get marked or bent. Always be on guard for this type of information, and be ready to use it.

7. Encourage dealer errors.

Always allow yourself to be paid for a dealer error, never correct a dealer's payout in your favor, and never correct another player when the dealer underpays that person. You want the dealer to make as many errors as possible, of whatever type they happen to be. Making bets of weird sizes is one way - how much does a blackjack pay on a bet of \$135? Try to take early surrender. Miscount multi-card hands that have busted. The break-in joints (and the newer casinos popping up around the country) are the places where you will get the most from this method; it is a valid advantage play technique. Actively encourage dealer errors.

8. Observe everything.

Sometimes dealers have tells when they look at their hole-card. Sometimes other players will give you information that may help you make an insurance or playing decision. Sometimes you can ask a dealer for information and they will tell you. After the dealer checks his hole-card under a face card, ask him if it is a face card. You will be surprised how much you can read from the response. You can get far more information than you could possibly imagine by just opening your eyes to what is right in front of you.

9. Comps.

Find ways to maximize the comps you receive. There was a game I played a couple of years ago that gave your



comps based on the time you played times your average bet size. What was your average bet? It was the average of the first five bets you made after you sat down. I played my max bet for those five hands, and received a huge amount of comps for my play. You should not always play for comps; often remaining incognito is more important. But single out a few places where that is exactly what you are playing for, and play for your comps rather than for profit (though profit is good too, if you can get away with it). Do your homework on each casino you play and make the decision. Some casinos have very poor blackjack but great comps. It is well worth playing at these places, even though no one would recommend their blackjack.

And the number one way to beat blackjack ... the most certain way to earn money when you sit at the table...

10. Coupons.

There are many who make a large portion of their yearly gaming income off of coupons. When you get a players card, always ask for the coupon book. At many casinos, when you check in they give you a coupon book - always get this book. Always play the coupons you have, they are high EV, low variance plays that generate solid (if not large) profit. Always play your coupons. Look for companies that sell coupon books and buy them. Go on coupon runs. Chant the mantra ... coupons ... coupons ... coupons. You will be glad you did.

The next time you play, make it a point to beat blackjack in as many different ways as you can. The power of advantage play is in the word "advantage." Any method that gains a legal advantage is worth considering. Don't let opportunities pass you by. Fill your tool kit with plenty of skills, then apply those skills often.

Chapter 42

Entering Las Vegas

I hope that your primary objective when you go to Las Vegas (or wherever you play) is to take a lot of their money. In support of your quest, I have a few tips that I hope will put extra Benjamins in your pocket.

- **Don't play bad games**

You made it to Las Vegas, don't get impatient. You would do well to research a few games in advance. Ask your friends. Buy a copy of CBJN (see Chapter 10). Find out where the good games are. Life is too short to spend trying to squeeze a drop of water from a brick. Go to the good games. Wear good shoes, you'll be walking a lot.

- **Avoid your gambling habits and addictions**

Some of you want to play craps even though you know you can't beat the game. Or maybe you'll play some slots. Don't! If you need to practice walking in and out of a casino without gambling, do it until it is easy for you. No action, just observation.

Many of us pass the time sitting out a highly negative shoe (or when we are just tired of walking down the hot streets) by putting a few \$\$\$ down on a game we know is bad. I am certainly guilty of this. Eliminate this from your world. If you want to find another game to play that also has an edge, learn it. If you know several games, you won't be nearly as tempted to break this rule.

- **Get adequate rest and eat well**

Eat a good breakfast with plenty of carbohydrates (with apologies to Dr. Atkins). You may want to put in a lot of hours while on your little trip to Las Vegas, but those hours will be sloppy ones unless you take care of yourself. It's all about staying power. An injection of sugar and caffeine in the morning followed by a marathon of 20 hours of play and no



sleep is sure to take its toll on your wallet. You will start making playing errors (and you may think you are playing perfectly). You will get reckless with your bet sizing and over-bet. You will not notice the heat¹ you are getting. You will play in one place too long because you are too tired to move on. You will get emotional, frustrated, elated, and involved in the outcome.

Adrenaline is the most powerful drug on the planet. If you are playing while high on this drug, you are making a big mistake. Give yourself some down time each day. Do something else besides blackjack at least once each day. Get at least 6 hours sleep out of each 24 hour period and double check this often! Here is a simple equation to help you:

Too little sleep = one big problem.

- **Practice at home before you go**

Don't be lazy about it. Yes, you knew it once; you were good at it once. You could count down that deck in record time and recite basic strategy and play variations in your sleep. But be honest with yourself. When is the last time you gave yourself a refresher course? Make sure to triple check your skills before you get on the plane. If you are practicing your skills on the plane, it is too late. You will never get up to speed in time. Your skills should be excellent before you leave.

- **Have a good time**

If you are not enjoying yourself, then stop and find something else to do. You can always play another time and Las Vegas has a wide variety of activities. If you don't like it, then don't do it. You traveled all the way to Las Vegas with certain hopes for your gaming experience. If things go badly (which they do for all of us sooner or later), then walk away and let some steam off doing something fun. Return when you regain the proper attitude to perform at your peak level.

1. "Heat" is the generic term used to describe being watched closely by the dealer, pit personnel, surveillance, or undercover agents in a casino.

Chapter 43

The True Cost of Making a Mistake

About my third trip out as a new young card counter, I was in a casino that happened to have a great game and no heat. It was a double deck game, dealt down to 15 cards, dealt face up, with great rules. Professional counters from around the world had descended on the game to burn it out.

I was there with a friend, playing from a joint bankroll, and I had done very poorly over a span of our first few days. My friend was getting suspicious that my game was not very good, so he asked one of the professionals to watch me play. They watched and they watched. Finally, the hand came. The count was positive, but I miscomputed the true count. I had A-8 against the dealer's 5. I doubled down. I lost two max bets (I would have won had I not doubled). The old pro shook his head and told me that I had just made a mistake; the count did not justify my double. He said that the margin in the game was so small, that even one mistake like that and I could lose the edge. I still recall his exact words: "I am not confident that you are playing with an advantage." My friend concurred, and the next day he disbanded the partnership.

You can tell that this has eaten away at me for years. I knew then that the mistake was incredibly small, but I didn't yet fully understand the blackjack zone. If I had objected at the time, I would be talking back to a pro, a guy who made his living by the game, a person clearly deserving of respect. The cessation of my first team adventure had nothing to do with my losses. The real problem was that neither my partner nor I, both being new to the game, had the stomach for the very kinds of losses that we had created a joint bankroll to survive.

Here is my analysis of the maximum cost of that mistake. I was playing double deck, but let's assume it was the standard six deck game where the mistake is even more pro-



nounced. I had A-8 and the dealer had 5. I doubled when I should have stood. Off the top, standing has an expected return of .443 units per unit bet, whereas doubling has an expected return of .414 units per unit bet. I lost .029 units on each of the 8 units I bet, so that altogether I lost .232 units. Since our unit was \$10, this play, because of which our joint bank was disbanded, cost at most \$2.32.

Because the count was very close to the index for the actual play, the mistake truly cost much less than \$2.32, maybe only a few pennies. However at the table that night, it cost \$240 (I would have won \$80 instead of losing \$160), and it cost a partnership.

What is the real cost of mistakes? How many mistakes can we make per hour and still make a profit? Which mistakes don't matter and which do? Can lousy players win? All of these questions can be answered in the blackjack zone.

For the purpose of this example, we will be using the standard game, dealt to a penetration of 4.5 out of 6 decks. These simulations will use High-Low with a bet spread of \$10 to \$100. I will use every index for strategy variation with a true count between -10 and +10.

According to a 50 million hand simulation I ran, this game returns \$14.65 per 100 hands. This is a very weak game because of the poor penetration; one most of us would not play seriously to begin with. But even with this starting point, you will see just how many truly awful mistakes we can make and still be beating the game.

Now lets start making some mistakes and see what happens. In coming up with these mistakes, I will use my own experience, the mistakes I continue to make. OK, not very often, maybe one or two per trip, but they continue to happen. In this study I am going to make a bunch of them. I will not focus on strategic mistakes, like being underbankrolled, over-betting, using an incorrect bet ramp, two hands vs. one hand, etc. Ultimately the strategic mistakes cost the most. We are talking beginner stuff here.



Among the mistakes I make are the following:

1. Completely forgetting the count.
2. Transposing the count (changing it from positive to negative, or vice versa).
3. Not computing the TC correctly, leading to a minor bet or strategy flaw (like the A,8 vs. 5 above).
4. Using the wrong basic strategy play.
5. Adding up the value of the hand incorrectly and calling for a hit/double/stand at the wrong time based on this miscount.

Let's get right to the most serious mistake. This is number 2. Suppose you are dyslexic, and every time the count gets to +4, you make a minimum bet. Conversely suppose every time the count is -4 you make a maximum bet. This seems like a pretty big error, doesn't it? You just have this problem with the count of +4 or -4, and no other counts. About 4.16% of the time the hand has true count +4 or -4. If you make both of these errors consistently, you are making an enormous error on over 4% of your hands. That's four mistakes per hour. Could you possibly still be a winner?

A 50 million-hand simulation of this situation and you are still beating the game to the tune of \$6.67 per 100 hands. You may have reduced your profit by over 54%, while you make 4.16 major mistakes per hour, but you are a winner.

Now let's add a little bit of problem 1 to the mix. Suppose that you add to your dyslexia this awful problem you have with super high true counts. You can't compute TC's higher than 10. Every time the TC goes higher than 10, you go spastic and forget the count. You decide that you will just play those hands according to basic strategy with a minimum bet, since you'd rather not risk making a big mistake with such a huge count. Could you still be beating the game?

The simple answer is yes. This tendency to forget the count is not that big of a deal. Now you are winning at a rate of \$5.75 per 100 hands. You are making errors on 4.21 hands per hour.



Let's add problem 4 next. We will assume that you did not study very well and are still using the single deck basic strategy rule to double all 8's vs. dealer's 5 or 6 (except for 4-4, which you split). You completely forgot the indices for this play, you just double every time. Not only is that not correct for this game, but it is clearly an error.

Note that the hand 8 vs. 5 or 6 comes up about 1 out of 275 hands, so you will make an additional .36 errors per hour (assuming each such double is an error - though some of these doubles will be correct at high counts, which are not very frequent). You are now making 4.57 errors per 100 hands. How much does this bad play cost you? According to a 50 million hand computer simulation, you are now making \$5.63 per 100 hands. You are still a winner.

Let's consider problem 5. Playing a six deck game, it is face up, and the dealer will know the total value of your hand most of the time, and hesitate before you make a mistake. I only know of one time I added incorrectly and misplayed my hand, miscounting a multi-card 17 against a dealer 7, I thought I had 16 and took another hit. I busted when I would have won, and lost a minimum bet. It happened once. Oh, maybe 10,000 times over the years I have signaled for a card and had the dealer hesitate thinking it was a mistake. Most often this happens when I have soft 18 against a dealer 9, T, or A. But just that once did I make a real mistake. In practice, mistakes like this never happen in a face-up game. It is much more important to watch that the dealer does not make an error when he pays your winners. This type of error is both common and costly.

Finally let's add problem 3. In addition to being dyslexic when $TC = +4$ or -4 , not being able to count past $TC = 10$, always doubling hard 8 vs. 5 or 6, you also misplay A-8 vs. 5. This hand comes up once every 1,098 hands, so it happens exactly .09 times per 100 hands. We are assuming you make exactly the mistake mentioned in the beginning of this article. According to that calculation you would lose .029 for each



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unit you bet. That means you would lose \$2.90 from your \$100 bet. If this happened .09 times per hour (per every 100 hands), then your EV is reduced from \$5.63 per 100 hands to \$5.39 per 100 hands, and you now make 4.66 errors per 100 hands.

Though you started with an EV of \$14.65 per 100 hands, you still ended winning \$5.39 per 100 hands. It is possible to make a significant error on almost 5% of your hands and still beat the game. When you are willing to take a long-term approach towards your errors, you will understand that on any particular hand an error can cost a lot of money, but other times it will win. There is no doubt that errors in your play will eat away at your earning potential, but their true cost can only be known in the blackjack zone.

The next time someone tells you that your single subtle misplay of a close hand is the difference between being a winner or a loser, you can tell them that you are dyslexic and never play your +4 and -4 true counts correctly, that you never play when the true count is more than 10, that you play single deck basic strategy on 8 vs. 5 or 6, and that you double your A-8 against the dealer's 5 with a max bet out, no matter what the count. And, oh yes, be sure to tell them that you're a winner.

Mistakes are costly, no doubt. But the fear of them is over-emphasized to the beginner, and that fear persists with the professionals. We do not need to play perfectly to be winners. We can be downright lousy players and still beat the game.

LIFE LESSON: Don't sweat the small stuff, but be sure you know the difference.

Chapter 44

The Best Game in Town

On my last trip to Las Vegas I started my first day at 8AM, and I trekked from Casino Royale to Mandalay Bay, walking through every casino on the strip looking at their games. I looked at all of their table games except blackjack. Four hours later, my feet were very sore, and I didn't find what I was looking for, nothing, nada. But I looked. I took a cab back to Casino Royale and took a warm bath. I was tired. Not a single dollar on the baize and half a day gone.

That afternoon I went the other direction. Again, I found nothing.

What was I looking for? It has been almost a year since I went to Las Vegas to just play blackjack. I was no longer satisfied with the 1% - 2% card counter's edge. I had become used to routinely getting edges from 3% to 50% using various advantage play schemes. On this particular day I was in search of my personal Shangri-La, a 100% edge over the house. Let me explain.

A 100% edge does not mean you are a guaranteed winner on every bet. It simply means that in the long run your bets will pay off at 100%. For example, if you flipped a coin where if it came up tails you lost your bet, but if it came up heads you would win 3 bets, then in the long run you will win 2 units for every 2 bets. That's a 100% edge even though you don't win every time.

The daylight faded, my feet were swollen from more pounding than they had taken in the previous month, and all I could find was blackjack. I was depressed. I once again hailed a cab back to Casino Royale, and thought that I should do it all again, a new crop of dealers were running the show: the swing shift. But I was too tired to walk, so I got in my car and drove to "Fred's Casino."



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Entering Fred's, I scouted the games. I took a seat at the Big-6 wheel to rest. The Big-6 is one of the worst propositions in the casino, with a house edge of 11% to 24% depending on the wager. I watched it spin, too tired to look at anything of real value. The wheel slowly spun - one, two, three complete revolutions, and a few more numbers. The spinner was this petite Asian woman, she could barely spin any harder if she tried, and the wheel seemed to have a heavy mechanism that stopped it quickly. I watched again, three spins and seven numbers. Two more spins went by and I watched closely: three spins and five numbers, three spins and eight numbers. Yes ... there it was. I waited. When everything lined up perfectly, I put my table-max bet on the 40-1 spot. She spun. I needed three spins and six numbers to win.

The wheel went around three times then crept towards my winning bet. It landed there and settled, and my heart jumped into my throat. But it was not to be, the wheel just barely edged its way into the next position and my bet was a loser. I remember thinking "holy f***" as I settled in for a most enjoyable evening.

I played the Big-6 wheel at Fred's casino until the spinner's shift ended.

What was my edge at this game? Let's assume the spinner was not nearly as predictable as she actually was and say that I could only guess where the wheel would end up plus/minus 10 spots (I could place it in a 20 spot landing zone). If I wagered 1 unit on the 40-1 bet every time the 40-1 was in the landing zone, then in the long run I would lose 19 units (the 19 times it missed) and win 40 units when it hit. This means that I would win 21 units out of every 20 spins, for a 105% edge over the house.

I started reflecting on some of the edges I had enjoyed over the house. Between 3% and 10% for hole-card play. From 12% to 70% for some of the side bets I've exploited. Almost 50% using coupons. But this was by far the biggest



edge I had ever enjoyed over the house. I had reached my Shangri-La.

The rest of the trip was uneventful; I even played some blackjack (a whopping two hours worth over four days).

The way to beat Las Vegas is to walk into every casino fully armed. Card counting is the BB-gun of advantage play; we plink the casinos until they notice us and deal with us. But we can detonate atomic weapons and they won't have a clue. The opportunities are out there, but no one is going to tell you what/how/where/when. You may have to pound the pavement to find your Shangri-La, but the reward is worth every blister.

HOMEWORK: The next time you walk through a casino, look at every game (even the slot machines) and think about what you could do to beat it. While doing this exercise, don't worry if your idea is legal, and just consider how it could be done. Then come up with two more ways.

Chapter 45

Ten Ways Advantage Play Can Help You Win At Life

Each of the points presented in this chapter has been discussed in the context of blackjack. As you read these points, think back through what you have read and learned, and where each point was made. Try to find more than one blackjack context to apply each point.

As you understand the blackjack context, begin to think about how beautifully and perfectly each point applies to your life. The lessons learned as you master blackjack not only help you win at the tables, they are profoundly and deeply inspiring lessons to help you win at life.

1. Never take less than you fully deserve from any situation.

If more than one alternative is available, and each seems to have benefits, which has the greatest benefit in the long run? Life is full of opportunities; always reach for the one with greatest potential.

2. Education is important if you want to succeed.

It is not enough to ask questions; you have to keep an open mind towards what is possible, as well as a keen awareness of what is impossible. Study and work hard to learn about those things that interest you. Seek out the best answers to your questions; avoid a quick fix; don't be satisfied with anything less than the truth.

3. Never accept that things are good enough.

Sometimes taking a course of action that may be more likely to bring immediate pain is going to pay off far better in the long run. Delayed gratification is the best course of action when you are certain that the ultimate gain you will receive far outweighs the immediate gratification that is offered.



4. Pain avoidance leads to the creation of stories and the invention of physical laws, mythology.

This type of thinking leads you to take actions that are not in your best interest. Mythology is part of the human condition and you must constantly be on guard. Be aware of your own mythology and the mythology that others present to you. Challenge all mythological thinking and be skeptical of every assertion.

5. Your perceptions of the universe may not accurately reflect the actual universe in which you live.

You see very little of the vast field of possibilities, as you extrapolate from your limited experience to a view about the entire universe. Sometimes you start believing that your limited view is the truth, and often this view is supported by others. But short-term observations are not enough to know or derive a truth. You must be willing to forgo your perceptions and accept the truth as it is given to you from a higher authority.

6. Don't play a losing game when a winning game is available.

If you know there is an alternative that will win for you, why are you continuing to use a losing strategy? Losing is easy, but you deserve nothing less than to be a winner. If you sell yourself short at the blackjack tables, and are satisfied with losing, or if you expect to lose, how can things be any different with your job, family, love-life, education, success or happiness? Be a winner.

7. Believe in the long run.

This is the most difficult of all the points to understand, but it is also the source of the greatest wisdom the game of life can offer. Remember, the journey is the destination. You will never get to the long run; you can only experience being on the road towards it. That's all you will ever have. If you know a destination that you want to head towards, then commit every day to taking one more step in that direction. That's the only thing you can ever do in blackjack or in life. Take one more step.



8. Realize that even though you are playing a winning game, there may be a decision you have to make in which every choice will lose.

But some choices will lose less than others. Choosing a line of action that loses less is part of winning. Hold your head up just as high when you make this type of choice; it is the toughest to make. Often you can't justify your choices to others; people will argue against you and make you doubt the soundness of your judgment. You must trust yourself and trust your own wisdom in these situations. That's the only way.

9. Be ready for the ups and downs.

The ride is never easy. Wild things happen, wilder than you could ever imagine. But you know that the wild ride is part of what winning is all about and part of the beauty of this life you are living. You are committed to winning and therefore you are committed to achieving and learning the most from the lessons and experiences life presents to you.

10. Be ready to leave when there is nothing left of value in a situation and no potential for change.

You may be tempted to stay, sensing the possibility of change or short-term gain. Don't be fooled and don't fool yourself. A losing situation needs immediate corrective action.

And suddenly life and blackjack meet in a little café in Montmartre for a cup of coffee, and recognize how much they have in common.



Part 5

The Art of Respect





Chapter 46

United Tyranny of Casino Management

Whenever you play at a casino, there is an implicit expectation from casino management that any personal information they want from you must be given. If you choose not to answer their questions, you immediately become a suspected cheat or advantage player. Here is a sample of some of the questions that dealers, pit bosses, and other casino employees have asked me:

- What's your name? Where are you from? What do you do? Why are you here?
- Are you on vacation? Do you live locally? Are you attending a convention?
- Are you here alone? With friends? With your wife? Your family?
- Do you want a player's card? Why not?
- May I see your driver's license? Your identification?
- Are you a card counter? Are you cheating? (I have been asked both of these).
- Would you color up before you leave? (how much have you really won/lost?)

Because we are being hosted by the United Tyranny of Casino Management (UTCMT), we feel obliged to answer these questions, or at least, we must have a story to tell. Our privacy, both financial and personal, is treated with total disregard by casinos.

I have a story about not letting the casinos get away with it. The story is set at the Fred's Casino in Las Vegas. Over two years ago I was told that I could no longer play blackjack there, but I was free to play any other game. At the time they



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also sent out a SIN¹ flyer. To preserve my longevity during my visits to Las Vegas, I no longer attempt to play blackjack at Fred's Casino.

I returned to the Fred's Casino about 2 months ago. Knowing their predisposition to flyer me, I again decided not to play blackjack there. I enjoy playing Limit Hold-em poker, especially first thing in the morning, and Fred's Casino had recently opened a poker room. On this day, I sat down around 7 AM to play at a 4-8 game.

As I played, I observed that the man sitting in seat six was very drunk. He could hardly hold his cards, and kept asking what game we were playing. He put out \$2 on every hand, regardless of it being a 4-8 game, and every hand the dealer had to push his \$2 back. He folded a winning hand then complained that he hadn't meant to fold. He played several hands to the river, claiming that he had won (I recall a pair of deuces losing to a flush). He yelled at the dealer repeatedly. Almost every hand was visible to several players at the table as the drunk carelessly flashed his cards. Needless to say, everyone loved him being there, and he was losing a lot of money.

I complained to the floor manager that this individual should not be allowed to play. He replied that the man had been cut off from further drinks, and would be monitored to see if he should be removed. I told the manager that I felt threatened by having a man that drunk at the table and that he had been aggressive towards the dealer. The floor man again said the drunken man would be watched. I played a bit more.

A few minutes later I complained again, this time weakly quoting Nevada gaming regulations. I knew enough about

1. SIN stands for "Surveillance Information Network". This is one of a host of companies that distributes information to casinos throughout Las Vegas containing photographs and personal details about suspected card counters and advantage players. Because this information is distributed without the consent of the player, there is much debate about the legality of their actions.



the regulations to say to the floor man that it was not permitted to allow someone who was visibly intoxicated to play any game. Again, the reply was that he would be watched.

A waitress appeared and brought the man a beer. The floor man immediately went up to the waitress and chewed her out for serving the drunk, but the floor man took no action to remove the new beverage. I complained again and asked that the drink be removed, but there was no action taken.

Twenty minutes passed and I decided to do something if action was not immediately taken. In the meantime a new floor man came on duty. I went up to him and demanded that the drunk be removed. He refused. I threatened to call the Gaming Control Board and told him he was violating state regulations. He refused. A strong security guard came on the scene and stood behind the drunk, but nothing else was done.

And then, with my cell phone in hand, I pushed my pre-set number for the Gaming Control Board: 1-702-486-2000. In a brief moment I was speaking to a GCB agent. He asked to speak to the floor man. They spoke for a few moments, and then I heard the floor man say (under his breath) "a**hole!" He crossed the poker room floor and handed me the phone.

The GCB agent then told me that he had given the floor man ten minutes to remove the drunk from the game, and if I noticed that the drunk was not gone in ten minutes, then I should call back and an agent would come to the scene.

All hell broke loose. Everyone at the table told me I had ruined the game for them, and now they were going to all leave (everyone, that is, except the drunk). They complained bitterly about me to the floor man, even as I attempted to quote state gaming regulations back to them. The security guard directed me not to talk. The floor man asked for my name (I refused to give it to him).

Then the floor man did something just astounding, a last ditch effort to win a lost battle: he told the people at the table



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that if they wanted, they could all file a complaint against me with the casino shift-manager. I expected to be detained as these actions were taken. It was time to leave, fast.

I cashed in my chips, and without another word I left the chaotic scene. Moments later, walking North on Las Vegas Boulevard, a young man came up to me and said: "What happened over there? I was at another table, and after you left, every game just broke apart." I told him the story, and was relieved at his complete and total support for what I had done.

I only pulled this off because I was in a casino in which I was already a known and undesired entity. In a casino where I still had advantage play opportunities, calling the GCB would have been reckless and incorrect.

In case you are wondering, here are the pertinent gaming regulations that applied in this case:

5.011 Grounds for disciplinary action. The board and the commission deem any activity on the part of any licensee, his agents or employees, that is inimical to the public health, safety, morals, good order and general welfare of the people of the State of Nevada, or that would reflect or tend to reflect discredit upon the State of Nevada or the gaming industry, to be an unsuitable method of operation and shall be grounds for disciplinary action by the board and the commission in accordance with the Nevada Gaming Control Act and the regulations of the board and the commission. Without limiting the generality of the foregoing, the following acts or omissions may be determined to be unsuitable methods of operation:

1. Failure to exercise discretion and sound judgment to prevent incidents which might reflect on the repute of the State of Nevada and act as a detriment to the development of the industry.
2. Permitting persons who are visibly intoxicated to participate in gaming activity.

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3. Complimentary service of intoxicating beverages in the casino area to persons who are visibly intoxicated.

Our battle is for an advantage over the casino by any legal means possible, and where legitimate, for an edge over other players (for example, when playing poker). But it is our moral obligation to follow the regulations in our treatment of fellow players who are incapacitated in some fashion.

LIFE LESSON: Do not take advantage of those who are less fortunate than you. Never harm the defenseless, the incapacitated, or the innocent.

Chapter 47

The Menace of 6:5 Blackjack

You are hungry and see a sign for your old friend McDonald's®. You order a Big Mac®, and as you eat it you start wondering, "Where's the beef?" You open the burger and observe that the beef patty has been reduced to one-eighth of its original size. You go back to the restaurant to complain only to find the item you purchased was a "Big Mock." In the fast-food world this would never be allowed; it would be considered an unfair trade practice and consumers would rise up in revolt. This is exactly what is happening in the world of blackjack.

Casinos know how to take advantage of trade ideas and branding. "Single Deck" is a brand, and it lures customers. Just a few years ago, there were battles between downtown casinos for customers; almost all of them offered several tables of good single deck blackjack. Now the game in its pure form is limited to just a few casinos who closely scrutinize every customer. The false idea persists among the general population: "Shoes can't be beaten; single deck blackjack is the only game the good players can beat." Casinos, in a moment of marketing brilliance, realized that "Single Deck" was a brand and created a new variation of blackjack that exploited the name while offering a huge return to the casino. Because this game is not really blackjack, the gaming laws prohibit casinos from referring to this game as blackjack. Instead they use the cynical "Single Deck 21" to lure unsuspecting and uneducated consumers into playing this rip-off game.

"Single Deck 21" is spreading like a virus through casinos. The only difference between this game and the blackjack we all know and love is that blackjack pays 6:5 (usually it pays 3:2). In practical terms this means you will see a return of \$12 for a \$10 bet when you get a blackjack instead of the



usual \$15. If you play "Single Deck 21" for one hour (approximately 100 hands), and flat bet \$25 per hand, this rule alone will cost you about \$36. That's \$36 the casino is taking out of your pocket and putting into theirs.

To put this in perspective, the flat \$25 bettor who plays standard blackjack using basic strategy can expect to lose \$4.50 per hour. In "Single deck 21" that same player can expect to lose about \$40 per hour, making this game over eight times as good for the casino. No other variation of blackjack has this magnitude of an edge for the house.

Here's how to compute the edge this rule gives the casino. Normal blackjack, played with a single deck, has a return of about .18% for the casino. In this game, every 21 hands (the average number of hands between blackjacks) you are paid \$12 for every \$10 bet instead of \$15. This means the casino keeps the \$3 they should have paid you for your \$10 bet. In other words, they keep 30% of one of your bets every 21 hands, or 1.4% per hand.

Single Deck 21 is an unfair trade practice. This extremely player-unfriendly game is not blackjack, yet it is advertised as such. It is usually offered in the same area as standard blackjack, and it is promoted widely both inside and outside the casino, exploiting the mystique single deck offers as the only beatable game in town. This game is not beatable, and it is not blackjack. It is a carnival game designed to lure the unsuspecting and uneducated gambler into thinking he is playing a game with great odds, when the truth is the opposite. It is the Big Mock of blackjack.

Chapter 48

A Close Call in Paradise

I was in Las Vegas, happily playing video poker at one of the nicer casinos, on a game that I had the edge over the house. After about two hours of play, I got a tap on the shoulder. A man in a black suit asked me "Mr. Jacobson, would you please step away from the machine." My instinct was to run, but I had cash in the machine. Since he didn't flash a badge, I said "one moment" and had the machine print a ticket for the cashier's window. After I had finished the routine, I turned to him for another glance, deciding if I should run or see what he had to say. I was sure my video poker playing was over, that I was busted. Again, since there was no badge and no obvious security backing him up, I let him speak (the alternative being to dash for the door).

"Mr. Jacobson, we just want to let you know that you are welcome to play any game you like in our casino, except blackjack."

"But I'm not playing blackjack!" I replied.

"I can see that, I just want to let you know so you won't even consider playing blackjack."

After saying this, he calmly walked away. I got a back-off from blackjack without playing a single hand of blackjack. At some point I thought: "if they knew I was an advantage player, and they saw me sitting at this machine, wouldn't they think that I must be beating the machine?"

This incident was the result of a decision made by the highest level of surveillance and management. And what was their decision? I was welcome to beat them at any game at which I could find an edge, except blackjack.

I actually think casinos have a right to earn a buck; they are built on income-making models that have worked for centuries, and there is huge public demand for their products and



services. But at some level they seem completely mismanaged. They don't understand the mathematical models they are using.

A simple example: if they increased penetration through shoes and pitch games, the extra hands per hour would more than make up for the potential damage counters could do. And then there's 6:5 and Superfun 21 blackjack. Don't get me started.

There are dozens of other little things they could do that would no doubt benefit some of the better players, but in the long run would help them make a lot more money. A friend described their behavior by re-telling the story of the man who lost his keys and was looking for them under the street light. When a passer by asked if that was where thought he lost them, the man said no, but the light was much better there. The street light of advantage play shines on card counters, and casinos look for us because they think we are what they are trying to find. The street light is in Miami, but the lost keys are in San Francisco.

Chapter 49

Another Corporate Takeover

I was playing single deck at the Las Vegas Club in downtown Las Vegas. At midnight the intercom suddenly announced a change of owners and that free champagne was available to all patrons in celebration. With a glass of champagne in hand, I went up to the new owner, David Barrick, and introduced myself (but not my reason for being there). I told him the story of my ownership of a garage-casino as a child and then I told him about the long tradition the Las Vegas Club had for offering great games, and how I hoped he kept it up. David Barrick is a gentleman with youth and excitement; but the real owner is not David Barrick, it is the corporation "Barrick Gaming."

The next morning, I sat down to play poker at The Plaza. An old guy dressed in a fine suit was sitting to my right. After a few hands, he mucked a King Jack off-suit in late position after a raise; I thought he was a fine player to do so. He then got a cell phone call and had to leave right away. Suddenly several players at the table called out their best wishes to him. It was Jackie Gaughan, owner of The Plaza, Gold Spike, Western Hotel, El Cortez, and Las Vegas Club, now left with only one downtown property to call his own (the El Cortez). Though his casinos were some of the dirtiest, dingiest, and ugliest left in town, Jackie held on to playable single deck blackjack, while all around him 6:5 and Superfun 21 were spreading like a virus.

Not many owners get my respect, but Jackie does. He is the last of the great generation of owners, which included Benny Binion, Sam Boyd, and Jay Sarno. With each of their departures, the great mob connections are passing into corporate hands. They knew that it is all about offering good games - there's no 6:5 at any of Gaughan's casinos. He offered real games. And that's the concern. What's going to



happen to those last few good casinos as they too fall into corporate hands? What can we do about the swift degradation? Is 10-1 Roulette next?

The corporate face of modern casinos is an ugly one. Lost are the humanity and the dignity of the games. What remains is a cold cash extraction mechanism subjected to profit optimization and game deterioration all geared towards a single focus: the corporate bottom line. Serve up another super-sized McCasino with a side of 6:5 blackjack, double-0 roulette, and 8/5 Jacks-or-Better Video Poker.

I call on these corporations to learn from their fathers. Jackie, Benny, Sam, Jay all knew how to take a chance. They put the games out there and challenged us to beat them, and we did. But intelligent casino operators know that they will beat 99.99% of their customers, and are willing to tolerate the tiny percentage that have developed the skills, discipline, and bankroll to win in order to offer real games that give dignity to the word "casino". The sleek modern casino is empty of romance; it is a shell into which lost souls pour their hopes, but the casino has pre-manufactured only losing dreams.

Chapter 50

When Your Partner Counts Cards

by Arlene Stepputat

When I met Eliot, he had several interests that made him a fascinating man. He played Irish music; he wrote poetry; he was a master at bridge and chess, and he counted cards in blackjack. I didn't know much about this latter aspect of his life, but after seven years of partnership and close to six years of marriage, I understand a great deal. I also have an approach about it which allows me to relax and support Eliot in his gambling jaunts to casinos near and far.

My guess is that if you are reading this, you are the card counter and hope that there are some tidbits you can pass along to your significant other so that your trips can be free of tension, guilt, resentment, or concerns regarding your relationship. Let me start then with you.

If your card counting is part of a gambling addiction or if your trips to casinos kick up other addictive tendencies that you may have, nothing I could write will assure your mate. If you have addictions, get help, clear and simple. Secondly, if your relationship is not stable and is not based on trust and good communication, then there is work to be done at home so that when you take off, this foundation is solid. Lastly, there may be some concessions to make on your trips that may look like some sort of sacrifice or compromise, but I assure you these small steps are worth the peace of mind it will bring to your partner and ultimately you as well.

When Eliot leaves on a gambling trip I have only one concern: that he travels safely and returns to me healthy and whole. I know that he is taking risks but he is not going to bet everything including the pet dog to win. I can trust his judgment and his sense of responsibility to our financial life. Therefore I never ask him if he has won or lost or how much



money he is taking. I also understand the game is over the long haul so up or down a day or a trip is just a statistic; like baseball, it changes with every game. Eliot tells me about his game, and when he loses I don't freak and when he wins, I don't immediately begin planning a cruise to Tahiti. The truth is I don't pay that much attention one way or another because I can trust him. If I ask, I get the truth, no matter what it is. Eliot will tell me if he's having fun or not.

I also have come to see blackjack as Eliot's sport of choice. If Eliot were into golf, I figure annual club membership, clubs, clothes, and the fee every time he played the game is an expense he is entitled to for his own pleasure. No golfer gets this money back; he merely gets the satisfaction of playing the game. We could even say that the money is lost. So Eliot's sport more often than not pays for itself: comps on rooms and food, clearly no special clothing requirements, no membership fees, and a chance to return with more than you started with. To me it's no big deal.

Some partners might feel threatened by all the temptations offered by Sin City and fear that fidelity is forgotten once you cross the Nevada border. "What happens in Vegas stays in Vegas" is not a slogan that assures the insecure at home. Again, this has to do with the quality and commitment in your relationship all the time. We all know that if you are going to cheat in your relationship, you will. Though it may be easier on a road trip, if the willingness to betray your partner exists, you have work to do together.

Eliot checks in with me every day he is away. I don't require this. The truth is we miss each other. Sometimes it's a long chat, sometimes a message on the machine. I always have a casino name and room number for an emergency. I haven't used it yet. I want him to have a good time. I also have the freedom to take trips independently myself. Then it is his turn to hold down the fort and feed our menagerie.

I have been invited to attend Eliot's trips to Vegas and even though I won't drop a quarter in the slots, I have gone



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with him a few times. I understand he wants to spend hours playing and he understands I don't want to stand around and watch. I usually find ways to entertain myself and we meet for a meal or some other event. When I am there he will take the time to share some of Vegas with me: a show, a restaurant, watching the dancing waters for a moment, (but never shopping). I see for myself the grueling hours he keeps and the up and down adrenaline rush of the game. It's his event and I understand it now. Occasionally I meet friends of his from the game. Again, including me in the picture makes it easier for me to not care about what's going on when I am not around.

To the counter, let me just reiterate: make your relationship a priority even when away. And bringing home a present whether you won or not is always a way to get points.

If your partner is a card counter, realize that most of your friends really don't understand what that means. You will have to explain over and over that it is not cheating; it is the demonstration of skill, study, and talent.

For most people, gambling carries both intrigue and stigma. "Your husband is a gambler? Are you worried? Does he win? How much?" These are questions I find both predictable and wearisome, but they offer an opportunity to educate others about advantage play. It is also a chance to point with pride to all the skills my husband has learned, practiced, and used to become a winner. I don't feel the specific amount Eliot wins (or loses) is really anyone's business. Any specific answer invites judgment ("Oh that's not much," or "Wow really?") My standard response to the money question is vague, something like: "he usually returns with more than he left with." This is also true.

Most people do not have the aptitude to learn all the strategies. People who talk with me about card counting still tend to think it is either illegal or something you can pick up quickly. Everyone knows someone who did well at the tables because they read a book. When I watch Eliot practice with



his cards, I realize how much work this is. Most people do not have the discipline that it takes to learn and practice. Again, how often does Tiger Woods practice golf?

Another strategy is to plan things for yourself, especially when your partner is away gambling. Arrange something special, whether it is time with your family, a massage, or curling up with your favorite video. If you can make the time your partner is away valuable and meaningful to you, then you won't be obsessed by what's happening in the casinos. You might even plan your own little jaunt so when you return you can both swap stories.

Ask your partner for what you want in order to feel supported and cared for. Don't be unrealistic or demanding. A call every four hours is just too much to think about in a city that has no clocks on the wall.

Adopt the philosophy that blackjack is a kind of sport with expenses attached to it. Some guys buy season tickets for football, some go fishing or backpacking. Eliot goes to Las Vegas. It is no big deal.

If your partner loves the game of blackjack start to learn why. Take an interest in the ups and downs. Listen to what your partner shares about the experiences at the table. Demonstrating your interest or at least curiosity will make it more of a shared aspect of your lives.

Lastly, develop your own love and passion for something: music, nature, cooking, community service, whatever. One of the reasons our relationship works so well is because I am an independent woman with my own range of resources. Being with Eliot is always my preference, but I understand his need for freedom to pursue his passion because I have my own. When I want to leave town for a few days he only asks me to do one thing, return home safely.

Chapter 51

Interview with a Bear

Note: "Las Vegas Bear" (LVB) is a professional blackjack player, who travels and plays throughout Nevada. In this interview he shares his history, his experiences, and his wisdom about the game, the people, the casinos, and what life is really like when beating the game of blackjack is your "job."

EJ: Tell us about how you started you got started as a professional Blackjack player.

LVB: I began playing blackjack in about 1996, after reading Ed Thorp's *Beat the Dealer*. Previously, I had just played as a ploppy¹ once or twice a year. I had no real interest in the game, or any other casino games. After reading Mr. Thorp's book, I became interested in the concept of advantage play.

I have been self-employed for most of my life, and I had a flexible schedule. So, I began to read more books and begin practicing at low stakes in several Laughlin casinos. Laughlin was the closest casino location to where I was residing at the time. In 1999, there were some changes in the business I was in, and I decided to leave that business. My wife was in the last year of a very lengthy course of study in college, and it would have been difficult to change residential location at the time. Unfortunately, the city we lived in offered very few opportunities for me in anything that I was interested in doing. My wife and I decided that I would play blackjack for about six months and see how it went, while she completed her studies. We decided to defer the decision about where we would live until her schooling was completed. So, from mid-1999 until mid-2000, I was on the road a lot, playing blackjack throughout Nevada.

1. The term "ploppy" is the way advantage players refer to non-advantage players who believe in some aspect of the mythology described in Part 3. "Ploppy" is also used to describe a gambler who plays a game with a huge house edge. It is not a term of endearment.



EJ: How long have you been a professional?

LVB: I hesitate to use the term "professional," as it tends to (unintentionally) downgrade other players who play at a far higher level than I do, but don't do it as their primary source of income. I prefer to use the term "full-time" blackjack player. I became a full-time player in 1999. In June of 2000, when my wife's schooling was completed, we decided to move to Las Vegas. I had grown up in Las Vegas in the 1960's, but moved away in 1972. My parents live in Las Vegas, and employment opportunities for my wife abounded in Las Vegas, so off we went. We have lived in Las Vegas ever since, and I have been a full-time blackjack player ever since.

EJ: What is it like being a full time professional, and to be married?

LVB: My family life is better than if I had a "normal" job, since my work hours are flexible. Even though I am gone several days a month on playing trips, when I'm home, I can come and go as I please. I don't have to miss school events. I can go to lunch with my family whenever I want. My schedule can be totally modified to suit family needs, so long as I still put in the hours to maintain the income. Putting in the hours is the hardest part. It is very easy to take too many days off, and have to put in "overtime" near the end of a month to meet the monthly quota I set for myself.

I pretty much work a Monday through Friday week, early morning to mid-afternoon, with weekends and holidays off. My family avoids the question of what I do for a living with a vague, "he's an investor" answer to nosy people. Only my immediate family, including my parents, and a few close friends, know what I'm doing for a living. My wife likes me playing full-time, since it gives me flexibility and availability for all family functions.

EJ: What about issues like retirement, health insurance and sick leave?



LVB: I am fortunate that my wife has an excellent health insurance plan through her employer. As for retirement, that's the big unknown. Ideally, I'd be able to put away enough and invest it for the future. But to do that, I'd have to increase my bet level significantly, and therefore increase my risk of ruin. At this point, I'm not interested in doing that, so there is no real answer right now. It is something I frequently think about, though. As a matter of fact, last night I hurt my knee on the tennis court. I can barely walk today. It'd be a bad situation if I was unable to get to casinos for an extended period of time. Obviously, I have no "sick leave."

EJ: Tell us about how much you earn and the lifestyle that blackjack allows you to afford.

LVB: I'd rather not go into specific numbers. Suffice to say that I live a pleasant upper-middle-class life, own a home with a swimming pool, three paid-for cars, and virtually no debt, except for our house payment. Of course, my wife's above-average salary contributes to this as well.

EJ: What do you dislike the most about being a professional blackjack player?

LVB: Casino "heat," along with drunken ploppies, is the most negative thing about this "business." I try my best to avoid both. Drunken ploppies are easy, I just leave. Casino heat is more troublesome, since you never know when it will rear its ugly head. I keep very detailed records about my playing sessions, including shifts played on. I try never to appear at the same casino on the same shift more than once every 10 days or so. I know the shift change times at the places I "patronize," and am not anywhere near the pit within 30 minutes of a shift change. That way, if I'm backed off on one shift, I still have the other two shifts available.

EJ: How have you managed to survive this long as a professional?

LVB: I think that I have survived as long as I have because of a combination of factors:



1. Short sessions;
2. No frequent appearances on the same shift;
3. Good casino comportment, which includes being unfailingly pleasant and polite to everyone, even the drunken ploppies.

Of all the above, I think that simply not feeding at the same trough too often is the most important thing. While a purple chip player raises suspicion by not wanting to be rated, a red/green player usually does not. I frequently will tell a persistent pit critter than I'll just be playing a short time anyway, so I won't need a rating or any comps. That usually ends the questioning. If they insist, I just give one of my playing names, and note my records accordingly. If somehow the same pit critter remembers the name I used weeks earlier, it is important to be consistent.

Once a pit critter in Reno remembered me by name from six weeks earlier. When I expressed surprise at her memory, she said that the name I gave her (not my real name, of course) is the same as a good friend of hers, so it was easy to remember. You just never know, so it is best to be prepared, to deflect potential suspicion.

I do use player's cards at a very few selected locations, to keep free room offers and other mailings coming. I play very conservatively at those places, so as not to risk a back-off. Even though I play at low stakes, my aggressive bet spread requires that I'm constantly alert for any signs of heat. That's one of the reasons I've stayed with a very simple counting system, though I know I could probably do better with other, more "advanced" systems.

EJ: Describe the conditions that you most prefer when you play.

LVB: I play quickly and quietly, preferring to play alone (I won't play with more than one other player at the table). I can chat with the dealer, critters, cocktail waitresses, or ploppies if I have to, and still be confident of my count, and still



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be able to maintain my game speed, without looking like I'm paying "too close" attention to the cards. With a more complicated count, I may lose the ability to do that, and/or my casino "persona" might otherwise suffer. Playing in short sessions, getting as many hands per hour as possible is vital

EJ: What do you think about the quality of the games that are available? Give us your historical perspective.

LVB: The games overall have significantly deteriorated in quality, without a doubt. Most of the double decks have a full deck cut off now. Many of the shoes are going to H17. Most of the normal single decks have disappeared entirely from Las Vegas. Only a few of the remaining ones are playable. The 6:5 ploppy rip-off is expanding quickly. The Superfun 21 is a waste of time for all except the few practitioners who have studied it extensively. Casinos seem more paranoid than ever.

EJ: What do you think about the future of the game?

LVB: I think BJ will continue to exist in some form. The most recent Nevada Gaming Control Board statistics show a 13% hold for BJ statewide, and that's a lot of money. But since large corporations control most of the casinos now, the games will only get worse. Without a large outcry from the public about the terrible games being offered, the casinos are not going to improve them. Why should they? The sad reality is that 99% of casino patrons don't care about the quality of the games. They don't even UNDERSTAND the games, or the math involved. The casinos have done a very good job in marketing their games as "entertainment" to the ignorant and gullible masses. If the public cared about the quality of games, 6:5 BJ couldn't exist. Keno couldn't exist. Craps couldn't exist. Roulette couldn't exist. Slot machines couldn't exist. State lotteries couldn't exist. But they all do, and millions of people play them every day.

I estimate that less than one percent of blackjack players bother to even learn simple basic strategy. Obviously, they



just don't care. Stanford Wong has commented on how he has pointed out more advantageous payouts to people sitting at an inferior machine right next to the better one. He has reported that they have actually become angry at him for trying to do them a favor, and they didn't move to the better machine, despite the information. Don Schlesinger [author of *Blackjack Attack*] has commented about how he has tried to get publicity in the mainstream media about the poor quality of games and conditions for years, but the media says there is no interest in the subject. The public just doesn't care!

EJ: What are the requirements to become a professional blackjack player?

LVB: I have a great, understanding wife who has become accustomed to the uncertainties that self-employment in any business sometimes brings (I have been self-employed for the entire 12+ years we've known each other). She is a professional in her field, and earns a good income. For a married person, I think that full acceptance of this "career" by the spouse is a must. Without it, full-time play would be very difficult. I suppose, though, that acceptance by a spouse is probably necessary for any successful endeavor.

For a single person who has amassed a sufficient bankroll, it is a good opportunity, and there is really no downside. At least, no more downside than you'd have starting out in any other business. The bankroll requirements are certainly much lower than just about any other type of business.

At first it's interesting and fun, especially if contrasted to a job or business you were in that you didn't like. But eventually, the monotony turns into boredom, and it becomes just like any other "job" you have to wake up and go to on a routine, daily basis. There is much more flexibility, though, than at just about any other similarly profitable venture.

EJ: Thank you for your time, your willingness, and your openness in sharing your very interesting life experience with the blackjack community.

LVB: Thank you.

Chapter 52

The Last Card in the Deck

At present, casinos can refuse service to anyone determined to be proficient at the game of blackjack. This is their right; they have to make a buck. However, casinos and their agents do not have the right to create their own laws and enforce their own version of our civil rights. The line they cross is not subtle. Their violations include harassment, intimidation, illegal sharing of digital images, libelous and unsubstantiated claims dispersed in faxes by the Griffin Detective Agency, by SIN, as well as by Biometrica, the illegal sharing of personal and private financial information among casinos, illegal detainment, illegal confiscation of personal items, illegal search, and breach of contract.

The following incident is typical of the tactics that casinos and their agents use when dealing with advantage players. I was playing blackjack at Fred's casino. Suddenly three armed security officers surrounded me. A woman in a suit approached and asked me to step away from the table. She informed me that I was no longer allowed to play blackjack in this casino. She then asked to see my identification. I asked if I was under suspicion for illegal activity and she answered that I was not. I refused to show her my identification, as is my right. She then told me to leave the casino immediately, and said that if I returned, I would be arrested for trespassing.

About one week later a friend gave me a copy of a "flyer" that had been faxed to several casinos. This fax contained my illegally transmitted digital image followed by details of my wagers, chip purchases, and winnings at Fred's casino. It also labeled me as a card counter.

It is my opinion that in this incident the following violations of my rights took place:



- I was harassed and intimidated by the presence of the armed guards, even though I was playing the game of blackjack lawfully.
- I was not permitted to leave when the guards surrounded me, therefore being unlawfully detained, since it was admitted that I was not suspected of cheating or having broken any law.
- My digital image and facts about my financial situation were unethically shared with various casinos, via fax, without my consent.
- The information in the fax was unsubstantiated; there is no way they could know what was going on inside my head.

Griffin Detective Agency, SIN, and Biometrica are involved with the collection and dispersal of private and highly personal information. Much of what these companies collect is both libelous and illegal, yet they distribute it for profit to their casino customers without due course of appeal by those affected. These three companies must be regulated. Casinos must be regulated. The changes in the way casinos and their agents do business must include the following:

- Limit data collected on law-abiding patrons without consumers' consent.
- Inform consumers when biometric scanners are capturing their faces, fingerprints, voices and the like.
- Establish rules for the collection and maintenance of biometric databases and any possible reuse of biometric images.
- Provide for government oversight of data collection restrictions and safeguarding.

The casino industry does not want to gamble. They are corporations that advertise games of chance, yet they insist that each patron be a loser, even when the games are being



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played by the rules they offer and promote. This is a form of bait and switch and violates the implicit contract formed when chips are purchased and the game has begun. Casinos want to prohibit any skill by the player whatsoever.

Advantage players are intelligent, successful, hard working, studious, and creative individuals. Many have honored positions in our communities as teachers, law enforcement officers, engineers, computer programmers, financial advisors, and the like. We enjoy casinos and the games casinos offer and are willing to play by their rules.

The advantage player must be treated with respect.



Appendices





APPENDIX A

Top Web Resources

www.advantageplayer.com: If you are wondering which site has the greatest diversity of experts that routinely contribute, that honor has to go to this site. You will be able to ask your questions directly to experts like Donald Schlesinger, John Auston, and many others. The years of accumulated knowledge and wisdom this site offers place it at the top of the top of the elite blackjack sites.

www.bj21.com: This website has a pay portion, known as "Green Chip," that features the best all around discussion forums for blackjack available on the Internet. You can also join a chat on Tuesday nights with the legendary Stanford Wong. They have an excellent dictionary that will answer all your questions about what that word or term means. Finally, for a modest price, you can also purchase a copy of Current Blackjack News (CBJN), a monthly publication that gives the latest information available on blackjack conditions at casinos around the country.

www.bjinsider.com: Henry Tamburin is one of the most prolific journalists in blackjack working today. He both publishes and writes books on blackjack, as well as producing a monthly newsletter that focuses on the issues most current with the advantage community. Although a pay site, it is worth the investment for the depth and quality of material presented.

www.bjmath.com: If you have any interest in the more theoretical aspects of blackjack, this site is the best one out there. It has discussion boards and articles on all aspects of card counting, including betting strategies, counting strategies, and computer simulations.

www.bjrnet.com: This is the best place to buy your books on blackjack online. It features a huge selection of books, with honest reviews and low prices. It also has excellent discussion boards and a wide variety of other important features that make it a must-see on your blackjack web surfing ride.

www.bjstats.com: Continuing with the mathematics theme, this site is a repository for statistical data from computer simulations. If you have a wacky idea about something in blackjack, and you dream of running a computer simulation, most likely it has already been done and you can find the results here.

www.blackjackinfo.com: Aside from the availability of basic strategy charts to just about every possible combination of rules, the site also features an excellent training program that can assist you in the task of learning basic strategy.

www.bobdancer.com: Advantage play at video poker has a lot in common with advantage play at blackjack. Bob Dancer consistently provides the highest quality video poker information anywhere.

www.lasvegasadvisor.com: This is the best all around resource for negotiating the very complicated and ever changing landscape of Las Vegas. Anthony Curtis, who runs this site, often appears on Travel Channel specials and makes many other media appearances. His support of the advantage community has been solid and uncompromising. A membership to the Las Vegas Advisor will get you an excellent coupon book, and great deals on books.

www.wizardofodds.com: Although this site has some material on blackjack, its claim to fame is that it gives the correct house edge, and proper basic strategy for many current casino games. Whether by computer simulation or mathematical deduction, the detail is extraordinary. The site is run by Michael Shackleford, one of the world's foremost experts on casino games, their rules, and their vulnerabilities.

APPENDIX B

Glossary

Advantage player. A player who enters a casino knowing how to play one or more games with an edge over the house.

Back off. To be asked to no longer play a game in a casino, usually blackjack. The standard phrase used for a back off is "Sir, your game is too strong for us; you are welcome to play any other game in our casino except blackjack."

Basic strategy. The list of rules that tells you exactly how each of the 550 possible blackjack hands should be played. This strategy varies depending on the number of decks and the details of the rules for the particular game.

Betting ramp. When counting cards, the amount that should be bet at each separate true count to help generate an advantage.

Blackjack zone. The mythical casino where each hand dealt is always the same for a full year. The act of playing the same hand 10,000 times in a row, at the same game, making the same playing decision each time. The blackjack zone helps the player understand the concept of the long run and the long-term consequences of his decisions. We all live and play in the blackjack zone every time we sit at the tables.

Bust card. A card that when dealt forces a stiff hand (valued 12-16) to exceed the total of 21.

Card counter. A player who uses a technique to beat blackjack that assigns a numerical value to each individual card and counts these values as the cards are played from the deck. This allows the player to vary his bet size and playing strategy to get an edge over the casino.

Clumping. The false idea that certain types of cards tend to be unnaturally grouped together as the deck is dealt.

Typically the belief is that large cards clump together and small cards clump together.

Comp. Short for "complimentary." This is an item, experience, or service that is provided to the player for free in exchange for his play at table games or slot machines.

Critter. As in "pit critter," this is the less than affectionate term used to refer to any individual in a supervisory role in a table games area. These individuals are usually called "Pit bosses."

Double. To double a hand is to put out an amount of money equal to the wager you initially placed, and in turn you receive exactly one more card. The rule DOA (double on anything) allows you to double any initial two cards.

Even money. Taking insurance when the dealer shows an ace and the player has a blackjack. This guarantees the player an even-money payoff on his blackjack, but this payoff is less than the actual expected value for the hand.

Expected Value (EV). The theoretical dollar value of making a specific play in a specific game. Though it is rare to be able to receive this value as an actual payoff, in the blackjack zone this value can be used to predict long-term wins and losses.

First base. The seat at the far right of the blackjack felt that receives the first card as the cards are dealt, and who makes the first playing decision as the cards are played.

Front loading. The act of looking at the value of the dealer's hole card as the dealer tucks it under his other card, usually from third base. This allows the player to know the exact value of the dealer's hand and to vary his playing strategy to take advantage of this knowledge. Front loading is a legal way to beat blackjack.

Griffin Detective Agency. An agency that helps casinos to identify card counters, advantage players and cheats. They maintain a notebook, the "Griffin Book," that contains private, libelous, and often false information about players. Once in the notebook, there is no appeal.

Hard hand. A hand that is either devoid of aces, or one that contains aces and has a total of 12 or more with no ace being counted as an 11.

Heat. When a casino suspects, but is not sure, that an individual is an advantage player, they may take actions to make the player uncomfortable. These actions include frequent shuffling, limiting the bet size of the player, or closely watching the player.

High-Low. A card counting system that assigns the following values to the cards: 2, 3, 4, 5, 6 = +1; 7, 8, 9 = 0; T, J, Q, K, A = -1.

Hit. To take another card. The player is allowed to take additional hits on any hand with the exception of those hands that have been doubled, as well as split aces.

Hole card. A dealer will always deal one card face up and one card face down to himself. The hole card is the face down card the dealer deals to himself.

Hot/Cold dealer. A dealer is "hot" if he is winning more hands than average. A dealer is "cold" if he is losing more hands than average. These concepts do not exist, as all averages are taken over short run observations. The past behavior of a dealer does not influence or help predict his future performance.

Illustrious 18 (I-18). Conceived by Don Schlesinger, this is the collection of eighteen index numbers that are most important when considering play variations based on the true count.

Index number. A number that determines the cutoff point for a play decision, based on the true count. For example, 16 vs. T. The player should hit if the true count is less than +1, otherwise the player should stand. The index number for this decision is +1.

Insurance. A side bet that pays 2-to-1, placed when the dealer has an ace up. If the dealer has a blackjack, the bet pays 2 units; otherwise the player loses 1 unit. The wager is usually one-half the amount of the blackjack bet for that hand.

Kelly betting. A method of betting that optimizes bankroll growth while minimizing risk. The player makes a wager proportional to both the size of his advantage and to his total bankroll.

Long term. The statement that as more hands that are played, the ratio (Actual Winnings) / (Expected Winnings) gets closer and closer to 1. In practice, it means that the more we play, the more likely we are to have our actual results mirror our expected results.

Martingale. A progression system where the player doubles his bet after each loss, and returns to his initial bet when he wins. This system is dangerous, does not lead to an advantage, and should never be employed.

Penetration. A measurement of the total number of cards dealt to the player between shuffles of the deck or shoe. Card counters seek out games with deep penetration.

Progression system. A system of betting where the current wager is based solely on the sequence of wins and losses that occurred over a set series of hands. Progression systems are dangerous, do not give the player an edge, and all such systems should be avoided.

Risk of ruin (ROR). A measurement of the likelihood that a player will go broke, even though he has the advantage.

Running count (RC). The running count starts at 0 with each freshly shuffled deck or shoe. As a card counter observes cards being played, he adds their value from the counting system to the running count.

Shuffle tracking. The art of gaining the advantage over the house by studying the shuffle and understanding its effects on the likelihood of various hands as the shoe is dealt.

Side bet. Any wager allowed at the blackjack table that is not properly part of the game of blackjack.

Single Deck 21. The terminology used to deceive players when offering a 6:5 payout for a blackjack. Many players consider this good just because it is played with a single deck.

In truth, it is one of the worst variations of blackjack offered and should be avoided.

Soft hand. A hand containing one or more aces in which an ace is counted with the value 11.

Split. If you are dealt two of the same valued cards, you can play these two cards as two separate hands by placing an additional bet equal to your original bet. Often you can split to at most four hands. Also, if you split aces, then you usually receive exactly one card on each ace and are not allowed additional hits. The rule RSA (resplit aces) allows you to split aces up to four hands as well. The rule DAS (double after split) allows you to double a hand after you have split.

Standard game. The game most often used as an example in this text. It has the rules: 6D, DAS, DOA, RSA, S17. This game is common on the Las Vegas strip.

Stiff hand. A hard hand with a total value between 12 and 16.

Stop loss. The decision to leave a game or end a session when a certain amount of money has been lost. This has no effect on the player's long term edge.

Surrender (LSR). Sometimes called "Late Surrender." This rule allows the player to forfeit half his wager without playing out his hand. In the case the dealer shows an Ace, the player must wait for the dealer to check for blackjack before he surrenders.

Surveillance Information Network (SIN). An agency that helps to identify card counters, advantage players and cheats, and then distributes faxed flyers and digital photographs to its member casinos when such a player is identified in the area. Many of these flyers contain private, libelous and often false information about the players. Once a flyer has been sent out, there is no appeal.

Third base. The seat at the far left of the blackjack felt, the last player to be dealt his cards, and the last player to play out his hand.

True count (TC). As cards are dealt, the player converts the running count (RC) to the true count by dividing by the number of remaining decks (ND): $TC = RC / ND$. The true count is used in the High-Low system to correctly determine bet size and play variations.

Variance. A measurement of data dispersion. A larger variance yields more significant ups and downs and hence a larger risk

About the Author

Eliot Jacobson received his Ph.D. in Mathematics from the University of Arizona in 1983. He was Professor of Mathematics at Ohio University from 1983 to 1998 and undergraduate chair from 1990 to 1994. Eliot has over twenty research publications appearing in major international journals.



Eliot currently holds the position of Lecturer in Computer Science and Engineering at the University of California, Santa Barbara. In addition, Eliot is Vice President of the management consulting company Integrity International. He has been active as a computer consultant, public speaker, and webmaster for over ten years.

Eliot started his gaming career as a young child, learning chess and bridge from his father at age five. Growing up playing games of all sorts, he opened a casino in his garage as a teenager and quickly won all the allowance money in the neighborhood.

As a young adult, Eliot achieved the "expert" ranking at chess and competed in national bridge tournaments. At a mathematics convention in Las Vegas in December 1996, Eliot discovered his talent for card counting and was hooked immediately.

Eliot combines his love for casino games with his passionate claim that players should be able to use their native abilities without retaliation from the casino. He continues to promote the cause of skilled players in a wide variety of venues, including features in major newspapers and e-zines, his TV and radio appearances, and through his popular website www.cardcounter.com.

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