

# The Evolution of Professional Chess

Brett Sargent, Kyran Ergin

# Goal

Our goal is to track changes in chess strategies over time, as well as analyze differences in strategies based on elo, win percentage, nationality, and other attributes.

# Questions

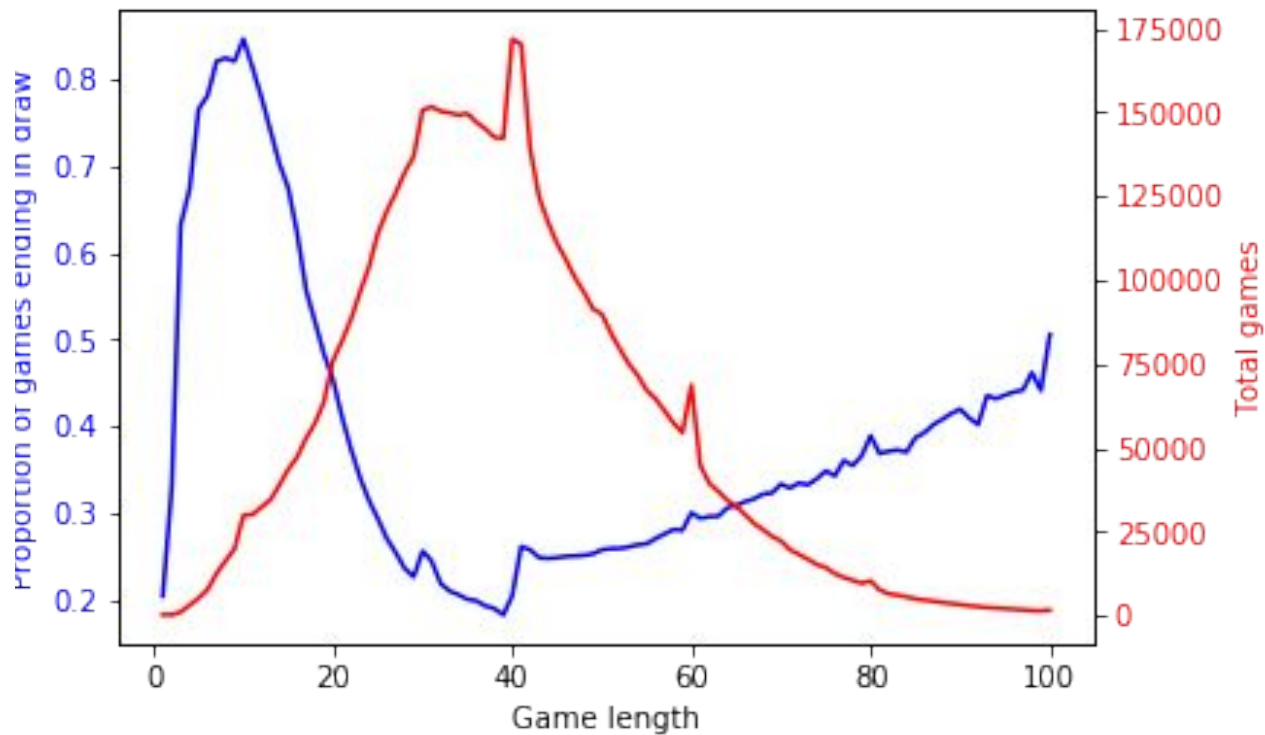
Do longer games necessarily result in more decisive results, or is there a tipping point where longer games are more likely to end in a draw?

How does this change when we condition on opening?

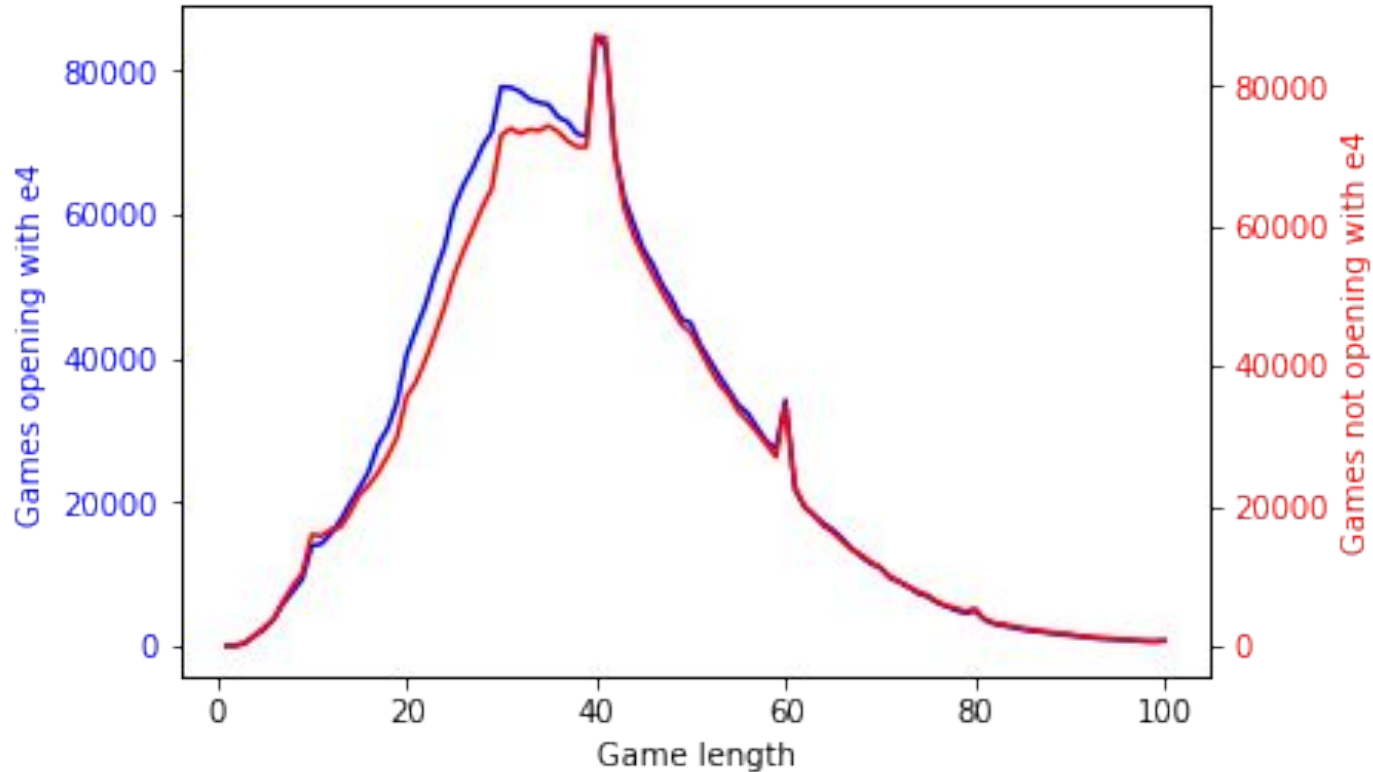
Do conditioning on opening basically just split into higher rating differentials between players?

How does this relationship change between super GMs and non-super GMs?

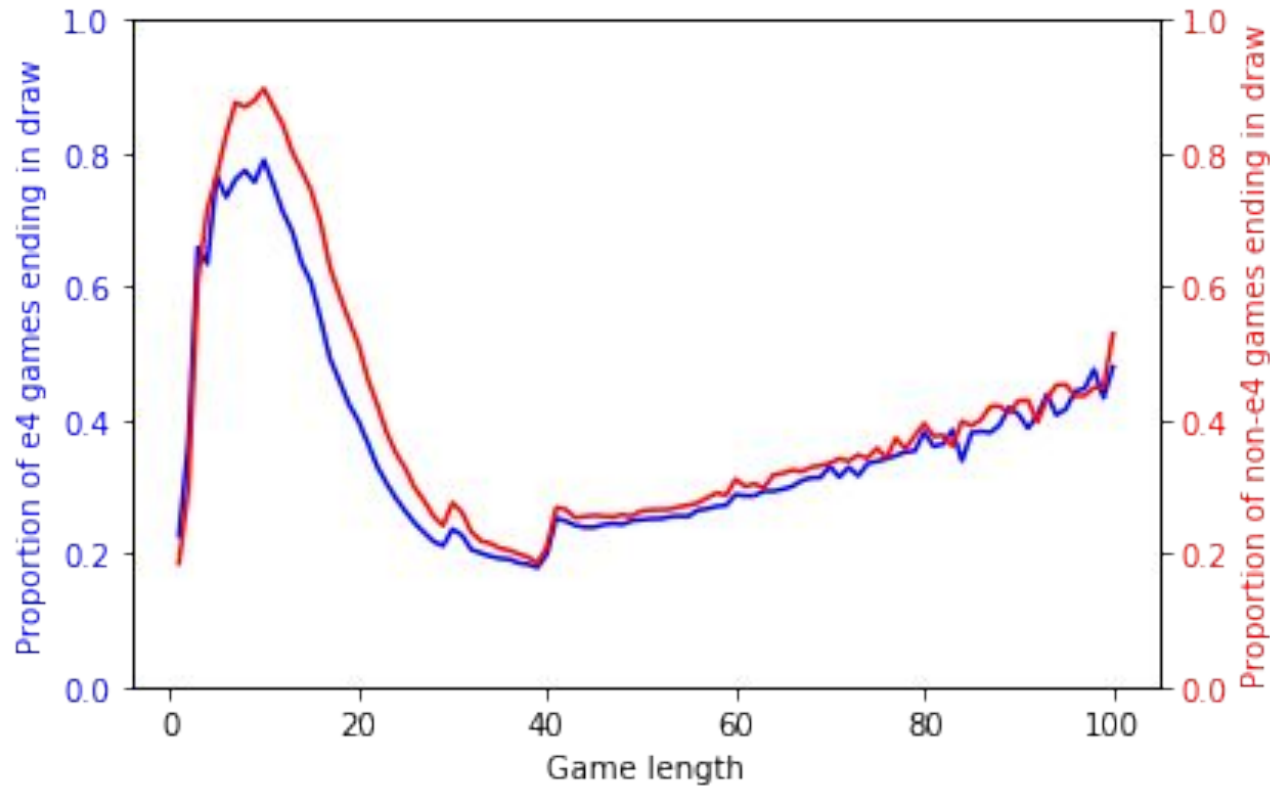
# Games ending in draw



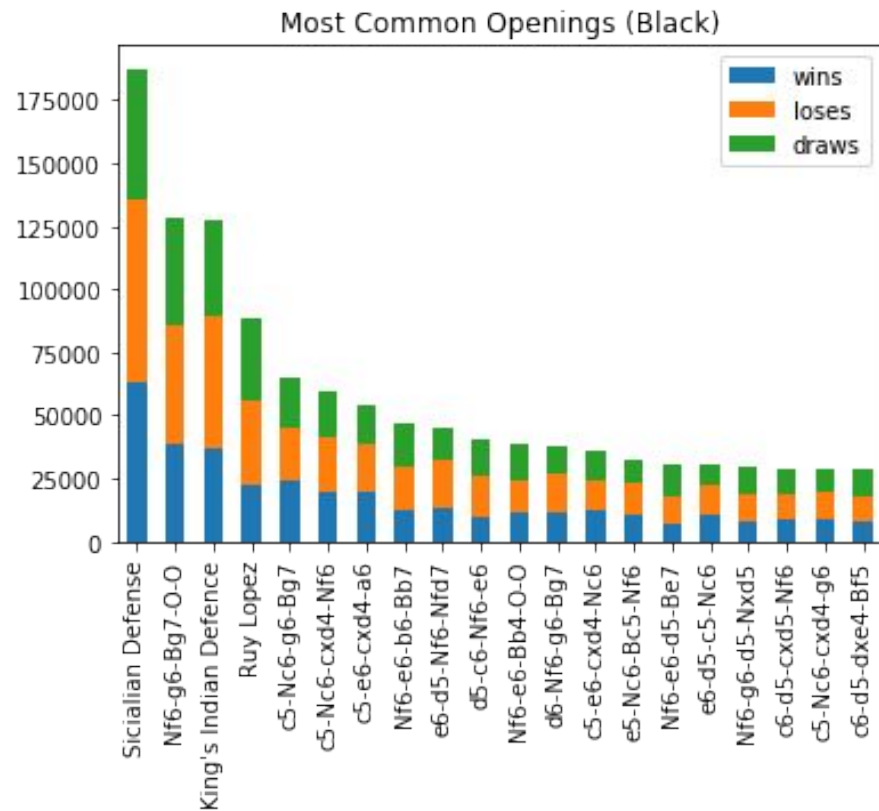
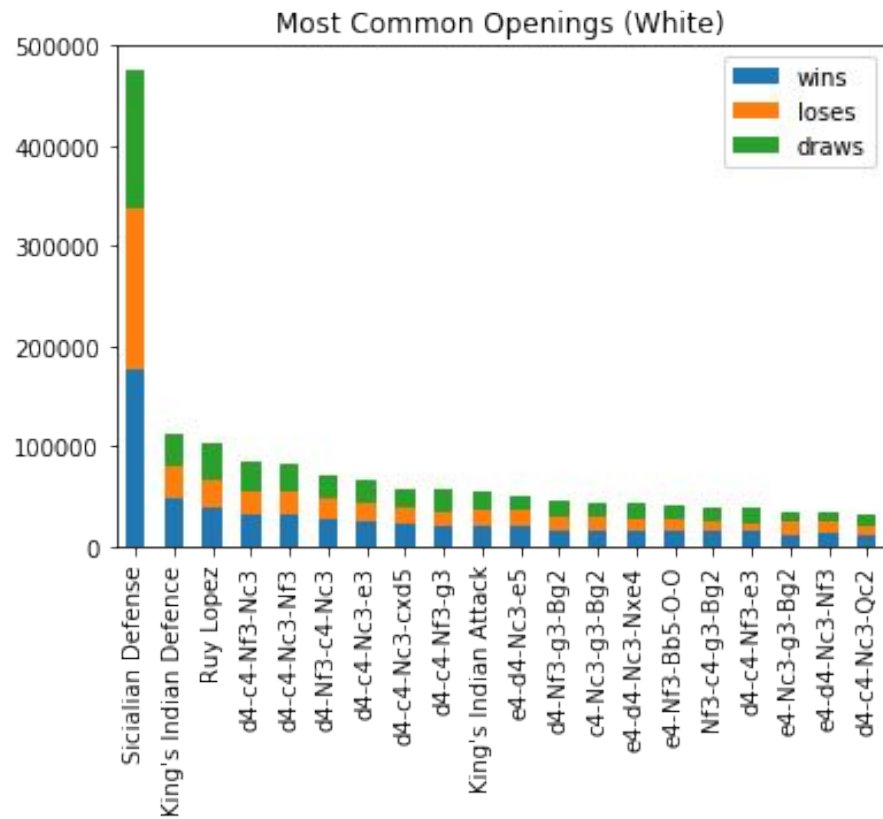
# Relating this to opening move



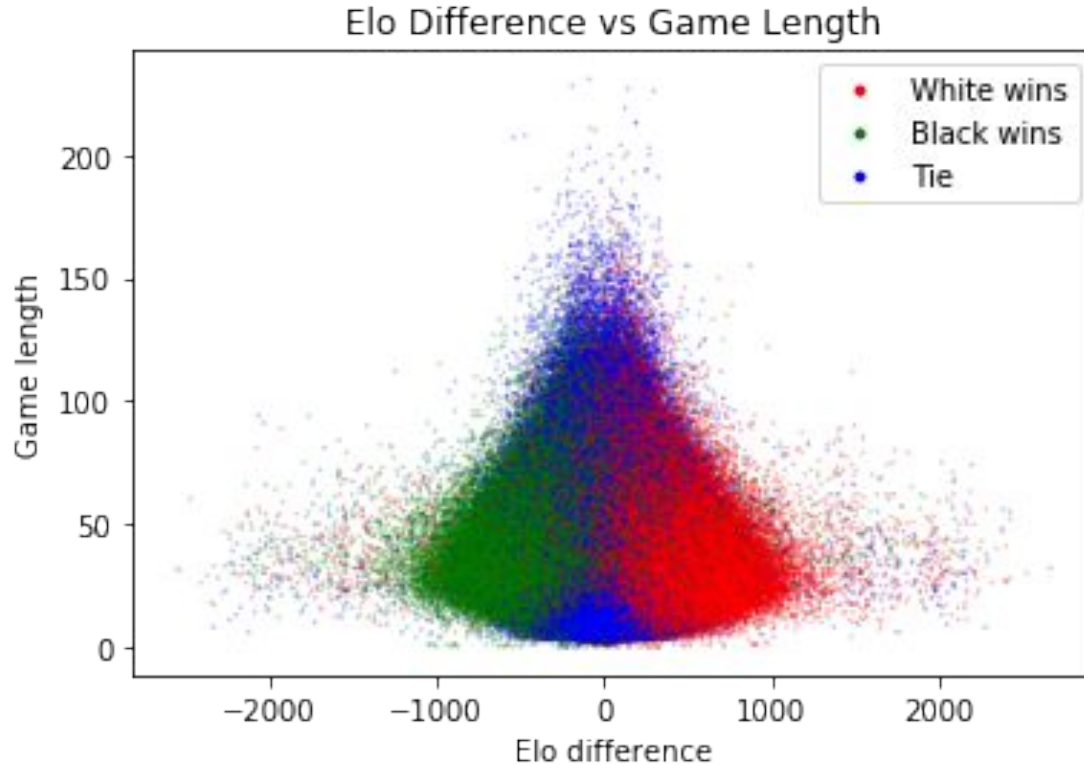
# Relating back to proportions ending in draw



# Proportions of opening moves

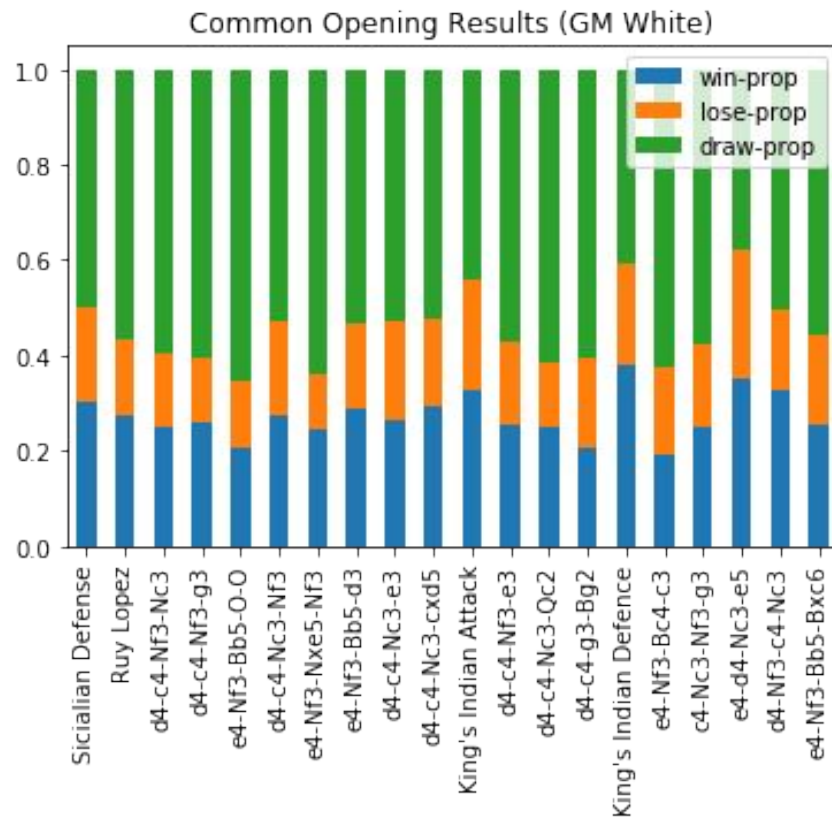
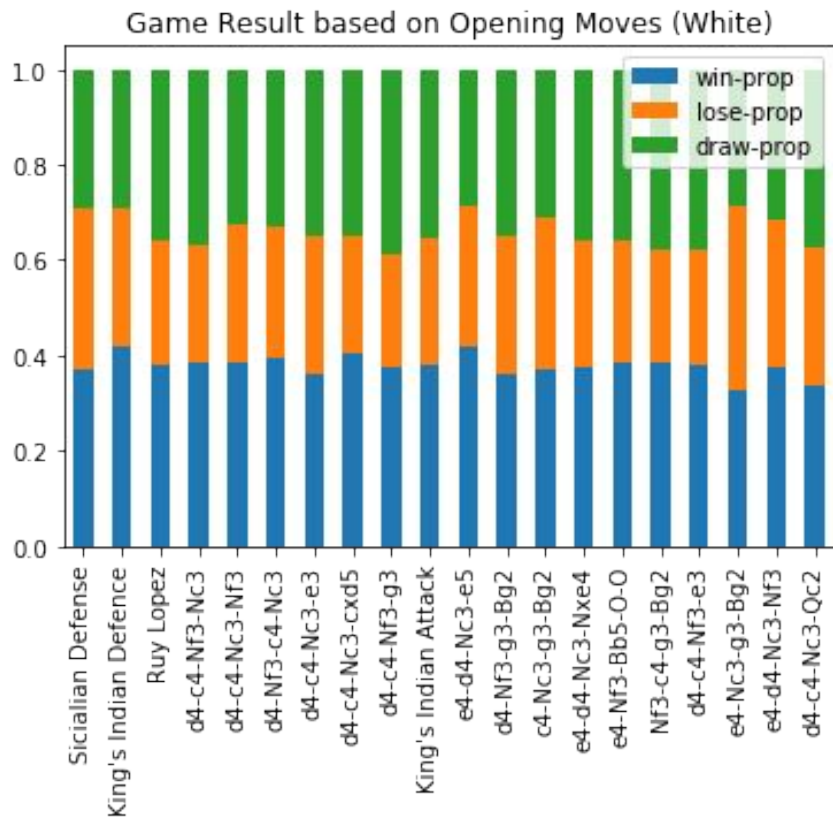


# Elo difference vs Game length vs Result

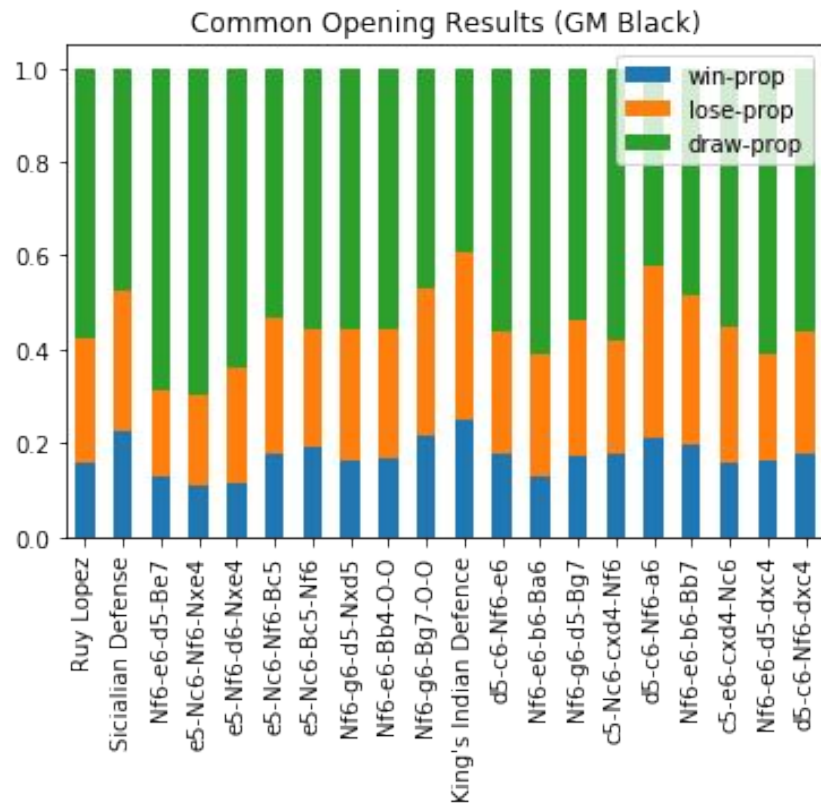
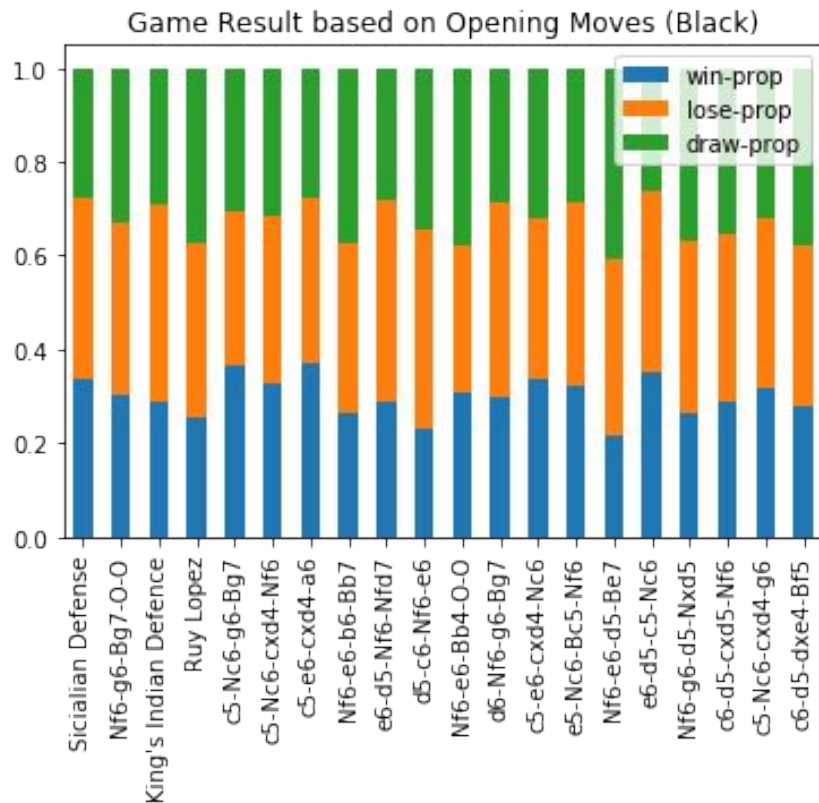




# Results of games based on opening moves (white)



# Results of games based on opening moves (black)



# Takeaway

A smaller elo difference tended to lead to longer game lengths with ties. There seemed to be a tipping point where most of the games would end in a tie.

Different openings are more popular than others. Out of the most common opening strategies, I found that black had a more diverse range of openings, while white was almost always used an opening that is specifically countered with the Sicilian Defence. All openings had a similar proportion of winning games.

Games where both players were of title Grand Master (above 2700 elo) tended to have a very different proportions for popular openings. As expected, more games resulted in a tie (because of the closer elo). But also, Grand Masters tended to have a larger variety of success with the well known openings such as King's Indian Defense and King's Indian Attack in comparison to the majority of players.