

Chessplanner: A middle game chess thought process

Blue Devil Knight

When learning chess you are taught how the pieces move, but rarely given good advice on how to think.

Heisman, 2002b

§ 1: Introduction

Chessplanner is a five-step procedure for selecting moves in the middle game of chess. Like all chess thought processes, it aims to increase the likelihood that the knowledge you *already have* will be put to use in games. Every beginner, for instance, knows that they shouldn't leave their queen en prise, but we have all left her hanging, appalled at our sloppiness. Diligent application of a thought process will drastically reduce, if not eliminate, such blunders.

I should stress at the outset that consciously following an algorithm for move selection is not the end goal. The great players do not walk themselves through a step-by-step procedure for picking moves. Consciously thinking "OK, now I need to look at checks, captures and threats" is inefficient: it is much more economical to simply consider all checks, captures, and threats. Hence, the objective is to *implicitly* carry out all the steps without consciously thinking about them. Unfortunately, chess novices tend to impulsively make the first move that pops into their heads. An explicit thought process is meant to counter such impulsivity. During this learning period it is necessary to think about thinking, but any thought process should be looked at as a ladder that we will ultimately discard once its application is second-nature.

Note that this document assumes familiarity with chess basics, what you'd get from reading a book like Wolff's excellent *Idiot's Guide to Chess*.

§ 2: Chessplanner

The five step thought process is:

- 1) **Threat scan:** look for threats.
- 2) **Planning:** evaluate the position to generate plans and candidate moves.
- 3) **Analyze:** consider the consequences of each candidate move and select the candidate with the best consequences.
- 4) **Blundercheck:** Quickly check for one-move disasters.
- 5) **Move**

Before explaining each step in more detail, it is important to keep in mind that while Chessplanner is written as a step-by-step thought process, this is largely an artifact of the medium used to describe it (written English). Things will rarely be so tidy in practice. As long as you are consistently applying all the steps, it doesn't matter whether they are done in strict order. For instance, when a tactical pattern pops out at me in Step 1, I will often jump directly to Step 3 for that move, analyzing it while it is fresh in my mind, before tactical fatigue sets in. If the analysis reveals that the move will give me a material advantage, *it becomes the standard against which I judge all other candidate moves*. I don't play it right away (there could be an even better threat), but having a move

thoroughly analyzed before considering other candidate moves can sometimes make move selection more efficient.

Enough with the jibber-jabber. The rest of this section describes each step of Chessplanner in more detail.

1) *Threat scan: look for threats*

Mating attacks and material imbalances determine the outcome of most games at the club level. While GMs rarely drop pieces, club players' games are typically scattered with opportunities to gain a decisive material advantage. Under the category of 'threats' I include mating attacks, checks, captures, tactics, combinations, as well as moves that set up such threats (e.g., moving your knight so it can fork the opponent's King and Queen on the next move). When you generate a threat that must be dealt with, this is known as seizing the *initiative*. When you have the initiative, your opponent is less able to focus on his own attacking plans. Hence, even the threats that don't ultimately win material can be a powerful tool. All else being equal, seize the initiative.

Because of the relative importance of mating attacks and material advantages your primary goal on every move is to keep your own material safe while seizing opportunities to attack the enemy King or kill members of his entourage. Imagine analyzing pawn structure for ten minutes before looking for threats. If it turns out you are about to get mated, then you've burned ten precious minutes off your clock that could have been used to think about defense. As Fine (1942) says, "[I]f an attack against the King is begun, Pawn structure and mobility will have to take a back seat."

There is a second, often overlooked, reason to look for threats first: the longer you look at a position, the less likely you are to see tactics. Soltis (2005, italics added) says: *Looking for a way to attack enemy pieces should come at the start of the hunt for candidates*. This is because tactical vision carries with it a surprising law of diminishing returns: The more you study the position, the less you will see tactically. One-move and two-move tricks often jump to your attention in the first several minutes you spend on a position. But if you don't see them during that time, it is unlikely you'll see them if you spend another 10 minutes on the position. For some reason we can't explain, the mind tends to block out relatively simple tactics that stare us in the face.

In other words, look for threats before tactical fatigue sets in.

Focusing on threats first is not something only beginners and club players do. Buckley (1999, italics added) says:

Contrary to ideas held by some amateurs, *the expert looks at mating attacks and material threats carefully before embarking on any positional maneuver*. Nobody tacks about when victory is in sight. Instead, the master finds the sharpest idea available, then begins to evaluate plans and calculate variations.

Even the best players place an emphasis on analyzing threats first.

I am not arguing that strategy is unimportant, but it is important that strategic moves be tactically justifiable: if having a bishop on a certain square would increase its activity, you won't put it there if it will be lost to a tactic. Tactical considerations are the constraints within which strategic thinking must take place. Nor am I arguing that material is the *only* factor to consider when looking for moves (see §3). Indeed, there exist perfectly legitimate gambits and sacrifices in which you purposefully exchange

material for other compensating factors, usually piece activity that can be used to mount an attack against the enemy King. The key is to *avoid being surprised by threats you did not anticipate*. When you lose material, you want it to be because you *meant* to give it away, and are getting something else in return.

It is often most efficient to begin your threat scan by considering forcing moves (checks and captures) available to you and your opponent. Any threat you can make whose consequences look good or unclear should be put on the candidate move list. To see what threats your opponent has available, imagine it is his turn to move. If he has dangerous forcing moves, assess whether you can take the initiative by finding an even stronger threat in reply, or consider defensive resources at your disposal. The relevant moves go on your candidate move list.

After considering forcing moves, look for tactical possibilities for each side. If none pop out immediately, examine the position for the hallmarks of tactical opportunities: a knight in the opponent's territory (potential forks), two pieces lined up (skewers, double attacks), pinned material (pile on the pinned piece), a piece with few escape squares (look for a trap), etc.. Heisman (2001b) calls these tactical signatures the 'seeds of tactical destruction.' When looking for material threats, you can scan for the seeds and then determine whether the corresponding tactic is available. Looking explicitly for a knight fork will cause knight forks to pop out at you, just like someone telling you to look for a person with glasses and a red shirt will make that person pop out at you in a crowd.

Perhaps more importantly, be sure to consider attacks against the King. If there are more pieces bearing down on the King than there are defenders, if there are open (or open-able) lines of attack directed toward the King, consider how you might parlay this into an all-out attack (and also determine whether your own King might be vulnerable to such an attack).

Once you find a viable offensive threat (e.g., you can fork his two knights), don't stop your threat scan. Put that move on your candidate move list, and look for an even stronger threat (e.g., you might be able to fork his King and Queen or have a mate-in-two). Lasker advises, "Once you've found a good move, look for a better one."

If you find what look like potentially decisive threats for either side, then put all the relevant moves on your candidate move list and start analyzing their consequences straight off (i.e., jump to Step 3: Analysis). If this more thorough analysis reveals that the consequences are actually unclear, then finish looking for other threats before going on to Step 2 where you will use more positional considerations to select your move. At that point your strategic thinking will be enhanced by your knowledge of the tactical contours of the position.

While it is crucial to be aware of threats, most positions in actual games do not offer tactical possibilities. What moves should you make in these common positions? This is the province of *positional chess* or *strategy*. Wolff says, "If there's no move to capture one of your opponent's pieces, and you can't see how to attack the king, how can you know what move to play? Which positions are good for you, and which are bad? How can you tell? The answers to these questions come from knowing chess strategy" (Wolff, p. 159). Threats often flow from good strategy, so the importance of strategy should not be overlooked. Such considerations are discussed next.

2) Planning: *evaluate the position to generate plans and candidate moves.*

Many introductory chess books scold amateurs for playing moves “without a plan.” Strangely, they often give little guidance on how to play *with* a plan, and sometimes they don't even define what a plan *is*. I follow the standard usage, defining 'plan' as a goal that is used to aid move selection. Goals (or from now on, plans) can be long-term (e.g., create a closed pawn structure and attack queenside with my knights), short-term (e.g., increase the activity of my Bishop), or anywhere in between.

Some beginners have the impression that GMs play with a single long-term plan starting on move one, a plan that is revealed in every move played. This picture of GM play is misleading. Most plans are short-term and arise from evaluating the concrete position that emerges during the game. For example, if your opponent has an isolated pawn, this suggests a plan: exploit the isolated pawn by either attacking it or blocking it. Such specific plans suggest move sequences to achieve them (e.g., the plan of blocking the pawn will prompt you to start looking for material to place in front of it). The initial moves suggested by such plans are candidate moves.

The previous example illustrates some important features of the logical structure of plans (see Figure 1). First, notice that there exists a hierarchy of plans. At the top is the most general plan: to mate your opponent. At the bottom of the hierarchy we find more specific plans, highly dependent on the features of the position, plans that often involve specific pieces and squares. These specific plans transparently dovetail with candidate moves (see previous paragraph for an example). Note that the same move can accomplish more than one plan. For instance, moving a bishop to an open diagonal might both increase its activity and clear a file for a rook.

The overarching goal, below mate, is to increase strengths, decrease weaknesses, and do the opposite for the opponent. This goal is too general to be useful, so we use the four criteria for evaluating the relative strengths and weaknesses in a position that are discussed in detail in §3 (material, piece activity, King safety, and pawn structure). Hence, in practice, start this step by evaluating the position using those criteria. To evaluate a position is to determine both players' strengths and weaknesses. Use the evaluation to generate plans to improve your position, descending in your mind through the hierarchy of plans until you come up with concrete plans that will suggest candidate moves.

For example, imagine that your evaluation reveals that your Bishop is cramped in with little mobility while your opponent has a very active Bishop of the same color. Two possible plans might be to exchange those Bishops, or to bring your Bishop to a more active square. It is these concrete plans, that refer to a specific piece, which will then suggest candidate moves.

During this Step, don't worry about performing detailed analysis of what will happen if you play the candidate moves (there will be plenty of time for that in Step 3). This is the time to be optimistic, imaginative, and speculative, allowing yourself to entertain moves that may turn out to be unplayable. Where, in your wildest dreams, do your pieces want to go? Wolff points out that you can often get inspiration "by asking yourself this question: What move do I wish I could play? Sometimes you may find that the only thing preventing you from making your wish come true is one of your own pieces. And if that's the case, maybe you can do something about it" (Wolff, p. 128). Another useful tour of the imagination is the performance of 'hypothetical exchanges' in which "you imagine an instant trade of a pair of pieces, remove them from the board [in

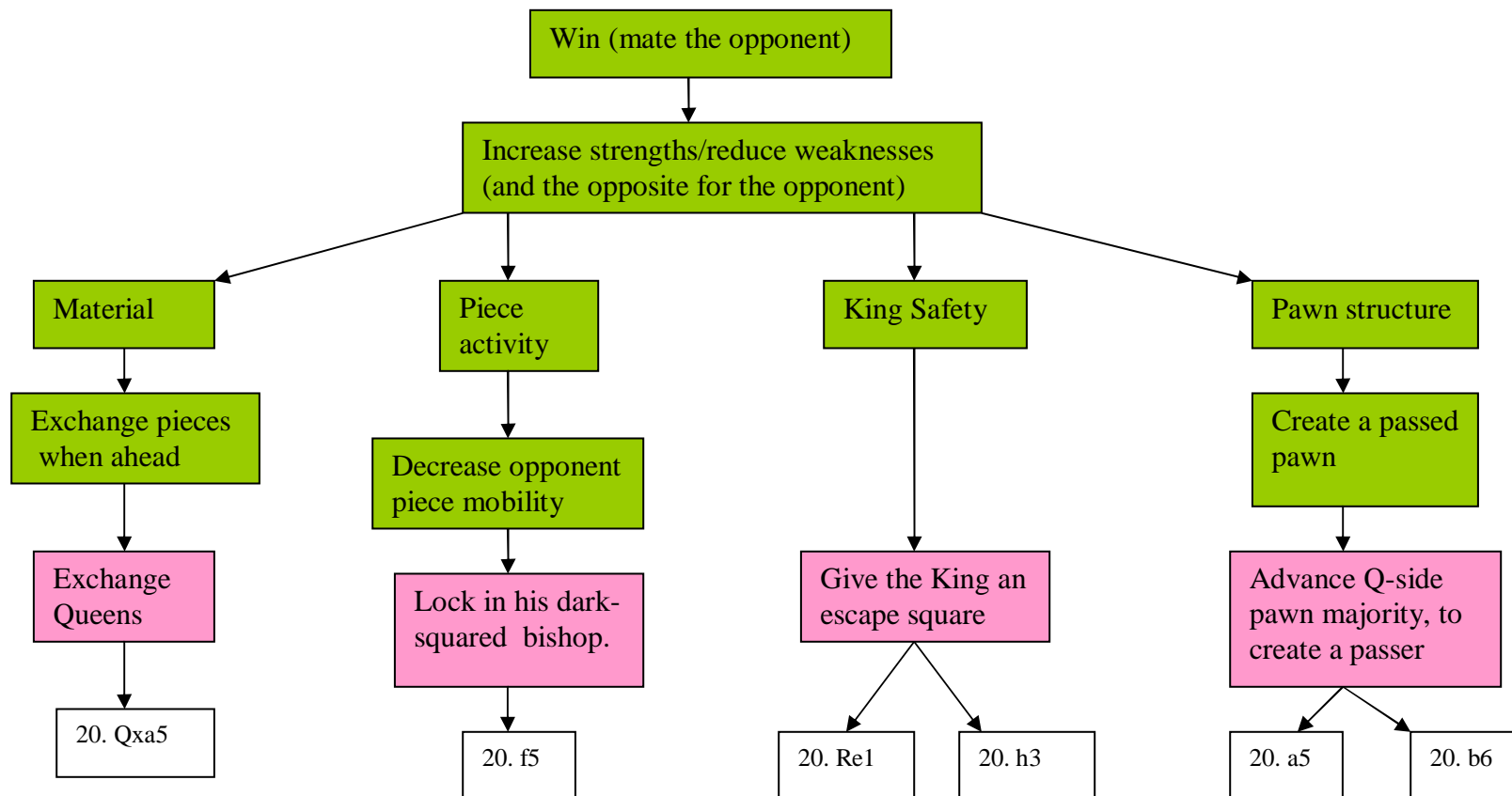


Figure 1: The plan hierarchy and its connection to candidate moves. The upper boxes represent plans that are more general in the hierarchy. The green boxes are those plans which are so general that they don't immediately suggest candidate moves. The pink boxes are the most specific plans in the hierarchy. They refer to specific pieces, squares, or sectors of the board, and therefore naturally suggest candidate moves that can be used to achieve the plans.

your mind], and then reevaluate the game. The exchange may be immediately playable or a distant hope; it makes no difference, because you are searching for *ideas* first" (Buckley, 1999).

Be sure to consider long-term plans that started on previous moves. It is a nice feeling to have a long-term plan come to fruition, and gives a certain aesthetic appeal to your moves. Some players describe this as playing 'consistently' and place a good deal of stock in its importance. However, I think it may be even more important to be flexible and willing to change plans in response to the concrete demands of the position. If a plan starts to implode, don't freak out: you don't have to stick to it, and can change plans as many times as you want during a game.

Also, it is key to avoid focusing exclusively on your own plans. It is easy to get so caught up in putting a Knight on an outpost that you don't realize that your opponent is about to trap your queen! It is crucial to try to figure out what plans your opponent is trying to implement, as your best strategy may be to generate counterplans or defensive maneuvers. It is especially important to figure out your opponent's plan if he plays a move that looks illogical or downright silly. Often such moves are setting up tricky tactics or attacks.

Once you have generated some candidate moves, it is crucial to buckle down and concretely analyze their consequences, which brings us to Step 3.

3) Analyze: *consider the consequences of each candidate move and select the candidate with the best consequences.*

Welcome to the most difficult step in Chessplanner: it involves thinking ahead in the game tree, the most time-consuming and intellectually demanding aspect of the game of chess. It is also an extremely important step: it is what separates lazy and impulsive players from sharp and objective players.

After going through Steps 1 and 2, you will have multiple candidate moves on your plate. In those steps, when nominating moves based on hope for material gains or strategic principles, we were often thinking quickly, abstractly, optimistically, for the long-term, and often based on memory of previous similar positions. *Step 3 is the time to be concrete, accurate, and objective in your thinking.* Here we buckle down to visualize a move's concrete consequences and evaluate the resulting end-node in the game tree using the evaluation criteria in §3. It may *look* like a position you have seen before in which you can win a piece, but there may be subtle differences in the position that give the opponent defensive resources.

It is helpful to treat each candidate move as a hypothesis about the present position, the hypothesis being "This is the best candidate move." Rather than simply look at what you would *like* to happen (you will likely do this naturally anyway), try to find moves that kill that candidate move, that falsify that particular hypothesis. In general, the least bad move is the best move, so even if you find problems with all the moves, pick the move that seems least problematic.

So, in practice, how should we go about analyzing candidate moves? How many moves into the future should we visualize the position? People who don't play chess are often under the mistaken impression that GMs analyze every move a trillion-ply deep before they decide what to play. In fact, GMs are much more efficient than all that, and have a good sense for the types of positions and moves that call for deep analysis. There

is no need to analyze every candidate move so far into the future. The amount of calculation required depends on the type of move being analyzed. Soltis (2005) says:

In many quiet positions you can go ahead and play the candidate virtually without any calculation because there are no significant replies to worry about [Soltis calls these 'low calc moves']. When the pawn structure is fairly static and enemy counterplay is limited, the calculating quotient declines sharply. The basic guideline is: You can afford to overlook most quiet moves because they're quiet. You must examine all forcing moves because they're forcing. In very sharp positions, low-calc options are rare. The price of failing to look two or three moves into the future can be high.

In other words, threatening moves you find in Step 1 (checks, captures, and tactics) demand careful analysis while in quiet positions, it is typically safe to think in terms of general strategic principles (e.g., rooks belong on open files).

For those lines that demand analysis, how many moves should you look ahead? Soltis (2005) advises:

The *minimum number* usually depends on how far into the future one player can continue to make forcing moves. In sharp positions in which your opponent is doing the threatening, you should continue looking until his moves have run out of force. But bear in mind we are talking about a minimum number of moves to look ahead. If you have the clock time to spend, you should analyze the position until you run out of forcing moves--and then look *one move further*.

In other words, analyze until the forcing moves have petered out (this is often called 'thinking the move through to quiescence'), and if you have time, one move past that. It is crucial is to look at your opponent's potential checks, captures, and threats in response to your move. If there is a check, capture, or threat that you cannot meet, then the candidate move doesn't work. Looking ahead in the analysis tree, especially focusing on forcing moves, is something Dan Heisman calls *Real Chess*.

Note this doesn't mean that analysis should be ignored in quiet positions. Blumenfeld (2006) recommends, "In situations that are not sharp, where there cannot be any forced variations, your calculations should be confined to a few short lines which serve to bring out the characteristics of the position." In general, unless there are sharp or forcing lines, your mantra should be 'Breadth not depth.' Most club players, if they spent less time going seven moves deep into an analysis, and more time looking two to three moves deep on multiple lines, would end up with a much higher score.

Which candidate moves should you analyze first? As you might expect, given the disproportionate importance of threats and material, it is most efficient to first analyze the most threatening moves, and then work your way down to quiet moves. Buckley (1999) offers the following useful advice:

By ranking the threats, strongest to weakest, you discover where the critical battle will be fought. For instance, you pass over a hanging pawn in your calculation if there is any *chance* of mate for either side. Only after assuring yourself there is nothing better should you analyze the pawn win. Thus no time is lost. The most dangerous ideas are always checked first, before any minor threat is even considered.

In sum, look at the biggest threats first, then work your way down.

There are a few mistakes to be wary of when analyzing candidate moves. First, it is important to assume your opponent will play good chess. Playing with the hope that she will not see what you are planning is a recipe for amassing losses. Look for worst-case scenarios, consider your opponent's best reply to a candidate move, to reveal weaknesses in your moves (e.g., you might lose a piece). This is often described as striving to be objective in your analysis. You want to try to falsify the hypothesis that move X is best, not optimistically play a move hoping your opponent plays like a crack baby.

Another mistake is to make a move quickly just because you thought it would be a good move when you previously analyzed the position. Heisman (2006) says, "Playing a move quickly just because you calculated it on the previous move is almost always a big mistake." When you previously considered the move, it was only hypothetical, the position was not actually in front of you. We can revise Lasker's famous slogan to read, "If you imagined X was a good move in your previous analysis, look for a better move on the board in front of you."

Also, if you can't decide which of two candidate moves is best, you often don't need to take a lot of time off your clock to find the objectively 'best' move. "Taking a lot of time to find a good move can be, by itself, a blunder," (Soltis, 2005). Soltis (2005) analyzed over 6000 positions from real games and found that in about a third of the positions, there were multiple equally good moves. About a third of the positions had a clear best move. Not surprisingly, these 'best move' positions were typically very tactically rich. Hence, in quiet positions, you can afford to follow Bobby Fischer's advice, "Don't worry about finding the best move. Just try to find a good move." Save that clock time for when the position calls for deep analysis.

Once you have analyzed your candidate moves, and have decided on the one that you want to play, *for God's sake, don't play it yet*. Sit on your hands if you have to, and go on to Step 4.

4) *Blundercheck: Quickly check for one-move disasters.*

Blunderchecking involves quickly checking for flagrant oversights in your move selection. It is an absolutely crucial, but simple, step. Consistently blunderchecking will save you many palm-against-the-head experiences. This Step should not take long: *quickly look for one-move disasters, and then move on.*

First, make sure you haven't missed any obvious captures that you can make. Perhaps his queen is en prise and you got so caught up thinking about pawn structure that you missed it.

Second, imagine you have made the candidate move you selected in Step 3, and that it is your opponent's move. Will any of your pieces be en prise that you didn't notice in Steps 1-3? Will you be mated? If so, you need to select a different move!

5) *Move: Make the best candidate move.*

§ 3: Board evaluation: The four factors

The plan is built up on the basis of *a concrete evaluation of the position* and its peculiarities.
Kasparov et al., 2003, emphasis added

We know that the ultimate goal in chess is to mate the enemy King. In this section I discuss the four factors that, during the middle game, are generally recognized as the most important for evaluating which player is more likely to reach that goal (the factors are adapted from Del Rosario (2004) and Heisman (2003)).¹ These are the evaluation factors to be used in Step 2, the basis for forming plans to improve your position. The factors are:

1. Material
2. Activity
3. King safety
4. Pawn structure

The rest of this section describes each factor. To reinforce the tight link between position evaluation and planning, I give examples of plans associated with each factor.

1. Material

When evaluating a position, almost everyone starts by counting up the material for each side. To do this we need to know much each piece is worth. While there is some debate about piece values, most agree that on average the queen is worth 9 pawns, rooks 5 pawns, bishops and knights 3 pawns, and the king 4 pawns in attacking strength (though obviously the king is infinitely valuable as far as exchanges are concerned). Note that these are *averages*. In an open game, bishops are usually worth more than Knights and vice versa for closed games. Also, material advantages can be localized (e.g., less material overall, but lots piled up kingside poised for an attack).

While the subject of getting a material advantage is the province of tactics (Step 1), the relative amount of material possessed by each player does have associated plans. Perhaps the most important is: If you are significantly ahead in material (especially if there are still pawns on the board), simplify the position by exchanging pieces, especially queens. Conversely, if you are behind in material, avoid exchanges and try to complicate the position so that your opponent is more likely to make mistakes.

2. Activity

Piece activity is the most important strategic factor. There are three main dimensions of a piece activity: mobility, freedom, and coordination.

A piece's *mobility* is the number of squares to which it can move. This is easy to calculate: simply add up the number of squares to which the piece can move (e.g., a

¹ There is some squabbling among authors about what the best list of evaluation factors is. I have selected this list because I find it useful in practice. I am not attached to these factors as somehow being a uniquely wonderful basis set for all evaluations. If someone finds another list more helpful, then they shouldn't hesitate to use it.

bishop cramped in all four directions has a mobility of zero). Importantly, all mobility is not created equal. The most valuable real estate is near your opponent's pieces where you will be able to generate the most threats (typically such squares are on his side of the board). This is why it is so useful to have pieces (especially knights) in the center of the board. Examples of goals: increase the mobility of your cramped bishop. Decrease the mobility of the opponent's bishop by forcing him to lock it in behind his pawns. Exchange a relatively immobile piece for one of his highly mobile pieces.

Mobility is inextricably tied to pawn structure: the pawns determine which bishops are good and bad, which files are good for the rooks, where the outposts are for knights, etc.. Often a simple pawn move will free a piece from its prison or give a knight a sweet outpost in the center of the board.

Note that different pieces can have identical mobility but different ranges. The range of a piece is the distance it can travel on the board. The bishop, queen, and rook are long-range pieces, while the Knight is a short-range piece. In some circumstances, such as when all the pawns are locked together on one side of the board, short-range pieces are often preferred. When the position is wide-open and there are pawns on both sides of the boards, it will be helpful to be able to have a piece that can move long distances across the board, and in such cases Bishops are often preferred.

The second activity subfactor is *freedom*. A piece's freedom is the number of squares to which it can move while still carrying out essential defensive roles. Even if a piece technically has high mobility, its freedom can be drastically curtailed. A pin against the king leaves the pinned piece with no freedom to move from the line of the pin. Such passive pieces are limited in their ability to carry out other useful tasks. If you need to defend material, consider using a minor piece or pawn (or King in the endgame) so that your major pieces will have the freedom to carry out other plans. Other potential plans include: break the pin against your knight. Decrease his Knight's freedom by forcing it to defend a pawn.

The third subfactor, *coordination*, is the most subtle dimension of piece activity. Pieces are coordinated when they work toward a common goal. For example, one piece may put pressure on an escape square of the opponent's king while another piece is poised to put the king in check. If your pieces have high freedom and mobility, but are not working in concert for an attack, then consider how you can increase their coordination. Goal examples: hammer at the c-file by forming a rook battery; coordinate an attack against the f7 square to build up pressure against the opponent's King. In general, *if your pieces are mobile and free, then consider starting an attack against the enemy King, or contemplate how to coordinate your pieces so that they will be able to attack the King.*

If there is a piece that is especially low in activity, increasing its activity should become a priority. You don't want it pathetically watching from the sidelines when an attack starts. It wants to be in on the action! When evaluating a piece's activity it is often helpful to consider where it 'wants' to be on the board (e.g., a Rook wants to be on an open file). Often it would only take a move or two to get a piece to its most natural square, and often the trajectory involves making threats along the way.

C. King Safety

Is the king safe? Is the time right to launch an attack against the enemy King (or

vice versa)? Have you castled? Is his pawn barrier intact? Does he have escape squares if there are impending threats? Examples of plans: Castle. Preserve the integrity of the king's pawn protectors. Remove the enemy king's escape squares. Clear the lines toward the enemy king to allow your pieces to rush in for an attack. Keep the lines between your King and the enemy pieces closed.

D. Pawn structure

Who has the healthiest pawn structure? Are there isolated, backwards, doubled, or passed pawns, and are they good or bad? Who has more space (i.e., whose pawns are more advanced)? Where are the weak squares and potential outposts, and can they be exploited? Examples of goals: Attack his backward d pawn. Exchange knights, forcing doubled pawns. Move a rook to the half-open file where the opponent has isolated doubled pawns. If you have an isolated pawn, avoid exchanges as it will become weaker as material disappears from the board (isolated pawns tend to be weakest in the endgame).

Some may argue that all of the strengths and weaknesses of pawn structure are ultimately strengths and weaknesses of material, piece activity, and King safety. Every pawn move is a commitment to create a long-term pawn-skeleton infrastructure, an infrastructure that establishes the highways and dead ends in the position for a long time to come. But this is just a dimension of piece activity. Also, as pawns advance, they threaten promotion and drastically limit the freedom of the opponents' pieces. But pawn promotion is merely a material consideration and restricting freedom an activity consideration. Also, since pawns can only move forward, never back, one must be especially careful of moving pawns in front of the castled King, as it creates permanent weaknesses around the King. But this is just an aspect of King safety. While it is true that pawn structure evaluation is usually derivable from the other evaluation factors, most players find it helpful to give pawn structure special consideration because of the relatively permanent changes it will create in the position. It is really a matter of taste.

§ 4: Loose Ends and Final Points

There are a few topics that didn't fit naturally in the above sections that I should briefly mention. For instance, what should you do while it is your opponent's turn to move? It depends on the position. If the position is extremely sharp, and there are only a few reasonable moves your opponent can make, then start thinking about how you will respond. If the position is quiet, that would be a waste of intellectual energy, so you can evaluate more positional features of the board and come up with some plans. In other words, apply Chessplanner. On the other hand, sometimes you just need to relax and step away from the board for a minute to clear your head and come back to the board with fresh eyes.

Also, what about time management? How much time should you take on each move? Won't applying Chessplanner will chew too much time off the clock? Indeed, it does take up a good deal of time and is probably not possible to use in blitz games. However, there are a few reasons not to fret too much about time. First, note I haven't advocated spending a ton of time on every move—recall from §3 that the only positions which demand time-consuming thought are the sharp positions.

Second, while applying Chessplanner is initially quite intellectually demanding, it becomes easier and faster with experience, just like your ability to multiply two numbers. It becomes somewhat unconscious, automatic, and effortless with extended practice.

Third, board evaluations have a good deal of inertia during a real game; there is a big difference between evaluating a novel board position and evaluating the board on move 30 of a game you have been playing with good evaluation the whole time. Typically, features such as pawn structure have changed very little. You do need to be careful, of course: that helpful evaluation inertia can lead to blunders, such as when your opponent unleashes a discovered attack that wasn't present in previous positions.

One thing I should stress: if you don't apply (at least unconsciously) a thought process on every step, you will simply play worse. Heisman (1999) rightly points out, "In order to be a good player, you have to at least try to play correctly on every move, not just most of them. Consistency is important: remember that your chain of moves, in many cases, is only as strong as the weakest link.

There is a lot written elsewhere about practical aspects of time management (see, for instance, Heisman (2001b)), so I recommend reading that and the many other articles Heisman has written on the topic. Briefly, the most important thing is to use all the time on your clock. Doing anything else short-changes all the hard work you put into the game when you aren't playing. It is a recipe for sloppy chess. Resist the urge to move quickly after making a blunder (to make it seem you meant to give up your rook), and also after going up material (you may get over-excited and make a blunder of your own). In other words, use your thought process on every move. For practical advice on how to avoid taking too much time on moves, see the cited Heisman article.

I'll end by mentioning two potential limitations of this process. First, Chessplanner will not work for everyone. Decision-making in chess is as idiosyncratic as decision-making in real life: people muck about, doing the best they can, using what has worked for them in the past to help them decide what to do in the future. While Chessplanner seeks to make explicit what the masters say they do in real games, if it sucks the fun out of the game, if someone already uses a different decision procedure that works for them, or if they are past the stage of needing a thought process, then they shouldn't use Chessplanner.

Second, Chessplanner may seem almost trivial to some chess players. Seasoned club players might say, "*Of course* plans spring from an evaluation of the board. *Of course* you need to start by looking at threats. Etc.." This would be a welcome criticism. I gratefully acknowledge that the best ideas here are taken from master-level player/instructors whose writings are geared toward the novice. If anything is unique in Chessplanner, it is that it integrates information that is spread out over works written from multiple perspectives using different vocabularies. Having all this information together has been very helpful for me, and I hope it is helpful for others.

Chessplanner weaves the helpful practical suggestions that pepper the chess improvement literature into a thought process that is simple and flexible enough to grow with your skills. I welcome all comments and criticisms.

§ 5: References

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