Understanding Reputation and Accusation: A Case Study of Chess Cheating

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INTRODUCTION

Cancel this… cancel that... *Canceling*, a phenomenon whereby people lose reputations following accusations (with or without proof), has caused many celebrities to lose their previous statuses, which has occurred in many different realms. One of these realms is the chess community. The game of Chess has gained enormous popularity in the past few decades and has recently found a spotlight regarding cheating in gaming, which has led to cancel-adjacent events.

Chess' requirement for deep critical thinking can be trivialized by chess engines, which are computer programs meant to surpass human ability and be a more absolute evaluation of chess games. Despite many benefits, chess engines have revolutionized chess cheating; one common form of cheating occurs with the use of engines to assist play (FIDE, n.d.). This paper aims to address the question of how accusations of chess cheating via engines has affected player reputations and the community by investigating cases of accusation in the community.

Chess cheating has been a prevalent issue in the community: the rise of chess has given way to a large increase in cheating; chess.com, a popular online chess site has reported closing nearly three times more accounts since the start of the COVID pandemic (Menon, 2022, p. 68). The main difficulty for the community lies in the fact that cheating is easy while difficult to prevent. As a result, players of all calibers often resort to accusation by informing the public that someone is cheating and let others handle the investigation. However, accusation as a powerful double-edged sword is often misused, leading to unforeseen reputation changes.

This paper will focus on how accusations of cheating have affected player reputations and the community. With ties to game studies and social theory, chess cheating is an important subject of study for how superhuman inventions can change a community and its interactions within. Learning about how accusations within the chess world impacted the community may

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yield insight into how modern scandals and accusations – outside of the chess world – should be handled. For example, if the chess world handles accusations in a proper manner, society as a whole can benefit from examining the chess world's procedure. On the other hand, a mishandling of cheating accusations would serve as an example to avoid for society. These lessons could be applied to metaphorical witch hunts, such as doping in sports, low-evidence criminal cases, and other situations with a difficult burden of proof.

BACKGROUND & CONTEXT

Chess is most commonly played in three formats: over-the-board (OTB), online, and correspondence. OTB chess is conducted during in person tournaments (while OTB matches do not have to be during tournaments, this paper will focus on OTB chess during tournaments), with many matches simultaneously in a large room. Players are allowed to exit the tournament hall to get water, eat, use the bathroom, and basically anything. Players are on their honor to not cheat. Talking is discouraged but often allowed. Online chess occurs on chess websites, notably chess.com and lichess.org. Correspondence chess, while much less widespread in the modern era, is a form of chess where players have very long time frames to play moves, including several days.

In the various aforementioned chess forms, essentially every tournament chess game occurs with a "time control," which dictates how much time each player has throughout the game. If a player runs out of this allotted time, the player running out of time loses. Excluding correspondence chess, time controls are split into 4 main forms: classical, rapid, blitz, and bullet (Chess.com, n.d.). Classical time controls refer to long time controls, where players may have hours of time to use throughout the game. Rapid time controls are shorter than classical time controls but require at least 10 minutes per player. Blitz time controls allot players between 3 to

10 minutes a game. Bullet time controls refers to any time control where each player has less than 3 minutes for the game. Correspondence chess can allot players days *per* move, which is usually too long for tournaments to support. Almost every combination of chess form and time control is common (except OTB bullet chess, as chess becomes too messy with players accidentally knocking pieces over to move pieces quickly). Time control along with game format impacts how easy it is for a player to cheat – the more time a player is allotted, the more time they can let an engine calculate the best move in a chess position.

Cheating prevention occurs in many forms. In OTB chess, there exist guidelines surrounding electronic devices to ensure that they cannot assist play (US Chess Federation, 2020). In online chess, chess.com, one of the most active hosts of online chess tournaments, requires players to have cameras showing their environment with proctors watching the cameras (Chess.com, 2024a). Players' screens can even be inspected by proctors, making it risky to use an engine, as it is possible for a proctor to detect unusual behavior or outright cheating.

Cheat detection in chess is a hotly debated topic, as it is an extremely difficult task (Cohen, 2023). After all, how can one know if another is cheating? Just think about the massive discussion on the difficulties of detecting cheating in education contexts. A study by the Institute of Electrical and Electronics Engineers aimed to develop a cheat detection AI for chess, but failed to produce usable results (Patria et al., 2021). To contrast with these results, Chess.com's current fair play and cheat detection algorithm appears to inspire some confidence in top level and influential chess players (Chess.com, 2022a). Therefore, it might be possible to detect cheating with decent confidence, though Chess.com has not released much information about their cheat detection team. Because of the lack of transparency and result producing studies, there remains a sense of distrust in cheat detection algorithms. A study by Thijs Laarhoven and

Aditya Ponukumat forms a framework for detecting cheating while urging transparency of cheating detection algorithms (2023).

In practice, spotting a chess cheater relies upon a lot of practice. In OTB chess, detection may rely on detecting if an opponent is "looking around a lot" or seemingly "jittery," which may not be very reliable (WIRED, & Rozman, L., 2022). OTB cheating can be obfuscated by concealed chess engines or communication devices, which can be difficult to detect (McKenna, 2012). In online chess, detection comes in the form of studying a user's profile and habits of play. Cheaters tend to have abnormal win rates, high move accuracy, consistent timing per move (i.e. using a relatively constant amount of time for every move), and other common red flags. Rozman introduces the concept of "bot moves," which symbolizes a move that goes against human chess ideals and may indicate cheating.

Despite many potential red flags, a chess player strong enough to understand mid-level chess and cheat detection strategies can bypass common cheat detection algorithms. For example, remaining non-jittery while playing strong engine-suggested moves that are not "bot moves" may be able to avoid suspicion. While the study by Thijs Laarhoven and Aditya Ponukumat finds that in the long run, cheating may be detectable, it may not be possible to determine cheating from one instance (2023). As a result, a top level player may be able to cheat on occasion with plausible deniability.

Cheat detection may also work with a larger game dataset of a player – knowing how a player historically plays improves the accuracy of cheat detection algorithms (Iliescu, 2020). This idea is supported by International Master Levy Rozman, who explains that a user's online chess profile, which contains their previous games, is a handy tool for detecting cheating (WIRED, & Rozman, L., 2022).

While accusation has not been extensively studied in the context of chess, the effects of accusations on general communities has been studied by many. Aside from the accused, accusations can affect the accuser. One study by Rucker and Petty found that accusations can have varying effects on the accuser. Rucker and Petty also find that the change in reputation of the accuser depends on their initial reputation. One with high esteem tends to lower their reputation after accusing others whereas those with low reputation tend to gain status via accusations (Rucker & Petty, 2003, p, 1267).

Accusations often bring light to the accuser, which can allow for faster investigation Finnemore & Hollis, 2020). In their study, Finnemore and Hollis also explain that accusations can help deter cheating; the threat of accusation may be sufficient to prevent bad actors from engaging in nefarious behavior. The efficacy of accusation also rests upon many factors, including the environment of the accusation as well as relationship between the accuser and accused.

METHODS AND THEORETICAL FRAMEWORKS

This paper will present case studies of high profile cheating-related incidents in the chess world and contrast them with the current theories presented by Rucker & Petty. Case studies were used because cheating-related incidents heavily vary – the details need to be carefully examined, which necessitates delving into the details of the cases. The particular cases, one of the Niemann-Carlsen controversy and another of the Kramnik controversy, were chosen as they are high profile, better documented events than other low profile cheating scandals.

Each case study will concisely overview various cheating scandals as well as the fallout from each. Following each study will include discussion of literature to further analyze the situations, examining how cheating accusation cases compare to current literature.

While engine-assisted cheating in chess has been an issue in chess for around two decades, many of the modern cheating events have occurred in the past few years. As a result, there is little secondary literature regarding specific cheating scandals. Therefore, much of my evidence regarding specifics of scandals will come from primary sources: blog posts on chess.com and lichess.com, newspaper articles, and other non-scholarly media. There are also tweets on twitter.com as well as podcast episodes where players discuss various events. Ultimately, the gathered evidence will be analyzed alongside the STS concept of underdetermination.

The concept of underdetermination, as defined by Longino, plays a large role in the case studies (2016). In her paper, Longino defines underdetermination to represent data being insufficient to make judgements about the data. In other words, evidence about a situation is not enough to fully understand the situation. This concept of underdetermination has parallels with chess cheating scandals: without the accused admitting to cheating, data regarding cheating may not necessarily point one to determine if a player was cheating. Just evaluating one's moves may be insufficient to determine if they were cheating, especially at the top level, where the players are strong enough to play brilliant, well thought out, bot moves.

RESULTS

This paper will present two case studies of high-profile cheating accusation events involving only grandmasters (GMs)[1]:

Case 1: Magnus Carlsen – Hans Niemann

This controversy is well summarized by chess.com in an investigation, of which the most critical points will be restated in this paper (Chess.com, 2022b).

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[1] Grandmaster is the highest official title achievable by chess players.

SUMMARY

At the 2022 Sinquefield Cup[2], GMs Magnus Carlsen – former world champion – and Hans Niemann played a classical time control chess match in which Niemann won. Magnus tweets his withdrawal from the event, linking to a video clip in which a soccer manager can be heard saying, "I prefer really not to speak. If I speak, I am in big trouble." Afterward, Chess.com emails Hans privately to let him know that his account had been discreetly closed. [Niemann] publicly addresses his ban by Chess.com stating that, although he cheated a few years ago when he was 12 and 16 years old, he has never cheated "in a tournament with prize money," "when I was streaming," or "in a real game." [Carlsen] indicates that he "believe[s] that Niemann has cheated more – and more recently – than he has publicly admitted." Overall, [Chess.com has] found that Hans has likely cheated in more than 100 online chess games, including several prize money events. He was already 17 when he likely cheated in some of these matches and games. He was also streaming in 25 of these games. Chess.com's fair play detection team reflects, stating that numerous top players participating in our events have expressed private concern over Hans competing in [Chess.com] events for some time. While not mentioned by the investigation, Carlsen's reputation does not seem to have changed. On the other hand, Niemann's name is synonymous with being banned for cheating. At the time of writing this paper, a simple internet search gives articles about the controversy (e.g., Reddit, 2020). Studies find no evidence that Niemann has cheated in any OTB games (Chess.com, 2022b).

DISCUSSION

The Carlsen–Niemann controversy seems to contradict Rucker and Petty's findings. Prior to the accusations, Carlsen was held in high regard by the community. While not mentioned by

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[2] The Sinquefield Cup is a prestigious chess tournament held yearly.

the investigation, his reputation has seemed to remain the same – a simple google search fails to yield new criticism of Carlsen from the fallout of the controversy. Rather, a simple search finds current discussions regarding Carlsen, such as one of his recent losses (e.g., Fletcher, 2024). Some still criticize how Carlsen handled the controversy (e.g., Reddit, 2023b), though much of the discussion surrounding Carlsen has moved on from this debacle. Within the chess world, Carlsen is more famous for having won many world championships, including classical, blitz and rapid titles. He is even in contention for the "Greatest of All Time" (GOAT) label, which community members still debate (e.g., Vijayakumar, 2023; "Is Magnus Carlsen", 2024). Other common discussion about Carlsen regards analyses of his chess play, his comments on the future of chess, and his future in chess (e.g. Fletcher, 2024; Svensen, 2024).

Niemann, relatively unknown to the outside world, instantly became one of the most well known players outside of the chess community. His reputation, on the other hand, is somewhat tarnished. Some criticize him for cheating in the past, asserting that cheating has no place in chess. Another group is ambivalent, contending that while he has a checkered past, his known cheating was made while he was still very young and immature. Niemann has even garnered some supporters in the community, who cite the fact that there is no evidence of him cheating against Carlsen (Reddit, 2023). Niemann's high level of play despite no evidence of cheating represents a critical example of underdetermination, for evidence about Niemann's play was not enough to make conclusions about his cheating.

Interestingly, a joke derived from this controversy, that Niemann was using a cheating device in the form of a sex toy, has become a popular internet joke (Mackintosh, 2023; Brinsford, 2022). While it is difficult to ascertain at a community wide level, the severity of the cheating controversy may have been diluted by jokes such as the sex toy hypothesis.

Overall, in this case, the accuser of high initial reputation managed to maintain their reputation. The accused, without much initial recognition, became very well known even outside of the chess community, even garnering supporters. Carlsen's reputation not changing after this represents a counterexample to Rucker and Petty's findings.

Underdetermination also played a large role in this case. Because of the difficulties in detecting cheating relating to underdetermination, it is possible that the public is more likely to believe larger authorities on this matter. Chess.com's fair play team, which performed the investigation in this case, may have been the most believable authority on this matter, helping strengthen Carlsen's accusation against Niemann.

This case expands Rucker and Petty's findings, as the manner in which the high-reputation individual goes about accusation can also impact their resulting reputation. Carlsen handled the accusation in a more discrete manner, allowing chess.com to handle the investigation before he commented on the manner. This showed some professionalism, which may have resulted in the public supporting him.

Case 2: Vladimir Kramnik's Accusations

Case 2 details a series of weeks in which Vladimir Kramnik, former world champion from 2000 to 2006, accused a series of players of cheating.

SUMMARY

Vladimir Kramnik, recently started a war on chess cheating by accusing GM Hikaru Nakamura. Kramnik cited a streak in which Nakamura had a 46 game streak with 45 wins and 1 draw, deeming such a streak statistically improbable (Mcclain, 2023). Kramnik continued on his blog, stating:

Having checked Hikaru's statistics carefully, I have found NUMEROUS low probabilities

performances both of him and some of his opponents. Some of which have

EXTREMELY low mathematical probability, according to mathematicians.Way below

one percent, according to the calculations of those professional mathematicians.

(Kramnik, 2023)

Here, Kramnik, despite not having a mathematics-related degree, can be observed to accuse

many of cheating based on the "mathematical probability" of their win streaks.

Following this tweet, Chess.com conducted an investigation, concluding that the "vast majority"

of Kramnik's accusations were "baseless" (Chess.com, 2023). Kramnik has accused many others

of cheating on video streams, including many lower rated players (Kramnik, n.d.).

Interestingly, Kramnik's accusations have not led to any bans as of yet. GM Nakamura

and other GMs have recorded many YouTube videos with their reactions to Kramnik's

accusations as entertainment, which may point to the public not fully taking Kramnik's views

seriously.

DISCUSSION

The controversy surrounding Kramnik ventures into relatively unexplored topics about

accusation. As a previous world champion, Kramnik was a popular figurehead in the chess

community. He is well known as an incredibly strong player, even being invited to commentate

on chess tournaments with positive feedback about his ability in commentary such as Norway

Chess 2020, World Championship 2023, etc. (Reddit, 2021). On the other hand, he had many

critics. GM Carlsen claimed he is overconfident about his ability, though definitely a strong

player (McGourty, 2014).

Following the controversy, Kramnik has brought more criticism to his reputation. Some noteworthy figures have come out in partial agreement with his statements, notably GM Fabiano Caruana, the large majority (including Caruana) of the community disapproves of Kramnik's methods ("Chess With Mustreader", 2024). A google search of "Vladimir Kramnik reddit" yields an abundance of posts criticizing Kramnik, expressing disappointment in the direction he has taken his cause. Some critics on social media – namely twitter and reddit – point to Kramnik's lack of a mathematical background decreasing the credibility of his claims (e.g., Reddit, 2023a). Kramnik has also tweeted that he has begun receiving death threats, indicating a lack of public support (Kramnik, 2024).

The clear downturn in Kramnik's reputation from his campaign against cheating highlights that despite his well-intentioned efforts to bring attention to chess cheating, his methods were far more important. His lack of expertise and support from professionals in mathematics and statistics indicated overconfidence and untrustworthiness to the public. As a result, some of the claims were not taken seriously by the public, leading to a decrease in his reputation.

Another difficulty for Kramnik remained in the idea of underdetermination. The evidence that Kramnik used was not enough to fully conclude if a player had been cheating. As a result, accusing people of cheating on these terms was a cause that was likely to fail. Furthermore, Kramnik accused popular members in the chess community, including the extremely popular GM Nakamura (Sweet, 2022). Challenging such an influential figure meant it was even more likely that the public would not believe him.

Kramnik's change in reputation supports the findings by Rucker and Petty. Kramnik's initial high reputation has been found to have been tarnished as a result of his accusations against

other influential chess players, namely GM Nakamura. This case expands Rucker and Petty's findings, as the manner in which the high-reputation individual goes about accusation can also impact their resulting reputation. While it is speculation, one could argue that had Kramnik accused other GM's of cheating in a better manner, he may have not tarnished his reputation. If he had allowed chess.com and other authorities to conduct investigations before commenting, his reputation may have remained relatively unchanged, like Carlsen's.

CONCLUSION

Through accusation, cheating has impacted the community in many ways; organizations have become more cognisant of the issue, controversies have been developed, and reputations have changed, mostly for the worse. In the Carlsen-Niemann controversy, Carlsen's accusation of Niemann resulted in Carlsen's reputation remaining similar, while Niemann rose to part fame, part infamy. Kramnik has lost reputation from his accusations, while those he accused have maintained their statuses. Rucker and Petty's findings provided a basic understanding of accusation, though it is clear that their findings cannot be well generalized. More important than the accusations are the details of which the accusations are made. It is important to back claims with overwhelmingly supportive evidence – which chess.com's investigation of Niemann contained unlike Kramnik's.

The concept of underdetermination played a large role in both of the presented cases. Because chess cheating may not be accurately detectable, especially by a single person, it is difficult for someone to be convicted of cheating. Furthermore, a high-level player with understanding of common cheating detection algorithms may be more difficult to detect. Therefore, it requires substantial evidence to sway the chess community, or any general community in which underdetermination plays a role.

Generalizing cases of accusation allows analysis of how accusation is handled in communities plagued by uncertainty and underdetermination; cancel culture fallout stems from how accusations are handled by the public. The case studies can serve as a lesson to use larger authorities rather than using one's own investigatory power. Deferring to more knowledgeable figures is more useful when trying to sway the public opinion. Well-liked individuals may necessitate highly convincing evidence to successfully accuse. Still, the proceedings in the case studies were far from clean – establishing a procedure to handle accusations may be helpful for everyone involved.

To achieve a favorable outcome after an accusation, one should consider more factors than just evidence, such as what authorities one should turn to, what constitutes convincing evidence, and how one should present their case. With the prevalence of "cancel culture" and related accusatory phenomena in modern society, it is imperative to design guidelines and procedures to facilitate proper analysis and discussion of accusations.

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