



Bobby Fischer and the delusions of a king of logic

This Essay relates the intriguing story of Bobby Fischer and his severe mental illness. It does so through the lens of what appears to be a paradox: how could someone whose mind was so exquisitely tuned to the logic and strategy of chess at the elite level, develop a system of firmly held beliefs that seemed clearly to defy logic and rationality? In fact, we suggest, the case of Bobby Fischer highlights something that is often overlooked: that delusional thinking may be underpinned not by a failure of logic but rather by a train of logic that, though internally consistent, is insufficiently constrained by past experiences and by the capacity to consider prevailing assessments of environmental uncertainty and volatility.

Commemorating the 50th anniversary of his unforgettable world championship victory, we examine how his persisting brilliance on the chessboard could co-exist with his profoundly anomalous conception of reality and speculate on how informative this might prove in thinking about the mechanisms of delusion formation.

The life of James Robert ‘Bobby’ Fischer is fascinating in many aspects. Born in Chicago (USA) in 1943, he was a chess child prodigy with unprecedented achievements. Fischer became the youngest US Chess Champion at 14, revalidating the title all seven times he participated, including the only perfect score (11-0) in the tournament’s history. Fischer was also the then youngest Grandmaster at 15, and he quickly set his eyes on the world championship. His historical 1972 match against soviet Boris Spassky in Reykjavik (Iceland) (Fig. 1) staged a Cold War battle surrogate, leading to extraordinary media attention and opening the game to wider audiences. The 29-year-old national hero was at the peak of his fame and chess performance.¹ And then Fischer disappeared from the public eye.

Fischer forfeited the title in 1975 and purposelessly wandered in the USA, only occasionally surfacing. In 1992, he won a non-title rematch against Spassky, with an estimated performance as someone still perhaps among the top 10 players.² But the match was set in Yugoslavia during the civil war, and Fischer ignored and then actually spat on the US executive order against commercial activities there, warranting his arrest. Now a fugitive, he lived in Hungary and the Philippines, from where he ‘applauded the [9/11] acts’, becoming a US public enemy. He cohabited and married with different women throughout these years, all of them associated with the chess scene. Fischer was detained in Japan in 2004 while using a revoked US passport, who immediately issued a deportation order. Finally, he was granted Icelandic nationality and moved to Reykjavik in 2005 (Fig. 2), where he died in 2008 (at 64) of kidney failure.

Queries regarding his mental health predated his professional career and were evident in his later years. His devotion to chess was absolute from an early age (‘Bobby isn’t interested in anybody unless they play chess’). His mother sought advice repeatedly from psychiatrists who were also chess players, including Grandmaster Reuben Fine.³ Intellectually gifted, he was notoriously disinterested in lessons as a student (‘he never seems to be listening in class’) and was described as ‘antisocial’ by his teachers, leaving school at 16. Besides disregarding social activities, he was also known for his poor tolerance of chess defeats during early childhood. At the professional level, from age 16, it became ‘difficult’ for tournament organisers to satisfy his increasing demands. Fischer was not shy of conflict with fellow players, funders, organizations, federations, or anyone in the role of authority and frequently stormed out of tournaments. He notoriously accused Russians of colluding during competitions to get easy draws and avoid effort⁴ (although this was confirmed in some cases). Fischer also

‘demanded special lightning, special seating, special conditions to ensure quiet. He complained that opponents were trying to poison his food, that his hotel room was bugged and began to fear flying because he thought the Russians might hide booby traps on the plane’.⁵

Fischer even semi-retired during the mid-1960s, including withdrawal in the main tournament as his religious beliefs at the time (Worldwide Church of God’s Seventh-Day Sabbath) were not respected, all postponing his challenge to the title.

The 1972 world title match was not without drama. He refused to play the second game as he was distracted by noise and lights, and the match needed to be continued without the public. After the victory, Fischer notoriously forfeited the title as his demands for changing the tournament format were not accepted by the international federation. In 1981, after he was mistakenly arrested, Fischer published a 14-page report (‘I was tortured in the Pasadena

Jailhouse’) accusing of being ‘frame up and set up’. He made extreme antisemitic remarks throughout his life which worsened in later years when he felt a ‘victim of an international Jewish conspiracy’ until his death as a justice fugitive.

His family history was even more surprising. Fischer didn’t know his biological father, but all evidence points to Paul Nemenyi, a brilliant mathematician and physicist from a wealthy Hungarian-Jewish family, specializing in continuum mechanics. Indeed, his obituary was published in *Science* magazine (*Science*, 29 August 1952, p. 216). Nemenyi was also known for carrying soap around in his pockets and hated to touch door handles. Fischer’s maternal grandmother was an inpatient in the New Jersey’s State Lunatic Asylum at Morristown, where she resided for more than 3 years before dying at 37 (unknown diagnosis). Fischer’s mother, Regina, was a multi-talented woman with Polish-Jewish origins. In 1943, she was formally diagnosed with ‘stilted [paranoid] personality’ and described as ‘querulent but not psychotic’. Notably, she was under strict FBI surveillance for over 20 years as she had lived (and married) in Moscow in the 1930s and had supposed communist views before moving to the USA. Indeed, Fischer’s named father (Gerhart Fischer) was denied US entry due to his communist affiliation, and he was physically separated from Fischer’s mother since 1939 (Bobby Fischer was born in 1943). The federal pressure forced the family to move constantly, looking for low-paid jobs.

There is little doubt that Fischer suffered from a serious mental illness.⁶ In his later years, he experienced psychosis with persecutory delusions and paranoia, with no evidence of abnormal perceptual phenomena (hallucinations) other than unusual body sensations. He might have met the criteria of different disorders throughout his life, from Asperger’s-like syndrome in his childhood to paranoid personality disorder in his twenties, but the final presentation after 1972 was fully compatible with delusional disorder (F22 ICD-10; 297.1 DSM-5). Anecdotally, the only other US chess (unofficial) world champion, Paul Morphy (1837–84), also suffered from persecutory delusions and died at an early age, albeit Morphy’s psychiatric presentation resembles a typical case of schizophrenia, probably hebephrenia subtype. Morphy never played chess after the psychosis onset. Instead, Fischer maintained some degree of top chess performance, promoted a new version of the game called random chess and even developed the incremental chess clock in 1988 (US Patent 4

884 255), which was a brilliant, insightful innovation and the standard now.

Delusional disorder is poorly studied in the scientific literature and frequently confounded with paranoid schizophrenia. It is characterized by the presence of a limited set of systematic delusions without prominent hallucinations, thought disorder or flattening of affect. The disorder has its roots in the *Die Verrücktheit* entity defined by Emil Kraepelin in the sixth edition of his *Textbook of Psychiatry for Students and Medics* (1899, *Psychiatrie: Ein Lehrbuch für Studierende und Ärzte*), possibly the most influential book in psychiatric history. He distinguished this delusional paranoia with conservation of the mind (*Besonnenheit*) from the *Dementia Paranoides*, a subtype of *Dementia Praecox* (later termed paranoid schizophrenia) associated with intellectual impairment.⁷

Kraepelin only accepted the reference form (persecutory delusions), but the current delusional disorder includes different subtypes: erotomaniac (de Clérambault syndrome), grandiose/megalomaniac, morbid jealousy, persecutory and the somatic (e.g. delusional parasitosis or Ekbom syndrome and Cotard syndrome or nihilistic delusional syndrome). Munro⁸ describes delusions as logically constructed and internally consistent, which do not interfere with general logical reasoning (although within the delusional system, the logic is perverted), and there is usually no general disturbance of behaviour (or behaviour that is directly related to the delusional beliefs, as was seen in Fischer’s case). Moreover, the individual experiences a heightened sense of self-reference. Events that, to others, are non-significant are of enormous significance to them, and the atmosphere surrounding the delusions is highly charged. Patients have a notorious lack of insight and are barely seen by psychiatrists but by another medical specialist (dermatologist, neurologist or internist) or legal specialist.

Fischer’s paranoia illustrates a case in which two reality evaluation systems seem to be working in parallel: mastering a set of logical rules with preserved immediate reality feedback (chess) while developing an abnormal inference of the external world leading to persecutory delusions. Indeed, the evidence that patients with active delusions have difficulty with standard logical-reasoning tasks is limited, and the symptoms suggest something more than a general problem with reasoning.⁹ Whereas this can be contradictory, recent advances in the conceptualization of reality perception



Figure 1 Bobby Fischer arriving to Reykjavik in 1972 for his Chess World Championship. ©Trinity Mirror/Mirrorpix/Alamy Stock Photo.



Figure 2 Bobby Fischer arriving to Reykjavik in 2005 as a refugee. ©Thorvaldur Kristmundsson/ZUMA Press.

and delusion formation under the cognitive neuroscience framework can perhaps help to understand it.

In a nutshell, and with the notion that the brain is an inference organ (Helmholtz, 1878), the way we shape our beliefs ('reality') is based on the interaction between what we perceive (from the senses) and what we expect to perceive (the prior knowledge) using a probabilistic approach. To be an effective mechanism, each perception of a stimulus must update the internal record of its probability (beliefs about the world). When a new stimulus–outcome pairing occurs (also called prediction error), prior occurrences of elements of that pair (the stimulus and the outcome) must be evoked to ascertain if it is genuinely an association or simply a chance co-occurrence. A mismatch between the prior knowledge and the actual perception should lead to an update in the knowledge (learning process) mediated, at least partly, by dopamine-containing midbrain neurons.

An abnormal prediction error mechanism (false inference) is the proposed basis of the delusion formation. Psychosis (also named reality distortion or positive symptoms) can occur when low-level information from the senses is ignored by the high-level information of the prior beliefs. But it can also go in the other direction when an overload of (wrong) top-down information changes prior beliefs [e.g. *Folie à deux* or shared delusional disorder]. The computational basis of the prediction error is based on the Bayesian inference theorem and allows experimental testing designs in people

with psychosis. There is ample evidence from both behavioural and physiological studies for abnormalities of probabilistic learning in schizophrenia associated with psychosis (e.g. reviewed in Fletcher and Frith¹⁰).

If Fischer suffered from an aberrant prediction error mechanism, one might argue that his devotion to chess ('chess demands total concentration and a love for the game'; 'I give 98 percent of my mental energy to chess') kept him 'sane'. The set of rules of chess is unquestionable, preventing any need for updating from the senses. [Moreover, some chess players indicate that being paranoid is an adaptive response as the opponent aims to deceive you.] The other set of social rules sent him danger signals from an early age. Born into a Jewish family (including a father who abandoned him), subject to FBI surveillance most of his adult life and playing against the Communist 'apparatchiks', it is not 'un-understandable' (to use Jasper's terms) that these were the focus on his persecutory delusions. Moreover, each adverse event (many of them self-inflicted), reinforced the association.

A deeper understanding of the cognitive and biological mechanisms leading to psychosis might help clinicians to formulate adequate interventions and policymakers to develop appropriate environments for people who have psychosis. Unfortunately, Fischer systematically refused medical attention (even when he suffered appendicitis) and psychiatric help. He was once invited to see one by Grandmaster Byrne, to whom Fischer famously replied, 'a psychiatrist ought to pay him for the privilege of working his brain'. It would have been a sound investment.

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