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April 27, 2023

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Chairman of the Board, The Kihon Ki-in (Japanese GO Association)

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Dear Chairman Satoru Kobayashi.

I am a psychological researcher working on crystalized intelligence and executive functions, and I would like to present to you a recent study on GO and its potential applications that can promote the popularity and international communication of GO in Japan and abroad. My coworkers and I believe that you as the Chairman of the Japanese GO Association can effectively contribute to the development of rules for GO tournaments and the coordination of training programs for GO players. We hope that you will be aware of our research on the performance of existing GO tournaments and that you can incorporate the findings of this research into the development of the GO schedule rules.

You may be aware of the significant effect of age on competitive performance, but not of the specific underlying cognitive mechanisms. GO as an abstract strategy board game poses significant challenges to cognitive abilities such as working memory capacity and fluid reasoning (Masunga & Horn, 2001). These abilities are collectively referred to as executive abilities, which you might understand as the ability of a player to quickly choose different strategies in a game of GO in response to the existing game process. Some of the available studies point out that this ability is closely related to age, and to be precise, this ability to flexibly change strategies decreases rapidly after the age of twenty-seven (Bryan & Luszcz, 2000).

The key phenomenon that most GO players' performance decreases rapidly after the age of thirty is reciprocal evidence to our finding. Most GO title holders achieve their best results before the age of thirty, and only one of the ten strongest ten GO players (“Toketsu 9dan”) in the world as of today is older than thirty at the age of 31 (Hollosi & Pahle, 2023). Interestingly, this decline in the ability to perform cognitive flexibility has a significant effect on the performance of only the top professionals, and evidently, the long-term training commitment is perhaps more important than the physiological effects at the lower levels of competitive GO players (Burgoyne et al., 2016). On top of this, the study presented to you here highlights another potentially important factor, body duration, for all levels of GO players. We found that the ability of GO

players to perform decreases over long-duration tasks, meaning that the ability of GO players to choose strategies quickly is much better in the early stages of the game than in the later stages. As the association for all Japanese GO enthusiasts, your association has a large number of members who are not professional players, marking our findings extremely important. In particular, our research points out the effect of overly long games on performance - in the second half of the game, the spectacle and intensity of the game decrease as the ability of both players to execute decrease, especially in long-period games. The longer the game, the more prominent the phenomenon would be (Baddeley, 1992). We hope that our research will help you understand the shortcomings of the current system and help you move forward with changes to the GO system.

In GO tournaments, the length of a game is usually between three and five hours, and only a very few international tournaments have a single event of less than this length. At the same time, the unique Japanese multi-day tournament can be even two or three days long. These tournament systems pose a great challenge to the physical health of GO players, even if the tournament is set up with short rest periods. Prolonged sedentary play is a major poor health habit, with potential adverse effects including digestion, blood pressure circulatory system, etc. (Parry & Stracker, 2013). Reducing the length of sedentary time and the number of breaks can make the game more enjoyable for tournament players, as our study indicates that the latter half of GO competition with prolonged duration has lower quality. In addition to reducing the physical and mental fatigue of players, shortening the format may increase the excitement and unpredictability of the game, since players will have less time to guess their opponent's moves with greater risk.

Promoting reform requires great courage, and fortunately, both other two GO associations in East Asia have already provided precedents for us to follow. Of the 11 major professional tournaments hosted by the Chinese GO Association, only one tournament takes more than five hours in a game. In the eight major professional tournaments governed by the Korean Go Association, all games are completed in three to four hours. For comparison, only six of the thirteen tournaments managed by the Japanese GO Association finish in less than five hours. Considering that the average Japanese spends less than four hours in front of the TV (Cramer-Flood, 2020), it may be difficult for Japanese Go fans to find the time to follow a game in its entirety. Therefore, a more immediate advantage of a shorter tournament format comes with a more accessible and appealing game to a wider audience, especially younger and busier people who may not have the time or patience to watch or play a long game. You might consider looking at the precedents of other associations to push for changes in the tournament rules so that Japanese players can still be competitive in short time games. For example, you could change the time rule for some tournaments from three hours to two and a half hours for each player, which would reduce the total time of the tournament by an hour.

Predictably, you may have some obstacles in promoting a shorter format. First, GO players have more time to think and analyze the current situation to make more informed strategic choices in longer games, and thus a shorter format inevitably reduces the depth and quality of GO games. The argument may have been reasonable a decade ago, but with the advent of artificial intelligence (AI), GO seems to be closer to the "optimal solution" than ever before, and the quality of a three-hour human game may not be as profound as the depth and quality of an AI's three-minute calculation. This may be frustrating, but it is undeniable that we may need to rethink the starting point involving the game of GO —— this game is a competitive game designed for humans —— and we believe that the promotion of GO is better served by

unpredictability than by game quality. At the same time, some GO enthusiasts have a passion for excellence in GO; perhaps some GO fans believe that GO is not just a simple game, but an artistic game with philosophical connotations, whereas that shortening the format would compromise the aesthetic value and integrity of GO. It is this pursuit that has kept countless enthusiasts loyal to their time and has given GO a special historical place in East Asian culture. Therefore, instead of completely cutting long-duration tournaments off, we suggest you might want to consider balancing the ratio of the tournament to meet the needs of various audiences. For example, you could keep a portion of the long, time-consuming format to satisfy the aesthetic needs of some GO enthusiasts.

Any tournament reform will involve a lot of personnel changes, which will put demands on the association's finances. However, your association will be able to reduce the rental and personnel costs of hosting the venue with tournaments under scheduling rules, and the benefits of such an adjustment will be long-term and predictable. If the Association decides to add quick games shorter than two hours, GO fans will have more freedom in their schedules to participate and watch the games than in the previous five-hour format. Combined with the unpredictability of the shortened format, the reformed tournament will be more appealing to GO fans and provide better publicity. Also, given the increased exposure and promotability of a shorter tournament, more tournament sponsors may be willing to provide financial support to the association, which may also appease existing players' anxiety about the change in schedule rules.

We want to thank you for your outstanding contribution to the GO industry! We hope our research has provided you with research support to push for a change in the format. If you are interested in the results of our research, please visit our website or contact our phone address. Thank you for your consideration!

Sincerely,

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BrianGolab.com

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