

Cheating in chess: a call for an integrated disciplinary regulation*

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Abstract. This article examines recent regulation in the sport of chess with a focus on cheating. On the one hand, disciplinary law in chess could be considered relatively underdeveloped compared with other sports. On the other hand, however, this kind of ‘underdevelopment’ might be appropriate since chess governing bodies have not yet introduced interventionist rules. These two interacting perspectives shape the aim and the objectives of legal research designed to protect the chess community from cheating by suggesting adequate disciplinary measures. The analysis focuses mainly on two forms of cheating: computer-assisted cheating and match-fixing. The broad concept of cheating and relatively young legal regulation in an under-researched sport call for interdisciplinary analysis, therefore, knowledge of sports law, human rights as well as criminology is applied.

Keywords: cheating, match-fixing, chess, computer-assisted cheating.

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Sukčiavimas šachmatuose: integruoto teisinio reguliavimo poreikis

Santrauka. Moksliniame straipsnyje šachmatų sporto pagrindų analizuojamos dvi ne sąžiningo elgesio formos: kompiuterinis sukčiavimas ir manipuliacijos sporto varžybomis. Kompiuterinio sukčiavimo įrodinėjimo procesas vyksta pasitelkiant statistinę amerikiečių profesoriaus K. Regano programą, kuria remiantis nustatomi nuokrypiai nuo vadinamojo žmogiškojo žaidimo. Tokio įrodinėjimo keblumas yra tas, kad šiuo metu pasaulyje yra labai nedaug ekspertų, gebančių taikyti šią programą. Todėl tyrimo pabaigoje formuojamos rekomendacijos išplėsti šią programą iki globalaus masto, apmokyti minėto profesoriaus asistentus ir įdiegti reikalingą techninę infrastruktūrą tam, kad šią programą gebėtų taikyti daugiau žmonių. Manipuliacijos sporto varžybomis šachmatų sporte kol kas buvo įrodytos tik vieną kartą – precedentinėje Kenijos byloje. To priežastys yra santykinai lakoniška aptariamiosios srities teisinė bazė, ribotos drausminių institucijų tyrimo galimybės, pranešėjų apsaugos nebuvimas. Atsižvelgiant į šias spragas tyrime siūloma įvesti inovatyvią taisyklę, *de facto* leisiančią bausti už prielaidas manipuliacijoms: turnyrų organizatoriai turėtų patys įrodyti, kad varžybos nebuvo sutartos (t. y. nebuvo manipuliuojamos), kitu atveju turnyras nebūtų reitinguojamas Tarptautinės šachmatų federacijos (FIDE) ir nebūtų suteikiami tarptautiniai titulai juos įvykdžiusiems sportininkams. Svarbu pažymėti, jog panašią taisyklę jau yra įvedusi Lietuvos futbolo federacija, ir Tarptautinis sporto arbitražo teismas tokią inovatyvią teisėkūros praktiką toleravo. Taigi tyrimas parodė, kad šachmatų sportas susiduria su rimtomis grėsmėmis. Tam, kad būtų deramai kovojama su galimomis korupcijos ir sukčiavimo apraiškomis, būtinas ne vien teisinės bazės tobulinimas, bet ir ekspertinis švietimas bei suvokimas, jog šio sporto specifika reikalauja tiek teisinių, tiek statistinių, tiek techninių sprendimų.

Pagrindiniai žodžiai: sukčiavimas, manipuliacijos sporto varžybomis, šachmatai, kompiuterinis sukčiavimas.

Introduction

It is quite clear that cheating in chess is dangerous *per se* as it robs the sport of its essential features of uncertainty of outcome and sporting integrity, and accelerates its spin into the forum of entertainment, thus becoming no longer a sport (McLaren, 2008). The notion of cheating is opposed to fairness – often defined as respect for the rules, and not only the letter of the rules, but also their spirit (Butcher, Schneider, 1998). According to Gardiner et al. (2005), rising legalism in sport is connected with the desire to achieve higher sporting standards. The primary question is the degree to which the state, or the Federation, should interfere in such a specific field as cheating in chess.

This question is not purely philosophical, and two views are usually presented: paternalistic and libertarian. The right to regulate some harmful activities of human behaviour is explained as paternalism, where essentially the state (in the context of cheating in chess, the International Chess Federation (FIDE)) acts as a parent, guiding behaviour. The roots of this perception can be found in J. S. Mill's doctrine – the philosopher thought that human behaviour could be justifiably regulated or prohibited if it is dangerous to others.¹

Opponents of paternalism argue that the state should not be too interventional. This is a libertarian view: people may behave as they want if they manage to deal with others. In this article, the shift from libertarianism to paternalism is discussed: the regulation of cheating in chess is too recent to be called paternalistic, but the tendency of legal regulation is towards an interventionist model of law-making. The main **aim** of this article is to analyse the regulation of cheating in chess and identify its drawbacks. The **objectives** that help to achieve this aim are: 1) to identify the main characteristics of cheating in chess; 2) to identify the main problems of proving cheating; 3) to suggest certain disciplinary measures that would not be excessively interventionist, but would still help the chess community to fight cheating. The main **method** applied in the article is documentary analysis, although at times – due to the relatively long sporting experience of the author of the article – the text might resemble an intersubjective ethnographic study.

¹ The direct quote is as follows: 'The only purpose for which power can be rightfully exercised over any member of a civilised community, against his will, is to prevent harm to others. His own good, either physical or moral, is not a sufficient warrant. He cannot rightfully be compelled to do or forbear because it will be better for him to do so, because it will make him happier, because, in the opinions of others, to do so would be wise, or even right. These are good reasons for remonstrating with him, or reasoning with him, or persuading him, or entreating him, but not for compelling him, or visiting him with any evil in case he do otherwise. (...) The only part of the conduct of anyone, for which he is amenable to society, is that which concerns others. In the part which merely concerns himself, his independence is, of right, absolute. Over himself, over his own body and mind, the individual is sovereign.' See: Mill J. S. On Liberty. Ebook, Chapter I. Introductory. 2011. Accessed 3 May 2020. https://www.gutenberg.org/files/34901/34901-h/34901-h.htm#Page_140.

1. The concept of cheating in chess

Depending on the theoretical paradigm, objectives, and context, various authors outline different attributes of cheating in sports. Comparative analysis of cheating in sports accentuates essential features by defining it as a deceptive violation of sport rules. Deception suggests wilful intention. It is also worth mentioning that these features are relative: for example, the criminological perspective might likewise accentuate violation of the principles of respect, tolerance, and equality, thus bringing cheating closer to foul play, whereas legal positivism tends to distinguish these phenomena. The importance of these interacting perspectives is not limited to comparative purposes: some subtle concepts within the sports world cannot be defined using rigorous legal mechanisms; in the context of this article, the notion of fixed draws is relevant. The interplay of approaches is even more relevant when defining the opposite behaviour of cheating – that is ‘fair play’. There is no clear definition within the realm of legal positivism as to what constitutes fair play in chess. However, (ethnographic) observation of the chess world could offer some vivid concepts, for example, that fair play can be understood as an attempt to restore the correct flow of the game independently of what the formal result should be, which might imply Don Quixotic behaviour such as offering draws in winning positions. Interestingly, these idealistic acts take place not just in fiction, but at the highest level, although, admittedly, very rarely. The rationale behind this hyper-ethical behaviour is amazingly simple: a player would not feel particularly happy about an undeserved victory.² Accordingly, honest

² One of the most widely known proponents of this behaviour is Czech GM David Navara. He said that “*in that famous game Moiseenko – Navara from World Cup 2011, when playing my move, I touched two pieces – the bishop clearly intentionally, the king clearly unintentionally, when catching the bishop. I do not even know which I touched first, but it might have been the king. I played with the bishop. If I had to play with the king, I would have had to resign. I achieved a winning position but not knowing the exact rules, I had no idea what the correct decision was. (The arbiter seemed not to have seen the critical moment and his statement that he believed that I first touched the bishop was therefore completely irrelevant.) I wanted the match to be decided in a normal, unproblematic game (i.e., that is why Navara offered a draw in winning position – S. Z.). This eventually happened and I managed to win the rapid tie-break.*” Author’s interview with David Navara. Interview date: 1 Feb. 2019.

players might define cheating in a straightforward and plain fashion, stating, for instance, that cheating is an act by which an undeserved result is attained in the game (independently of whether the result is a win, draw or loss³).

Naturally, a legal approach calls for more concrete definitions. The prohibition on cheating in chess is found within the FIDE Code of Ethics (CoE). Art. 2.2.5 of the CoE prohibits cheating or attempts at cheating during games and tournaments. Art. 3.2 of the CoE stipulates that breaches of the FIDE Code of Ethics are punishable by one or more of the following sanctions: warning; reprimand; return of awards; fine of up to 25,000.00 US dollars; revocations of titles and sports results; social work; maximum ban of 15 years on taking part in a chess competition, or in any chess-related activity, as a player, arbiter, organiser, or representative of a chess federation; temporary exclusion from membership or office.⁴

More specifically, anti-cheating issues are regulated by the 2018 Anti-Cheating Regulations (Regulations). This document is a product of the FIDE Anti-Cheating Commission, renamed in 2019 as FIDE Fair Play Commission (FPL). Art. 2 of these Regulations states that ‘cheating’ means:

- (i) the deliberate use of electronic devices or other sources of information or advice during a game; or
- (ii) the manipulation of chess competitions including, but not limited to, result manipulation, sandbagging, match fixing, rating fraud, false identity, and deliberate participation in fictitious tournaments or games.

As may be implied from the Regulations, cheating also covers corruption-related offences.⁵ Although this choice is understandable, it is not very precise since it is more usual in the general sports world to distinguish between cheating-related offences (e.g., doping) and corruption-related offences (e.g.,

³ In chess, a win is recorded as one point, a loss as zero, and a draw earns a player 0.5 points.

⁴ In reality, computer-assisted cheating or false accusations related to it is for now punished by suspension and revocation of titles; other sanctions are not applied.

⁵ In other words, the CoE and Regulations differentiate between (i) obtaining illicit assistance during a game of chess, and (ii) manipulation of competitions and results. The first is cheating in the narrow sense, whereas the second is corruption. Both are treated as ‘cheating’ in a wider sense.

match-fixing).⁶ In this article, these two aspects are analysed separately for the following reasons: the deliberate use of electronic devices is indeed much closer to anti-doping rule violations⁷ and it is therefore logical to analyse it in the context of the World Anti-Doping Code and related CAS practice, whereas match-fixing in chess is more appropriately analysed through the lens of the Council of Europe Convention on the Manipulation of Sports Competitions (Macolin Convention).

2. Peculiarities of match-fixing in chess

Art. 3.4 of the Macolin Convention defines manipulation of sports competitions as an intentional arrangement, act or omission aimed at an improper alteration of the result or the course of a sports competition in order to remove all or part of the unpredictable nature of the aforementioned sports competition with a view to obtaining an undue advantage for oneself or for others.

The problems arising from this definition are quite explicit: the definition of ‘manipulation of sports competitions’ is very broad; manipulation covers both disciplinary and criminal offences, and the consequences of match-fixing could be very different, ranging from a ban on taking part in a specific activity to imprisonment.⁸ In addition, it is not necessary for the attempt to be successful in

⁶ The FIDE Code of Ethics is more precise: cheating and match-fixing are entrenched in different articles: 2.2.5 and 2.1. However, for the sake of objectivity, it must be noted that Art. 2.1 is so laconic that the aforementioned precision is rather symbolic.

⁷ Conceptually, computer-assisted cheating is very similar to technology doping. Technology doping is the practice of gaining a competitive advantage using sports equipment. The World Anti-Doping Agency (WADA) considers prohibiting technologies if they are ‘performance-enhancing’ or ‘being against the spirit of the sport’. In 2006, WADA initiated a consultation on technology doping which is now officially recognised as a threat, whilst the decision to allow or ban a new technology, specifically relating to sports equipment, is the responsibility of each sport’s own governing body. https://en.wikipedia.org/wiki/Technology_doping#cite_note-sportseng-1. Accessed 12 Jan. 2020.

⁸ A case in point is France with probably the most draconian legislation in Europe: in this country, since 2019, corruption in sport is punished with a fine up to 500 000 euros and imprisonment. See: Article 445-1-1 of the French Criminal Code: https://www.legislationline.org/download/id/8546/file/France_CC_am012020_fr.pdf. Accessed 3 May 2020.

order to be prosecutable. The term ‘in order to’ indicates an intention to obtain an undue advantage for oneself or others, even if this intentional arrangement, act or omission, aiming at improperly modifying the results or course of a sports competition, fails to obtain the advantage sought (Explanatory report of the Macolin Convention, Art. 51, also CAS 2011/A/2490, § 3). In this way, an offence is described as a ‘conduct crime’ in that it doesn’t require the results to be concretised: a clear guideline in this regard is already provided for by legislation in some states, for instance, in Italy and Spain.⁹

When narrowing the concept of the manipulation of sports competitions as it relates to chess, it should be noted that chess both resembles and differs from other sports. When the players agree on winning or losing a game, then chess, in principle, is no different from any other sport; accordingly, such detrimental behaviour clearly falls under the concept of cheating as per Art. 2 of the Regulations. However, one of the most controversial forms of (potential) match-fixing in chess are pre-determined draws where players agree before the actual game not to fight beyond an equal position, or even rehearse a ‘peaceful’ game in advance. Such tactics are not uncommon. Many radical measures have been suggested to combat the draw problem in chess, but none have found favour with the overarching chess community, traditionalists and liberals alike (Smerdon, 2012). The general opinion among chess players is that fixed draws should be tolerated, as it is extremely hard physically and emotionally to play all the games to the fullest. A resounding position has been recently expressed by the FIDE Ethics & Disciplinary Commission in Case no. 2/2020 where it was stated that ‘the Ethics & Disciplinary Commission Chamber does not however find arranged draws as unacceptable match fixing *per se*, primarily due to the fact that chess players are allowed under the Rules of Chess (Art. 9.1.2.1)¹⁰ to propose and agree to a draw, admittedly only during the course of the game’ (§ 10.4).¹¹

⁹ Di Giandomenico A. The Convention on Manipulation of Sports Competition: A First Comment. Presentation of 20th IASL Congress Sessions, Athens. http://iasl.org/pages/en/sports_law_congresses/20th_int_congress/presentations.php. Accessed 12 Jan. 2020.

¹⁰ FIDE Laws of Chess. <https://handbook.fide.com/chapter/E012018>. Accessed 26 June 2020.

¹¹ Case no. 2/2020: Alleged match-fixing during Kenyan National Women Chess Championship, 2019. https://ethics.fide.com/wp-content/uploads/2020/06/FIDE-2_2020-decision-final.pdf. Accessed 26 June 2020.

As Moul and Nye (2009) put it, if we consider that tournament chess is not simply stressful but notoriously tiring, we may hypothesise that very strong players who wish to collude can improve their performance against other players by agreeing to early or prearranged draws. Assuming for simplicity that the expected outcome of a game between players of equal strength is half a point each, a peaceful pair of agreed draws produces the same outcome with less effort and risk than taking a win and loss apiece.

To a certain extent, such insights lead to questioning whether chess is a sport (or in such cases, just a game) because chess players can legally agree to a draw at very early stages. Thus, the concept of manipulation may depend on the specificity of the sport: in some branches of sport similar acts may be considered as punishable and illegal manipulation, while in other sport branches they are just widespread tactics. It should also be taken into account that there are many other cases where 'fixing' is not so clear, even though the general public knows (or even expects) that it will happen. For instance, tournaments where one team is already advancing to the next round but still has a game to play and does not use its best players because the team can afford to lose a game. A case in point where a much stricter approach was demonstrated could be the sport of badminton in the London Olympics where four pairs of women's doubles players, including the Chinese top seeds, were ejected from the Olympic tournament for trying to throw matches in an effort to secure a more favourable quarter-final draw. The Badminton World Federation read a brief statement saying the players had been disqualified for breaching two parts of the players' code: 'Not using one's best efforts to win a match and conducting oneself in a manner that is clearly abusive or detrimental to the sport' (Zaksaitė, 2013). Admittedly, the situation in chess is not identical: the rationale behind fixed draws is usually not to secure a more favourable opponent. However, the badminton experience might be useful for introducing the same criteria in chess: fixed draws might be considered detrimental to the sport when a clear abuse of the game is witnessed. In other words, although fixed draws in chess are usually nowadays considered as tactics, this does not mean that in the nearest future the most dangerous forms of fixed draws will not be considered an abuse of the game. The FIDE Ethics & Disciplinary Commission has recently expressed a very similar position in aforementioned Case no. 2/2020: there are situations where arranged draws

may be in violation of the concept of sportsmanship and fair competition to such an extent that they would qualify as match fixing. One example is where one of the players is offered some kind of remuneration to agree to a draw (§ 10.5).¹²

However, this analysis does not exhaust the phenomenon of fixed draws in chess. Such acts might *per se* range from less dangerous to more critical. Accordingly, some acts can be considered sports tactics, some can be regarded as a foul play whereas others already qualify as match-fixing. Examples are as follows:

- 1) Simply caring about your own long-term performance and agreeing to a draw in order to save energy for the next round.
- 2) The situation where a coach, for the benefit of his student, decides to save the student's energy for the later games and agrees to a draw.
- 3) Cartel-like agreements where a group of masters are more likely to draw when they play each other than when they are playing with other masters.
- 4) Not showing one's best efforts while playing in round-robin (or 'all-play-all') tournaments in order to create more possibilities for promising players to fulfil international norms.

All four examples are ambiguous but they differ in scale and consequences. Cartel-like agreements (i.e., the third example) were more prevalent in the cold-war period and still exist today, albeit to a lesser extent. Such agreements may be politically oriented or done for purely commercial interests. For the sake of comparison, similar agreements exist in other sports, for example, in Formula-1 where the so-called 'sister team' policy exists. Although there are no scientific or sports-law related definitions of sister teams, it can be stated that they are teams not formally connected but which help each other in competition, this cooperation being doubtful in terms of fair competition. The F1 Red Bull and Toro Rosso teams could practically be considered sister teams in that, both being controlled by the same executives, they help each other in races in the most needful situations (Zaksaitė, Raduševičius, 2017).

¹² Case no. 2/2020: Alleged match-fixing during the Kenyan National Women Chess Championship, 2019. https://ethics.fide.com/wp-content/uploads/2020/06/FIDE-2_2020-decision-final.pdf. Accessed 26 June 2020.

The fourth example comes close to match-fixing, since this behaviour is usually driven purely by selfish motives: an overly principled grandmaster (who shows his best efforts and fighting spirit in every game) is less likely to be invited to some dubious round-robin tournaments. Thus, there does exist an implicit arrangement between the organiser and the grandmaster that the latter will create certain conditions to 'help' young talents meet international norms. Interestingly, even this type of behaviour is not unambiguously condemned by the chess community.¹³ Certain euphemistic techniques are invented: playing below one's efforts is called upbringing, assistance, or sacrifice. In this respect, the margin between unfair play and match-fixing is thin since a person might unconsciously drift from seemingly innocent behaviour towards cheating. Football is a relevant example in this regard. The convincing language of match-fixing in this sport requires a certain technique as well. For example, a football official from Malaysia describes a case where corrupt persons used neutral language to prevent athletes realising they were behaving illegally. Bribes were called 'tips', bookmakers were called 'agents', non-initiated investigations were referred to as 'swapping dust under the carpet', coercion was called 'trust' (Hill, 2009). Such euphemisms illustrate the insights of criminologist David Matza (1964), according to whom certain practices (so-called techniques of neutralisation) may help neutralise remorse. According to Matza (1964), the process can be described as a 'drift' from honest behaviour to cheating, and deviant behaviour can be understood as a stream. Specific (learned or self-made) practices, language and patterns of behaviour help to get into the stream – a subculture of deviant behaviour. From a cultural point of view, it should be noted that entire nations or even continents could be seen as a 'stream'. For example, it is argued that the simulation of injury in football is considered an act of high professionalism in Latin America, but is called dishonourable in Europe; according to Lithuanian

¹³ Though, of course, some simple preventative measures have already been invented: for example, Grandmaster Nunn suggests that tournament organisers should collude to extend invitations to only those top players exhibiting 'fighting spirit'. Smerdon D. Fixing Flaws and Stopping Draws. A new chess tie-break system based on directed network analysis. Social Network Analysis Research Proposal, Tinbergen Institute, 2012. https://www.academia.edu/24439310/Fixing_Flaws_and_Stopping_Draws_A_new_chess_tie-break_system_based_on_directed_network_analysis. Accessed 3 May 2020.

basketball player Arvydas Sabonis, it was not uncommon for athletes from former Yugoslavia to simulate injuries in basketball.¹⁴ Similarly, in chess, a cultural drift might be explained geopolitically: cartel-like agreements were more prevalent among players and coaches from the former Soviet Union countries (Moul, Nye, 2009).

That being said, we can conclude the discussion of fixed draws in chess by underlining the following insights. Firstly, it must be noted that legal positivism may be insufficient for describing this phenomenon. It is not easy to determine when actions that appear to be part of the legitimate tactics of the sport become deviant and thus punishable. Criminology might be a more proper 'ally' when trying to analyse the manifestations of fixed draws in chess. Secondly, fixed draws are manifested in different forms: some types of fixed draws are closer to the tactical dimension of the sport while others come very close to match-fixing. Several criteria should be taken into account to delimitate these forms: the importance of the tournament, the round of the tournament (fixed draws in the last round tend to be more harmful compared to those occurring at the beginning of the competition), the consequences of prearranged draws, the degree to which the game is abused, the commercial interest vested in the particular competition, etc.¹⁵ In my opinion, fixing draws to save energy for the next game should not be considered match-fixing. In the light of the introduction to this article, one might state that this a kind of fixed draw mainly concerns one person and does not cause substantial harm to others, thus the Federation's intervention is not necessary. Similarly, no euphemistic techniques are needed – players can simply state that fixing draws is a lesser evil than playing two rounds (i.e., approximately 8 hours) per day.

¹⁴ Donskis L. (host). Be pykčio [Without Anger]. Vilnius: LTV2, 2011. Accessed 3 May 2020. <https://www.lrt.lt/mediateka/irasas/31600/be-pykcio-pokalbis-ne-apie-laimeta-auksa-o-apie-pati-aryvda-saboni-sporte-ir-gyvenime>.

¹⁵ In this respect, Smerdon noted that in an age when grandmasters are concerned about protecting their livelihood, but the general public craves increasing levels of excitement and drama for their entertainment purposes, professional chess is at risk of becoming obsolete. Smerdon D. Fixing Flaws and Stopping Draws. A new chess tie-break system based on directed network analysis. Social Network Analysis Research Proposal, Tinbergen Institute, 2012. https://www.academia.edu/24439310/Fixing_Flaws_and_Stopping_Draws_A_new_chess_tie-break_system_based_on_directed_network_analysis. Accessed 3 May 2020.

However, cartel-like agreements seem to be very close to match-fixing, whilst the example of the player and the 'selfless' coach seem to lie at the borderline and requires individual handling. The fourth example (not showing one's best efforts while playing in round-robin (or 'all-play-all') tournaments) also lies on the borderline: it depends on the degree to which the grandmaster is ready to sacrifice his own rating for the benefit of the (usually) younger generation.

3. The investigation process of cheating in chess

Taking into consideration the two-fold concept of cheating in chess, this chapter is divided into two parts: the process of investigating computer-assisted cheating and the process of investigating match-fixing.

3.1. The process of investigating computer-assisted cheating

Computer-assisted cheating is widely deemed to be the greatest threat to the future of chess and many amateurs and even professionals regularly allege that cheating is rampant. The 2006 world championship match was roiled by accusations by Veselin Topalov against Vladimir Kramnik. Another high-level accusation by elite grandmaster Shakhriyar Mamedyarov against grandmaster Igor Kurnosov at the 2009 Aeroflot Open is regarded as groundless. However, there are many recent cases that carry more weight. These include the revocation of the gold medal won by Sebastian Feller at the 2010 Chess Olympiad and the disqualifications of Christoph Nastidis from the 2011 German championships and Gaioz Nigalidze from the 2015 Dubai Open. Every year for the past decade there have been multiple cases resulting in sanctions, others in exoneration, and others not resolved. The problem is made harder by the fact that a cheater does not have to use assistance for an entire game. Using a computer at one or several critical points in a game can dramatically affect the outcome. In the cases of Nastidis and Nigalidze, a cell phone was used in the restroom at key moments in the games (Copeland, 2019). This has aspects of so-called 'wicked problems', but is amenable to quantitative methods that can guide problem-solving in other sports and areas of educational testing.

Computer-assisted cheating has already been investigated by the FIDE Ethics Commission (ETH) in quite a number of cases: 2/2011, 6/2014, 8/2015,

7/2015, 2/2016, 1/2018, 6/2019 and 8/2019.¹⁶ Firstly, it should be noted that chess disciplinary law embraces case-law of the Court of Arbitration for Sport (CAS) related to standards of proof. According to established CAS practice, the standard of proof in cases involving disciplinary and ethical violations in sport is the standard of ‘comfortable satisfaction’ (‘sufficient confidence’ of the hearing experts), which is higher than the standard of ‘balance of probability’, commonly used in civil proceedings in most countries. The CAS panel of arbitrators reached this conclusion, for example, in CAS 2011/A/2625 *Mohamed Bin Hammam v. FIFA*,¹⁷ citing established CAS case-law and, in particular, CAS 2011/A/2426 *Amos Adamu v. FIFA*.¹⁸ The same conclusion was reached in case no. CAS 2014/A/3628 *Eskişehirspor Kulübü v. UEFA*, where the panel of arbitrators also stated that the seriousness of the violation must be taken into account when using this standard, i.e., the more serious the violation and its consequences, the higher the level of ‘sufficient confidence’ should be for the arbitrators to allow a decision on the application of sanctions against the accused person.¹⁹

Computer programmes are already used by FIDE to provide evidence of players using dishonest methods of play through statistical data analysis, and provide important additional information for investigating cheating during chess matches. The decisions of the ETH in cases 8/2015 and 2/2016 describe in detail the method of functioning and the feasibility of using Dr. Regan’s²⁰ system as the most complete system unifying data from different chess programmes for the detection of unfair play in order to provide important evidence that a player committed a cheating-related violation.²¹

¹⁶ FIDE Ethics Commission, list of decisions: <http://ethics.fide.com/list-of-decisions/>. Accessed 12 Jan. 2020.

¹⁷ CAS 2011/A/2625 *Mohamed Bin Hammam v. FIFA*, pp. 37-38, § 153.

¹⁸ CAS 2011/A/2426 *Amos Adamu v. FIFA*, pp. 44, § 88.

¹⁹ CAS 2014/A/3628 *Eskişehirspor Kulübü v. UEFA*, pp. 33-34, § 123-124.

²⁰ Dr Kenneth Regan is an Associate Professor with tenure in Computer Science at the State University of New York at Buffalo (USA).

²¹ Combined motivation for the decisions of the FIDE Ethics Commission in cases nos. 8/2015 (Alleged cheating by Mr Ivan Tetimov (BUL) - Benidorm 2014) and 2/2016 (Alleged cheating by Mr Arcangelo Ricciardi (ITA) - Imperia Open, 2015) dated 1 March 2018. https://ethics.fide.com/images/stories/FIDE_ETHICS_COMMISSION_-_MOTIVATION_-_TETIMOV__RICCIARDI_FINAL.pdf. Accessed 3 May 2020.

Art. 12.21, 12.25 and 12.36.4 of the combined motivation for decisions 8/2015 and 2/2016 state that in order to provide a statistical judgment, Dr. Regan's model uses three separate statistical tests, each producing a z-score to indicate variance with the projected performance: (1) The Move-Matching percentage (MM); (2) Equal-top value moves (EV); and (3) Scaled Difference, i.e., total error (SD) and Average Scaled Difference (ASD) when averaged over all the positions analysed. The outcomes of MM, EV and SD tests are converted into z-scores indicating the probability of fair play / cheating by comparing the player's actual performance with the projected (expected) performance of a player of the same strength. If the deviation is sufficiently significant, it provides statistical proof of the probability of cheating. Thus Dr. Regan runs his statistical programme to generate projections, measure deviations and complete confidence intervals, for several aggregate statistics. The parameter settings are derived from the post-tournament ELO rating;²² the main tests are MM, EV and SD. The programme computes projections and z-scores according to the well-known statistical theory of independent Bernoulli trials and Gaussian normal distribution.

CHART 1. The statistical probability of cheating in the z-score is reflected as follows:

2.0	1:44
2.5	1:161
3.0	1:750
3.5	1:4 300
4.0	1:32 000
4.5	1:300 000
4.75	1:1 000 000
5.0	1:3 500 000

²² The ELO rating system is a method for calculating the relative skill levels of chess players. It is named after its creator Arpad Elo, a Hungarian-American physics professor. FIDE officially applies this system; thus, ELO rating and FIDE rating are used as synonyms.

The higher the *z*-score, the higher the level of ‘sufficient confidence’ of the referees; if the *z*-score is extremely high (4.5 or more), it clearly indicates the lowest possible probability (approximately 300,000 to 1) that the player acted honestly, and should be clearly sufficient to meet the ‘comfortable satisfaction’ standard of proof and to find the athlete guilty of cheating. In this case, the athlete should be allowed to present in turn arguments in his defence, based on facts and circumstances that must be proven at the level of ‘balance of probability’. It should be noted that these arguments should not be unfounded but need to conform to the above standard. One can be sure that if the *z*-score is higher than 4.5, then the presumption of proof of a violation at the level of ‘comfortable satisfaction’ is established, which the athlete should be able to refute at the same level of ‘balance of probability’.²³ Again, this opinion of FIDE lawyers echoes CAS case-law.²⁴ For example, when analysing the Athlete Biological Passport²⁵ (ABP) profile, CAS stated that, as to the absence of positive tests and the method applied to evaluate the samples provided by the Athlete to find an anti-doping rule violation, the Panel noted that the ABP profile had been validated in a long line of CAS cases (see *inter alia*: CAS 2010/A/2174; CAS 2010/A/2178; CAS 2010/A/2308 & 2335; CAS 2012/A/2773; as well as CAS 2010/A/2235) as being a reliable means to detect blood doping, even in the absence of positive tests, through the identification of abnormal values calling for an explanation by the athlete in question.²⁶ It is important to note that, in the context of chess, a ‘positive test’ would be physical evidence e.g. a telephone / computer found with a programme running during the game

²³ FIDE/SILA lawyers’ legal opinion on Dr Regan’s statistical model (2019).

²⁴ The only difference is that in CAS case-law usually more than one expert is called for, whereas chess world for now has only one or two experts.

²⁵ In order to improve the testing regime, WADA introduced the Athlete Biological Passport (ABP) so that abnormal variations in specific biological values can be monitored. The ABP can be used to identify athletes to target testing and may be used to pursue an anti-doping rule violation while the specific illicit substance no longer has to be detected itself. ABP was introduced to improve the detection of cheating and catching those who manage to avoid detection by direct testing for illegal substances. Westmattmann D. et al. Perception of the Current Anti-doping Regime – A Quantitative Study Among German Top-Level Cyclists and Track and Field Athletes // *Front Psychology*, 2018, vol. 9, pp. 1-14.

²⁶ CAS 2015/A/4010 IAAF v. ARAF, Vladimir Kanaikin & RUSADA, award of 25 April 2016 (operative award of 24 March 2016), § 121.

in question. Thus, by analogy with ABP, Dr. Regan's system is devoted to detecting cheating in the absence of any 'positive test' as such or when other evidence alone would be inconclusive. It is worth noting that players caught red-handed usually plead guilty to cheating; therefore a 'positive test' *per se* leads to an easier and simpler process of establishing proof.

The following is a summary of the computer-assisted cheating investigation issues: Dr. Regan's system is of invaluable help to the chess world in proving computer-assisted cheating cases. It can be conceptually compared to ABP evidence or the Betting Fraud Detection System (BFDS).²⁷ However, as it is carried out mainly by one person it is fragile in itself, and it would therefore be very much advisable that at least three institutions (similarly to the case of anti-doping laboratories) could use the system. Technically, this can be done by creating some form of online-screening tool²⁸ to analyse all available

²⁷ WADA's ABP and BFDS, similarly to Dr. Regan's system, rely on a large amount of general information used to identify usual and unusual situations in order to determine the possible commission of an offence. Still, a deeper look might reveal conceptual differences as well as similarities between these systems. See more: Ibarrola J. (2017) CAS 2015/A/4351, *VsI Pakruojis FK, Darius Jankauskas, Armas Mikaitis, Sigitas Olberkis, Valdas Pocevičius, Alfredas Skroblas, Donatas Strockis, Diogo Gouveia Miranda, C. H. Alexandru, Taras Michailiuk v. Lithuanian Football Federation*, award of 13 July 2016. In: Duval A., Rigozzi A. (eds) *Yearbook of International Sports Arbitration 2016. Yearbook of International Sports Arbitration*. T.M.C. Asser Press, The Hague.

²⁸ Currently, games have to be sent to Dr. Regan in PGN (portable game notation) format and he screens them. Technically, the proposal is to set up an online screening tool that allows the user to upload a PGN file, screen the game and send the results back whilst alerting Dr. Regan and the FIDE Fair Play Commission of any detected irregularities. In order to achieve this, a front-end application will have to be developed that will interface with the back-end calculation system. Given the computing requirements, it is desirable that the back-end calculation is done using distributed computing (cloud). The front end is required to upload and screen the PGN file to ensure there are no errors in the file, send this file to the back-end calculation system, maintain a queue of files and disseminate results. A simplified workflow is as follows. A PGN file is uploaded to the application along with a contact email address, the app performs an integrity check on the file reporting any errors and the file is placed in a queue for processing. When the file reaches the front of the queue, it is sent to the calculation system, calculation system performs the analysis and sends the result back to the app. The app compiles a report and transmits it to the sender and all other authorised parties. In the case of anomalies, the report may contain recommendations for further action. The complexity in the system is in the back-end calculation. This has already been developed by Dr. Regan, but to make it accessible for use, it needs a front-end application to drive and control the data.

chess games and instantly detect abnormalities caused by computer-assisted cheating. It should be emphasised that the prevention of cheating in chess is unique in that it requires comprehensive knowledge in the fields of chess, computing, and data science. The screening tool embodies modern goals of large-scale data representation to spot potential anomalies. The predictive-analytic component deals with the forecasting of probabilities or natural frequencies for events or decisions. In terms of chess, the probabilities are put on chess moves selected by a person with respect to that person's ELO rating and other parameters reflecting the person's skills and style of play. Both are applied to human behaviour – with the aim of detecting non-human behaviour behind the chess board.²⁹

That said, chess is breaking the ice by identifying (ir)regular patterns of human thought, and the experience borrowed from chess can be useful in other fields far beyond anti-cheating, for example insurance companies, stock trading, educational testing, and betting markets. In the latter example, Dr. Regan himself already compared his model to that used in the betting market: 'My chess model does the same thing to a chess position – given information about the skill set of the player deciding on a move – that a bookie does to a horse race. It sets odds on each legal move to 'win' by being played in the game. The probabilities need to be accurate for the same reason bookmakers need their 'initial betting lines' to be close to how bets will ultimately balance, so they can preserve their margin. A horse with highest probability – perhaps a tie – is the bookie's favorite.'³⁰

3.2. The process of investigating match-fixing and related offences

Firstly, it should be noted that up to now there have been only two match-fixing cases decided within FIDE. In Case no. 8/2019, the respondent confessed that, besides other cheating incidents, he also fixed a match. § 8.2 of

²⁹ See more: Johnson B. (host). EP. 136 - IM Kenneth Regan. Perpetual Chess Podcast <https://podcasts.apple.com/us/podcast/ep-136-im-kenneth-regan/id1185023674?i=1000445123682&fbclid=IwAR1yP8R2LiwMyZnNtkA7ye9nyDL6vpbFRnErgncyQNqqBRBjKbLAM-qvcnw>. Accessed 3 May 2020.

³⁰ See more: Regan K. W. Predicting Chess and Horses. <https://rjlipton.wordpress.com/2019/08/15/predicting-chess-and-horses/>. Accessed 3 May 2020.

the Decision stated that ‘at the hearing the respondent confessed that he had made himself guilty of cheating in one game at the 2015 Czech Championships (Havlickuv Brod) and in one game at the 2017 Teplice Open by similar use of his mobile phone. In addition, the respondent confessed that he arranged with his opponent beforehand the outcome of a game at the 2017 Teplice Open in the respondent’s favour.’³¹ In Case no. 2/2020, the respondents were found guilty of an attempt at match-fixing. § 11.7 of the Decision stated that the offence must be deemed to be of a serious nature as match fixing is perilous for all sports, chess included. § 10.10 12.3 and 12.4 of the Decision asserted that even if it is not established that specific remuneration was offered or accepted, the Chamber is comfortably satisfied that the respondents did attempt to fix the result in their game to their mutual benefit. The Chamber *inter alia* considered the statement of the Arbiter Moses Maina to the FPL wherein he described the conversation in writing between the respondents showing how they planned to share the cash prize. The offence was committed at a FIDE rated event which was the first step in the qualification for the Kenyan Women Olympiad team. Both respondents were sanctioned by a worldwide ban of 24 months (the last six months of which were suspended and served as a probationary period) from participating as a player in any FIDE rated chess competition, taking effect from the date of the decision, 21 June 2020.³²

In fact, with reference to match-fixing, Case no. 2/2020 is a landmark precedential case where the concepts of (attempted) match-fixing and fixed draws were studied in great detail. Match-fixing is (more precisely, was, until June 2020) rarely investigated within FIDE for the following reasons: (1) the Anti-cheating policy within FIDE itself is very recent, and priority was given to the fight against computer-assisted cheating; (2) up to 2018, there was hardly any legal framework within FIDE to tackle match-fixing. Presently, the legal framework is a little more coherent (match-fixing at least is covered by the concept of cheating), but still rather fragmented and very laconic; (3) there

³¹ Case no. 8/2019: Allegations of cheating at the 2019 Strasbourg tournament and various other tournaments against GM Igor Rausis. https://www.fide.com/docs/decisions-resolutions/Ethics%20case%208_2019%20Decision.pdf. Accessed 3 May 2020.

³² Case no. 2/2020: Alleged match-fixing during the Kenyan National Women Chess Championship, 2019. https://ethics.fide.com/wp-content/uploads/2020/06/FIDE-2_2020-decision-final.pdf. Accessed 26 June 2020.

are not only legal, but also practical obstacles related to the protection of reporting persons, and certain forms of suspicious behaviour (failure to report suspicious activity, presumed match-fixing) are also not prohibited in chess. These obstacles are studied in more detail below.

In practical terms, one of the most evident obstacles is that related to the protection of reporting persons. Article 7.2 of the Macolin Convention states that Each Party shall encourage sports organisations to adopt and implement the appropriate measures in order to ensure effective mechanisms to facilitate the disclosure of any information concerning potential or actual cases of manipulation of sports competitions, including adequate protection for whistle-blowers. In the criminological sense, such measures would help to break *omertà* (i.e., code of silence) and build trust in sporting organisations. However, the FIDE 2018 Anti-Cheating Regulations contain no clauses on the protection of whistle-blowers. In practice, a whistle-blower reports some suspicious event to an official from FIDE (for example, the Director General), then the FIDE official asks FPL to initiate an investigation. This is a flawed practice since FPL loses access to the primary source of information³³ and as a result it is very hard to collect evidence. In this respect, Art. 47 and 48 of the 2019 UEFA disciplinary regulations where the protection of witnesses is entrenched should be considered and adjusted for chess by stating, for example, that witnesses may remain anonymous when they or their family may be in physical danger, and also when there is a perceivable risk to their sporting career. Needless to say, 'remaining anonymous' should mean anonymity for the public, but not for the disciplinary bodies themselves (this paradoxical situation may now occur and occurs *de facto* in chess). In this respect, CAS jurisprudence in case CAS 2009/A/1920 is relevant. In this case, CAS considered the testimony of witnesses given anonymously and found that the use of anonymous witnesses' statements was admissible yet at the same time subject to strict conditions. The right to be heard and to a fair trial must be ensured through other means, namely by cross examination through 'audiovisual protection' and by an in-depth check of the identity and the reputation of the anonymous witness by the court (CAS 2009/A/1920 § 55,

³³ Of course, nobody stops the Investigative Chamber from contacting the initial complainant, but the problem is that the Investigative Chamber might not know that person.

72).³⁴ A similar position has been presented by the European Court of Human Rights: an anonymous witness could be questioned in a room away from the hearing room, with an audio and video link enabling the accused to ask the witness questions.³⁵ In other words, all necessary measures must be taken to avoid false accusation, called in the chess world ‘witch-hunting’.³⁶

Match-fixing is also difficult to prove because (contrary to the Macolin Convention³⁷) failure to report any suspicious activity, incident, incentive or approach is not yet an offence in chess. In other sports, failure to notify the competent authorities of a potential disclosure of confidential information relevant to the outcome or course of the competition would be considered dishonest behaviour. It is worth remembering CAS case no. 2010/A/2172 of the Ukrainian referee Oriekhov: the referee was punished not for specific actions, but for failure to act, i.e., for failure to report offers of match-fixing (§ 20).

It should be further noted that presumed match-fixing is not prohibited by FIDE laws, although the CAS would probably tolerate such legislation. For

³⁴ CAS 2009/A/1920 FK Pobeda, Aleksandar Zabrcanec, Nikolce Zdraveski v. UEFA https://arbitrationlaw.com/sites/default/files/free_pdfs/CAS%202009-A-1920%20FKP%20et%20al%20v%20UEFA%20Award.pdf. Accessed 3 May 2020.

³⁵ ECHR decision on Balta and Demir v. Turkey, Application no. 48628/12, judgment of 23 June 2015, final on 23 September 2015.

³⁶ False accusation in Art. I.5 of the Anti-Cheating Regulations is defined as an abuse of freedom of expression that is prohibited by the Code of Ethics. An accusation of cheating that is manifestly unfounded, i.e., based only on emotion and/or insufficient data, is a false accusation. It is important to note that it is possible to be punished for a false accusation, and this has already happened in ETH Case no. 3/2015, which has emerged as a case of ‘witch-hunting’, namely a case of targeting a chess player in a public smear campaign with accusations of cheating based upon fears and suspicions unsupported by any concrete evidence. Case no. 3/2015: Discrimination against a player by fellow participants in the European Individual Women’s Chess Championship, Chakvi, Georgia, 2015. https://ethics.fide.com/images/stories/Motivation_Sandu_final_31.07.pdf. Accessed 3 May 2020.

³⁷ Art. 7.1.c of the Convention stipulates that Each Party shall encourage sports organisations and competition organisers to adopt and implement rules to combat the manipulation of sports competitions as well as principles of good governance, related, *inter alia*, to the requirement for competition stakeholders to report immediately any suspicious activity, incident, incentive or approach which could be considered an infringement of the rules against the manipulation of sports competitions.

example, paragraph 4 of CAS 2015/A/4351 states that a player can be held responsible for presumed match manipulation (even) when the finding of actual match manipulation is not possible.³⁸ In the case of chess, one cannot rely on irregular betting patterns as a presumption of fixing, but it is still possible to use some specific expertise – for instance, graphological analysis of the score sheets could indicate if the game was indeed played or if it was fixed.³⁹ So, in principle, chess has certain peculiarities as regards proving match-fixing, but conceptually they are not very different in essence from those of other sports. The problem is that disciplinary regulation in chess is not tailored to proving match-fixing: if a fixer does not confess, there are hardly any means to collect the relevant evidence.

That said, it is almost impossible for the time being to prove match-fixing without police assistance. Another possibility is to grant FPL powers similar to those of prosecutors and officers from (*inter alia*) the tennis integrity unit –

³⁸ Sports institutions, such as the Lithuanian Football Federation (LFF), in this case, demonstrated originality in the drafting of rules providing for 'light' means of evidence. It should be emphasised that the rules in question were redrafted several times. According to the recent knowledge of the author of this article (who, as an attorney-at-law, tried to defend one football player in the Disciplinary case no. 2019/26) in practical terms, in order to sanction clubs and players for breaching the prohibition on 'presumed match-fixing', LFF needs to establish the following conditions: (1) that a particular match may have been fixed; (2) that the conduct of a particular player in that match is atypical and gives grounds to believe that there may have been a breach of the prohibition on match-fixing. The first condition is usually substantiated by UEFA reports, which are compiled by analysing match-specific betting market data. Analysis of such data gives a sufficient impression as to whether a match might have been fixed. The second condition is proven by video analysis of specific suspicious matches. The LFF has set up a special match Investigative Committee for this purpose. It is its responsibility to carry out such analysis. This Committee analyses matches and player behaviour and draws conclusions to that effect. Thus, the conclusion of the Committee is the decisive factor for the fulfilment of the second condition. See Ibarrola J. (2017) CAS 2015/A/4351, VSI Pakruojis FK, Darius Jankauskas, Armas Mikaitis, Sigitas Olberkis, Valdas Pocevičius, Alfredas Skrobilas, Donatas Strockis, Diogo Gouveia Miranda, C. H. Alexandru, Taras Michailiuk v. Lithuanian Football Federation, award of 13 July 2016. In: Duval A., Rigozzi A. (eds) Yearbook of International Sports Arbitration 2016. Yearbook of International Sports Arbitration. T.M.C. Asser Press, The Hague.

³⁹ A beautiful, overly neat handwriting might indicate that the game was fixed. And *vice versa* – a nervous, shaky handwriting during a difficult period might indicate that the game in question was played honestly.

that is, *inter alia*, the obligation for the defendants and other related people to furnish (accordingly – the power of the integrity unit to ask for) any object or information regarding the alleged Corruption Offense, including, without limitation, (i) personal devices (including mobile telephone(s), tablets and / or laptop computers), (ii) access to any social media accounts and cloud storage held by the Covered Person (including provision of user names and passwords), (iii) hard copy or electronic records relating to the alleged Corruption Offense (...).⁴⁰ However, not only do Members of FPL have no similar powers, but most of them work for FIDE on a voluntary basis.

Considering the fragility of the powers granted to FPL, I would like to suggest one simple rule. A solution would be to state that FIDE has the right to reject norms or not to rate certain tournaments unless the organisers can prove on the balance of probabilities that the tournament was not fixed. Of course, prior to refusing to rate a tournament, there should be at least some proof / preliminary data on potential match-fixing. In the chess world, the most likely proof in such cases would be the testimonies of (anonymous) witnesses. In fact, this suggestion would allow punishment for presumed match-fixing, and importantly, it would also allow punishment for the most dangerous forms of fixed-draws. The proposal would be in line with disciplinary regulations found in other sports. For example, the World Anti-Doping Code establishes that the burden of proof for an anti-doping rule violation generally rests with the anti-doping organisation, but in cases where the burden of proof is transferred to the athlete (to prove certain facts and circumstances or the lack of intent to commit a violation not involving a particular substance), the standard of proof will be 'balance of probability'.

From the human rights perspective, in order to legitimise the proposal in question, we should ask some fundamental questions originally coming from the jurisprudence of the European Court of Human Rights. These questions read as follows: *is the rule restrictive, and if so, is the restrictiveness proportionate to the aim that is being sought?* The answer to the first question is affirmative: the proposed rule is restrictive, namely, it might interfere with the right to reputation (of the tournament organisers and of the players, accordingly). The right to reputation is protected by Article 8 of the European

⁴⁰ Tennis Anti-Corruption Program (2019) <https://www.tennisintegrityunit.com/storage/app/media/TIU%20Documents/TACP.pdf>, pp. 9. Accessed 3 May 2020.

Convention on Human Rights as part of the right to respect for private life.⁴¹ The second question concerns proportionality and, in my opinion, the answer to it is also affirmative. It is important that there is a rather lenient sanction / reaction entrenched: it is stated only that the tournament will be not rated. It should be underlined that such a sanction should not directly affect a player and thus should not presume the guilt of an athlete. Rather, a tournament is 'punished'. Accordingly, this relatively mild consequence is in accordance with the principle of proportionality and the reversed burden of proof seems a reasonable way to fight against potential match-fixing. This way of creating disciplinary law is also in line with classical principles stemming from Cesare Beccaria: the imminence of responsibility is more important than severe punishment (Bekarija, 1992). Interestingly, chess organisers from India introduced an even more straightforward approach against one form of manipulation of chess competitions, namely 'sandbagging'⁴²: players who have already won large cash prizes in previous tournaments are not allowed to participate in lower category events.⁴³ The tournament regulations stipulate that players who have previously won Rs. 70,000 or more as a cash prize in an under-1600 tournament (or any category event which is below 1600) are not eligible to participate. Thus, the tournament organisers are not required to prove sandbagging (and a player does not even have a chance to prove the opposite on the balance on probabilities); instead, they do not allow players to take part in the tournament, thus sending a message to sandbaggers that they will not have a chance to play.

⁴¹ ECHR decision in *Axel Springer AG v. Germany*, judgment (Grand Chamber) of 7 February 2012, § 83-84.

⁴² Sandbagging in the context of chess refers to deliberately playing below one's actual ability in order to lower one's rating to play in a future event with a higher handicap and consequently with a better chance of winning.

⁴³ Shah S. India's biggest open in Delhi sets the trend, begins the fight against sandbaggers. <https://chessbase.in/news/Delhi-Open-2020-fights-against-Sandbagging?fbclid=IwAR04RrzwM8A2TlEjPjnnWKX1ayeNvVC-8ai9ZMipyKffakfUS5fx2Djc4>. Accessed 3 May 2020. By the way, the same rule has been applied in U. S. continental tournaments (covering about 50 % or more of all unofficial tournaments) since the 90s.

Final remarks

Cheating in chess is a multi-faceted issue. On the one hand, computer-assisted cheating is conceptually very close to technological doping both in terms of substantial and procedural issues. However, anti-cheating policy within FIDE is very recent, and computer-assisted cheating has never been formally recognised as doping by either WADA or FIDE. Doping issues and anti-cheating issues within the governance of FIDE fall under different regulations and different governing bodies (namely, the Medical Commission and the Fair Play Commission), which is why, even though computer-assisted cheating is conceptually close to (technological) doping, this insight remains in fact a theoretical abstraction.

Moreover, cheating in chess is supposed to include match-fixing issues, so that corruption and fraud somehow interplay within the disciplinary regulations in chess. There are both advantages and disadvantages in that respect. Firstly, while the chess legal system's 'underdevelopment' may appear immature, it may also be appropriate, because the chess community feels relatively safe and is not yet subject to overarching 'Orwellian' surveillance mechanisms. There is no duty to report on match-fixing or any other suspicious behaviour and there is no right to punish for assumptions of match-fixing. However, some modern solutions should be introduced to ensure that the anti-cheating policy is not too lax. One solution is to harmonise the statistical evidence of Dr. Regan's system with that already used by CAS in (*inter alia*) Athlete Biological Passport cases by providing him with assistance to make his model global. Another suggestion relates to combating match-fixing: it would be worthwhile introducing a rule allowing FIDE to reject norms or not to rate certain tournaments unless the organisers can satisfy FIDE on the balance of probabilities that the tournament was not fixed. Such a rule would not require major resources from FIDE and would not put excessive pressure on organisers since the potential sanction would be relatively mild. The third suggestion would be to ensure the anonymity of whistle-blowers within the chess community and thus protect their sporting careers.

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