COLUMNISTS

Novice Nook

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A Generic Thought Process

Dan's Quote of the Month: *"You get better (and your rating eventually goes up) when you learn something new or when you identify a mistaken idea and no longer repeat it - not when you win a bunch of games."*

I am often asked, "What is a good thought process to find your move during a chess game?"

The best answer is, "While a chess program depends on a specific algorithm, there is no single, fixed, correct thought process for a human." A human might have several different thought processes, depending on the situation, and which varies with considerations such as:

1. What is the time control and how much time do I have left on my clock?
2. What part of the game am I in? For example, am I in a part of the game where it is more memory than analysis? Have I been in this exact position before, such as the first move of the game?
3. What is the game situation? If I am losing terribly or if I absolutely have to win this game and a draw is no good, these will affect the thought process quite a bit.
4. Do I normally play the person or the board? I (Dan) almost always play the board, but some people play the person more than the board. For example, if those who "play the person" think their opponent does not like complications, they will give additional "weight" to moves that create complications.
5. How do I feel? Am I "up" for lots of calculations, or do I feel like playing more by judgment this game?

I am sure you can think of a few more items that might affect an ideal thought process.

So if there is no generic thought process, what now? Does that mean we should throw up our hands and forget the whole thing?

I see two solutions that might be of use: 1) I can pick a specific position (and overall tournament situation) and you can follow my thought process; or 2) I can make some assumptions and then show a generic thought process.

Both of these approaches are likely to be very helpful and maybe a future *Novice Nook* will try the one I didn't choose, but I feel that the more helpful and original is the second. Therefore, I will make the following assumptions and, with the help of a couple of prior Novice Nook references, show *roughly* how *I might think* in a generic situation when it is my move:

1. The time control is slow and neither my opponent nor I am in time trouble.
2. I am playing White and after my previous move have a slight advantage.
3. I am trying for the best result I can, but don't necessarily have to risk everything just to win.
4. I am in some generic middlegame position with most of the pieces on the board and the material is even.
5. I may have been in similar positions but nothing so similar that I am just using that similarity as a basis and playing from memory (as is possible with many positions if you are an experienced, strong player).
6. My opponent is roughly as good as I am.

Here we go: My opponent makes a move and starts my clock running:

1. I write down my opponent's move on my scoresheet. Staring at it before doing so is not going to be productive. I might also record how much time my opponent has on his clock.
2. I ask myself, "Is that move legal?" If not, then there is a certain algorithm I must use which is beyond the scope of this article. If legal, then I continue…
3. I ask myself "Am I in check?" If so, that really limits my thought process, but it will be more interesting if I assume not, so if not…
4. I ask myself, "Can I mate him with any forced sequence of checks?" If so, then I really don't care much what he now threatens, but in this roughly equal middlegame with a slight

advantage the answer is going to be no, so…

5. I look at my opponent's move and ask, "What does that move do?", "How does it change the position?", "What can he do now that he could not do before?", "What can he no longer do that he could have done before?", and "How did his move meet the threats I made last move?" In a sense these are all part of the single question as to *how my opponent's move has changed the situation*.

Now comes the first of the more elaborate mental actions. I need to know what all my opponent's threats are. (A *threat* is a move that allows one to do something constructive *next move* if not stopped). Note that threats that he had *which were already on the board on the previous move* should either have been addressed by my previous reply or "passed along" to this move, so in the latter case I must not forget them!

The way to determine what my opponent's (new) threats are is to (mentally) assume I just *pass* – make no move at all! I say to myself, "Suppose it was his turn again – what would he do?" I am most interested in his further checks, captures, and threats *for his next move* after the assumed pass. If the moves that this process generates are constructive for him, then those are his threats.

There are three main things one can do against a threat:

1. Ignore it;
2. Create a bigger counter-threat (a "counterattack"); or
3. Stop it.

When would I ignore a threat? Well, suppose I was up a queen and my opponent "threatens" to win a pawn. Instead of making the pawn safe I might continue my development, knowing that my greatly superior forces will win easily and that saving the pawn is not as important as getting all my pieces into play quickly.

I teach beginners and anyone who is not highly rated and has a large advantage not to counterattack. Beginners who are winning easily should refrain from that method of dealing with threats because, after counterattacking, they are often faced with two threats (if their counterattack is met by a second threat). So the possibility of additional threats after a counterattack just complicates matters, and when you are winning easily you are more likely to be the one to be

harmed by complexity (you have more to lose – see last month's *Novice Nook*). Counterattacks are a legitimate way to meet a threat, and all *zwischenzugs* (in-between moves) pretty much fall into this category. Stronger players not only do counterattack, but often find this a most effective method; it is just they rarely make misjudgments, and so can afford the extra luxury of this possibility. So I do look for counterattacks.

I also need to determine how his move has met *my* previous threats and also how it created new opportunities for him that are not direct threats, such as indications of some plan or maneuver of which I must be aware.

Once I have determined all of my opponent's threats and other alterations to the position, then it is time to select candidate moves. These are all the moves that, at least initially, I consider reasonable and will have to investigate to see which I should play. But before I explain that part of the process I should note three considerations that will help me.

1) Suppose an opponent's threat is so serious that I simply cannot allow it except under extreme circumstances. Then it becomes a "killer move." That means that any candidate move (for my upcoming move) that allows his threat to be executed is likely bad and has to be dismissed. This is powerful logic that often saves one a great deal of time and effort since you should identify his threats before you get too far into your candidate-move selection process.

2) This is the point where my static evaluation of the current position should be utilized. It was stated in the assumptions that I am a little better, but in practice I have to determine this by doing a static evaluation of the position after his move: I count the material (even), and evaluate and weight all the positional considerations: king safety, pawn structure, piece activity, potential endgame plusses, etc. This is not an easy skill to develop – more difficult than learning how to analyze a position for tactical possibilities. One reason it is difficult is that the weighting changes in each position; in one position the king safety might easily outweigh all the other factors combined while in another the only thing that might really count is the army's piece activity. Of course, if you are playing a slow game you often have the ongoing static evaluation in mind as you play and do not have to do it consciously during every move, but the knowledge should still be there.

3) It is very helpful to use one of the consequences of Steinitz' Rules. I wrote about this in an archived **ChessCafe.com** column by that title, but to summarize: one can't get better by making a move – one is only as good as one's best move. Therefore, in theory, one's static evaluation "sets the bar" for your dynamic evaluation – you are trying to find a move that leaves you at least as good (theoretically exactly as good) as your static evaluation.

What does all this mean? It means that if you feel your position is a little better, then you should be able to find a best move that leaves you a little better, no more, no less. So if you are sure that your position is better you should not settle on playing a candidate move that you evaluate as resulting in an even position. And if you find a move that "wins", that means either your static evaluation is wrong ("I didn't know I had that move – my position is much better than I thought!) or the move does not really win. Of course, humans are fallible, so when in doubt, trust your dynamic evaluation (the one you got by looking at candidate move possibilities) over your static evaluation unless you feel you are a *much* better evaluator than analyzer.

So with these three considerations in mind, at this point I am not only ready to look for candidate moves, but I also know approximately how good my position needs to be after such a move: "the bar (goal) has been set". How much time did all this pre-candidate move thinking take since my opponent made his move? The length of time varies according to how complex the position was after that move and the time limit (you have to shortcut the process when you have less time), but anywhere from a couple of seconds to a couple of minutes. Obviously experience helps greatly: a master can determine whether an opponent's move is truly innocuous much more quickly than a beginner. So why does a beginner play so much faster than a master when it should be just the opposite? Because a beginner does not realize how much he has to lose if he makes even one serious mistake in this process and thus usually proceeds much too carelessly.

Which moves should I choose to analyze? Well, Alekhine said that it is better to find a plan and to find the best move that meets that plan than it is to just look for the best move. However, in practice this is sometimes difficult. So I at least look for all moves that achieve something positive (I have seen one GM call these mini-plans "schemes"!), such as those that:

1. meet my opponent's threats (as discussed above);
2. carry out my threats if unstopped, such as winning material or checkmating (not likely if I am only slightly ahead);
3. create new threats, but only if in doing so they either:
   (A) Cannot be met; or
   (B) Otherwise improve my position when being met. *It is bad to make a threat that, when met, leaves you with a worse position than before!* This is a very common beginner mistake.
4. improves (increases the activity of) my pieces; and/or
5. achieves a positional goal, such as weakening my opponent's pawn structure or trading an isolated or doubled pawn for an opponent's pawn.

So now I try to create a list of all such moves that are worth investigating. As stated above, any moves that do not address an opponent's killer moves will likely have to be discarded.

Suppose I have a choice of several reasonable moves – what then? For each I have to analyze *all* my opponent's dangerous responses, such as his most forcing moves: checks, captures, and threats, usually in that order.

As was discussed in detail in previous columns (The Secret of Real Chess; Putting It All Together), this key aspect of the thought process means that for most positions I need to find a Principal Variation of at least 3 ply (half-moves) that will get me safely to the next move. Otherwise, I am playing "Hope" chess and my opponent may reply to my move with an unanticipated move which makes a threat I cannot meet, and then the game will likely be lost.

For each candidate move I begin by looking at my opponent's likely (and most dangerous) replies. For each, I anticipate what I might do in return and how effective my reply might be. Of course, I never assume my opponent is going to make a mistake – doing so would be a bad error on my part and leads to very poor play.

So for each of my candidate moves I have to "put myself in my opponent's shoes" and figure out what I would do if I were him. Once I determine what his best move is, I have to try and find a reply that at least maintains the expected evaluation. In this case, since I have a slight advantage, I am at least looking for a sequence "my move – his move – my move (or more, if forced or necessary)" (MHM) which

retains that slight advantage. If I find a sequence MHM that dissipates my advantage it is likely not my best line. If I find a sequence MHM that does retain that slight advantage, then it remains as a likely candidate move.

How do I know how good a move is? Well, I assume best play and then, after I look at all forcing sequences, (using deductive logic to determine what is forced and what is not), I eventually reach a position of quiescence (no more checks, captures, or threats – see my recent Novice Nook on *Analysis and Evaluation*). At that point I use the same techniques I mentioned earlier to evaluate the potential position and figure out *who is better, by how much, and why*. But all I really need for comparison with the other moves is the "Who and by how much."

Suppose I find a move that I like? Do I play it?

No! - Unless I am in severe time trouble, which I am not in this situation.

If you see a good move, look for a better one!!

Your goal is to find the best move, not just any acceptable one. How can you do that unless you consider all the reasonable moves?

I liken this process to a programmer taking Programming 101 who is asked to find the biggest number out of 10 numbers. He compares the first two numbers and calls the bigger of the two "*biggest so far*". He then compares "*biggest so far*" with the third number. If the third number is bigger, it becomes *biggest so far*; otherwise *biggest so far* does not change. This continues until, at the end of the comparison with the 10th number, he sets *biggest so far* to "*biggest of all*" and that is the answer.

So if you find a good move, it becomes "*biggest so far*" and you stick it in your pocket. If you find a better move, take the one you were going to play out of your pocket and put the better move in there instead as *best so far*. Continue this until you are sure that no other move can be better (consider at least all checks, captures, and threats for both sides!) and then you are almost ready to move.

So finally I have a move which I think is the best. Do I play it now?

No.

Time for one last “sanity check.”

I can write my move down on my scoresheet, take a deep breath (or close my eyes), and try to take a fresh look at the board, imagining my planned move. I ask myself, “Is that move just crazy? Have I overlooked some obvious thing, like the piece I am moving is not safe, or possibly any other piece on either side not being safe?” If there is such an oversight, I can resume my process, erasing or crossing out my move if necessary. If everything is OK, *then I can make my move and immediately hit the clock*.

It is silly to “hold my hand on my piece” or hesitate before hitting the clock. Because of the touch-move rule, any hesitation before hitting the clock is purely wasted time and also tells my opponent that I think something may be wrong. Either is not good for me, so I hit the clock with alacrity every time. I put on a poker face no matter what.

This reminds me to tell the reader that the above process is only hindered and never aided if you worry about what happened earlier in the game. That is just a distraction. Worry after the game. During the game give your best effort every move; you might as well just resign if you are losing and don’t want to try any more. In his interesting book *The Seven Deadly Chess Sins* GM Rowson credits Australian player Bill Jordan with *The Theory of Infinite Resistance*, which is basically what I said above and more: Make things hard on your opponent, even if he is winning – you can never tell what might happen. Of course, if the position starts to get out of hand, maybe it is time to resign and not waste any more of your time – or your opponent’s. Play another game or get some rest before the next round (if in a tournament). No one respects a player who constantly plays each game to mate against strong opponents.

As far as the overall thinking process is concerned, do I follow this process *consciously* every move? No, because the *process* is not usually conscious, and also because the situation varies and I have to adapt as I have learned over the years (experience!). For example, in an easily won endgame, it might be as simple as “Oh, I can sacrifice my queen for his last piece, a rook, and then win the resulting endgame with knight and pawns versus just pawns easily – I will do that.” And no, because some of the process is so ingrained, like walking, that it is more subconscious.

How much time should the entire move process take? Well, in a slow time control of 40/2 you have three minutes for each move, but some moves are either “book” or forced, so you really have more time per move for the remainder. You need to take as much time as you can on each move, but sometimes the clock leaves you with no choice: you have to shortcut the process and hope for the best. That is *not* my definition of “Hope chess”, but then again that was another article…!

Discouraged because you don’t use the above process? Don’t be! Because the above is very generic and many good players do not follow any structured process on a regular basis; some players play more intuitively than others. Also, it is extremely likely that no one ever taught you how to think about making a chess move, so you, like everyone else, started haphazardly and improved by trial and error. However,

1. identifying those aspects of the above process *that might help you if you did apply them*, and then
2. practicing using these aspects until you can use them without conscious effort

…may reap big benefits. Doing so is not always easy because at first, like anything else, altering your thought process may seem like it is more of a pain than a gain. But sometimes even a small adjustment in your thinking process is worth more than learning 100 new opening lines! Finally, the length of this process also shows why playing slow games helps improve your chess much more than quick games do – you get to learn how to play positions, and can apply this knowledge for future use in similar positions; this improvement is not possible in blitz games where you never have the time to analyze correctly and learn how different positions should be played.

Reader Question #1 *I no longer make blunders due to chess "blindness". It seems to me that what is hurting me is playing a move that I have not properly analyzed (no Principle Variation). I was inquiring to see if you can suggest a method of training that would address this.*

Answer This is not a trivially answered question! Before we can find a method of training, we have to ascertain the main causes of your

problem. What are the reasons for a lack of proper PV? The main ones seem to be:

1. Not using a consistent thinking process;
2. Being discouraged with a main line of analysis and deciding to play something else "by default" with serious analysis - always dangerous!;
3. Managing time poorly: too fast, or so slow that time trouble forces you to play too fast later;
4. Not being aware of tactical patterns so that dangerous opponent ideas are overlooked;
5. Positions not calling for it: opening moves, some positions requiring "technique", only one plausible move, etc. In many of these cases not having a proper PV is OK! You just have to be experienced enough to know that is OK, which I think in most cases you are; and/or
6. Being too obsessed with your own ideas and not sufficiently respectful of the opponent's. This is discussed under “Egoism” in Rowson's *The Seven Deadly Chess Sins* book (an advanced, but very interesting book).

Do any of these seem to fit? Once identified, we can discuss ways to combat them…

Reader Question #2 *I have a problem with my chess play I would like to resolve: sometime during the game of chess I go through the following process when trying to search for a move:*

a. Determine opponent's threats

b. Determine my options

c. Arrive at some candidate moves based on (a) and (b)

d. Evaluate the results of each of the moves from (c)

e. Ignore stages (a)-(d) and make a totally unrelated move

Case in point: one of my recent games (I was Black) started:

1.d4 Nf6 2.e3 e6 3.Bd3 c5 4.c3 Nc6 5.f4 b6 6.Nd2 Bb7 7.Ngf3 Be7 8.O-O d6 9.Qc2 Rc8 10.Ne4

a. At this point, I determined my opponent has a hidden threat against h7 (after Nxf6+)

b. So, I need to close the d3-h7 diagonal or to move the h-pawn out of harm's way

c. Candidate moves: 10...h6 or 10...Nxe4 11.Bxe4 f5

d. I carefuly evaluated the positions resulting from those moves (investing quite a lot of time, by the way) and

then ....

e. I thought "oh, why bother with all that, lets make a solid developing move - let's castle first..."

And then of course followed 10...0-0 11.Nxf6+ Bxf6 12.Bxh7+ and White probably already winning

How do I suggest I deal with this problem?

Answer Your list of five is much shorter than what I go thru in a slow game - it depends on your time limit, of course (see the column above).

Sometimes we do moves by process of elimination, but that is very dangerous. The idea is you don't like candidate moves a-d so choose e in hopes that it is better, but it is often disastrous. Good players rarely do this and being aware of the problem is the first step toward mitigating it.

In your specific case (I would castle earlier and play for ...e5 but that is irrelevant to your question, although castling late is a common beginner problem) you need two primary things:

1) A "sanity check" such as I advocated in this month’s column: write your move down first (in this case O-O) and then take a deep breath or close eyes and then say, "Is that move just crazy?" - make sure your intended PV (principal variation) is completely safe. In this case

10…0-0 11.Nxf6 removes the guard, so the answer is no and you cross out 10…0-0.

2) But even before that your first step tells you "Hey, He has a threat! - Only candidate moves that meet 11.Nxf6 and 12.Bxh7 can likely be played unless I want to keep my king in the center and just gambit the h-pawn to open the file for my rook. They are 10...h6, 10 ...h5, 10...Nxe4, 10...g6, and 10…cxd4. Moves which trap his bishop are possible, but 10...Kd7 11.Nxf6+ Bxf6 12.Bxh7 g6 is risky due to either 13.Ng5 or 13.Bxg6, and after 10…Kd7 he can just laugh at my wandering king anyway." From then on, you must keep in mind that any move which does not meet these criteria *are not candidate moves*. Since 10…0-0 is not on the list, every time you consider a non-candidate move, you must say to yourself, "Why did I originally rule out moves like 10…0-0? Oh, Yes!! His threat is 11.Nxf6 Bxf6 12.Bxh7 and 10…0-0 only makes it worse." *If you forget why, that is no reason to play the move, but a good reason to try and remember why it is not a candidate move* - the answer will usually be a strong one."

Nothing is an absolute cure for a problem like this, but hopefully these two suggestions should go a long way to minimizing this problem.

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