HOW TO READ HANDS AT NO-LIMIT HOLD'EM

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INTRODUCTION

Hand reading is the key to winning at no-limit hold'em. If you can read hands, you can win. If you can't, you'll struggle.

This book will teach you the hand reading skills needed to beat live no-limit games up to $5-$10, small stakes online games, and nearly any home game you might play in. The techniques in this book are also very useful for the early stages of no-limit hold'em tournaments when the stacks are still deep enough that every hand isn't all-in preflop.

A good hand reader who has mastered the concepts in this book should be able to clear $20 to $40 per hour in today's medium-level live games (i.e., $2-$5 or similar stakes).

Hand reading is the art of deducing your opponents' hands based on the available information. Information is available everywhere, from the betting action to the time it takes your opponents to act to body language to what your opponents are wearing. While all this information can play into hand reading, the betting action contains the most valuable information, and that's the information we'll use the most as we work through the examples in this book.

There's no magic or voodoo in this book. Poker players like to say things like, "Something just didn't feel right, and I could tell he didn't have it." None of that here. Some people do have a "feel" that is helpful to them—mine is average at best—but I won't try to teach you how to have accurate spidey sense.

This book takes a practical, example-driven approach. You'll work through hands and use a logical, repeatable process to read your opponents' hands. You don't have to be clairvoyant to read hands. You just need to think clearly, and then you need practice, practice, practice. This book will give your hand reading a big jump start.

PART I: CORE HAND READING

Player Types

Different players play differently. Tell me something I don't know, right?

Hand reading is obviously player-dependent. Even though no two players think and play exactly the same way, you can fairly categorize players into rough groups that are useful for hand reading. In this book we'll discuss hand reading against three specific player types:

The Nit

Nits are conservative. They are primarily driven by the fear of losing their stack. If you make a big bet and they have a hand they're not sure about, even if they suspect you of bluffing, nine times out of ten they will end up folding.

Because of this, you gain more information from their calls than you would against other player types. In general, their calling hands will be relatively strong. Often after a call you can pin them down to one of just a few specific hands because they would have folded anything weaker and raised anything stronger. We'll discuss this in depth later.

The Fish

Fish is a generic term for a bad player. For the purpose of this book, a fish is someone primarily driven by the thrill of winning pots. Where nits are terrified of losing a big pot, losing doesn't worry the fish nearly as much. Instead, they are constantly seeking to make hands and win pots.

Because of this, you gain much less information from their calls than you would against other player types. They call with all sorts of hands, hoping to get lucky. This aspect of playing against a fish frustrates many players, because it can feel like you're playing blind against them. "You play so many hands you could have anything" is something you'll hear grizzled veterans say from time to time to a fish.

Nevertheless, hand reading is still extremely useful when playing against a fish.

The Regular

Regulars have been around the block. They don't play in constant fear, nor do they obsessively chase longshots. When used to describe an online medium stakes player, the term "regular" describes someone who is actually very, very good at no-limit hold'em. That's not who I'm talking about.

Our regulars are the "solid" players who fill out $1-$2, $2-$5, and $5-$10 games in cardrooms. They're the "sharks" in most home games. They tend to play a predictable game that makes reading their hands fairly easy. They also make plenty of poor plays as a matter of habit, and they can be manipulated into making even worse plays.

In short, regulars tend not to make many eye-poppingly stupid plays, but if you learn to read their hands well, you will have a big advantage over them.

There's another important player type that I'm avoiding in this book: The Tough Player. Tough players read hands well and play an aggressive game designed to put pressure on you when they deduce that you are likely to have a weak hand. If you play online at the $1-$2 level and above, you'll encounter plenty of tough players. These guys already know what's in this book and are using it against you.

You can use the principles in this book to read tough players' hands. But tough players know you're reading their hands and mix up their play to thwart you. Learning to spar with these players is beyond the scope of this book.

Fortunately, very few genuinely tough players find their way into a cardroom to play small or medium stakes no-limit. When they do play live, they usually play $10-$20 and higher.

More to the point, you can make a decent living for years playing this game in cardrooms around the world without ever really learning to get the best of the tough players. I'm not trying to turn every one of my readers into the next Tom Dwan. I'm focused on what you need to know to be a consistent winner in most no-limit games. That's ambitious enough, don't you think?

In this book we'll use these player types as a shorthand to describe how your opponents make decisions and therefore how their actions define their hands.

The Three Principles Of Hand Reading

Before we get into the nitty gritty of working through hand examples, I want to talk about three general principles of hand reading. It pays to keep these in mind as you proceed through the book and also as you play.

Players play the way they do for a reason.

It can be tempting to observe a particularly poor play and say, "Wow, that guy is just playing randomly," or "He must be a total idiot." No. Players play the way they do for a reason. As I alluded to in my player types descriptions, emotion plays a large role in how people make decisions. Nits are afraid. They experience negative emotions when they lose, and they make plays to keep the negative emotions away. But on top of this fear, nits have realized that their conservative style is a successful one in many games, and their tendency to make tight folds is reinforced by a track record of slow but steady winning.

Fish are looking for the thrill of winning. They often know that they only have four outs, and it's not correct to call getting 3-to-1 to try to hit their hand. They know that Q3o is a bad hand. They're not calling with these hands because they think it's the correct or profitable play. They're calling because calling offers them the thrill of a gamble—and possibly of a big win. They also often relish being the underdog.

There is always some method behind the madness. If you can figure it out, it will help your hand reading tremendously.

Very few players bluff at the correct frequency. Most players don't bluff nearly enough, and a minority bluff way too much.

Bluffing is in some ways the essence of poker. Without bluffing, the game would still likely be entertaining, but it wouldn't be nearly as complex and enjoyable.

But most players don't incorporate bluffing well into their play. Nits and regulars tend not to bluff often enough. It's often through indifference. When they don't flop a good hand, they lose interest, and it doesn't even occur to them that bluffing might be a good play. And even when they do think of a good bluff, they often don't have the guts to pull the trigger.

Some fish don't bluff enough either. Other fish bluff way too much. That thrill of winning pots turns into a thrill of stealing pots. Any time the opportunity seems to present itself, they're out there with a bet trying to pick up the pot.

Anyone who bluffs with nearly the correct frequency is almost by definition a tough player. Good bluffing requires good hand reading and a willingness to make decisions based on the math and not on emotion.

Information from large bets and calls is more reliable than information from small bets and calls.

In a $2-$5 game, a $30 flop call can be a decent hand, a draw, a strong hand slowplaying, or a very weak hand. A $300 call is almost always a good hand. A player could raise a $30 bet with a variety of hands and draws, but anyone who raises a $300 bet means business. It's almost never a bluff.

One of the tricks no-limit players like to use is to make a misleading play for small money to try to sucker you into making a mistake for big money. Don't be fooled. Big money talks in this game. Most players don't bluff often enough, and players bluff even less frequently when big money is involved.

The bottom line is that as long as you are playing against one of our three player types, the larger the bet, the more you can trust that there's something behind it.

These three principles provide a basis for reading most players' hands. If you keep them in mind, it will help you to build accurate pictures, especially in large pots when it matters most, of what your opponents might hold. I will refer back to these principles throughout the book.

Hand Ranges

Hand ranges are the main tool of hand reading. Hand reading isn't about looking into your opponents' souls and divining the two exact cards they hold. It's a process of logical deductive reasoning. You start every hand knowing little about what your opponent could hold, and then as a hand unfolds, you get more information that will help you narrow down your opponents' possible holdings to just a few.

A hand range is the list of plausible hands your opponent could hold based on the action thus far. Here's how it works. Let's try to read an opponent's hand using hand ranges. Of our three player types, he's a regular. It's a $1-$2 no-limit game, and he has a $200 stack. Again, we'd expect a regular in a small game like $1-$2 to have a sense of preflop hand values, but to make significant mistakes in many, many situations.

First he's dealt two cards. At this point, his hand range looks like this:

[xx]

Throughout the book I'll be using this bracket notation to denote hand ranges. An 'x' means any card, so this hand range is any two random cards.

Everyone folds to him, and he limps in. We can narrow his hands down. If he held a terrible hand like 82o, he likely would have folded. If he held an excellent hand like QQ, he likely would have raised. So his hand is likely something in between. We can guess that he might have one of the following hands:

[88-22

A9s-A2s, KJs-K8s, QJs-54s, QTs-53s, Q9s-T7s

A9o-A7o, KQo-K9o,QJo-T9o, QTo]

This is a little over 20 percent of all hands, and it's a decent guess for a limping range for an average small stakes regular player. I'm assuming his raising range looks like:

[AA-99

AKs-ATs, KQs

AKo-ATo]

These ranges are just rough guesses. It's hard to know too much about what players have the moment they enter a pot. We'll look more at preflop ranges in the next chapter.

Three players limp behind our regular, the small blind calls, and the big blind checks. Six players see the flop with $12 in the pot.

The flop comes Q♦T♦9♠. The small blind checks, and the big blind bets out for $15. The regular calls. We can narrow his hands down further.

On a coordinated flop like this one in a multiway limped pot, we could fairly expect the regular to fold any hand that did not connect with the board. Out of his preflop limping range, here are the hands we could reasonably expect him to fold.

[77-22

A8s-A2s, K8s, 76s-54s, 75s-53s (not diamonds)

A8o-A7o]

These hands make nothing on this board, and while a fish might call anyway with some of these hands, a regular would typically fold them. He might also fold hands like A9 and 97s that hit this flop, but make weak hands that likely won't hold up by the river. But for the purpose of this exercise, we'll keep these hands in consideration.

That leaves the following hands:

[88

A9s, KJs-K9s, QJs-87s, QTs-86s, Q9s-T7s, Ad8d-Ad2d,

        Kd8d, 7d6d-5d4d, 7d5d-5d3d

A9o, KQo-K9o, QJo-T9o, QTo]

Some of these hands he might choose to raise (e.g., QTo), and some of them he'd almost surely just call (e.g., J9o). Players do slowplay routinely, however, so don't put too much stock into the fact that a player just called rather than raised, especially early in a hand. A call can be a strong hand or it can be a marginal hand.

If these bracketed ranges seem overly complicated, don't worry. We're not going to go through this process for every hand in the book. We'll use shortcuts. But make sure you understand what I'm doing in this example, because this process is fundamental to hand reading.

Everyone else folds. So there are two players left, the flop bettor and our regular. The pot is $42, and each player has about $183 behind.

The turn is the 2♣ making the board Q♦T♦9♠2♣. This card is a total brick. It devalues all the drawing hands and boosts the value of good made hands.

The flop bettor checks, and our regular checks behind. What does this action tell us about his hand range? While slowplaying on the flop is common, it would be peculiar for a regular to check a strong hand on the turn in a heads-up pot on a draw-heavy board. We can fairly safely eliminate all hands two pair or better from his hand range. He could reasonably play this way with his one pair hands, pair plus draw hands, or pure drawing hands. Therefore, we can estimate our regular's hand range now as

[88

A9s, KTs-K9s, QJs-JTs, 98s-87s, J9s-86s, T7s, Ad8d-Ad2d,

        Kd8d, 7d6d-5d4d, 7d5d-5d3d

A9o, KQo, KTo-K9o, QJo-JTo]

The river comes the 8♣, making the final board Q♦T♦9♠2♣8♣. The flop bettor checks again, and the regular bets $40 into the $42 pot. This bet represents a jack for the straight. But does he really have a jack? Or is he just betting the scary card to pick up the pot? Our hand range will help us answer the question.

Of the hands in the range we gave the regular after the turn, which ones have a jack in them? Only a few: QJs, JTs, J9s, QJo, and JTo. Two other hands also improved significantly on the river: 88 and 76s. Out of all the hands that we thought the regular could have after the turn, only seven of them make trips or a straight. This works out to approximately 30 percent of the total hands in the regular's turn range. (I'll show you how to calculate this number in the next section.)

So does he have it? Or is he bluffing? Before the regular decided to bet, we'd estimate about a 30 percent chance that he held a strong hand. After the bet, though, that number goes up. Regular-type players typically don't make this bet with a hand like **K♦T♥**. They'd check that hand back and hope to win a showdown.

Say I were the big blind and held AA (not that I'd play AA this way). Would I call the river bet? I'd probably fold. Remember the second principle of hand reading. Most people don't bluff enough. Combine that fact with the raw 30 percent chance that my opponent made a big hand, and the fact that I've kept some weak hands in the range that the regular may have had the good sense to fold on the flop, and I'd estimate that I'm beaten often enough that I should fold. Since I'm calling $40 to win $82, I have to win only one time in three to make the call worth it, but I don't think a regular is bluffing quite often enough in this situation to make it a good call.

That's how you use hand ranges to read hands. You start out by giving your opponent the widest possible range, any two cards. Then you narrow that range down based on each action your opponent takes. It's a systematic process. It may look unduly complicated right now, but with practice you will learn the shortcuts that will enable you to do it in your head in just the seconds it takes to play a hand.

Exercise No. 1. Go back through the above example hand and write out the hand ranges for the big blind. Write out the range of hands he might have after the cards are dealt. Then write out a range after he checks his option. Then write his range after he bets the flop, after he checks the turn, and after he checks the river.

Hand Combinations

In the last section, I said that the regular would hold a strong hand about 30 percent of the time. You calculate that number by counting hand combinations.

We talk about having pocket aces preflop. Or ace-king suited. Or ace-king offsuit. But AKs, for instance, isn't an actual hand. It's just a convenient name for one of four hands you could be dealt: A♠K♠, A♥K♥, A♣K♣, and A♦K♦. Therefore, we say there are four ways to have AKs.

There are six distinct ways to make AA: A♠A♥, A♠A♣, A♠A♦, A♥A♣, A♥A♦, and A♣A♦.

And there are twelve distinct ways to make AKo: A♠K♥, A♠K♣, A♠K♦, A♥K♠, A♥K♣, A♥K♦, A♣K♠, A♣K♥, A♣K♦, A♦K♠, A♦K♥, and A♦K♣.

In general, any suited hand can be made four ways, any pocket pair six ways, and any offsuit hand twelve ways.

Each combination is equally likely. Therefore, you are twice as likely to be dealt AKo as you are AA, since there are twice the number of hand combinations (12 versus 6). You are three times as likely to be dealt AKo as you are AKs (12 versus 4).

Once cards hit the board, these numbers change. The board cards can no longer appear in anyone's hand. If the flop is 9♠7♠5♠, then there are still six ways to have KK, but only three ways to have 77. Since the 7♠ is on the board, only 7♥7♣, 7♥7♦, and 7♣7♦ are possible.

In general, there are three ways to have a set, twelve ways to have a pair with a specific kicker, (e.g., AQ on a Q-high board), and nine ways to have two pair.

Say someone reraises preflop and you assign him the following hand range

[AA-TT

AKs-AQs

AKo-AQo]

The flop comes K♦9♦4♣. What percentage of the time does he have a pair of kings or better?

There are six ways each to make AA, QQ, JJ, and TT. Since KK would make a set, there are only three ways for that hand. There are twelve ways to make top pair AK (three suited combos and nine offsuit) and sixteen ways to make AQ (four suited and twelve offsuit).

There are 27 combos of pocket pairs, 12 combos of AK, and 16 of AQ for 55 total hand combos. Of these, 21 make a pair of kings or better (AA, KK, AKs, and AKo). Thus, there is a 21/55 chance, or about 38 percent, that this player made a pair of kings or better. Assuming, of course, that the initial guess for his hand range is correct.

Exercise No. 2. Check my math in the Hand Ranges section. Using the hand range I gave after the turn play, calculate how many combinations make trips or better.

Preflop Hand Reading

You've now got the tools you need to start soul reading opponents. Hand ranges give you a systematic approach to determine what your opponent might have. And counting hand combos allows you to calculate the probabilities. The rest of the book will teach you how to construct hand ranges for your opponents. It's all the hand reading tips, tricks, and shortcuts I've learned through thousands of hours of experience.

Here's my first tip. Your opponents aren't robots. Sometimes they'll look down at a bad hand they'd usually fold and, for whatever reason, decide to play it this time. Likewise, they'll sometimes fold decent hands they'd usually play. We're obviously more interested in the weird hands they play rather than what they fold.

Because your opponents aren't robots, you have to be flexible with your hand reading. You can't ever know precisely which hands the player in seat nine will call a raise with. You may have him pegged as the nittiest nit, but if the board comes A-7-6-J-4 and he shovels money in on the river, you have to consider that he may have called you preflop with 85.

Tip No 1. Be flexible. Your opponents will sometimes play unpredictably. Don't get caught off-guard. Be willing to reconsider your reads given new information.

With that disclaimer out of the way, let's build some theoretical preflop hand ranges for different opponent types. Let's assume we're playing a 9-handed live $1-$2 game where most players have at least $150 in play.

The Nit

For $2, nits will try to sneak into pots with a reasonably wide range of hands. Here is a reasonable range for a nit who open-limps

[AA-22

AKs-A2s, KQs-KTs, QJs-54s, QTs

AKo-ATo, KQo-KTo, QJo-JTo]

Out of the 1326 total possible starting hands, this range represents 282 of them or about 20 percent. Someone playing this range is open folding about 80 percent of the time and playing about 20 percent of the time. Of the 282 hands the nit is playing, 78 of them are pocket pairs. (There are 13 different pocket pairs, and each can be made six ways.) Thus, a nit will have a pocket pair about 30 percent of the time after opening the pot. (This is a considerably higher number than for the other player types. Nits do love flopping their sets.)

Nits vary in their preflop raising standards. Some literally never raise preflop. The ones who do raise preflop typically don't raise very often with hands at the bottom of their opening range like KTo or 76s or 22. They use the straightforward strategy of raising their better hands and limping their weaker hands.

Behind a limper (or several limpers), nits sometimes add a few more hands. Most of these hands are suited—e.g., 86s and K7s.

If someone has raised, nits often tighten up considerably. Say I opened the pot for $10 from four off the button, and a nit called me next to act. I might give him a range like this

[AA-22

AKs-ATs, KQs-KJs, QJs, JTs

AKo-AQo]

Pocket pairs, Broadway suited hands, AK and AQ. In particular, they'll fold weaker offsuit hands and also frequently small suited hands. This range is very pocket pair heavy: 78 of the 134 total combinations in this range are pocket pairs—a staggering 58 percent.

Not all nits play this tightly against a raise. But even a looser nit's range will be very pocket pair heavy.

Tip No. 2. When nits call preflop raises, they very frequently have pocket pairs and big suited hands.

In the above example, I opened the pot and the nit called next to act. Most players play tighter in this scenario than when the pot is already multiway. Say I open for $10 and then four players call. A nit calls in the small blind. In this scenario I'd expect him to loosen up from the last hand range. He might play a range similar to his open-limping range without the weaker offsuit hands

[AA-22

AKs-A2s, KQs-KTs, QJs-54s, QTs

AKo-AJo, KQo]

Nits don't make preflop 3-bets or 4-bets without very strong hands. It's not 100 percent, every time reliable, but it's true enough that you should simply fold when a nit 3-bets or 4-bets you unless you have AA or KK. (And if the money is deep and the nit wants to play for stacks, consider folding KK.)

In our live 9-handed $1-$2 game, here is the nit's 3-betting range

[AA-KK]

Some might get frisky with QQ or AK.

Pay Attention. When you see someone 3-bet or 4-bet, watch the hand. If they show a hand considerably weaker than TT or AQ, they likely 3-bet "light." You can loosen up considerably against these players when they 3-bet.

Nit preflop play summary

- Nits will open the pot with roughly 20 percent of their hands (plus or minus 5 percent or so). This range consists of about 30 percent pocket pairs.

- Nits call raises fairly tightly. In raised pots, nits have an even more pocket pair heavy range.

- Nits generally don't 3-bet without the nuts.

- Some nits rarely raise preflop, some raise a little more often. Those who raise usually raise stronger hands and limp weaker ones.

- Be flexible. Nits usually know they have a tight image, and they will surprise you from time to time.

The Regular

Recall our definition of a regular from the player types section. This is a "solid" player for a small stakes no-limit game. Unlikely to make any eye-poppingly bad plays, but prone to have a collection of bad, exploitable habits. For many regulars, these bad habits begin preflop.

Regulars play more hands than nits do. For the most part, these extra hands just get them into trouble.

Here are some possible sample ranges for a $1-$2 regular player. This is just a jumping off point. No two regulars will play exactly the same way.

Opening the pot for a limp, regulars will typically play all the hands that nits play, plus more suited hands, connected hands, and rag aces.

[AA-22

AKs-A2s, KQs-K9s, QJs-54s, QTs-75s, Q9s-96s

AKo-A2o, KQo-K9o, QJo-98o, QTo]

This range represents about 35 percent of all hands. Of these hands, many regulars will open the stronger ones for a raise. A raising range might look like

[AA-55

AKs-A8s, KQs-KJs, QJs

AKo-ATo, KQo]

This is about 12 percent of all hands, or about 1/3 of all the hands the regular will play opening the pot.

Limping behind limpers, regulars will often open up a little more, adding in hands like Q5s and K8o.

When calling raises, regulars will typically play most of the suited hands from their opening range, while dropping some of the weaker offsuit holdings.

[AA-22

AKs-A2s, KQs-K9s, QJs-54s, QTs-75s

AKo-A9o, KQo-KJo, QJo-JTo]

Like nits, most regulars don't 3-bet or 4-bet very often. A reasonable guess for a 3-betting range from a typical regular is

[AA-QQ

AKs

AKo]

Some players stretch this range out to include JJ, TT, AQs, and AQo.

Compared to the nit ranges, these hand ranges are heavier with offsuit holdings and therefore lighter with pocket pairs and big suited cards. If a regular will limp in with any offsuit ace as in the opening range I listed above, then slightly over 40 percent of his range will consist of a hand with an ace in it.

This is why it can seem like someone always holds an ace when one flops. The ace on the flop reduces the number of Ax combinations possible, but if there are three or four regulars in a pot each with ranges heavily weighted toward ace-high hands, it's far more likely than not that someone holds an ace.

On the other hand, when no ace flops, a typical regular's range will often be fairly weak.

Regular preflop play summary

- Regulars play more hands than nits do. They play more weak suited hands, more connected offsuit hands, and more offsuit rag aces.

- Regulars are often willing to open-raise with hands like 66 and JTs, but even so they usually limp in with more hands than they raise.

- Typical regulars play ranges that are heavily weighted toward aces. More than 40 percent of holdings in a typical range can contain an ace.

- Because so much of their range consists of aces and other offsuit hands, regulars often hit the flop weakly when no ace shows.

- Regulars tend to 3-bet tightly. Fold to their 3-bets unless you have a premium hand.

The Fish

Fish play poker for the thrill of winning pots. They know that you can't win a pot if you fold preflop. So most fish play well more than 50 percent of their starting hands. It's impossible to pin them down on any particular range. Many fish base their calling or folding decisions on various factors besides the strength of their hand: whether they've been on a rush or not, whether someone they want to play against is in the pot or not, whether they just got a phone call, and so forth.

It doesn't really make sense to write out reference ranges for fish. They play most hands. I have only two points to make make about how fish play preflop.

Many times I've heard players complain about a fish (usually a fish on a hot streak). "I hate playing against you. You'll play anything. I never know what you have." This has some truth to it. Fish play most hands, so they have the widest hand ranges. It is indeed often harder to know what a fish has than what a nit or a regular has.

But wider ranges are also weaker ranges. All those offsuit hands that fish play are simply bad no-limit hands. They hit the flop weakly and rarely make hands that can play for stacks. Early on in a pot, you don't have to worry so much about enumerating the mind-bendingly wide hand ranges. Instead, you can just assume that fish are weak until they suggest otherwise (usually by raising).

Fish can vary a lot in their 3-betting strategies. Some fish make minimum sized reraises with AA only. Other fish make unpredictable reraises with a wide variety of hands. As a general rule of thumb, give nearly any live player credit for a strong hand the first time they 3-bet. If you see someone 3-bet multiple times within an hour or two, however, then suspect that they may be doing so with a wide array of hands. In particular, if you see someone who plays like a fish make a lot of 3-bets, expect him to show up frequently with very weak hands like T7o when he reraises.

Fish preflop play summary

- Fish play most hands.

- Fish base their preflop play versus fold decisions on many factors that have nothing to do with hand strength.

- The wide ranges that fish play are, by definition, weak. A fish on a hot streak might seem hard to play against, but streaks aren't predictive in any way. Every time a fish picks up two cards and throws the money in, he's very likely to end up with a weak hand by the time all the cards are out.

- Fish play a wide variety of 3-betting strategies. Many of them are very tight with 3-bets like most other live players. Some, however, are wild with their 3-bets, putting in big raises with trash. Pay attention and you can usually tell who is tight and who isn't.

Preflop hand reading exercises

Exercise No. 3. Write out hand ranges for your own preflop play. What is your range to open the pot? Do you add hands as your position improves? How about calling a raise or reraising? Compare your ranges to the ones for the nits and the regulars. Do you fit roughly into either of those categories, or do you play in a substantially different way?

Exercise No. 4. You're playing in a 9-handed $1-$2 live game. Two players fold, and then a regular open-limps. A fish limps behind him, and then

another regular limps. You raise to $15 on the button with **A♣Q♣**. A nit calls in the small blind. The first regular folds, the fish calls, and the second regular calls.

Write out possible hand ranges for each of your four opponents: Reg1 (open-limp/fold), Fish (limp/call), Reg2 (limp/call), Nit (cold-call). Remember that Reg1 folded, so don't include any hands in his range that he would have called a raise with.

Which of these players is most likely to hold a pocket pair? Who is most likely to hold an ace with a weaker kicker than yours?

Exercise No. 5. You have **J♦J♣**. Two players limp, and you raise to $10. A regular reraises to $35. You know from experience that this regular will reraise with the following range

[AA-QQ

AKs

AKo]

What is the percentage chance your opponent has each of the following hands: AA, KK, QQ, and AK?

Now the action is the same, but you have **A♠K♣** instead. Your opponent has the same range. How have the percentages changed? (Hint: Holding an ace and king in your hand reduces the number of combinations of a number of these hands.)

Hand Reading On The Flop

Before the flop, you're usually just trying to get a general sense of the sorts of hands your opponents will and won't play. The real business of hand reading begins on the flop.

Most of your opponents—whether they be nits, fish, or regulars—will play a fit-or-fold strategy after the flop. They will tend to call or raise on flops that connect with their hands, and they will fold on flops that miss their hands. Naturally, a nit will tend to have stricter standards for "fitting" the flop than a fish will have. But both player types are going with the "fits" and dumping the rest.

This fact makes hand reading much easier. Specifically, here's what your $1-$2 opponents won't be doing (except in rare circumstances):

- They won't be cold bluffing you repeatedly on multiple streets.

- They won't be calling your flop bets with air to try to steal the pot from you on a later street.

- They won't be raising your flop bets with air. Furthermore, if they call you on the flop and raise you on the turn, they will essentially never have air.

This isn't to say that people won't try to run bluffs on you. They will. But the bluffs will usually take one of two forms:

1. Semi-bluffs with drawing hands. People will sometimes bet or raise flush and straight draws.

2. River bluffs with hands that fit the flop, but then didn't pan out on the turn and river. Examples include busted draws and small pairs that didn't improve.

> Tip No. 3. If someone calls or raises you on the flop, expect this player to have "fit" the flop. Some players' definitions of fitting will be looser than others.

This fit-or-fold rule breaks down when you start playing against tough players in tighter games. Good players will try to read your hand and sometimes will run unexpected bluffs against you when they perceive that you may be weak. But fit-or-fold is a good hand reading rule of thumb against the vast majority of small stakes no-limit players.

When You Have The Initiative

You have the initiative in a hand when you were the last person to bet or raise. Say two regulars limp in preflop, and you raise the button to $12. The regulars call. After the flop, both players check to you. You have the initiative. You were the last person to put in a bet or raise, and your opponents are now reacting to you.

If you play correctly in a small stakes game, you will often have the initiative. Aggression gets the money, and you want your opponents to be responding to your bets and raises more often than not.

Since it's such a common situation, hand reading on the flop starts with learning to decode your opponents' responses to your flop bets. Let's run through a series of flops and come up with hand ranges for various opponent types.

For each of these examples, assume that the action goes as follows. A player limps in four off the button. Another player limps two off the button. You raise on the button to $12. The blinds fold, and the two limpers call. On the flop, both players check to you. You bet $30 into the $39 pot, and the first limper calls and the second folds. We're going to come up with ranges for the flop caller in each example.

K♦8♠4♥

This is a dry flop that allows for few drawing hands. A nit would likely want at least a pair of eights on this flop to consider it a fit. Preflop, we assumed that a nit would open-limp with

[AA-22

AKs-A2s, KQs-KTs, QJs-54s, QTs

AKo-ATo, KQo-KTo, JTo]

Of these hands, the following make a pair of eights or better

[AA-88, 44

AKs, A8s, KQs-KTs, 98s-87s

AKo, KQo-KTo]

These are roughly the hands you should expect a nit to have after calling you on this flop. You can break this range down further into two portions, strong fits and weak fits. A strong fit is a hand that your opponent is likely to call with again on the turn, and a weak fit is one that he's likely to fold to continued pressure. Nits will typically fold pairs lower than kings to further betting while hanging on with top pair or better. Here are the strong fits.

[AA-KK, 88, 44

AKs, KQs-KTs

AKo, KQo-KTo]

And the weak fits.

[QQ-99

A8s, 98s-87s]

A quick look at these two ranges will tell you that there are many more strong fits than weak fits on this flop. Thus, if you were to bet the turn, you should more often than not expect your opponent to have a pair of kings or better and call (or raise).

Tip No. 4. On a dry flop with one high card and two low ones, if a nit calls you on the flop he's more likely than not to have top pair or better.

Thinking in terms of strong fits and weak fits is a very useful shortcut during a hand. Say you flop a set. If your opponent is likely to have more strong fits than weak fits, then you will surely want to bet the turn and river for value. On the other hand, if his hand range is heavy with weak fits, you might choose to slowplay to give him a chance to catch up and pay off with something.

Likewise, if you are considering a bluff, you want to try it against a range heavy with weak fits.

When I'm reading hands during the heat of battle, I don't enumerate long hand range lists in my head. Insteady I often just try to get a rough count of the strong fit hands versus the weak fit hands and plan my strategy accordingly.

Tip No. 5. If you struggle with enumerating hand ranges in your head, make things simpler by dividing the possibilities into strong fits and weak fits.

Back to the example flop of **K♦8♠4♥**. What hands would a fish consider to be a fit on this flop? Most fish will call the flop with any pair. So any king, eight, four, or pocket pair is a fit. Furthermore, a fish would typically call with a gutshot around the 8 and 4 (76, 75, and 65). Finally, many fish would call a dry flop like this one with ace-high, two big unpaired cards, or possibly a couple of backdoor draws. I'd expect many fish to call this flop of **K♦8♠4♥** with hands like **A♦T♠**, **Q♣J♣**, or **9♠7♠**.

That's a lot of hands. So many, in fact, that I won't try to write them all out in bracket notation. But even so, the fish is still folding a lot of hands on the flop. Almost no one, not even a fish, is going to take one off on the flop with hands like **Q♣2♣**, **J♦7♠**, or **T♥3♥**.

This is the big problem with the ultra-loose, fit-or-fold strategy of the fish. They have a weak hand range at nearly every point in a hand. They will call the flop with a wide array of trash. But their preflop ranges are so wide and weak that they are still frequently folding to flop continuation bets.

Tip No. 6. Fish call flops with a wide array of bad hands that you would likely never consider continuing with. This sets them up with a weak hand range on the turn.

"Never try to bluff a fish." It's advice that you've no doubt heard before. And there's certainly a lot of wisdom in it. Some fish will call you down on three streets with a pair of threes just for the heck of it.

But it's not a hard and fast rule. Fish tend to have weak hand ranges on all streets because their calling ranges are so wide. At every stage of a hand, they are folding some percentage of their holdings. If a fish calls a **K♦8♠4♥** flop with A5 or 97 and doesn't improve on the turn, he's likely to give it up on the turn.

Thus, it often pays to be aggressive against fish with hands you'd play more conservatively against tighter players. For instance, if you held **6♦6♥** on the **K♦8♠4♥** flop, bet the flop, and a fish called, you should consider betting the turn. Say the turn was the **8♥** (an admittedly good card for you). You bet the turn. Sure, you'll get called by kings and eights, but you'll also get called by fours and 33. And you'll get hands like 97 and QJ to fold.

This book is about hand reading more than betting strategy, so I will leave this tangent now. The takeaway is that fish have weak hand ranges throughout hands, and therefore you can often play aggressively against these ranges with what might look like marginal hands.

Breaking down the fish's flop calling range into strong fits and weak fits isn't as straightforward as it was with the nit. Obviously top pair and better will be strong fits. No pair, no good draw hands are weak fits. The smaller pairs, however, are player-dependent. Some players will call you down

doggedly with every lowly pair of deuces. Others will give these hands up to pressure.

Pay Attention. Pay close attention to how the fish at your table play. The fish at the table are always your most important opponents. They are your main source of profit. They also give away tons of information about how they play. First, they play nearly every hand, so you get a lot of data points on them. Second, they often make no attempt to disguise their play. Don't be satisfied just thinking that they play "bad." There is method to their madness. Figure it out, and it will pay dividends. A good place to start is to figure out exactly where they draw the line in calling down with weak pairs.

How about the regulars? What will their hand range look like after calling a **K♦8♠4♥** flop? Recall the open-limping range we proposed for them in the preflop chapter.

[44-22

A7s-A2s, KTs-K9s, JTs-54s, QTs-75s, Q9s-96s

A9o-A2o, KJo-K9o, QJo-98o, QTo]

This is the total opening range, but with the hands we'd expect them to raise removed. You shouldn't discount the raising hands entirely, however. People limp in with "raising" hands sometimes.

Which of these hands would a regular consider a fit on a **K♦8♠4♥** flop?

[44

A4s, KTs-K9s, 98s-65s, T8s,86s, J8s

A8o, A4o, KJo-K9o, 98o]

This range is about right. I included the gutshot hands (76s and 65s), but left out bottom pair, no kicker (54s). Some regulars would fold the gutshots and call with the pair. Hand reading is not an exact science. You often won't be certain about some of the hands on the fringes.

Which of these hands are strong fits?

[44

KTs-K9s

KJo-K9o]

And the weak fits.

[A4s, 98s-65s, T8s, 86s, J8s

A8o, A4o, 98o]

I included A8o with the weak fits, but it could go either way depending on what comes on the turn. A regular might like A8o better if the turn is a deuce than if it's a queen.

If you count the hand combinations, the regular's flop calling range divides roughly equally into strong and weak fits with a few extra hands on the weak side. This means that if the turn was a card like a queen that doesn't improve any of the weak fit hands and puts another overcard on board to the eight, you could bet the turn and expect a good fold percentage.

> Tip No. 7. Counting the weak fits is often as important as counting the strong fits. When your opponent's range is full of weak fits, it gives you the green light to stay aggressive. You can bluff against weak fits, and you can also bet so-so made hands for thin value.

This is the essence of hand reading. You take a hand range and compare it to what's on board. Then you get into your opponents' heads a little bit and guess about how they would play each possible hand. As a hand progresses, your guesses become more and more refined. They also become more refined as you learn more about your opponents.

What About Getting Raised?

In the last example, we came up with ranges your opponents might call your flop bet with. What if they raise instead?

When your opponents raise instead of call (or call instead of raise) it sometimes gives you extra information. But other times, your opponents will raise you with "calling" hands and call you with "raising" hands, and so you don't gain as much information. Here are the general rules for when raising is meaningful.

- Raises late in the hand mean more than raises early in a hand.

- Raises of large bets mean more than raises of small ones. Also, large-sized raises mean more than small-sized ones.

- Raises mean more the more tight and passive the player making the raise.

Here are these principles in action. You bet $150 into a $200 pot on the river. The board is Q♣9♣2♠7♣A♦. Your nit opponent raises you all-in for $500 more.

This is a large raise, late in a hand, from a tight and passive player. He has the nuts. Period. Ace-high flush every time. This raise gives you the ultimate in hand reading, a perfect read. (Unfortunately, the only thing you can do with the read in this case is to fold.)

Rewind this hand to the flop—Q♣9♣2♠. It's the same nitty opponent. You bet $15 into a $20 pot. He raises to $45. What does this raise mean?

It's not necessarily the nuts in this case. The raise means that he fit the flop. It also likely means that he has a strong fit. He could have a set, but he could also have KK or AQ. He could also have a big draw like A♣J♣ or J♣T♣. Here we have a tight and passive opponent, but the raise comes early in the hand and it's a small bet. Therefore, the raise gives us some information (we're up against a strong fit, not a weak fit), but not as much as the previous example.

Now change the opponent to a fish who plays fast-and-loose. This player type could raise with any hand he considers a fit on this flop, possibly including hands as trashy as A♣T♠. In this case, the fact that the opponent raised tells us almost nothing versus a call.

There's one other important factor that distinguishes raising ranges from calling ranges. People tend to raise when they have a strong hand that they fear might get outdrawn. We'll talk more about this tendency for players to want to "end the hand" or "put you to a decision" later on.

So back to the original question. What if you get raised? On a dry flop like K♦8♠4♥, you don't get too much information from whether people raise or call. If a nit raises you, he likely has a strong fit. But a regular or fish might choose to raise this flop sometimes with a good portion of their range. Likewise, any player with a super-strong hand like two pair or a set might choose to slowplay on this flop. So I wouldn't expect too much separation in this particular scenario between calling ranges and raising ranges.

> Tip No. 8. Decoding raising versus calling can be tricky. In some situations, the fact that a player raised (or called) is significant and can help you narrow down hand ranges. In others, raising and calling ranges are fairly well mixed together. Using the guidelines provided, along with experience, you can get a feel for how this dynamic works.

Now let's see how this hand reading logic changes on different flop types. First, let's look at the same flop, but make it ace-high instead of king-high.

A♦8♠4♥

Nits hit this flop a bit more often than they hit the king-high flop. Since nits often play any suited ace, the ace-high flop gives them more top pair combos and also some two pair combos (A8s and A4s) that weren't in the nit's range on the king-high flop.

Normally you should consider most hands top pair or better to be strong fits. Players generally don't like to fold top pair. But if a nit flops A♦8♠4♥ to his A♣3♣, it's a weak fit. Fearing a better kicker, nits will typically fold weak kicker aces to pressure on the turn.

Exercise No. 6. Using the same process we used in the king-high flop example, write out the hand range a nit would consider a fit on an A♦8♠4♥ flop. Then divide the hand range into strong fits and weak fits. Use your judgement about how high a kicker a nit might need to consider a pair of aces a strong fit rather than a weak one. Are there more strong fits or weak fits? What does that fact say about your bluffing chances on the turn?

This flop plays fairly similarly against a fish as the king-high flop. Since fish often play both K5o and A5o, roughly the same number of hands will fit both flops. The one thing to look out for are the gutshot draws around the ace and four on this flop. Fish can have 53, 52, and 32 when they call you. These draws aren't a large part of a fish's range, but if another wheel card comes and a fish all of a sudden wants to get the money in, don't miss these possibilities.

Since regulars play an ace-heavy hand range, changing the king to an ace has the most effect on their hand ranges. This was the regular's open-limping hand range.

[44-22

A7s-A2s, KTs-K9s, JTs-54s, QTs-75s, Q9s-96s

A9o-A2o, KJo-K9o, QJo-98o, QTo]

Of these hands, this flop fits

[44

A7s-A2s, 98s-65s, T8s, 86s, J8s

A9o-A2o, 98o]

Dividing this range into strong fits and weak fits, we get

[44

A7s-A2s

A9o-A2o]

for strong fits, and

[98s-65s, T8s, 86s, J8s

98o]

for weak fits. Regulars will also sometimes fold ace-rag to turn pressure, but they do so much less reliably than nits. So for these purposes I would consider even A2o to be a strong fit (though it really belongs somewhere between the strong and weak fits). Let's count the strong fits versus weak fits.

There are 3 combos of 44 and 3 combos each of A7s-A5s, A3s-A2s. Since it makes two pair, there are only 2 combos of A4s. For the offsuit hands, A9o, A7o-A5o, and A3o-A2o have 9 combos each. A8o and A4o have 7 combos each. That makes 88 total combos of strong fits.

For weak fits, we can make 98s and 87s 3 ways and 76s and 65s 4 ways. There are 3 ways each for T8s, 86s, and J8s. Finally, there are 9 ways to make 98o. That makes 35 combos of weak fits.

In the king-high example, the strong fits and weak fits were roughly equal in number. In this example, however, there are 88 strong fits to only 35 weak ones. Regulars hit ace-high flops harder than they hit many other flops.

> Tip No. 9. When a regular calls your flop bet on a dry ace-high flop, you are very frequently looking at a pair of aces or better. It usually does not pay to continue a bluff against this hand range.

6♣5♥2♦

Nits fit this flop with pocket pairs, the suited aces that connect with the board (particularly A6s and A5s), and a few suited connectors (87s, 76s, 65s, 54s). This is well less than half of the hands they open with, so it's almost always a good idea to continuation bet rag flops like this one against nits.

Players of all types tend to raise rag flops more often than they raise flops like Kxx. Many players will flat-call preflop with QQ-88, but then raise the flop when they catch three undercards. This tendency can make playing JJ on a flop like this a bit tricky. If you bet the flop and get raised, your opponent could have hands you beat (TT-88, 87s) and hands that beat you (AA-QQ, 66, 55,22, and 65s) with roughly equal frequency. With 99 on this flop, I'd tend to fold to a raise, since that's 12 extra hand combos that now beat me. With KK, I'd be inclined to play for stacks since I could be getting it in good against all the lower overpairs. With JJ, it's a reasonably close decision between playing for stacks on the flop, folding on the flop, and calling the flop to get more information on the turn.

Fish will call flops like this with any pair, any gutshot (e.g., Q3, T4, 97), and even two overcards like KJ. This is a very weak hand range. You can often get a turn fold if you bet, with the usual caveat that a fish might decide to get stubborn and call three streets with 32.

This flop doesn't hit the ace-high heavy range of a regular very hard. Pocket pairs are fits, as are the small aces (A6-A2), and a small handful of suited connectors (98s-54s, 97s-75s, 96s). Offsuit connector fits are also possible (98o, 87o), though they are on the fringe of many players' preflop ranges.

> Tip No. 10. You should often bet rag flops. Your opponents won't give you much credit for hitting the little cards, but they will have missed with most of their ranges as well, and players tend to give up rather than play back.

The exception would be if you have air, and you're against a particularly stubborn fish. The fish will find plenty of hands to call with on the flop and won't readily give you credit for a hand.

7♣7♥3♠

Everything I said about the rag flop goes for this one as well, except this small, paired flop is even harder to hit. Most player types will fold more hands on a flop like this than nearly any other type of flop.

Having said that, if you have an aggressive or bluffy image, this flop can represent an exception to the "fit-or-fold" assumption we made. Some players who don't normally play back with weak hands might call or raise you with air on a flop like this one because they realize that it's hard for you to have hit this flop as well.

Exercise No. 7. Write out hand ranges for nits, fish, and regulars that constitute a fit on a 7♣7♥3♠ flop. Then, next time you play, watch how different players handle these small, dry flops. What hands do they turn up with at showdown? Do you see players calling the flop (or flop and turn) only to fold to a bet on a later street? If so, what sorts of hands do you think they're doing this with?

K♥J♥3♠

The flops we've covered up until now have all been relatively uncoordinated. No flush draws and few straight draws were available. Now we'll explore some more coordinated flops. This one features two Broadway cards (ten and over) and a possible heart flush draw.

Let's look at how the nit's range connects with this flop. This was our opening range for the nit.

[AA-22

AKs-A2s, KQs-KTs, QJs-54s, QTs

AKo-ATo, KQo-KTo, JTo]

With two overcards on board, most nits will fold TT-44 and 22 on this flop. The other hands that fit are kings, jacks, open-ended straight draws, and flush draws. Thus, the fits are roughly

[AA-JJ

AKs, AJs, KQs-KTs, QJs-JTs, QTs, AhQh, AhTh-Ah2h, Th9h-5h4h

AKo, AJo, KQo-KTo, JTo]

That's a good portion of the nit's original range. Let's divide these hands into strong fits and weak fits. Nits will often fold small flush draws or open-ended straight draws not to the nuts to a sufficiently large turn bet. So I'll classify those hands as weak fits, while I'll keep the ace-high flush draws and combo draws as strong fits. That gives us for strong fits.

[AA-KK, JJ

AKs, KQs-KTs, QhTh, AhQh, AhTh-Ah2h

AKo, KQo-KTo]

And weak fits.

[QQ

AJs, QJs-JTs, QTs (not hearts), Th9h-5h4h

AJo, JTo]

This leaves more hand combos in the strong fit category than the weak fit one. Overall, a nit who calls on this flop will tend to have a strong hand range going into the turn. Furthermore, it won't be clear to you which turn cards are scare cards for your opponent, or which ones make his hand.

> Tip No. 11. Flops with two (or three) high cards and a flush draw tend to hit nits' hand ranges fairly hard. Since they play, proportionally speaking, a lot of big suited hands, this should be no surprise.

Fish play a wide assortment of hands. Some play so many hands that you should treat their hand range going into the flop as if it were any two cards.

[xx]

It's easy to look at a flop like K♥J♥3♠ and think, "Wow, that hits a lot of hands." But it actually hits no more hands than T♦5♣3♣ does. Both flops have two connected cards to form straight draws around, two cards of the same suit for flush draws, and a third unrelated card.

The reason K♥J♥3♠ hits more hands in practice is because most players play hand ranges that are heavily weighted toward high cards. A regular player is a whole lot more likely to hold QT to make a straight draw than 42.

But with fish, this isn't so. They play a wide array of hands and can show up with both QT and 42. Thus, fish hit T♦5♣3♣ and K♥J♥3♠ with nearly the same frequency. This actually makes K♥J♥3♠ a particularly bad flop for a fish. Everyone else is playing hand ranges strongly weighted toward high cards, but the fish isn't.

Consider the following. Say you hold T♦T♣ and you're heads-up against a fish who plays more than 80 percent of his hands. The flop comes K♥J♥3♠. Who do you think is the equity favorite?

You are. According to PokerStove, TT is a 62/38 equity favorite over the fish's hand range even on this "terrible" flop for your pair.

Fish play so many hands that they will have a weak hand range on nearly any flop, even ones that look dangerous.

> Tip No. 12. There's no such thing as a scary flop against a fish. Fish play so many junk hands that they cannot possibly clobber a flop the way a player with a tighter hand range can.

The K♥J♥3♠ flop hit the nit's range quite hard. It will also hit a regular's range fairly hard. But whenever players play a lot of ace-rag hands, any flop without an ace in it will necessarily miss their range a good portion of the time.

Exercise No. 8. Figure out what percentage of a regular's preflop range fits a K♥J♥3♠ flop. Divide those fits into strong fits and weak fits. Are there more strong fits or weak fits?

T♣8♣7♠

Let's focus on the regular this time. Here was his open-limping range from the preflop chapter.

[44-22

A7s-A2s, KTs-K9s, JTs-54s, QTs-75s, Q9s-96s

A9o-A2o, KJo-K9o, QJo-98o, QTo]

Let's assume he will consider any straight draw (open-ended or gutshot), flush draw, or decent pair to be a fit on this flop. What is he left with?

[A7s, KTs-K9s, JTs-65s, QTs-86s, Q9s-96s, Ac6c-Ac2c, 5c4c, 7c5c

A9o-A7o, KTo-K9o, QJo-98o, QTo]

Except for the small pairs and the bad offsuit aces, that's nearly every hand in the regular's limping range! Note how a medium-sized connected flop like this one hits nearly every connected hand in the deck. They make straights, two pair, pair plus straight draws, pair plus flush draws, top pairs, and so forth.

> Tip No. 13. Medium-sized coordinated flops hit most regulars' limping ranges very hard. When you bet flops like **T♣8♣7♠**, you will get relatively few folds.

Furthermore, a good number of these hands qualify as strong fits. Pair plus draw hands are of particular interest. A player with 98 or 97 on a **T♣8♣7♠** flop will often call a turn bet. When the board is coordinted like this, pair plus draw hands make up a significant fraction of your opponents' strong fits.

Nits will also hit this flop fairly frequently because the top card, a ten, is high enough to connect with a number of high card hands.

Exercise No. 9. Compare a nit's range on a **T♣8♣7♠** flop to a **8♣6♣5♠** flop. Nits hit the first flop with more hands because the cards are higher, but how many more?

Hand Reading In Action

Here's a hand I played in a $2-$5 game in Las Vegas. I used my knowledge of flop hand ranges to get extra value. My main opponent in this hand had about $900, and I had him covered.

A player limped in, and my main opponent made it $20 to go. Of our three player types, I would classify him as a regular, but he had some fishy tendencies. He played a lot of hands and would sometimes make some unwise calldowns after the flop. He also raised a fairly wide range of hands preflop.

Everyone folded to me in the small blind, and I made it $75 to go with **J♥J♦**. The limper folded, and the regular called as I expected him to do with most of his range.

The flop was **T♣9♥7♠**.

I bet $125 and my opponent called quickly. I wasn't certain at the time if he would have raised or called with a big hand such as T9 or TT.

The turn was the **2♠**. I bet $250 and my opponent called quickly again. In fact, his turn call was so quick that I considered it to be a tell. When someone calls very quickly, particularly if the bet is sizable, it typically indicates a medium-strength hand. It's a hand that is obviously (to the person playing the hand, at least) too good to fold, but also obviously not good enough to raise.

When the flop is coordinated, pair plus draw hands make up a good chunk of my opponent's strong fit hands. If my opponent held a set or two pair, he would at least think about raising on the turn. But with 98, T8, JT, and the like, he would call and possibly call without much thought.

The river came the **Q♥**. I bet $300. Normally a **T♣9♥7♠2♠Q♥** board would be a bit scary for me holding **J♥J♦**. But I knew on the turn that my opponent's hand range consisted primarily of pair plus draw hands. A holding like KJ for a flopped double-gutter and rivered straight would be part of his turn-calling range, but since I held two jacks, only 8 combos of that hand were possible.

Overall, the queen would have missed most of the hands in his turn calling range, so I thought there was an excellent chance my opponent had a pair smaller than mine. He hemmed and hawed for about a minute and then decided to call me with 88. He flopped a open-ender to his pocket pair and then paid off three streets with it.

By employing a little hand reading, I was able to make a good $300 value bet that other players might have missed.

Flop hand reading summary

- Most of your opponents will play a fit-or-fold strategy on the flop where they continue with hands that "fit" the flop and fold those that don't

- Some players will have looser standards than others for which hands fit and which hands don't. But these standards will usually remain fairly consistent for a given player.

- If you bet the flop and your opponent calls you, construct a hand range from all the hands in his preflop range that fit the flop.

- You can divide that range into two: strong fits and weak fits. Strong fits are hands that your opponents will likely continue with on the turn, while weak fits are those that they'll likely fold on the turn without improvement.

- If your opponent has a hand range rich with weak fits, consider betting the turn either for value or as a bluff (depending on what you hold).

- Pay attention to the flop texture. A **K♥J♥3♣** flop gives a nit a lot of strong fits. A **T♣5♥3♥** flop misses the bulk of a nit's preflop hand range.

- Flop texture factors to consider are whether there's an ace or not, whether there are two (or three) connected cards, two (or three) of a suit, how high the top cards are, how high the connected cards are, whether the flop is paired, and so forth.

- Fish who play most of their hands preflop will have a weak hand range on nearly any flop.

- If you get raised on the flop, it may or may not allow you to further narrow down your opponents' holdings. Typically players will raise only with strong fit hands. But many players like to slowplay their strongest hands on the flop. On the other hand, they'll raise sometimes with draws or mediocre top pairs. Aggression early in the hand for smaller bets doesn't carry as much information as aggression later in the hand for bigger bets. I'll talk more about how to read an opponent's aggression in a later chapter.

Hand Reading On The Turn

Once you have a flop hand range in mind for your opponent, hand reading on the turn is fairly simple. The turn card will either have improved your opponents' hands, or it won't have. Hands can improve on the turn in a few ways:

- Complete a draw

- Become two pair or trips (for a flopped pair)

- Catch a pair (e.g., a turn 6 holding 76 on a 982 flop)

- Catch a second draw (e.g., a turn **K♣** holding **7♣6♣** on a **9♦8♣2♠** flop)

- Catch a brick (for a made hand on a coordinated board, e.g., a turn 2 holding KK on a T98 flop)

There are some other ways to improve on the turn, but that covers the main scenarios.

> Tip No. 14. A player who called the flop and improved on the turn will rarely fold.

It's simple, intuitive, and fairly reliable. Anyone who calls the flop and improves on the turn will usually call again (or raise). There are a few exceptions. If you make a massive overbet, you can get people to fold hands that they would have called a more typically-sized bet with. Nits also sometimes find folds on the turn when the improvement is marginal (e.g., a turn 6 holding 76 on a 982 flop).

In general, however, it's a good rule of thumb. People call or raise when they improve. When they don't improve, they generally continue with their flopped strong fits and fold their flopped weak fits.

When the turn card hits, count how many hands in your opponents' ranges have improved. This will give you a sense of how they'll react if you bet.

It's a $1-$2 game with $300 stacks. Two regulars limp in, and you raise to $12 on the button. The big blind calls, as does one of the limpers. There's $39 in the pot with $288 behind.

The flop comes **K♠T♥6♠** . Both players check to you. You bet $30, the big blind folds, and the regular calls. There's $99 in the pot with $258 behind.

What does your opponent's range look like?

Here's the regular's reference preflop open-limping range

[44-22

A7s-A2s, KTs-K9s, JTs-54s, QTs-75s, Q9s-96s

A9o-A2o, KJo-K9o, QJo-98o, QTo]

Let's add the fringe hands 77-55 to this range to allow for the possibility that this player flopped a set of sixes. Remember, the hand ranges we've been using in this book are just approximate reference ranges. In practice, you will have to add and subtract hands from these ranges to account for how specific opponents play.

Which of these hands fit a **K♠T♥6♠** flop?

[66

A6s, KTs-K9s, JTs-65s, QTs-86s, Q9s, T7s-96s, As7s,

    As5s-As2s, 5s4s, 7s5s, Js8s

A6o, KJo-K9o, QJo-98o, QTo]

On this reasonably coordinated flop, a big chunk of your opponent's limping range will fit the flop. Notice how nearly all of the connected hands made either a pair or a gutshot on this flop. Let's divide this range into strong and weak fits. For strong fits, we have

[66

KTs-K9s, As7s, As5s-As2s, JsTs-8s7s, QsTs-9s7s, Qs9s, Ts7s

KJo-K9o, QJo]

and for weak fits

[A6s, JTs-65s, QTs-86s, Q9s, T7s-96s (excluding the strong fits),

     5s4s, 7s5s, Js8s

A6o, JTo-98o, QTo]

The weak fits on this flop are mainly three types of hands: flopped pairs lower than top pair, gutshots, and small flush draws. The strong fits are top pair or better, nut flush draws, and combo draws (straight and flush draws and pair plus flush draws).

As you can see, the strong fits and weak fits are fairly evenly split. Because there are so many weak fits, the turn card will strongly influence how often your opppionent calls the turn.

Say the turn card comes **2♣**. How many of the weak fit hands does this card improve? None of them. If you were to bet $70 (into $99) on this turn, I'd expect your opponent to fold a good percentage of the time.

How about a **K♣** on the turn? Same story. None of the weak fits have improved, and I'd expect a good number of folds.

How about the **5♠**? Now we have some improvement. Specifically, the following weak fit hands have improved: 65s and **J♠8♠**. You could also consider 87s (not spades) having improved, since it picked up an open-ended straight draw, but this is an example where the improvement might not be enough to get a turn call. And **5♠4♠** and **7♠5♠** disappeared from the range since the **5♠** appeared on the board.

But wait, you say, didn't every flush draw just improve? Sure. But because of the connected nature of the flop, nearly every flush draw in our opponent's range qualified as a strong fit. They were either nut flush draws, straight and flush combo draws, or pair plus flush draw combos.

While the flush card improved the overall strength of your opponent's range, most of the weak fit hands didn't improve. Thus, the **5♠** might be a decent card to bluff, especially if you held a hand with outs such as **A♠J♣**.

How about the **9♦** on the turn? That would make the board **K♠T♥6♠9♦**. This card improves most of the weak fit hands. 87s improves to a straight. T9 (offsuit and suited) and 96s improve to two pair. JT, 98, 76s, QT, J9s-86s, Q9s, and T7s all improve to a pair plus a gutshot. **J♠8♠** and **7♠5♠** improve to combo draws. Only a few of the weak fits didn't improve: A6, 65s, and **5♠4♠**. Since this card improves so many hands, if you bet the turn you should expect at least a call.

> Tip No. 15. Turn cards that are lower than the lowest board card and turn cards that pair the board improve relatively few hands. Turn cards that put three cards to a straight on board (e.g., a 9 on a KT6 flop) improve many more hand combos.

In the above example, the 9 improved so many hands becuase it connects with both the KT on the flop and the T6 on the flop to make three to a straight. Thus, both JT and 76 improve to a pair plus gutshot. Cards like a Q or a 7 would also improve a number of hands, but not quite as many as the 9.

Exercise No. 10. Write out which of the weak fit hands improve on a **Q♥** turn. Do the same for a **7♥** turn.

Recategorizing the Strong and Weak Fits

In the last section, we looked at different turn cards and saw which ones improved the flopped weak fits. The weak fits that improved, along with the flopped strong fits, become the hand range your opponent can have after calling the turn.

We can now take that turn range and divide it again into strong and weak fits. In this case, a strong fit is a hand that your opponent is likely to take to showdown on most river cards. A weak fit is one that your opponent is likely to fold on the river without improvement.

All pure drawing hands on the turn, even big combo draws, are weak fits. If your opponent doesn't improve, he's likely to fold to a river bet. Pair plus draw hands can be strong or weak fits depending on how strong the pair is and how likely the player is to pay off with any pair.

Top pair hands can also be strong or weak fits on the turn. Top pair with a big kicker is usually a strong fit. Top pair with a mediocre or no kicker is a strong fit for some players, but nittier players will often fold a bad kicker on the river.

Two pair or better should usually be considered a strong fit.

Let's look back at the last hand example with the **K♠T♥6♠** flop and the **9♦** on the turn. Since nearly every weak fit hand improved, we said an opponent would fold very few hands on the turn. But how many of these improved hands are now strong fits, and how many are weak ones?

Here's the hand range that calls (or raises) a turn bet.

[66

KTs-K9s, JTs-76s, QTs-86s, Q9s, T7s-96s, As7s, As5s-As2s, Js8s

KJo-K9o, QJo-98o, QTo]

Here are the strong fits.

[66

KTs-K9s, T9s, 87s

KJo-K9o, QJo, T9o]

And the weak fits.

[JTs, 98s, 76s, QTs-86s, Q9s, T7s-96s, As7s, As5s-As2s, Js8s

JTo, 98o, QTo]

Exercise No. 11. Count the number of strong fit hand combos and the number of weak fit combos. Remember to account for the cards that are on the **K♠T♥6♠9♦** board and remove any combinations that include those cards.

If you complete the above exercise, you'll see that there are more weak fit hands than there are strong fit hands. This is commonly the case when you have a turn card like the **9♦** that improves a large percentage of the weak fits from the flop. A single card can improve a wide range of hands, but it can't clobber that whole range. Lots of the improvements will be marginal and improve the flop weak fit only to a turn weak fit. In this case, the **9♦** improved many of the gutshot and second/third pair hands on the flop to a gutshot plus a pair on the turn.

This brings us to a key strategic insight. Say you have air on the turn. Bluffing the **9♦** on the turn, planning to give up on the river if called, would be madness. We already showed that your turn bet will get called the vast majority of the time.

But bluffing the **9♦** on the turn, planning to bluff all-in on most river cards, is not nearly as mad. Because more than half of your opponent's turn range consists of weak fits, you can expect the river bluff to succeed quite often. Here's a simplified example of the situation to show you how it works.

The pot on the turn is $100. You and your opponent have $220 behind. You have complete air. You bet $70 on the turn, and your opponent calls you 100 percent of the time. On the river you bet your last $150, and your opponent calls you 40 percent of the time (with strong turn fits). Is this series of bluffs profitable?

You win a $170 pot 60 percent of the time. The other 40 percent of the time, you lose your $220 in bluffs. Thus, on average you win

EV = 0.6 (+170) + 0.4 (-220) = 102 - 88 = +$14.

You win $14 on average every time you execute this series of bluffs. It's a winner even though your turn bluff literally never works!

What if you decided to wuss out on the river and give up after getting called on the turn? In that case, you'd lose $70 on average. Huge difference.

This is an absolutely critical situation in no-limit hold'em. Once you get the basics of no-limit down, the next step is to learn how to amp up the aggression. Most players do this gradually. First players start continuation betting more flops. Then they start following up their flop continuation bets sometimes with turn barrels. Many players never really get beyond this stage. But good players start looking for situations to fire bluffs on the flop, turn, and river.

The players in the middle, the ones who fire the turn but not so much the river, are the ones who get bitten the worst in the above situation. They bluff the **9♦** on the turn, but when they get called, they don't have the guts to shove the river. Their reluctance to bluff the river costs then $84. They'd be much, much better off in this scenario if they never bet the turn at all.

> Tip No. 16. Learn to recognize situations where bluffing just the turn is throwing money away, but where bluffing the turn and river together can be profitable. These situations frequently occur when the turn card improves most of the flop weak fits to turn weak fits.

Notice how not bluffing at all and bluffing the turn and river are fairly close in EV ($14 versus $0) while bluffing just the turn is much worse (-$70). As you learn to identify and handle this situation, first make sure you avoid the really bad option. That alone gets you 80 percent of the value. As your hand reading improves, you'll be able to find the very best option more and more often.

One final point about this situation. You want to bluff most river cards, but not all of them. To decide whether to bluff a river card or not, count how many of the turn weak fits have improved. If few of them have improved, bluff. If many have improved, however, then you're toast, and you just have to give up (and eat the loss of your turn bet).

The decision to run the bluffing line or to give up on the turn often hinges on this consideration . If most river cards are safe to bluff, then frequently the bluffing line is better. But if many river cards are going to stop you from bluffing, then usually you just have to give it up on the turn.

Hand Reading In Action

Here's a hand I played at $2-$5 in Las Vegas that illustrates this principle. My opponent in this hand has $1,000, and I have him covered. My opponent in this hand is a nit. But he plays a bit more loosely preflop than our prototypical nit, and he uses a bit of hand reading to inform his play.

I have **K♦J♦** and open from three off the button for $20. The opponent described above calls on the button, and both players call from the blinds. The pot is $80.

The flop comes **9♦9♣5♦** giving me a big flush draw. The blinds check to me, and I bet $40. The nit calls on the button, and the blinds fold. The pot is $160.

The turn is the **6♥**. I bet $85. My opponent calls.

The river is the **2♥**. I look at the final board for a moment, **9♦9♣5♦6♠2♥**, and decide it doesn't afford many credible bluffs, so I give up and check. My opponent tables **7♦6♦** for a pair of sixes.

Yuck. I fell into a common trap in this hand. Normally when you flop a flush draw and two overcards, it gives you license to play aggressively on the flop and turn. The chance you win the pot immediately plus the chance you improve makes pushing the hand profitable.

The problem in this hand was the specific turn card. My opponent has a few weak fit possibilities on this flop: 87, 86, 76, 88, 77, 66, 65, 75, and so forth. These hands have all improved on the turn. There are very few hands that my opponent would have called with on the flop that he's folding on this turn card. On the other hand, he could have a number of weak hands on the turn: sixes, fives, pocket pairs 88 and lower, and the like. These are hands I could conceivably get him to fold on a blank river.

Therefore, this hand is a situation where I should either fire the turn and river, or I should check the turn. Since my opponent is so likely to call the turn, even with my big flush draw I'm just throwing money away betting the turn and giving up on a blank river.

Because my opponent was a bit on the nitty side, had position on me, and caught a good turn card for his hand range, I probably should have checked the turn. But more importantly, on the turn I should have looked beyond my own cards and seen the bigger picture.

Scare Cards

I said before that a turn card either improves your opponent or it doesn't. But it's slightly more complicated than that. Cards that don't improve your opponent also fall into two categories: bricks and scare cards.

You're probably familiar with the distinction. A brick is a card that doesn't improve the hands your opponent might suspect that you have. A scare card is one that your opponent might fear because it could have improved some of your hands.

Fear is the operative word for many no-limit players. Most of your opponents in small-stakes games don't use the process described in this book to try to read your hand. They do try to read your hand. They're just not systematic about it. They try to guess hands you could have, and often their perceptions are colored by their emotions. They think of hands they're worried you could have. Or they think of hands they hope you have.

Thus, whether a card is truly a scare card for your opponents depends strongly on their personalities. One player will see the third club fall and think, "Just my luck, the flush just got there. Damn it, drawn out on again." Another will see the third club and think, "That's ok, no one's got the flush. I can represent it."

Pay Attention. Pay attention to how your opponents react to potentially scary cards. Some will recoil in horror every time any remotely threatening card appears. You'll see them check or meekly call with good hands. You'll often see them physically react to the card in a negative way. And often they'll say something either during or after the hand about how the card affected them. Other players will proceed full steam ahead into scary cards, often professing surprise after the hand when an opponent shows up with a hand they should have considered. This is largely a personality difference and therefore will remain fairly consistent for a player across sessions.

Good hand readers use the process described in this book to assess scare cards. They count how many hands have improved and how many haven't to determine exactly how scary the card might be. Of course good hand readers have emotions too, and their thoughts may be clouded a bit sometimes, but these players have the numbers to fall back on and are less easily manipulated. If you play small-stakes live no-limit, you'll encounter very few good hand readers. These players inhabit the higher stakes live games ($10-$20 blinds and above) and the tougher online games (roughly $1-$2 blinds and above).

Scare cards turn strong fits into weak fits in your opponent's mind. Your opponent has **A♠A♣** and catches a **Q♥T♥6♠** flop. This is a strong fit for nearly all players. When the turn comes the **7♥**, however, some players may become willing to fold before going to the felt. Thus, the hand becomes a weak turn fit due to the scare card. Had the turn come the **5♦** instead, the hand would have stayed a strong turn fit.

Moreover, the same player may not be nearly as afraid of the **9♦** on the turn, even though it's a card that's sure to have improved nearly every hand his opponents are likely to hold. Fear is a fickle thing. Some players fear flushes and not straights. It's your job to figure out which sorts of cards are scary to your opponents and which ones aren't as scary.

You do this by watching every single hand, not just the ones you're in. Don't worry, you won't have to wait long to get useful information. Potentially scary cards show up nearly every hand, and small stakes players aren't shy about letting you know what they think of these cards. They'll fold hands face-up, a dead giveaway that they consider the board to have gotten scary. They'll complain about the cards that come, they'll complain about the dealer, and so forth. Watch. All that information is extremely useful.

It may seem like way too much to keep information to keep track of, to keep mental notes on every player at your table. But once you get the hang of it, it's no big deal. Some opponents are more important than others. The fish to your right who plays every hand is about ten times more important than the nit across the table who plays only one hand every two orbits. The fish is going to be in every pot you play, while you could go the whole night and never tangle with the nit. If you struggle to keep track of everything, devote your mental energy to the most important opponents.

And always remember that it's to your benefit that your opponents read hands according to the whims of their emotional state. They'll be scared

of cards that they shouldn't, and they'll ignore critical cards that make your hand. This gets your big hands paid and lets you get away with bluffs that shouldn't work. Better opponents are harder to read and much harder to manipulate. So be thankful for every donkey at your table.

Back to scare cards. There are four major classes of scare cards.

1. Overcards

2. Flush cards

3. Straight cards

4. Board pairs

An overcard is a potential scare card for someone with top pair or a small overpair. If the flop comes T84, a turn K can be scary for anyone holding a ten or pocket jacks or queens. For players holding one of these hands, higher cards are generally scarier, with the ace being the ultimate scary overcard.

An overcard can often convince someone who had a strong flop fit to mentally demote their hand to a weak turn fit (meaning, again, that they'll call the turn but consider folding to a sizable river bet absent improvement). Sometimes it can convince someone to fold top pair outright. Say a regular holds JT on a J93 flop. An ace comes on the turn, and you make a large bet. The very scary ace combined with the large bet could convince the regular to play it safe. Notice that a K or Q on the turn would have improved JT to a pair plus straight draw. These cards almost certainly wouldn't have induced a fold on the turn.

Remember, however, that a card can be scary only if it doesn't improve your opponent's hand. It's easy to look at an ace on the turn and think, "Ha, scare card! I bet." But that's not enough. What if your opponent's range is rich with hands that are improved by the ace? This happens fairly frequently. Scare cards turn strong fits into weak fits. But they can also turn flopped weak fits into strong turn fits through improvement. Stick to the hand reading process as I've described it. Count the strong fits and the weak fits. That will tell you which scare cards to bet and which ones should be scaring you.

Exercise No. 12. A nit limps in, and two players limp behind. The small blind calls, and you check your big blind. The flop comes **J♥6♥5♣**. You bet the pot, and the nit calls. The other players fold. The turn is the **A♥**. What hands are in your opponent's range on the turn? Which of these hands were weak fits on the flop and improved to strong fits on the turn? Which of these hands may have been strong fits on the flop, but are now weak fits due to the scary turn card? Remember that nits typically play out of fear of losing a large pot. They therefore often react in fear of potentially scary cards.

Flush and straight cards can be scare cards for obvious reasons. One big difference between them is that, for whatever reason, no one ever misses the third flush card coming on board, but players frequently miss a card that could make someone a straight. Straight cards also create many more credible redraws making them less scary on average.

Say a player has the **A♦4♠**. The flop comes **A♠J♦9♠**. The turn is the **Q♠**. The turn card is a scary one that is likely to have improved many drawing hands. The player has a redraw, the **4♠**, but it's a weak one. Even if a spade came on the river, most players know that the **4♠** could still easily be beaten.

Now say a player has **A♦T♠**. The flop comes **A♠J♦9♣**. The turn is the **Q♥**. This is still a scary turn card that improves many hands. But it's also improved the player with AT to an open-ended straight draw. A king gives this player the nuts, and an eight gives him the second-nuts. This happens commonly with straight cards. The card may have made someone a straight, but it also allows the other players in the hand to hang hopes on their own one card straight draws.

Board pairs are sometimes scary and sometimes not. For someone holding AA on a KT2 flop, a king on the turn is much scarier than a 2. Players holding top pair are frequently scared of the middle card pairing. Players with less than top pair, on the other hand, often aren't scared when the top card pairs.

Exercise No. 13. Two regulars limp in, and you make it $15 to go from the small blind with **A♠A♣**. The first regular folds, and the second calls.

The flop comes **K♠T♥7♠**. You bet $30, and your opponent calls.

The turn is the **K♣**. What percentage of your opponent's range has improved to beat you? Now the turn is the **T♣**. What percentage has improved to beat you? What about for the **7♣**?

Earlier in the book I said that you wouldn't have to go through all these hand range calculations at the table for every turn of the card and every check or bet. I said there would be shortcuts. Doing these exercises will help you to develop the mental shortcuts.

What does pairing the board mean for a "typical" hand range that calls the flop? If you did the above exercise, you now know. Sure, the answer is slightly different depending on exactly what cards are on the flop and exactly what type of opponent you're up against. But you have a baseline. You don't need to recalculate it at the table. Just tweak it. Even if you don't tweak it just right, no big deal. You still will have a big leg up on your opponents who are just working by instinct and emotion.

You get good at hand reading (and consequently at no-limit hold'em) by working away from the table. Work through the exercises in this book and

remember the answers. If you play a hand that gives you trouble, write it down. Then when you get home, work through it. Write down hand ranges for your opponents at each point in the hand. Consider different turn and river cards. What happens to your opponents' hand ranges in each case?

If you put in this work away from the table, then your instincts while you play will be much, much better. You won't have to think hard in every pot. You'll just know the answers. In a later chapter I'll talk a little more about working away from the table, and I'll recommend some software tools to help you.

A Sample Turn Thought Process

Here's what you should be thinking about when you have the initiative and the turn card hits.

- What types of hands called you on the flop.

- Which of these hand types improved on the turn. Which ones might have been scared by the turn.

- What river cards generally improve your opponent's hand range. What river cards favor you.

It's a $2-$5 game. Everyone has $500 or more behind. A regular limps in, and you make it $25 to go from two off the button. The button calls, the big blind calls, and the regular calls.

The flop comes **Q♥J♣7♣**. Everyone checks to you, and you bet $65 into the $102 pot. The button and big blind fold, and the regular calls.

Let's put the regular on a hand range. Instead of using the bracket notation, however, we'll just talk about hand types he could have. This is how you can think about things during a hand.

He could have a queen or a jack. He could have a seven also, but he might fold that hand since the betting is already getting big, and a queen and jack on board should be scary to a regular holding just a pair of sevens.

He likely doesn't have an unimproved pocket pair. To have AA or KK, he would have had to limp in, then fail to reraise your preflop raise, then fail to bet or raise again on the flop. This is unlikely. Pocket pairs TT-88 are consistent with this player's play, though most players would simply fold these hands on this unfavorable flop. The small pairs are quite unlikely for the same reason.

He could have an open-ended straight draw or a flush draw. He could possibly have a gutshot. However the betting is getting big already, and many regulars know to fold a hand like **9♠8♠** on this flop for a bet of more than 10 percent of their stack.

Then there are the big hands. He could have two pair (particularly QJ) or a set. The big sets are relatively unlikely because, with QQ or JJ, I would expect most regulars to have found a raise either preflop or on this flop.

Finally we have big draws. Hands like **A♣T♣** and **T♣8♣** hit this flop hard. Many players would bet or raise them on the flop, but many wouldn't, so these hands are certainly possible.

Most other holdings are quite unlikely. Regulars don't just call off $25 preflop and $65 postflop without having a reasonable piece of the flop. To summarize, this is what we have our opponent on so far:

- A queen

- A jack

- Two clubs

- KT or T9

- Possibly QJ or 77

- Possibly a combo draw (straight plus flush draw or top pair plus flush draw)

- Possibly TT-88

- Possibly a gutshot with an overcard like AK or AT

- Occasionally QQ or JJ

- Occasionally a weak gutshot (e.g., 98)

- Occasionally Q7 or J7

- Occasionally AA or KK

The holdings high on the list are completely consistent with all of our opponent's actions (limp, call, and call). The "possibly" holdings require our

opponent to have chosen to call over another reasonable play (e.g., raising QJ and folding 88). The "occasionally" holdings require our opponent to have made an improbable decision (e.g., limping QQ and not raising it on the flop, calling with a weak gutshot on the flop).

Let's look at different turn cards. How does the 5♦ change our opponent's range?

The only hands in his range that are improved by the 5♦ after the Q♥J♣7♣ flop would be a club draw that includes the 5♣, Q5, or J5. The club draw is a possibility, while Q5 and J5 are less likely because regulars generally fold these weak hands preflop.

Does the 5♦ scare any of the hands in our opponent's range? He won't be happy to see that card if he holds any of the drawing hands. Bricking a draw on the turn cuts its value significantly. A big turn bet may force him to fold a draw.

On the other hand, if he has any of the made hands, particularly those top pair or better, a turn brick on this draw-heavy board will be a welcome sight. Holding a jack he may be roughly indifferent to the 5♦ because with that weak pair he won't know if he's drawing or if he holds the best hand.

Therefore, after a turn 5♦, expect him to be more willing to fold his drawing hands, willing to fold a jack, and less willing to fold his made hands top pair and better. Furthermore, drawing hands and jacks make up a good percentage of his total hand range.

If you bet the turn and he calls, expect him to have mostly queens with some drawing hands. Therefore, another brick will generally improve your opponent's range. An ace or king would be quite scary to your opponent unless he has AQ or KQ respectively. A club would likely also scare your opponent, though he would still have a few flush draws in his range after calling the turn. All-in-all, the deck divides roughly evenly into "safe" and "scary" river cards, and you have uncertainty, depending on whether your opponent has a queen or a draw, which ones are good for you and which ones aren't.

The 5♦ isn't the only possible turn brick. Any non-club 6 or lower is roughly equivalent to the 5♦ in this scenario.

How about the 7♦? This card connects with the board, making it Q♥J♣7♣7♦, but if you look at the range that we've posited for your opponent, it almost never improves his hand. If you're an aggressive player (the sort who raises preflop sometimes holding a 7), your opponent has to worry that you might have improved. The 7♦ would also make most regulars more willing to fold a draw on the turn, since draws lose value on paired boards.

How about the A♦? That's a card that shakes things up a bit. It improves AQ, AJ, KT, and any ace-high club draw. It also improves the possible hands AK and AT. Furthermore, it gives KQ, KJ, QT, and JT gutshots to go with their pairs. Finally, it improves king-high and ten-high flush draws to combo draws (flush plus gutshot draw).

It's obviously a scare card to any queen or jack, particularly those with kickers below ten (i.e., those that don't have a straight draw to fall back on). It's a bad card for a small flush draw.

Overall, unless your opponent frequently limps and calls preflop raises with hands like J8 and Q4, this is a fairly good card for his range. It improves a lot of his possible hands and truly scares relatively few of them.

If you were to bet the turn and get called, it would be nearly impossible to know which river cards are good for you and which ones aren't. He could be calling because he hit the ace (and has no intention of folding). He could be calling with an ace-high flush draw (and therefore not fear a club river). He could be calling with a pair plus gusthot hand like KQ, so you don't know if a K or T is scary or makes his hand.

The ace, therefore, is a poor card to bluff. It improves a lot of your opponent's turn range, and his range is well-distributed between big made hands, club draws (mostly combo draws now), and pair plus gutshot hands, so you don't know which river cards would be worth bluffing.

A turn king presents a similar situation, though aces tend to hit a few more hands than kings do.

An offsuit ten, nine, or eight on the turn improves a few hands on this Q♥J♣7♣ flop. The ten improves the most hands: QT and JT improve to two pair, KQ, KJ, AQ, AJ, Q9, J9, and Q8, J8 improve to a pair plus a straight draw. The open-ended straight draws KT and T9 "improve" by pairing, but this is really a false improvement in most cases. AK improves to a straight, and AT improves to a pair plus gutshot. A few more offbeat hands improve also. TT improves to trips, and 98 improves to a straight.

Nines and eights improve most of the same hands, but if you go through them all you'll see that these cards don't improve quite as many hands, and the improvement is often not quite as strong.

On the other hand, tens, nines, and eights are not particularly scary cards for many hands in your opponent's range. An opponent might be wary that you made a straight with one of these cards, but they don't rate to truly scare many players.

An eight plays somewhat similarly to a brick (6 or lower) on the river, while a ten plays more similarly to the ace and king. A nine is in the middle. Note that these cards (particularly the eight and nine) would hit your opponent's range harder if the flop bet had not been so large. If you had bet $30 into $102 on the flop instead of $65, you would expect more hands including a 7 to call the flop (e.g., 97 and 87) and more gutshots around the J and 7 to call. By betting large on the flop, you weed out some of the smaller hands.

Then we have the offsuit queens and jacks. On the Q♥J♣7♣ flop, a jack obviously improves all your opponent's jacks. It scares nearly everything else. Draws don't like it when the board pairs, and top pairs don't like it when the middle card pairs.

If you were to bet a turn jack and get called, you could expect your opponent's range on the river to be heavy with queens, with jacks somewhat less likely (because the second jack on board reduces the number of hand combos including a jack, and because your opponent might have raised the turn with trips). He'd likely fold his weaker drawing hands on the turn and possibly stick with a few combo draws that he felt were too strong to fold, despite the pair.

This hand range is vulnerable to a club on the river. An opponent with a queen would have to worry that you hit the jack or that you made a flush.

A turn queen has less impact. Your opponent will feel more confident with his queens, but not much less so with his jacks. Like the offsuit 7, a queen devalues drawing hands. If he doesn't hold one, however, your opponent will generally be more inclined to give you credit for holding a queen

than a seven.

Finally, we have clubs on the turn. Clubs 6 and below improve the flush draws and scare nearly everything else. A hand like A♣J♦ improves on a small club. Given the range we gave our opponent on the flop, he's more likely than not to hold neither a flush nor a pair with a high club.

The high clubs are action cards. They improve a wide swath of your opponent's holdings, and if you get called on the turn, it will be difficult to know on the river which cards are good for you and which ones aren't.

Whew. That's every possible turn card. I wanted to take one example hand through every possible turn card so you could see all the different ways a flop calling range can change on the turn. Fortunately, when you actually play you get only one turn card per hand. When you see it, do the following.

- Group your opponent's hand range into categories. Top pairs, gutshots, flush draws, and so forth.

- Determine how the turn card affects each of the hands in these categories. Do they improve? Do they get scared?

- If you bet and get called, consider what sorts of river cards will improve your opponent's range and which ones might be scary to him. Sometimes your opponent's range will be well-mixed, and it will be hard to tell which rivers are good or bad. Other times your opponent's range will be heavy with one type of hand or another, and you can identify good and bad cards.

Hand Reading On The River

River hand reading is similar to turn hand reading. You take the hand range your opponent had going into the river, compare it to the river card, and see which hands improved and which hands didn't. The obvious difference between the river and the turn is that drawing hands don't exist on the river. The draws have either hit or busted. This concept is easy enough to grasp, but it has significant implications.

On any board that's remotely coordinated, when you bet the flop or turn, a good portion of the hands that will call are draws or pair plus draw hands. All these hands disappear on the river. This makes river calling ranges much more player and context-dependent than flop and turn calling ranges.

Say you bet a K♥T♠5♠ flop. Almost no matter who your opponent is or his playing style, he's going to call (or raise) if he holds K♣J♣ or 8♠6♠. These hands are too strong to just fold, and nearly everyone knows it.

Now say the turn and river roll off the A♥ and the 8♣, making a final board of K♥T♠5♠A♥8♣. You bet. Is your opponent calling with K♣J♣? How about 8♠6♠?

It strongly depends on your opponent's play style and to a somewhat lesser extent on the context of the hand. If your opponent is a committed nit and your bet is fairly large, then he'll likely fold either hand. If he's a fish, there's a good chance he'll tend to call with either hand. But if you've been caught bluffing on the river several times in the past hour, there's a chance the nit calls with KJ.

On the flop and turn, we divided calling ranges into strong fits and weak fits. The river doesn't break down like that. River calling ranges separate into value calls, bluff catchers, and junk.

A value call is a hand that is "too good to fold" in your opponent's mind. If your opponent is thinking clearly about poker, then he presumably expects that you could be betting weaker hands than his for value. For instance, on a A♣8♠2♦Q♦3♥ board, Q8 might be a value calling hand, since you could presumably be betting AK or AJ for value.

Fish and other players who don't think too clearly often don't worry about what you might be betting. Instead, they base their "too good to fold" perception on the raw value of the hand. AJ makes top pair, good kicker on an ace-high board, and therefore it's too good to fold. No thought about what hands you might be betting versus checking.

Any hand that's at least ace-high or better, but not too good to fold, is a bluff catcher. Even the worst fish knows that 42 is not a strong hand on an A♣8♠2♦Q♦3♥ board. It's definitely not too good to fold. But it is a bluff catcher, and if a fish views your bet with suspicion, he may decide to call you down with a pair of deuces. Some fish are more suspicious than others.

Junk is a hand that's too weak to call with, too weak even to try to catch a bluff. These hands are almost always straight draws or small flush draws that busted out.

This is how you make sense of your opponent's range on the river. Once the river card is out and the action is on you, your opponent has one of three hand types: value calls, bluff catchers, and junk. Your task is to take the range your opponent had on the turn and mentally separate hands into each of the three categories. Then you guess based on your opponent's tendencies and the context of the hand how likely he is to call with the bluff catchers.

Manipulating Ranges With Bet Sizing

You can manipulate your opponents' hand ranges with your bet sizing. By betting a large amount, you can force your opponents to view certain hands differently than they would if you had bet a small amount. As a trivial example, if you were to bet $10 into a $100 pot, then most players would view any pair of aces as a value call almost regardless of what else is on board. Whereas, if you were to bet $200 into a $100 pot, then many players—nits and regulars especially—would view any one pair hand as just a bluff catcher.

You can manipulate ranges with bet sizing on all betting rounds. But players are less sensitive to sizing early in a hand than they are on the river. Most players will call a half pot-sized flop bet with top pair or a flush draw. They'll also call a pot-sized bet with either hand. To get most players to consider folding either hand on the flop, you'd have to make a massive overbet.

On the river, however, players often tend to be quite sensitive to bet sizing. Here's an example.

It's a $2-$5 game with $1,800 stacks. Two regulars limp in. A loose and aggressive regular who plays a large number of hands and raises nearly every one of them makes it $30. You reraise to $75 on the button. The blinds and limpers fold, and the raiser calls.

The flop comes J♥T♥2♠. The regular checks, you bet $150, and he calls.

The turn is the 8♠. The regular checks, you bet $400, and he calls.

The river is the 9♣. The regular checks.

What does his hand range look like? Preflop he could have nearly anything remotely playable: pocket pairs, big cards, suited hands, and connected hands. On the flop, he can have a flopped pair, a pocket pair, a flush draw, or a straight draw around the jack and ten. He can also potentially have two pair or a set.

The turn has improved a large number of his flop calling hands. After his turn call, he likely has at worst top pair or a lesser pair plus a gutshot draw. He could also have a pair plus an open-ended draw, two pair, a straight, a flush draw (or a combo draw including a pair or a straight draw),

and so forth. Given the stack sizes and the coordinated nature of the board, most regulars would raise the turn with strong hands like straights, sets, and probably also top two.

What does that hand range look like after the river card? Both flush draws bricked. The pair plus open-ender hands turned into two pair or a set in the case of 99. He could still have just one pair with AJ or KJ. Naturally, QJ made a straight. He could also have a straight with QT, Q9, Q8, J7, T7, 97, 87, and KQ or AQ. Note that with a straight, particularly the nuts or a straight to the queen, the regular might have bet the river rather than checked. So these hands, while still entirely possible, are made somewhat less likely due to the river check.

This player's range consists of a number of straights. The nut straight (KQ), straights to the queen, and little straights with the seven. Also he can have a lot of two pair hands, particularly those including a 9. He can also have just a jack, or he can have a busted flush draw. The pot is just a bit over $1,250, and there is $1,175 behind. By betting different amounts on the river, you can manipulate which of these hands is likely to call you.

If you bet $200, then you're likely to get called by nearly everything besides the busted flush draws.

If you bet a bit more, say $400-$700, you might get the weaker hands to fold. Holding KJ, a regular player will realize that he can beat only a bluff, and he might not want to call $600 to see if you're bluffing. You might also get a few folds from two pair hands, particularly the weaker ones made with the nine on the river. Sets are fairly likely to call, and both sevens and queens will almost certainly call.

If you move all-in, you will get more folds. Now anything worse than a queen is a bluff-catcher, and a regular player will realize that. While you'll certainly get called sometimes by two pair, a set, or a seven, you'll also frequently get folds from these hands.

The more you bet on the river, the tighter your opponent's calling range becomes. But only to a point. Few players would ever fold a queen, no matter much you bet. Say instead of $1,175 behind, you and your opponent had $6,000, or nearly five times the pot. You hold the nuts, KQ. If you move all-in, you can expect everything except a queen to fold. But you can still expect a queen to call your massive overbet.

Mathematically, there's a point where the stacks get so deep your opponent should fold even a queen to an all-in. But practically speaking, players have an internal cutoff level. Any hand better than the cutoff they will felt no matter how deep the stacks. For most players, a queen would qualify in this scenario. Some fish will even felt sevens here no matter what.

So how is all this useful? Say you suspect that your opponent will call $600 with any two pair or better, but will call an all-in $1,175 bet only with a queen. You hold KQ. You should bet $600. If you count the hands, the range of hands two pair or better is more than twice as large as the range of just queen-high straights. Your bet will get called more than twice as often, and therefore the smaller bet is more profitable.

If the stacks were $5,000, however, then you would be better off shoving all-in. While you get called only by the queens, there are enough queens in your opponent's range to do better with the huge bet.

Instead of KQ, say you held a seven for the bottom end of the straight. Most no-limit players would simply check the hand and hope to win the already big pot. But with hand reading, perhaps you can do better.

With the bottom end of the straight, you certainly wouldn't want to shove all-in. That bet size tends to fold out all the hands you beat while keeping in those that beat you. But say you bet $200. Ignoring for now the chance that your opponent might decide to check-raise bluff you, is this bet profitable? You get called and beaten by an queen. Given the action, the most likely hands are AQ, KQ, QJ, QT, Q8, and perhaps a Q9 that failed to raise the turn. Your opponent may not have raised with Q8 or Q9 offsuit preflop, so let's restrict those to suited hands.

You chop with any seven. You can ignore those hands.

You beat sets, two pairs, and top pairs. Given the action, the most likely of these hands are 99, J9, T9, 98, AJ, and KJ. Two pairs already made on the turn—JT, J8, and T8—as well as sets already made—JJ, TT, 88, and 22—are possible. But on this coordinated board, I would expect many players to bet or raise these hands rather than check and call.

Let's count. AQ and KQ can be made 16 ways each. QJ and QT can be made 12 ways each. Q8s and Q9s make 3 ways each. So that's 62 hand combos that beat you.

Now the hands you beat. AJ and KJ can be made 12 ways each. 99 can be made 3 ways, and J9, T9, and 98 can be made 9 ways each. That's 54 hand combos you beat. The less likely sets can be made 12 ways total, and the less likely two pairs 13 ways (requiring J8 and T8 to be suited).

It's quite close. Of the most likely hand combos, you're slightly more likely to be behind than ahead. But two factors mitigate that: your opponent might have bet the river with a queen, and the less likely set and two pair hands are still possible.

Then there's the chance you could be check-raise bluffed. Against some players you can discount this chance entirely. Against most players you can largely discount it. Players that you truly have to worry about check-raise bluffing you on the river are relatively rare.

It's a close decision. I'd tend to bet my hand for value (for about $200-$300) against a fish, while checking it against a more competent player. Fish are less likely to find the bluff, and they are also more likely to have and call with additional weak holdings we didn't account for—e.g., AT, KT, and so forth. Either way, a larger bet makes no sense because it folds out too many of the weak hands we need to keep in. By choosing a small bet size, we manipulated our opponent's river calling range enough to turn an otherwise straightforward check into a possible thin value bet.

If you're bluffing, you can use the same type of reasoning, except you count hands that will fold rather than hands that will call. If busted draws make up a large percentage of your opponent's range, often a small bluff is most profitable, since these hands will fold no matter how small you bet (assuming you don't bet so small that your opponent feels compelled to raise-bluff you). On the other hand, you likely want to bluff big against a range heavy with middling hands like one and two pair. A small bet might not get these hands to fold.

Tip No. 17. On the river, you don't just have strong fits and weak fits. There are more strata than that. Think of the different hand types your opponent can have—one pair, two pair, straights, flushes, and so forth—and estimate for each one the bet size that would have your opponent strongly consider folding. Once you've got the hands into a few bet-size buckets, count hand combos to find the most profitable bet size.

In the previous example, we created a relatively simple model of our opponents' behavior. The smaller we bet, the more hands they call with, and the larger we bet, the more hands they fold. Broadly speaking, this model will hold for most players in most situations. But there's psychology to bet sizing. Sometimes a large bet will "look bluffy" while a small bet will look like a "suck bet." Using bet sizing to psyche out your opponents is beyond the scope of this book. But the basic hand reading techniques I describe will be useful when you try to tackle that aspect of the game.

Exercise No. 14. It's a $2-$5 game with $600 stacks. Two regulars limp in, and you make it $30 to go with **A♦9♦**. The blinds fold, and one of the limpers calls.

The flop comes **T♦7♣3♣**. Your opponent checks, you bet $75 into the $97 pot, and he calls.

The turn is the **9♣**. He checks, and you check.

The river is the **2♦**. He checks.

First write out the hand range you think your opponent could have. This would be hands that he would play preflop and call with on the flop, but hands that he would choose not to bet on the river.

Consider various bet sizes. For each bet size, list the hands out of the range you wrote down that you think he'd call with. There's $247 in the pot, and you have $495 behind. Consider small bets like $40-$50 and large bets like an all-in shove as well as one or two sizes in between that could make sense.

For each size, count the hands that you beat and count the hands that beat you. Ignoring the chance of getting check-raise bluffed, are any of these bets profitable?

Exercise No. 15. A regular with slightly nitty tendencies open-raises for $20 in a $2-$5 game with $500 stacks. Another regular calls, and you call on the button with **J♠T♠**. The blinds both fold.

The flop comes **Q♦9♦3♠**. Your opponents check to you, and you bet $50 into the $67 pot. The preflop raiser calls, and the other player folds.

The turn is the **2♠**. Your opponent checks, you bet $125 into the $167 pot, and your opponent calls. The river is the **9♣**. Your opponent checks. The pot is $417, and you have $305 behind.

Write down the hand range your opponent could have.

Choose a few bet sizes from small to all-in, and for each bet size write down which hands in his range you think your opponent would call with, and which ones he might fold. Are any of these bluffs profitable? Remember that the smaller you bet, the more odds your bluff has. So if you were to bluff, say, $100 into the $417 pot, you'd have to win only 20 percent of the time for the bluff to be profitable.

Exercise No. 16. A fish limps in, two regulars limp, and you raise to $40 holding **J♣J♠** in a crazy $2-$5 game with $2,500 stacks. The big blind calls, the fish calls, and one of the regulars calls. There's $167 in the pot, and you have $2,460 behind.

The flop is **K♦J♦3♣**. Your opponents check to you, and you bet $200. You choose the overbet because you want to build a pot with your big hand, and you don't expect any of your opponents to read more strength into your bet size than if you had bet $120-$150 or so. The big blind and fish fold, and the regular calls.

The turn is the **3♦**. Your opponent checks, and you bet $500 into the $567 pot. Your opponent thinks for a while and calls.

The river is the **2♦**, putting four to a flush on board. Your opponent checks. There's $1,567 in the pot, and you have $1,733 behind.

Write down the hands your opponent can have. Choose a few bet sizes and decide which hands call. Again, ignore the possibility of a check-raise bluff. Obviously you are going to bet in this situation. Which size is most profitable? For each bet size, count the number of hands you beat that call you. Multiply that number by the bet size. The bet size with the largest product is the most profitable one. (The calculation is complicated by the fact that you can be beaten and also because your opponent might check-raise you with a hand you beat. Try to account for these possibilities if you feel up to it. Otherwise, just ignore them.)

Now say the hand plays out the same way, except the player who calls you on the flop is the fish, not the regular. How does this change the situation on the river?

PART II: HAND READING VARIATIONS

When Your Opponents Don't Cooperate

So far we've discussed only hand reading in situations where you have and retain the initiative in the hand. You have position. You raise preflop, and people call you. You bet the flop, and people call you. You bet the turn, and people call you. Then you bet the river. Or you don't. Either way, it's been you driving the action the whole time.

This is the core scenario for no-limit. You make your money on hands that play out like this. The more you drive the action from in position, the more money you'll win. If you get really good at reading hands in this type of pot—finding the value bets and the bluffs and the non-bets accurately—you will be a fearsome player with an excellent winrate.

These are also the simplest types of hands to analyze. You bet. Your opponent calls. He's got a calling range. You bet again. He's got a new calling range. You bet again. Yet another calling range.

Once your opponent stops cooperating, things can get a little complicated. He can be bluffing, for one. He can be semi-bluffing. He might choose to bet again, or he might not. If he doesn't, he might call if you bet or he might not.

Reading hands where your opponent either drives the action or raises you requires more insight into how your specific opponent plays. Nearly everyone check-calls the flop with top pair, decent kicker. You don't have to know much about your opponent to put that hand in a flop calling range. But some players raise their draws and some don't. You've got to know your opponent.

Likewise, nearly everyone calls with 44 preflop. But some players will raise with a hand like 86s preflop and fire two postflop barrels with it, and some won't. Again, you've got to know your opponent.

The other problem when you face aggressive opponents is that you often have to make decisions for your stack with less information than when your opponents respond to your betting. Hand ranges are frequently wider, and no-limit becomes more of a high variance guessing game.

The good news is that you can analyze hands where you don't keep the initiative using the same tool—hand ranges—that we've used so far. The answers won't be quite as neat and tidy, but you do what you can.

Let's investigate hand reading where your opponents are betting and raising.

Reading Preflop Aggression

Roughly speaking, players raise preflop for one of three reasons: for value, to open the pot, or to attack weakness. To read your opponent's raise correctly, you need to try to get into your opponent's head and figure out which of these reasons is most likely.

Some players raise only for value. They raise good hands, limp medium-strength hands, and fold bad ones. These players are happy to open-limp, and they never attempt to attack anyone's weakness.

A tight raiser might have a raising range that looks like

[AA-JJ

AKs-AJs, KQs

AKo]

A looser raiser might have a raising range that looks like

[AA-77

AKs-A9s, KQs-KTs, QJs

AKo-ATo, KQo-KJo]

Some players raise hands for value, but also tend to raise whenever they open a pot. "Never open-limp" is a simple maxim and, for the most part, a good rule of thumb. Some players live by it. Where others would open-limp with a hand like 87s or 33, they will raise if they are first in. But these hands aren't in their value raising range, since they would limp with them behind other limpers. They're raising 87s and 33 only because they want to play the hands, and they don't want to open-limp.

Players like this will be weaker on average when they open-raise versus when they raise limpers.

Some players, particularly the sharper ones, will also raise to attack weakness. If one or two players limp in front of them, they will raise with a questionable hand to isolate. For instance, if a poor player limps in, and a sharp player raises from the cutoff, often the cutoff will be raising to isolate the bad player with a very wide range of hands. In this circumstance, a reasonable range might be

[AA-22

AKs-A2s, KQs-K2s, QJs-Q4s, JTs-43s, J9s-53s, J8s-85s, J7s

AKo-A2o, KQo-K8o, QJo-Q9o, JTo-87o, J9o-97o]

Some players will isolate even wider than this.

Thus, raising ranges can really vary, and if you aren't paying attention to the specifics of the situation, you could be off by a lot. One player could have a tight range when open-raising from four off the button, a very tight range when raising three limpers from the small blind, a loose range when open-raising from the cutoff, and an even looser range when raising behind one limper from the button. You have to think about why your opponent might be raising before you can assign a reliable hand range.

> Tip No. 18. Players who raise frequently and limp infrequently are more likely to vary their raising ranges based on circumstance. Players who limp a lot will tend to raise a more constant set of hands, independent of circumstance.

Reading 3-Bets, 4-Bets, and 5-Bets

For many small stakes no-limit players, preflop reraises, 4-bets, and 5-bets signify premium hands with very few exceptions.

A tight reraiser might reraise with this range

[AA-KK]

Someone a little looser might reraise with

[AA-QQ

AKs

AKo]

And someone a bit looser still might reraise with

[AA-TT

AKs-AQs

AKo-AQo]

Naturally when your opponent is marked with a range this tight and strong, you should proceed only with a premium hand.

Some players, again mostly the sharper ones, open up their reraising ranges situationally. They will reraise with a weak hand against a raise and

several calls (a squeeze play) or against just a loose raiser (isolation reraise).

Unless there is an established dynamic of loose 3-betting, most 4-bets and 5-bets signify the very strongest hands.

Postflop Aggression By Player Type

Say your opponent open-raises, and you call. Then he bets the flop, and you call. Then he bets the turn. What hands is he doing this with? As I said in the introduction to Part II, it's not as straightforward to read your opponent's hand when he's betting as when he's calling. When he's betting, he can be bluffing. You can no longer assume that your opponent has fit the board. Nor can you assume that he will give up on his weaker fits while continuing with his stronger fits.

The first key to reading your opponents' aggressive hand ranges is observation. Most hands in no-limit never get to showdown, so you won't generally be able to determine how often your opponent is bluffing just by waiting to see a busted hand. Instead, look at betting frequencies. Your opponent raises preflop, and someone else calls. How often does this player bet the flop? Every time? Half the time?

Then look for factors that your opponents might be using to adjust flop betting frequencies. Do they seem to bet every time against one opponent, but less than half the time against three or more opponents? Do they bet more on dry boards than on coordinated boards?

Let's break things down by analyzing each of our three player types.

Nits tend to avoid big bets with bad hands. While it's not correct to assume that nits never bluff, it is fair to assume that they are bluffing less frequently than most players, and therefore that you should tend to give most nits credit for a hand when they make medium-to-large bets.

Many nits will bet the flop with weak hands like missed overcards or decent pairs, but then give up on the turn and river if called. Nits also tend to slow down on their value bets when a scare card hits.

Here's a quick example. A nit open-raises and gets called by both blinds. The flop comes **T♥9♥2♦**. Both players check to the nit, and he bets the pot. One player calls. The turn is the **7♣**. It goes check-check. The river is the **5♥**. Again, it goes check-check. Here the nit could easily have hands such as QQ, JJ, AT, AK-AJ, and so forth.With the overcard hands, the nit takes one stab at the pot and then gives up. With the pairs, the nit bets the flop, but shuts down as semi-scary cards hit on the turn and river.

Three barrels from a nit typically means the nuts. Say a player limps in, and a nit makes it $25 from the button in a $2-$5 game. The big blind calls, and the limper folds. The flop comes **K♦T♥6♦**. The blind checks, the nit bets $40, and the blind calls. The turn is the **9♦**. The blind checks, the nit bets $100, and the blind calls. The turn is the **8♥**. The blind checks, and the nit bets $200.

This will more often than not be the ace-high flush. With a small flush, a nit often wouldn't raise preflop and also might not bet the river. While QJ might make a good hand to value bet on the river, nits will tend not to bet it with the flush on board.

When nits do bet "thinly" for value on the river, they often size their bet small. They do this for a few reasons. First, they obviously want to limit their losses if they're beaten. Also, they want to discourage you from making a larger bet that would make them uncomfortable. Finally, they want to encourage you to call with a weaker hand. For instance, say a nit raises to $25 in early position, and you call on the button. The flop comes **K♣T♦T♠**. The nit bets $30, and you call. The turn is the **J♠**. The nit bets $50, and you call. The river is the **3♠**. The nit bets $50 with $500 behind. This could be a hand like AA or AK or KQ. The nit still thinks he's got a decent chance to have the best hand, but he's worried that if he checks, you will bomb the pot and he'll be in a pickle. So he throws out a blocking bet on the river. He wants you to fold or call with worse, and he plans to fold to a big raise.

> Tip No. 19. Big bets from nits mean business. A medium-sized bet from a nit usually means at least top pair, top kicker. A big bet on the turn or river usually means the nuts. Nits typically give up on betting their draws and one pair hands on the turn or river.

Perhaps this description of how nits play seems obvious to you. But a recent survey of small stakes poker games revealed that every eight seconds, somewhere in the world a nit is holding the nuts and getting paid on the river. Don't be a victim of the nut-peddlers!

Fish vary widely in their aggressiveness. Some will rarely bluff and will tend to have a good hand when they make large turn and river bets. Unlike nits, however, fish often don't have as clear a sense of what hands are "good," and they can make overlarge bets with hands that aren't strong enough.

Consider the example hand from above where the board came **K♦T♥6♦9♦8♥**. When the nit made a large river bet, it was fair to assume that it was more likely than not the nuts. A fish could make the bet with any flush, any straight, or even two pair.

Some fish love to bluff. These players rarely miss a chance to bet when someone shows weakness. Again, their sense of what is "weakness" is not particularly refined. I played a hand in a $2-$5 game in Las Vegas where I raised to $25 preflop and a fish called. Both of us had more than $1,000. I caught the ace-high flush draw on the flop and bet the pot. My opponent called. I turned the flush and bet the pot again. He called. The river bricked, and I made another pot-sized bet. (In retrospect, I probably should have shoved the river to win more from smaller flushes and whatever other hands he'd want to pay me off with.)

My wild opponent check-raised all-in, about $400 more into a nearly $1,500 pot. I assumed I had beaten him flush-over-flush. Instead, he rapped the table and said, "You got me," as he tabled just a flopped pair of fours. "I thought you were weak," he said.

> Tip No. 20. Don't give fish full credit for a hand when they bet and raise. Fish often have difficulties reading the board and understanding where they are in a hand. When a fish is playing wildly or unpredictably against you, keep your hand range estimates wide.

Regulars tend to play a postflop game that's tougher to read than nits, but less unsound than fish. They will value bet sensible hands (but also miss many bets). They will bluff in semi-sensible situations (but again also miss many bluffs).

And, obviously, some regulars play better than others. To get good reads on your opponents' ranges when they're betting and raising, you have to pay attention to the sorts of hands they bet—and the hands they don't bet.

When Don't They Bet?

You check, and your opponent bets. What does he have? He could have a strong hand, a vulnerable hand he wants to protect, a strong draw, a weak draw, or air. Doesn't give you much to go on, does it?

But reading aggression isn't hopeless. The key is often to look at the hands your opponents don't bet.

Most players don't bet more often than they bet. They bet the flop, get called, and then don't bet the turn and don't bet the river. They check the flop and then call (i.e., don't raise).

To figure out what hands your opponents are betting and raising, it's often more helpful to look at it a bit backwards. First think of the hands your opponent wouldn't bet. Players often choose not to bet hands in these categories:

1.   Hands they're giving up on

2.   Hands with showdown value

3.   Draws they don't want to get raised off of

4.   Hands they're slowplaying

5.   Any other hands they don't want to lose a lot of money with

I'll talk briefly about each category.

1. Hands they're giving up on.

This one is obvious. Players check and fold when they're giving up.

2. Hands with showdown value.

This one is key to effective hand reading. Players often check hands with showdown value. For example, a player raises and two players call. The flop comes Q86 with a flush draw. The callers check, and so does the raiser. The raiser often checks the flop with a hand with some showdown value like JJ-99, AK, or AJ.

Here's another example. A player limps, someone raises two off the button, and the player on the button calls. The limper calls also. The flop comes K53 rainbow. The limper checks, the raiser bets half the pot, the button calls, and the big blind folds. The turn is an 8 completing the rainbow. Both players check.

In this example, the player on the button is quite likely to have showdown value. At worst I would expect A2 for a gutshot, but more likely a pair. The raiser may also have showdown value with a hand like TT or AQ.

Most no-limit players check hands with showdown value as a routine part of their strategy. Many do it habitually, to the point where you can discount (but not necessarily eliminate) the entire range of medium-strength hands when the player does bet.

For example, a player open-raises from the button, and only the big blind calls. The flop is **K♦J♠3♠**. The big blind checks and calls. The turn is the **3♥**. The big blind checks and calls a half-pot bet. The river is the **4♥**. The big blind checks, and the raiser makes another half-pot bet.

If you ask a number of no-limit players what hand the button has, the first thing many players will say is, "A king." In fact, many players would rarely play a king this way, betting all three streets. Once the board pairs on the turn, most kickers no longer play, and a hand like KT slips for most people into the "check with showdown value" category.

AK is a possibility, but many players would check even that hand at some point. This betting pattern represents a hand range mostly composed of KJ and stronger. We know this because players usually check at least once with showdown value.

3. Draws they don't want to get raised off of

For most poker players, betting a draw, getting check-raised, and being forced to fold before seeing the last card feels like an utter disaster. We all like drawing hands. The thrill of waiting to see if our card comes, and the promise of a large payoff if it does, gets our adrenaline flowing. So nothing could possibly be worse than betting a draw and walking into a check-raise that forces us to fold. What if we would have gotten there? So much frustration.

In reality, betting and getting raised off a draw is a bad thing, but often the benefits of betting the draw outweigh the risks. Some players see this and bet their draws where it's sensible, while others allow the fear of missing a big hand to compel them to check.

For example, say someone open-raises from four off the button, a player holding **J♥T♥** calls from the cutoff, and the small blind calls. The flop comes **K♥8♥6♦**. The small blind checks, and the raiser checks. I would expect many players to bet their flush draw (and here a bet is nearly mandatory), but some players will check. If you see someone check in this situation, remember it, because it means a future bet is less likely to be

a draw.

Pay Attention. Some players are much more aggressive with their drawing hands than others. Any time you see a player play a draw in an unconventional way, remember it. Some players will check draws that demand a bet. Others will be wildly overaggressive with so-so flush and straight draws. Knowing how a player approaches drawing hands will vastly improve your ability to read them when they take the betting lead.

4. Hands they're slowplaying

Players check hands they're slowplaying. Some players virtually always slowplay big hands on the flop. Against these players a flop bet means with near certainty that they don't hold a big hand.

Most players slowplay sometimes and fastplay others. Still, the fact that a player bet early in a hand often reduces the chance that you're up against a flopped monster hand.

5. Any other hands they don't want to lose a lot of money with

Players check when they're uncertain or scared of losing money. Sometimes players who have been running bad will enter a defensive shell where they stop betting many of the hands they would normally bet. I've seen players check the nuts last to act on the river because they were feeling so beaten down, they didn't even have the heart to bet a lock hand.

Obviously that's an extreme example, but be on the lookout for players who seem to have gone limp. Aggression from these players usually means a very big hand.

Whenever your opponents bet or raise, think first about all the hands they likely would not bet for one of these reasons. This will usually allow you to start narrowing down your opponents' ranges to something you can work with.

Let's work through a few example hands. Each of these hands comes from a $1-$2 game with $300 stacks.

Two tight players limp, and you raise to $12 from two off the button. A regular player calls on the button, the blinds fold, and both limpers fold. There's $31 in the pot and $288 behind.

The flop comes **K♥T♠8♠**. You bet $20, and your opponent calls.

The turn is the **2♣**. You check, your opponent bets $40 into the $71 pot, and you call. There's $151 in the pot and $228 behind.

The river is the **4♣**. You check, and your opponent bets $70. What sort of hands is he likely to have?

A regular player calls a preflop raise on the button with a fairly wide range of hands. The flop is very coordinated and hits a large portion of a preflop calling range. Hands that will call the flop include sets and two pair, any king, any ten, any eight, high unimproved pocket pairs like QQ and JJ, spade draws, straight draws around the KT and the T8 (e.g., QJ, Q9, J9, AJ, and so forth).

Due to all the available open-ended and gutshot draws, this range is fairly heavy with straight draw hands.

On the turn you check and call. What does your opponent's turn bet mean? It could be a set or two pair that your opponent slowplayed on the flop. It could be a king. It could possibly be QQ or JJ or a flopped ten or eight, though these hands might check the turn with showdown value. It could be a flush or straight draw (or a combo draw). In other words, your opponent might bet any hand with which he called the flop, though he might instead check the weak pairs with showdown value.

After betting the turn, however, most players would check their weak pairs on the river. If your opponent tries to read hands, he might interpret your turn call to be either a king or a draw. Holding a pair like JT, he might check the river hoping to beat a busted draw at showdown.

The fact that your opponent chose not to check the river is meaningful. He could have a set or two pair. He could potentially have a strong king like AK or KQ. He could also be bluffing with any of a large number of busted draws. But he likely doesn't have a middling hand with showdown value like JJ or A8.

If your opponent were a nit who would rarely bluff both the turn and river, then after this action he likely would hold two pair (probably top two) or a set. Don't pay off nits.

But our opponent in this hand is a regular player. Many regulars will bluff their busted draws, and on this river there are more busted draws your opponent could hold than there are big hands. Getting nearly 3-to-1 to call, this is a reasonable situation to try to snap off a bluff.

The keys to finding a bluff-catching call in this situation are the board and the tendency to check once with showdown value. The turn and river bricked out every single draw. And few of the pairs KJ and worse look strong enough to bet for value on two streets. This combination puts a lot of bluffs in your opponent's range while it simultaneously removes a large number of marginal made hands.

Consider a hand with the same preflop action as the previous one: two limpers, you raise, get called on the button, and everyone else folds. There's $31 in the pot and $288 behind.

The flop is **J♦9♥6♥**. You bet $20 and get called.

The turn is the **8♠**. You check and call $40.

The river is the **A♠**. You check, and your opponent bets $70.

Let's consider what your opponent could have. Again the flop is coordinated with a flush draw and lots of straight draws around the J9 and 96

available. So the flop call could be a set or two pair, an overpair, a jack, a nine, a six, pocket pairs like TT, 88, and 77, a flush draw, or a straight draw.

The turn improves most of the straight draws. Obviously QT, T7, and 75 made a straight. T8 and 87 paired and now have some showdown value. Of the likely straight draws, only KQ and KT are still no-pair hands.

The turn also improves some of the flopped one pair hands to a set or two pair—hands like J8, 98, 88, and 86.

With which of your opponent's flop-calling hands would he now bet the turn? He'd almost certainly bet a straight, a set, or two pair on the turn. He'd likely also bet a hand like QQ, AJ, and even JT. Weaker pairs he might check, however. They have some showdown value, and this board is likely scary enough to convince your opponent holding A9 or 77 to check.

You could reasonably expect your opponent to bet flush draws and KQ and KT, though he might also check these hands for fear of getting checkraised.

Overall this is a fairly strong turn-betting range. Straights, sets, two pair, overpairs, and top pair with a strong kicker bet for value. There are many more combos of these hands than there were on the turn in the previous example hand. In that hand, the board was **K♥T♠8♠2♣**. No straights are possible. There's only one overpair. And the turn deuce likely doesn't make any two pairs.

Furthermore, there are more draws with showdown value on the **J♦9♥6♥8♠** board. Someone with T8 might check to avoid a checkraise and also possibly to see a showdown with the pair of eights. Therefore, compared to the previous example, there are more value hands and fewer bluffs in your opponent's turn betting range.

The river **A♠** is an interesting card. It doesn't make any straights. But it does improve some of the hands in your opponent's range, notably AJ, **A♥8♥**, and other ace-high flush draws. Overall this card further strengthens your opponent's range.

Straights, sets, and two pairs are still squarely in your opponent's river betting range. A few hands that bet the turn like KK, QQ, KJ, QJ, and JT would likely check the river. But most of the other hands that bet the turn for value could conceivably be betting again on the river.

Furthermore, relatively few of the flopped draws will have made it to the river without at least a pair. KQ and KT are still pair-less, as are king-high flush draws (e.g., **K♥5♥**). But ace-high flush draws paired, and most of the flopped straight draws have paired. Most regular opponents would check these pairs on the river.

If you compare the number of value betting hands (straights, sets, two pair) to the number of possible bluffing hands (KQ, KT, and a few flush draws), there are more value betting hand combos. This makes the river range strong and the bet unlikely to be a bluff.

This tendency for players to bet strong hands and bluffs, but check middling hands for showdown value, is called *polarizing a hand range*. With each successive bet, hand ranges become heavier with the extremes—very strong and worthless hands. This concept is critical to reading your opponents' aggression.

Exercise No. 17. The two preceding example hands had the same opponent and action, but in the first example your opponent had a considerably weaker hand range on the river than in the second one. The boards were the difference. Construct and analyze some more example hands with the same action. What does your opponent's hand range look like for the following boards? Is the final river betting hand range richer with strong hands or weak ones?

2♦2♣2♠8♣4♣

5♥3♥3♠K♦T♣

A♦6♣3♥9♥K♠

9♣8♠6♥K♣6♦

Exercise No. 18. Busted draws are the most common weak hands your opponent will bet on the river. On some boards, nearly every flopped draw busts out. On other boards, nearly every draw comes in. But many boards are in between, with some of the draws busting and others coming in.

Write down three different flops that have both flush and straight draws on them. Then come up with turn and river cards that complete some, but not all of the draws. Assume you bet the flop and your opponent calls with a draw. Write down all the hand combos your opponent could call with on the flop. Put these hand combos into three categories: hands that busted, hands that got there, and hands that missed, but still improved to have showdown value.

Which types of turn and river cards complete more of the drawing hands and which ones bust out the most draws? Also, what sorts of cards improve draws most frequently to have showdown value (and therefore remove them from the pool of bluffing hands)?

Getting Raised

Getting raised stinks. It almost always means you're up against a stronger range of hands than you thought you were when you bet. Getting raised also has a few other effects on the play of the hand (and on your hand reading) that may be negative.

Getting raised builds a big pot and often commits you to playing for stacks with relatively less information than normal. When you don't get raised, you often can build a clear picture of your opponent's hand range by the river. But when your opponent raises you early in the hand, you're making stack decisions when hand ranges are less defined and when the turn and river cards are still yet to come. Getting raised early forces you to gamble.

Gambling isn't necessarily bad. But variance is much higher in games with lots of early aggression than it is in games where your opponents rarely raise postflop without the nuts.

It's natural, therefore, to feel a bit lost when you get raised. By raising, your opponent is often denying you information and forcing you to gamble more than you may be used to.

Flop Raises

Flop raises are often the trickiest to deal with as a small stakes player. Your opponents are generally more likely to get out of line on the flop than they are on the turn and river. And a flop raise isn't always big enough to commit stacks, so you typically have three reasonable ways to respond: fold, reraise (intending to get it in), and call (intending to reevaluate on the turn).

Here are some rules of thumb for dealing with flop raises.

First, most flop raises come from hands that are a subrange of the calling ranges we built earlier in the book. That is, when most small stakes players raise the flop, they have a hand that another player might call with. They are much less likely to have an obvious "fold" hand. (This is not, by the way, the theoretically correct approach to no-limit. In many circumstances your raising ranges should include bluffing hands that you would have folded had you not bluffed.)

Second, consider which strong hands your opponent might slowplay. Some players will slowplay nearly any hand two pair or stronger on the flop. Most players will slowplay the flop with a hand like Q♥J♥ on a Q♦Q♠J♠ board. If your opponent likes to slowplay, don't be quick to give him credit for big hands when he raises the flop.

Third, when constructing a raising hand range, add in some fudge factor for hands you didn't consider. That is, if you think your opponent could have this or that or that, also consider that some percentage of the time he'll have something else. Fudge factors are important whenever you are trying to construct a narrow hand range. It's hard to make a strong hand. Everyone throws in a weird raise every once in a while. The fewer legitimate raising hands you can think of for your opponent, the more important that "once in a while" factor becomes.

Fourth, card removal is often important when constructing raising ranges. If you have a weak hand and get raised, usually you'll just fold. Thus, when you're typically trying to construct raising ranges, you hold a decent hand yourself. This often means that you'll hold at least one key card that reduces the possible combinations of some important hands.

Let's look at some example hands.

It's a $1-$2 game with $200 stacks. You raise to $10 with A♠T♠. The button calls, and the big blind calls. There's $31 in the pot and $190 behind.

The flop comes A♦K♠6♥. The blind checks, you bet $20, and the button makes it $60 to go. The big blind folds. The button is a regular in the game and no more aggressive than the average $1-$2 player.

What could he have? This is an unusually dry flop. There are no flush draws, nor are there any open-ended straight draws. As such, if you were in the button's position, this might be a good flop to bluff-raise with air from time to time.

But this button player is typically non-aggressive and relatively unlikely to bluff-raise with air. So what can he have? Here's one possible hand range:

[AA, KK, 66

AKs, A6s, AQs-ATs, K6s

AKo, A6o, AQo-ATo]

This is the range of all hands AT or better, excluding K6o due to the likelihood he would fold it preflop. Would your opponent tend to slowplay any of these hands?

Because the flop is dry and because there is another player in the pot, any of these hands is a candidate for a flop call rather than a raise. So we can't adjust our range much due to the possibility of a slowplay.

There is some fudge factor. In addition to these strong hands, our opponent might choose to raise occasionally with hands like Ax, gutshots, unimproved pocket pairs, and even Kx or 6x.

Because we hold the **A♠**, all the combinations with aces in them become less likely. Holding the **T♠** also makes AT less likely (as well as the fudge factor hands QT, JT, and TT).

So what's the verdict? Even with the fudge factor, AT is likely well behind our opponent's hand range. Reraising the flop is suicidal, since nearly every hand we'd get it in against would have a big edge. Calling the flop and checking the turn could help us sniff out the fudge factor hands, since a non-aggressive opponent will usually check these hands back rather than fire again. But the most likely outcome by far if we call the flop is that we'd check and fold the turn.

Therefore we should fold to the flop raise. This is an exploitative fold. Its correctness depends on our assumption that our opponent will tend to raise the flop only with hands he would also call with. If our opponent were to start bluff-raising more frequently, we could no longer put him on such a narrow range. In small stakes games, however, it is usually safe to assume that your opponents are raising only with hands they would also call with. Players who don't fit this mold usually stick out as frequent (and often hopeless) bluffers.

Here's another hand from the same $1-$2 game. Your opponent here is a fairly aggressive fish. He plays more than half of his hands preflop, and he's not shy about getting the money in.

The fish open-raises to $15 (he'll do this with any hand), a nit calls from two off the button, and you call on the button with **3♠3♣**. Both blinds call, and it's five ways for $75. You and the fish both have about $300 left.

The flop comes **K♦J♦3♦**. Everyone checks to you, and you bet $60. The blinds fold, and then the fish shoves all-in. The nit folds.

What hands could the fish have?

First let's account for the flush combinations. Whenever the board comes with two cards of a suit, there are 55 possible hand combinations of flush draws. When the board comes with three of a suit, the number of possible made flush combos drops to 45. Tighter players won't have all of these combos in their range, as they will fold the junk (e.g., 92s) preflop. But this fish plays any two suited cards, so he has the full 45 possible flush combos.

This fish is an aggressive player, and he doesn't need a flush to raise the flop. First, you could imagine him making this raise with just the bare **A♦**. Of the 51 possible cards besides the **A♦**, 5 are now accounted for (three on the flop and two in your hand), leaving 46 possible hand combos including the **A♦**. Nine of these combos are suited aces which we counted already among the flushes. So there are 37 hand combos of the bare **A♦** (including AA and flopped pairs like **A♦J♠**).

There are 37 flush draws in your opponent's range and 45 flushes. So he's nearly as likely to have a draw as he is to have a flush.

What other hands are in your opponent's range? Bigger sets are a possibility. There are 6 combos total of KK and JJ. Two pair is also possible. There are nine combos of KJ. There are three combos each of K3 and J3. For most players we'd discount these hands, but this fish plays most of his hands, so we'll keep these in the mix.

He could have some weaker hands also. Top pairs and overpairs without the **A♦** are possible. He could have AK or KQ (with or without the **Q♦**) or AA without the **A♦**. He might even have something like KT or K9 with the **T♦** or **9♦**, or perhaps QQ with the **Q♦**.

With a fish, even more hands are possible, but rather than try to enumerate them we'll just build in a healthy fudge factor. So what does our range look like?

[AA-KK, QdQx, JJ

XdXd, AKs, KQs, KJs, K3s, J3s,

AdXo, KJo, KoTd, Ko9d, K3o, J3o]

Before we go on, it's worth noting that the fish played the flop strangely. He raised preflop, checked after two checks, and then shoved over your bet. It's tempting to try to extract information from this play. Is this the fish attempting to slowplay a big hand? Or was the initial check the more meaningful action, with the fish deciding to raise only after your bet cleared out half the field.

I've found that unless I really have a lot of hands logged with a particular fish that it's difficult to try to read his thought process in situations like these. Everyone plays the game according to some type of strategy or pattern, but with fish sometimes the thought process is completely foreign. This, along with their typically wide ranges, can make fish "impossible to read." Fortunately, they put so much money in the pot with bad hands that you can play the percentages and do just fine. So in this case I wouldn't try to read much into the strange flop play and instead would just try to account for all the possible semi-reasonable holdings.

It's $240 to you, and there is $190 in the pot. Since you're getting nearly 2-to-1 to call, and since well more than half the hand combos in your opponent's range are behind your set, this is an easy call.

I included this hand because it's a situation a number of students have asked me about. Without using the tools of hand reading, this scenario can be difficult to analyze. Most of my students are allergic to the thought of calling an all-in overbet with the worst of it, and despite the fact that you have a set, you could easily be taking the worst of it against a flush.

The key to finding the correct call is to realize that you aren't necessarily up against a flush or any other particular hand. You make decisions against a range of hands. You could be against a flush or a flush draw or two pair or other hands, and your set is happy to play for stacks against that range.

The general rule when you have a set on a monotone flop is that it's right to get all the money in, whether you're calling the bet or raising all-in yourself. This is because there are usually nearly as many flush draws in your opponent's range as there are flushes. When you add in the other possible hands like two pair, overpairs, and top pairs as well as the odds the pot is laying, a set will nearly always be in fine shape.

The logic applies to three straight flops as well, though it seems to be more intuitive to my students to get it in with a set on these flops. (This rationale can break down in multiway pots if two or three opponents are giving a lot of action. The chance you're up against a made hand goes way up in that scenario, and there's also a decent chance some of your board pairing outs are in other players' hands. Due to the pot odds, you often still get it in with the set, but these scenarios warrant more complex analysis.)

> Tip No. 21. When a fairly aggressive opponent raises the flop on a monotone board, he often is nearly as likely to hold a flush draw as he is to hold a made flush. This is particularly true when the ace of the suit is not on the flop. Players often slowplay the ace-high flush on the flop, while they often raise the naked ace as a semi-bluff.

Rapid Fire Hand Reading

As I've said several times already, getting raised on the flop often forces you to gamble. Your opponents can still have a fairly wide range, but the pot is often big enough that you're nearly committed to the hand. The best you can do is come up with educated guesses about what your opponents have, weigh your equity, and make a decision.

With that in mind, here is a series of flops. In each case, the action is identical. It's a $1-$2 game with $300 stacks. You open preflop from middle position for $10, and two players call behind you. You bet $25 into $33 on the flop, the next player folds, and the button raises to $75. The button is a regular who is semi-aggressive.

Two pair hands and better should nearly always be considered in your opponent's range. Depending on the board texture, however, the mix of weaker hands and draws can vary. For each flop, I'll point out some other hand types you can expect to find in your opponents' raising ranges.

A♦K♦6♥

- Big aces (AQ, AJ)
- Flush draws, particularly combo draws (Q♦J♦, Q♦T♦, J♦T♦).

J♥T♣5♥

- Overpairs, particularly QQ due to the lack of a preflop reraise
- Big jacks (AJ, KJ)
- Flush draws, particularly with extra features like straight draws, overcards, or pairs (A♥9♥, Q♥T♥, A♥Q♥).
- KQ

8♦4♦2♠

- Overpairs, particularly QQ-99 due to the lack of a preflop raise
- Flush draws, especially since most flush draws will have two overcards to the board
- Top pairs, since people like to "protect" vulnerable pairs with flop raises
- Underpairs, e.g., 77-55, again since people like to "protect" vulnerable pairs

K♣K♠Q♦

- Queens, particularly with a decent kicker
- Ace-high, particularly AJ and AT
- JT

This is a flop I would generally expect to get raised infrequently. Most of the above listed hands will usually call, not raise. And most of the legitimate raising hands on this flop (Kx, QQ, and KK) will slowplay.

Q♥Q♠3♠

- Pocket pairs, sometimes all the way down to 22.

- A three, almost regardless of kicker

- Flush draws, though many will fail to raise due to the paired board.

- Air

Again, I would expect most flopped trips or full houses to slowplay. Because players will raise hands like 88 on this board and often not a queen, you can frequently catch people playing backwards (i.e., raising with vulnerable hands and bluffs while calling with strong hands) on this flop, allowing you to exploit them.

4♣3♠2♦

- Overpairs. Pocket pairs are a sizable chunk of most regulars' ranges when they call a preflop raise. They then often feel compelled to raise the flop if it comes three low cards.

- Fives, particularly with an extra feature such as 75 or 54.

J♠9♠6♠

- The A♠, particularly with a pair like AA, A♠9x

- Overpairs, particularly with a spade

- T♠Tx, 8♠8x are also possible, as are hands like JxT♠ and T♠9x

Note, many players almost pathologically slowplay the nut flush on a board like this one. Even though there are 45 flush combos on any monotone flop, this particular flop removes many of those possible combos since it eliminates many suited connectors and one- and two-gappers. If we assume our opponent will slowplay the nut flush, and that our opponent will play down to K5s, but won't play suited three-gappers below Q8s, there are only 19 possible flush combos:

[KQs, KTs, K8s, K7s, K5s

QTs, Q8s

T8s, T7s

87s, 85s

75s, 74s

54s, 53s, 52s

43s, 42s

32s]

Compare this to a flop like **J♠3♠2♠** where if we use the same criteria, we get 25 flush combos:

[KJs, KTs, K9s, K8s, K7s, K6s, K5s

QTs, Q9s, Q8s,

T9s, T8s, T7s

98s, 97s, 96s

87s, 86s, 85s

76s, 75s, 74s

65s, 64s

54s]

The numbers would be even more different if we removed the terrible hands 53s, 52s, 43s, 42s, and 32s from the first range (e.g., against a tighter player). In general, your opponents will have more possible flush combos on boards like **J♠3♠2♠** with two or three low cards, fewer flush combos on boards like **J♠9♠6♠** with three middle cards, and even fewer combos on boards like **A♠Q♠8♠** with the ace on board and one or two other medium-high cards.

Turn And River Raises

Raises on the turn and river (after you have bet the flop) have two things in common in most small stakes no-limit games. First, they are generally either all-in or so large that they commit your stack. Second, they mean business. Small stakes players don't semi-bluff raise the turn very often, and they don't bluff-raise the river often either.

Absent any compelling reason to think otherwise, assume your opponents have a narrow range comprised mainly of hands two pair or better when they raise the turn or river.

Here's a basic example. It's a $1-$2 game with $300 stacks. You open to $10 with **A♦K♠**. Two players call behind you, and the big blind calls. The pot is $41.

The flop comes **A♣7♣6♠**. You bet $30, the next player calls, and the other two fold. The caller is a loose-playing regular. There's $101 in the pot and $260 remaining.

The turn is the **J♥**. Before we continue, let's pause to read our opponent's hand. He can have aces, flush draws, unimproved pocket pairs between the ace and seven, straight draws, sevens, and sixes. He can also have two pair or a set. His range after the flop call looks roughly like this:

[AA-66

AKs-A2s, XcXc (subject to preflop play), K7s, T9s-54s,

    T8s-64s, T7s-63s

AKo-A2o, T9o-76o]

The offsuit jack hits very few of the hands in this range. This is a range heavy in weaker aces and draws. Against a loose player, it's worth it to bet the turn to get these weaker hands to call.

You bet $70 into the $101 pot. Your opponent calls. What's his range now? The gutshot draws and weaker pairs have likely folded, so it probably looks something like this.

[AA, JJ, 77, 66

AKs-A2s, XcXc, 98s, 76s, 54s, 85s

AKo-A2o, 98o, 76o]

Let's count the combos we're behind. There are 10 combos of sets (1 way to make AA and 3 ways to make the other sets), 9 combos of 76 (suited and offsuit), 6 combos each of AJ, A7, and A6. Since our opponent is loose, J7s and J6s are slight possibilities with 2 combos each. That's 41 total combos we're behind.

There are 12 combos each of AQ, AT-A8, and A6-A2. That's 108 combos of weaker aces.

There are 16 combos of 98 and 4 each of 85s and 54s. There are 55 total combos of flush draws, minus **J♣6♣**, **9♣8♣**, **8♣5♣**, and **5♣4♣** that we've already counted. So 51 flush draw combos. Some of the combos like **9♣2♣** our opponent may not have played preflop. As an estimate, let's assume he played about 25 of the remaining 51 possible flush draw combos.

There are two player tendencies that can affect our numbers here. First, our opponent could have chosen to raise any of the 41 combos we're behind either on the flop or on the turn. Since he didn't raise, it reduces the chance that he has one of these hands. This is the "limiting turn call" effect.

Second, our opponent may fold some of the weaker hands we've given him on the turn. Even loose regulars will fold hands like A2 and A3 sometimes to a good-sized turn bet. Likewise for the weak flush and straight draws. So our opponent may have fewer combos of weak hands than we've counted. Nevertheless, even with these effects in play, I'd estimate that our AK is solidly ahead of his range after the turn call.

After the turn, there is $241 in the pot, and $190 remains in the stacks. The river is the **T♥**. This card improves 25 hand combos in the turn calling range to beat us—AT, 98, **T♣6♣**, **J♣T♣**, **K♣Q♣**. That makes 66 hand combos that beat us.

Which of the hand combos that we still beat will call a river bet? The busted draws won't call, and there are roughly 33 of those (depending on exactly how many suited club hands our opponent played preflop). There are 96 combos of weaker aces, but a regular (even a loose and bad one) might fold A6-A2 to a big river bet. So let's say we can expect calls from AQ, A9, and A8. That's 36 combos.

An all-in bet is a bad idea. We're realistically hoping for a call from only 36 hand combos, while 25 combos have improved on the turn to beat us, and 41 more other combos could be hanging around that beat us.

So the realistic river options are to check or to make a small blocking bet. The goal of the blocking bet is twofold. First it might induce calls from A6-A2. By adding some of these 60 hand combos to our opponent's calling range, the bet could be profitable.

Second, it "blocks" our opponent from bluffing. Say we checked and our opponent bet. He could be betting one of the 66 hand combos that beat us, or he could be betting one of the 33 busted draws. (There's also a fudge factor chance he's betting some in-between hand.) If we assume he bets all-in, and we also assume that he'll bluff with all of his 33 busted draw hand combos (neither is an assumption to hang your hat on—this is just a theoretical exercise), then the pot would be laying us just slightly better than 2-to-1, while the chance that we'd win if we called would be right around 1 out of 3. This is a damned if you do, damned if you don't situation for us. Either we call and pay off our opponent the two times out of three that he has us beat, or we fold and allow ourselves to get bluffed. We'd much prefer it if our opponent never bluffed on the river.

The blocking bet potentially can prevent this situation since small stakes players tend to be much less likely to bluff-raise the river than they are to bluff bet if you check. If we can buy honesty from our opponent for a $50 river bet, then it's worth it.

So say we bet $50 on the river into this $240 pot with $190 behind. If our opponent raises all-in, I'd tend to give him credit for having one of the 66 hands that beat us and lay down.

This is a book about hand reading, not blocking bets. But realize that the blocking bet in this hand is effective only if it buys you honesty. Some opponents will see your blocking bet and take it as a green light to run a big bluff at you. Since the whole goal in this hand is to prevent bluffs, please don't try the blocking bet against these aggressive players. Just check this river to them and pray they check it back.

I'd expect most small-stakes players to play nice with the blocking bet. They'll fold their busted draws, call with their weaker aces, and raise with their better hands. This is how I assume most small stakes players in general will play, and therefore I read strength into most turn and river raises.

So the general rule is to respect turn and river raises. Like all good rules, this one has exceptions. The main way to sniff out turn and river bluff raises at small stakes is to watch out for null ranges.

Null Ranges

What's a null range? It's a hand range with nothing in it. In other words, if your opponent plays a pot in a way that you don't think he'd reasonably play any hand, he has a null range. When your hand reading ends in a null range, your opponent's holdings consist of nothing but fudge factor. And fudge factor is where many bluffs live.

Here's an example of an opponent creating a null range. In this hand you are playing $2-$5 with $700 stacks. Your main opponent is a loose and aggressive regular. You might characterize this player as unpredictable, but he's not someone who reads hands well, nor does he play a particularly tough game.

Two players limp in, and you raise to $25. Your main opponent calls on the button. The two blinds call, and the limpers call. It's six ways for $150 total, and you are playing $675 behind.

The flop comes **Q♥J♥7♠**. The small blind bets out $70. Three players fold, and you call. The button calls also. There's $360 in the pot, and you are $605 behind.

The turn is the **2♠**. The small blind checks. You bet $200, and the button shoves. What can the button have?

Preflop he's loose, so he can have the usual assortment of pocket pairs, big card hands, suited connectors, and weaker suited or connected hands.

On the flop he can have flush draws, including combo draws around the QJ or including a pair of jacks. He can also have a queen and maybe a jack also. He's aggressive with his preflop reraising on the button, so hands like AA-JJ and AQ are somewhat unlikely because he probably would have 3-bet them. He can also have KT or T9, but the gutshots T8 and 98 are somewhat less likely since $70 is more than this player would usually call with a gutshot.

Finally, he can have 77, QJ, or possibly Q7s or J7s. But given the board texture and action, I would expect most players to raise the flop with these hands. It's a big pot already with six players preflop and a bet and call on the flop. The board is very drawish. Even players who love to slowplay would think twice about it in this situation.

Therefore, the lack of a flop raise somewhat limits the top end of your opponent's range. Then the deuce comes on the turn. Even in the large pot I would not expect someone to take a card off with 22. Though possible, Q2s, J2s, and 72s are unlikely. Any flopped hand two pair or better I would have expected to have raised the flop. Therefore, we have a null range. There's not a single hand that truly fits the action.

So what sort of hand does he likely have? I'd expect a combo draw of some sort. The turn puts two spades on board, so hands like **K♠T♠**, **J♠T♠**, and so forth are possible. Flopped draws are also possible. The button may have decided that the small blind's turn check shows weakness.

While turn and river raises usually show big hands at small stakes games, if no possible big hands fit the action, look out for possible bluffs. But don't take the concept too far. If you bet the river and get raised, and you're thinking, "Gee, he has to have exactly 9-7 to raise the river," rest assured that if you call you'll frequently get shown 9-7.

Exercise No. 19. Write out a hand range for your opponent after the flop raise. It's a $2-$5 game with $800 stacks. You open **K♦K♠** for $20. A regular calls from the cutoff. The big blind, a fish, also calls. The flop comes **Q♦8♣6♣**. The big blind checks, and you bet $40. The cutoff makes it $100.

Now write out a hand range for your opponent after the turn raise on a similar hand. Same game, same opponents. You open **K♦K♠** for $20, the regular cutoff and the fish big blind call. The flop comes **Q♦8♣6♣**. The big blind checks, you bet $40, and the cutoff calls. The big blind folds. The turn is the **J♦**. You bet $100 into the $140 pot, and the cutoff makes it $250 to go with another $490 behind.

Discounting Hand Combos

When you construct hand ranges for your opponents, you'll often have some holdings that are solidly within the range, and some you aren't sure about. For instance, a regular calls your preflop raise on the button and then calls your flop continuation bet on a **Q♦7♣6♠** board. You can be fairly certain that QJs is in your opponent's range. But what about 76s? Would he slowplay bottom two, or would he be more inclined to raise the flop? And what about Q8s? Sure, if he has that hand he's likely calling the flop, but does he call your preflop raise with it?

Constructing hand ranges is an inexact process, and you should be uncertain about some of the holdings you put in the range. How do you account for this uncertainty?

An easy way to model the uncertainty you have in some holdings is to discount their number of hand combos. Throughout the book we have counted up hand combos to estimate probabilities that an opponent holds certain types of hands. If you are uncertain about a holding, you can include it, but discount the number of hand combos associated with it.

For instance, when the flop comes **Q♦7♣6♠**, there are two combos of 76s. We aren't sure whether our opponent will raise the flop or just call with this hand. If we think the chance of each is roughly 50/50, then when our opponent raises the flop, we'll include 76s in the hand range, but count only one of the two combos of it. This fairly represents the uncertainty we have in how our opponent will play the hand.

An opponent calling a **Q♦7♣6♠** flop can also have 98. We can be fairly sure most regular players will call preflop (and call again on the flop) with 98s, but what about 98o? That's a fringe preflop raise-calling hand for many small stakes regulars. So we include it, but we discount the number of combos from 12 to 6. Or if we think there's a better chance our opponent will call it than fold, we count 8 or 9 of the 12 combos.

Tip No. 22. When you aren't sure whether a hand is in your opponent's range or not, include it, but discount the number of hand combos.

Exercise No. 20. A regular open-raises, and you reraise on the button with **Q♦Q♣**. The blinds fold, and the regular calls. You know the regular has a fairly tight range when he calls 3-bets. You've seen him call 3-bets from out of position with 88+ and AQ+, but you suspect that he sometimes folds TT, 99, 88, and AQ to 3-bets. Also, you know that sometimes he will 4-bet with AA and KK, but that he will also flat call for deception sometimes with them.

The flop comes **5♥5♠3♥**. Estimate the chance that you are ahead. If you bet the flop, assume your opponent will raise with AA-JJ half the time and call the other half. He'll call with TT-88 nearly every time. With AQ he'll fold nearly every time, and with AK he'll fold half the time and call half the time. You bet the flop, and your opponent calls. What is the chance you are ahead now?

Polarized Hand Ranges

As hands proceed, hand ranges get narrower. We've seen this throughout the book. Your opponents will have much wider hand ranges on the flop than they will on the river after calling flop and turn bets.

This narrowing phenomenon occurs for both the bettor and the caller. So far we've focused on hand ranges of callers, but bettor hand ranges also narrow. More often than not, when players bet the flop, they won't end up also betting the turn and river. They try to check down weak made hands, they give up on some bluffs, and they chicken out when scare cards come.

There's something very different about calling ranges and betting ranges, however. Calling ranges tend to be *unipolar*. That is, people call with only their best hands. If one of your opponents raises preflop, it makes no sense to call the raise with 44, but fold 88. If you're calling with 44, you're also calling (or raising) with every better pocket pair.

In general, a calling range (ignoring raises) tends to represent the best X percent of hands in your opponent's range.

Betting ranges, on the other hand, are *polarized*. There are good hands you bet for value, but there are also terrible hands that you bluff with. The hands in the middle are the ones that tend to get dropped from a betting range.

Let's look at a simple example. It's a $2-$5 game played with $700 stacks. One fish limps, and then a fairly tight and aggressive regular makes it $25 from the cutoff. You call on the button with **A♦J♦**. The blinds fold, and the fish calls. There's $82 in the pot and $675 behind.

The flop is **J♣T♣6♠**. Everyone checks to the raiser who bets $50. You call, and the fish folds.

The turn is the **8♦**. Your opponent bets $100 into the $182 pot, and you call. There's now $382 in the pot and $525 behind.

The river is the **8♥**. Your opponent bets $200. What can he have?

Preflop he plays position aggressively, and a fish has limped in, so you think he could have a fairly wide raising range. He could have any pocket pair, many suited connectors and one-gaps, any suited ace, many offsuit Broadway hands and aces, and a few other hands, mostly suited.

He bets the flop into two players. This is a poor flop for him to continuation bet if he's missed, but you know this player continuation bets a lot because it's a successful strategy in this small stakes game. You expect him to bet any made hand QT or better, any flush draw, and any gutshot with at least an overcard. Thus, his betting range is roughly

[AA-TT, 66

AKs-ATs, KQs-K9s, QJs-Q9s, JTs-J9s, 98s, XcXc

AKo-ATo, KQo-KTo, QJo-QTo, JTo]

You suspect he might check weak made hands like 99, T9s, or A6s. You also suspect that he would continuation bet sometimes with complete air like **A♦3♦** or **5♠4♠**.

Already this range is polarized. It includes the best X percent of made hands and the best Y percent of draws, but it also includes some air and some weak draws like **K♥9♥**. Furthermore, it excludes some medium-strength made hands. But betting hand ranges tend to be only weakly polarized on the flop. This range will get more polarized as the hand progresses.

On the turn, you can expect your opponent to give up on some of his bluffs, and he will also check his weakest made hands (hoping to go to showdown with them). Therefore, his turn betting range consists primarily of strong made hands, strong draws, and the occasional double-barrelled air hand.

For instance, on this **J♣T♣6♠8♦** board he might bet

[AA-TT, 66

AJs, KQs, Q9s, JTs, AcKc, AcQc, Ac8c, Ac6c, Kc9c, 9c8c,

9c7c, 8c7c, 8c6c, 7c6c, 6c5c, 6c4c

AJo, KQo, JTo]

and he might check

[AKs-AQs, ATs, KJs-K9s, QJs-Q9s, J9s, 98s, XcXc

AKo-AQo, ATo, KJo-KTo, QJo-QTo, air]

A wrinkle worth noting, an aggressive player might decide to double barrel some percentage of the time with many of the hands in the checking range.

On the 8♥ river, the betting range gets even more polarized. He's likely betting only made hands QQ or better. But he also has a number of busted draws that he might fire a bluff with. Therefore, out of the hands he was likely to have bet on the turn, his value betting range on the river is only

[AA-TT, 66

Q9s, JTs, Ac8c, 9c8c, 9c7c, 8c7c, 8c6c

JTo]

This represents only 45 hand combos that would bet all three streets for value on this board. Of the hands that bet the turn, here are the ones that missed on the river

[KQs, AcKc, AcQc, Ac6c, Kc9c, 7c6c, 6c5c, 6c4c

KQo]

That's 23 hand combos, none of which is better than a pair of sixes on the river. We can add to that the fudge factor hands he may have bet on the turn (gutshots, weak flush draws, and air). It's reasonable to expect a tight, aggressive $2-$5 regular to bet some of this busted range again on the river.

On the river he's betting either queens up or better or he's bluffing. Nearly all of the in-between hands—jacks and tens primarily in this hand—have checked at least once and are likely not in your opponent's river betting range. Therefore, for the purposes of deciding whether to call this river bet, all hands between AJ and 77 are roughly equal in value. If he's betting for value, you'll lose. If he's bluffing, you'll win. Since your opponent is betting almost no hands in this range, they all become equally good. This is called a *bluff catching range*. It's the range of hands that have value only as a bluff catcher, because you can expect them to beat bluffs, but almost never beat a legitimate value betting hand.

Understanding the bluff catching range is critical. Just look at the board. J♣T♣6♠8♦8♥. I'm saying AJ and 77 are almost equal in value on this board when facing a river bet. This concept may make sense to you right now as you read, but in the heat of the moment, I bet you'd be a lot more tempted to call with AJ than with 77. It's only natural to give top pair, top kicker much more value in your head than a sad-looking unimproved pocket pair.

If you want to read your opponents' aggression well, however, you must understand how polarizing ranges work, and you must be able to identify the bluff catching range. At small stakes no-limit, players don't bluff enough. This goes double for the river. Therefore, when someone bets the river and you have a hand in the bluff-catching range, you usually have a clear fold.

One of the biggest mistakes players make on the river is that they call with hands that somehow look good, but that are really just part of the bluff catching range. Being able to identify the "pretty" hands that are really just bluff catchers is a critical skill.

There's one other thing to watch out for. I put the bottom limit of the bluff catching range in this example at 77. That's because your opponent could turn a hand like A♣6♣, 7♣6♣, or 6♣5♣ into a bluff on the river. I've seen players make hero calls on the river with ace-high many times. And every so often the caller will end up losing to someone who was "bluffing" with a hand like 22. Take this possibility into account and discount accordingly any hands worse than the bluff catching range.

> Tip No. 23. Betting ranges become more and more polarized as a hand proceeds. Whenever you're contemplating calling a bet, consider two different hand ranges—the range of hands your opponent will bet for value, and the range of hands your opponent might bluff with. Identify the bluff catching range. That's every hand that has a value between the weakest hand in the value range and the strongest hand in the bluff range.

> Tip No. 24. Small stakes players don't bluff often enough. They really don't bluff often enough when they bet all three postflop streets. Think twice before you call when you have a hand in the bluff catching range. Think even harder before you call with a hand that's so weak it will lose to some of your opponent's "bluffs."

> Tip No. 25. River bluffs often come from busted draws. You're often safer if you try to make a hero call against a potential busted straight draw rather than against a busted flush draw. With straight draws, you know the ranks of the cards your opponent must have, whereas with flush draws you don't. Say the board comes T♥9♠2♣3♦4♣. If your opponent has a busted straight draw, the strongest hand he can have is KQ. Therefore, A6 is in the bluff catching range. When a flush draw busts out, on the other hand, your opponent could have ace-high or even have paired on the turn or river. So trying to bluff catch with ace-high isn't nearly as safe.

Exercise No. 21. Get a deck of cards. Assume you're playing $2-$5 with $1,000 stacks. A fish limps, a tight, aggressive regular raises in the cutoff, and you call on the button. The fish calls. Deal out a flop. The fish checks. The regular bets $50. Write down a betting range for your opponent. You call, and the fish folds. Now deal a turn. The regular bets $100. Write down your opponent's new betting range. Now deal a river. The regular bets $200. Write down your opponent's final betting range. What is his value range? What hands might he have to bluff with? What is your bluff catching hand range? Do this until you can't stand doing it anymore. Then do it again tomorrow. This exercise will tremendously improve your hand reading as a caller.

Hand Reading In Multiway Pots

This book has focused on hand reading in small stakes hold'em games against amateur players. Thus, many of the examples have featured multiway pots, since most pots in these games start out multiway.

In some ways hand reading is easier in these games than it is in tighter, tougher games. You can make assumptions about your opponents' tendencies which allow you to rule out some holdings in certain key situations.

But hand reading is also tougher in multiway pots than it is in heads-up pots. When you're heads-up, you know your opponent is responding only to you. This simplifies things. In a multiway pot, your opponents are taking into account what other players may do. Here are some basic hand reading principles that apply specifically to multiway pots.

Players will be more inclined to protect vulnerable made hands with raises.

Say you make it $20 to go preflop in a $2-$5 game. Four players call behind you, and the big blind calls. The flop comes **J♥T♠7♠**. It's a six-way pot for $122. You bet $70. The next player flat-calls.

Small stakes players like to slowplay hands like sets and two pair. But in this circumstance, I would expect almost all nits and regulars to raise with JJ, TT, 77, or JT. I would also expect a raise from T7 and AA-QQ. No one wants to flat call with their set only to see the **9♠** roll off on the turn.

Thus, when I see a player call in this situation—directly after the bettor with two or more players behind on a threatening flop—I discount the really big hands. The only big hand that I would expect players to slowplay regularly would be 98, particularly **9♠8♠**.

This is useful information if the action goes like this. The player calls and everyone else folds. The turn is the **2♣**. You check, and he bets $120. This is a great situation to checkraise presuming the stacks are deep enough to allow for some fold equity. Since your opponent is marked with a range that generally lacks the strongest hands, you can expect a fold a good portion of the time.

Or if you don't think your opponent will bet if you check, you can plan to bet the turn and shove the river if it's a blank. The money already in the pot combined with the fact that your opponent has limited the strength of his range by his flop call should alert you to a possible bluffing opportunity.

> Tip No. 26. In general, be on the lookout for situations where your opponents remove the strongest hands from their ranges by flat calling in situations they would nearly always raise with a monster. These are often good bluffing opportunities.

Players will be less inclined to make speculative calls with players behind.

This is the flipside to the first adjustment. Same hand. If it were a heads-up pot you could expect opponents to call on the **J♥T♠7♠** flop with hands like AK, AQ, 87, and so forth. But the player first to act after your bet with two or more players behind will frequently fold these marginal hands rather than call and risk getting raised by someone behind. This principle holds very true for nits, true for regulars, and less true for fish. (Really all hand reading principles hold less true for fish. They play by their own rules, and you often just have to assume you're playing against a wide, weak range and proceed accordingly.)

For example, if a nit called me in this situation, I would expect a hand range consisting of big draws and too-good-to-fold, too-weak-to-raise made hands: nut flush draws, combo draws, top pair plus flush draws, and perhaps AJ. I'd not expect a nit to hold T7 or J7, and I'd expect him to raise any hand JT or better including 98. Nits play out of fear of losing a big pot, so they are generally less inclined than the average player to slowplay a hand that could get outdrawn.

Aggressive players will be more inclined to shove over bets rather than call and allow the hand to continue.

Nits tend to play very cautiously in very multiway pots. They don't slowplay their big hands, and they are very tight with the hands they'll call with. This is basically the right way to play multiway pots. The fact that a nit's strategy aligns well with correct strategy in multiway pots is a big reason that nits do quite well for themselves in small stakes live games (while not doing so well in tighter, tougher online games).

Aggressive players tend to overextend themselves in multiway pots. They are aware they don't want to slowplay big hands. And they're aware that calling with several players behind can get them in trouble. But they don't have the discipline to fold many of the hands and draws that they should be folding. So instead they raise.

They'll raise flush draws. They'll raise straight draws (particularly open-ended ones with overcards). They'll raise top pair, good kicker. They'll raise weak overpairs like 99 on an 866 flop. Many of these are hands they might call with if heads-up. In a multiway pot they know calling is dangerous, but where maybe they should be folding, they'll raise instead.

Players will tighten up their betting standards.

Most players tighten up their betting standards in multiway pots. Players who continuation bet nearly every heads-up flop will instead check when they miss in five-handed pots. Again, this is the correct adjustment to make.

Also, players (particularly aggressive ones) will sometimes make small bets with hands they probably should be checking. For instance, instead of checking a weak top pair in a $120 pot, they'll bet $40. They know that betting is walking into a minefield, but they can't bring themselves to check, so they go for the middle ground. This strategy is actually not bad at all in games where players are loose preflop and tight postflop, as they often are at the small stakes in Las Vegas. In these games, players give these $40 bets nearly the same credit they would give a $100 bet, and therefore the aggressor gets a decent shot to win a big pot with a relatively small outlay.

But in general, if someone bets $120 into a $120 pot on a 6-handed flop, they nearly always mean business, even if they were the preflop raiser and you might normally expect them to continuation bet with a wide range.

Players in late position don't give multiway bets enough credit.

Say someone bets $70 into a $100 pot in a six-handed pot. The first four players fold, and the last player calls. Often this caller has not given the bet enough credit since the pot is no longer multiway. Since they are no longer worried about getting raised by a third player, these last players loosen up again. They forget, however, that the player who bet did so into five other players and therefore likely has quite a strong range.

This is one reason that loose no-limit games are so incredibly lucrative. When you flop a set you can bet into the field and, after getting a few folds, hook someone for a loose call who sees the big pot and a single opponent and mistakenly overestimates his winning chances.

# Using Flopzilla To Perfect Your Hand Reading

I'll admit it. Keeping track of hand ranges and counting endless numbers of hand combos can become tedious. It's fun to do when the concepts are new and you feel like you're making a major breakthrough in your understanding of no-limit hold'em. But after you've done it a few times, counting dozens of hand combos again and again gets a little tiring.

Enter Flopzilla. It's a software package for Windows written by Scylla, and it's designed to do the drudgery of analyzing hands on your behalf so you can get to the good stuff instantaneously.

If you want to get good at hand reading, you should get yourself a copy of Flopzilla and use it to analyze hands after every single session you play. It's an absolutely invaluable tool.

We started the book by establishing reference preflop ranges for nits, fish, and regulars, and then in the next chapter we explored how these ranges fit various flops. I will show you how to analyze these same ranges and flops using Flopzilla.

After you have downloaded, installed, and registered Flopzilla, you will open it and see a window that looks like this.
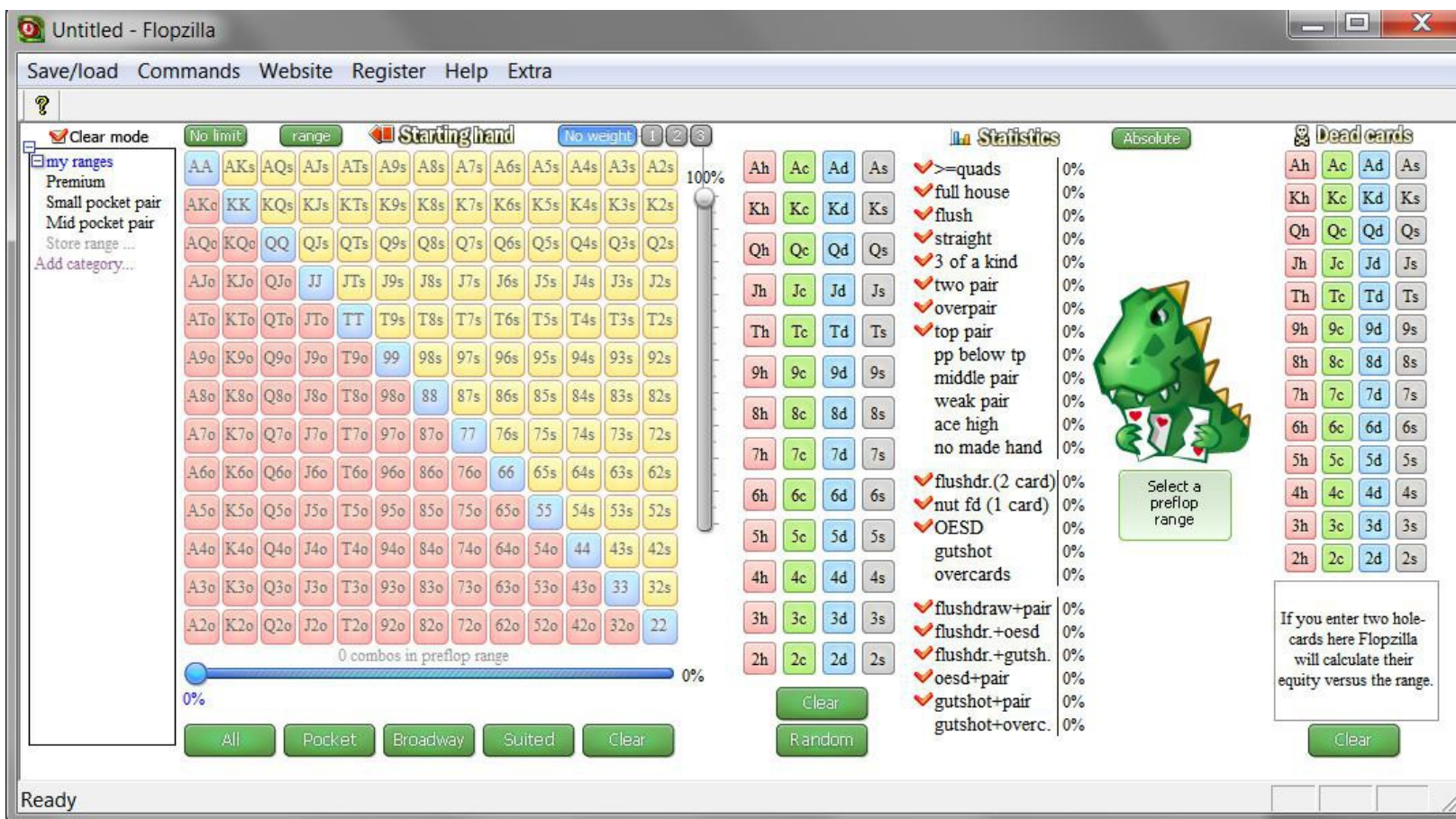
The big square in the middle is obviously used to select a hand range. Recall the nit's preflop limping reference range from earlier in the book.

[AA-22

AKs-A2s, KQs-KTs, QJs-54s, QTs

AKo-ATo, KQo-KTo, QJo-JTo]

Let's input and save this range in Flopzilla. Click on each hand in the range. When a hand is selected, it will appear in a darker shade than an unselected hand.

After we've finished inputing the range, we can save the range for later use. To do this, in the pane to the left of the range-selecting square click "Add category..." and type in Nit.

Then under the Nit category, click "Add range..." and type "Open-Limp." This stores the selected range for later use. After we're done with this, our screen looks like this.
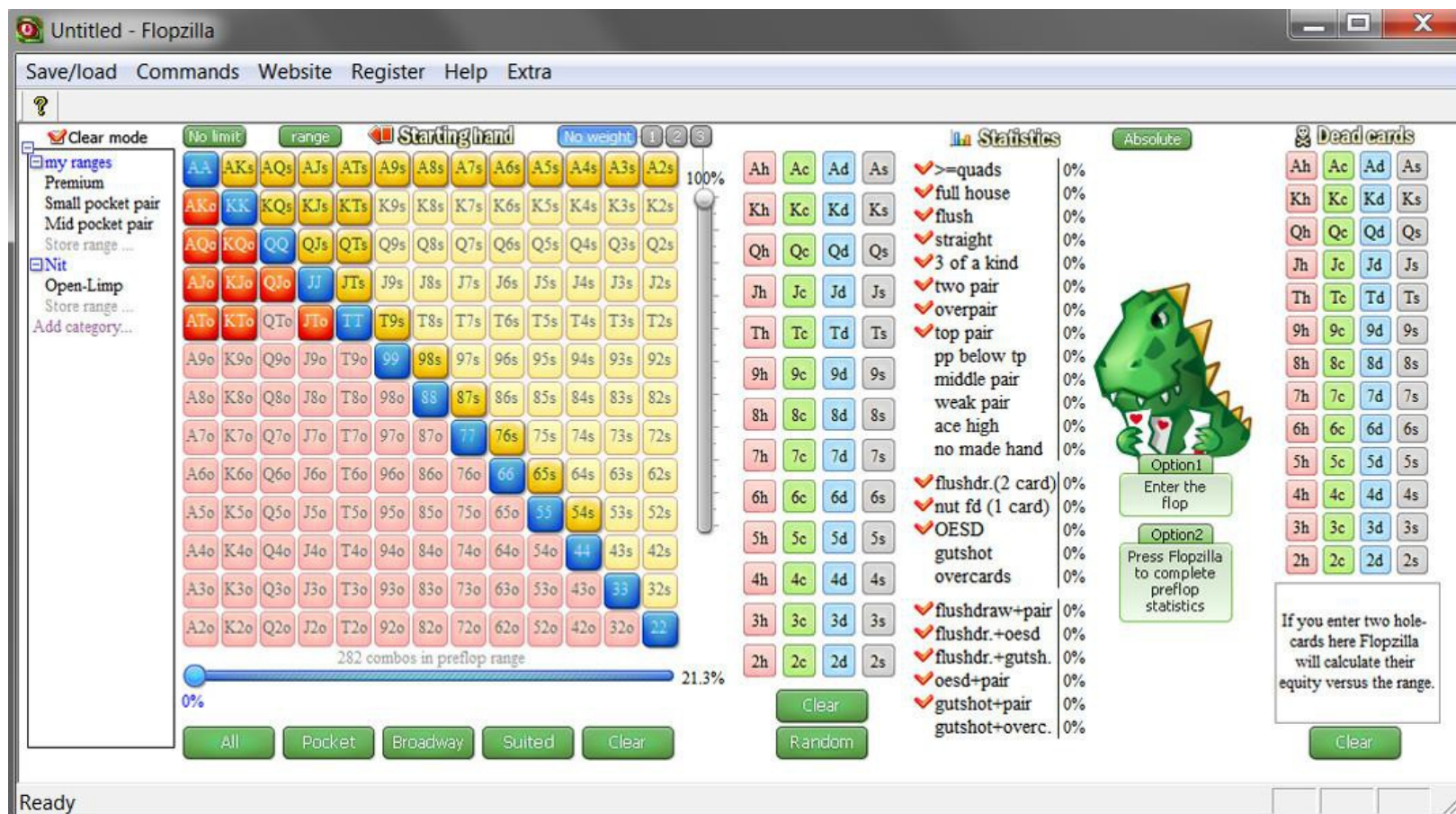
We can then go through the same process for each of our preflop reference ranges. When we're done, we'll have a few ranges we can use saved in the left pane.
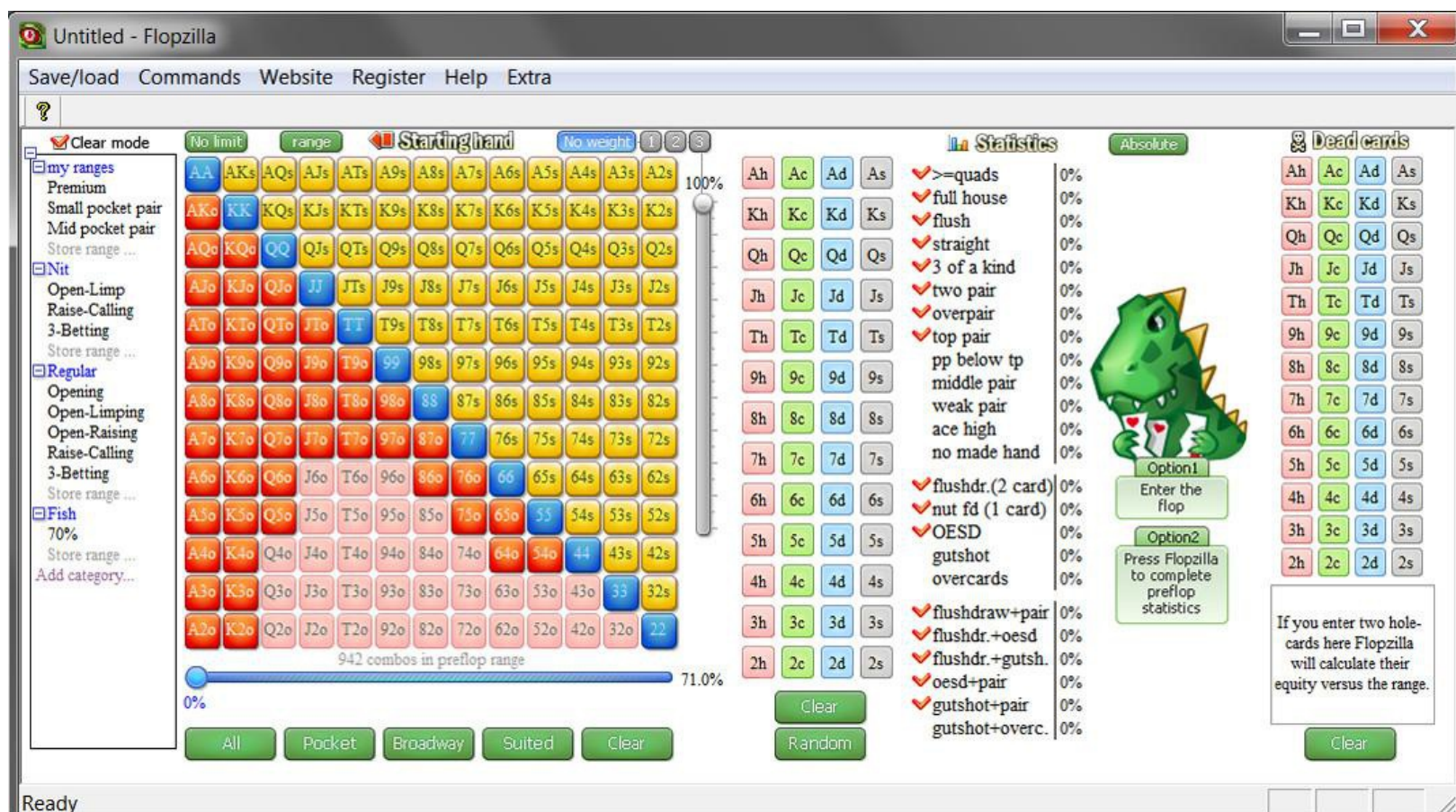
For the fish's range, I estimated that a typical fish would play 70 percent of all hands. So I used the slider at the bottom of the window to go to 70 percent. This left a few suited hands out of the range, so I filled in all the suited hands and removed the very worst offsuit hands because I think it better reflects how most fish tend to play.

Now that we have our preflop ranges, it's on to the flop. The first flop we examined was **K♦8♠4♥** so let's input that into Flopzilla. We do that by selecting these cards in the Flop column to the right of the preflop hand square.

The moment we select the third card, we get a rundown of how this range connects with the flop.
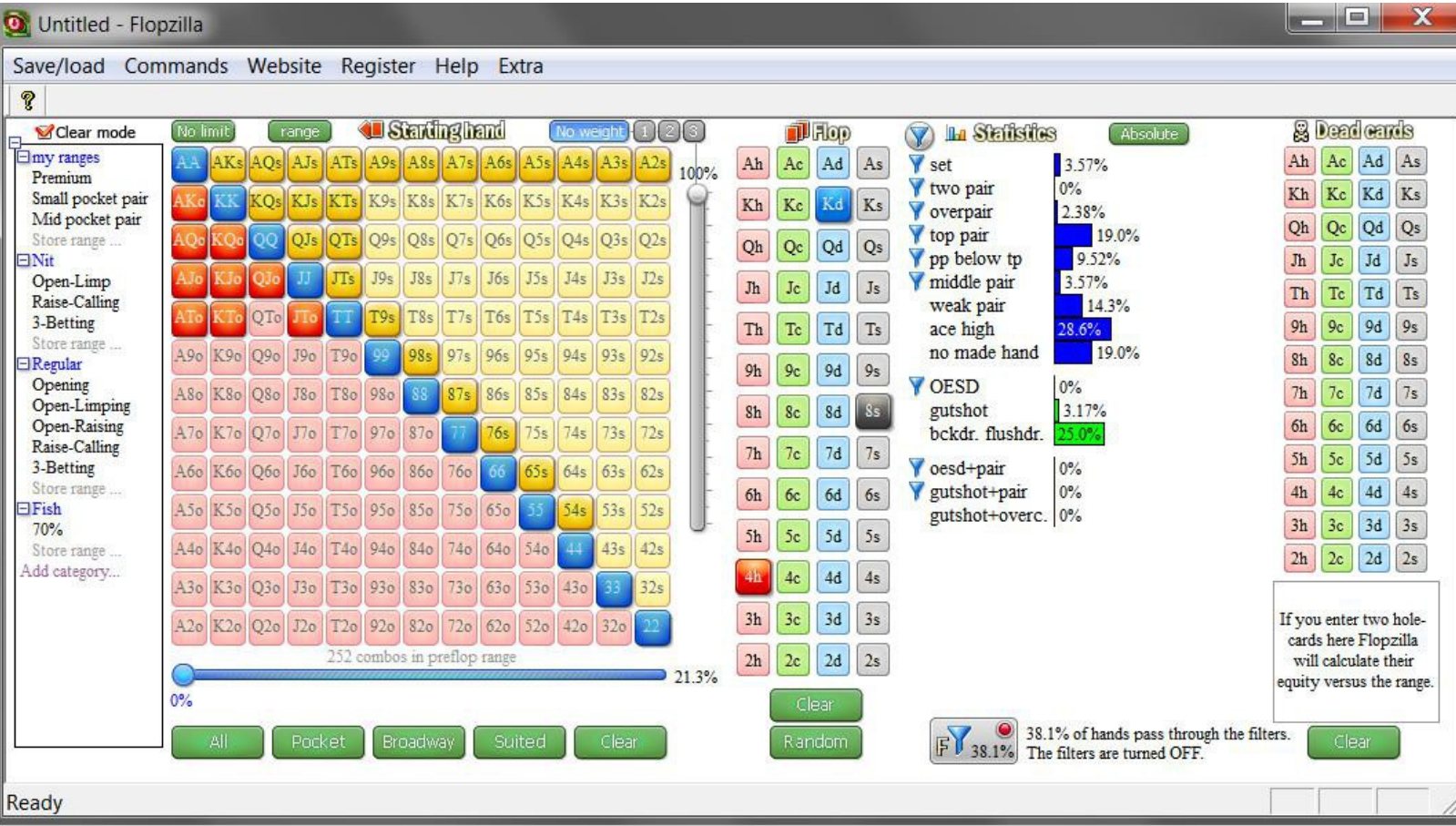
Look in the Statistics column to the right of the Flop column. This tells you how often a nit who open-limps will make various hand types on this flop. A nit will make a set 3.57% of the time, two pair 0%, an overpair 2.38%, top pair 19.0%, a pocket pair between the top and middle card 9.52%, middle pair 3.57%, a weak pair 14.3%, ace-high 28.6%, and nothing 19.0% of the time.

The Statistics column also tells you how often the range makes various types of draws on the flop. Since this flop is not very drawish, the nit makes a gutshot only 3.17% of the time and a backdoor flush draw 25% of the time.

We divided hand types into fits and non-fits. Flopzilla allows you to do this also with the click of a button. The blue pin icon to the left of some of the hand types marks which hand types would be a "fit" on this flop. You can add or remove a pin by clicking on it.

When we analyzed this flop the first time, we said that a nit would consider only a pair of eights or better to be a fit worthy of a flop call. At the very bottom of the Statistics column, we see that these fit hands make up just 38.1% of the nit's total preflop range.

This number would suggest that a continuation bet against an open-limping nit would be a good play on this flop, as you would expect a fold well more than half the time.

If you click on the filter box, then the Statistics change.
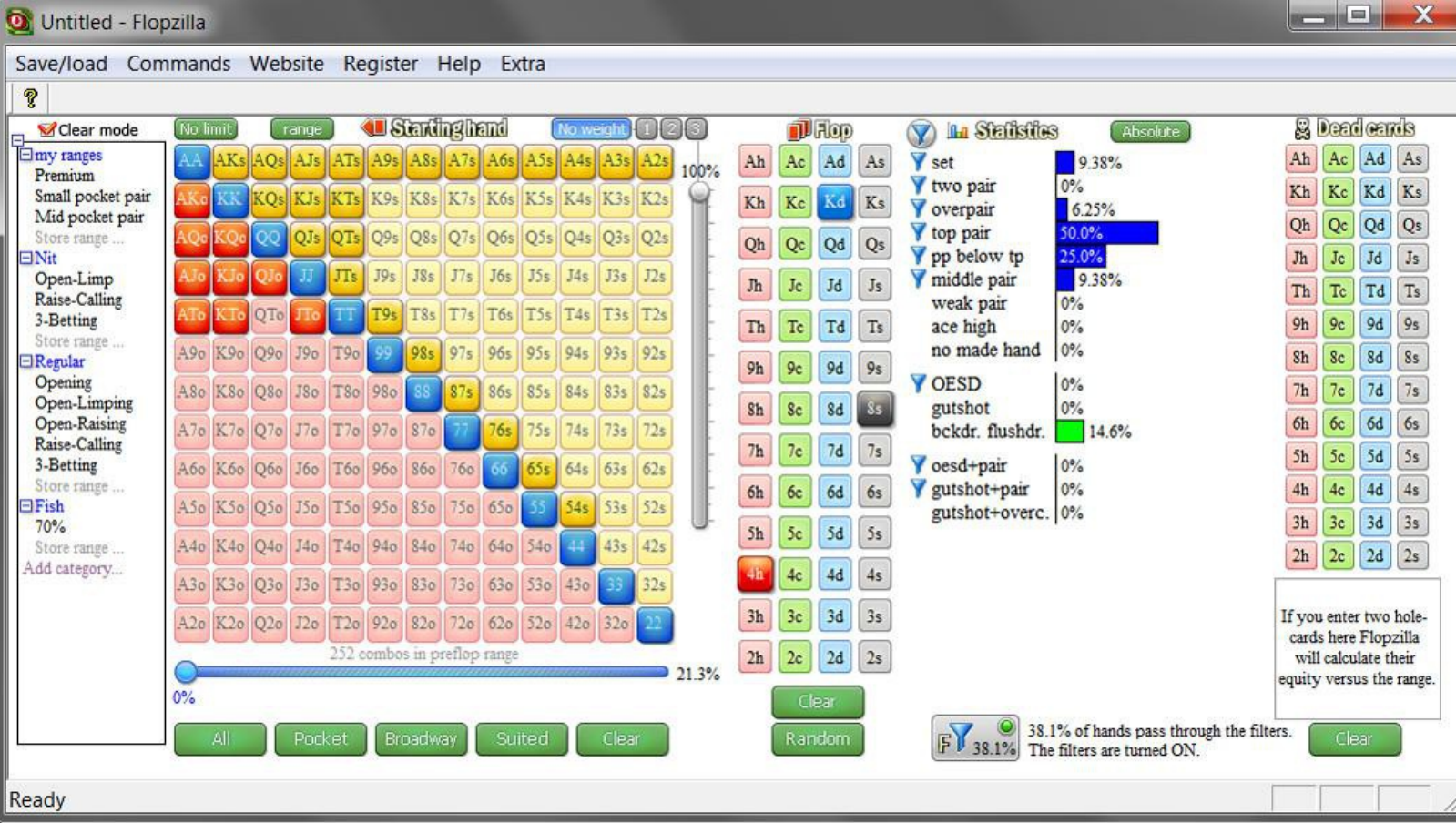
Now Flopzilla tells you what percentage *of the fits* fall into each category. Of all the hands we've marked as fits, 9.38% are sets, 0% are two pair, 6.25% are overpairs, 50% are top pair, 25% are pocket pairs below KK, and 9.38% are middle pair.

This function is useful for dividing fits into strong fits and weak fits. You can instantly look at the fits and calculate what percentage of them your opponent would fold to another bet.

Now let's change the flop to the next flop we analyzed, **A♦8♠4♥**. To do that, you just click off the king and click on the ace. Now we get new numbers.
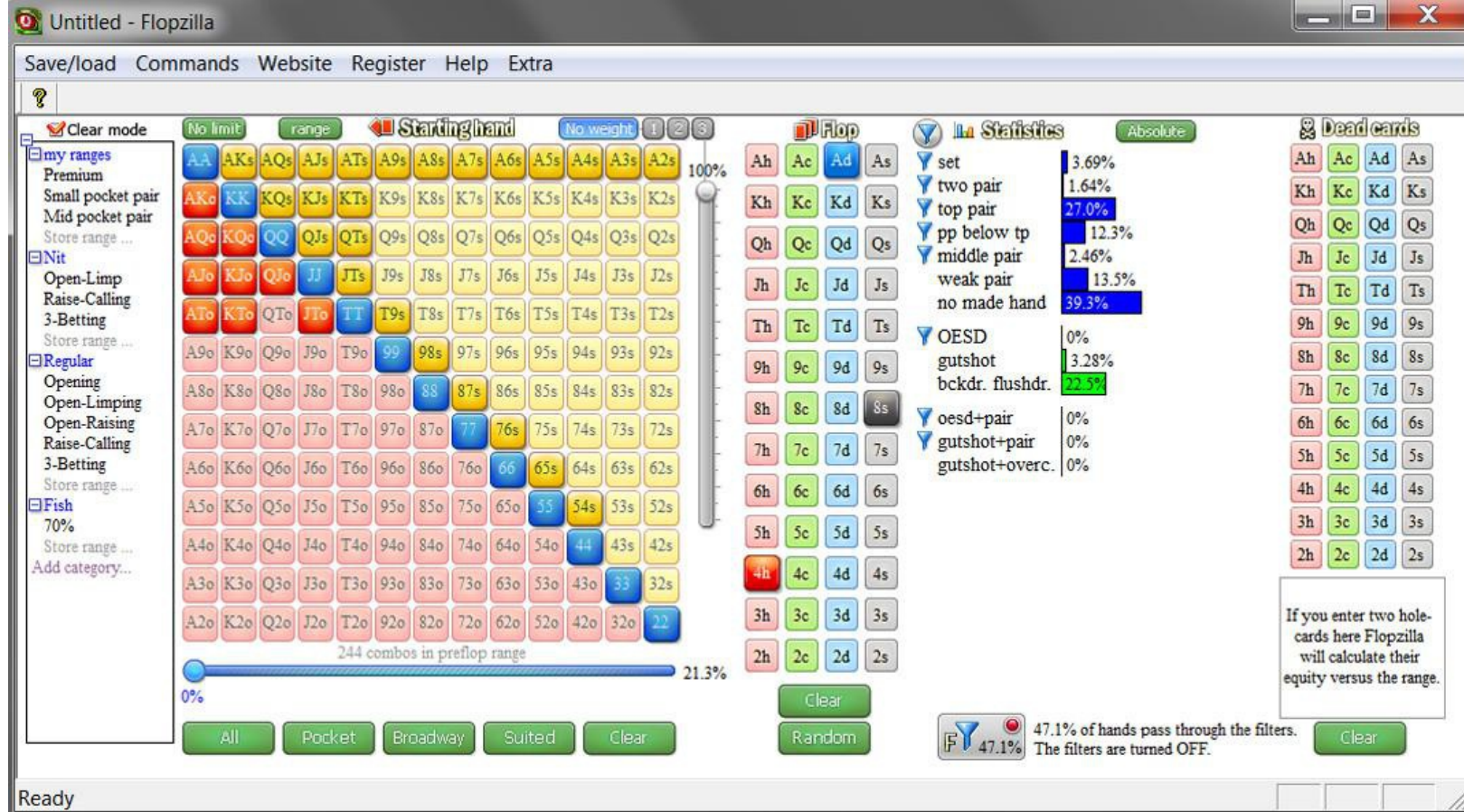
If you look at the filter button now, you'll see that 47.1% of the nit's range fits this flop. This is considerably more hand combos than fit the previous flop.

Finally, I'll show you the Dead cards feature. If you're analyzing a hand that you played, you'll know what two cards you had. Select them in the Dead cards column, and Flopzilla automatically adjusts your opponent's range for the card removal. Furthermore, Flopzilla will tell you what your equity is against the hand range you've selected.

For instance, say we held the K♣K♦ on a A♦8♠4♥ flop against a nit who open-limped. Flopzilla tells us that a nit will hit this flop 49.8% of the time.

Against the nit's entire preflop range, we have 61.787% equity versus 38.213% equity for the nit.
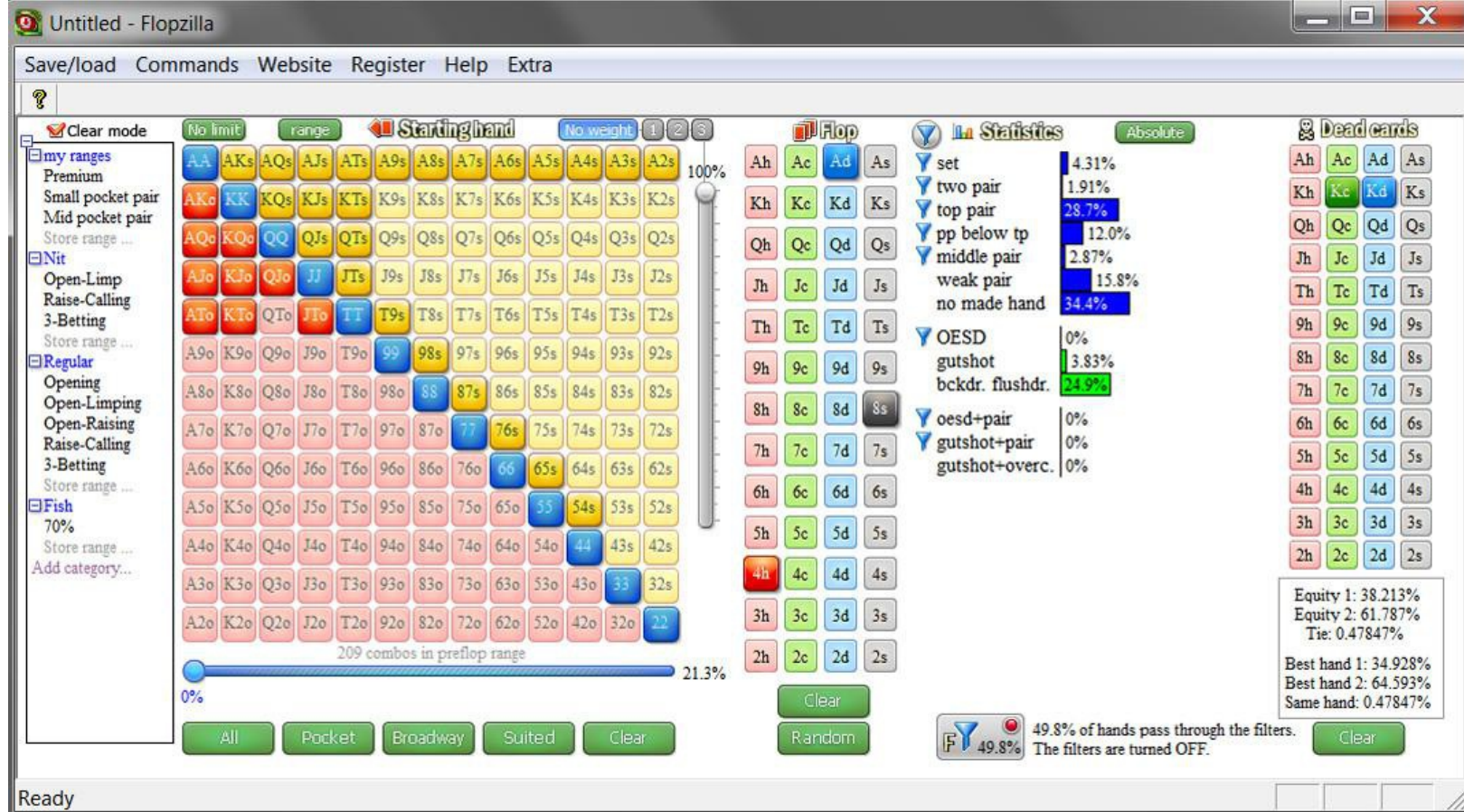
However, if we click on the filter button to pare the nit's range down to only those hands he would call the flop with, the equities flip. When we get called on this flop by a nit, we have only 31.629% equity versus 68.371% equity.
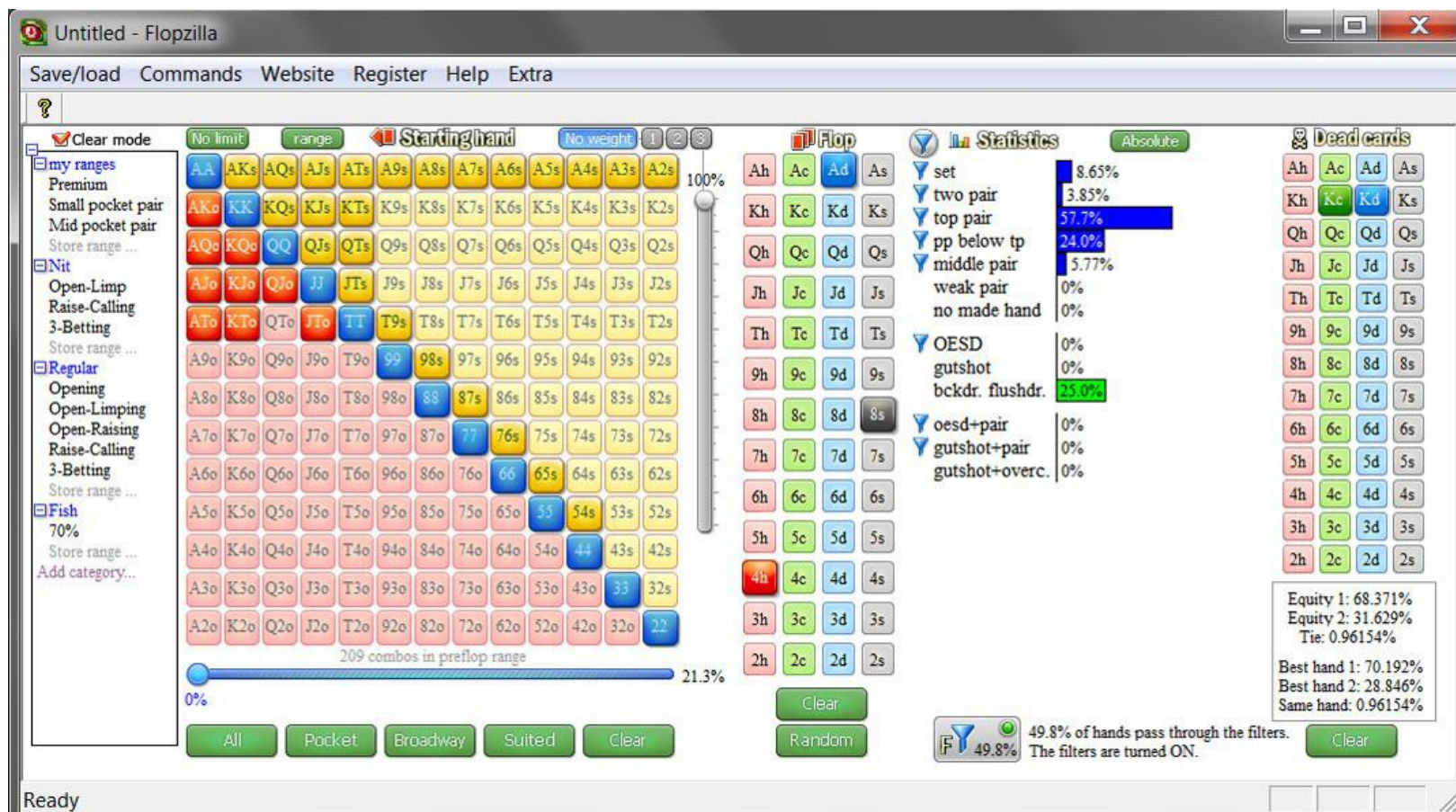
Flopzilla is user-friendly, intuitive, inexpensive, and extremely powerful. If you are serious about improving your hand reading, I strongly urge you to get a copy. You can get your copy at my website at notedpokerauthority.com/flopzilla.

Exercise No 22. Go through some of the other hand examples from the book using Flopzilla. Input preflop ranges and flops and see how Flopzilla helps you to group hands into fits and non-fits, and then helps you to group the fits into strong fits and weak fits.

Exercise No 23. After each session you play, analyze a few of the hands in Flopzilla. Assign hand ranges to your opponents and then see how these hand ranges interact with the flop. Based on the numbers, decide whether you played the hand correctly or if you should have played another way.

Profiling Players Using Bayesian Inference

Profiling players is a fundamental hand reading skill. If you want to read hands accurately, you have to watch your opponents play and try to figure out what they are doing. The problem is that so few hands go to showdown, you rarely get the opportunity to see your opponents' cards. Even more frustrating, when you do see cards you often won't learn much, since most hands shown down are either big hands that were bet all the way or weak hands that were checked all the way.

You have to derive information from the hands that didn't get shown down. You do this by observing the frequency with which someone takes a certain action. If you see a player play 20 hands in three orbits, you know he's loose. If you see a player play 2 hands in three orbits, you know she's tight.

Whenever we draw conclusions about how a player plays based on observations, we are unconsciously using a process called statistical inference. We get bits of data here and there, and from the data we draw a conclusion about the process that produces the data (i.e., by seeing how your opponent has played a certain number of hands, we draw conclusions about that player's overall strategy and how he might behave in a future situation).

Here's the problem. Statistical inference is tricky, and human brains aren't wired to do it right. Specifically we tend to give too much weight to recent occurrences, and we often don't take the characteristics of the population into account correctly.

Here's an example of statistical inference in action. Say you're walking down a busy street and you see a man pass you who looks to be about 6 foot 4 inches tall. You might think, "Wow, that's a tall guy." Next you pass a man who looks to be about 8 foot 4 inches tall. This time you would likely think, "He must be wearing stilts."

Why the difference? Both are legitimate observations—This man looks 6'4", that man looks 8'4". But the inference is different. One guy is tall, while the other one is cheating.

It's in the distribution of the underlying population. Men who are 6'4" tall are uncommon, perhaps only a percent of the total population. But they are not so uncommon that you wouldn't expect to pass one in the street every so often. Men over 8 feet tall, however, are so rare that there have been only a handful in all of recorded human history. The odds that you would run into one by chance on the street are vanishingly small.

Let's get back to poker. A friend of mine recently related a hand he played at $1-$2 no-limit in a locals cardroom in Las Vegas. He wasn't sure about what to do on the turn, and according to him, the problem was that he was in the hand with an "extremely good player." According to my friend, his foe had been outplaying him all day. The guy had superhuman hand-reading skills and was aggressive at all the right times. My friend wanted to know how to adjust to an opponent like that.

I immediately cried foul. He might as well have told me that he had been in a $1-$2 game with an 8 foot Martian. "You're wrong," I said. He gave me a puzzled look. "About what?"

"About your opponent," I said. "He didn't have super-human hand reading skills, and he wasn't outplaying you. Based on what you've told me so far, I wouldn't make any adjustments at all."

It's the population of $1-$2 no-limit players. The vast majority of $1-$2 no-limit players are not aggressive enough. Some are too loose, some are tight. But nearly all of them don't bet or raise enough.

A small minority of $1-$2 no-limit players are wildly overaggressive. They bet and raise at nearly every opportunity that seems even remotely reasonable. They also play lots of hands.

The number of people playing $1-$2 no-limit at a locals casino in Las Vegas at any given time who read hands and run bluffs like Tom Dwan is zero. It was virtually impossible for my friend to have sized up his opponent correctly.

My friend said his opponent was playing tight. I told him that meant his opponent was likely a bit on the nitty side and certainly no one's world beater. It was just my friend's bad luck that this guy happened to pick up big hands every time they played a pot together. You don't need dynamite hand reading when you keep getting dealt the nuts.

My friend thought his opponent was 8 feet tall. In reality, the guy was temporarily wearing stilts. At a poker table, catching hand after hand for a few hours can make you look a whole lot bigger than you actually are.

What's the point? When you're sizing up your opponents, be much quicker to assign them common traits than rare ones. See a woman play four hands in a row? Ok, she's loose. There are plenty of loose players at $1-$2, and the observed data suggest this woman is among them. See someone slowplay a set on the flop? Ok, the player is a bit trappy. Again, trappy players are a dime a dozen at $1-$2.

But if you see a player shove all-in on the turn three times and win the pot each time, do not assume he likes to bluff-raise the turn. Very few $1-$2 players like to bluff-raise the turn, and therefore the observed data do not yet support this conclusion. With only three data points, the far more likely explanation is still that the player is an average $1-$2 player who caught three big hands. With nine opponents, you can expect at least one of them to run hot during your session.

Sure, it's possible that Tom Dwan's secret protege sat two to your left in your $1-$2 game during double points happy hour just to torture you. But it's really very unlikely. Put your observations in context, and don't let any opponent get into your head.

My friend exemplifies the wrong way to try to profile your opponents. So what's the right way?

Introducing Bayesian Inference

The process of profiling opponents can be broken into two steps: formulate a hypothesis, then test the hypothesis through observation. "That guy across the table with the long beard is a calling station," is a hypothesis. Though you may not have used the word "hypothesis" to describe it, in your time you've no doubt formulated many hypotheses like this one.

After you have a hypothesis, you test the hypothesis with further observation. "He called a big river bet and showed bottom pair." This observation supports the hypothesis. "He called a big river bet and mucked." This observation also supports the hypothesis, though not as strongly as the first one. This is where the math comes in. How much stronger is the first observation than the second? And after either observation, how sure are we that our hypothesis is correct?

To answer these questions, we use a branch of math called Bayesian inference. Though it's an extremely powerful tool, the concept behind Bayesian inference is simple. You formulate a hypothesis and estimate a probability that it's true. Then you make observations, and with each observation you adjust your probability. You adjust the probability up if the observation supports the hypothesis, and you adjust it down if the observation contradicts the hypothesis. If you've started with a reasonable estimate, then as you accumulate observations, you become more certain about the likelihood of your hypothesis.

Here's a simple example. You sit down and see a young Asian guy at your $2-$5 table. He's wearing several thousand dollars worth of clothes and jewelry, he's got an enormous stack in front of him, and he's drinking both a beer and a whiskey. You might hypothesize based solely on his appearance that this player is a loose and aggressive fish. Looks obviously can be deceiving, so that's where Bayesian inference comes in.

You watch the first hand. A player open-raises, and your friend folds. The first observation weakly contradicts the hypothesis. An average player might fold 75 percent of his hands at $2-$5. A loose aggressive player might fold 55 percent. Seeing your opponent fold once makes it slightly more likely that he's closer to an average player than you initially gave him credit for being.Therefore, after this observation you'd mentally adjust down slightly your certainty that your friend is loose and aggressive.

Next hand. Your opponent open-raises. Score a point for loose-aggressive fish. Adjust your certainty upward.

Next hand. Your opponent reraises an old man in a cowboy hat and then grins and folds when the man shoves over top. Score several points for loose-aggressive fish.

As you keep watching hands, you get more and less certain with each raise and each fold about whether your hypothesis is correct or not.

Here's the thing. While this process may seem reasonable, chances are that the math of it will be counterintuitive at first. Here's a simple non-poker example to help you get your pump primed.

Interpreting Data With Attached Uncertainty

Say there's a scary new virus out there called Virus X. Virus X incubates asymptomatically for many years. Eventually, it turns your skin bright blue.

Population studies determine that about 1 asymptomatic person in 100 is a carrier of Virus X. Recently, a company has developed a test for Virus X. The test always comes back positive if you have Virus X, but it returns a false positive 5 percent of the time if you don't have Virus X. That is, if you don't have Virus X, you have a 95 percent chance of having a negative test, and a 5 percent chance of having a positive one.

You take a Virus X test, and your test comes back positive. Oh no! What is the probability that you will live out your golden years in Smurf blue?

95 percent? That's what most people say, but it's wrong. Very wrong, in fact. The correct answer is about 17 percent. How do I get that?

Say we were to test 100 people at random. We would expect 1 out of those 100 to have Virus X. That person would test positive. The other 99 would be Virus X negative, but 5 percent of those would test false positive, which averages to just a hair under 5 people.

Therefore, for every 100 people we test, we would expect about 6 positive tests, 5 of which are false positives, and only 1 of which indicates a real infection. Therefore, if you test positive for Virus X, your chance of actually having the infection is about 1 in 6, or about 17 percent.

Why does it work out this way? You take a test which is 95 percent accurate, and after a positive result you're still a big favorite to be negative. It's because Virus X is rare. Most people don't have it. When something is rare, you often can't identify it accurately with just a single observation. You have to check a few times.

Say you tested everyone again who tested positive. Out of the 6 people who originally tested positive, you would expect the person who is infected to test positive again, and you would expect a second person to test positive about 25 percent of the time (five people each with a 5 percent chance to test positive). Thus, an average of about 1.25 people will test positive, 1 of whom has the disease. This means that anyone who tests positive twice in a row has about an 80 percent chance to have Virus X. If you tested a third time, a third positive would make you nearly certain of an infection.

This is Bayesian inference in action. The hypothesis is, "I have Virus X." Before any tests, the probability we assign to that hypothesis is 1 percent, the rate of infection in the general population. After a single positive test, we adjust the probability of the hypothesis up from 1 percent to 17 percent. After a second positive test, we adjust the probability from 17 percent to 80 percent.

Back to poker. Humans are great at developing hypotheses. "I think that guy is bluffing a lot." Humans are bad at evaluating these hypotheses correctly using Bayesian inference. "See, he made a huge turn raise. That's his third one tonight. He's a bluffer, I tell you." We make two mistakes. First, we tend to ascribe too much certainty to our observations. Second, we don't correctly account for rarity within the population.

Most observations in poker have uncertainty attached to them. When someone raises the turn and there's no showdown, we can't be sure what happened. Maybe the player was bluffing. Maybe he had the nuts. Maybe he had a big draw. This uncertainty in how to interperet the observation is

akin to the 5 percent false positive rate in the Virus X test. Many of our poker observations, however, have equivalent false positive rates closer to 50 percent.

Some traits are much more common in the poker population than others. Calling stations are much more common in live small stakes no-limit games than players who like to 5-bet bluff preflop. **More observations are required to confirm a rare trait than a common one.**

Using Bayesian Inference At The Table

As you play I don't expect you to have a list of probabilities in your head for each opponent. It's not the specific numbers that are important. It's the general process. I'll give you an in-depth example of how I use the principles of Bayesian inference to profile my opponents accurately.

Reraising preflop is a powerful weapon in no-limit hold'em. Whenever you get reraised preflop, you should consider the range of hands your opponent might be reraising with. Most players tend to fall into one of three groups.

First are the ultra-nits. These players tend to reraise with only A-A or K-K. With A-K, Q-Q, and all weaker hands, they are reluctant to reraise.

Next are the tight reraisers. These players tend to reraise with A-A through J-J and A-K. They might also situationally add T-T and A-Q to that range.

Finally there are the loose reraisers. These players reraise with A-A through T-T, A-K, and A-Q, but they also reraise situationally with some weaker hands, and they also reraise frequently as a bluff.

These are the three profiles we'll consider for preflop reraising:

- Ultra-nit: A-A and K-K only

- Tight: A-A through J-J and A-K. Sometimes T-T and A-Q.

- Loose. A-A through T-T, A-K, and A-Q. Frequent bluffs. Sometimes weaker hands for value.

Given the opportunity, how often does each of these player types reraise?

There are 1,326 total possible hold'em hands, and the ultra-nit raises exactly twelve of them (6 combos each of AA and KK). This means that the ultra-nit will reraise roughly 1 percent of the time.

The tight reraiser will reraise 40 of the 1,326 hands and also sometimes with 22 other hands. This translates to about a 4 percent reraising frequency.

The loose reraiser will reraise with 62 hands. He will reraise situationally with weaker hands, and he will balance his reraising range with bluffs. Add all these up, and a loose reraiser might reraise about 10 percent of the time.

Now our job is to profile a player as an ultra-nit reraiser, a tight reraiser, or a loose reraiser. It's our first orbit at the table. Two players limp, and we raise from two off the button. The player on the button reraises.

What should we do? Is our opponent an ultra-nit, a tight reraiser, or a loose reraiser? What's his most likely hand range?

The simple way to answer the question is to say that loose players reraise the most of the three types, therefore our opponent is most likely to be loose. This is how most poker players implicitly answer these questions, but it's the wrong approach. The conclusion is wrong because it ignores the relative rareness of the three player types within the player population.

I hear poker players talk all the time about unknown players. "Never played with him before. Don't know anything about him." But it's not true. You have a base of information about all your opponents, even those whom you've never seen play a hand.

Say you're playing $1-$2 at a local cardroom. An unknown player is in your game. If nothing else, you know that he's a $1-$2 player. As a general population, $1-$2 players tend to play a certain way that is quite different from how $10-$20 players play. You can use this general knowledge about $1-$2 players to inform your opinion about any particular unknown $1-$2 player.

My experience with $1-$2 players in Las Vegas is that they overwhelmingly tend to be either ultra-nit reraisers or tight reraisers. Loose reraisers are very uncommon at these stakes. A fair guess is that only about 2 percent of the $1-$2 player pool consists of loose reraisers. I arrive at that estimate by thinking about how many sessions I'd have to play with unknown opponents until I encountered a loose reraiser. I would guess that I encounter a loose reraiser in a $1-$2 game of unknowns perhaps once every five or six sessions.

I'd guess that ultra-nits and tight reraisers roughly evenly split the other 98 percent of $1-$2 players. Therefore, before seeing my opponent play a hand, I'd guess that there's a 49 percent chance he's an ultra-nit, a 49 percent chance that he's tight, and a 2 percent chance that he's loose.

Now, at the first opportunity, my opponent has reraised. How should I adjust my probabilities?

For that we need to use a mathematical tool called Bayes Theorem. I'll just give you the answer, but if you're curious how I arrived at it, Google "Bayesian inference" for the mathematical nitty-gritty. The new probabilities are

- Ultra-nit: 18.5 percent

- Tight: 74 percent

- Loose: 7.5 percent

By far the most likely profile for my opponent after having seen him reraise once is that he's a tight reraiser. He likely has a range of A-A through T-T, A-K, or A-Q. (Since he's on the button, I give him credit for reraising with the hands on the fringe.)

Seeing a reraise jumped the probability that my opponent is loose from 2 percent to 7.5 percent. But even so, it's still the least likely profile. Loose reraisers are uncommon in $1-$2 games, and one reraise isn't enough evidence to get me to reconsider that general principle.

Say we played a little longer, and this player failed to reraise a few times and then reraised again. Now would we give him credit for being a loose reraiser? No. If you were to run the numbers, tight reraiser would still be the most likely profile, though loose reraiser might slip past ultra-nit into second place.

What's the takeaway? Given just a few observations, it's almost always more likely that your opponent is a common player type receiving some uncommon cards rather than an uncommon player type getting out of line with trash. It's easy to get reraised a few times, get frustrated, and overreact. The next time you start to get frustrated, recall this, and know that the math says that you are most likely up against a run-of-the-mill opponent who happened to catch a few big pairs.

If you study the process of Bayesian inference, you will find that you can estimate much more accurately, both at the poker table and in the rest of your life.

Exercise No. 24. Next time you play, choose one opponent. You can choose the player for any reason you like, though you should probably pick one who appears to be in the game for the long haul.

Develop a few initial hypotheses about how this player might play. You can base it on how the player looks, or you can watch a few hands to get an initial impression. Once you have your hypotheses, estimate how certain you are that your hypothesis is correct, remembering to take into account whether you've ascribed a common or a rare trait to your opponent.

Then watch every action your opponent takes at the table, and determine if it confirms or contradicts your hypotheses. Also determine whether it's a weak data point or a strong one. A single preflop fold is always a weak data point, while seeing an opponent turn over an all-in river bluff is always a very strong one. Keep track of your observations and decide at the end of the session how correct or incorrect your initial impressions were.

While you do this, at first you might want to ignore all the other players. Getting this one player pegged will probably require all your attention. Also, if you can keep track of all this information in your head, more power to you, but you'll likely need to jot down some notes. Keeping notes on a phone is great for minimizing the weird factor, but you can write on paper too.

After you do this a few times, you'll likely be surprised by what you find. We humans are fallible critters, and one of our common foibles is that we tend to observe only the things that confirm our hypotheses. In other words, if you have someone pegged as loose-aggressive, you might not even notice if he goes a whole round without playing a hand. By paying attention to literally every data point for a single player, you'll get a much more objective player profile.

This section is based on a series of articles that appeared in *Card Player*, Volume 24 Numbers 17-19.

Quick Concepts And Key Points

If you've made it this far and you're still nodding your head, congratulations. I'll be honest. Hand reading ain't easy. The basic idea is fairly simple, but there are a lot of variables to keep track of. You have to profile your opponents. You have to make assumptions about how they will handle situations you've never seen them play. Then during each hand you have to create hand ranges for them, and you have to be thorough about it. As the hand progresses, you have to pare down these ranges using logical deduction and applying shortcuts you learn through experience.

The good news is that if you learn to read hands really well, you will be an unstoppable beast at the table. That's something to look forward to when you're putting in all the work.

In this section I will present some quick hand reading concepts and also some of the key points made earlier in the book. This is a great section to come back to again and again as you hone your hand reading chops.

The concepts are listed in no particular order. They're all important.

Concept No. 1. A turn call often limits the top end of a hand range.

When your opponents make a big hand, they usually have a strong incentive to raise either the flop or turn. The first problem with slowplaying twice, particularly when they're out of position, is that the river may get checked through. The second problem is that slowplaying twice allows you to draw out for cheap. Another problem is that cards can come on the river that will scare you and kill their action. For these reasons and a number of others, players rarely slowplay a big hand twice.

This has far-reaching implications for hand ranges whenever one of your opponents calls you twice. A flop call can be speculative, but a second call on the turn is usually reserved for something "pretty good." Top pair, a good draw, something like that. The thing is, because players rarely slowplay twice, the ranges are also limited on the high end. They have something "pretty good," but not a fist-pump snap-calling hand.

This means that three barrelling is more profitable than it would be if most players played a more game theoretically correct strategy. When your opponent flat calls a turn bet, look for bluffs when:

- The board is very coordinated on the turn, but all the draws brick out on the river.

- One of the draws hits, but by counting hand combos you conclude that it's one that your opponent is an underdog to hold.

- There's a lot of money behind and you can make a massive overbet that your opponent would be loathe to call with nearly any hand in his turn calling range.

This phenomenon also means you can sometimes eke out thin value bets. For instance, you might bet small with a hand like bottom two on the river even if a draw hits. Compare the number of combos in your opponent's range that completed on the river to the number of combos of second-best hands like top pair. Since you needn't worry so much about running into a bigger two pair or a set, sometimes you can find good value bets others miss.

Concept No. 2. Flush draws are more common when the the suited board cards are low ranked.

Players are more likely to play KTs preflop than they are to play 52s. Due to card removal, more flush draw combos will be in your opponents' hand ranges on a 9♣5♠2♠ board than on a K♠9♠6♣ board. When the high cards are on board, they aren't in your opponents' hands.

Feel free to count the combos yourself using various preflop ranges and flops, but the difference between low card and high card flops can sometimes be as many as 25 percent more flush draw combos.

Concept No. 3. Aces on board tend to strengthen flop calling ranges.

Your opponents will play more hands with aces in them than any other card. On the flipside, when there's an ace on board and your opponent doesn't have one, he'll be much less likely to call than he would against any other top card.

Assume you're against a regular player with a typical preflop hand range. Compare an A♠8♠6♣ flop to a J♠8♠6♣ flop. Calling ranges on former flop will be more top pair heavy than on the latter one. Your opponents play more hands with aces in them than jacks. Also there are considerably more ways to have straight draws on the latter flop.

As a general principle (with situational exceptions, to be sure) there are fewer double and triple barrelling opportunities on ace-high flops than on flops with lower top cards.

Concept No. 4. Rag flops produce few hands strong enough to call three streets.

This concept is similar to the last one. When the flop comes 8♦5♣2♠, it's plain difficult to make a good hand. When you get called on a flop like this one, your opponents' ranges will be heavy with mediocre holdings like 66, AQ, and sometimes even worse. Unless the board peels off something like 6-4 on the turn and river, you will frequently be able to muscle players off nearly their entire flop calling range by the river.

Concept No. 5. Turn overcards usually don't hit a flop calling range.

Say the flop is **J♣7♦2♠**. You bet and get called. On a dry flop like this, you will frequently be up against a jack.

Now say the **K♣** comes on the turn. When I ask my students, "What hands could your opponent have now?" nearly every time the first hand my students will say is , "King-jack."

Well, yeah. Your opponent could have KJ. But let's say that after the flop call, AJ, KJ, QJ, JT, and J9s are all in your opponent's range. That's 51 hand combos. Only 12 of these are KJ, so there's a less than 25 percent chance he has KJ. In fact, that chance actually goes down on the turn, since the king on board removes three of the possible KJ combos. Now it's a 9 out of 48 chance, or less than 20 percent.

The other 80 percent of these hands are not going to be happy to see the overcard on the turn. The bottom line is that an overcard on the turn is nearly always a big underdog to have hit your opponent. It's much more likely to be a scare card.

Overcards are very often good barrelling cards.

Concept No. 6. The wider your opponent's range, the less scary any particular card can be.

Fish can be frustrating opponents. They'll play any two cards at any time, and there's no such thing as a safe river card against them.

But there's usually never a scary river card against them either. The flop comes **K♣8♠5♠**. You have **A♥K♥**. You bet the flop, and a fish calls. The turn is the **Q♦**. You bet the turn, and the fish calls. The river is the **9♠**.

Ugh. That's a bad card. It completes the flush and also completes the 76 and JT straight draws. Let's assume this guy is really fishy. He'll call the turn with all 55 combos of flush draw, and he'll also call with all 16 combos each of 76 and JT. That's 87 combos. Throw in 6 combos of K9 and 3 combos of 99, and that nine could have beaten you if your opponent is holding any of 96 hand combos.

Here's the thing. That's just about the worst card in the deck. Against a somewhat tighter player, it would be a killer. But fish can have huge calling ranges. For instance, he can have any Kx hand. That's 56 combos you beat. There's also 62 combos each of 8x and 5x that you beat. He could also have stuff like AQ, QJ, 66, and so forth on the river. Even with the worst card in the deck, you're still a big favorite to have the best hand against a super-wide fishy turn calling range. In comparison, a card like the **2♠** would be downright innocuous.

When you're against an opponent who can have anything, remember that he can literally have anything. That makes it less likely that he has the particular hands you're worried about.

Concept No. 7. On monotone flops (without an ace), loose players are roughly equally likely to hold a flush or the bare ace of the flush suit.

The flop is **K♥9♥6♥**. Assuming your opponent plays any two suited cards and also plays any ace, there are 45 combos of the flush and 39 combos of **A♥**X (where X isn't a heart).

Say your opponent shoves the flop over your bet. He's aggressive, and you think he'd do it with any flush (except the nut flush, which he is required by law to slowplay) and also with any hand including the **A♥**. That's 36 non-nut flushes and 39 **A♥**X hands. You'll often have a call against this range. Make sure the odds and equities are right when you have a hand that is drawing nearly dead against a flush, however, since the bare **A♥** will have plenty of equity against you.

Concept No. 8. On medium and high three-straight flops (e.g., J-T-9), loose players are roughly equally likely to hold a made straight or pair plus an open-ended draw. With a gap in the board, (e.g., J-9-8), the pair plus draw becomes more likely.

On a J-T-9 flop, there are 48 straight combos, and that's if your opponent plays Q8o preflop. If he wouldn't play that hand (but would play Q8s), there are 36 combos. There are also 36 combos of QJ, QT, and Q9. Somewhat fewer if he's not playing Q9o. But he might also play KJ and KT the same way as he would QT, which adds in some more pair plus straight draw combos.

With a gap in the board, the straights become less likely while the pair plus draw hands don't. There are only 32 straight combos on J-9-8. Twelve of those are T7o. Meanwhile, there are 36 combos of JT, T9, and T8.

Concept No. 9. Follow the pocket pairs.

Pocket pairs appear in virtually every flop calling range. Tighter players also tend to have preflop calling and raising ranges that are heavy in pocket pairs. When you're up against a nit or a tight regular, always consider how your opponent will play each of the various pocket pairs, since these hands are bound to make up a significant chunk of your opponent's range.

I feel this is especially important to point out, because players who are new to systematic hand reading often tend to overlook pocket pairs entirely when they build their hand ranges.

When you're building your hand ranges, make sure you follow the pocket pairs.

PART III: HAND READING IN PRACTICE

Hand Reading In Practice

Throughout this book we've talked about the process of hand reading. I started by defining hand ranges. I introduced notation for hand ranges. And then I enumerated range after range in excruciating detail.

If you try to do this at the table, you'll get mixed up, your opponents will call time on you, and ultimately your brain will melt.

Counting hand combos is very important. It's how you quanitfy exactly how strong or weak a range is. But I don't suggest you try to count combos at the table in all but the most trivial cases. It's too much work.

So here are some examples of how I read hands at the table. The thought process is, of course, informed by everything we've learned so far in the book, but we'll use some practical shortcuts. For simplicity, every hand will be in the same 10-handed $2-$5 live no-limit game. Stack sizes will vary from hand to hand.

Hand No. 1. $600 stacks. A fish limps in and you raise to $25 from middle position with **A♦A♣**. A loose regular calls from the small blind, and the fish calls. There's $80 in the pot.

The flop comes **K♥8♥5♣**. Both players check, and you bet $60. The regular calls and the fish folds. $200 in the pot with $540 behind.

The turn is the **7♠**. Your opponent checks, and you bet $150. He calls. There's $500 in the pot and $390 behind.

The river is the **J♣**. Your opponent checks. Should you bet or check, and if you bet, how much?

Calling out of the big blind I'd expect a loose regular to have any pocket pair, any suited ace, many suited connectors and one-gap hands, and most hands where both cards are ten or higher.

Which of these hands calls the flop? Kings (especially AK-KT and maybe K9s), unimproved pocket pairs (especially QQ-99), eights (especially A8s, 98s and 87s), flush draws, and some straight draws. This flop is also dry enough that a regular might slowplay a big hand, though the only likely big hands on this flop are 88 and 55.

Which of these hands calls the turn? Kings probably call again. The unimproved pairs may fold. Of the eights, 87s turned two pair and 98s turned a gutshot. These hands are certainly calling (though I'd expect 87s to raise with three to a straight and a flush draw on board). A8s may or may not call again.

The straight draws are likely calling again since the 7 improves all of them. T9s turned an open-ender, 97s picked up a pair, 76s picked up a pair, and so forth.

Flush draws also likely call again. People sometimes fold small flush draws on the turn, but on this board many of the small flush draws connect with the three low cards on board.

I'd expect most hands two pair or better to raise on the turn given the somewhat connected board.

So which of these hands call on the river?

The jack completes the T9 straight, so that hand is obviously calling. KJ is also obviously calling. These are the only two hands in our opponent's turn calling range that drew out on the river. Beyond these hands, kings are likely to call the river. A flush draw that includes a jack may also call. You may also get a crying call from a hand like 76 that paired on the turn and missed on the river. And then there is the chance that your opponent didn't raise the turn with a hand two pair or better.

The most likely calling hands would be AK, KQ, and KT that we beat, and KJ and T9s that we lose to. That's 30 combos of top pairs that we beat, 9 combos of top two, and 4 combos of T9s. If we wanted to add in a chance that our opponent would call from the blind with T9o, we could bump that up to 8 or 10 combos.

We can expect some stray calls also from **J♥**Xh and busted pair plus straight draw hands. On the other hand, we can expect a surprise every once in a while from a big hand that chose to slowplay the turn. On balance, we can expect to get called on the river by significantly more combos that we beat than that beat us, so we should bet.

How big a bet? There's $500 in the pot and $390 behind. To make these betting decisions at the table, I often try to think of what the *swing hand* is. The swing hand is weakest holding that I need to call to make my bet profitable.

Above we said that there are 30 combos of top pairs that we beat and 13-19 combos of hands that drew out on the river. If KT doesn't call, however, then we lose 12 combos and it's only 18 combos versus 13-19 combos. In this example, I'd consider KT the swing hand. As long as all hands KT and better call, we're good. If KT folds, however, then the bet is much closer to break-even, and we might be better off making a smaller bet that will entice our opponent to call with KT.

So that's what I'd bet. Whatever amount I thought would make me reasonably sure to get a call from KT. This amount will also sometimes encourage the bonus hands like **J♥**Xh and 76 to call.

Against many players, I'd bet the full $390. But it isn't an automatic play.

Hand No. 2. $600 stacks. A nit opens for $15 from early position. Two players call, and you call on the button with **J♠T♠**. The blinds fold. There's $67 in the pot and $585 behind.

The flop comes **K♦9♦8♠**. The nit bets $60, and the players in between fold.

What is the nit's range? To open in early position, nits need a fairly good hand. Pocket pairs, big suited hands, AK, AQ, and maybe a few other hands here and there. The nit then bets nearly the full pot, first to act, into three opponents. This is a strong play. This flop is dangerous and hits preflop calling ranges very hard. I would expect the worst made hand in the nit's betting range to be about KQs. He could also have combo draws like **Q♦J♦** and **J♦T♦**. But this bet is very strong and represents a range of big made hands and even bigger made hands.

Given this fact, it doesn't make sense to raise your straight draw as a semi-bluff, since you can expect relatively few folds. Calling makes sense, though, because the stacks are relatively deep, you have a backdoor flush draw, and you might be able to stack your opponent (despite the fact that he's a nit) if you hit. So you call.

The turn is the **T♣**. The pot is $187, and there's $535 behind. The nit bets $80. What's his range now?

It hasn't changed much from flop to turn. He can still have made hands KQ and better. If he held a combo draw on the flop, then he either paired on the turn or he made his straight.

It is worth noting the small bet size, however. While this player may simply tend to make small turn and river bets, it is peculiar for him to bet the pot on the flop and then to bet just over a third of the pot on the turn. Nits often make plays out of fear. On the flop a fearful player might make a large bet with a good-but-vulnerable hand like AK to try to force out all the draws. After getting called, however, the fear of being beaten already might take over. Hence the small bet on a somewhat scary turn card.

I try not to overreact to bet-sizing information. Sometimes it can be helpful, but players size their bets for all sorts of reasons, and you may not be thinking the same way your opponent is. So I wouldn't add hands to or remove hands from the turn betting range based on the size, though I might weight the weaker hands like AK a bit more heavily than the stronger hands like KK.

The river is the **5♦**. The pot is $347 and there's $455 behind. Your opponent bets $80. What's his range now?

There aren't many possible flushes. The board is **K♦9♦8♠T♣5♦**. Assuming our read of his preflop raising range is reasonable, he can have **A♦Q♦**, **A♦J♦**, **A♦T♦**, **Q♦J♦**, or perhaps **J♦T♦**. Some nits don't even raise the weaker three of these hands. But adding them in, it's only five combos. Other flush combos simply aren't that likely. Nits generally don't push suited connectors and draws this hard.

On the other hand, there are six combos of AA and twelve of AK in your opponent's range. He can also have nine set combos and three combos of QJs for a straight. If your opponent might play AK or AA this way, then his range is heavily weighted toward non-flush hands.

Again, the small, blocking-style river bet suggests he has a hand he's worried about.

Given everything, I would consider bluff-raising this river. Calling with the pair of tens is right out. Sure it's a small bet, but a ten is simply never good here. You can easily represent a flush, there aren't many flush combos in your opponent's range, and there's plenty of money behind to get him to fold.

After his bet, there's $427 in the pot, and it's $455 to shove all-in. That makes it a roughly even money proposition. With only five flush combos in our opponent's range and only three more straight combos, and with potentially 18 combos of AK and AA (which are almost certainly folding to the raise), this bluff is a good bet to make a profit.

It's also not required to shove if you want to bluff, though if you choose a smaller amount you should be fairly certain your opponent will fold AA to the raise with some expectation that he'll fold a set as well. (This is another example of using the swing hand concept. In this case, AA is the swing hand that you need to fold to make the bluff profitable.)

Hand No. 3. You open from middle position for $20 with **4♣4♠**. A tight regular calls from two off the button, and another tight regular calls on the button. The blinds fold.

The flop comes **K♥T♥8♠**. If you bet, roughly how often can you expect to win the pot immediately?

To answer this question, we have to posit preflop calling ranges for our opponents. For simplicity we'll assume both players are identical. They'll call with any pocket pair, two big suited cards, suited connectors (but not one-gap hands below about J9s), suited aces, and AQ, AJ, and KQ offsuit. Let's assume that both players have reraising ranges of QQ+ and AK, though either player can flat call with these hands rather than reraise with them.

Let's count the hands that miss this flop. Pocket pairs 77-22 certainly count as misses. That's 31 combos (given that you hold two of the fours). A tight regular might well fold 99 as well. That's 6 more combos. Then we have A9s and A7s-A2s, non-heart. That's 19 more combos. Then there's non-heart 76s-54s for 9 more combos. So that's 65 combos that missed this flop. Everything else hit.

The range I listed is about 17 percent of all hands. If we take out the reraising range, it's about 15 percent which is about 200 total combos. With only 65 combos missing this flop, each of our opponents is a favorite to have hit the flop.

Let's assume that our opponents hit the flop exactly half the time each, and that they play independently of one another. That would mean a flop bet would get called or raised 75 percent of the time. These assumptions aren't exactly right, but they're good enough for our practical hand evaluation. The bottom line is that a continuation bet is a big favorite to get called or raised on this flop, and since we have nearly no equity when called, this is a terrible flop to bet.

Many players like to continuation bet every flop, but some flops are simply bad to bet. This is one of them. Matching hand ranges to the board can help you find the bad flops. As a general rule, any flop with three cards eight or higher is a candidate to be a bad flop to bet with air. Use Flopzilla to

help you find these bad flops that hit tight preflop calling ranges very hard.

Hand No. 4. $1,000 stacks. You have T♣9♣. Three players limp, and you make it $30 to go in the cutoff. The blinds fold, and one of the limpers folds. The other two limpers—a fish and a loose regular—call.

The flop is 8♦8♠7♦. Your opponents check, and you bet $50 into the $102 pot. The fish calls and the regular folds. What sort of hand does the fish likely have?

Fish tend to be very loose and have extremely wide ranges at all points in a hand. Beyond that commonality, however, fish play a variety of different styles, and unless you know in detail how any particular fish will play, you often have to be ready for anything and just fall back on a default strategy against a weak range.

Having said that, we can take a shot at what sort of hand the fish can have. Preflop he can have nearly any two cards. He can call on the flop with any pocket pair, any eight, and any seven. He can also have any two diamonds and any straight draw. Possible draws are JT, J9, T9, T6, 96, 95, 65, 64, and 54. Being a fish, it's also reasonable that he could have called simply with two overcards or possibly even a hand like A6.

Since our opponent is a fish, we can't fairly assume that he would necessarily raise as opposed to call with any hands in this range.

The question is how to proceed against this range. Because his calling range is so wide, the fish is a big underdog to have trips or better. So one might conclude that we should continue to barrel on the turn and river. The problem is that we don't have a clear idea what our opponent's river calling range is. It very well may be that he'll call with any two pair hand, even 22, on most rivers. If this is the case, then it's dangerous to continue a bluff since the chance he'll have two pair by the river is actually quite high.

The turn is the T♥ making the board 8♦8♠7♦T♥. Your opponent checks. If you were to bet the turn, what would the fish's calling range look like?

He'd probably call again with any pocket pair, any eight, any seven, any flush draw, and any straight draw. He might ditch unimproved overcards and ace-high on the turn, though now any hand with a jack or nine in it makes a straight draw.

With a ten we're now ahead of this calling range. He's considerably more likely to have a seven than an eight by card removal. He's also as likely, if not more, to have 99 or 66-22 as opposed to AA-TT or 88-77. Hands J9 and 96 have made straights, and JT is also ahead of us, while we're now ahead of T7. Without doing the math, that's roughly an equal number of hands we're ahead of as those that are ahead of us. What tips the scales to a bet is all the drawing hands he will still call with on the turn—flush draws, pair plus straight draws, or just raw straight draws like A9 and 65.

You bet $150 into the $202 pot. He calls. There's $770 behind. This turn bet can be larger or smaller. Again we can look at swing hands to help us size the bet. Ideally we'd like this player to call with 33, A9, and 3♦2♦ when we bet the turn. Try to choose a bet size that keeps these hands in. If you bet so much that your opponent folds these hands, you forfeit much of the value of your hand.

The river is the A♥. Your opponent checks. Is there a profitable value bet here? Let's estimate the fish's river calling range.

Let's say he'll still call with any pocket pair. The ace didn't hit many hands that called the turn. We're mainly worried about AJ, A9, and A7. If we were behind KT, QT, or JT on the turn, we're now chopping.On the other hand, if we were ahead of T9, T7, or T6 we're also now chopping.

Obviously busted draws aren't calling the river. The pocket pairs are still roughly a wash. Tens are now mostly a wash except for AT. So we're looking at combos of straights, aces, and eights versus combos of sevens. There are 32 combos of straights. Even though we don't want to put too much stock into whether a fish would raise or call, he very well might have bet or raised a straight by now, so let's discount that to 16 combos. We're looking at AJ, AT, A9, and A7 for aces. That's 12, 6, 9, and 9 combos respectively for 36 total. There are roughly 36 possible kickers for eights and sevens that don't hit the board. There are three sevens outstanding while only two eights, so that makes about 36 extra combos of sevens.

So do we have a bet? It's close, but I think it's a check. By our count, there are slightly more combos outstanding that beat us than that we beat. We've estimated along the way, and the fish may have already raised some of the strong hands in this range. But we're also counting on him to call with hands like 22 on the river and 72 offsuit preflop. If we give him just a little more credit for folding really terrible hands before the river, he doesn't get to the river with quite enough combos we beat for a profitable value bet.

But it is close. If we held JT instead of T9, if the turn had come a J, and if the river had come a 2, then we'd have a clear value bet. I think it's even a value bet in that scenario with an ace on the river, though it's very close. In this case, how much would we want to bet? Look at the swing hands. We need the pocket pairs below 7 to call on the river to make this bet work.

What if the turn had been a 2. Should we have barrelled the turn? A quick eyeball of the hands he's folding versus all the ones he's calling with should tell you that the answer is no. He simply isn't folding enough of his range on the turn. And too many river cards complete his draws (or at least pair him) to count on bluffing the river also. Once this fish calls you on the flop, you should stop barrelling and hope to make a hand.

Continuation betting the flop is ok, since our hand has signficant value on this flop. But if we held total air instead, we shouldn't even fire the flop against this character. He just plain calls too much.

Hand No. 5. $300 stacks. You open for for $20 with K♠J♦. A regular calls, and a loose-aggressive regular calls in the big blind. The flop comes K♥T♥5♣. The blind checks, you bet $40. The regular on the button folds, and then the big blind shoves. It's $240 more into a $140 pot.

What's the big blind's range? He's loose preflop and playing from the big blind, so preflop he can have any pocket pair, any ace, a large number of suited hands (though perhaps not terrible hands like 93s), two big cards, and perhaps some offsuit connectors.

Which of these hands hits the flop? Let's not worry yet about which of these hands he'll raise. We'll use the assumption that he won't bluff-raise a hand that he wouldn't call with.

We have Kx and Tx and some 5x hands also. Pocket pairs AA-TT and 55 for sure, and possibly other ones like 99 and 77. He can have two

hearts. He can have a straight draw around the king and ten. He can also obviously have two pair, particularly KT and K5s. Let's also assume that he may have 3-bet with AA-QQ and AK before the flop, so we'll discount the number of combos of those hands by half.

Now let's talk about which of these hands he might shove with. It's quite unlikely that he'd shove with Tx, 5x, or any unimproved pocket pair below a ten. It's also fairly unlikely that he'd shove with just a gutshot like J9 or Q9. He might shove a heart draw or a straight draw (particularly QJ). He also might have a king, AA, two pair, a set, or possibly QQ or JJ.

Should you call against this range? To determine that, we need to count combos as well as estimate equity against each of these hands.

We're worst off against sets. There are 7 combos, and we're only about 5 percent to beat a set. Next are the two pair hands. There are 6 combos of KT and only **K♦5♦** is possible with K5s, so it's 7 combos again, and we're about 15-20 percent against those.

We're also behind AK and KQ. There are 12 combos of AK, but we are discounting those by half due to the chance this loose-aggressive player 3-bets preflop. So 6 combos of AK. There are 12 combos of KQ. We're about 15 percent against these hands. Overall we're about 13 percent against the hands that beat us, and there are 32 combos.

How many hands do we beat? Let's say he'll shove QJ and any heart draw, and he's not playing the 15 worst combos of suited hands (stuff like 94s). That's 40 flush draw combos, and we're about 55 percent against these hands in aggregate. There are 12 combos of QJ, and we're 65 percent against that hand. So that's 52 combos against which we're about 58 percent to win.

For the call to be profitable, we have to win 240/620 = 39 percent of the time. If these are the only hands that shove, then the call is roughly break-even. If we add in fudge factor hands like K9, JJ, AJ, or even other combos, then the call becomes solidly profitable.

Against a loose-aggressive player who would shove a flush draw, this is a call. Kicker matters a lot in this scenario. AK is a snap call, and KQ is also a clear call. K9, on the other hand, is close to a fold.

Perhaps you're thinking, "How do I do all this math at the table?" Again, the answer is basically that you don't, at least you don't do the math in detail. First, you do plenty of work away from the table so that you are familiar with the numbers. Then you take shortcuts. One shortcut that I've used thus far in these examples is to find groups of hands that are a "wash" that I can ignore. If I have QQ and I think my opponent could have AA-TT or AK, I can solve this problem quickly. AA-TT are a wash against QQ since the same number of combos beat QQ as lose to it. Since QQ is a favorite over AK, QQ is therefore also a favorite over the range AA-TT and AK.

Often you'll find it's easier to enumerate the hands that beat you than the ones you beat. Simply, there are fewer strong hands than weak ones. So try to count the hands that beat you and then try to find enough hands you beat to make it a wash. If you can do that, then you almost always have a call/bet/raise since any fudge factor hands will tend to be weaker than your hand, and their presence in your opponent's range just makes your position stronger.

This analysis can get a bit tricky when we're comparing not to 50 percent but to a break-even pot odds point like 39 percent. Even so, breaking hands into small groups and trying to find groups that cancel one another out will save you a lot of time.

Hand No. 6. $400 stacks. A fish limps in, and a nit limps behind him. You have **A♠K♠** in the big blind and raise to $30. Both players call. There's $92 in the pot and $370 behind.

The flop is **Q♣9♠8♣**. Since this is a flop that hits much of the nit's range and is likely to get a call from the fish also, you check. It's checked around.

The turn is the **A♦**. You bet $50. The fish calls, and the nit folds. There's $192 in the pot and $320 behind.

The river is the **7♣**. If you bet, what is the fish's calling range?

On the turn he has a fairly wide calling range. He can have Ax, Qx, two clubs, straight draws (including Jx and Tx), and possibly also 9x, 8x, and pocket pairs below 8. Even a fish can usually see this is a scary board and that a hand like 85 or 55 is unlikely to win.

The river comes, and it's a scary card for sure. Except that fish have such wide ranges that there's no such thing as a scare card against a fish.

Let's try to break down the fish's calling range on this river, keeping in mind that we can bet anywhere from $5 to $320 into this $192 pot, and the size we choose will change the range that calls.

The fish can have Ax and will likely call a modest bet with it. There are 28 non-king kickers that don't pair the board and 2 aces outstanding for 56 total combos of Ax that we beat. He may call with Qx also, though I would not expect even a fish to call an all-in on this board with just a queen. There are 59 total combos of Qx.

You may note that our fish seems to be playing tighter in this hand than in Hand No. 4, but the board is much more dangerous in this hand. When the board is paired and full of low cards, fish find calls with most pairs. When the board is coordinated and full of high cards, they exercise some discretion.

Rarely the fish could find himself with KK, JJ, or TT and call with those hands. He may also find a call with a hand like T9 or T8 if he's feeling extra suspicious. We won't count these hands explicitly, but they're part of the fudge factor.

What about hands that beat you? There's 45 combos of clubs. He's playing any two suited, and his play is completely consistent with a flush, so these combos get counted fully. There's 3 combos each of QQ, 99, and 88, though he might have bet the flop or raised the turn with these hands, so we'll discount them to 2 combos each. There's a single combo of AA and it's conceivable that it's in his range, though it would be very peculiarly played. He could have called the turn with 77 also, so we'll discount it to 2 out of the 3 possible combos.

So far we're at 54 combos that beat us. That's approximately a wash with Ax. So let's see if there are more straights and two pairs in his range

than there are weaker pairs that he'll call with.

Straights are JT, T6, and 65. It would be a strange way to play JT, but it's possible, so we'll count it for 8 of the 16 possible combos. He could have T6 and 65, but it would require him to call a sizable turn bet with these nearly hopeless hands. But hey, he's a fish. We'll give him 2 combos of T6s, 1 (out of 12) combos of T6o, and 3 out of 16 combos of 65. These numbers are obviously coarse estimates, but with fish that's often the best you have to go on. So we have 14 straight combos. On to two pair hands.

There's 6 combos each of AQ, A9, A8, and A7. Maybe he raises the turn with one of the first three, so let's discount those to 4 combos each. There's 9 combos of Q9 and Q8, and let's discount these to 6 combos each. Q7 is 9 fairly clean combos. And then there's 9 combos each of 98, 97, and 87. I wouldn't expect him to have raised the turn necessarily with 98, though I also wouldn't necessarily expect him to call the turn every time with 97 and 87. We'll give him 20 of these 27 combos. That's 59 combos of two pair.

So in total we have about 73 combos that beat our top pair that we have to offset against pairs worse than Ax. There are 59 combos of Qx, so we'd need him to call with all of his queens and realistically another 30+ combos of weaker pairs to make a bet profitable.

Even against a fish, on this board your hand is just too weak to make a large value bet. You have two reasonable options. You can check. Or you can make a small bet like $50 into the $192 pot. The purpose of the small bet is twofold. First, it entices your opponent to call with nearly all his pairs. If he does this, the bet may eke out a small profit on its own. But second, it acts as a blocking bet that deters your opponent from bluffing or just making a flukey bet with a hand you beat. Say he has QT. If you check, he might bet. Why? Who knows. He could be betting just because you checked. But if he makes the bet large enough, it will be difficult to call given how many hands in his range beat you.

So you throw out a small blocking bet that serves to "protect" what's in the pot from your opponent's erratic river betting. Even if the bet is a slight loser in a vacuum, it protects the $192 pot often enough for you to be a net positive. This type of manipulation using unorthodox bet-sizing works well on amateur players.

Also note that if you had two pair, say A8, instead of AK this would be a solid river value bet despite the straight and flush possibilities on board.

Hand No. 7. $1,000 stacks. A nit and a regular limp in. You raise on the button to $30 with **T♣8♣**. The blinds fold, the nit folds, and the regular calls. There's $72 in the pot and $970 behind.

The flop is **A♣7♣6♠**. The regular checks, you bet $50, and he calls. There's $172 in the pot and $870 behind.

The turn is the **J♦**, and your opponent surprises you by betting $130. What is your opponent's range?

Preflop the regular limped in behind a nit, so big pairs and AK are unlikely. Otherwise he should have a relatively standard preflop range.

He checks and calls the flop. He could have Ax, a pocket pair KK-88, or a small flopped pair like 97s, 87s, K7s, 65s, K6s, and so forth. He could have a flush draw or a straight draw (particularly an open-ender or one of the good gutshots T8 and T9).

But then he makes a large turn bet. What could this be? Theoretically this bet is unbounded and could be any hand he called the flop with. But in practice it's unlikely to be a weak pair. Regulars typically try to get to showdown cheaply with hands like A3 and 87 and 99.

His action says he hit the jack, and it's possible. AJ is most obvious, and JJ is also very possible. J7s is worth considering. He can also have a flush draw including the **J♣**, or the jack could have given him extra outs with **K♣Q♣**.

He can also be uncloaking a flop slowplay. That could be 77, 66, A7, A6, 76, or even AQ. AA and AK are possibilities, but again I would figure that he'd most likely raise preflop with these hands.

Finally, he could be getting out of line with a draw. Any flush or straight draw is a potential candidate for this play, though I would definitely discount the number of combos since the standard play would be to check these hands. Obviously you are at least calling with your combo draw and deep stacks, but do you have a profitable bluff raise against this range?

The stacks are deep, which adds leverage to a bluff. The pot was $172 on the flop with $920 behind. Our opponent has now bet $130 leaving $790 behind. Our call would make the total pot $432, and we could raise up to $790 on top of that. A raise of about $250 more would leave $540 behind to bet into a $932 pot on the river. That's serious leverage.

The downside is that if you get reraised all-in, you would have almost exactly the right odds to call which might sound good, but in reality means that a reraise completely nullifies the value of your draw.

Which hands are folding and which hands might reraise all-in?

It's fair to assume that your opponent will not fold any hands A6 and better. He may reraise some or most of these hands. It's possible he'll fold J7s, 76, AA, or AK, though I wouldn't count on it. With **K♣Q♣** he'll likely call the raise. He's most likely to fold if he holds a run-of-the-mill flush or straight draw. Even then he may not fold.

Overall I think this range is too strong to attempt a semi-bluff raise against. Some aggressive players would make this play (check-call flop, bet out on turn) with a wider range including weak pairs and draws. Against these players raising the turn would make considerably more sense.

The river is the **2♣**. The pot is $432 and there's $790 behind. Your opponent bets $200. What's his betting range? If you were to raise, what would his calling range be?

To recap, the board is **A♣7♣6♠J♦2♣** and you hold **T♣8♣**. There are exactly 18 combos that beat you. Among these combos are hands like **Q♣4♣** and **J♣3♣** that your opponent is unlikely to have played preflop. If we assume his preflop range looks like Kxs, Q5s+, J8s+ then it's 12 combos.

How many combos worse than yours might he bet? He'd likely bet any flush, and including only suited connectors and one-gap hands, there are 5 flush combos you beat. Getting over 3-to-1 from the pot, this is enough information to justify a call. I doubt many would fold a ten-high flush, but hand reading has confirmed our intuition.

What about raising? Before the raise, the pot would be $832 and there would be $590 behind. To raise profitably, we need one of two things to happen. We need either more than 12 hand combos worse than us to call (and to be safe we'd prefer to have 15+ combos in case our opponent is playing looser preflop with suited hands than we assumed). Or we need our opponent to fold enough hands better than ours that our hand becomes a profitable bluff.

Since 7 of the 12 combos that beat us are the nuts, it's not reasonable to assume we'll get enough folds to make a bluff-raise profitable. He'd have to reliably fold every non-nut flush, and no one plays that way.

So we need our opponent to call with 15 or more hand combos. So far we have 5 smaller flush combos. How about sets? Would he bet $200 and then call a raise with a set? The likely sets are JJ, 77, and 66. AA is relatively unlikely, and 22 is pretty much out. That's 9 combos, which means he'd need to bet/call with at least AJ as well.

This one is player dependent. If the opponent were a nit, then I don't think it's reasonable to expect bet/calls with enough non-flush hands. But some more reckless $2-$5 players will definitely bet and call all-in with AJ on this board, in which case an all-in raise should be profitable.

Hand No. 8. $700 stacks. You open **K♦K♠** for $20 from early position. Two players call behind you, and the small blind calls. There's $85 in the pot and $680 behind.

The flop is **K♣8♠6♣**. It's checked to you, and you bet $60. One player folds, the button calls, and the small blind calls. There's $265 in the pot and $620 behind.

The turn is the **A♠**. The blind checks, and you bet $170. Both players call again. There's $605 in the pot and $450 behind.

The river is the **9♥**. The small blind goes all-in.

Say the small blind is a nit. What does he have?

Preflop he's got a nit's calling range from the small blind. On the flop he can have a set, two pair (relatively unlikely, though, given the ranks of the cards), AA, a good king, a flush draw, or an open-ended straight draw. A nit wouldn't overcall the flop with a weak pair.

On the turn he checks and overcalls again. This likely rules out hands A6 or better, since this is a drawish board and the nit would almost certainly like to shove to price out draws with any strong made hand. Kings are no longer in the running, since a nit would be loathe to play such a huge pot with just the second pair.

Some draws are still in the mix, particularly combo draws.

Then he shoves the river. When a nit shoves the river in a huge pot, what's he got? The nuts. No flushes came in, but a straight did for T7 or 75. These are unlikely hands for a nit to play preflop, but the river action is more telling than the preflop action. He could have had a moment of weakness and tossed in $18 preflop with **T♣7♣** or **7♠5♠**.

So should you fold? That answer isn't so easy. Before making your river play, you have to reexamine how you went about classifying your opponent as a nit.

Time to use Bayesian inference. Your hypothesis is that your opponent is a nit, and presumably you have observed enough to confirm that hypothesis at least somewhat. But how sure are you? T7 and 75 are both unlikely enough hands that you have to be fairly certain in your read to consider laying down a big set getting more than 2-to-1.

You're not going to build a Bayesian model in your head at the table. But remember the principles. In order to consider folding your set, you need your opponent to have the relatively rare trait that he absolutely won't play any hands like this besides **T♣7♣**, **7♠5♣**, and **7♠5♠**. (Nits generally don't make large turn calls with just the bottom of a small open-ended straight draw with two flush draws on board. It's reasonable to assume that a nit would need a flush draw to go with the straight draw to call the turn.)

So how sure are you that your opponent is a nuts-only nit? Have you played 3,000 hours with him and never once seen him get out of line? Or have you just drawn your conclusion based on a few sessions and that old-fashioned cowboy hat he wears? In the former case I'd actually fold the set. In the latter, I'd probably hold my nose and call.

Against an unknown $2-$5 player I'd still expect to see a straight on the river a good portion of the time, but I'd expect enough weaker made hands and fudge factor to make the call profitable getting over 2-to-1. (I wouldn't worry too much about the player on the button showing up with a better hand, though obviously it's possible.)

Finally, this hand exemplifies a potential hand-reading pitfall. The turn has two flush draws and a few possible straight draws. All of those draws brick out on the river except for the two straight hands. One might be tempted to look at all the possible busted draws and conclude that there's a lot of bluffs in this player's betting range.

While a wild or aggressive player might be bluffing here a good portion of the time, most $2-$5 players won't be. With two opponents in the hand, this pot is protected. Whenever a player is representing a small number of hand combos (really only 3 in this case) while holding a range filled with busted draws, it's reasonable to suspect a bluff. But don't automatically assume. Most $2-$5 players don't bluff enough, and they really don't make big bluffs often enough. At a low enough bluffing frequency, even just 3 legitimate combos will dominate a hand range.

CONCLUSION

Hand reading is the key to winning at no-limit hold'em. If you can read hands, you can win. If you can't, you'll struggle.

Hand reading is simple. Construct hand ranges for your opponents. Then employ logical deduction and a dash of intuition to pare down the hand ranges as the action proceeds. Eventually you'll have a clear picture of what your opponent may have, and you can then count hand combos to compute odds that will inform your decisions.

But hand reading is also quite complex. First you have to get down the mechanics of keeping correct track of the sorts of hands that will be in your opponents' ranges. Then you have to adjust these ranges based on your opponents' playing styles, styles which you'll have to determine through hypothesis testing and Bayesian inference. Finally, you'll often have to take leaps of faith about what hands to include when you lack the required background information.

And all of this is an inexact science. Even if you do it right, you'll get it wrong sometimes. But don't beat yourself up if you get it wrong. This process works. Keep at it, hand after hand, session after session, month after month. You'll get better. Your reads will get sharper. And eventually you'll find that you're winning more money than you ever imagined.

ACKNOWLEDGEMENTS

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