No Game No Life: Chess Analysis

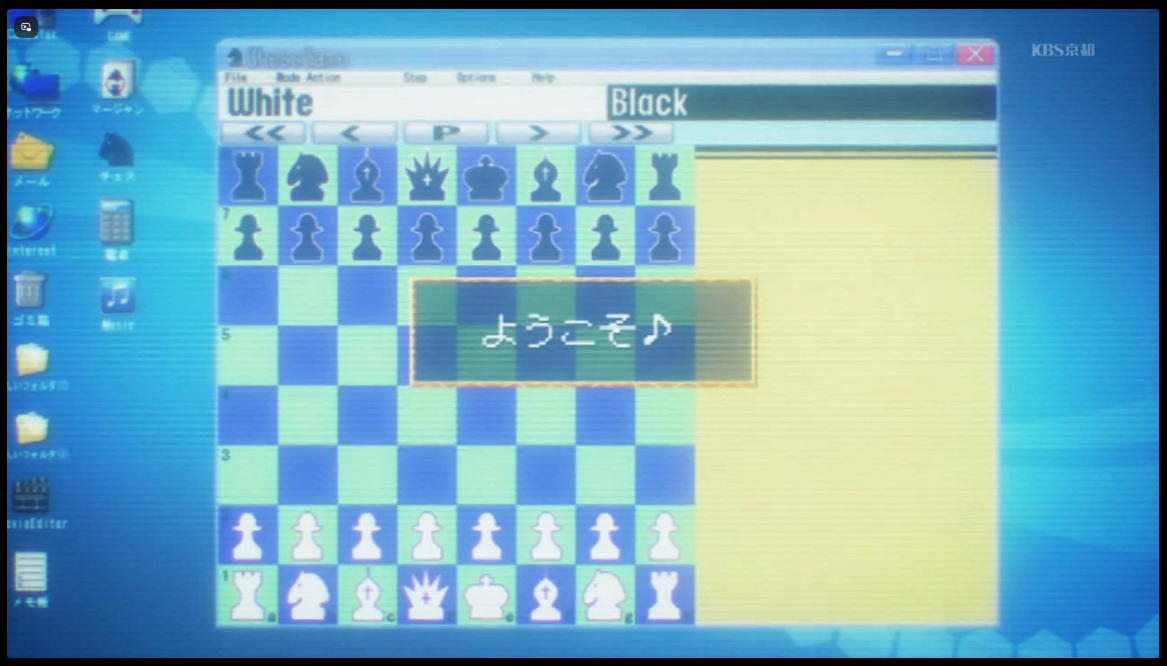
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The scenarists & author of the anime may not be familiar with chess!

As a person who is not very familiar with anime and manga in general, I can safely say that the opinion about what I saw about chess in anime will be honest and unbiased. Considering the previous analysis of such anime as “Code Geass” and then comparing the manga and anime - I realized that sometimes they both differ in some moments they cut and in some they supplement and I am sure this applies in general, about chess separately this is rather one of the examples that you as a viewer will observe. The next anime we will analyse is “No Game No Life”, as Hans Niemann said: “Let chess speak for itself”.

Episode 1. "Beginner"



[6:07] - And here we already see the first blunder of the authors, according to the rules of the chessboard, the square a1, must be black and at the same time Sora says: “This is high-level chess,” no matter how long I stared at the unknown chess program displayed on the screen, to be fair, I still can’t figure out how Sora determined that it was “high-level chess.”

Sora asserts that "chess is a perfectly balanced game for two players, with no room for luck." I share his perspective, but I would add one caveat: the player with the white pieces always moves first, granting them a slight advantage of first to move. However, one might counter this by pointing out that in an ideal game, the outcome often results in a draw, which is also a valid point. In this particular moment, the authors did a good job.

Then Shiro says this: “Chess is no different than tic-tac-toe.” A very controversial take as the narrator says that Shiro is able to calculate up to 10^{120} moves - for me as unknown with the series of this novel, manga and anime as a whole, this statement is simply false. The *Shannon Number (10^{120})* says about the possibility of 3 best moves with the game ending roughly to 40-60 moves and white are winning, for example mathematician G. H. Hardy estimated the possibility of chess games up to *10^(10^(50))* or “in any case a second order exponential” - G.H. Hardy. So what do I mean by that? Simple, when the narrator says that Shiro is able to calculate up to Shannon Number, she’s basically going depth 60 with 3 best moves variability. I don’t frankly understand when people accept that when you calculate up to 10^{120} you basically *solved* chess, that’s ridiculous. Chess complexity (CC) goes far beyond the O(1) and O(n) the Big-O notation and chess hasn't even reached even 1% to be solved. So when it comes to complexity it’s safer to say it exceeds the O(n) notation. So for those who are unfamiliar with math: CC > O(n)

P.S. O(n) is ***infinitely*** larger than 10^{120} - for those who didn’t get it.

Shiro is presented to us as a very strong chess player, so for you to understand how far? Each of her moves must be the best move according to the Stockfish evaluation - **a bare minimum.**

Then the narrator says that Shiro beat the best chess program 20 times in a row, the one which beat the best chess grandmasters.



[7:28] - Here we see PGN (Portable Game Notation), to my surprise, the authors showed a real game between two chess players: (Circled in red is a mistake, instead of f7-c5 it should have been f7-f5 a mistake by animators.)

GM Peter K Wells (UK) vs FM Yoshiharu Habu (Japan)

Essent Open (2005), Hoogeveen NED, rd 2, Oct-24

Semi-Slav Defense: Meran Variation (D47) · 0-1

Yoshiharu Habu is the strongest Shogi & strongest Japanese chess player, so picking one of his chess games was reasonable to me. Majority of anime are produced in Japan so I'm not surprised why they specifically chose a Japanese chess master instead of any other chess master, probably because of the same nationality and easier access to him, since he literally was born and lives in Japan & linguistic understanding, if in case he will sue the company that worked on this anime episode (which I personally doubt this ever happened in any media, not only anime, but it's a very safe decision, can't blame them).

Main board analysis

If anyone are interested in the PGN of the real game authors based off of the game, here the copy paste, you can look and analyse by yourself, but I will analyse only on the moves anime focused on, so I won't flood anymore here:
1.d4 d5 2.c4 c6 3.Nf3 Nf6 4.Nc3 e6 5.e3 Nbd7 6.Bd3 dxc4 7.Bxc4 b5 8.Be2 b4 9.Na4 Bd6 10.e4 Nxe4 11.Qc2 f5 12.Ng5 Nxg5 13.Qxc6 Ne4 14.Qxa8 O-O 15.Qc6 Ndf6 16.f3 Bd7 17.Qa6 Bxa4 18.Qxa4 Bxh2 19.Rxh2 Qxd4 20.fxe4 Nxe4 21.Rh1 Qf2+ 22.Kd1 Rd8+ 23.Kc2 Qxe2+ 24.Kb1 Nc3+ 25.bxc3 bxc3 26.Ba3 Rb8+ 27.Qb3 Qd3+ 28.Kc1 Qd2+ 0-1



[FEN] - Board analyzed by Stockfish 17 NNUE
[Threads: 11/32 | Time search: 8s | Variants: 5/5 | Memory: 16 MB]

[7:12] - Sora says that the chess engine can't make mistakes and finds only the best chess move, so *Ndf6* is a bad move that was made by a human, at the same time Shiro was surprised by this. In other words, Shiro as an incredibly strong player is surprised by a bad move - what a joke. But when Sora says it's a bad move, for example Stockfish 17 (The strongest chess engine) disagrees with Sora, in his defence I can say he wasn't participating just standing nearby and watching so his assumption that this move was bad is reasonable, he wasn't "locked in". Then there's time skip.



[7:45] - Here on the board we see white checkmating black pieces. It's impossible to deduce or somehow make it logical why white wins if in the original game black won. Yes you heard me right, a Japanese FIDE chess master was playing as black, here in this anime episode Sora and Shiro are playing as white, yes in media white pieces are portrayed as "cooler" side, can't argue with this, but it would have been cooler if they won as black because white had one move advantage and even with this white still loses. But the author thought otherwise. And yes, it's ironic that they checkmated the wrong side, it should have been white pieces instead of black, simply because Habu Yoshiharu played as black pieces. Double mistake by author and animators. I won't try to theorize how could white win here, simply because it's impossible.

Conclusion

Here my attempt to analyse the game on the screen from a real game then I will tell you where game of Sora & Shiro abrupts and we skip to the checkmate screen:

Opening:

d4 d5
c4 c6
Nf3 Nf6
Nc3 e6
e3 Nbd7
Bd3 dxc4
Bxc4 b5

Semi-Slav Defense: Meran Variation, Black aims for a solid setup while preparing to counterattack.

The move 7...b5 seeks to expand on the queenside and challenge White's control.

Be2 b4

Na4 Bd6

Wells' knight on a4 is out of play, while Habu develops his pieces actively, placing pressure on the center.

Middle Game:

e4 Nxe4

Qc2 f5

Habu's 11...f5 is a strong counter, attacking the e4 pawn and preparing to open lines for his pieces.

Ng5 Nxg5

After 12...Nxg5, Habu exchanges knights, which helps him maintain central control and opens up lines for his bishops.

Qxc6 Ne4

Habu's knight on e4 is well-placed, attacking the c3 pawn and threatening to create further weaknesses in White's position.

Qxa8 O-O

Habu sacrifices a pawn for active piece play, with threats against White's king and control of key squares.

Qc6 Ndf6 **[Moment where anime episode decides to abrupt the original game.]**

f3 Bd7

Wells tries to solidify his position with 16.f3, but Habu's pieces remain active and ready to attack.

Tactical Sequence

Qa6 Bxa4

Qa4 Bxh2

Habu captures on h2, winning a pawn while also threatening to attack the exposed white king.

Rxh2 Qxd4

With 19...Qxd4, Habu gains material while maintaining threats against White's position.

fxe4 Nxe4

Now Habu has two pieces attacking the f2 pawn, increasing pressure on White's position.

Rh1 Qf2+

This move forces the king into a vulnerable position, as it cannot escape to safety without losing material.

Kd1 Rd8+

Kc2 Qxe2+

Habu wins another pawn and maintains threats against White's king, which is now exposed and in danger.

Kb1 Nc3+

The knight move attacks the king again while also threatening to capture on b1 or d1.

bxc3 bxc3

Habu captures on c3, reinforcing his control over the center and keeping pressure on White's position.

Ba3 Rb8+

Qb3 Qd3+

Kc1 Qd2+

The final moves lead to an inevitable checkmate threat against Wells' king, demonstrating Habu's tactical superiority throughout the game. It's a pity that this great other part of the game wasn't shown because 80% of the anime was just showing an opening book line, Semi-Slav is not a popular opening but very solid when your opponent simply doesn't know this line, at least from my subjective experience.

1. Sora & Shiro (White) chess performance:
   Elo (Before abrupt): 1800(-) | Elo (Final scene): N/A (just checkmate.)
2. NN (Black) chess performance:
   Elo (Before abrupt): 1500 - 1800 | Elo (Final scene): N/A (just checkmate.)

COMMENT: I lowered their elo because I seriously doubt how you can lose as black pieces when in the real game even GM lost as white and couldn't make it to a draw, therefore I with a certainty claim that both made at least 3-5 mistakes that led to a different outcome. Still this is by far the best I've seen so far in the anime adaptations.