

To Hit, or not to Hit

Volume I

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Introduction

When learning backgammon, the first impression that most players get is that the game is mainly about getting your checkers around the board as quickly as possible. For them the rule of thumb “When in doubt hit!” makes perfect sense since hitting fits neatly into a racing strategy: you slow your opponent down by sending a checker back and you may slow her down even more when she fails to enter from the bar. However, I think in order to become a good player you need to get rid of this simple rule at some stage of your learning process. Even though hitting is indeed the default play in many situations, there are others where it is a big mistake. The purpose of this book is to shed some light on the various strategic and tactical factors that determine whether to hit.

The choice between an aggressive hitting play and a safe alternative is a risk versus reward decision. For a proper assessment of risk and reward it is essential to know some probabilities in backgammon. For example, you need to know how often your opponent will hit back, or how likely it is that she will stay out. If you have difficulties counting shots or dancing numbers, I therefore strongly recommend going to appendix B first, where you can find a short introduction to basic probabilities in backgammon.

In appendix C the concept of equity is introduced. Fully understanding equity is not as important as being able to compute or simply knowing the basic probabilities. However, since all mistakes are measured in (cubeful) equity, it is helpful to understand the meaning of the term. Furthermore, it is useful to know how equities are displayed in the analysis window of the backgammon software eXtreme Gammon, especially with regard to cube level. In appendix D you can find the definitions of

some basic backgammon terms used in this text.

In part I of this book I discuss the various reasons for hitting, and I introduce basic concepts that are important for the discussion such as cubeful equity and gammon value. Part II is mainly about hitting loose in our inner board. I examine in detail loose hits in the early game and in the middle game before discussing tempo hits, double hits, and double tiger plays. To complete the discussion, in the last chapter of part II I look at some examples where you may not want to hit in your opponent's inner board. Part III is about whether you should hit or make a valuable point. The first chapter deals with hitting versus making a good advanced anchor, whereas the second chapter is about hitting versus making a strong offensive point.

Most chapters are structured in a similar way. Basic concepts will be developed first, with the help of very simple early game positions, and then these concepts will be applied to positions deeper into the game. Whenever possible they will be presented in easy-to-remember rules of thumb.

When nothing else is indicated, the positions in our diagrams refer to unlimited games with the Jacoby Rule in play. This means that, unlike in match play, an arbitrary number of games is played without any limit to the cube level, and that gammons and backgammons don't count when the cube is in the middle. Instead of "unlimited" I also use the term "for money".

The position diagrams are more or less self-explanatory. The numbers on the right side of a standard position diagram are the numbers that you can find in the analysis window of eXtreme Gammon. For all positions they are the results of full XG rollouts (standard settings, 5184 games, seed 1). I use various terms in the text to refer to a position: "the position in diagram 1.1", "diagram 1.1", and "position 1.1" all refer to the position shown in the diagram labeled 1.1.

When I started this book project, I quickly realized that the topic is too broad for only one volume. In this book I mainly concentrate on positions in a stage where the game is not yet well-defined. This means that it is not clear which game plan both sides should pursue, as is the case in many positions in the opening or in the early middle game. In volume II I will mainly examine positions from a stage where the game has taken shape already. Topics include how to execute a blitz attack, whether to hit against a backgame, or whether to hit a lone checker in our home board in a containment game.

Part I

Basic Concepts

Chapter 1

Reasons for Hitting

In this book I will discuss positions where at least one of the checker play alternatives involves hitting. In this chapter I will give an overview of the different reasons for hitting before examining specific situations in detail.

1.1 Hitting to Improve Racing Chances

Hitting usually gains ground in the race because putting our opponent's checker on the bar increases her pip count, with the additional benefit that she could dance and roll zero pips on her next turn. Exceptions mostly occur when we hit in our home board or on our bar point, where we gain only a few pips but risk losing a lot of pips when our opponent hits a return shot.

In most contact positions it is close to impossible to find the correct move through mere calculation. Position 1.1 is a rare exception. The first move that comes to mind when up against a closed board is clearly to play safely, so let's estimate our chances after playing 8/5 6/5 with the . After this move we are up by two pips but our opponent is on roll; since being on roll is worth about four pips, we would be at a slight disadvantage in a pure race. However, with 11 dice combinations our opponent won't be able to escape our broken three-prime, which will slow her down and give us a second chance to attack her. This is why the game should be about even after playing 8/5 6/5. At best we could be a tiny favorite.

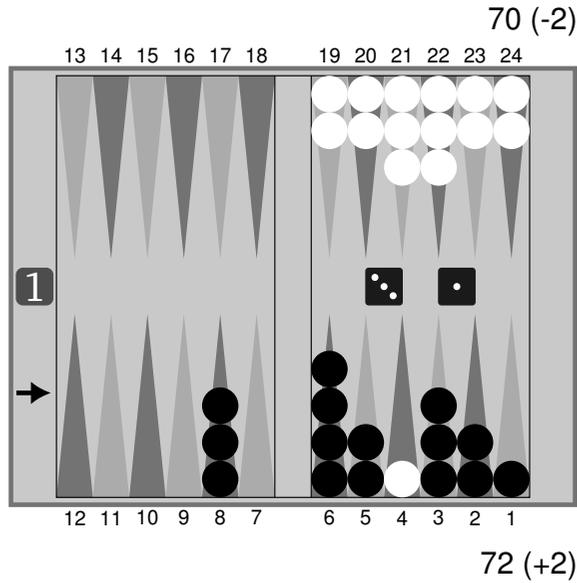


Diagram 1.1: Do you play 8/5 6/5 or 5/4* 4/1?

The bold alternative to the safe approach is to hit with the and cover the ace point with the . A play like 5/4* 4/1 can be easily overlooked: we are not used to breaking a good inner board point in order to make an inferior one, and it is even more uncommon to volunteer 13 shots when the opponent has a closed board. The reason why this play should be considered is not the four pips in the race that Black gains by putting White's checker on the bar, but rather White's 16 dancing numbers. After White dances Black would have a powerful double, since he would be up six pips with a good chance to make a strong five-point board.

Let's assume White passes, which turns out to be correct as we will later see. Under this assumption, hitting leads to 16 immediate wins after White dances versus 13 immediate losses after she hits back. Black is thus a solid favorite when White rolls one of her 29 numbers that end the game immediately. But what about her seven numbers that enter without hitting? Black seems to be doing a little better than White, since only allows her to jump into the outfield for a more or less even race. It is therefore fair to assume that Black will win four out of these seven games, bringing his total wins to roughly 20 out of 36. Thus, the seemingly reckless hitting play provides Black with more winning chances than 8/5 6/5, after which we estimated him to be only a tiny favorite at best.

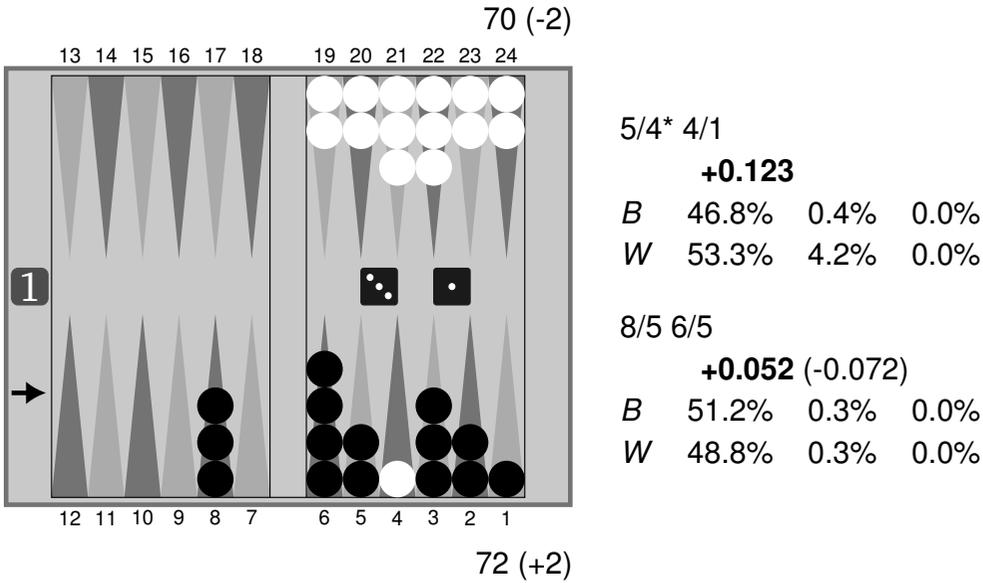


Diagram 1.2: Black’s cubeful equity after hitting is higher although the percentages favor the safe play.

You can see in the statistics column of diagram 1.2 that playing 5/4* 4/1 is indeed clearly superior. Note, however, that the play wins fewer games *and* loses more gammons. How can it be that hitting yields a higher equity than playing safe? This can only be understood by knowing what the numbers in our position diagrams mean.

Probabilities, Cubeless Equity, and Cubeful Equity

In the statistics column of our diagrams the probabilities for wins, gammons, and backgammons after each move are shown as percentages. These percentages are based on the game being played until the end *without* the cube, and from them you can calculate the *cubeless* equity of the resulting position after each move. In our example the cubeless equity after hitting would be lower than after playing safe (−0.103 after 5/4* 4/1 versus 0.024 after 8/5 6/5 to be precise)¹. However, XG doesn’t show cubeless equities for checker plays since they are not relevant for the decision. Instead it displays the *cubeful* equity after each move, meaning that cube actions from both players are priced in. In our diagrams that number is printed in bold type above the correspond-

¹In appendix C you can find how these numbers are calculated. For more detailed explanations I refer to “The Theory of Backgammon”.

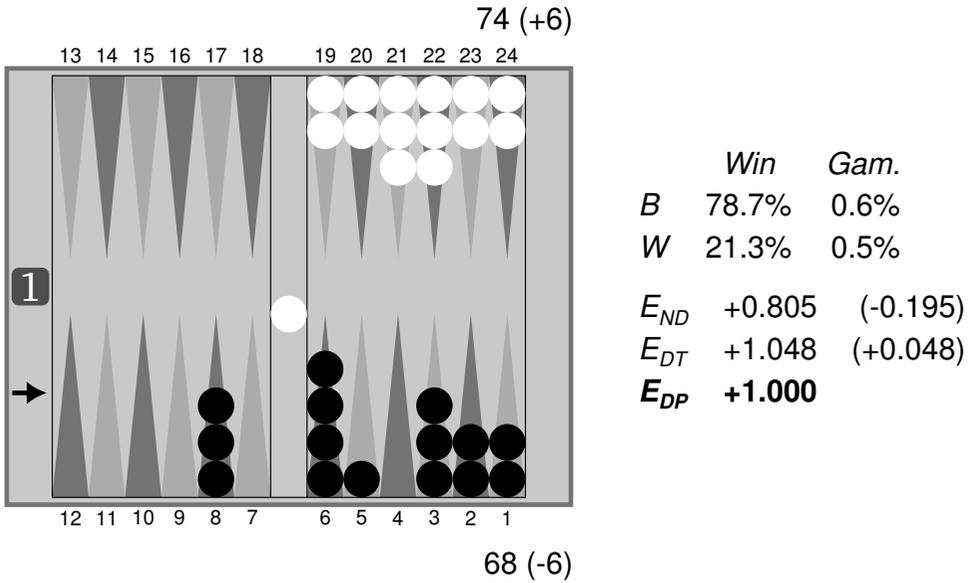


Diagram 1.3: White has a pass after dancing.

ing percentages for all the checker play alternatives that are considered worth discussing.

Let's try now to understand the discrepancy between the cubeful equity after the hitting play and the underlying percentages for wins and gammons. One reason for this seeming inconsistency is that White's gammon wins, which occur mainly after Black hits and White hits back, don't have an impact on the cubeful equity of the position. Due to the Jacoby Rule White will double after a hit and Black of course has to pass, giving White a single win. Thus in a money game with the cube in the middle White will *never* win a gammon after she hits a return shot.

There is another reason why the cubeful equity after the hit doesn't align with the percentages. After dancing, White would still have significant game-winning chances if the game were played to its conclusion; these wins are part of White's overall wins as displayed in the diagram. But in fact they have no actual impact on the cubeful equity of the position after 5/4* 4/1 because Black will double and White should pass, as you can see in diagram 1.3. In other words, in a money game White's wins in this scenario are exactly zero when Black has access to the cube.

This example shows that checker play and cube play can't be viewed in isolation. If, for example, Black fails to recognize that he has a strong cube after White dances and won't double, he shouldn't play 5/4* 4/1 in the first place. Note that over the board I only would have known with

a high degree of confidence that position 1.3 is a strong double, and not whether it is a take or a pass. But this wouldn't be my problem anyway: what my opponent does with the cube is not relevant for my decision. What matters to me is that my double should be very strong and could easily provoke a cube mistake from my opponent.

Taking a Risk Despite Having Escaped

In position 1.4 Black has escaped with his back checkers, White has a strong board, and Black has a modest lead in the race. So why should he play 13/11* 11/7 with and risk 11 (, , , , ,) potentially fatal return shots? The answer is that when the hit works and Black gets missed, he can turn a solid but not overwhelming position into a very big advantage. Black gains at least an additional 11 pips in the race by sending White's checker to the bar. The swing in Black's favor is even greater when White rolls one of her four dancing numbers: now, instead of moving 9 pips with a , 12 pips with a , or 24 pips with a she will move 0 pips. In fact, after these four numbers Black would have a strong double. As you can see in diagram 1.4, hitting is therefore the correct move.

This is a bit counterintuitive for most players since it is normally a

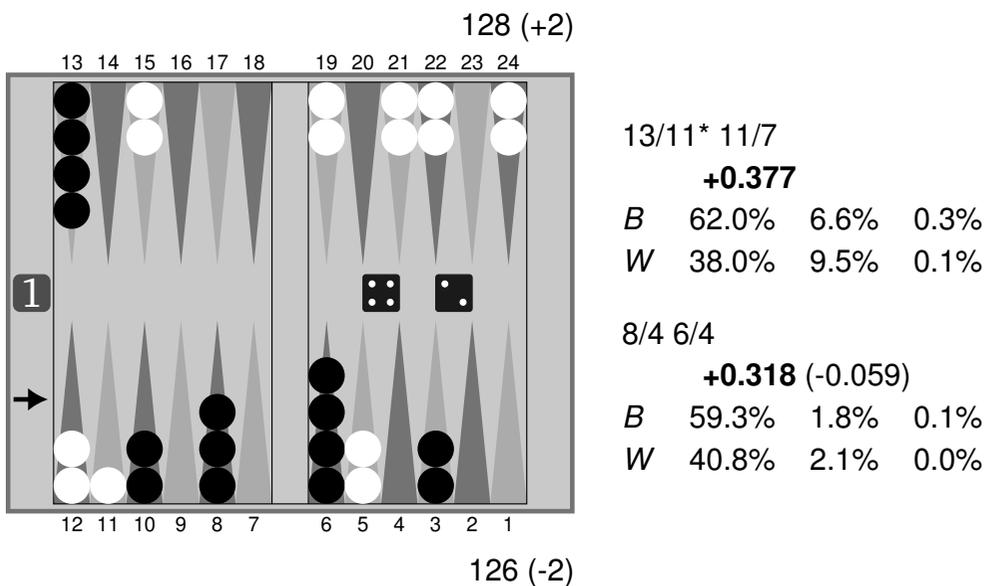


Diagram 1.4: Hitting to increase the lead in the race is correct despite White's eleven return shots.

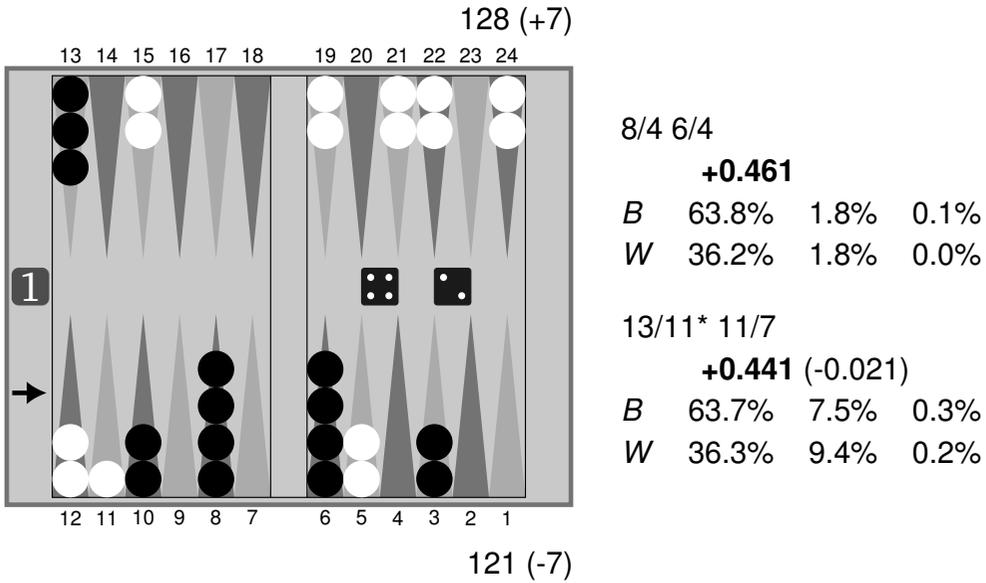


Diagram 1.5: It takes a comfortable lead in the race for the safe play to be correct.

mistake to take extra risks when you have escaped your back checkers and your opponent has a strong board. Over the board, after counting the pips, I played 8/4 6/4 in position 1.4 without hesitating. It is surprising to me how big a racing lead is required in order to make the safe play correct. In position 1.5 Black has a healthy 13 pip lead after playing safe, yet making the 4 point is only slightly better than hitting. We can begin to see that the racing advantage that hitting provides makes it superior to safer plays, even when a return shot can lead to an immediate loss.

The two previous examples have shown that it can be worth taking a seemingly big risk in order to gain ground in the race, either by sending an opposing checker back or by making our opponent dance. The next examples will deal with a different kind of race, namely the race to win a gammon.

1.2 Hitting and Gammons

When deciding whether or not to hit, the possibility of winning or losing a gammon oftentimes plays an important role. Aggressive hits, for example, tend to increase gammon wins but they also tend to lose more

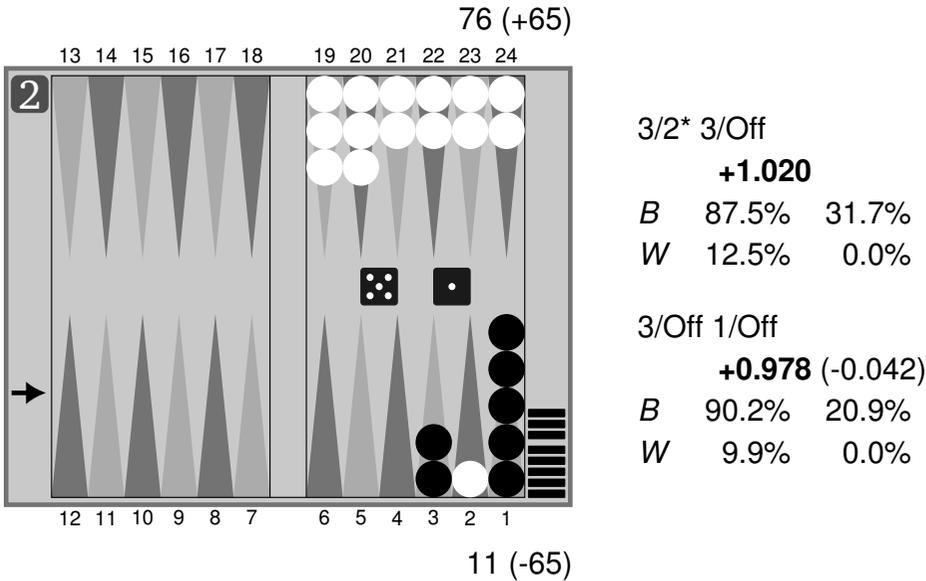


Diagram 1.6: Hitting loses more games but wins many more gammons.

games. In position 1.6 Black can either hit with the or take another checker off. Both plays leave the same number of shots, and Black will win for sure after either play when White misses. However, the extra checker off matters when White hits; in that case Black will win more games after taking two checkers off, and thus his overall wins have to be higher after 3/Off 1/Off.

Nevertheless, according to diagram 1.6 it would be a mistake not to hit, because hitting wins a lot more gammons than does taking off an extra checker. In the race to win a gammon it doesn't matter to Black whether he has six checkers on the board or five; he will be off in three rolls or less. But hitting makes a difference when it comes to White's chances of saving the gammon. When the race to save the gammon is relatively close, every pip matters. The analysis column of diagram 1.6 shows that sending White's checker back two pips increases Black's gammon chances by more than 10 percentage points. On the other hand, not taking the extra checker off decreases his wins by a little less than 3 percentage points.

Note that the number of checkers on the board is crucial here. Since Black has an odd number of checkers left, he doesn't lose a roll by taking only one off. With an even number of checkers things are different. In position 1.7 it would be huge mistake to hit. As before, Black will lose more games after hitting, but this time he will win fewer gammons as

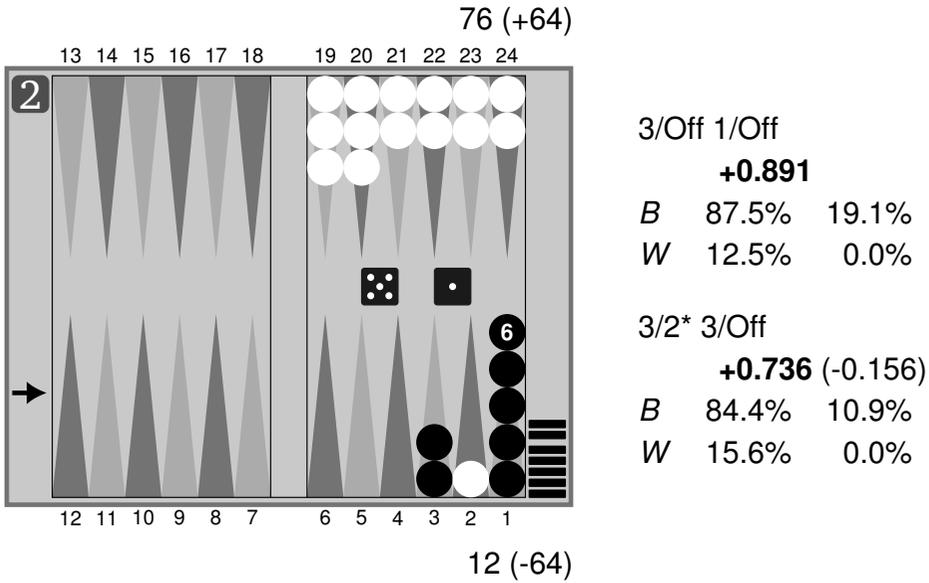


Diagram 1.7: With an even number of checkers on the board it is mandatory to take two off.

well. Since he has an even number of checkers on the board, without rolling a doublet he will need four rolls to finish the game after taking only one off. This would make it much easier for White to save the gammon despite the loss of two pips and one crossover. Position 1.7 is a very rare case where hitting slows you down more than it does your opponent.

The Value of Gammons

In order to understand why it is a good deal for Black to take the extra risk in position 1.6, we have to relate the extra gammons he wins to his extra losses. Backgammon is full of risk versus gain decisions. These are generally hard to quantify, for example, the decision to leave extra shots in order to achieve a more flexible position. When it comes to extra gammons versus extra wins, however, we know exactly what we gain and what we risk. Turning a win into loss with the cube on 2 costs us four points, the difference between +2 and -2, while turning a single win into a gammon win gains us only two points. Winning an extra gammon is thus half as important as winning the game. This ratio is called the *gammon value*, and we also say that the gammon value in unlimited is 0.5. This number is the same at any cube level. Note that the

presence of the doubling cube distorts the number a bit. In general, you can risk a little bit more than the gammon value suggests when you own the cube and a little less when your opponent owns it. In position 1.6 Black wins over three times more extra gammons than he loses extra games, which is why taking the risk is clearly correct.

Gammon-Go and Gammon-Save

In this book we will mainly discuss checker play decisions for money. But since match play is a very important part of backgammon and many decisions in match play are score dependent, we will sometimes discuss the score 2-away/Crawford, where winning a gammon is as important as winning the game (you risk 50% match winning chances to gain 50%) and losing a gammon doesn't matter. This score is called *gammon-go*. When our opponent is at gammon-go we are at *gammon-save*, which means that saving a gammon is as important as winning and that our gammon wins don't count.

The difference between unlimited and gammon-go is illustrated in position 1.8. Black can significantly boost his gammon chances by hitting loose on his ace point. But if White is able to hit the return shot and escape Black's prime, Black can easily lose the game. For money, where a play needs to increase gammon wins by twice the potential ex-

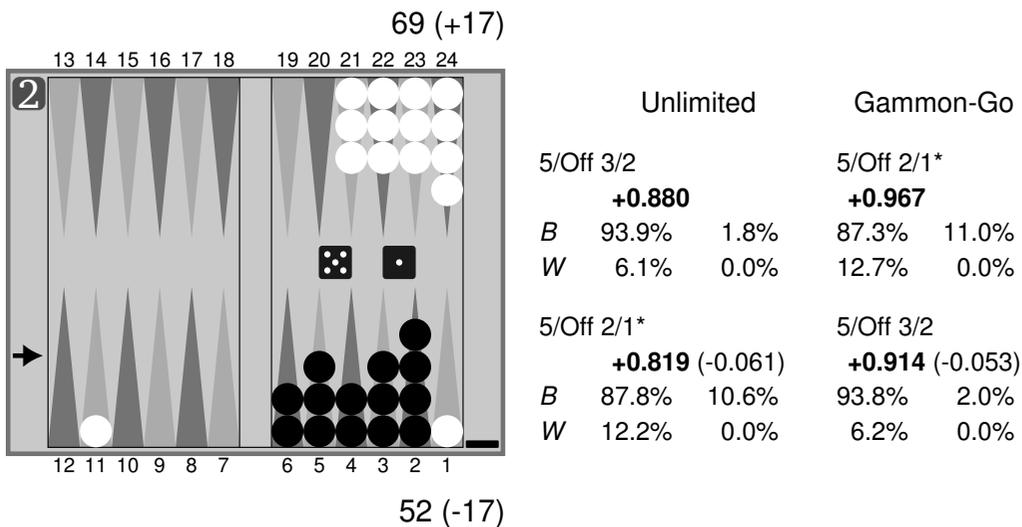


Diagram 1.8: Hitting is only justified when gammon wins are extremely valuable like at gammon-go.

tra losses, the risk is not justified. Winning nine percentage points more gammons doesn't compensate for the six percentage points extra losses. At gammon-go, however, where the gammon value is 1, Black will happily take the risk since his extra gammons only have to exceed his extra losses.

Gammon Values at other Scores

Gammon values in match play vary with score and cube level and most of them are somewhere between 0 and 1. It is tedious to memorize them all, and I don't think it is necessary except for some key values like the gammon value at gammon-go. However, I think it is important to know in which direction the gammon value at a certain score deviates from 0.5, the gammon value for unlimited.

To illustrate this concept, let's have a look at position 1.9. I find it difficult to evaluate the position over the board. I know for sure that I will win when I play the  without hitting and that I will win a significant number of gammons too. Furthermore, I know that hitting should increase my gammon wins by a lot when it works. However, I also know that my opponent has decent winning chances after hitting the return shot although, with nine checkers off, I will remain a substantial favorite. Last but not least, owning the cube argues in favor of the bold

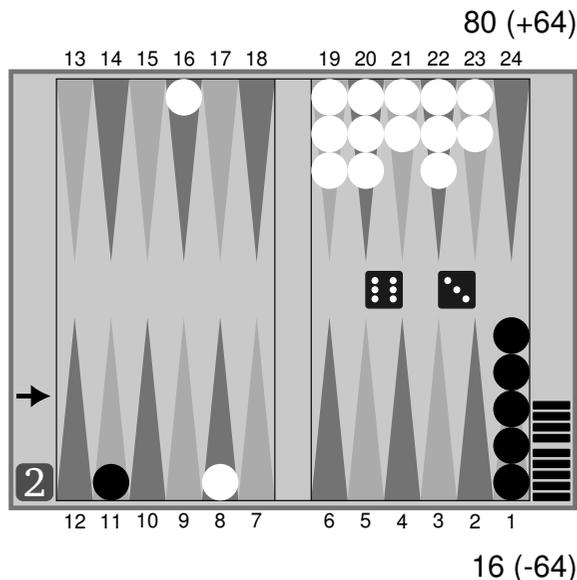


Diagram 1.9: Do you hit or not?

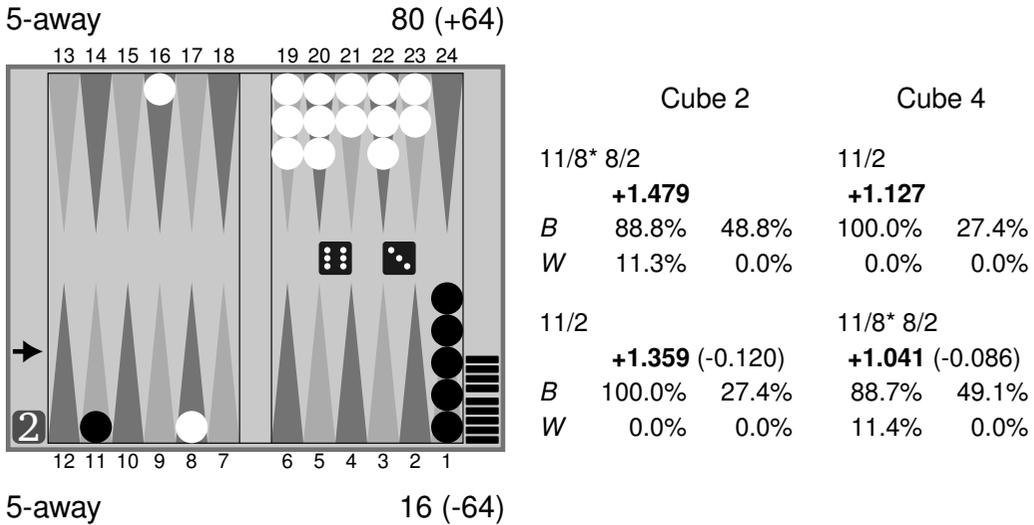


Diagram 1.10: Whether the gammon value is higher or lower than for money is crucial for the decision.

play because I will be in the game until the end no matter what happens. At the end of the day, whatever I decide to do, I wouldn't be confident at all in my decision.

As clueless as this analysis may sound, it still helps me with my decision at many match scores. I would simply move in the direction to which my gammon value points me. I know, for example, that gammon value is moderately increased at 5-away/5-away with the cube on 2 because the extra two points get me to Crawford which is very significant (according to XG the gammon value in this situation is 0.66). Since gammon wins go up in value compared to money, the bold move has to gain in equity over the safe play. Hence I would play 11/8* 8/2.

When owning a 4 cube at this score, it is just the other way around. Winning a single game already leaves me in a very good position to win the match whereas losing the game would be a disaster. Winning a gammon would of course still be nice but certainly isn't the top priority in this situation. I don't know the exact number for the gammon value here but I know that gammons are around half as valuable as for money (actually the gammon value is 0.23) so that I wouldn't hesitate to make the safe play. In diagram 1.10 you can see how the different gammon values at the two cube levels determine the correct decision.

You can imagine that, for money, the decision must be close because the gammon value (0.5) is somewhere in between. Diagram 1.11 shows

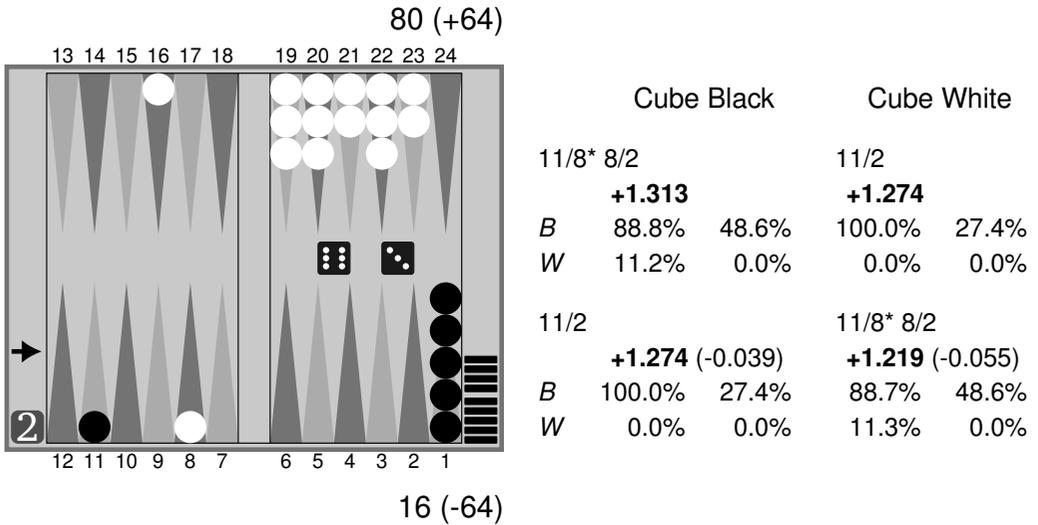


Diagram 1.11: Black can afford to hit only when he owns the cube.

how the position of the cube affects the decision: hitting is correct when Black owns the cube (left column) but is a mistake when White owns it (right column). You can see that, in both columns in diagram 1.11, Black's equity after playing $11/2$ is exactly the same: after playing safe, Black will win for sure and only the gammon is in question. The position of the cube is thus irrelevant because neither side will be able to use it to their advantage. However, when Black plays $11/8^* 8/2$ and White hits back, ownership of the cube matters. When Black owns it he will sometimes get to a strong redouble, which improves his equity after getting hit. This makes $11/8^* 8/2$ more attractive since the damage done by the return hit is somewhat reduced. Likewise, White owning the cube and sometimes getting to a powerful redouble hurts Black's equity even more after getting hit, which makes the bold play less attractive.

1.3 Hitting as a Tactical Measure

Strategic considerations, like whether we would prefer to play a racing, priming, or blitzing game, are very important in backgammon. However, because of the randomness of the dice, we cannot play the game with a fixed strategic plan in mind. Instead, the structure of the position in combination with our roll will determine which way we go, and we have to be flexible enough to change our plan from one turn to another when the dice so dictate.

Moreover, strategic considerations are often not sufficient on their own to lead us to the correct move when at least one of our alternatives involves hitting. Our opponent will have to use half her roll in case of a single hit, and her entire roll in case of a double hit, to enter from the bar, and sometimes she will fail to enter altogether. Hitting thus provides us with a tactical short-term advantage by restricting our opponent's options for at least one turn. This is frequently more important than pursuing long-term strategic goals.

To illustrate these considerations, let's have a look at position 1.12. Black is in trouble because White has a strong inner board and a good priming structure, while Black hasn't yet made any progress on his side of the board. Fortunately for him, Black is able to hit White's inner board blot with the  and now he has to decide how to play the . Going for

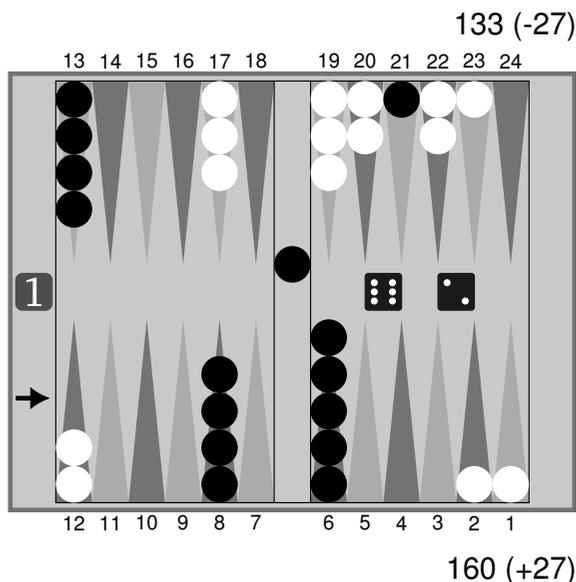


Diagram 1.12: Do you play Bar/23* 21/15 or Bar/23* 8/2*?

the race seems to be Black's only reasonable game plan. After playing 21/15 he would be up by 4 pips and in decent shape if White fails to hit him back. Playing 8/2* and going for the blitz instead has very little chance of being successful because Black has only a one-point board and nine checkers in the attacking zone. Nevertheless, hitting twice is clearly best, as you can see in diagram 1.13.

The key to understanding why hitting on the deuce point is superior to running is to understand the purpose of the move. Playing 8/2* does *not* form part of a blitzing strategy. Rather, it has a defensive purpose. If Black plays 21/15, White will attack with most of her entering numbers: With a 6-2 she will hit on her 10 point and with her sixes White will hit loose on her deuce point. If Black fails to roll a good number from the bar, the game will be over quickly. The tactical merit of 8/2* is that it reduces White's attacking options. Unless she rolls a doublet, she won't be able to hit loose in her inner board. Even if White hits back with a 6-2, Black will have the opportunity to avoid getting blitzed either by establishing an anchor on White's 2 point or on her 4 point. The defensive nature of 8/2* is also reflected in the percentages for wins and gammons: the only major change compared to 21/15 is that White's gammon wins go down.

Hitting two checkers in position 1.13 is mainly a protection play. If we want to formulate an underlying game plan for Black, it would be

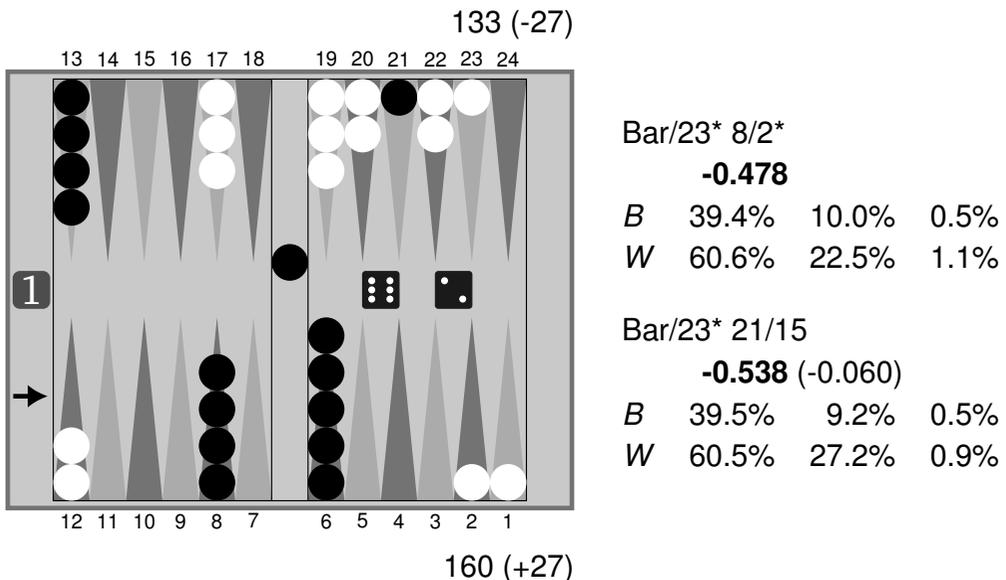


Diagram 1.13: Hitting the second checker is mainly a defensive play.

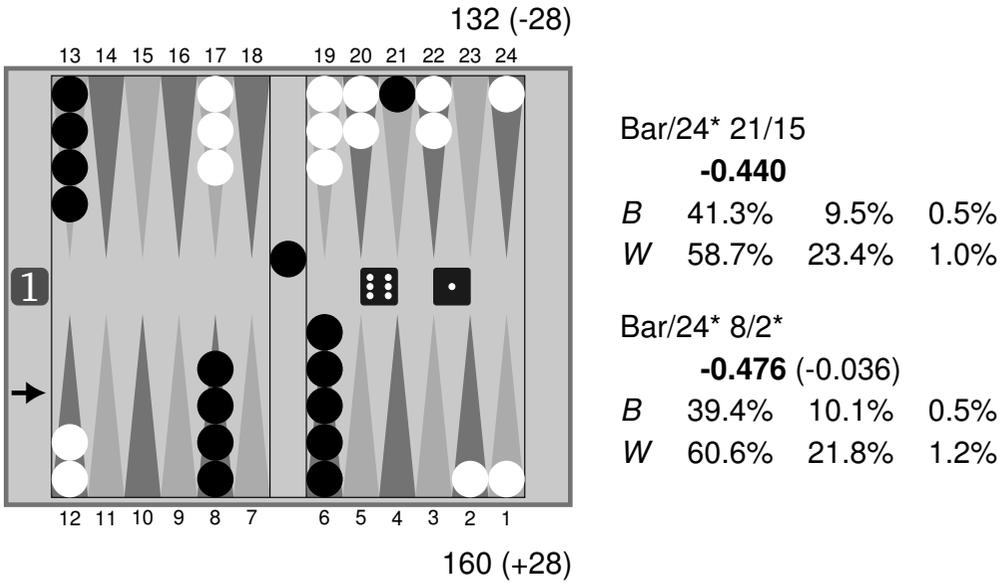


Diagram 1.14: Under less pressure from White, Black doesn't need to make the tempo hit.

something like: "Avoid immediate destruction by consolidating your defense, and, once that is achieved, try to improve your front position." Hitting plays that are not part of an offensive strategy but rather serve to thwart our opponent's offensive plans are often referred to as tempo hits.

Tempo hits often involve hitting loose deep in our inner board, and the structural damage that they do to our position is difficult to repair. Before making a tempo play we therefore have to weigh how important it is to keep our opponent off balance for a roll or two. In position 1.14 I moved White's blot to the ace point and gave Black a 3-1 instead of a 2-2. The difference from the previous position is that Black's checker on White's ace point is in less danger of being attacked; Black therefore has less incentive to make a tempo hit. As you can see in the analysis column of diagram 1.14, jumping into the outfield and trying to go for the race is slightly better than hitting.

Tempo Hits in Priming Battles

Position 1.15 falls into the prime-versus-prime position category. Black is down in the race and he still has three checkers on his mid-point; this timing advantage means that he will probably be able to keep his

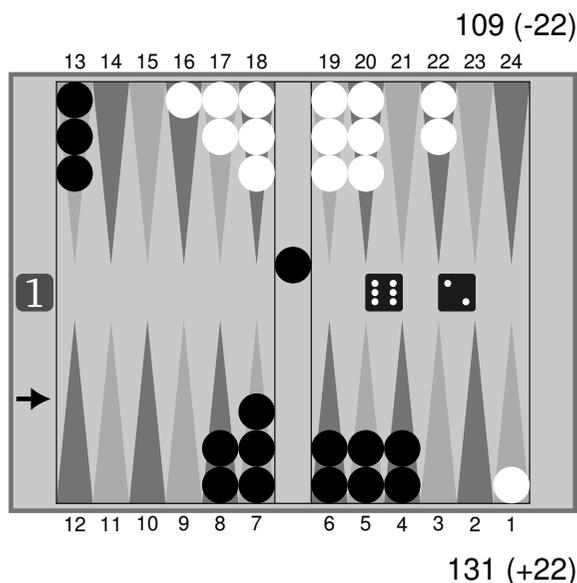


Diagram 1.15: Do you play Bar/23 13/7 or Bar/23 7/1*?

prime longer than White will. White, on the other hand, has priming *and* blitzing chances. With her small numbers she can make a six-prime, although she will have to break it again if she cannot escape with her back checker quickly. With most of her high numbers White will make her deuce point, hoping to escape while Black remains on the bar.

Because of Black's priming advantage, bringing a checker down to his bar point with the 34 seems to be the obvious move. Black's game plan should certainly be priming and not blitzing, and hitting on his ace point gives White the chance to send a second checker back. The play also looks horrible because it puts one of Black's checkers out of play, making the task of extending his prime much more difficult. When White rolls a 12 she would be at the edge of Black's now stripped prime and Black would have a hard time keeping her from escaping. Hitting keeps White from completing her six-prime unless she rolls 11, but all in all the tempo play sacrifices too much in order to gain too little, especially since it is not likely that White will keep a six-prime for long. Black should stick with his game plan and make the priming move, as you can see in diagram 1.16 on the next page. Hitting would be a blunder. Position 1.15 seems to be straightforward: just make the move that best fits your game plan.

1. REASONS FOR HITTING

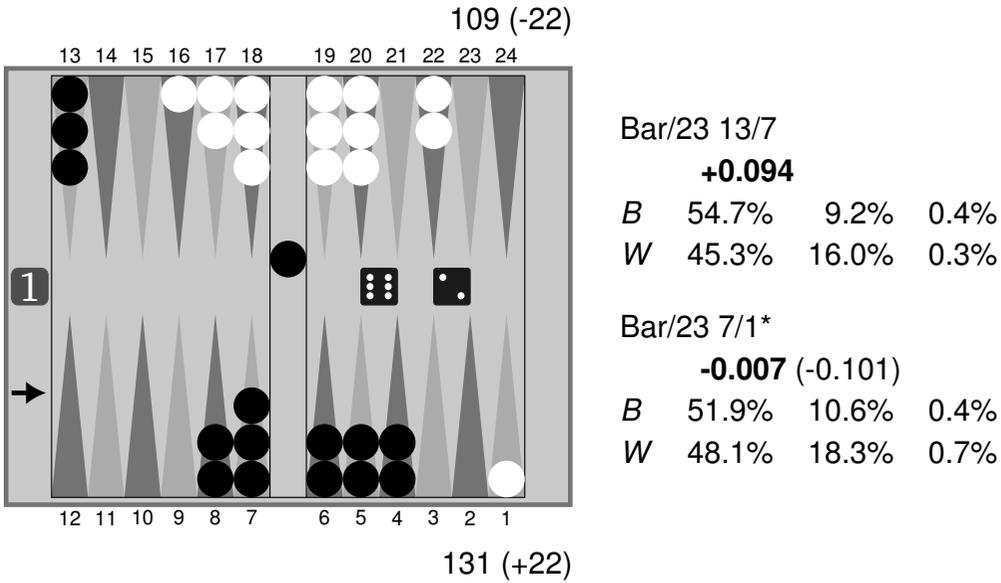


Diagram 1.16: Black should stick to his priming plan.

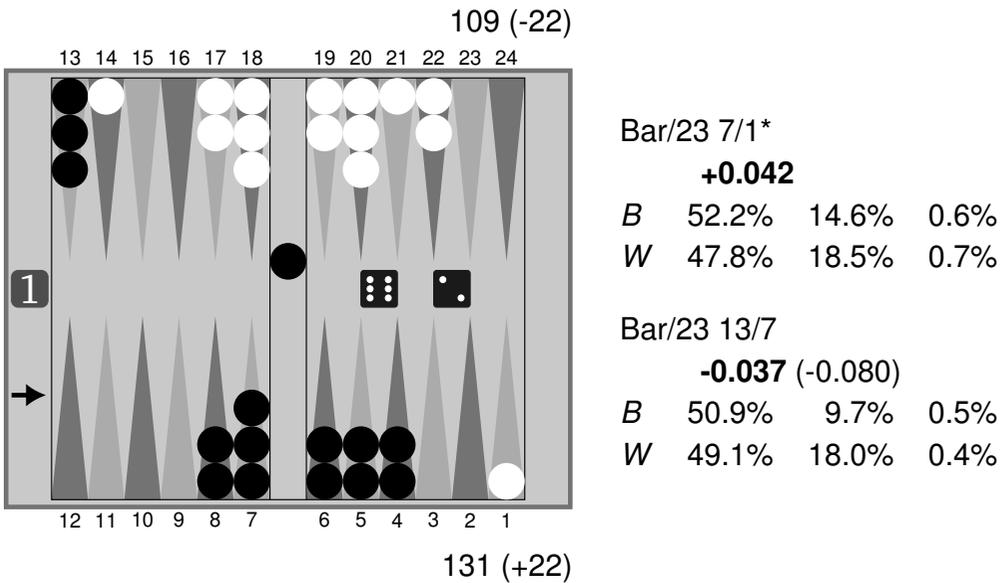


Diagram 1.17: A small change in the position has big effect on the decision.

The only difference in position 1.17 is that White's checker on her 9 point is moved two pips backward and her checker on the 6 point is moved two pips forward. The general characteristics of the position haven't changed much: Black has the better timing which argues for a priming plan, and White's chances are based on a combination of prim-

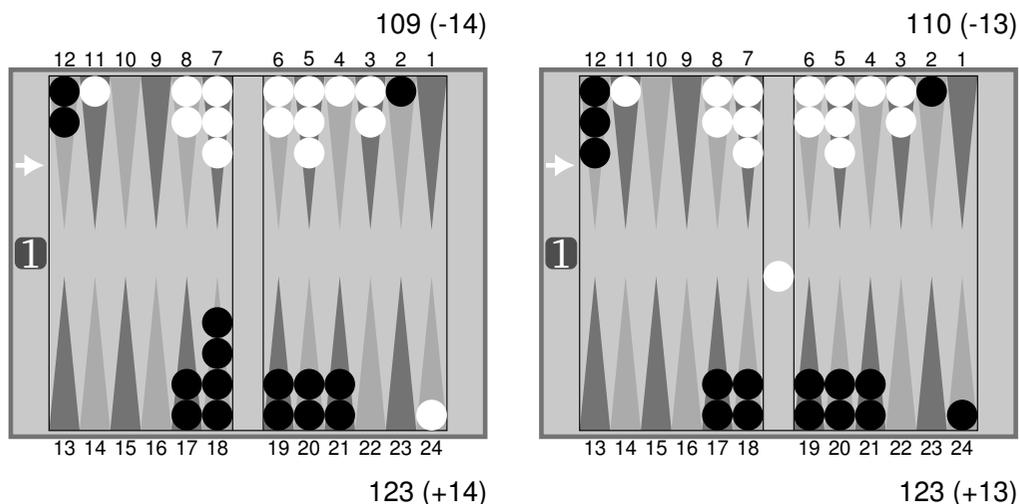


Diagram 1.18: Hitting turns White's blot on her 4 point into a liability.

ing and blitzing. However, having the 4 point slotted gives White a better chance to complete her six-prime, meaning that we should expect the tempo hit to go up moderately in value relative to bringing a checker down. The analysis column of diagram 1.17 shows that hitting not only goes up in value but is clearly best now.

Assets and Liabilities

The tempo play produces such a large equity swing in position 1.17 because it turns White's blot on her 4 point from an asset into a liability. In order to understand what this means let's take a look at diagram 1.18, which shows the resulting positions after each move. After the non-hitting play (left), most of White's numbers will cover her 4 point and make a six-prime. Given the option to move her blot back to her six point before rolling, White should decline. The checker on her 4 point improves her overall chances, and therefore we call it an asset.

Let's compare this to the resulting position after hitting on the ace point. Now White has only eight numbers (●●, ●●, ●●, ●●, ●●) that come in and make the six-prime. On the other hand, White has nine dancing numbers after which she would be in trouble. Black would then have an opportunity to send another checker to the bar with any ●. Note that, after White's dancing numbers, Black's main game plan would no longer be priming. If he fails to roll a ●, except for ●● (Black should play 13/9 13/10), Black should cover his ace point when

possible, hoping to get a second chance to hit on the 21 point when White rolls another bad number. To stabilize her position White would need to get rid of her blot. In fact, in the right position of diagram 1.18 White would be glad to move her checker from her 4 point to her 6 point before rolling if she had the choice. Thus, the checker that was an asset for White after 13/7 becomes a liability now, which is why hitting is superior in position 1.17.

Hitting plays that look as ugly as Bar/23 7/1* can easily be overlooked when you rely too much on pattern recognition and game planning and don't pay close enough attention to tactics. Over the board I played 13/7 without hesitation and didn't even see the hit on the ace. I think that this is a problem with tempo hits in general; once you analyze them you can easily understand the merits, but since they normally don't look very appealing they are hard to spot.

1.4 Hitting as Part of a Blitz

In the previous section we saw that hitting can be important for tactical reasons even if game plan considerations suggest a different strategy. When our position suggests that we should try to blitz our opponent

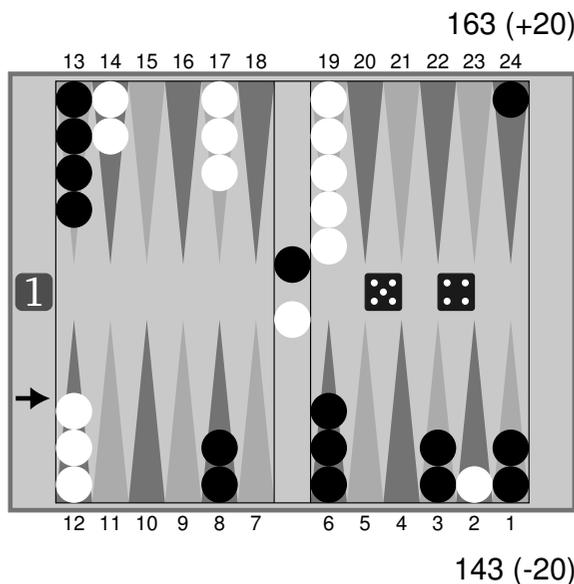


Diagram 1.19: Do you play Bar/20 24/20, Bar/20 6/2*, or Bar/21 13/8?

we are certainly not in danger of simply overlooking a hitting play, but whether or not to hit can still be a tricky decision.

In position 1.19 Black has already made two points deep in his home board, clearly a blitzing structure. Ideally Black would want to have at least one more checker in the attacking zone; nevertheless, hitting on the deuce point puts White under a lot of pressure. If she dances, White wouldn't be able to accept Black's double, meaning that after playing Bar/20 6/2* Black would win immediately 25% of the time. That said, hitting on the deuce point also has some severe drawbacks. After a return hit from White, Black would be left with a stripped front position and little chance to continue his blitz successfully. Even if White only manages to enter with one checker on either Black's 4 or 5 point, he will still have a lot of work to do. Black only has sixes to cover his inner board blot, and if he covers it without hitting White again she will have a chance to get an advanced anchor, leaving Black with many checkers out of play.

Before we discuss the merits of the alternatives to hitting let's have a look at diagram 1.20. We can see that the two top choices are entering on the 21 point and bringing another checker down to the attacking zone or making the anchor on White's 5 point; hitting on the deuce point is inferior to either of these moves. Let's compare the hit to playing Bar/21 13/8. In the scenario where White rolls a 6-2 it is not difficult to

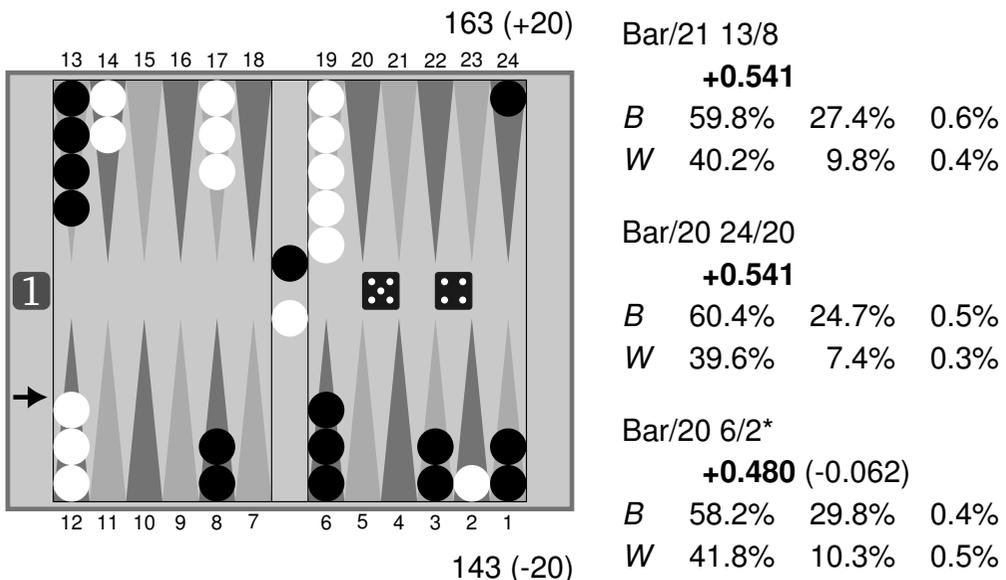


Diagram 1.20: The quiet plays are better than hitting.

understand that the quiet play is better. Black would prefer to let White anchor on his deuce point rather than getting hit. But what if White rolls one of her worst numbers? With one more checker in the zone, Black would be in a very strong position after Bar/21 13/8 after White dances as well (in fact, the correct cube action would be double/pass too). This brings me to a concept that I sometimes forget myself when I play too aggressively:

Just because you decline to make an aggressive blitzing play doesn't mean that the blitz is over. You may be able to resume it on the next turn under more favorable conditions.

In a nutshell, Bar/21 13/8 risks less, on average, on White's good numbers while gaining roughly the same on her mediocre and bad numbers. A similar argument can be made for Bar/20 24/20. The only difference is that making the advanced anchor protects better against White's jokers, while on the other hand it is slightly weaker when she dances.

With White's blot on Black's 4 point instead of his 2 point, any play but hitting is a blunder, as you can see in the analysis column of diagram 1.21. One reason is that letting White anchor on the 4 point does more damage to Black's position than letting her anchor on the deuce point. The other reason is that Black's structure is much better after 8/4*

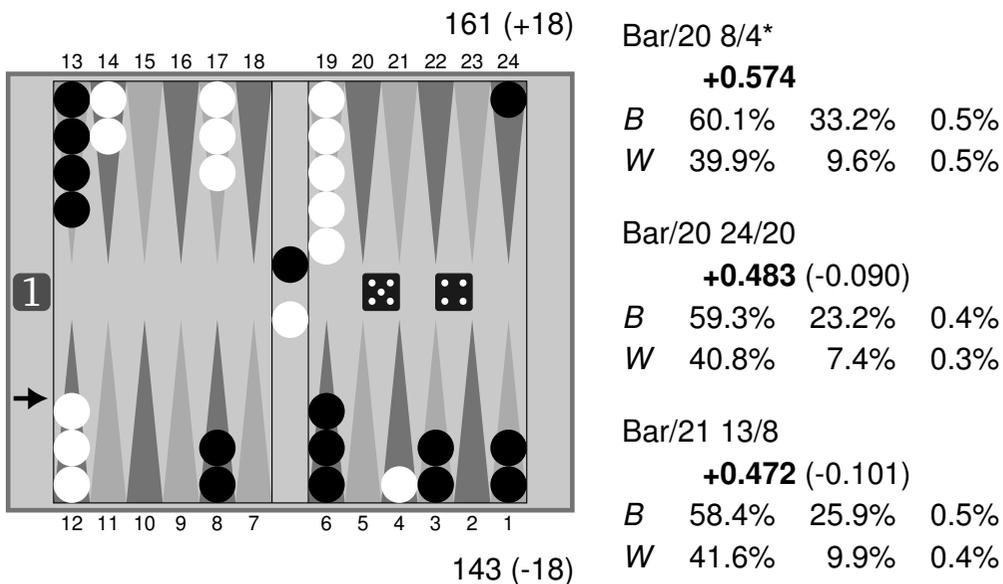


Diagram 1.21: If White's blot is on Black's 4 point, not hitting is a blunder.

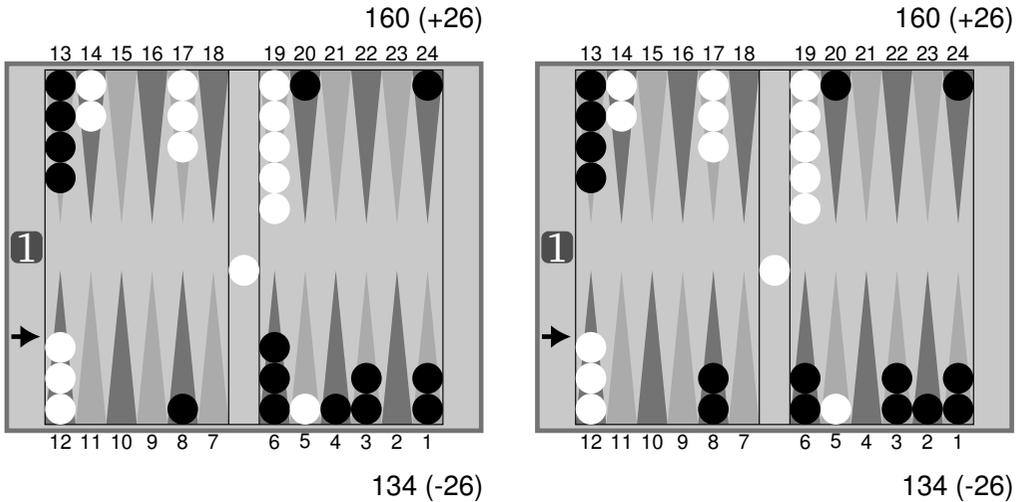


Diagram 1.22: Black's blitzing potential is better in the left position.

than after 6/2*. We can visualize this by looking at the two resulting positions side by side (diagram 1.22) when White enters with one checker without hitting, like, for example, with a $\bullet\bullet\bullet$. In the left position, because of his diversified spare checkers Black has more covers for his 4 point and more attacking numbers. In the position on the right there are only four numbers for Black that put two checkers on the bar against at least a four-point board ($\bullet\bullet\bullet$, $\bullet\bullet$, \bullet). In the left position there are more than twice as many that do so ($\bullet\bullet\bullet$, $\bullet\bullet$, \bullet , $\bullet\bullet$, $\bullet\bullet$, $\bullet\bullet$). After $\bullet\bullet\bullet$ White would have only a small take in the left position but a very easy take in the position on the right. In general, blitzing positions are stronger for the attacker when the opposing blots are on his higher inner board points since they are closer to the attacker's ammunition.

One note of caution: in the early game and middle game it is generally preferable to make a strong advanced anchor rather than to hit loose in one's inner board. Exceptions mainly occur when an all-out blitz attack has a good chance of succeeding, like in position 1.21. Positional features like the number and the distribution of your checkers in the attacking zone will help you to identify these spots.

Changing Plans

Position 1.23 illustrates how important it is to keep an open mind when playing backgammon and to be able to adjust quickly to changing circumstances. Black was trapping White's back checkers behind a strong

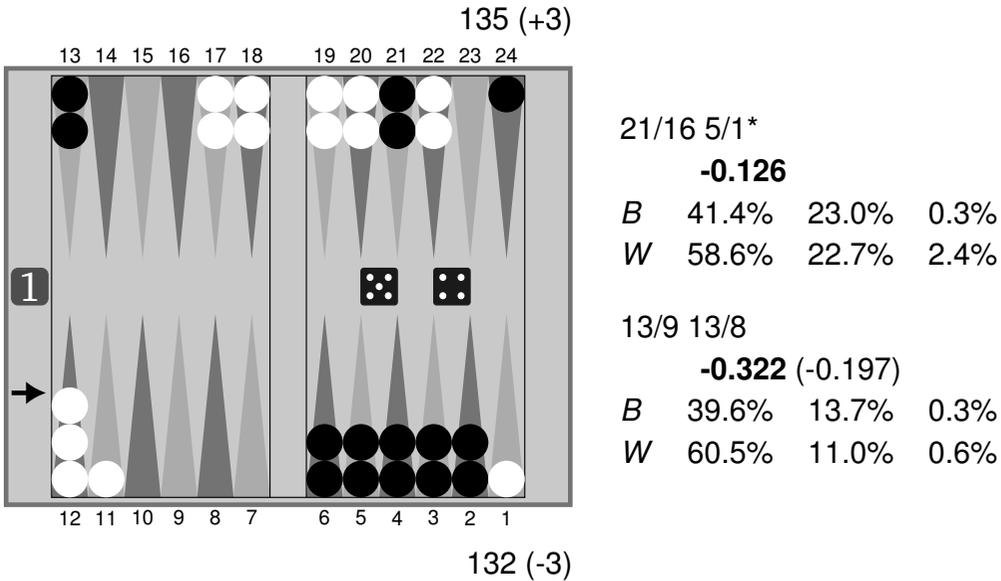


Diagram 1.23: Not going for the blitzing move is a big blunder.

five-prime but then White managed to escape to Black's 11 point, and Black missed the shot with a 4-4. Black instantly played two checkers down from his mid-point, sticking to his priming plan. As you can see in diagram 1.23, this is a huge mistake. Black should have stepped out with the 6-6 and hit with the 4-4, breaking his board. Destroying the best possible five-point board and leaving a double shot with five blots lying around looks suicidal at first glance. Remember, however, that in the disaster scenarios, Black will lose one point at worst, since the cube is in the center and White's position is not strong enough to merit a double from the roof. Moreover, when White is only able to hit one blot from the bar, Black has a chance to stay in the game with a good roll. On the other hand, 21/16 5/1* has a huge upside, namely when White rolls one of her 16 dancing numbers. In the left position of diagram 1.24 you can see how well Black's numbers are diversified if that happens. Fours make a five-point board, fives and deuces hit, and threes step up from the 24 point. Many aces and sixes can be played constructively as well. In fact, the only number that doesn't do much for Black is 1-1.

Furthermore, the alternative 13/8 13/9 has some severe drawbacks too. The move disconnects Black's back checkers from his front position; after rolling a 1-1 and escaping, White would be in complete control of the outfield. When White cannot escape, Black's best chance would probably be to attack her back checker if possible, so why not do it now

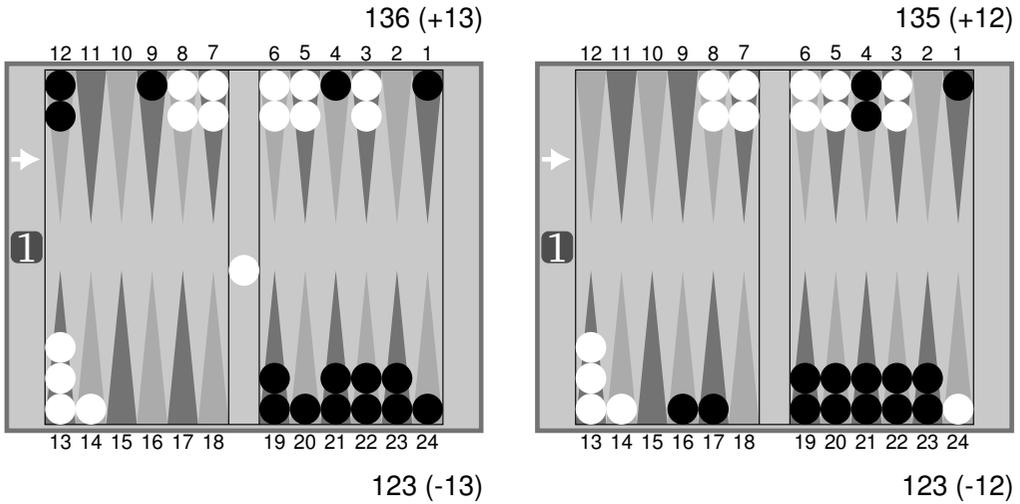


Diagram 1.24: Hitting puts White under a lot of pressure. The priming move allows her to seize control of the game.

with the 5/1^* ? Of course, by playing 21/16 5/1* Black has fully committed himself to the blitzing plan, which was not his primary strategy before the roll. After White dances, over 40% of all games will result in a gammon win for Black. He should therefore double in this scenario and White has a clear take because, when Black's blitz fails, White will become a big favorite with the cube on her side.

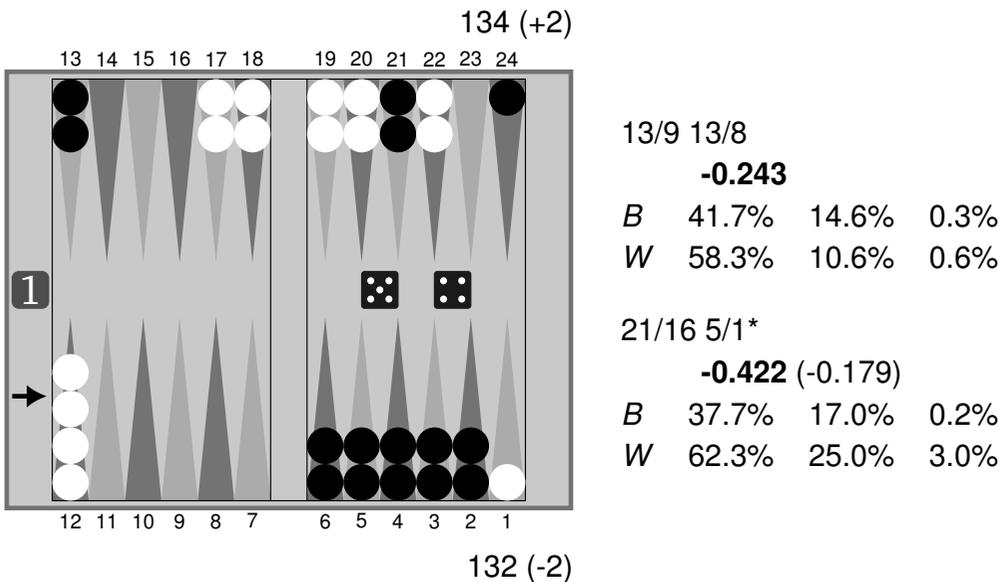


Diagram 1.25: Going for the blitz without the second blot is a blunder.

Diagram 1.25 shows how important White's blot on Black's 11 point is to his decision to switch from a priming plan to a blitzing plan. If White escapes instead with a 3:3 the roll before, Black should stick to his original game plan and play 13/8 13/9. The tactical hit's chance of succeeding depends enormously upon there being a second blot for Black to pick up. Without White's blot on his 11 point Black would be nowhere near a double if he plays 21/16 5/1* and White dances, and so he should just stick to his priming game plan.

1.5 Do We Want Our Opponent to Dance?

In the previous sections, we never asked whether or not it benefits us when our opponent dances; this seems like a rhetorical question because the answer almost always is: "Yes, of course!" While this is indeed true for all early game positions there are important exceptions, and they mostly occur late in the game. Position 1.26 is an example. White is playing a 2-3 backgame. Black has already made his ace point, reducing his flexibility, and White is likely to get multiple shots during Black's bear-in or bear-off. After hitting, White's chances will depend upon her

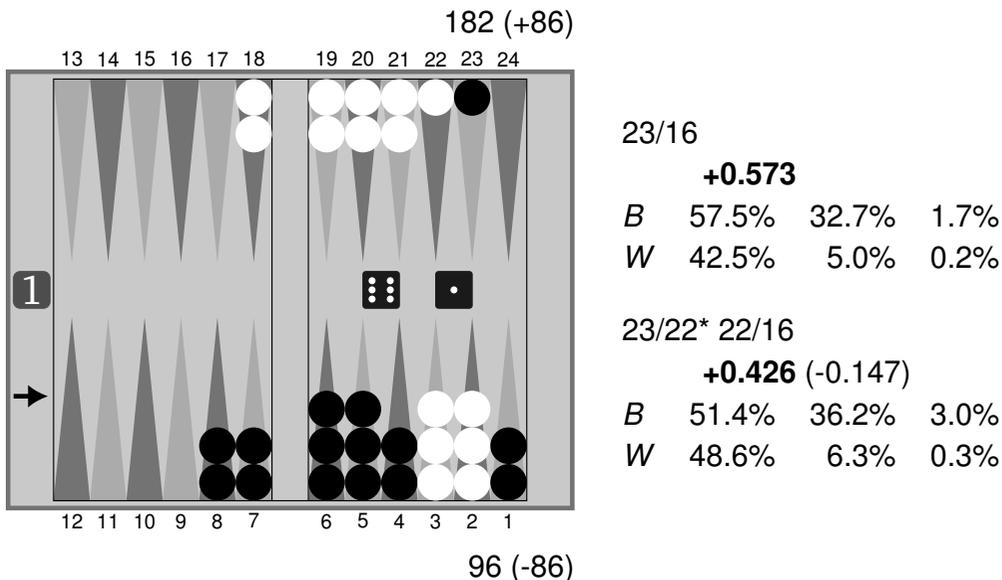


Diagram 1.26: Hitting helps White maintain her front position.

ability to maintain her front position in order to contain Black’s checker.

Position 1.26 shows a crucial moment of the game: White needs to roll a ⚀ quickly or her front position will crumble. If it does, the game would be over, because Black would be able to cash one point by turning the cube. Therefore, White would prefer not to roll at all until Black starts bearing in his checkers. This scenario could only occur when Black decides to hit with the ⚀⚁ and White is lucky enough to stay out multiple times. It is much better for Black to avoid this possibility by jumping over White’s prime without hitting. You can see in the analysis column that hitting would be a big blunder.

Diagram 1.27 shows another position type in which our opponent may not want to move her checkers: the priming battle. In a prime-versus-prime position it is usually a good thing to move to the edge of your opponent’s prime. However, in order to do so, Black would have to hit with his ⚁⚁ , and as long as White stays out she would be able to keep her six-prime, leaving Black no chance to escape. Furthermore, playing 8/7 with the ⚁ benefits Black because it “kills” his sixes and enables him to keep his own prime longer.

Black might nevertheless be tempted to hit since any ⚁ except for

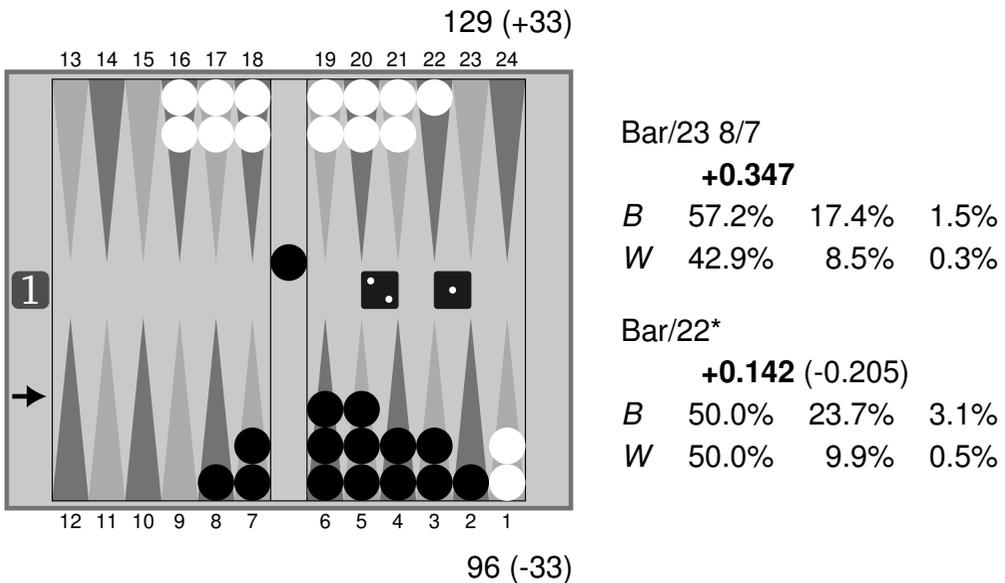


Diagram 1.27: Black cannot afford to hit although he would like to be at the edge of White’s prime.

•• and •• would be terrible for White. After the other eight numbers that contain a • she would have to break her six-prime and would have to pass a double from Black. Unfortunately for Black, there are twice as many numbers that stay out, and White could also roll a joker from the bar like ::•. Key to this problem is that White's dancing numbers are an above-average outcome for her, meaning that, if given the choice, forfeiting her turn would be better for White than rolling and hoping for a joker. This leads us to the following rule of thumb:

When you have a four-point board or better and your opponent benefits from staying on the bar, don't hit!

A weaker home board makes it less likely that our opponent will stay out, so that her dancing numbers become less of a concern for us. Position 1.28 is like 1.27 except that all checkers at the bottom are shifted one pip to the left. Staying out still is an above-average outcome for White but in 1.28 there are fewer dancing numbers and more numbers from the bar after which she is forced to break her six-prime. Moreover, Black won't be able to kill his sixes in case he decides not to hit with his •. As a result, not hitting here is a big blunder. Not wanting our opponent to dance is, of course, an exception. For the rest of this book

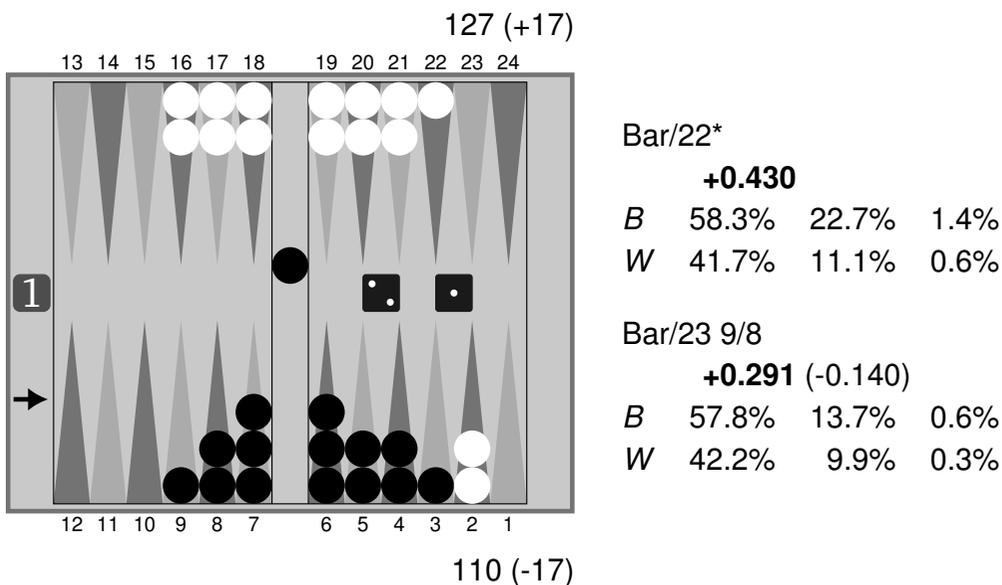


Diagram 1.28: White has only nine dancing numbers and hitting is clearly best.

we will only look at the normal case where we benefit when she stays out after we hit.

1.6 Summary

- Checker play and cube play can't be viewed in isolation. Your goal is to maximize your *cubeful* equity, meaning that you need to factor in possible future cube actions when deciding whether to hit. A typical example is taking into account the cube action after your opponent dances.
- Hitting frequently leads to positions with very different gammon rates compared to non-hitting alternatives, which is why you need to relate additional gammon wins to additional losses. In unlimited winning an extra gammon is half as important as winning the game. This ratio is called gammon value.
- The gammon value depends on the match score. An extreme case is gammon-go (2-away/Crawford) with gammon value 1 for the player and gammon value 0 for the opponent.
- The short-term tactical advantage of hitting is that it restricts your opponent's options for at least one turn. Sometimes you need to hit in order to prevent your opponent from carrying out her threats even if hitting doesn't fit your game plan.
- Just because you decline to make an aggressive blitzing play does not mean that the blitz is over. You may be able to resume it on the next turn under more favorable conditions.
- You need to keep an open mind when playing backgammon and be able to adjust your game plan quickly to changing circumstances. Very bold tactical measures may be required when the dice are such that pursuing the original plan will likely lead to defeat.
- You shouldn't hit with a strong home board when staying out is an above-average outcome for your opponent. This frequently occurs in backgames, but sometimes also in prime-versus-prime positions.