



Having played a lot with Greg over the years, I know he plays a great game. Having taught with Greg, I know he's even better at teaching poker. But what really sets Greg apart is his skill at the final table. He has won over 30% of the times he made the final 9, and has won 70% of the times he made the final 3 in a no-limit or pot-limit game! Amazing!

Joe Hachem

Everyone knows Greg won the WSOP in 2004. What you might not know is that he came back the next year and almost won it again! Add in his 4 HPT titles, and Greg has a great all-around tournament track record. Greg takes a logical and mathematical approach to the game and teaches that approach very well. He has taught for the WSOP Academy and held his own boot camps around the country for years helping players improve. This book will help any tournament player to improve their game.

Chris Moneymaker

Greg Raymer came out of nowhere to win the WSOP Main Event. Then he backed it up with two more deep Main Event runs, and impressed me! Greg has continued to impress with many more deep runs and wins.

Phil Hellmuth

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# MY POKER PHILOSOPHY

Every poker player says they're playing to win the money. And with very few exceptions they are all being honest, in the sense that they would pass a lie detector test. But in many cases, they are at least partially fooling themselves. It is very common in poker tournaments to find players who are playing to survive much more than they are playing to maximize the amount of money they could win. In many cases, they think it is a sign of failure if they are eliminated early in the tournament. Once they've played long enough that they no longer feel there is any dishonor in being eliminated, they now realize that the money bubble is getting somewhat close, and thus they continue to play to survive so as to (try to) maximize their chances of making the money.

But all of these goals and concerns are often counter-productive in terms of maximizing their EV\*. And really, isn't that what it's all about? If you want to

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\* EV = Expected Value, that is, how much would you expect to win, or lose, on average, in a given situation. For example, if I offer to give you \$200 to \$100 on the flip of a fair coin, the EV of this bet to you is +\$50, as you expect to win \$200 for each time you lose \$100, for a profit of \$100 every 2 flips of the coin. In many (most) poker decisions, you cannot determine the exact EV of each decision you might choose, but by accurately estimating the EV of each decision, you can learn to choose the highest EV decision most of the time.

make the most money, you must make the decisions that will, on average, lead to the most money, even if those same decisions sometimes also increase your chances of being eliminated early, even this very hand.

Now I'm not saying that you cannot have these other goals, or that you can't make decisions that fail to maximize your EV, but instead maximize these other goals (such as making the money, making day 2 of a prestigious tournament, extending your time in the tournament for reasons of pride or further entertainment). What I am saying is that this book is going to completely ignore such things. Even if this is your one and only time that you will get to play in the WSOP Main Event, and it is important to you that the experience lasts as long as possible, I cannot accurately put a value on that experience to you. And even if I could, it would be a different value from one person to another. So, for purposes of this book, all such non-monetary considerations will be ignored. If you wish to consider such things, feel free to do so. Just make sure that you are properly weighing the monetary costs, and that the monetary costs are not too high for what you're getting in return.

There is a hypothetical I like to ask my students that says a lot about how the student thinks about poker and risk, and what things are important to them. Imagine it is the first hand of the Main Event, you have T50,000\* and blinds are T75,T150. You are in the big blind, and everyone folds to the small blind. They now announce "All-in." Not only is this a crazy play, but quite unexpected. In fact, you're so surprised, you now ask "All-in?" Unfortunately, the small blind doesn't understand that you've asked a question, and thinks you have stated yourself to also be all-in. As such, believing the action complete, they table their cards. Of course, you were not actually saying you were all-in, but asking if you heard them correctly, i.e., did they really say all-in? If the dealer and other players confirm that your words were a question, not a statement, the correct ruling is going to be that it is unfortunate for the small blind that they misunderstood, but the decision is still on you, to fold or call, and you now have the advantage of knowing their two cards. So, what do you do?

Obviously, if the small blind has the better hand, you fold. But assuming

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\* Throughout this book I will use the symbols T and \$ to distinguish between tournament chips and money. Whenever you see T100, for example, that means 100 tournament chips; whereas \$100 means 100 dollars in cash, or cash equivalent. While most players are not terribly familiar with this system, it does serve the purpose of making it easier to distinguish between the two, and thus easier to understand what I'm saying.

you have the better hand, how big of an edge do you require before you will call and risk all your chips on the first hand of the most important tournament of the year? Will you call if you're a small favorite, like 2-2 (52%) vs. A-K (48%)? How about something like A-10 (60%) vs. K-Q (40%)? Do you need more, like J-J (70%) vs. A-10 (30%) or J-J (80%) vs. 5-5 (20%)? Or even more edge, such as rare matchups like K-K (92%) vs. K-5 (8%)?

I've asked this question of thousands of students, and dozens of co-instructors. The range of answers is all over the board, and occasionally I even hear the answer that they would never call preflop, even if a huge favorite, because they are unwilling to risk all of their chips on the first hand. In fact, my question is closely related to a commonly asked question every year as the Main Event approaches. Go to any online poker forum, and somebody will ask if you would (or they should) call an all-in preflop on the first hand if holding pocket aces. Against a random hand, A-A will win about 85% of the time. So in a sense they are asking if 85:15 is enough of an edge to risk it all.

I'm sure you can pretty much guess my answer, given what I've already written in this chapter. If you're an average player in the field, then calling with any edge will make you money. At this very early stage of the tournament, doubling your stack will essentially double your equity in the tournament. That is, T100,000 chips are worth almost exactly double the T50,000 chips you started with. The fact that this is a tournament, and chips are worth more per chip in a short stack than in a big stack (see chapter 3 on ICM for details of this concept) does not really apply yet. That concept doesn't have a noticeable impact until you are in the money, getting very close to the money, or have amassed a truly huge stack at an earlier stage.

An interesting thing to consider, if you are a below average player compared to the field, is the fact that you will increase your EV by calling all-in here even if you are slightly behind. That is, if you know that most of the players are a lot better than you\*, you should call here even if you've got the two overcards vs. the opponent's pair. You know you're putting it in slightly behind, but since your opponents are more skillful, this is likely a better spot than what you will find later.

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\* Even if you're average or so for the field as a whole, if you happened to draw a very tough starting table, and most of these players are much better than you, and you know that this table probably won't break for a long time, this concept would apply.

Several years ago, my friend Matt Matros wrote an article for *CardPlayer Magazine* in which he considered this question, that is, at what point should the well above average player still call, and when should they fold, even though they're the favorite when making this call? Most people would agree that a typical player would make more money, on average, by calling any and every time they had even a small edge. The tougher question is how much edge do you need to profitably call if you are a better than average player? Matt did the math assuming the better player was not just a little better, but a lot. In fact, he assumed the hypothetical player was three times better than average. That is, if this superior player folded in this spot, they would still go on to an average result of winning \$30,000 in this tournament, for a profit of \$20,000, by playing their normal (highly talented) game. Of course, if this great player called and lost, they were out. But if they called and won, they had twice as many chips as anybody else at that time, and still had all of their tremendous skill moving forward.

Now you might guess that if this hypothetical great player is three times better than average, they would need to be at least a 3:1 favorite (i.e., 75% vs. 25%) before they should profitably call the all-in. But it's not that simple. What Matt discovered is that this great player only had to be a 53:47 favorite to make more money by calling than by folding. This is primarily because, even though the starting stack of T50,000 chips is worth \$30,000 in front of this player (as compared to a value of \$10,000 in front of an average player), if they call here and double their stack to T100,000, this double stack will almost double in value, and be worth almost \$60,000, when wielded by this great player.

What I find most interesting about all of this, is that I've discussed this with many players who are excellent tournament pros, with years of winning results under their belts. And while they will often say that they're not going to dispute the math, they will still insist that they would not call with such a small edge, and that they are sure it is correct for them to fold. They insist that they can find a better spot in which to risk all of their chips, rather than risking them here as only a 53:47 favorite. In fact, many of them say they would fold if they were a 60:40, or even a 70:30, favorite.

I think the mistake they are making is that they are focusing too much on the downside potential, and giving themselves too much credit when they say they will find a better spot to risk it all. They often will find a better spot, but



sometimes they will play smart, and yet still find they risked it all when way behind, maybe even drawing dead. Most of the time, even a great player can't avoid a cold-deck. Thus, they will usually find a better spot, but when we average those much better spots they usually find along with the sometimes worse spots they end up in, we find that their chances are probably not as good as they think. More importantly, even if they can, on average, find a much better spot to risk it all, if they take the risk now, and win, they will still be there to take advantage of these better spots that are coming along later. Thus, by risking it all now, they don't always miss out on later spots that are even better.

The math is clear, and can't be argued with unless you find that the mathematician made a mistake. So unless you find such a mistake in the math, don't even try to argue with it. But, if you wish to say that despite the math you're going to make a different decision, feel free to do so. Just make sure you understand that you're giving up EV in exchange for something else, make sure you know exactly what price you're paying, and that you are willing to pay it.

# TOURNAMENT EQUITY AND GOALS

As we discussed in Chapter 2, when it is early in the tournament, you are really just playing a cash game. The only reason that you shouldn't play exactly the same way you do in your regular cash game is that your typical tournament opponent is playing differently than your typical cash game opponent. As such, the Game Theory Exploitative strategies you select will be different, because the tournament player is making different mistakes than the cash game player. It is not until the late stages of a tournament, when you are in the money or at least getting very close to it, that you really start to play tournament poker.

Why is this? Again, we look back to chapter 2, and the discussion of how early in a tournament, chip values are linear\*, whereas now that we are deep in the tournament, in or near the money, chip values are now noticeably non-linear. Since the chip values are non-linear deep in the tournament, the ICM considerations we discussed in chapter 3 come into play, and we are now truly playing tournament poker.

If you have much experience in playing both cash games and tournaments,

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\* Or so close to linear, that we can ignore the minor amount of non-linearity that does exist.

you know all of this, even if you don't realize it. When you are near the bubble of a tournament, how often have you seen a player with the largest stack at the table (or at least one of the largest) simply run over the table? Everybody else at the table knows that this player is raising not just with premium hands, but also with a lot of very weak ones. Yet they continue to fold to this aggression. Why? Why is this so common that we've all seen it (and even done it ourselves)? It is because all of us at that table are playing tournament poker. There is so much value in surviving the bubble that many players will not take the chance of getting involved in a pot against the aggressor unless they have a truly premium hand. And since the aggressor knows this, they are raising, and will continue to raise all, or at least many of the hands, as long as this condition lasts.

The shorter stacks are playing extremely tight, because the ICM value of the chips they could lose right now, on the bubble, is so much higher than the value of the chips they could win. Thus, those blinds and antes are ripe for the picking by the chip leader. In the real world, many players are even more risk averse than they should be on the bubble, making this extra loose-aggressive play even more enticing to the chip leader. However, even if everybody at the table is a world-class player, and is making all the smartest decisions, it is correct for the chip leader to be more aggressive, and for the other players to be more risk averse, than in most other situations.

Let's look at a SNG example showing just how large this ICM (non-linear chip value) discrepancy can be. Imagine an online SNG where we each paid \$10 to enter, and the final three will be paid \$50, \$30, and \$20. Starting with T1,500 each, we are now 4-handed, with you and I starting the hand with T4,500, and our two opponents holding T3,000 each. You and I each get T1,500 into the pot. That makes a pot of T3,000, and each of us has T3,000 remaining in their stack. You move all-in. What is the math guiding my decision?

If this were a cash game (or early in the tournament), the math would be easy. There is T6,000 in the pot (counting your bet), and it will cost me T3,000 to call. I am getting pot odds of 2:1, and should call if I believe I will win more than 1/3rd of the time. Please notice that I have not mentioned whether all of this is preflop, or on any other street. Even on the river, the math is the same. The question is simply do I believe I will win more or less than 1/3rd of the time?

But this isn't a cash game, or early in a tournament, so the math is quite a bit more complicated. Let's start by looking at each alternative. What if I fold? In that case, I will have T3,000 chips and be facing opponents holding stacks of T3,000, T3,000, and you with T6,000. Using an ICM calculator, my stack has a value of \$22, meaning the two opponents who also have T3,000 stacks also have \$22 each in equity, leaving an equity of \$34 for you. If I call, then what? If I lose, my stack is worth \$0 as I'm eliminated in 4th place. You will have T9,000 vs. two stacks of T3,000, which will give you an equity of \$41 and each of them \$29.50. If I call and win, then your stack is worth \$0, and I'll have the \$41 stack.

Notice something important here. If I call your shove, then win or lose you and I will have stacks worth \$0 and \$41, giving our two opponents a combined value of \$59. But when I folded, the combined value of their stacks was \$44. You and I clashing on the bubble of this SNG gave \$15 of equity to our opponents. Each of them went from \$22 to \$29.50, an increase in value of more than 34%! This is why it can be valuable to just sit back and let your opponents butt heads late in a tournament. If everybody else is playing very loose and aggressive, you can make a lot of money by just sitting back, waiting for premium hands, and watching the carnage.

Back to your shove. If I fold, my stack is worth \$22; and if I call, my stack is going to be worth either \$0 or \$41. At what point is the average of 0 and 41 more than 22? It turns out that for me to correctly call your shove, I have to win at least 54% of the time. This is a huge difference from the cash game math. Instead of needing to win at least 33.3%, I now need to win at least 54% of the time, or I should fold. And this difference exists because the value of the chips that I can win is much lower than the value of the chips I can lose, on a chip-by-chip basis. If I call and lose, I lose T3,000 chips that would have been worth \$22. That is equal to \$0.0073 per chip. If I call and win, I win T6,000 chips that increase the value of my stack by \$19 (to a total of \$41). Those chips, when added to my stack, are worth only \$0.0032 per chip. In this scenario, if I call your shove, each chip I lose is worth more than double the value of each chip I win.

One table SNGs that pay multiple winners will have some of the most extreme examples you can find with regard to non-linear chip values. About the only other situation you will find that has such extremes will be in super-sat-

ellites and survivor tournaments that pay multiple identical prizes (see chapter 35). In a typical tournament that pays multiple winners with more money to first and lower amounts to other winners, you will not find such a large discrepancy between the value per chip of chips lost vs. chips won.

But this discrepancy does exist, and it makes it even more important in a tournament that if somebody is going to shove all-in, that you be that player, thus forcing your opponent to fold, or make what could often be a mistaken call. Looking back at our SNG example just above, what if you shoved knowing that each of us was exactly 50% likely to win? You have now forced me to fold, or to make a call that is a mistake. If instead I had been the one to move all-in, I would be putting you in this horrible spot, where you must fold (while getting 2:1 pot odds on a coin flip) or make a bad call. In that situation, it is the player who moves all-in first who wins, so to speak.

Now that we've seen how much the tournament math can change your decision, as compared to the cash game math, what should you do to help yourself make the best tournament decisions? Interestingly enough, the first thing you should do as you're facing the decision in a tournament, is to do the cash game (chip count) analysis. If you are still early enough in the tournament, you can just make the best decision based upon this cash game math. If you are extremely deep in the tournament, in the money or close to it, then we need to look a little closer. If the cash game math shows one decision is significantly better than the other(s), it is very likely still the best decision even in a tournament situation. But if the cash game math shows that two decisions are reasonably close in value, then it is probably more profitable to select the low risk choice (that is, the choice that carries the least risk of losing all or most of your chips).

What about the idea, which you will hear often from tournament players, of passing up on a given spot that is profitable, because you believe that an even better spot will present itself later? Early in a tournament this is just silly. Let's presume that you are a great player, with a significant edge on the field. You know from the history of tournaments you have played, that you will double your stack in a tournament before you go broke about 80% of the time. Notice we're not talking about making the money, or winning, just the concept that if the tournament started with T20,000, that you will, with about 80% certainty, reach T40,000 or more at some point before you are eliminated.

Now, you are faced with an all-in situation, where you believe you are 70% likely to win. If you call, you will double up when you win, and be eliminated when you lose. But if you fold, you know that by continuing with your normal game you will double up at some point with about 80% certainty. Does this mean you should fold this hand where you're a 70:30 favorite?

Sorry, but if you said yes, you need to think about it some more. The real question isn't which decision gives you the greatest chance of doubling up. If this were a \$100 buyin tournament, and you had made a bet with a friend for \$10,000 that you would double up at some point in this event, then yes, you should probably fold in this spot. But ignoring such silliness, the real question isn't which decision is most likely to double you up, but which decision, on average, makes you the most money. If you call now and lose, it is true, you will miss out on those future opportunities in this tournament where you would have gotten your chips in good, and frequently (80% of the time) doubled up to T40,000. But when you call now and win, you will have doubled up right now, AND you will still be there (70% of the time) to enjoy all of those future opportunities. You might say that if you call now and win, you have become something like an 80% favorite to triple up at some point in this tournament, because those opportunities wherein you would have won those other chips will still be there for you.

Only at very end, when you are down to the last few players, should you consider passing on a profitable but risky spot, in order to wait for a better spot that you are confident is going to come along. Here is a common example. You are down to three players in the tournament, and your two opponents are both very passive and relatively tight players. It is obvious they are not used to playing short-handed, and do not understand that they need to play a wider range of starting hands than when the table was full. As a result, you have been able to raise preflop, and steal the blinds and antes frequently, and you believe that you will be able to continue doing so, even when it gets down to heads-up play. Now, you raise again, and one of the opponents moves all-in. You actually have a very strong hand this time, and even when carefully doing the ICM/tournament math, you know it is profitable to call. But should you? Maybe not. If these opponents are going to let you slowly grind them down, one blind at a time, with a very high certainty, then why play a huge pot, even when you are a significant favorite to win? This is a time where you can go beyond the math,

and realize that the more profitable play might be to fold. In essence, what you are doing here is giving up on a call that is clearly correct as a Game Theory Optimal play, and pursuing your Game Theory Exploitative strategy of grinding the players down instead.

However, when it is still early in the tournament, it simply won't be more profitable to pass on risky hands where you have the advantage. With so many players still left in the field, you can't know that you will be able to win using conservative strategies. Even if the opponents you're facing now would permit this as a reasonable possibility, you will be facing many other opponents as you proceed in the tournament, and it is highly unlikely they are all going to let you grind them down slowly and surely. Early in an event there is so far to go, and so many chips yet to be won, that there is always a lot of risk awaiting you. As such, it simply won't be profitable to avoid risk early simply for the sake of avoiding risk. If the situation you find yourself in involves a lot of risk, but also gives you a significant edge, then it is a risk you should take if you want to maximize your long-term profits.

Something else I want to discuss in this chapter, because I really only see this in tournaments, by tournament players, is the setting of goals. My only goal, in a cash game or tournament, is to do my best to make the most profitable decision every time it is my turn. I see a lot of players who set more specific goals. In most aspects of life, it is better to have specific goals rather than general goals. A goal that is too general, like I'm going to write this book by the end of the year, isn't all that helpful, as such a goal might not motivate me when it's February. But if my goal is more specific, such as I'm going to spend at least one hour a day writing, it will be more helpful to achieving the ultimate goal of getting the book done by the end of the year. But in poker, I find that specific goals are actually counter-productive, and will probably hinder, rather than help you, achieve your ultimate goals.

When I play in the WSOP Main Event, everybody knows that it is a long, hard road to the final table and the bracelet. The starting field in recent years has averaged over 6,000 players, spread out over three starting days. Typically less than half of this number will be eliminated by the end of the first day. Many players set a goal to double their stack by the end of the day, so that they will be above average for day 2. However, this goal is silly, and more likely to lead to mistakes than if you just play your best game.

Imagine you set the goal of doubling your stack to at least T100,000 by the end of the day. With 30 minutes left to go, you've done quite well, and have a stack of T90,000. With so little time remaining, there is a good chance that your normal game will yield a result of little to no change in your stack size. And this means you will not reach your goal of T100,000. Therefore, when somebody opens for a raise in early position, maybe you decide to play a hand you would normally fold. But if your normal strategy is correct, then you are folding this hand because that is the most profitable decision. But that normal strategy, while correct, does not in this case give you the best chance of achieving your short term goal. And thus you might play a hand you normally wouldn't. If it works out, great, you will reach or at least come closer to your short term goal. But you might instead find yourself being eliminated, or losing a lot of chips you never should've lost, because of this self-destructive goal. Does it really matter in the end whether you get to T100,000 today, rather than some other time later in the tournament?

Other longer term goals, like deciding you will win a bracelet this year, or get your first 5-figure (or 6-figure) score, or anything like that, are equally harmful. There is too much variance in poker for such goals to be achievable just because you stick to them. It would be like me setting a goal of not just writing a book, but winning the Pulitzer-prize. Even if I write the greatest book of which I am capable, and most of the critics felt it was the best book, there is still a huge chance it won't win the Pulitzer. But I can set a goal of getting the job done, and doing my best possible work. And even if that doesn't get me the Pulitzer, if I have enough talent and work hard enough, I will be able to make a living as a writer. Similarly, if you make sure you work hard on improving your game, and always play the best you can, you will be a winning player. But don't set results-based goals in poker, as these will actually reduce your chances of meeting the more important goals that should be your true focus.