

# Matchstrategy and Volatility.

## An insight in the mind of the Belgian Champion

At the latest Brussel Backgammon Day I noticed the improvement that several players had made since I last saw them playing and since I only recently had written a short viewpoint on volatility in reply to a mail to the players of the European Championship in Denmark I thought it would only be fair if all players would have the possibility to read my ideas about it, so a few days later I decided to write a much more extensive article about matchstrategy and volatility.

This article will be about the 4 following topics: matchstrategy ; volatility ; matchstrategy and volatility in checkerplay ; matchstrategy and volatility in cubeplay.

I will try to avoid intertwining for as far is possible in these topics.

### 1. Matchstrategy

In backgammon you have only a limited number of gametypes that can occur, however you do not have the possibility to choose a certain gametype, it will depend on the rolls, for example you can not say that you will play a blitz the next game. Your matchstrategy however has the potential to make an influence in which gametype will arise because you have the option to make a different checkerplay with the roll that you got.

There are numerous of different matchstrategies possible, however not every strategy is a good strategy, for example if your strategy is to make your cubedecision by flipping a coin than I would say that this is a bad strategy, still there are a multitude of good matchstrategies.

As for the question which strategy is the best the answer is that there is no best strategy in general, there is only a best personal strategy. You should choose a strategy that fits best with your own strengths and weaknesses.

Personally I find matchstrategy (and also volatility) a very important part of backgammon and in my travels with Michel Lamote we have had numerous lengthy discussions about these topics so I could easily write 20 pages on strategy alone but that is not the intention of this article. Still there is a lot to say about strategy so I will divide it in several main elements and review them from lesser to higher importance.

First of all there is the division between the strategy on the board and the strategy beside the board.

We start with the strategy beside the board, which also can be divided in 2 main parts.

The part with the least influence is the psychological part. Your behavior, attitude and reputation can have an influence on your opponents decision. If you can intimidate or cause fear or doubt in your opponents mind he is more likely to change his normal play and thus more likely to make mistakes. For example, if you have a double that still is a big take (lets say 100mp take) and you are thinking 2 min before you hesitantly give the cube the chance that your opponent will take is higher than if you give the cube after only 20 sec and in a very confident way. If you than lean back with a confident aura or for example make a gesture like picking up your pen to write down the score will slightly more likely cause your opponent to make a wrong pass. I know that the psychological part only has a very slight influence but still it has on a few occasions been the reason why my opponent made a different checkerplay or a different cubedecision and even in a few rare occasions it has been the cause why I won the match.

More important is the information part. Every little bit of information you have about your opponent can be usefull. This varies from your opponents condition (is he healthy or sick, fit or tired) to knowledge about his play (does he drops a cube fast or does he takes deep) up to the most important part being is he a stronger or weaker player than you. All those small bits of information can be helpfull.

If you don't know anything about your opponent you can try to find out, I have on occasion in subtle ways asked for information from his compatriots and even on occasion looked up his national ranking just to get an idea of his strength, and keep in mind, even if you know nothing about your opponent you will be gathering information during the whole match which might be in your

advantage at the end of the match.

As for the strategy on the board, since most matches are played with a clock we can divide this in clockstrategy and gamestrategy.

In some occasions it can be wise to make a different cubedecision if your opponent is in timetrouble. For example the score is 9-9 in a match to 15 and your opponent has only 20 seconds left on his clock, you are in a position in which you have a small double, should you cube? Well the answer depends on your opponent so here outside information is usefull. Either he is a player that in most matches gets in timetrouble which means that he is capable to play several games with even only a few seconds left on his clock. Players that are notorious for getting in timetrouble rarely will lose on time so the correct decision is to double since this is the correct action in that position.

However if your opponent is a player that rarely gets in timetrouble he is likely to make big mistakes under the timepressure and even may lose on time. He will be glad that you double and is even likely to redouble whenever he sees an opportunity, even if it would be an incorrect redouble so in this case it might be strategically wiser not to double.

In my opinion regarding the clock there are 3 types of players. The first group are players that have a natural fast playing speed, they will never get in timetrouble, the second group are the players that almost always get in timetrouble, these players can play fast and even though they make a few mistakes because of the timepressure they will rarely lose on time, and the third group are the players like myself that rarely get in timetrouble but when they do they will make big mistakes and they even might lose on time.

That is why for me personal timemanagement is a very important element in my matchstrategy.

Since in matchplay there is only one game that you need to win being the last game of the match I will make sure that I will have enough time to think about my decisions in the last game, so I make sure that I have time enough even if it comes to a DMP. This means that if needed I will give up some equity in the beginning or middle part of the match by playing a few games at a faster speed and thus will likely make a few more mistakes in those games but at least I will not be making those mistakes in the last and most important game.

When I look around I notice that most players don't use timemanagement while for several of them it can be a big asset.

As for myself since I do use timemanagement it also means that time represents equity, one minute represents 1000mp so its much wiser to think 30 seconds about a difficult checkerplay when you roll a double since you can make a big mistake that can cost you hundreds of millipoints than thinking 15 seconds about how to play the best checkerplay when you are likely to make only a 20mp mistake by playing the second, third or even fourth best move.

Also a very important part of matchstrategy when your opponent is in timetrouble is not to start playing at his speed, he is the player that is under timepressure, not you, you have time enough to think about cubes, make pipcounts and think about difficult checkerplays, if you start playing at his speed you are likely to make more mistakes than your opponent.

And as last we have the matchstrategy on the board itself.

Since there is a limited number of gametypes you can divide these also in 2 groups and each group has a matchpoints value. You have the so called simple or easy games like running games and mutual holding games and so on which represent 1,5 matchpoints value, this is because in these types of games cubes are given at the latter stages of the game when gammonchances are very low or non-existing. The other group are the so called difficult games like backgames and prime versus prime and so on, here the matchpoints value is 2,5 since cubes usually appear in earlier stages and gammonchances are higher.

So it seems logical and is also part of my matchstrategy that when I am leading in the matchscore to hope for the easy games and avoid volatility and when I am trailing in the matchscore to hope for the difficult games and to try to create volatility. Also when I am playing a stronger opponent I prefer simple positions on the board because I will make less mistakes in them and will try to create volatility while if my opponent is a weaker player I will try to get complicated positions on the board because my opponent is more likely to make more mistakes and I will try to avoid volatility.

So flexibility and adaptability in your matchstrategy are important assets and yes even in very rigid strategies like playing by the numbers is room for flexibility and adaptability, for example you can adjust the numbers depending on the strength or weakness of your opponent. There are long tables about how much you should adjust, if I remember correctly there is an article about it with the name "can a fish tastes twice as good" which contains a lot of information on this.

Also keep in mind that every strategy and way of decision making besides its advantages also has its disadvantages. For example I base my decisions on things like referencepositions, pipcounts (as well the normal count but even more the Keithcount with an adjustment for the matchscore which I derived from my analyses), logical thinking in bear-offs with a small number of checkers (since the counts in these situation usually get more and more incorrect) and a very large number of selfmade rules to decide in cube and checkerplay which are all based on my analyses.

So my disadvantages are that I can miscount or I can base a decision on a wrong rule or forget about a rule or forget to take in account an important element from the position.

The disadvantages of playing by the numbers are that it takes time to make the calculations so at the end of the match you might not have time to calculate the right decision, you can miscalculate, you can make the correct calculation but based on the wrong numbers (after all you first need to estimate the numbers from a position).

And so has each strategy its advantages and disadvantages, and yes sometimes we do make mistakes, after all we are only humans.

## 2. Volatility

Lets start with the meaning of volatility. The definition of volatility according to the Oxford dictionary is: Liability to change rapidly and unpredictably, aspecially for the worse.

Originally I was thinking about how to define volatility but a few days later I suddenly realised that I could look up for the definition at an on-line dictionary and this one was the first I saw and I was immediately sold, aspecially because of the second part of the definition. This definition is totally applicable to the meaning of volatility in backgammon.

Still lets tell a little bit more about the characteristics from volatility in backgammon.

To start with every single position has a certain volatility but in most positions the volatility is very low so when we talk about volatility we actually mean high volatility.

If we look at the high volatility in numbers it usually is a position where you only have between 55% and 65% winning chances but with between 20% and 30% gammons. Since you are favorite in this position it also means that the majority of your rolls will be great, even the lesser rolls of them so you are not depending on a very good roll or a joker to get a great result. If you roll one of the good rolls the number can in a single turn change to around 75% winning chances and around 50% gammons and the gammons will keep rising a lot with most of the turns. This means that the most likely outcome from this position is that you will win a gammon.

Other characteristics from volatility are that it is very fleetingly, the volatility will usually arise in a single roll and will usually be gone in another single roll, either the numbers will go down but most likely the numbers will go up with a huge leap leaving you in a position that will be a huge pass when you double and in many cases even is too good to double.

Like you can give a matchpoints value to a gametype (and no those numbers didn't come from me, if I remember correctly they came from either Mochy or Michy) I would also like to give a matchpoints value to volatility. Since I never came across such a value I will here have to give my own estimation to it and that would be 3,25 matchpoints.

So when you are trailing in the matchscore it will take you a long time to make up the deficit with the easy gametypes, it will go faster with the difficult gametypes and it will go fastest when you are able to use the volatility. Therefor it is very important to be able to recognize volatility when it arises. It also shows why volatility is such an important element in my matchstrategy.

## 3. Matchstrategy and volatility in checkerplay

This point seems to be the most difficult to explain since we here are talking about volatility and

checkerplay which means that after your checkerplay your opponent also has a roll that can have a huge influence on the volatility of the resulting position, so we are actually talking about the possible potential of volatility.

I will try to explain it with 3 examples in which the first gives the general idea, the second is about a very difficult choice and the third, well, that will explain itself.

Lets start with the following situation, you are trailing in the matchscore and after the opening 4-5 rolls your opponent is already around 60% favorite to win the game, you still have a single 5 to play and you have the choice between 13/8 or the hit with 6/1. According to XG you should play 13/8 because it will give you for example 40% wins with 3% gammons. The hit would give you only 39% wins with also 3% gammons.

Now if you play the 13/8 you will give your opponent a full roll to improve his position and since he already is favorite he might very soon be in a position that is a double take or double pass.

But if you hit on the 1 you are actually creating the potential for volatility. You can not predict how the game will continue but you are creating opportunities. You might just as well get hit on the 1-point and roll a bad roll so that you stay on the bar which might result also in a double-pass position, this was anyway already a possibility if you played the 13/8 and since your opponent was already favorite its only a normal result.

But there are also other possibilities, your opponent might start without the hit and from that position on is everything possible but at least you took half a roll and a pipcount away from your opponent. You might get hit and start, again lots of possibilities here like making a higher anker while still having a guard on the 24, you might get in a backgame and so on, at least you have prolonged the length of the game and thereby created fighting chances.

And than there is the possibility that your opponent doesn't enter and suddenly the volatility rises, depending on the position you might have a double already and if not than you at least have a roll to improve your position drastically leaving you as favorite to win the game.

I know this might not be the best example and maybe that is because I try to give an example with numbers but its merely to demonstrate the principle why it sometimes might be wiser to play intentionally a lesser move.

In the next example I will give one of the most difficult situations to make a decision being to hit or not in a backgame. As a matter of fact both players will get a multitude of difficult decisions in this gametype and although I already have a large set of rules for this gametype my set of rules is far from complete and never will be complete because of the multitude of possible situations and in each situation the slightest difference of an element of the position has the potential to cause a different decision. Usually a wrong decision in these situations will be a mistake of several hundreds mp. So for sake of the example we take a position in which your opponent already escaped with his 2 checkers from the 24-point and is leaving a shot at for example the 10-point, you are having 4 checkers back and are having 2 ankers being on the 24 and 20-point, you both have only 2 points made in your home and you also have a blot in your home and in the outfield and with your roll you can hit the blot from you opponent but only from your 20-point anker so should you hit or not. Sometimes I do know the answer by looking at the elements of the position and sometimes I simply don't know what the correct answer is. First of all I will look at the elements of the position, to name a few: where is the cube ; how many points are made in the homes of both players ; are there more blots and where are they, for both players (double hits and re-hits) ; how many ankers are in the backgame and on which points ; which anker do I break up with the hit ; how many attackers are there on the anker that breaks up with the hit (double hits); what are the opponents chances to make a continuous 5-prime if I don't hit (cause for a double/pass after he makes that) ; are his points stripped or does he have spares ; what is the pipcount (likelihood to have a succesfull backgame) ; how likely will your opponent leave shots in the follow-up if you don't hit ; what is you timing (not on the clock but in the position to determine if you can keep your ankers long enough and to determine the gammons if you don't hit). Of course the matchscore is always an important element and even the strength of your opponent in some situations.

Sometimes I will be able to determine the correct play by looking at these elements and can make

the correct decision rather quickly. Other times I simply don't find the answer, I will have studied the position for about 2 min. and I can think about it for another 20 min. or even another 2 weeks and still won't know it. Now in this example it is clear that not hitting will be the safe play since you keep the volatility low and are in a position in which a no hit also not will result in giving your opponent many gammons, if the cube is still in the middle he also will not have a double. The hit will create high volatility for both players and the follow-up is unpredictable. So if I can't determine the correct decision in this position what should I do. I could make a wild guess or flip a coin but these are completely depending on luck. I could use the rule "when in doubt, hit" but I have used that rule several times in the past with these situations and my analyses showed that in these type of situations that rule is just as often incorrect. So I will base my decision on my matchstrategy, at least I will not be guessing and as long as I have not analysed the position I will not know if my decision is correct but at that point in time my decision is as correct as is possible for me. So if I am leading in the matchscore I will not hit (keep the volatility low), if I am trailing in the matchscore I will hit (creating high volatility), if the matchscore is about even I will hit if my opponent is a stronger player and not hit if he is a weaker player.

The last example involves the backgammon giant Falafel. With an opening 41 roll he will always slot the 5-point. He surely knows that this isn't the best play according to XG so he does it because it is part of his matchstrategy. Since this move generates more hits and in case of a no hit gives him more possibilities to make the 5-point it is a move that creates a higher volatility which makes it a perfect example for this point of the article.

So why is he playing this. First of all he is only giving up a small amount of equity with this move. There are first roll return rolls which if you would play them in the same way as you would play against the normal opening 41 will already cost you more equity than he lost in the first place. Furthermore since he always plays this he is very experienced in the follow-up and thereby less likely to make mistakes in the follow-up, where as you only rarely will encounter this position you are more likely to make mistakes in the follow-up. So we can conclude that from his matchstrategical viewpoint the lesser openingsmove actually is the best move for him.

#### 4. Matchstrategy and volatility in cubeplay

Lets start this last point with a small anecdote.

Michel Lamote, Johan Huyck and I were travelling by car to the European Championship. So we had a lot of time and as usual most of it was filled by backgammon talk. At a moment that the conversation was falling silent I made the following remark about our upcoming tournament: I rather win with a PR of 20 than lose with a PR of 2. Of course such a remark contains an element of truth, if we could sign up for this we all would do so because it would mean that we became the European Champion. In reality however that is not possible so I think Michel and Johan perceived this remark merely as an unimportant pleasantry, which partially was also my intention, however I was also dead serious about it. I knew that we were going to play long matches and I knew that I would play against strong players that are capable to recognize volatility and will use it. So I knew beforehand that in at least some of my matches I would encounter volatility and that I with my matchstrategy would have matches that end up with a high PR. As it turned out I had 2 matches in which I did not have to make passes in volatile positions, I had good PR's in these 2 matches and I won 1 and lost 1 of those which is only a logical average result, however in the other 4 matches I did make these decisions in volatile positions when they occurred. As a result my PR's in these matches are terrible but I also won all 4 of these matches. For me this means nothing more than the umpteenth proof that this matchstrategy does work best for me personally.

Now lets have a look at an example of a volatile position. I picked this example from the semi-final of the BIC against Leonidas Sotiriadis because he missed the cube and thereby we can also see the changes caused by the volatility.

So here are the 2 positions being the volatility position and the position 1 roll later.

eXtreme Gammon 2.10 Walter Meuwis-Leonidas Sotiriadis 13 point match 29-10-2016 #2.xg

Game 5: 4 - 1

Leonidas Sotiriadis Pip= 144 (+2) Score: 1/13

41: 24/23 13/9  
 2) 51: 13/8 6/5  
 63: 9/3 6/3  
 3) 32: 6/3 5/3  
 63: 24/15  
 4) 62: 13/11 8/2\*  
 31: Bar/21  
 5) 2 22: 13/11 8/4\* 4/2  
 62: Cannot Move  
 2 Double/Pass  
 Wins 1 pt.

Cube Move Summary

Winning Chances ND (click for D/T)  
 57,85% (G:26,34% B:0,65%)  
 42,15% (G:11,08% B:0,78%)

Cubeless Equity  
 N: +0,312  
 D: +0,684

Cubeful Equities:  
 No double +0,457 (-0,036)  
 Double/Take +0,493  
 Double/Pass +1,000 (+0,507)  
 Best Choice: Double/Take

Walter Meuwis Pip= 142 (-2) Score: 4/13

eXtreme Gammon 2.10 Walter Meuwis-Leonidas Sotiriadis 13 point match 29-10-2016 #2.xg

Game 5: 4 - 1

Leonidas Sotiriadis Pip= 136 (-10) Score: 1/13

41: 24/23 13/9  
 2) 51: 13/8 6/5  
 63: 9/3 6/3  
 3) 32: 6/3 5/3  
 63: 24/15  
 4) 62: 13/11 8/2\*  
 31: Bar/21  
 5) 2 22: 13/11 8/4\* 4/2  
 62: Cannot Move  
 2 Double/Pass  
 Wins 1 pt.

Cube Move Summary

Winning Chances ND (click for D/T)  
 74,99% (G:50,82% B:0,89%)  
 25,01% (G:5,44% B:0,36%)

Cubeless Equity  
 N: +0,969  
 D: +2,074

Cubeful Equities:  
 No double +1,137  
 Double/Take +1,950 (+0,814)  
 Double/Pass +1,000 (-0,137)  
 Best Choice: Too good to double/Pass (14,4%)

Walter Meuwis Pip= 146 (+10) Score: 4/13

The first thing I notice in the first position are the typical numbers of a volatile position being almost 58% wins and more than 26% gammons. The cause of this high percentage of gammons is the high number of market losers. According to XG there are in this position 29,6% market losers which I believe to be 11 rolls, a bit strange since if I count the market losers in the dice distribution I count it as 12 rolls, still the point is that there are a lot of market losers. Actually if I compare the characteristics of volatile double take positions with other double take situations I will see a similar pattern, to keep it short I can divide them both in the same 3 groups being about 50% of the rolls which I can call the good numbers where as in the other cubes I start with a higher win% these numbers will rise this with 2-3% and a low gammon % which rises also very slightly, with the

volatile cubes the rises in win and gammon % are both huge. The about other 50% of the rolls which I could call the bad rolls I can divide in 2 groups, 25% will in the other cubes keep similar % and in volatile cubes you have the same 25% but here the win and gammon% drops very slightly, in the third group which is the last 25% will by both drop the win and gammon % , with the other doubles it will drop more in the win% the gammons were already low so can not drop much, in volatile cubes they drop also several % in both win and gammon % but since the gammons already were so high you still will have a high gammon %.

The next thing I notice is as I can predict from the comparence above, is the change in the percentages between the both positions, it is also exactly as the definition of volatility predicts, a rapid change aspecially for the worse. The win% goes up with 17% and the gammons which were already huge rise again with a whopping 24%. If I also keep in mind that the 22 roll was the second best possible roll than I know that these numbers even could be worse and all of this is happening in a single turn.

I do also notice the huge changes in the equity numbers. From 457 to 1137 or a change of almost 700mp ; a change from 493 to 1950 which is a change of around 1450mp ; I see similar changes in the cubeless equity numbers. Now these are all huge numbers, I normally only see such changes when I make a big mistake about a 4 or 8-cube, I do not expect it in a checkerplay. So I could conclude that these huge changes are proof that my matchpoints value estimation for volatility is at least very acceptable.

I can also see the elements in the position that point to a take, such as an about evenly pipcount, the blot in his home, the open 4-point in his home and most of all the 2 checkers on the 24-point.

I also see the volatility in this position, I don't really need to explain this since it is obvious if you look at the troubles you will get into after his next roll.

Since you know my matchstrategy concerning volatile positions being a take when I am trailing, a decision that everybody will agree with, a take or pass depening on the strength of my opponent in evenly matchscores, a bit more disputable but also becoming more acceptable after reading the following part of this article, and a pass when I am leading in the matchscore, being the most disputable decision, you should keep in mind that from now on I will only be talking about these passes.

So the question is if my matchstrategy to pass here is a good strategy.

To find the answer to this question I will keep this example of the match against Leonidas and we will assume that he did give the cube in the first position.

First of all I would have passed it, since I did pass it a turn later it would not have made any difference in the result of the match, it would have caused my PR to be much worse but this is matchplay and the PR in matchplay is of zero value, the only thing that counts is winning or losing the match.

So I will try to determine the answer by looking at this situation in 3 completely different ways, this might give an acceptable overall result.

In the first way I will look at it by using Mochy's prat rule. As you probably know prat stands for position, race and threat and the answer to these 3 questions gives a good indication of what I should do.

So I start with position, is my position on the board better than Leonidas his position? I think the answer to that is a clear no, he has more points in his home than me, he has better points in his home because he has his 5-point, he has more checkers in the zone and I am having 2 blots which are under a huge attack.

Do I have more threat than him? Again a clear no, he has only 1 blot and that is also a builder to improve his home while I have 2 blots and he will hit or even double hit with 30 of his rolls and he might at the same time also improve his home.

Do I have a race? Although the race at this moment is about even, I will be trailing after his roll since he will either hit which makes my race worse or in case of the no-hit rolls I will be trailing too since these are big rolls being 66, 55, 65 and 62. There are also variations in which I can re-hit and

be leading in the race so the answer is not very clear . At best I would give this a score of a half point.

This leaves a score of 0,5/3 which is a clear indication for a pass.

Or at least it seems that way, the real question is if the prat tool is accurate in volatile positions which I very much doubt to be the case.

The second way to determine the answer is a bit more trickier. Just as backgammon is a game of probabilities in which 100% positions are rare and usually only occur in no contact near end bear-off positions this way also has no 100% answers but is based on probabilities of 91% and mostly even higher percentages.

First of all I need to determine several other things so I start by determining why XG says that it is a 500mp take. XG is determining this by the difference between the average take results compared to the pass result. For purpose of easier calculations I am going to adjust the percentages of this position slightly since this will have no influence on the result of the decision. So I change the win % from 57,85 to 60 and from 42,15 to 40 and the gammons from 26,34 to 25 and from 11,08 to 12,50.

If I play this position 10 times than the result of 10 passes is -10. If I take 10 times I will lose 6 times from which 25% are gammons so I lose  $4,5 \times -2 = -9$  and  $1,5 \times -4 = -6$  which totals -15, I win 4 times from which 12,5 are gammons this gives  $3,5 \times +2 = +7$  and  $0,5 \times +4 = +2$  which totals +9 So the total outcome is  $+9 -15 = -6$  and -6 is better than -10 so it is a take. On average I lose 1 point if I pass and lose 0,6 points if I take. If I would have made this calculation with the exact numbers the result would be close to the -0,6 average so the adjustment had no influence on the result.

Next I need to determine the average number of games in a 13-point match. The first number that pops up in my mind is 16. Lets see if that is an acceptable number because I might have longer matches that end on 13-12 and shorter matches like 13-2 which will have lesser games, there can be matches with 4 or 8 cubes and exceptionally there can be even a 16 cube in the first game (Michel had that last year). If I look at the 3 matches against Leonidas the numbers are 2-13 in 9 games ; 13-8 in 16 games and 13-10 in 13 games. If I look at the matches in Denmark the numbers are 4-13 in 11 games ; 13-11 in 12 games ; 13-11 in 14 games ; 13-12 in 16 games ; 13-11 in 17 games and 13-6 in 9 games.

So if I use 16 for the average length I am surely on the high end of possible games, and as a matter of fact the lower this number is the higher the probability percentage later in this way of determining will be so I am surely on the safe side here.

Now I need to determine the frequency of volatile positions in a 13-point match. To use the same 2 examples, I had only 1 volatile position in my 3 matches with Leonidas which is the example I am using here. The fact that he did not double does not take away the fact that it was a volatile position. I had 5 volatile positions in the 6 matches in Denmark (4 passes and 1 time I gave the cube).

That means 6 positions in a total of 117 games. So lets average it at 1 position in 20 games (also an easy number to work with).

This means that the average number of volatile positions occurring in a 13-pointer is 0,8 and since there is an equal chance that you are giving the cube as receiving the cube the average chance of receiving the cube is 0,4. I also need to take 3 other factors into account. First of all I am talking about a lead in the matchscore which means that there already are some games played and thus lesser games for the volatility position to appear, secondly it can appear much later in the match than in this example again leaving lesser games, thirdly by matchscores like 3-away 3-away and 3-away 2-away the influence of the gammons which is the main aspect of volatility gets lesser and disappears completely with 2-away 2-away and post Crawford 2-away again leaving lesser games where the volatility position can appear. This means that I must adjust the 0,4 probability to 0,2 or 0,25 so lets again stay at the very safe side and adjust it to 0,3. Now that I know that there is only a 30% chance that it appears once I can calculate the probability that it would appear twice while I am leading in the matchscore, this probability is with these numbers 9% or in other words since I have been using numbers on the very safe side I can with certainty claim that with a minimal 91%



probability this is a single occurring situation in a 13-pointer so from now on I will look at it as a single occurring situation which would be completely different if I was playing a 101-pointer because in that case I would know that I would get multiple volatility cubes and in that situation I would take them all.

Does this change anything? Well yes and no depending on how I want to look at it.

Lets start with the mathematical approach and before I do so I will be using the same adjusted numbers, this is because I am trying to come to a general conclusion and since volatile positions have a win % between 55% and 65% the average is not only 60% but also a much easier number to use. Now I can make the same calculation based on the percentages and instead of 10 games using 1 game and I will get the same result, -0,6 is better than -1. But now I have a problem, I can not score -0,6 after a take, I can win 2 or 4 points or lose 2 or 4 points and yes there are the possibilities of backgammons and even recubes but these have such a low probability that I for the sake of this calculation can disregard them. Nevertheless if I make the calculation with the real possible results I will still come to the same conclusion. However I would call this a rigid, stubborn and unrealistic calculation. The reason for this is simple, think of the definition of volatility, think of the huge number of market losers, look at the second position. I have no problem with the 40% wins with 12,5% gammons nor with the 60% losses but I should realize that the huge majority of these losses come from the market losers or to take it a bit broader the around 50% so called good rolls, and in these cases the gammon % goes up very fast, they will go up to 50% and keep going up in the following turns to 60% and 70% and probably even higher. Even the 25% group where the numbers stay about the same also keeps its dangerous potential and their part of the 60% losses will also be pretty soon with very high gammon %. So if I am prepared to make a realistic calculation which means that my 60% losses are not with 25% gammons but with lets say 60% or 70% gammons my calculation will change into a pass.

Another way to look at a single occurring situation is by simply saying that I am not favorite to win the game, as a matter of fact my opponent will win 50% more times than me, and even if I would win it than most likely I would win only 2 pions where as if I lose I am more likely losing 4 points than 2 points. I probably have been fighting long and hard to build up my lead in the matchscore which either can mean that I was very lucky but more likely means that I am the stronger player so if I pass I will not only keep my lead in the matchscore but I also have more games to play while I am the stronger player so I surely keep the better matchwinning chances, so why would I gamble with all my hard fought leading points, aspecially since it will be my opponents roll and he is having a very easy no skill required checkerplay coming up because each possible roll is a no brainer. I am a player and not a gambler. As to make a kind of comparison, if I would challenge you to a single coinflip for 50 euro and you accept than we both have even odds, this is a bet and not a gamble but if I now tell you beforehand that for this single coinflip I weighted the coin so that my side of the coin would come up with a 60% probability and I raise the stake to 100 euro and if you accept this challenge than you are not betting but gambling.

As to approach the pass from a healthy state of mind think of the following: I can not win every game in backgammon, and because it is a single occurring situation I can regard it just as well as if this was a blitz, I started with 52 and played 24/22 he rolled the 55 and I 66 double-pass, I am glad that I lost only a single point, I did not lose any of my valuable time nor did I get myself in difficult and dangerous positions and I avoided difficult decisions, I did not lose 2 or 4 points and I still am leading in the match as the better player and with the better matchwinning chances, so I forget about it and don't worry about it and get on with the remainder of the match.

So what is the result of this second way to determine the answer? It depends on which of the 3 following questions I am asking.

Is the pass the correct play? Possibly not, the numbers in XG are clear and I believe that XG is very accurate in its perentages, even if I regard it as a single occurrence my answer will only change to a yes if I am prepared to adjust the losing gammons to a more realistic probability number from later positions.

Is the pass the best play? Probably yes, again it depends on several factors but I am taking a safe

approach and am not risking my hard fought lead in an uncertain and very dangerous position. Is the pass the wisest play? Yes, I am not gambling on very costly and hugely uncertain outcomes and avoiding all sort of problems and troubles, I keep the better matchwinning chances.

In the third way I will try to establish the follow up from this position for the next 2 turns (4 rolls) and its implications if I would take.

So I start with his first roll. So I started with doing rollouts on all his rolls since this is not too much work and will give a good impression of the effects different rolls have. And yes I can display these as the 21 possible combinations but I find it better looking as the 36 possible rolls and it makes no difference as how I display them.

These are the results of the rollouts:

11 (11/10* 8/7 5/4*(2))	62.93	34.45	0.87	37.07	11.81	1.58
12 (11/10* 10/8)	54.63	19.97	0.61	45.37	13.26	0.80
13 (13/10* 11/10)	57.42	23.12	0.84	42.58	13.53	1.07
14 (11/10* 8/4*)	60.79	31.14	0.91	39.21	13.92	2.09
15 (11/10* 10/5)	56.25	22.80	0.62	43.75	12.43	0.87
16 (11/10* 8/2)	63.01	32.87	0.82	36.99	9.72	0.67
21 (11/10* 10/8)	54.63	19.97	0.61	45.37	13.26	0.80
22 (13/11 8/4* 4/2)	66.50	39.49	0.70	33.50	7.75	0.54
23 (13/10* 10/8)	55.34	21.20	0.74	44.66	13.04	1.02
24 (8/4* 4/2)	63.99	36.63	0.77	36.01	8.44	0.67
25 (11/4*)	52.13	23.60	0.59	47.87	15.13	1.95
26 (13/11 8/2)	49.87	20.03	0.51	50.13	10.81	0.81
31 (13/10* 11/10)	57.42	23.12	0.84	42.58	13.53	1.07
32 (13/10* 10/8)	55.34	21.20	0.74	44.66	13.04	1.02
33 (24/21 13/10* 8/2)	66.66	35.67	0.94	33.34	8.79	0.68
34 (13/10* 8/4*)	61.56	32.78	0.98	38.44	14.51	2.36
35 (13/10* 10/5)	56.85	24.40	0.64	43.15	12.43	1.05
36 (13/10* 8/2)	64.43	34.67	0.86	35.57	9.47	0.62
41 (11/10* 8/4*)	60.79	31.14	0.91	39.21	13.92	2.09
42 (8/4* 4/2)	63.99	36.63	0.77	36.01	8.44	0.67
43 (13/10* 8/4*)	61.56	32.78	0.98	38.44	14.51	2.36
44 (24/20(2) 8/4*(2))	71.82	40.33	0.77	28.18	5.45	0.26
45 (13/4*)	52.45	25.00	0.65	47.55	16.41	2.30
46 (8/2 8/4*)	60.79	35.06	0.70	39.21	10.20	0.90
51 (11/10* 10/5)	56.25	22.80	0.62	43.75	12.43	0.87
52 (11/4*)	52.13	23.60	0.59	47.87	15.13	1.95
53 (13/10* 10/5)	56.85	24.40	0.64	43.15	12.43	1.05
54 (13/4*)	52.45	25.00	0.65	47.55	16.41	2.30
55 (13/3 11/1)	46.87	18.65	0.31	53.13	13.29	0.94
56 (13/2)	50.53	20.15	0.40	49.47	10.79	0.80
61 (11/10* 8/2)	63.01	32.87	0.82	36.99	9.72	0.67
62 (13/11 8/2)	49.87	20.03	0.51	50.13	10.81	0.81
63 (13/10* 8/2)	64.43	34.67	0.86	35.57	9.47	0.62
64 (8/2 8/4*)	60.79	35.06	0.70	39.21	10.20	0.90
65 (13/2)	50.53	20.15	0.40	49.47	10.79	0.80
66 (24/18(2) 11/5 8/2)	61.98	18.35	0.24	38.02	4.76	0.28

At first sight these might just look as a bunch of numbers but actually they show the 3 groups that I talked earlier about. So lets get a better understanding of these numbers by looking at them in groups.

I start with the so called good rolls, here we have the market losers being 11, 22, 33, 44, 42, 61, 63 and 64. These give a win% between 60,79 and 71,82 with a gammon% between 32,87 and 40,33. The other good rolls are 41, 43 and 66 with win% between 60,79 and 61,98 and with a gammon% of 18,35 for the 66 , 31,14 for the 41 and 32,78 for the 43.

With the so called bad rolls we have the group where the numbers stay about the same being 21, 31, 32, 51 and 53. Here the win% is between 54,63 and 57,42 with a gammon% between 19,97 and 24,40.

The last group are the rolls 52, 54, 62 and 65 with win% between 49,87 and 52,45 with a gammon% between 20,03 and 25,00 and the anti-joker 55 with 46,87% wins and 18,65% gammons.

It is clear that no matter what he rolls the gammons will still be high.

I said that his rolls were all a no-brainer, still I can imagine a few different moves by some of the rolls so lets look at those.

For the 54 the rollout gives with 80% certainty the 13/4 hit as best, the move 11/6 8/4 with 19% certainty is only 5mp worse and with playing 11/2 I lose 19mp, neither of these is worth wasting valuable time to think about them.

The 65 roll gives 13/2 as best with only 48% certainty, 11/6 8/2 follows with 31% certainty and will cost 1mp, the move 24/18 11/6 with 21% certainty will cost 2mp. Actually during the rollout all 3 of these were continuously switching places, to determine the best choice very extensive rollouts will be needed, so I regard all 3 moves as the same value.

There is a fourth possibility with 13/8 11/5 which will cost 57mp but I can not imagine that he would play this move.

The biggest mistake is possible with the 55 roll, playing this wrong will cost at least 100mp but its the anti-joker which was already leaving him with the worst chances.

The most likely mistake will be with the 33 roll. The hit 13/10 8/2 24/21 gives a clear 100% certainty, playing 13/10\*(2) 8/2 will cost 26mp, 13/10\* 8/5 8/2 costs 3mp, 13/10\* 10/7 8/2 costs 52mp and 13/10\* 11/2 costs 54mp. I can imagine that you consider 54mp as worth thinking about, well, all I can say is that I wish that all my mistakes would leave me in a position with 64,94% wins and 34,72% gammons.

Considering all this I think I have all the right to claim that all his rolls are a no skill required no brainer.

So for this first roll after the take I see his roll as a coinflip for me, he can roll just as well a good roll as a bad roll and yes he only has 17 good rolls but 10 of his bad rolls aren't that bad either. I find it clear that I need to win this coinflip, if I lose it I am in a position where most of my losses come from and in a few turns they are very likely to be with very huge gammonnumbers.

Now it is my roll, try to imagine what I am facing up to or put the positions on a board.

First of all it is clear that the 55 would leave me in a good position, if I knew that he would roll this I surely would take the cube so I will not any longer go into positions in further rolls after the 55. The 35 other rolls can be divided in hits and no-hits, I will start with the no-hits which are only 5 rolls being 62, 65 and 66. As you can see I am now each time in a position where he already has a 4-points home and I have 2 blots so I desperately need to get these 2 blots safe because I can not afford to get hit with his next roll. So I need a 6, good rolls are 51, 65, 63 and 33 because they leave no shot, also good are 11 and 22 because they leave only a single shot but also do the next urgent goal which is making another point in my home. The rolls 55 and 66 are also good since they leave only long shots from the 24 (except after the 66, in that case the hit with a 4 is best aspecially the 42 and 44).

The other 30 rolls all hit, lets see what they will do. There are 5 double hits being 11, 41 and 43 , there are 11 hits that also make a 4-points home being 22, 33, 44, 24, 61, 63 and 64, the other 14 hits will either hit on the 15-point (10 hits with 12, 13, 15, 23 and 35) or the 21-point (the 4 other

hits being 52 and 54). So I will be on the bar with either 1 or 2 checkers facing a 3-points or a 4-points home. If I stay on the bar (25% or 45% probability) I might just as well go to the bar to drink a beer because I will be pretty soon with 2 checkers on the bar against a closed board.

It is also clear that with 2 checkers on the bar I will desperately need a hit and even in those positions I am in huge danger because of his better home and the number of checkers in the zone to keep attacking me, my best rolls would be like 22, 42 or 44 (not after the 11) which give me a very good position, the rest is looking grimly. If I get hit on the 21-point my best rolls are 22 and 46, and other starters that get the 15-point blot in safety or relative safety in the outfield. My best chances probably lie in being hit on the 15-point, if it is against a 3-point home starting on the 24 does not really help, only the hit on 23 or starting on 21 to make the anker helps me and not all 4's are good, 41 and 46 will leave a lot of shots on a third checker, if it is against a 4-point home than making the anker is even more important, still starting on the 24 is better than not starting at all.

If I look at all this I would at its very best not call it any better than another coinflip and this is a coinflip that I really desperately need to win.

Now the third roll, again a no brainer for him, his goals are easy to determine, hit, make another point in his home and play at least 1 checker up from the 24 to 21, 20 or 18 to cover the outfield. In most situations he will be able to achieve at least 2 of his goals in this roll, only if I did succeed in making the 21-point anker his only goal will be covering the outfield.

This brings me to the fourth roll which if I didn't make the 21-point anker is by now already a terrible position and my only hope lies in making that anker now. If I did make the anker my tasks now are to improve my home, not leaving a blot in the outfield and to get a hit for the racechances (this preferably after improving my home) , my good rolls are 55 and 66 because i can run from the 21-point and get the race even, still I am not completely safe yet but I have a good position, other good rolls that make a point in my home are 11, 22, 33, 44, 31 and 42, as a last chance I might also have the loose hits but they leave many return hits.

So I can consider this as a third coinflip too.

What is the result of this approach? It looks like that I need to win 3 coinflip but the last coinflip is of very little value since it only counts in case I made the anker, the first coinflip, much more important to win but not necessarily a lost position if I lose it, the second coinflip is the most important. Since i know that I have a high take-point (XG says 32,74%) and taking into account the value of each coinflip I would feel to be at best only near that take-point after the first 2 coinflips. So I would conclude it wiser to pass than to accept and face all these problems.

As an overall result of these 3 approaches. The prat rule, although giving an acceptable result with the pass, still has that the point about the race is arguable and it is doubtful to be a good tool for volatile positions. The single occurrence approach did not give any clear result at all. The follow-up approach seems to give the best indication to a pass, still I can not say that I got to a definite result, there are plenty of indications pointing to the pass but there is no conclusive proof.

Did I talk about everything I know about volatility? No not by far, for example I did not talk about double or not but I think that you can deduct from the fact that I will drop so called huge takes when leading in the matchscore that I will also double so called no doubles when trailing in the matchscore simply because of the characteristics of volatility.

There are also several other things that I could say about volatility itself and a few about volatility and XG but since they all point in the same direction and since they are not about matchstrategy and volatility I have left them out of this article.

As a general conclusion of this article I would say that in volatile situations it does not matter what you decide, double or not, take or pass all can be correct depending on your matchstrategy. As long

as you are making your decision based on your matchstrategy, the position on the board, the clock situation, the strength and all the knowledge you have about your opponent than you are making a decision to the best of your abilities and right then and there that is the correct decision regardless what any analysis afterwards would say about it.

Maybe you have learned a thing or two from this article or maybe not, anyway you are free to agree or disagree with anything or everything I have said here. After all this article is not intended as a backgammonlesson and it surely is not the holy bible of backgammon, it is nothing more than merely a simple insight in my mind.

Walter Meuwis.