FÉDÉRATION BELGE
BELGISCHE FEDERATIE

Go games analysis

Practical guide for club players, for self-training or teaching

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A. Why analyze Go games ?

Identifying better ways of playing is an important part of the pleasure of Go and also key for improvement. Without any analysis, players would only keep on playing the same mistakes ever and ever.
So, it may be a very superficial or an in-depth analysis, whenever you play a game, it is recommended to always spend a little bit of time to analyze a bit to grasp a few improvement ideas.

Aside from analyzing **games we play ourselves**, of course we can also review the **game of another player** (for example from a weaker player, for teaching purpose...) or review / study a review of an **exemplary game** (historical, professional or computer played...).
Watching other players styles is often inspiring and, as we also learn by imitation, even memorizing by heart sequences played might prove helpful.

Still, analysing properly requires a bit of experience to avoid getting lost in labyrinths of variations… So, to help players, this guide describes first several tips for analysis **technique** which are ordered in 3 parts : 1) position evaluation, 2) variations calculation and 3) selection of "key moments"
The second part is about how to interprete the moves played in terms of **patterns** and **plans** to **successfully gather interesting ideas** from it, whenever these games are played by yourself or from other players.

B. Technical analysis

I. Position evaluation

To be able to decide which kind of play is preferable, assessing correctly the value, weaknesses and strength of Go game positions is of course fundamental.
The main difficulty is mostly that in Go, positions are often very complicated to assess, and even when matters may look clear at first glance the flow of the game may change radically in just a few moves.

Thus how to assess the value of Go positions ?
We need some tools to evaluate - and arguably the more tangible our measurements are, the better would be our evaluation.

a. Points estimation

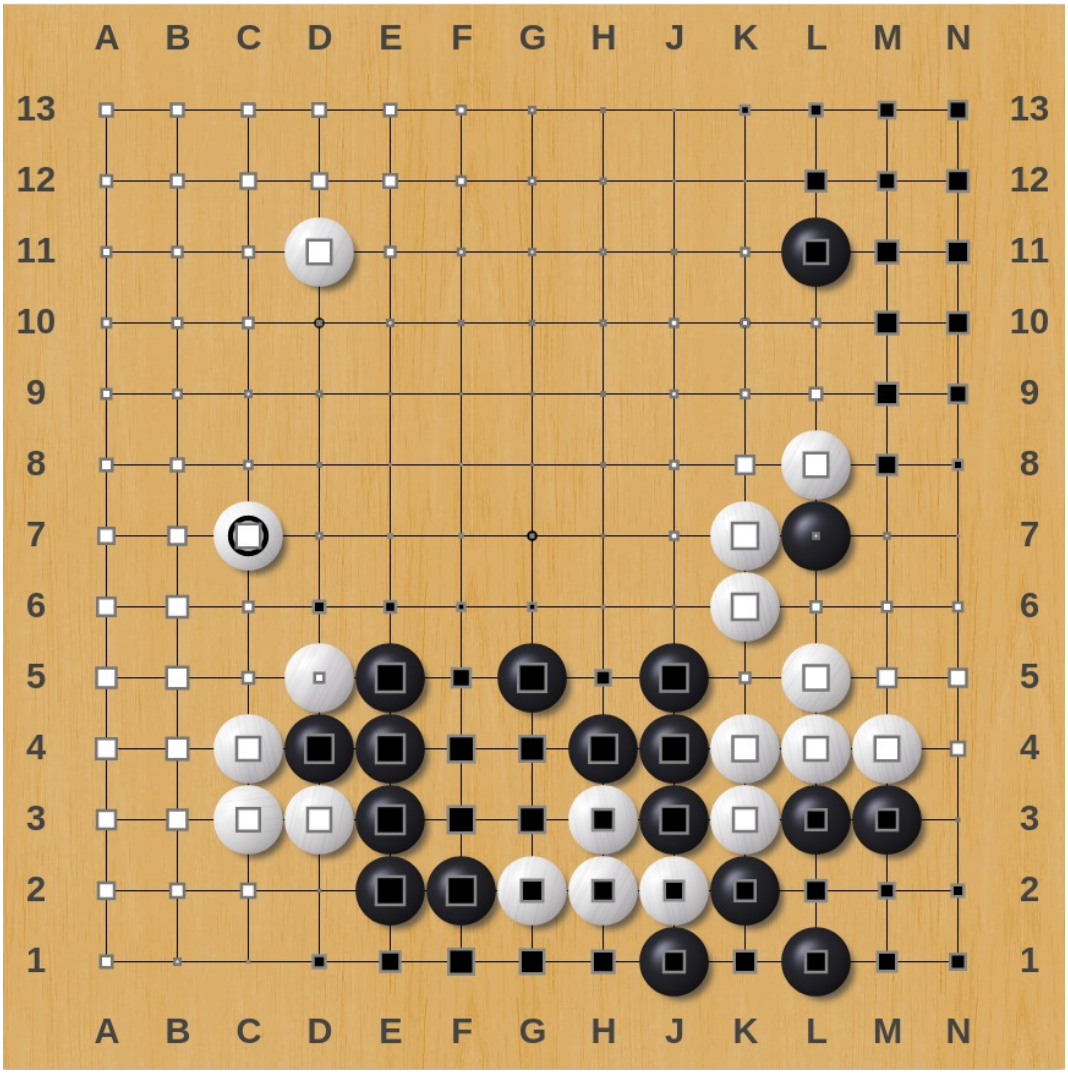
The main parameter and the most important to evaluate a position is of course the **points**.

There are many elaborated techniques to estimate the number of points each side is worth. In practice, the usual technique is to count the **points each player already “has” (sure points)** and **“should have" (expected points)** with good play of both sides (if we close the

frontiers...). Pay attention not to forget to count the captured stones, the Komi and take into account who has the initiative (important !)…

Example from Online Go Server “points evaluation” tool:

In this position below Black should be able to get the bottom center (considering white stones are dead there) and right corner which are worth at least 20 points.
White doesn’t have many « sure » points but has more potential on the top side of the board.
The evaluation also depends on tactics. Below for example White could play at M2 or N2 or a nasty cut threat such as H1. Also in Go, because players can ignore local play or be caught by Ko threats, many “territories” might be more undecided than they look at first glance.



Of course estimating endgame points is much easier to do than earlier. Thus, a good tip to ease the analysis of a game is to start from the end - where we have a clear situation with a win/loss - and go backwards.

b. Evaluating

When expected points can't be counted precisely, **estimation** can be done according to several tangible parameters: safety of the stones (alive, dead, seki, unclear...), number of liberties left, solidity of the connections, weaknesses, influence, complexity… - everything can be taken into account but the more concrete our criteria are the better it should be.

Estimation is then about **observing** and comparing different situations.
When concrete estimation based on points or tangible parameters is unclear, it's also about "feeling" or "experience": balancing pros and cons, if an influence is strong or not, or evaluating possible continuations...

II. Calculating variations

Of course, between each "position", there are "moves" played by Black and White. And the purpose of a game analysis is also to try other moves than the ones played during the game.

a. Tewari

Experience teaches us that the best move to play is very often played later in a game. So to find better moves, a powerful tip is to simply check the 2nd , 3rd or a later move played during the sequence we analyze. This powerful micro-technique of analysis which consists of trying some variation, then a different order of moves and comparing the resulting positions is called **tewari**,.
Technically, with tewari the assessment of each position is not "absolute" (as in the previous paragraph), but "relative" to another position we get as a result from another sequence. Thanks to this relative comparison the classification of each move should be easier to do than a global assessment.
Of course, the outcome of a variation can lead to a change in the assessment of a position, and vice-versa the evaluation of positions have to be taken into account when we are examining moves…

If after testing several variations, you can't find better moves, it may be that the problem has a root cause earlier in the game. Then look back on the moves that led you there...

b. Local play and global temperature

If every game could be divided into ordered parts and "sequences of moves", we would have somehow an easy task. Unfortunately sequences are often interrupted and imbricated with other moves.
We tend naturally to get caught up in the tactics of a local area and search for the best move only where the last moves have been played.
But it is the **global temperature** that matters, which means that the best move to play next is often elsewhere ("tenuki"). An explanation is that the urgency to play in some area often decreases as more moves are played, for example, no need to continue an attack sequence when the targeted stones are either alive or captured....

So, the board has to be seen in its entirety. An idea that might look better at first sight may lead to worse results in the bigger picture - for example because it just loses the initiative in a critical situation (Gote…).

III. Selecting key moments

Because Go complexity is abysmal, trying to assess every position and every move of a game can only be unproductive. Be pragmatic : no need to check thousands of variations, searching in vain certainty in unclear postions when play depends more on “style” than calculation.
So when analyzing, you need to spend your time on chosen **key moments** of the game.

Among key moments, because of their huge impact on the game outcome it’s often the **big mistakes** that are interesting to highlight.
Beginners make many mistakes, but stronger players always strive for the best and their worst moves tend to be only slight inaccuracies. So, somehow the worst moves define the level of play and improving is to a large extend about learning to play fewer mistakes.
By definition, mistakes can be identified **when the balance of the game seems to change sensibly** - or if you are using a computer it would be when the win percentage estimation shows high unbalance.

Aside from mistakes, key moments might be selected simply from a human point of view because they look **interesting** for whatever reason. For example : a move that highlights the plan of the player(s) or some subtle looking pattern has been played…

C. Interpreting

The previous part of this guide did cover Go analysis from a hypothetical « pure » technical point of view.
But of course, tactical sequences of moves and position evaluation can’t be separated from plans and ideas that have motivated them.
After seeing many positions and variations, we always integrate a bit of what we have seen as "experience" or "feelings". It may be some new ideas about shapes, stones connection or practical strategies… anything might be good.

I. Why ?

Calculations are always helpful to train you on how to handle stones. But in reality, when analyzing there is the question **« why ? »** we always ask ourselves.
Analyzing consists in a constant back and forth to do between what we see on the board and how to interprete it. The moves played can give us new ideas which in turn may lead to the need of investigating other variations…

II. Conceptualize

In the end, analysis can bring a lot of confusion in our brains.
For the sake of clarity and order, it's important to translate some of the analysis done into **patterns, principles and plans** – or "tangible concepts" - alike "japanese proverbs" which would enrich our way of thinking Go.

Which means that after each analysis it's good practice to explicitely synthetize some subtle ideas such as "a big corner can be invaded" or "pay attention to moyos"... and ask ourselves some questions about what we have experienced.
The most useful concepts to conceptualize are those that are easy to keep in mind and are useful for us because we have made a lot of mistakes by not applying them. For example, if a game analysis shows that we tend to neglect corners we can improve tremendously if we learn and keep in mind ideas such as « it's easier to make a life base in the corner » or « corner is gold, side is silver and center is grass ».

Especially when reviewing a game of another player, you may often realize that the player had a certain plan you didn't notice at the beginning, making some of your assessments irrelevant or in need of another point of view. In such case, it may be more appropriate to ensure the play is consistent with the plan than to ensure the play is purely optimal according to an AI engine's evaluation function.

III. Experimental methodology

To be able to play we need ideas in which we believe. And because we believe in what we play, we tend naturally to over-evaluate our own playstyle.
A fair and fruitful analysis should therefore be critical towards our own way of playing despite what our ego suggests us.
Because to analyze properly we need for sure some personal interpretation, here the danger is to follow our own ideas blindly to reach wrong conclusions too fast. Then take care to follow a strict **experimental methodology** and rely when possible on technical observations rather than feelings.

So to give an example, many players think of "walls" only as a base for a territory, while on the other hand other players disregard walls influence…
Analysis can highlight that the good way of playing is very situational: trying to make a territory nearby a wall is often a sound plan, but in some situations it might be better to wait and attack when the opponent plays nearby or abandon the wall to deal with more important matters…

It's all relative and analysis is precisely not about confirming our own ideas but about assessing in which situation some ideas work well or don't.

The attitude to have is contemplative, it's about looking carefully at the board situation and how the game evolves as the moves are played to check the validity of the strategies of both players. Go is not about having "one plan in mind", but being like a bamboo - very flexible with strategical ideas…

D. Get some help

To develop our own critical mind, it's important to **analyze games ourselves**. This study may be improved using theoretical sources of information: josekipedia, internet sites, books, etc.

But learning alone can be tiring and unlikely to be very enlightening. Therefore, it is essential to also **get the input of stronger players** - humans or computers - to see Go from a very different perspective.
A very instructive way to learn is to combine your own analysis with a review by a stronger player afterwards. The comparison between your way of thinking and analysis by stronger players should be very profitable. In practice, stronger players are not always talented for pedagogy, but hopefully many should be able to provide at least a bit of argumentation and useful tips.
Of course, comments from "weaker" players can be interesting too, to compare ideas - and they also may know some specific topics of the game (joseki, tsumego…) well -. It's not about hierarchy of players but hierarchy of ideas.

E. Reviewing for teaching

Analyzing a game for self-improvement or for other players follow more or less the same logic, except that you may have to select more carefully the key moments to highlight and adapt the variations and commentary for the audience.
Also there are many **pedagogical considerations** to take into account (presentation, vulgarization, interactivity...) to ensure the review is motivating for the audience which are not covered in this guide.

F. Conclusion

Of course, this guide only covers a few of the countless analysis theories and tools that are used to analyse Go and the subject could be developed in much greater depth...

If in the past, the theory of Go was made of many interesting - and often dubious - ideas, modern development of Go - especially thanks to computer technologies - has allowed tremendous improvements in the accuracy of Go positions evaluation.

But Go remains an intruiging creature, with many faces that can only be seen if we look at them from different angles.

Depending on what you try to see, in the end **analysis may provide you an answer or get you even more confused**. In both cases, the fun may come either from the satisfaction of understanding and improving – by getting a solution or by coming closer to it, or by making the game even more intriguing.

Go complexity hopefully is deep enough to be worth a trip.